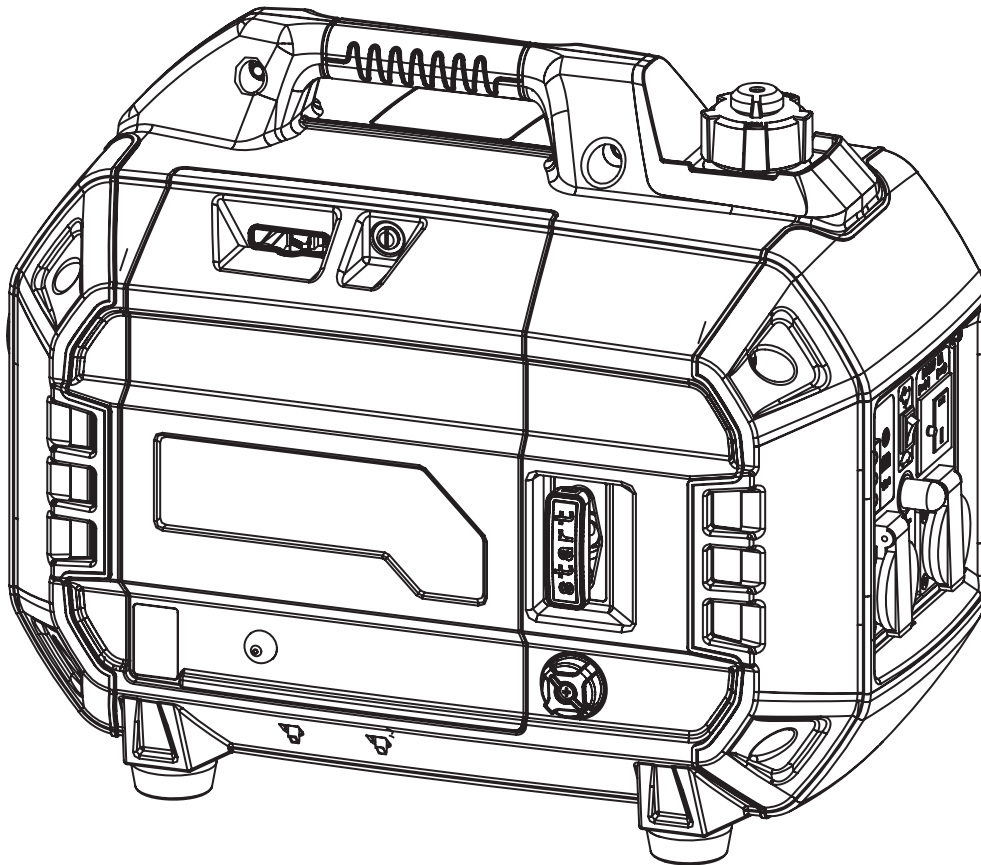


ALNOVA[®]

INVERTER

GI2000



Before using the generator for the first time, read through this instruction manual carefully. Keep for future reference, do not throw away.

PREFACE

This manual covers the construction function and servicing procedure of the united power G12000. This manual is principally concerned with the engine specifications, function overhaul and repair. There is a separate manual to cover generator function.

Careful observance of the instructions contained in this manual will result in safe and quality service work.

All information, illustrations, directions and specifications included in this publication are based on the latest product information available at the time of approval for printing.

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












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1. INTENDED USE

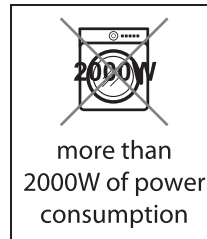
The generator is suggested to supply power to appliances such as luminaries, or electrical tools which are not sensitive to voltage/frequency input distortion.

These appliance types can be connected to the generator:

		
Furnace fans	Sump pumps	
		
Dishwashers	Hotplates/Stoves	
		
Lighting	Fans	
		
Washing machines	Garage door openers	
		
Air conditioners	Water heaters	
		
TV's	Refrigerators	Computers

Do not connect these appliances to the generator:

Appliances which use more power than this generator can provide:2000W.



2. SAFETY PRECAUTION

DANGER

To reduce the risk of serious injury, read the following instructions and precautions before operating this machine.

General

1. Read all of the safety and operating instructions carefully before using the machine. Use the generator only as described in this manual.
2. It is the responsibility of the owner to ensure that all users of this generator are adequately informed of the safety and operating instructions prior to use.

Before and during operation

3. Inspect and tighten all parts regularly. Ensure the generator does not have any damaged hoses, loose or missing clamps, damaged tank or cap before use. All defects should be corrected before use. Do not operate the generator if it has been dropped or damaged until all defective parts have been repaired.
4. The fuel is highly flammable. Wipe away all fuel spills with clean cloth. Keep gasoline, kerosene, matches and other explosives away from the generator because of the potential danger of explosion or fire.
5. Do not place fuel, matches, gunpowder, oily cloths, straw, trash, or any other flammable materials near the generator.

6. Ensure that the engine is not running when refueling. Do not smoke or use open flames near the fuel tank. Be careful not to spill during refueling. If fuel is spilled, wipe it off with a clean cloth and let dry before restarting the engine.
7. To prevent surging that may possibly damage equipment, do not allow unit to run out of fuel when electrical loads are applied.
8. Exhaust contains poisonous Carbon Monoxide gas. Never use generator in a poorly ventilated area as this may cause the engine to become overheated and the exhaust gas will endanger human life. Keep the generator at least 1 meter (3 feet) away from any structure or building while in use.
9. Do not operate in exposed locations where it will be subjected to rain, snow, or water spray. Do not touch the generator with wet hands as this may cause severe electric shocks.
10. If wet, wipe and dry it well before starting. Do not pour water directly over the generator or wash it with water.
11. Do not cover unit when in use.
12. Always operate the generator on a firm, flat, and level surface, as the generator will vibrate on an irregular surface. If the generator is tilted, or removed during operation, fuel may spill/or the generator may tip over, causing a hazardous situation.
13. Do not connect the generator to another power supply source.
14. Engine becomes extremely hot during and immediately after it has been in use. Be careful not to touch any parts of the hot engine, especially the muffler or muffler cover, or serious burns may result.
15. Do not connect external equipment to the generator before starting the engine.
16. Not recommended for life support, or life sustaining systems.

Children and bystanders

17. Keep children and all bystanders at a safe distance from work areas.

Electrical safety

18. Ensure that all necessary electrical grounding procedures are followed during each and every use. Failure to do so can be fatal.
19. When using extended wire or mobile electric net, if the wire diameter is 1.5mm, it must not exceed the length of 60 meters. If the wire diameter is 2.5mm, it must not exceed the length of 100 meters.
20. Due to high mechanical stresses only tough rubber-sheathed flexible cable (in accordance with IEC245-4) or the equivalent should be used.
21. Heavy-duty outdoor rated cords will handle household appliance loads.

22. To avoid overloading the generator, ensure that the load is kept within the rating stated on the generator. Overloading will damage the unit and/or shorten its operating lifespan.

Maintenance & storage

23. Always switch off generator and disconnect tools or appliances when not in use, before servicing, adjusting, or installing accessories and attachments.
24. Any major repairs to the generator should only be conducted by specially trained people at an authorized repair depot.
25. Store the generator in a well-ventilated area with the fuel tank empty. Drain all fuel before transporting the generator in order to prevent leakage.

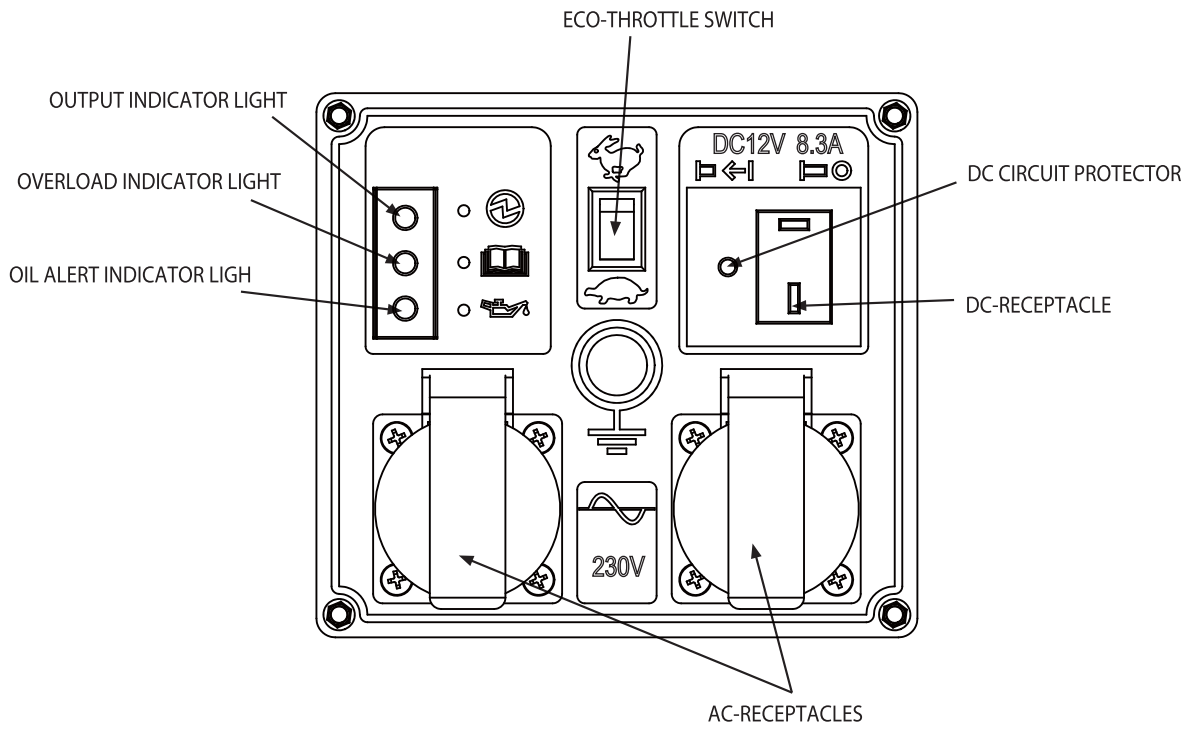
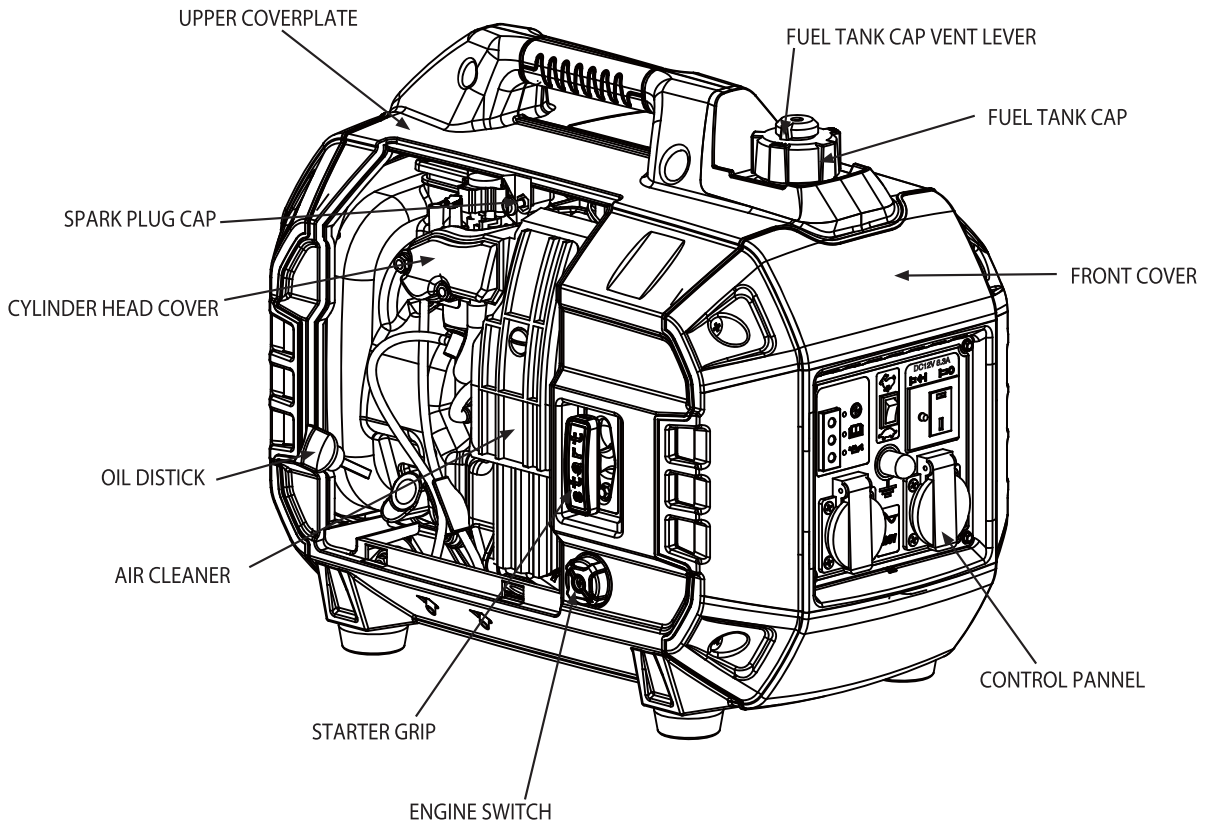
Environment (Noise/Disposal)

26. If the generator will be operated for an extended amount of time, it is recommended that the user utilizes an audition shield and protection against noise.
27. Dispose of soiled residual fluids at the appropriate collection point.

3. TECHNICAL DATA

Model		GI2000	
Alternator	AC Output Voltage	220V	
	Frequency(Hz)	50	60
	Rated Output(kW)	1.8	1.7
	Max. Output(kW)	2.0	1.9
Engine	Model	160F	
	Type	Single cylinder,4-Stroke,OHC air-cooled gasoline engine	
	Displacement(cc)	113	
	Lubrication Oil	SAE 15W/40	
	Lubrication Oil Volume	0.4 Liters	
Unit	Fuel	90 Octane Gasoline	
	Fuel Tank Capacity(L)	4.5	
	Sound Power Level(LwA)	93dB(A)	
	Starting System	Recoil	
	Dimensions	510×302×410(L×W×H)	
	Run Time	4h/1.8Kw	

4.KNOW YOUR GENERATOR



5. PRE-OPERATION CHECK

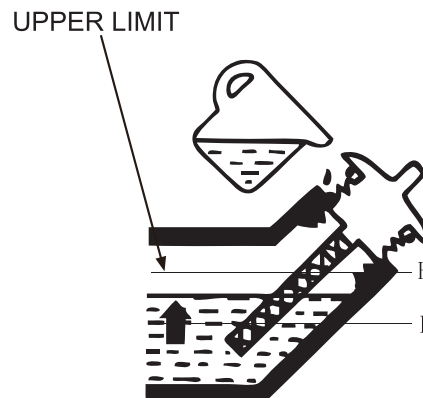
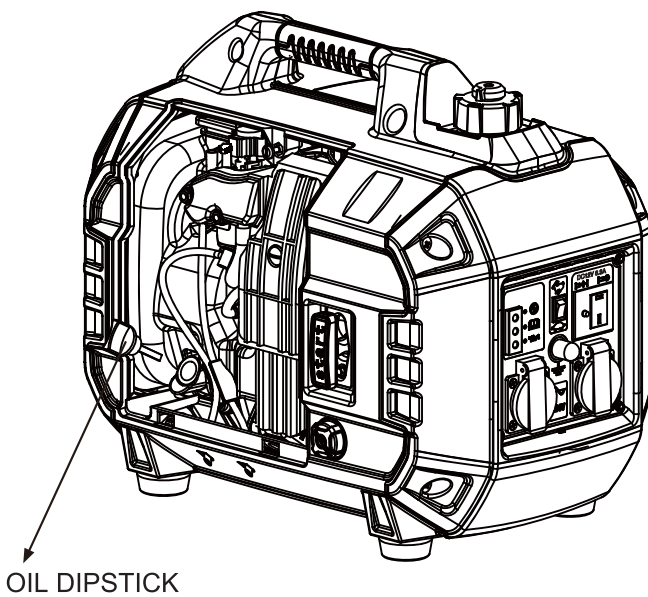
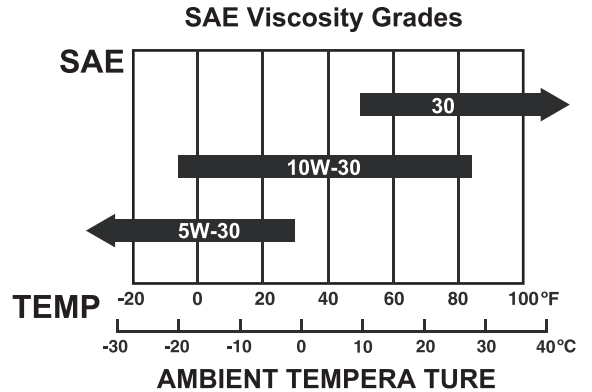
ENGINE OIL

SAE Viscosity Grades Check the oil level BEFORE EACH USE with the generator on a level surface and the engine stopped.

Use 4-stroke motor oil that meets or exceeds the requirements for API service classification SJ or later (or equivalent). Always check the API SERVICE label on the oil container to be sure it includes the letter SJ or later (or equivalent).

SAE 10W-30 is recommended for general, all-temperature use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

1. Open the oil maintenance cover.
2. Remove the oil filler cap and wipe the dipstick clean.
3. Check the oil level by inserting the dipstick into the filler neck without screwing it in.
4. If the level is low, fill to the upper limit of the oil filler neck with the recommended oil.
5. Close and latch the oil maintenance cover.



REFUELING

With the engine stopped, check the fuel level gauge. Refill the fuel tank if the fuel level is low. Refuel carefully to avoid spilling fuel. Do not fill above the maximum fuel level.

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

Stop the engine and keep heat, sparks, and flame away.

Handle fuel only outdoors.

Wipe up spills immediately.

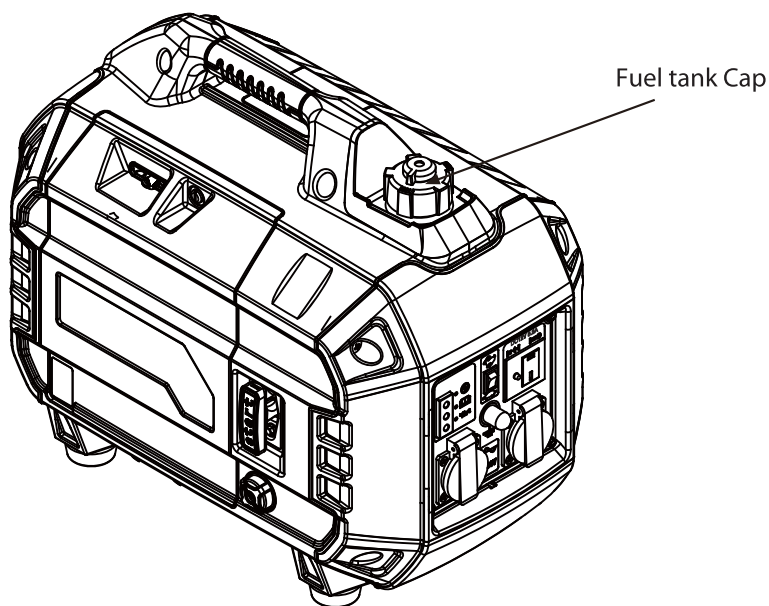
Refuel in a well-ventilated area with the engine stopped. If the engine has been running, allow it to cool first. Refuel carefully to avoid spilling fuel. Do not fill above the fuel strainer shoulder. After refueling, tighten the fuel tank cap securely.

Never refuel the engine inside a building where gasoline fumes may reach flames or sparks. Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.

Spilled fuel is not only a fire hazard, it causes environmental damage.

Wipe up spills immediately.

Fuel can damage paint and plastic. Be careful not to spill fuel when filling your fuel tank. Damage caused by spilled fuel is not covered under warranty.



After refueling reinstall the fuel tank cap securely.

FUEL RECOMMENDATIONS

This engine is certified to operate on regular unleaded gasoline with a pump octane rating of 86 or higher.

Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

After refueling, reinstall the fuel tank cap securely. You may use regular unleaded gasoline containing no more than 10% Ethanol (E10) or 5% Methanol by volume. In addition, Methanol must contain co solvents and corrosion inhibitors.

Use of fuels with content of Ethanol or Methanol greater than shown above may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of the fuel system. Engine damage or performance problems that result from using a fuel with percentages of Ethanol or Methanol greater than shown above are not covered under warranty.

6. STARTING THE ENGINE

STARTING THE ENGINE

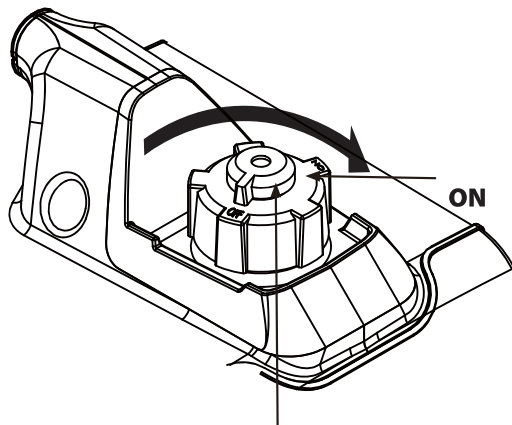
NOTICE

To prevent a possible fire, keep the generator at least 3 feet (1 meter) away from building walls and other equipment during operation. Do not place flammable objects close to the engine.

Operating this generator less than 3 feet (1 meter) from a building or other obstruction can cause overheating and damage the generator. For proper cooling, allow at least 3 feet (1 meter) of empty space above and around the generator. Refer to SAFE OPERATING PRECAUTIONS and perform the IS YOUR GENERATOR READY TO GO checks. Refer to AC OPERATION or DC OPERATION for connecting loads to the generator.

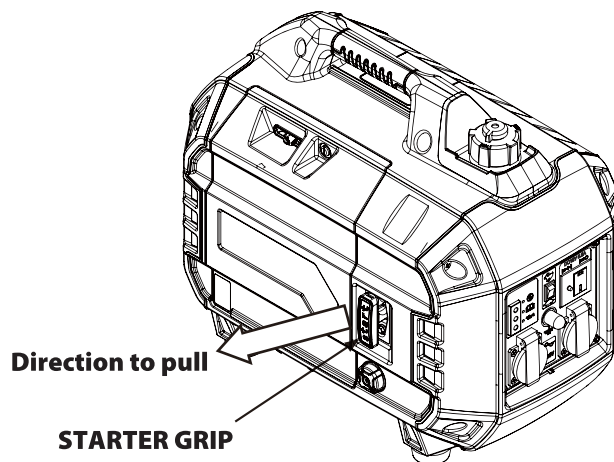
Manual starting:

1. Make sure that all appliances connected to the generator are turned off. The generator may be hard to start if a load is connected.
2. Turn the fuel valve lever to the ON position.



FUEL TANK CAP VENT LEVER

3. To start a cold engine, pull the choke knob out to the CLOSED position.
To restart a warm engine, leave the choke knob in the OPEN position.
4. Turn the engine switch to the ON position.
5. Pull the starter grip lightly until you feel resistance, then pull briskly in the direction of the arrow as shown.



NOTICE

Do not allow the starter grip to snap back against the generator. Return it gently to prevent damage to the starter.

6. If the choke knob was moved to the CLOSED position to start the engine, gradually push it to the OPEN position as the engine warms up.
7. If you wish to use the Eco-Throttle system, turn the Eco-Throttle switch to the ON position after the engine has warmed up for 2 or 3 minutes.

7. OPERATION

AC APPLICATIONS

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.

If an appliance begins to operate abnormally, becomes sluggish or stops suddenly, turn it off immediately. Disconnect the appliance, and determine whether the problem is the appliance, or if the rated load capacity of the generator has been exceeded.

Make sure that the electrical rating of the tool or appliance does not exceed that of the generator. Never exceed the maximum power rating of the generator. Power levels between rated and maximum may be used for no more than 30 minutes.

Limit operation requiring maximum power to 30 minutes.

Maximum power is:

2.0 kVA

For continuous operation, do not exceed the rated power.

Rated power is:

1.8 kVA

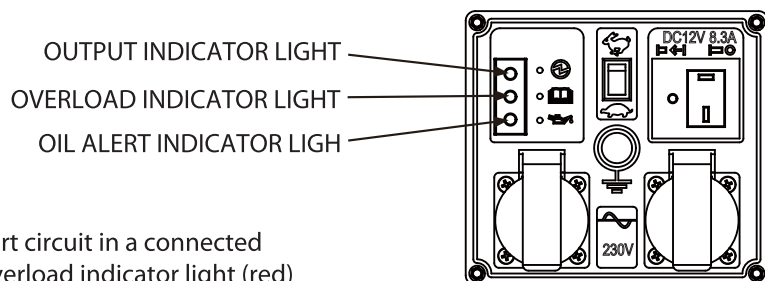
The total power requirements (VA) of all appliances connected must be considered. Appliance and power tool manufacturers usually list rating information near the model number or serial number.

AC OPERATION

1. Start the engine and make sure the output indicator light (green) comes on.

2. Plug in the appliance.

Most motorized appliances require more than their rated wattage for startup.



If the generator is overloaded, or if there is a short circuit in a connected appliance, or if the inverter is overheated, the overload indicator light (red) will come ON. The overload indicator light (red) will stay ON, and after about five seconds, current to the connected appliance(s) will shut off, and the output indicator light (green) will go OFF. Stop the engine and investigate the problem.

Determine if the cause is a short circuit in a connected appliance, an overload, or an overheated inverter. Correct the problem and restart the generator.

Before connecting an appliance to the generator, make sure that it is in good order and that its electrical rating does not exceed that of the generator. Then start the generator and connect the appliance power cord.

DC OPERATION

The DC receptacle should ONLY be used for charging 12-volt automotive type batteries. The DC charging output is not regulated. DC output will vary according to the position of the Eco-Throttle switch. When the Eco-Throttle switch is turned to the ON position and the AC output is not used, the DC current will be about one-third of the rated current.

ECO-THROTTLE SYSTEM

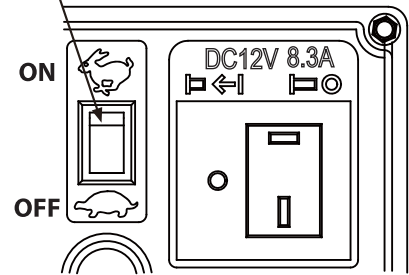
With the switch in the ON position, engine speed is automatically lowered when loads are reduced, turned OFF or disconnected. When appliances are turned ON or reconnected, the engine returns to the proper speed to power the electrical load. In the OFF position, the Eco-Throttle system does not operate.

Appliances with large start-up power demands may not allow the engine to reach normal operating rpm when they are connected to the generator. Turn the Eco-Throttle to the OFF position and connect the appliance to the generator. If the engine still will not reach normal operating speed, check that the appliance does not exceed the rated load capacity of the generator.

If high electrical loads are connected simultaneously, turn the Eco-Throttle switch to the OFF position to reduce voltage changes.

The Eco-Throttle system is not effective for use with appliances that require only momentary power. If the tool or appliance will be turned ON and OFF quickly, the Eco-Throttle switch should be in the OFF position.

ECO-THROTTLE SWITCH



HIGH ALTITUDE OPERATION

At high altitude, the standard carburetor air/fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting. Operation at an altitude that differs from that, at which this engine was certified, for extended periods of time, may increase emissions.

High altitude performance can be improved by specific modifications to the carburetor. If you always operate your generator at altitudes above 5,000 feet (1,500 meters), have your servicing dealer perform this carburetor modification. This engine, when operated at high altitude with the carburetor modifications for high altitude use, will meet each emission standard throughout its useful life.

Even with carburetor modification, engine horsepower will decrease about 3.5 % for each 1,000-foot (300-meter) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

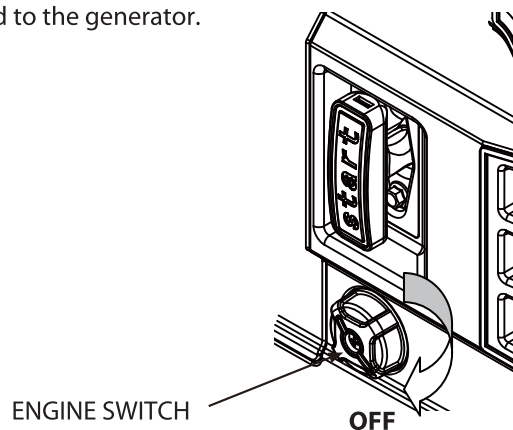
8. STOPPING THE ENGINE

In an emergency:

1. To stop the engine in an emergency, turn the engine switch to the OFF position.

In normal use:

1. Turn off or disconnect all appliances connected to the generator.
2. Turn the engine switch to the OFF position.
3. Turn the fuel valve lever to the OFF position.



9. MAINTENANCE

THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution.

To help you properly care for your generator, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult, or require special tools, are best handled by professionals and are normally performed by a Unitedpower technician or other qualified mechanic.

The maintenance schedule applies to normal operating conditions. If you operate your generator under severe conditions, such as sustained high-load or high-temperature operation, or use it in unusually wet or dusty conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any engine repair establishment or individual, using parts that are "certified" to EPA standards.

MAINTENANCE SAFETY

Some of the most important safety precautions follow. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

- Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards:

-Carbon monoxide poisoning from engine exhaust.

Be sure there is adequate ventilation whenever you operate the engine.

-Burns from hot parts.

Let the engine and exhaust system cool before touching.

-Injury from moving parts.

Do not run the engine unless instructed to do so.

- Read the instructions before you begin, and make sure you have the tools and skills required.
- To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks, and flames away from all fuel-related parts.

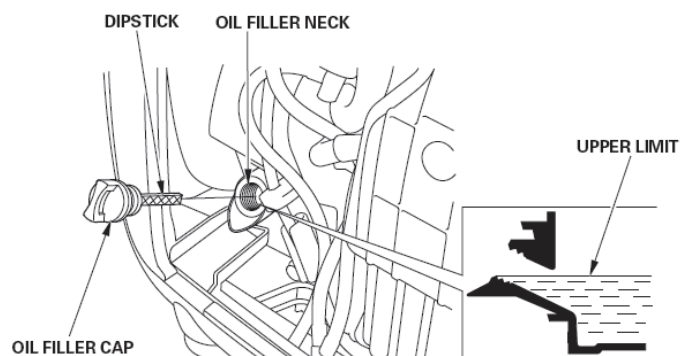
Remember that your servicing dealer knows your generator best and is fully equipped to maintain and repair it.

To ensure the best quality and reliability, use only new, genuine Unitedpower parts or their equivalents for repair or replacement.

ENGINE OIL CHANGE

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

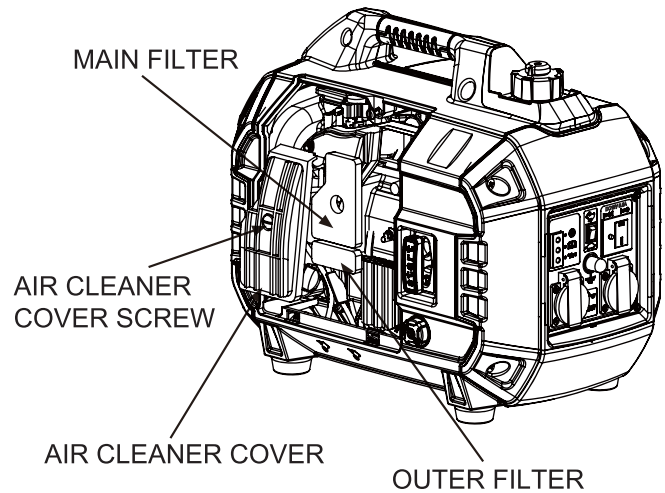
1. Turn the engine switch and fuel tank cap vent lever to the OFF position to reduce the possibility of fuel leakage.
2. Loosen the cover screw and remove the maintenance cover.
3. Place a suitable container next to the engine to catch the used oil.
4. Remove the oil filler cap/dipstick, and drain the oil into the container by tipping the engine toward the oil filler neck.
5. With the engine in a level position, fill to the upper limit of the oil filler neck with the recommended oil.
6. Reinstall the oil filler cap/dipstick securely.
7. Reinstall the maintenance cover and tighten the cover screw securely.



AIR CLEANER SERVICE

A dirty air filter will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the generator in extremely dusty areas.

1. Loosen the cover screw and remove the maintenance cover.
2. Loosen the air cleaner cover screw, and remove the air cleaner cover.
3. Remove the main and outer filters from the air cleaner cover.
4. Check the main and outer filters to be sure they are clean and in good condition. If the main and outer filters are dirty, clean them as described on page . Replace the main and outer filters if they are damaged.
5. Reinstall the air filters.
6. Make sure that the rubber seal is set in the groove of the air cleaner cover.
7. Reinstall the air cleaner cover, and tighten the air cleaner cover screw.
8. Reinstall the maintenance cover, and tighten the cover screw securely.



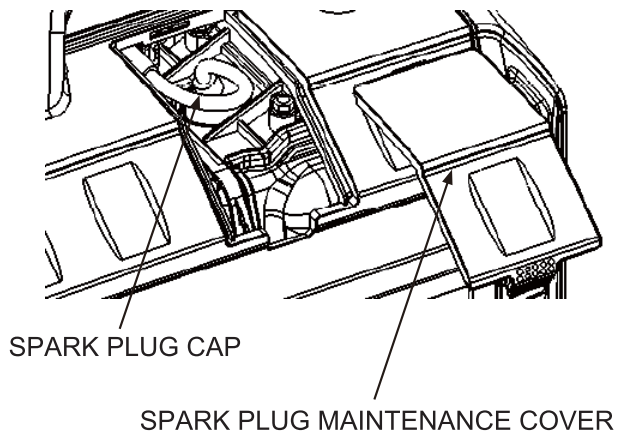
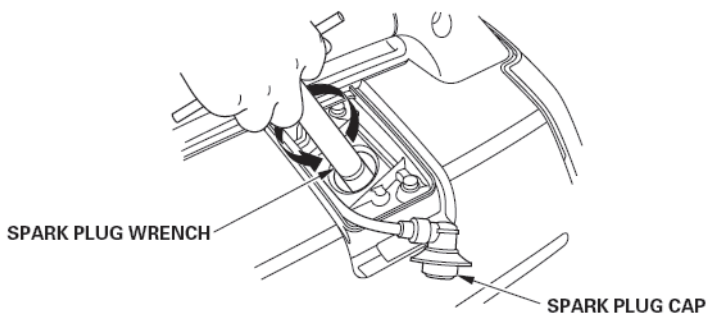
SPARK PLUG SERVICE

In order to service the spark plug, you will need a spark plug wrench (commercially available).

Recommended spark plugs: CR7HSA (NGK)

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits. If the engine has been running, let it to cool before servicing the spark plug.

1. Remove the spark plug maintenance cover.
2. Remove the spark plug cap.
3. Clean any dirt from around the spark plug base.
4. Use a spark plug wrench to remove the spark plug.



5. Inspect the spark plug. Replace it if the electrodes are worn or if the insulator is cracked, chipped, or fouled.
6. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode.

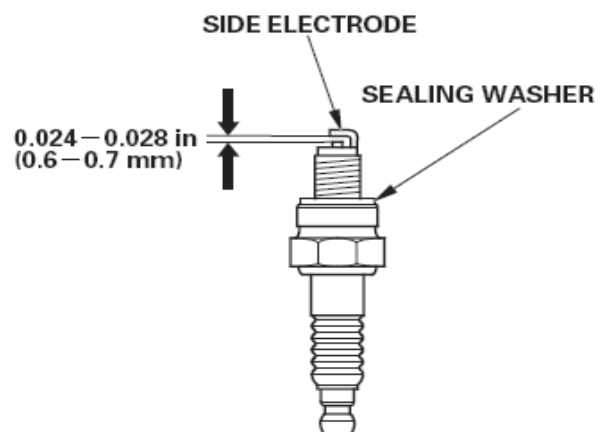
The gap should be: 0.024- 0.028 in (0.6 -0.7 mm)

7. Make sure that the spark plug sealing washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.

8. After the spark plug is seated, tighten with a spark plug wrench to compress the sealing washer.

If reinstalling a used spark plug, tighten 1/8 ~1/4 turn after the spark plug seats.

If installing a new spark plug, tighten 1/2 turn after the spark plug seats.



NOTICE

A loose spark plug can overheat and damage the engine. Over tightening the spark plug can damage the threads in the cylinder head.

9. Reinstall the spark plug cap on the spark plug securely.

10. Reinstall the spark plug maintenance cover.

MAINTAIN SCHEDULE**CAUTION**

- Always stop the engine before servicing, and disconnect all appliances to avoid receiving an electrical shock.
- Periodic checks and maintenance are very important for keeping the generator in good condition.

Item	Remarks	Pre-Operation Check (daily)	Initial 1 month or 20hrs	Every 3 months or 50hrs	Every 6 months or 100hrs	Every 12 months or 300hrs
Spark plug (12)	Check condition. Adjust gap and clean. Replace if necessary.			●		
Spark arrester	Clean the carbon de poists.				●	
Engine oil	Check oil level.	●				
	Replace.		●	●		
Air filter (8)	Clean. Replace if necessary.			●		
Fuel cock (10)	Clean fuel cock filter. Replace if neccessary.				●	
Valve clearance	Check and adjust when engine is cold.				●	
Fuel line	Check fuel hose for crack or damage. Replace if neccessary.	●				
Exhaust system	Check for leakage. Retighten or replace gasket if neccessary.	●				
	Check muffler screen. Clean/replace if neccessary.				●	
Carburetor	Check choke operation.	●				
Cooling system	Check for damage.					●
Starting system	Check recoil starter operation.	●				
Decarburization	More frequently if neccessary.					●
Fittings & Fasteners	Check all fittings and fasteners correct if neccessary.				●	

10. STORING YOUR GENERATOR

Long term storage of the generator will require some additional preventative measures to guard against deterioration. If fuel is kept in the generator, ensure that the engine is run for at least 30 minutes per month in order to ensure an easy start in emergencies.

1. Drain gasoline from fuel tank or utilize a fuel stabilizer if fuel is in tank.
2. Pour one tablespoon of SAE 10W-30 in summer and SAE 5W30 in winter of oil through spark plug hole.
3. Fill in the lubrication oil to the high limit mark of the dipstick.
4. Pull the recoil starter handle several times and replace the spark plug.
5. Pull the starter handle until you feel the piston on the compression stroke and leave it in this position.
6. Clean exterior of the generator and apply a rust inhibitor.
7. Cover and store indoors, in a dry, well-ventilated area, such as a toolshed.
8. When transporting the generator, turn the engine switch and the fuel cock level "OFF". Keep the generator level to prevent fuel spillage as fuel vapor or spilled fuel may ignite.



CAUTION

Touching a hot unit or exhaust system can cause serious burns or fires. Let the unit cool before transporting or storing the generator.

9. Take care not to drop or strike the generator when transporting. Do not place heavy objects on the generator.



CAUTION

Do not store the generator outdoors in cold weather when not in use.

HINTS ON STORAGE

1. If your generator will be stored with gasoline in the fuel tank and carburetor, it is important to reduce the hazard of gasoline vapor ignition.
2. Select a well ventilated storage area away from any appliance that operates with a flame, such as a furnace, water heater, or clothes dryer. Also avoid any area with a spark-producing electric motor, or where power tools are operated.
3. If possible, avoid storage areas with high humidity, because that promotes rust and corrosion.
4. Unless all fuel has been drained from the fuel tank, leave the fuel valve in the "OFF" position to reduce the possibility of leakage.
5. Place the generator on a level surface. Tilting can cause fuel or oil leakage.
6. With the engine and exhaust system cool, cover the generator to keep out dust.



WARNING

A hot engine and exhaust system can burn you and can ignite some material.

7. Do not use sheet plastic as a dust cover. A nonporous cover will trap moisture around the generator, promoting rust and corrosion.

REMOVAL FROM STORAGE

1. Check your generator as described in the PRE-OPERATION CHECK chapter.
2. If the fuel was drained during storage preparation, fill the tank with fresh gasoline. If you keep a container of gasoline for refueling, be sure that it contains only fresh gasoline. Gasoline oxidizes and deteriorates over time, causing hard starting.
3. If the cylinder was coated with oil during storage preparation, the engine may smoke briefly at startup. This is normal.

TRANSPORTING

1. If the generator has been used, allow it cool for at least 15 minutes before loading the generator on the transport vehicle.



WARNING

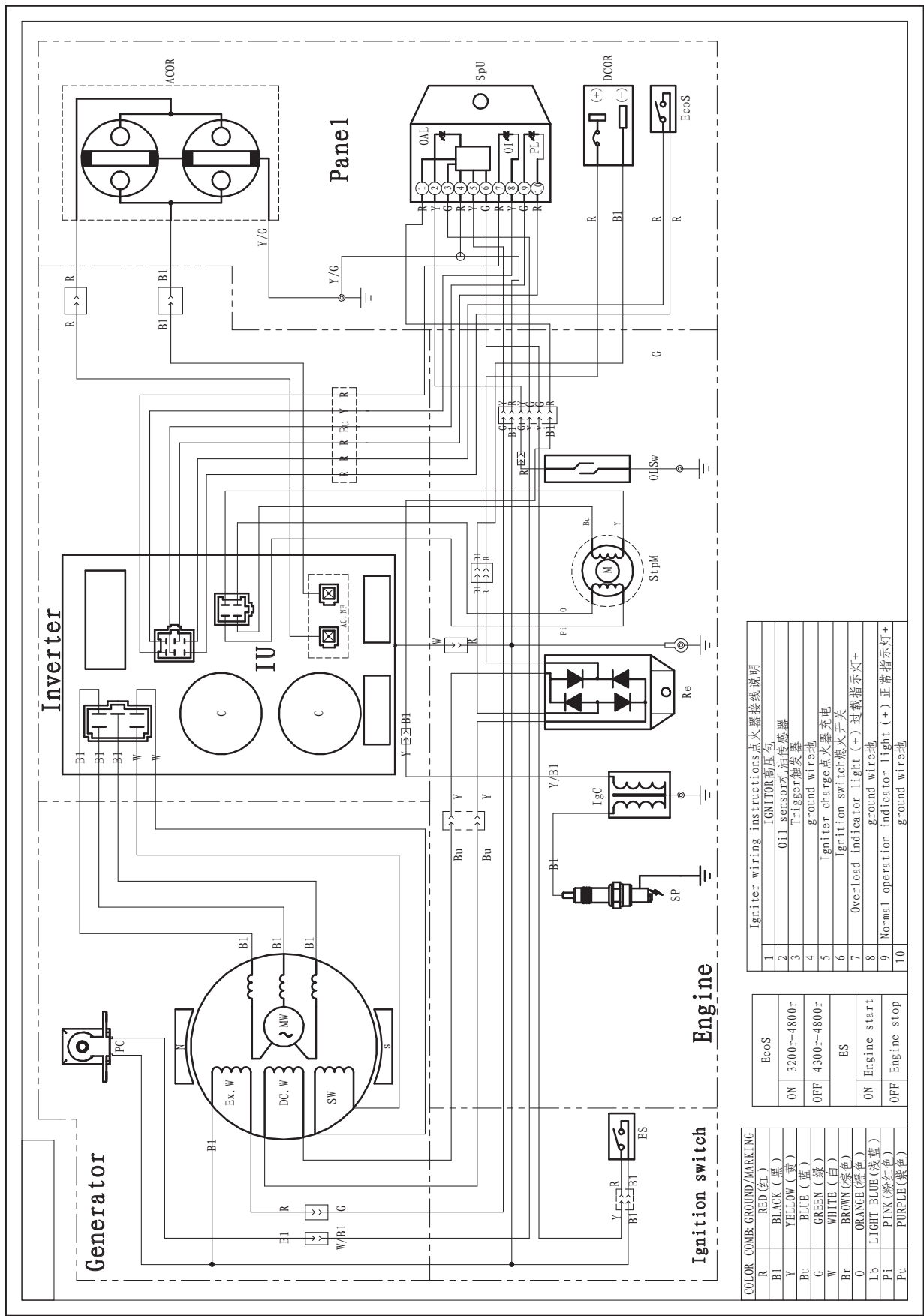
A hot engine and exhaust system can burn you and can ignite some material.

2. When transporting the generator, turn the engine switch and the fuel cock level "OFF", and keep the generator level to reduce the possibility of fuel leakage.
3. Take care not to drop or strike the generator when transporting. Do not place heavy objects on the generator.

11. Troubleshooting

Condition	Probable cause			Corrective action	
Engine will not start	Insufficient compression	Loose spark plug		Tighten plug properly	
		Loose cylinder head bolt		Tighten bolt properly	
		Damaged gasket		Replace gasket	
Low engine Output	sufficient compression	Fuel systems problems: No fuel supplied to combustion chamber	Insufficient pulling speed for starting rope	Pulling starting rope sharply	
			Foreign matter in the tank	Clean tank	
			Clogged fuel line	Clean fuel line	
			No fuel in tank	Add fuel	
			Fuel cock level not open	Open fuel cock level	
Engine runs erratically	sufficient compression	Electric systems problems: combustion chamber supplied with fuel	Improper spark	spark plug dirty with carbon or wet with fuel	Remove carbon or wipe up spark plug
				Damaged spark plug	Replace spark plug
			Faulty magnet	Consult dealer	
		Improper spark	Improper adjustment of carburetor		Pull starting rope sharply
			Insufficient Pulling speed for starting rope		
		Improper grade of fuel used			Check fuel
Overloading			Check the working condition		

12. Wiring Diagram



Igniter wiring instructions点火器接线说明

1	IGNITOR 高压包
2	Oil sensor 机油传感器
3	Trigger 触发器
4	ground wire 地
5	Igniter charge 点火器充电
6	Ignition switch 熄火开关
7	Overload indicator light (+) 过载指示灯+
8	ground wire 地
9	Normal operation indicator light (+) 正常指示灯+
10	ground wire 地

EcoS	
ON	3200r-4800r
OFF	4300r-4800r
ES	
ON	Engine start
OFF	Engine stop

R	RED (红)
B1	BLACK (黑)
Y	YELLOW (黄)
Bu	BLUE (蓝)
G	GREEN (绿)
W	WHITE (白)
Br	BROWN (棕色)
O	ORANGE (橙色)
Lb	LIGHT BLUE (浅蓝)
Pi	PINK (粉红色)
Pu	PURPLE (紫色)