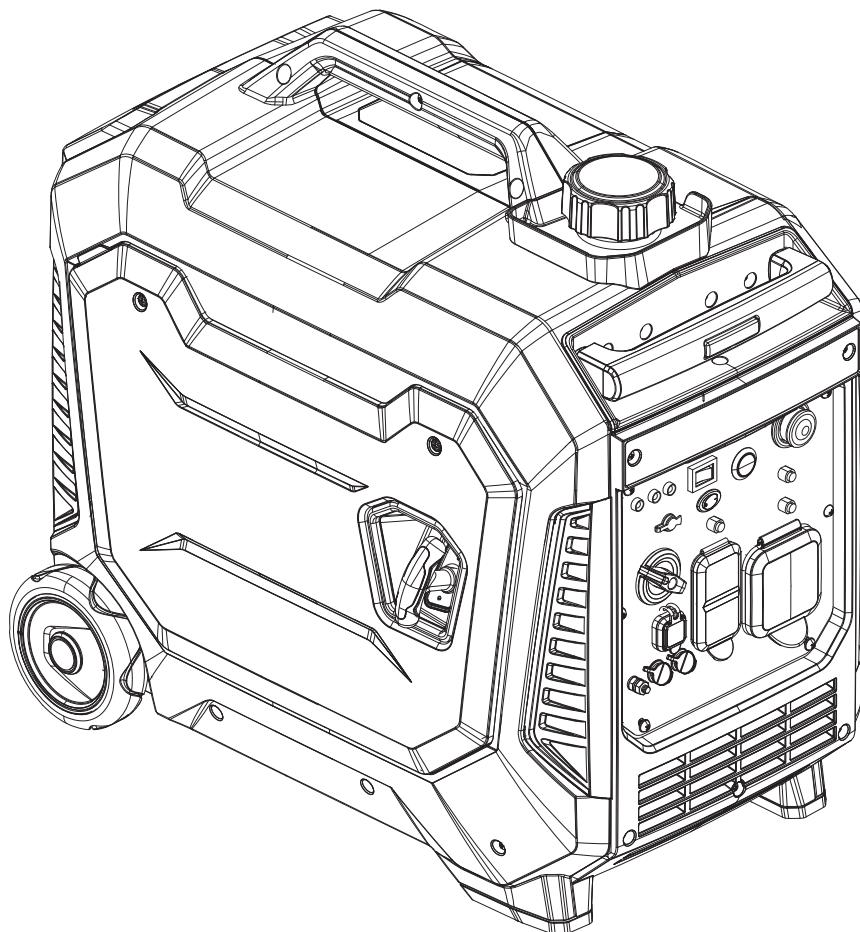


DUCAR®
POWER WITH VISION

**INVERTER GENERATOR
OPERATOR'S MANUAL**

ORIGINAL INSTRUCTIONS

**MODEL:
DLG4400ISE**



The picture is only for your reference

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INTRODUCTION

Thank you for purchasing this superior quality portable generator. When operating and maintaining this product as instructed in this manual, your generator will give you many years of reliable service.

Product Specifications:

This generator is an engine-driven, revolving field, alternating current (AC) portable generator. It is designed to supply electrical power to operate tools, appliances, camping equipment, lighting, or serve as a back up power source during power outages.

Generator specification

Model	DLG4400ISE
Voltage	120V
Frequency	60Hz
Power(COP)	GAS:3800W LPG:3400W
Power(Max.)	GAS:4400W LPG:4000W
Parallel Outlet	YES
Engine type	4 Stroke/ Single Cylinder/ OHV
Displacement	192cm ³
Fuel tank capacity	12L
Engine Oil Capacity	0.6L
Starting Type	E-start
Measured sound pressure level (dB(A))	74.9
Guaranteed sound power level (dB(A))	96
Measurement uncertainty K	2

The rated power output of the generator, the following standard reference conditions shall be used

- **Total barometric pressure:** 100kPa
- **Air ambient temperature:** 298K (25°C)
- **Relative humidity:** 30%
- **Altitude:** 0m

SAFETY RULES

Safety Symbols



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



Indicates a potentially hazardous situation which could result in damage to equipment or property.

Caution	Read the operator's instruction manual before use	Wear noise protection
Carbon monoxide (CO) danger	Fire hazard	Risk of explosion
Electrical hazard	Risk of being burnt	Lifting hazard

Safety Instructions

The manufacturer cannot anticipate every possible hazardous circumstance that the user may encounter. Therefore, the warnings in this manual, on tags, and on affixed decals are not all-inclusive. To avoid accidents, the user must understand and follow all manual instruction and use common sense.

	<p>Read and understand this manual in its entirety before operating. Improper use of this generator could result in serious injury or death.</p>
	<p>Engine exhaust contains chemicals that lead to cause cancer and birth defects.</p>
	<ul style="list-style-type: none">Always wash hands after handling generator <p>Fuel is combustible and easily ignited. Do not refuel during operation. Do not refuel while smoking or near naked flames. Do not spill fuel.</p>

SAFETY RULES



WARNING



Exhaust gas is poisonous; do not operate in an unventilated area

- Using a generator indoors **CAN KILL YOU IN MINUTES!**
- Carbon monoxide gas is a poisonous, odorless gas that can cause headache, confusion, fatigue, nausea, fainting, sickness, seizures, or death. If you start to experience any of these symptoms, **IMMEDIATELY** get fresh air and seek medical attention.
- Never use indoors, in a covered area, or in a confined space, even if doors and windows are open.
- Install a battery operated carbon monoxide alarm near bedrooms.
- Keep exhaust from this unit from entering a confined area through windows, doors, vents, or other openings.
- When working in areas where vapors could be inhaled, use a respirator mask according to all of its instructions.



WARNING

Never exceed generator's wattage / amperage capacity. This could damage the generator and / or connected electrical devices.

- Check operating voltage and frequency requirements of all electrical devices prior to plugging them into the generator.



WARNING

Never start or stop engine with electrical devices plugged in to the receptacles. Failure to do so could damage the generator and / or electrical devices.

- Always start the engine and let it stabilize before connecting any electronic devices.
- Disconnect all electronic devices before stopping the engine.



WARNING

Starer and other moving parts can catch on clothing, jewelry, and hair.

- Do not wear loose clothing or gloves.
- Remove jewelry or anything else that could be caught in moving parts.
- Tie back or wear protective head covering to contain long hair.



WARNING

Pull cord recoils rapidly and pulls arm towards engine faster than you can let go which could result in injury.

- To avoid the dangers of injury caused by the sudden change of rotation direction of the engine, pull starter cord slowly until resistance is felt, then pull rapidly.



WARNING



Avoid contacting hot areas of this unit.

- Use caution around the muffler, cylinder, and other engine parts as they can be extremely hot.
- Allow hot components to cool before touching.



The precautions to be respected by the user in the case of re-supply by generating sets of an installation, depending on existing protective measures in this installation and applicable regulations.



WARNING

The user shall conform to regulations of electrical safety applicable to the place where the generating sets are used.

SAFETY RULES



WARNING



This generator produces a very high voltage which could result in burns or electrocution causing serious injury or death.

- Never handle the generator, electronic devices, or any cord while standing in water, while barefoot, or when hands or feet are wet.
- Always keep the generator dry. Never operate generator in rain or under wet conditions.
- Never plug electronic devices into generator having frayed, worn, or bare wires. Never touch bare wires or make contact with receptacles.
- Never permit a child or unqualified person to operate generator. Keep children a minimum of 10 feet away from the generator at all times.
- If using the generator for back up power, notify the utility company.
- If connecting generator to a building's electrical system for standby power, you must use a qualified electrician to install a transfer switch. Failure to isolate the generator from the power utility could result in serious injury or death to electric utility workers.
- When using extension lines or mobile distribution networks the total length of lines for a cross section of 1.5 mm² should not exceed 60 m; for a cross section of 2.5 mm² this should not exceed 100 m.
- The generating set must not be connected to other power sources except with accessory advised by the manufacturer or other generators with the same model.
- Save these instructions. Refer to them frequently and use them to instruct others who may use this product. If you loan someone this product, loan these instructions also.
- Due to high mechanical stresses, only tough rubber sheathed flexible cable (in accordance with IEC60245-4) or the equivalent should be used.



WARNING



Generator Must be properly grounded to prevent electrocution.

- Only operate generator on a level surface.
- Always connect the nut and ground terminal on the frame to an appropriate ground source.



WARNING

Only use this unit as intended or serious injury or death could result.

- Do not bypass any safety device. Moving parts are covered with guards. Make sure all protective are in place.
- Never transport or make adjustments to this unit while it is running.
- Never insert objects through cooling slots.



WARNING

Never operate this unit if there are any broken or missing parts and only use replacement parts specifically designed for this unit.

- Improper treatment of generator can damage the unit and shorten its life.
- Always repair this unit as specified in this manual. If you have any questions contact your dealer or consult a qualified service center.
- Shut generator off if electrical if electrical output is missing, unit vibrates excessively or begins to smoke, spark or emit flames.



WARNING



To reduce the risk of serious injury, avoid attempting to lift the generator alone.

SAFETY RULES

▲ DANGER

Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide. This is a poison you can't see or smell.



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



ONLY use OUTSIDE and far away
from open windows, doors and vents.

▲ DANGER

L'utilisation d'une génératrice à l'intérieur PEUT VOUS TUER EN QUELQUE MINUTES. Les émissions contiennent de l'oxyde de carbone. Ceci est un poison invisible et sans odeur.

Ne JAMAIS utiliser dans la maison ou garage. MÊME SI les portes ou fenêtres sont ouvertes.

Utilisez SEULEMENT à l'extérieur et loin des portes et fenêtres ouvertes, ainsi que des systèmes de ventilation.

▲ WARNING/AVERTISSEMENT



TOXIC FUMES HAZARD. Running engines gives off carbon monoxide, an odourless poisonous gas that can cause nausea, fainting, or death. Do not start engine indoors or in an enclosed area, even if the windows and doors are open.

DANGER TOXIQUE. Faire fonctionner un moteur dégage de l'oxyde de carbone, un gaz inodore toxique qui peut provoquer la nausée, l'évanouissement ou la mort. Ne démarrez pas le moteur à l'intérieur ou dans un espace clos, même si les fenêtres et les portes sont ouvertes.

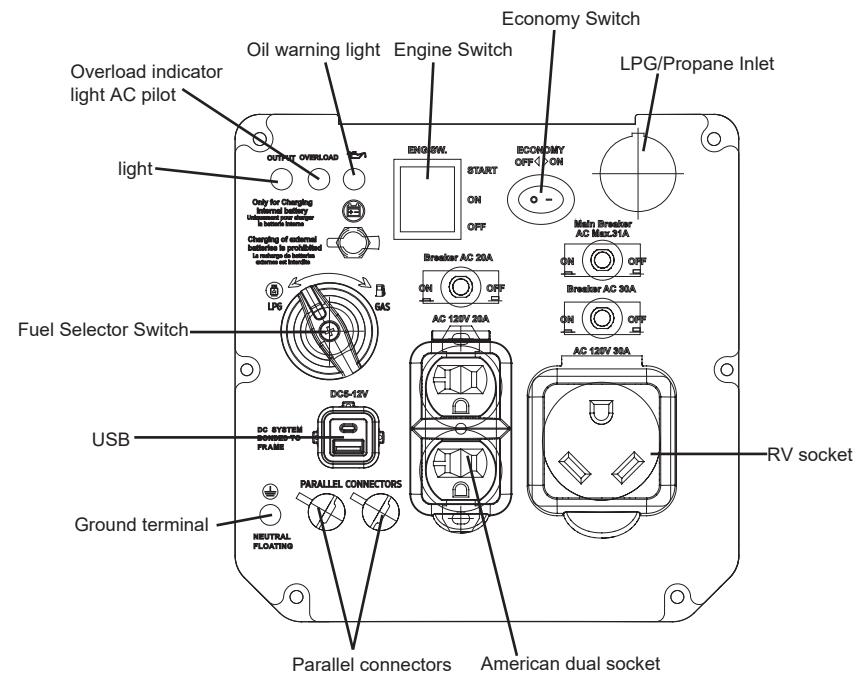
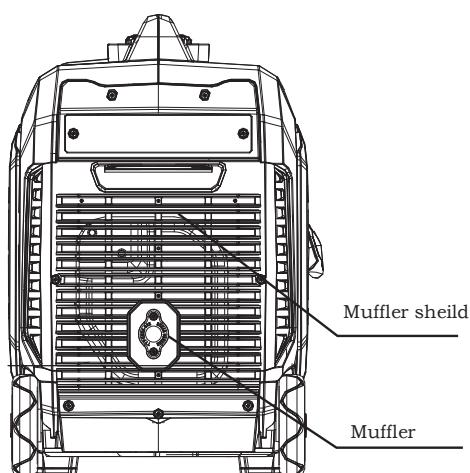
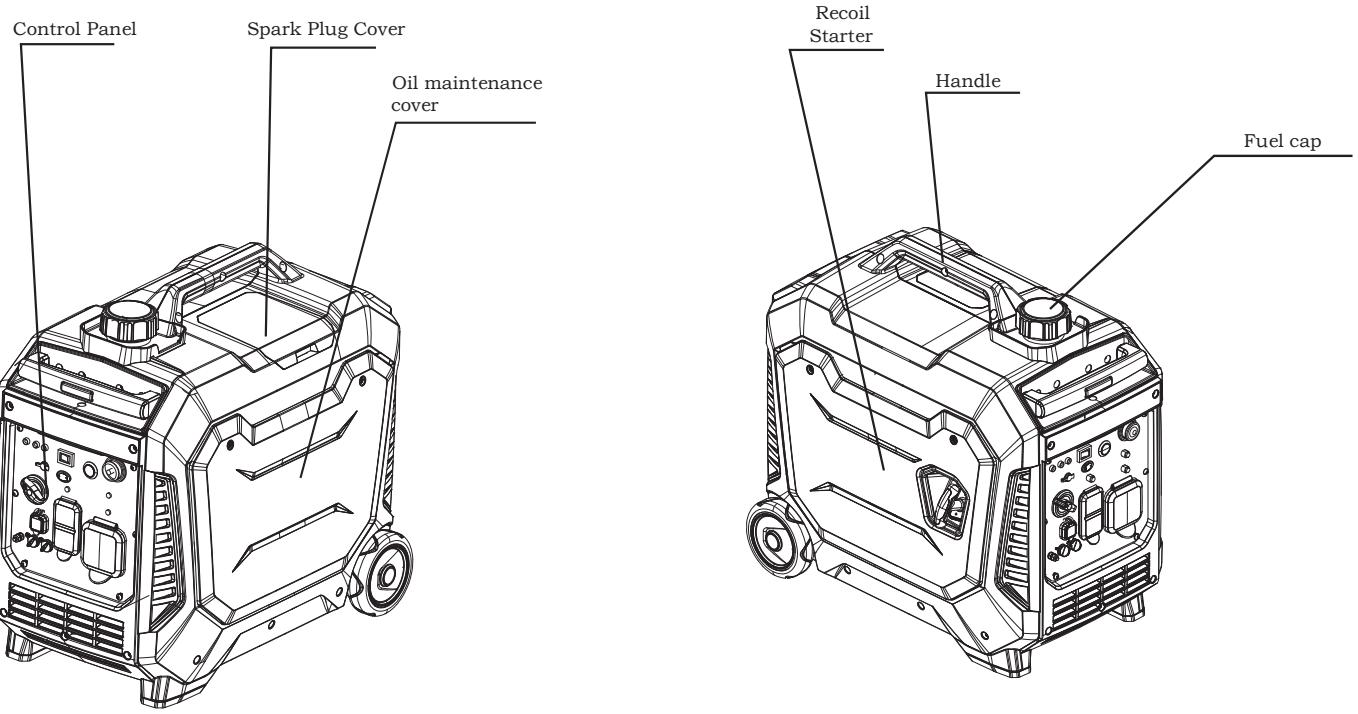
▲ WARNING/AVERTISSEMENT

FOR ELECTRICAL EQUIPMENT ONLY
POUR MATERIEL ELECTRIQUE SEULEMENT

FOR USE IN A WEATHER PROTECTED WELL VENTILATED AREA
EMPLOYEZ UNIQUEMENT DANS UN EMPLACEMENT
A L'ABRI DES INTEMPERIES ET BIEN AERE

NEUTRAL FLOATING
NEUTRE FLOTTANT
DC SYSTEM FLOATING
DC RÉSEAU FLOTTANT

FEATURES



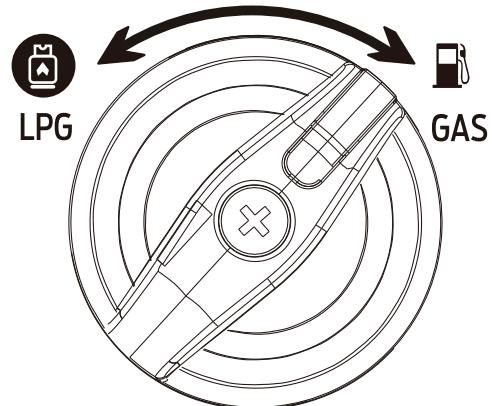
CONTROL PANEL FUNCTIONS

Fuel Selector Switch

Used to select gas or propane

Oil Warning Indicator Light

When the oil falls below the minimum level, the oil warning indicator light comes on and the engine stops automatically. The engine will not



Note: If the oil warning indicator light does not come on and the engine stalls, turn the Start Switch to "ON" and pull the recoil starter.

Engine Overload Indicator Light

If the engine overload indicator light comes on the generators wattage amperage capacity has been exceeded by connected electrical devices or by a power surge. When this occurs, the green AC Pilot Indicator Light will go off. The engine will continue to run, but the red Engine Overload Indicator Light will stay on and power will no longer be supplied to connected electronic devices.



How to Correct

1. Disconnect any electronic devices then stop the engine.
2. Reduce the total wattage of connected electronic devices until it is within the generator's rated output.
3. Inspect the Air Inlet and Control Panel for any blockage. Remove blockage if found.
4. Restart Engine.

Note: The engine overload indicator light may turn on for a few seconds when attaching a load due to a power surge. This is normal.

CONTROL PANEL FUNCTIONS

AC Pilot Indicator Light

The green AC Pilot Indicator Light comes on when the engine starts and generates power.

DC Circuit Breaker

When the DC Circuit Breaker is in the “ON” position, the generator is able to supply power to connected electronic devices. When the DC Circuit Breaker is in the “OFF” position, the generator will no longer supply power. The DC Circuit Breaker automatically turns “OFF” when connecting electronic devices to the generator that exceed the generator’s rated output. If the DC Circuit Breaker turns off, reduce the load of connected electronic devices until the load is within the specified rated output. To re-establish power, return the DC Circuit Breaker back to the “ON” position.



If the DC Circuit Breaker turns off again, stop using the generator immediately and consult our dealers.

Engine ECO Control

- When the Engine ECO switch is turned to the “ON” position, the economy control unit automatically determines the generator’s proper engine speed based on the connected electronic load. This results in superior fuel economy and reduces noise.
- When the ECO switch is turned to the “OFF” position, the engine runs at the rated speed of 4,800 r/min.

Note: The ECO switch must be turned to the “OFF” position when using electronic devices that require a large starting current, such as a compressor.

Parallel Outlets

Located just above the Ground Terminal, the generator’s Parallel Outlets enable a user to run two DLG4400ISE generator’s simultaneously. This operation requires special cables. When operating parallel generators, the rated output is 7.6Kva and the rated current is 33A/230V. For cables and instructions consult a dealer for a PARALLEL OPERATION CABLE KIT.



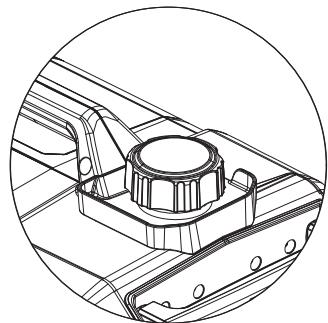
Never connect generators that are different models.

- Only connect this generator to another DLG4400ISE Standard Generator or DLG4400ISE Companion Generator
- Only use brands approved parallel operation cable kit to connect generators

CONTROL PANEL FUNCTIONS

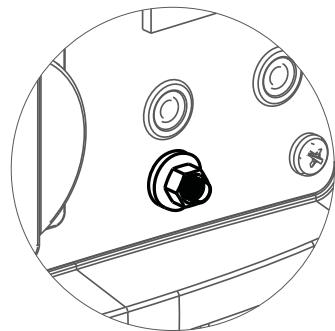
Fuel Cap

Turn counter clock wise to remove the fuel cap



Ground Terminal

The generator's ground terminal must always be used to connect the generator to a driven ground rod. Connect the ground terminal to the driven ground rod with a No 8 AWG (American Wire Gage) copper wire. The wire connects to the terminal between the lock washer and nut. Tighten the nut securely to ensure good connection. Grounding the generator protects you from electric shock that results from a build up of static electricity or undetected ground faults.



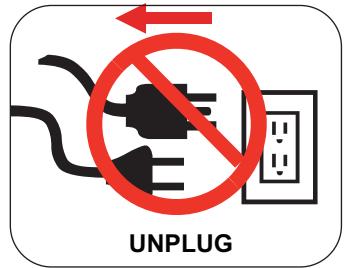
Generator must be properly grounded to prevent electrocution.

- Only operate generator on a level surface.
- Always connect the nut and ground terminal on the frame to an appropriate ground source.

ASSEMBLY

Connecting Generator to an Electrical System

- If connecting generator to a building's electrical system for standby power, you must use a qualified electrician to install a transfer switch. The power from the generator must be isolated from the circuit breaker or alternative power source. The connection must comply with all electrical codes and applicable laws
- Never directly connect generator to a household power source.

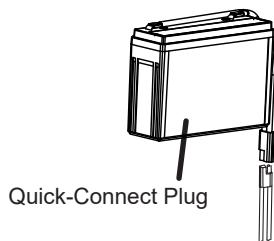
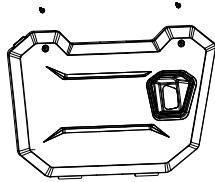
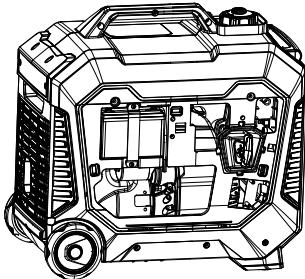


This generator produces a very high voltage which could result in burn or electrocution causing serious injury or death.

- Never handle the generator, electronic devices, or any cord while standing in water, while barefoot, or when hands or feet are wet.
- Always keep the generator dry. Never operate generator in rain or under wet conditions.
- Never plug electronic devices into generator having frayed, worn, or bare wires. Never touch bare wires or make contact with receptacles.
- Never permit a child or unqualified person to operate generator. Keep children a minimum of 10 feet away from the generator at all times.
- If using the generator for back up power, notify the utility company.
- If connecting generator to a building's electrical system for standby power, you must use a qualified electrician to install a transfer switch. Failure to isolate the generator from the power utility could result in serious injury or death to electric utility workers.
- When using extension lines or mobile distribution networks the total length of lines for a cross section of 1.5 mm² should not exceed 60 m; for a cross section of 2.5 mm² this should not exceed 100 m.
- The generating set must not be connected to other power sources except with accessory advised by the manufacturer or other generators with the same model.
- Save these instructions. Refer to them frequently and use them to instruct others who may use this product. If you loan someone this product, loan these instructions also.
- Due to high mechanical stresses, only tough rubber sheathed flexible cable (in accordance with IEC60245-4) or the equivalent should be used.

Connect The Battery

- Remove the right side panel, then find the battery.
- A quick-connect battery plug is pre-installed on the battery, connect them together.



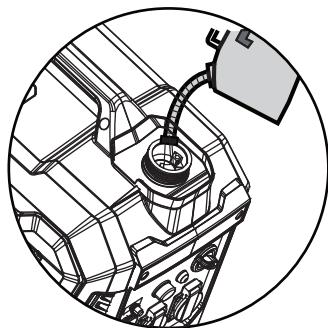
Quick-Connect Plug

Note: The generator is equipped with a battery charging feature. Once the engine is running, a small charge will slowly recharge the battery.

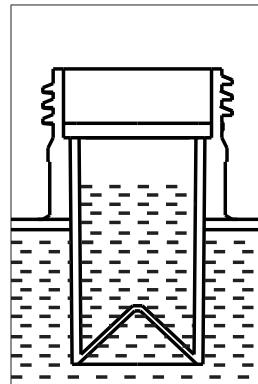
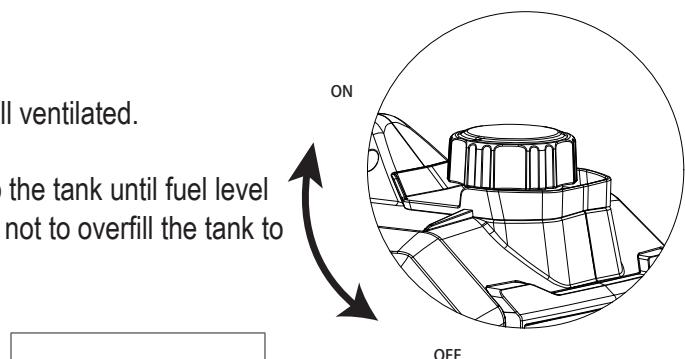
ASSEMBLY

Adding Fuel

- Set generator on a clean and level surface in an area that is well ventilated.
- Remove fuel cap.
- Insert a funnel into the fuel tank and carefully pour gasoline into the tank until fuel level reaches about 1 ½ inches below the top of the neck. Be careful not to overfill the tank to provide space for fuel expansion.
- Replace fuel cap and secure tightly.



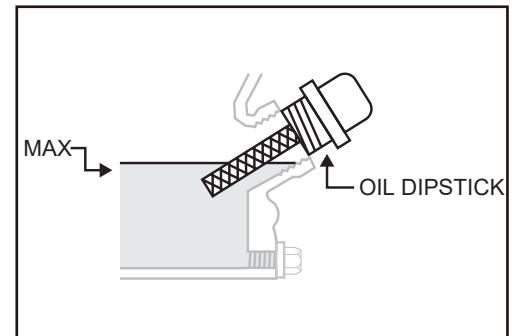
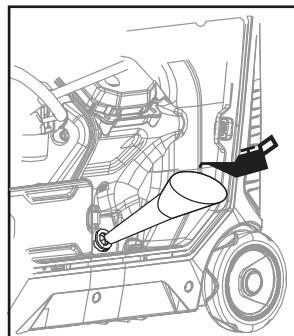
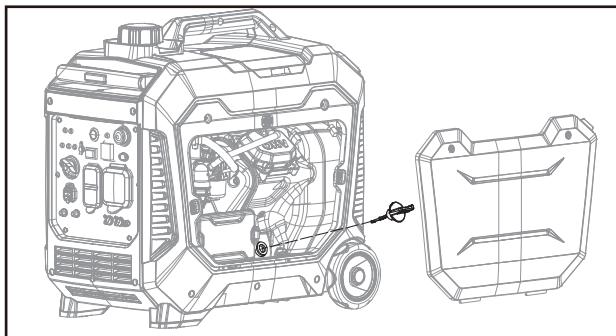
Do not smoke when adding fuel.



Do not to overfill the tank to provide space for fuel expansion.

Adding / Checking Engine Oil (See fig 4)

- Place the generator on a solid, flat, level surface.
- On the Right side of the generator, loosen the screws and remove the maintenance cover.



- Remove oil fill cap/dipstick to add oil.
- Using a funnel, as needed, add the appropriate type of oil until the oil level is at the proper level. SAE 10w-30 oil is recommended for general use. DO NOT OVERFILL. Replace oil fill cap/dipstick and secure maintenance cover.
- Check engine oil level daily and add as needed.

Recommended Oil: SAE 10W-30

Oil Capacity: 0.6L



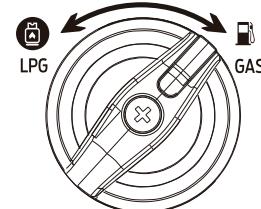
Generator has been shipped without engine oil. You must add oil before first operating this generator. Always check oil level before each operation.

OPERATION

How to Start Engine

Generator start- GAS

- Place generator on a level surface. All electrical loads MUST be disconnected from generator.
- Connect the battery to the positive terminal in red and the negative terminal in black, and ensure that the connector is fully inserted.



Recoil start



E-start

- Turn the Combination Start Switch to "GAS".
- Turn the start switch on the control panel to the "Start" position to start the generator. To prolong the battery life, do not turn the switch for more than 3 s each time, and the interval between two switches is not less than 10 s.

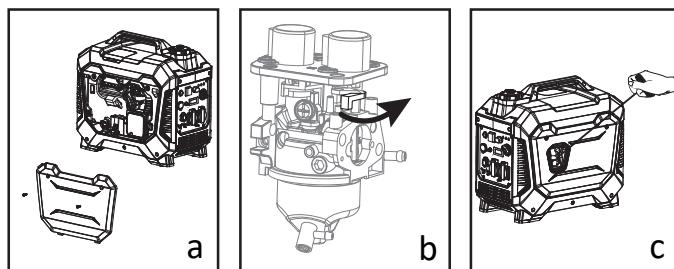
A. When the ambient temperature is lower than 0°C (32°F), the heating time is 3 min.
B. When the ambient temperature is higher than 0°C, the heating time is 1 min.
C. After running the above time, it is recommended that the energy saving

Connecting electrical equipment

Tip: When using the following devices, such as air compressors and sinking pumps, the energy saving mode must be turned off because of the large starting current required.

- When the battery is exhausted, start in the following way:

- a. Open side panel;
- b. Manually adjust the damper to close the damper;
- c. Start by manual;
- d. Assemble the baffle.

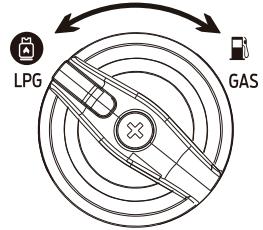


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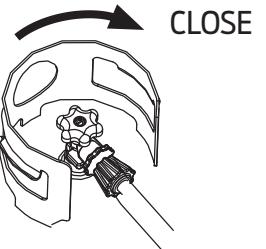
OPERATION

Generator start up- LPG

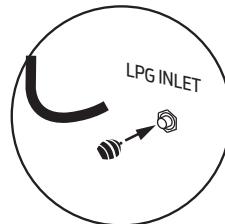
- Place generator on a level surface. All electrical loads MUST be disconnected from generator.



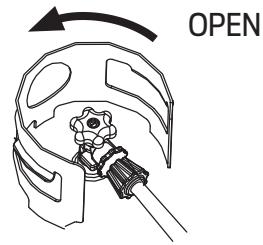
- Turn the Combination Start Switch to "LPG".



- Verify that the propane tank valve is in the fully closed position. The pressure reducing valve is connected to the gas tank



- Use your fingers to hand thread the LPG hose (included) to the propane inlet on the generator.



- Turn the propane tank valve to the fully open position. Check all connections for leaks by wetting the fittings with a solution of soap and water. Bubbles which appear or bubbles which grow indicate that a leak exists. If a leak exists at a fitting, turn the propane tank valve to the fully closed position and tighten the fitting. Open the propane tank valve and recheck the fitting with the soap and water solution. If the leak continues or if the leak is not at a fitting then DO NOT use the generator and contact an authorized Pulsar service center.

- Connect the battery to the positive terminal in red and the negative terminal in black, and ensure that the connector is fully inserted.

- Turn the start switch on the control panel to the "Start" position to start the generator. To prolong the battery life, do not turn the switch for more than 3 s each time, and the interval between two switches is not less than 10 s.

Recoil start



E-start

- When the ambient temperature is lower than 0°C (32°F), the heating time is 3 min.
- When the ambient temperature is higher than 0°C, the heating time is 1 min.
- After running the above time, it is recommended that the energy saving

OPERATION

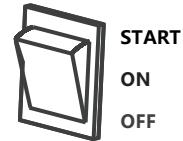
How to Stop Engine

Generator stop-GAS

- Disconnect any electronic device. All loads MUST be disconnect from the generator. Never start or stop the engine with electrical devices plugged in to the receptacles.

- Press the start switch to "OFF".

After 30s of no-load operation, press the start switch to "OFF", and the generator set will stop running immediately..



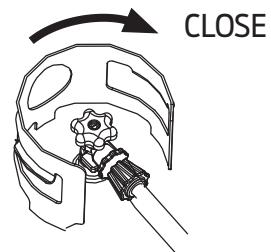
Generator stop- LPG

- Disconnect all electrical devices.



- Press the start switch to "Off" position.

- Turn off the gas tank.



OPERATION

Charging a 12 Volt Battery

Battery, 12V/1.2 Ah

The battery shipped with the generator has been fully charged. A battery may lose some charge when not in use for prolonged periods of time. If the battery is unable to crank the engine, plug the included 12V charger into the battery charging port on the control panel.

Note: Once started, the generator will charge the battery after 30–60 minutes of use. If you do not regularly run the generator, charge the battery overnight once a month to keep it ready for use. Charge the battery in a dry location. If the generator is not run, charge the battery overnight once a month.

- Plug the charger into the battery charging port on the control panel. Plug the wall receptacle end of the battery charger into a 220/230/240 Volt AC wall outlet.
- Unplug the battery charger from wall outlet and control panel jack after 2 hours of charging.

WARNING



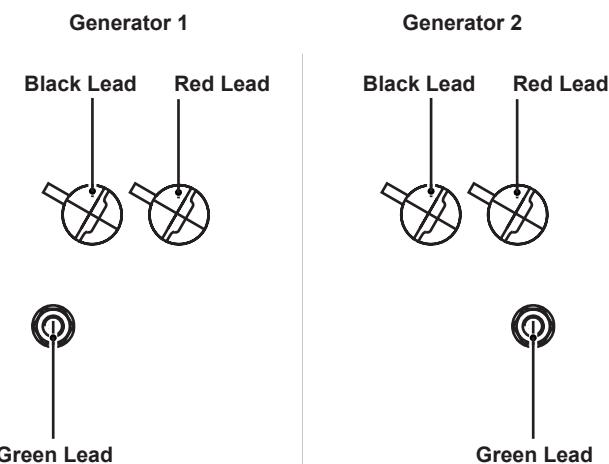
- Charge and store the battery pack in an ambient temperature of 18 - 24°C to ensure the longest battery life and best performance. Do not charge or store the battery pack in temperatures below 0°C and above 45°C.
- Do not dispose of the batteries in a fire. The cell may explode. Check with local codes for possible special disposal instructions.
- Do not open or mutilate the batteries. Released electrolyte is corrosive and may cause damage to the eyes or skin. It may be toxic if swallowed.
- Exercise care in handling batteries in order not to short the battery with conducting materials such as rings, bracelets, and keys. The battery or conductor may overheat and cause burns.
- When battery pack is not in use, keep it away from other metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
- Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.
- Do not use a battery pack or appliance that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.
- Follow all charging instructions and do not charge the battery pack or appliance outside of the temperature range specified in the instructions. Charging improperly or at temperatures outside of the specified range may damage the battery and increase the risk of fire.

OPERATION

AC Parallel Operation

The generator has two models that are compatible with each other (Standard and Companion). It is possible to connect two generators to each other, using a parallel cable kit.

- Connect PARALLEL OPERATION CABLES to two generators according to the instructions provided with the cable kit.
- Make sure the ECO switch is in the same position on both generators.
- All electronic devices should be turned “OFF” and disconnected from generators prior to starting generator engines.
- Start generator engines. Make sure the green output indicator light comes on for each generator.
- Allow generator output to stabilize (engine and attached devices run evenly) before plugging in the next load.



Maximum Power in Parallel Operation: 8.0kVA

Rated Power in Parallel Operation: 7.6kVA

Note: It is strongly recommended to plug in devices with the largest output first and the smallest output last to help prevent overloading the generator.

Note: Most electronic devices require power beyond its rated wattage to start. This additional power is referred to as surge watts and usually lasts between 2-3 seconds. When an electronic device is started, the red overload indicator may come on. This is normal. If the light stays on disconnect all electronic devices and stop the engine. Refer to “Engine Overload Indicator Light” on page 8.



WARNING Only connect electronic devices to the generator that are in good working order and do not exceed the rated power supply of the parallel generators or the desired receptacle.

- A faulty appliance or power cord can create an electric shock. Do not use electronic devices that have a damaged cord or plug.
- If an appliance begins to operate abnormally, becomes sluggish, or stalls, turn off and disconnect appliance immediately. The appliance may have a fault or its rated load capacity exceeds the power supply of the generator.
- To avoid damage to generator or electronic device, do not connect a load to the generator if its electrical rating exceeds that of the receptacle.



WARNING Never connect generators that are different models.

- Only connect this generator to another DLG4400ISE Generator or DLG4400ISE Companion Generator.
- Only use brands approved parallel operation cable kit to connect generators.
- The parallel cable must be removed if operating only one generator.
- Never disconnect or remove the parallel operation cable while generator is still running.

OPERATION

Don't Overload Generator

Make sure you can supply enough rated watts for all electronic devices connected to the generator. Rated watts refer to the power a generator must supply to keep a device running. Surge watts refer to the power a generator must supply to start an electronic device. This power surge for starting a device usually lasts between 2-3 seconds but this additional output must be taken into account when selecting the electronic devices you plan to attach to the generator. To prevent overloading the generator take the following steps:

1. Add up the total rated wattage of all electronic devices that will be connected to the generator simultaneously.
2. Estimate surge watts by adding the item(s) with the highest output (it is unnecessary to calculate the surge output for all devices as they should be connected one at a time).
3. Add the Surge Watts to the total Rated Watts in step 1. Keep total load within generator's power capacity.

Wattage Reference Guide

(Wattages listed are just approximations. Check electronic device for actual wattage)

Essentials	Rated Watts	Surge Watts
75W Light Bulbs	75 each	75 each
18 CU Ft Refrigerator / Freezer	800	2200
Furnace Fan (1/3 HP)	800	2350
Sump Pump (1/3 HP)	1000	2000
Water Pump (1/3 HP)	1000	3000
Heating/Cooling		
Dehumidifier	650	800
Table Fan	800	2000
Electric Blanket	400	400
Space Heater	1800	1800
Kitchen		
Blender	300	900
Toaster (2 slice)	1000	1600
Coffee Maker	1500	1500
Electric Range (1 element)	1500	1500
Dishwasher	1500	3000
Laundry Room		
Iron	1200	1200
Washing Machine	1150	3400
Gas Clothes Dryer	700	2500

Bathroom	Rated Watts	Surge Watts
Hair Dryer	1250	0
Curling Iron	1500	0
Family Room		
X-Box or Play Station	40	0
AM/FM Radio	100	100
VCR	100	100
Color TV (27")	500	500
Home Office		
Fax Machine	65	0
Personal Computer (17" Monitor)	800	0
Laser Printer	950	0
Copy Machine	1600	0
Power Tools		
1000W Quartz Halogen Work Light	1000	0
Airless Sprayer (1/3 HP)	600	1200
Reciprocity Saw	960	0
Circular Saw (7 1/4")	1400	2300
Mitar Saw (10")	1800	1800
Table/Radial Arm Saw	2000	2000
Electric Drill (1/2 HP, 5.4 Amps)	600	900

MAINTENANCE

Regular maintenance will extend the life of this generator and improve its performance. The warranty does not cover items that result from operator negligence, misuse, or abuse. To receive full value from the warranty, operator must maintain the generator as instructed in this manual, including proper storage.



WARNING Before inspecting or servicing this machine, make sure the engine is off and no parts are moving. Disconnect the spark plug wire and move it away from the spark plug.



CAUTION If you are unsure of how to perform a maintenance task, have the unit serviced by our dealers.



CAUTION Only use our specified replacement parts.

Maintenance Schedule

Pre-Operation Steps

Before starting the engine, perform the following pre-operation steps:

- Check the level of the engine oil and the fuel tank level. Check for any leakage.
- Check fuel hose for cracks or damage. Replace if necessary.
- Make sure the air filter is clean.
- Remove any debris that has collected on the generator and around the muffler and controls. Use a vacuum cleaner to pick up loose debris. If dirt is caked on, use a soft bristle brush.
- Inspect the work area for hazards.

After Each Use

Follow the following procedure after each use:

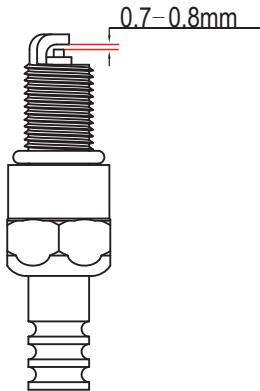
- Shut off engine.
- Store unit in a clean and dry area.

After First 5 Hours	Change Oil.
After 8 Hours or Daily	Clean Debris.
	Check Engine Oil Level.
6 Months (100 hr Use)	Check and Clean Air Filter Element. (Service more often under wet or dusty conditions.)
	Change Engine Oil. (Service more often under dirty or dusty conditions.)
	Check Muffler Screen. Replace if necessary.
	Service Spark Plug.
	Inspect Muffler and Spark Arrester.
12 Months (300 hr Use)	Clean Fuel Filter. Replace if necessary.
	Check Crankcase Breather Hose for cracks or damage. Replace if necessary.
	De-carbonize cylinder head. See dealer.
	Check and adjust Valve Clearance. See dealer.
	Check all Fittings and Fasteners. See dealer.

MAINTENANCE

Checking Spark Plug

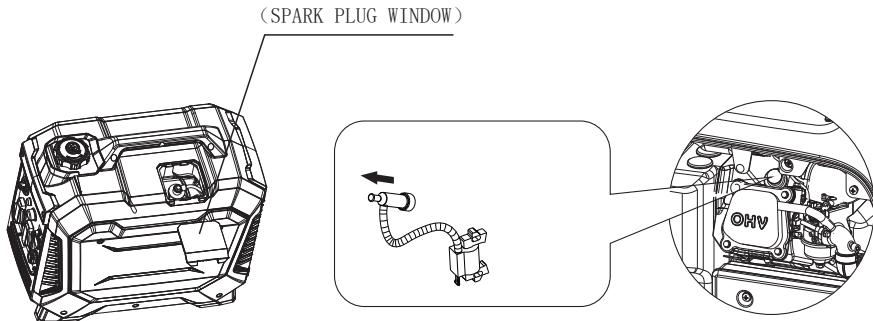
- Remove cap. Then remove spark plug cap.
- Disconnect the spark plug wire from the spark plug.
- Before removing the spark plug, clean the area around its base to prevent debris from entering the engine.
- Insert a spark plug socket wrench through the opening on the outside of the cover. Turn the wrench counterclockwise.
- Check for discoloration and clean carbon deposits off the electrode with a wire brush.
- Check the electrode gap and slowly adjust to 0.7 - 0.8mm (0.028-0.031 in) if necessary.
- Reinstall spark plug and tighten to Torque 20.0Nm (14.8ft-lb).
- If spark plug is worn replace only with an equivalent replacement part. Spark plug should be replaced annually.
- Reconnect spark plug wire.
- Replace spark plug cap, then replace cap.



Standard Spark Plug: F7RTC

Spark Plug Gap: 0.7 - 0.8mm (0.028-0.031

in) **Spark Plug Torque:** 20.0Nm (14.8ft-lb)



Carburetor Adjustment

The carburetor is low emission and is equipped with a non-adjustable idle mixture valve. If adjustment is needed contact an authorized dealer.

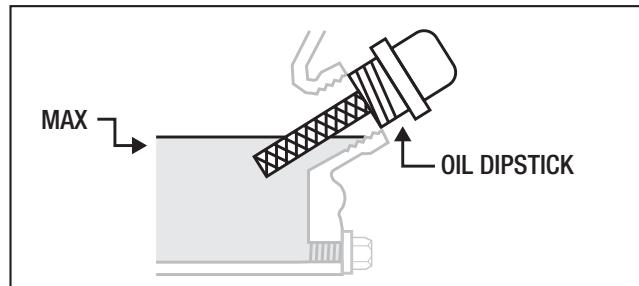
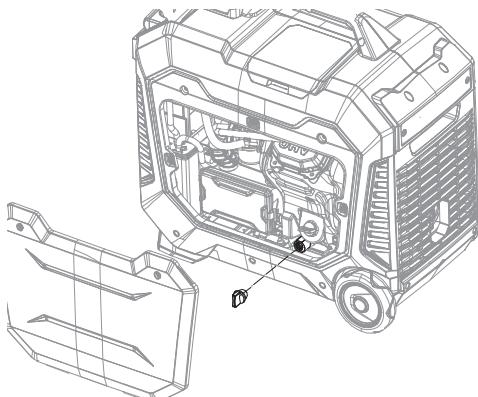
MAINTENANCE

Changing Oil

- Make sure the engine is stopped and is level.
- On the right side of the generator, loosen the screws and remove the Oil Fill Access Door.
- Place an oil drain pan under the generator and center under the Oil Drain opening.
- Remove the oil drain plug from the generator, tilt the generator slightly to facilitate drainage, and wait for the oil to drain completely. Recycle used oil.
- Clean the top of the Oil Fill and the area around it.
- Add the appropriate type of oil until the oil level is at the proper level. SAE 10W-30 oil is recommended for general use.

Note: Make sure the generator is level when adding oil to prevent overfilling which could cause engine damage.

- Check the oil level. The oil level should be just below the edge of the hole as shown.
- Once you have filled your oil in the generator re-install the side panel.



Recommended Engine Oil: SAE 10W-30

Recommended Engine Oil Grade: API Service SE type or higher quality of engine oil. **Engine Oil Quantity:** 0.6L



CAUTION Do not tilt generator when adding oil. This could result in overfilling which could damage the engine.



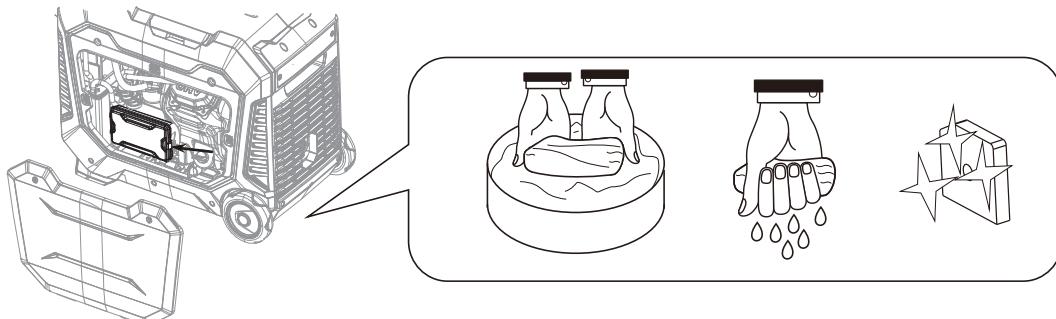
CAUTION Make sure no foreign matter enters the crankcase

MAINTENANCE

Air Filter

A dirty air filter will reduce the life span of the engine, make it difficult to start the engine, and reduce the unit's performance. Replace with new filter annually.

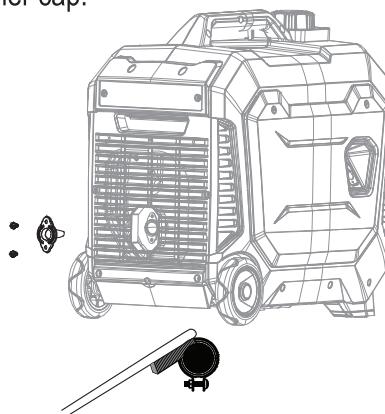
- To clean, remove the screws then remove outer casing.
- Remove the screws then remove air filter cover.
- Remove the foam element.
- Wash the foam element in solvent and let dry.
- Pour a small amount of oil on the foam element then squeeze out, but do not wring out, excess oil. Foam element should be damp, but not dripping.
- Reinsert the foam element into the air filter case.



CAUTION Do not run the generator without reinstalling the foam element or excessive piston and cylinder wear may result.

Checking Muffler and Spark Arrester

- Inspect muffler for cracks, corrosion, or other damage.
- Loosen bolt, then remove muffler cap, muffler screen, and spark arrester.
- Check the muffler screen and spark arrester for carbon deposits. Remove carbon deposits with a wire brush.
- Check the muffler screen and spark arrester for damage. If damaged replace with Our replacement parts specifically designed for this unit.
- Install the spark arrester. Align the spark arrester projection with the hole in the muffler pipe.
- Install the muffler screen and muffler cap.



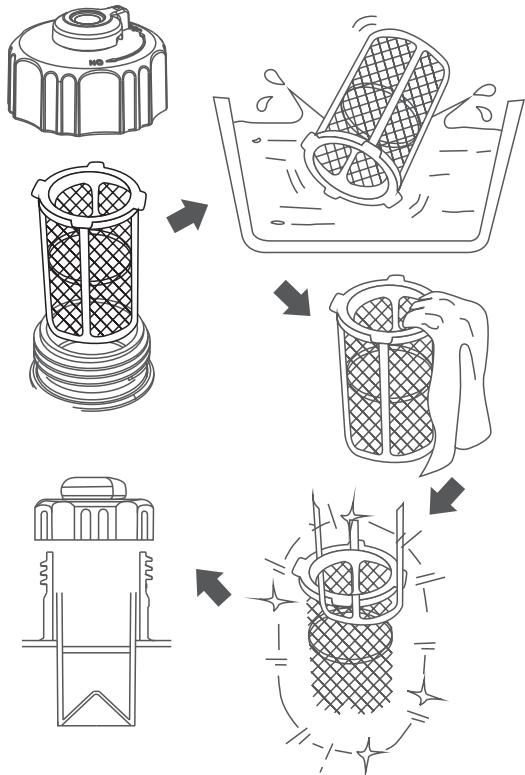
Avoid contacting hot areas of this unit.

- Use caution around the muffler, cylinder, and other engine parts as they can be extremely hot.
- Allow hot components to cool before touching.

MAINTENANCE

Fuel Tank Filter

- To clean, remove fuel cap and filter.
- Clean filter with gasoline.
- Wipe the filter with a clean rag.
- Install filter.
- Install fuel cap.



Fuel Filter

- To clean, remove screws, remove outer casing, and drain fuel.
- Lift and hold onto the clamp, then remove hose from tank.
- Take out fuel filter.
- Clean filter with gasoline.
- Wipe the filter with a clean rag and return filter to tank.
- Install hose and clamp.
- Open fuel valve. Inspect for leakage.
- Install outer casing and tighten screws.

Storage

To protect your generator from deterioration during long term storage, take the following preventative measures:

EXTERIOR

- Remove any debris that has collected on the generator and around the muffler and controls. Use a vacuum cleaner to pick up loose debris. If dirt is caked on, use a soft bristle brush.
- Inspect air cooling slots. Remove any debris if obstructed.
- Store indoors and use a protective cover to protect from dust.

FUEL

- For short-term storage, add fuel stabilizer to prevent stale fuel from causing acid and gum deposits in the fuel system and carburetor.
- For long-term storage, drain the fuel.

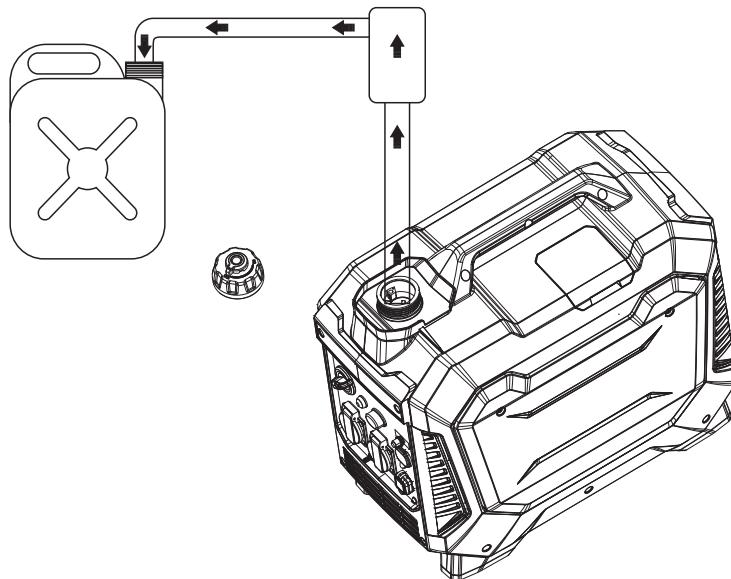
ENGINE

- Remove spark plug. Pour about 1 TBL of SAE 10W-30 engine oil into the spark plug hole, then reinstall spark plug.
- With the 3 in 1 switch in the “OFF” position, pull the recoil starter several times to coat cylinder walls with oil.
- Slowly pull the recoil starter until you feel the engine build compression (when you feel resistance). Leave the engine in this state. This will help prevent rust build up in the cylinder walls.

MAINTENANCE

How to drain fuel

- Turn the 3 in 1 switch to the “OFF” position.
- Remove fuel cap and fuel tank filter.
- Use a siphon to transfer gasoline from generator into a gasoline approved container.
- Wipe up any spilled fuel with a clean rag.
- Start generator engine and let it run until it stops and all remaining fuel is consumed. Do not connect electronic devices to generator during this process.
- Remove outer casing screws, then remove outer casing.
- Drain fuel from carburetor by loosening the drain screw on the carburetor float chamber.
- Turn the 3 in 1 switch to “OFF”
- Tighten the drain screw.
- Install the outer casing and tighten screws.
- When the engine has completely cooled down, turn the Fuel Cap Air Vent to the “OFF” position.



TROUBLESHOOTING

Problem	Cause	Solution
Generator is running, but does not supply power.	1. DC Circuit Breaker is "OFF" 2. Green AC Pilot Light Indicator is off. 3. Poor connection 4. Defective cord set 5. Connected device is faulty 6. Fault in generator	1. Turn DC Circuit Breaker "ON" 2. Stop engine and restart. 3. Check and repair 4. Check and repair 5. Connect a device that is working properly 6. Contact service department
Engine runs good without load but bogs down when loads are connected	1. Short circuit in connected device 2. Generator is overloaded 3. Clogged fuel filter 4. Engine speed is too slow 5. Short circuit in generator	1. Disconnect device 2. See pg 17 "Don't overload generator" 3. Clean or replace fuel filter 4. Contact service department 5. Contact service department
Engine will not start, shuts down during operation, or starts and runs rough.	1. 3 in 1 switch set to "OFF" 2. Dirty Air filter 3. Clogged fuel filter 4. Out of fuel or Stale fuel 5. Spark plug wire disconnected from spark plug 6. Bad spark plug 7. Water in fuel 8. Overchocking 9. Low oil level 10. Engine has flooded 11. Faulty ignition	1. Turn switch to "CHOKE" then pull recoil starter. 2. Clean or replace Air filter 3. Clean or replace fuel filter 4. Replace fuel 5. Reconnect spark plug wire 6. Clean or replace spark plug 7. Drain fuel tank and replace fuel 8. Turn off choke 9. Add oil level. 10. Wait 5 minutes and recrank engine 11. Contact our dealer
Engine lacks power	1. Generator is overloaded 2. Clogged fuel filter 3. Dirty Air filter 4. Engine needs servicing	1. See pg 17 "Don't overload generator" 2. Clean or replace fuel filter 3. Replace Air filter 4. Contact service department
Engine "hunts" or falters	1. Choke was removed too soon 2. Clogged fuel filter 3. Carburetor is running too rich or too lean	1. Move to choke until engine runs evenly 2. Clean or replace fuel filter 3. Contact service department