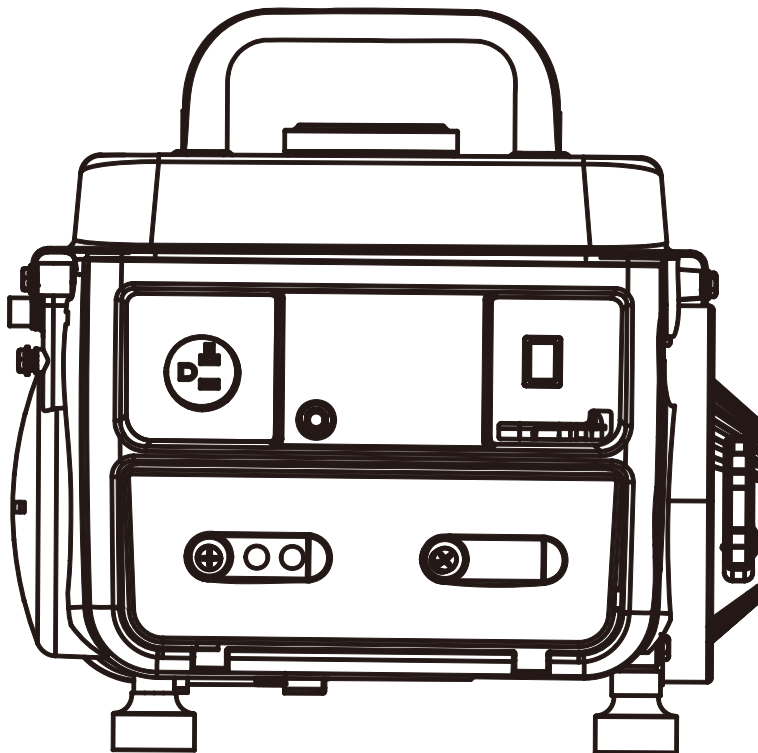


POWER SMART[®]

INSTRUCTION MANUAL

1200W 2 Stroke Portable Generator

Model # PS50



Fuel mix ratio: 50:1

Have product questions or need technical support? Please scan the QR code to enter our official website and contact us!

Website: www.powersmartusa.com

Toll free: 1-872-314-0005 M-F 9-5 EST

Email: support@amerisuninc.com , support@powersmartusa.com



Website

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TECHNICAL DATA

1200W 2 Stroke Generator	Model#PS50
Engine type:	2 stroke, single cylinder with forced air cooling system
Spark plug:	F5TC
Spark plug gap:	0.7-0.8 mm (0.028-0.031 in)
Spark plug torque:	1/2-3/4 turn after gasket contacts base or 15 ft.lb
Displacement:	71 cc
Fuel tank capacity:	1.1 gallon/ 87 octane minimum mixed with 2 stroke oil
Fuel and 2 stroke oil mix ratio	50:1
Lubrication system:	Splash lubrication
AC Rated wattage:	900W
AC Surge wattage:	1200W
AC Rated voltage:	120V
AC Rated amperage:	7.5A
Frequency:	60Hz
Phase:	Single
DC Voltage:	12V
Dimensions(L x W x H):	16x14x13.8 inch
Runtime on 50%load:	5 hour
Weight:	39 lb.

INTRODUCTION

Thank You for Purchasing a PowerSmart® Product. This manual provides information regarding the safe operation and maintenance of this product. Every effort has been made to ensure the accuracy of the information in this manual. PowerSmart® reserves the right to change this product and specifications at any time without prior notice.

Please keep this manual available to all users during the entire life of the generator.



This manual contains special messages to bring attention to potential safety concerns, generator damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

QUESTIONS? PROBLEMS?

In order to answer questions and solve problems in the most efficient and speedy manner, contact Customer Service at (872) 314-0005, Mon-Fri 9am-5pm EST or Email: support@amerisuninc.com , support@powersmartusa.com.

NOTICE REGARDING EMISSIONS

Engines that are certified to comply with U.S. EPA emission regulations for SORE (Small Off Road Equipment), are certified to operate on regular unleaded gasoline, and may include the following emission control systems: (EM) Engine Modifications and (TWC) Three-Way Catalyst (if so equipped).

SAFETY INFORMATION

Before operating this generator, read and observe all warnings, cautions, and instructions on the generator and in this Owner's Manual.

NOTE: The following safety information is not meant to cover all possible conditions and situations that may occur. Read the entire Owner's Manual for safety and operating instructions. Failure to follow instructions and safety information could result in serious injury or death.

This safety alert symbol is used to identify safety information about hazards that can result in personal injury.



A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

DANGER indicates a hazard, which, if not avoided, will result in death or serious injury.

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

CAUTION indicates a hazard, which, if not avoided, might result in minor or moderate injury.

CAUTION when used without the alert symbol, indicates a situation that could result in damage to the engine or generator.

GENERAL SAFETY PROCEDURES

DANGER: CARBON MONOXIDE

Using a generator indoors **CAN KILL YOU IN MINUTES**. Generator exhaust contains carbon monoxide (CO). This is a poison gas you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.

NEVER use a generator inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does **NOT** supply enough fresh air. **ONLY** use a generator outside and far away from windows, doors, and vents. These openings can pull in generator exhaust.

Even if you use a generator correctly, CO may leak into the home. **ALWAYS** use a battery-powered or battery-backup CO alarm in the home. If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air **RIGHT AWAY**. See a doctor. You may have carbon monoxide poisoning.



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



WARNING: This generator may emit highly flammable and explosive gasoline vapors, which can cause severe burns or even death if ignited. A nearby open flame can lead to explosion even if it isn't directly in contact with gasoline.

- Do not operate near open flame.
- Do not smoke near generator.
- Always operate on a firm, level surface.
- Always turn generator off before refueling. Allow generator to cool for at least 2 minutes before removing fuel cap. Loosen cap slowly to relieve pressure in tank.
- Do not overfill fuel tank. Gasoline may expand during operation. Do not fill to the top of the tank. Allow for expansion.
- Always check for spilled fuel before operating.
- Empty fuel tank before storing or transporting the generator.



WARNING: This generator produces powerful voltage, which can result in electrocution.

- **ALWAYS** ground the generator before using it (see the “Ground the Generator” portion of the “GENERATOR PREPARATION” section).
- Generator should only be plugged into electrical devices, either directly or with an extension cord.

NEVER connect to a building electrical system without a qualified electrician. Such connections must comply with local electrical laws and codes. Failure to comply can create a back-feed, which may result in serious injury or death to utility workers.

- Use a ground fault circuit interrupter (GFCI) in highly conductive areas such as metal decking or steel work. GFCIs are available in-line with some extension cords.
- Do not use in rainy conditions.
- Do not touch bare wires or receptacles (outlets).
- Do not allow children or non-qualified persons to operate.



WARNING: This generator produces heat when running. Temperatures near exhaust can exceed 150°F (65°C).

Do not touch hot surfaces. Pay attention to warning labels on the generator identifying hot parts of the machine.

Allow generator to cool down after use before touching engine or areas of the generator that become hot during use.

CAUTION: Misuse of this generator can damage it or shorten its life.

Only use generator for its intended purposes.

Operate only on dry, level surfaces.

Allow generator to run for several minutes before connecting electrical devices.

Shut off and disconnect any malfunctioning devices from generator.

Do not exceed the wattage capacity of the generator by plugging in more electrical devices than the unit can handle.

Do not turn on electrical devices until after they are connected to the generator.

Turn off all connected electrical devices before stopping the generator.

Turn the engine switch to “OFF” position when the engine is not running.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS – This manual contains important instructions for the PowerSmart® 1200W 2 stroke generator that should be followed during installation and maintenance of the generator.

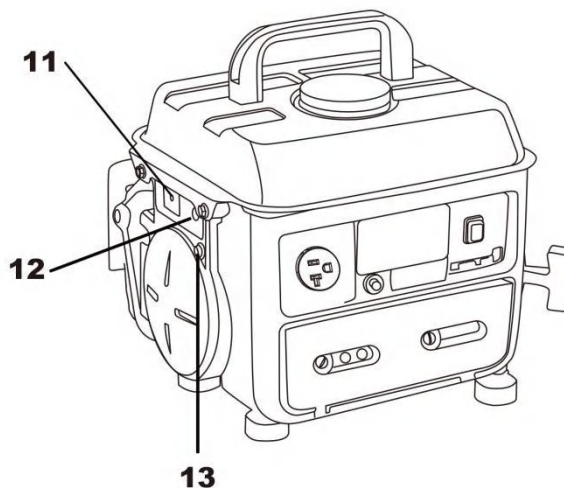
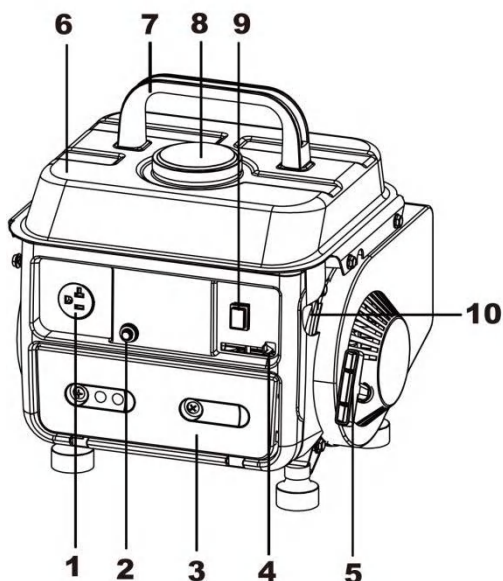
Generators vibrate in normal use. During and after the use of the generator, inspect both the generator as well as extension and power supply cords for damage resulting from vibration. Have damaged items repaired or replaced as necessary. Do not use plugs or cords that show signs of damage such as broken or cracked insulation.

For power outages, permanently installed stationary generators are better suited for providing backup power to the home. Even a properly connected portable generator can become overloaded. This may result in overheating or stressing of the components, possibly leading to a generator failure.



WARNING: If this generator is used as a supply for a building’s wiring system, the generator must be installed by a qualified electrician and connected to a transfer switch as a separately derived system in accordance with the National Electrical Code, NFPA 70. The generator shall be connected to a transfer switch that switches all conductors excluding the equipment grounding conductor. The frame of the generator shall be connected to an approved grounding electrode.

KNOWING YOUR GENERATOR



- 1 **120 Volt AC Receptacle**– To connect electrical devices that run on 120 V 60Hz, single phase, AC current.
- 2 **AC Circuit Reset Button**– Reset button that protects the generator from AC outlet overload.
- 3 **Air Cleaner** – a removable, cleanable, sponge -like element that limits the amount of dirt pulled into the engine.
- 4 **Choke Lever** – Adjusts the amount of air let into the engine.
- 5 **Recoil Starter**– Pull-cord for starting engine.
- 6 **Fuel Tank**
- 7 **Carrying Handle**– for easy transport.

- 8 **Fuel Cap** – Access to the fuel tank for adding fuel.
- 9 **Engine Switch**– Used to start/stop engine.
- 10 **Fuel Valve**– Allows fuel to enter engine.
- 11 **DC Terminal**
- 12 **DC Circuit Reset Button**– Reset button that protects the generator from DC outlet overload.
- 13 **Ground Terminal** – Connect grounding wires here to properly ground unit.

GENERATOR PREPARATION

The following section describes steps necessary to prepare the generator for use. If after reading this section, you are unsure about how to perform any of the steps please call (872)314- 0005 Mon-Fri 9-5, EST for customer service. Failure to perform these steps properly can damage the generator or shorten its life.

Step 1 - ATTACHING THE CARRYING HANDLE

1. Remove the 2 bolts and 2 washers.
2. Place the bolts and washers into the carrying handle.
3. Position the handle over the threaded holes in the fuel tank.
4. Tighten bolts using the screwdriver until the bolts are snug.

Step 2 – MIXING FUEL FOR 2 STROKE ENGINE

2 STROKE OIL

To operate the engine, use unleaded gasoline mixed with high quality 2 Cycle oil at a ratio of 50 to 1.

Note: Use NMMA or TC-WII or TC-W3 or JASO FB or FASO FC classified oil in the mixture.

GASOLINE

Use unleaded regular, unleaded premium, or gasoline containing 10% ethanol. Fuel must be fresh and clean. Never use gasoline stored for long periods.

MIXING GASOLINE AND OIL

WARNING: Never store generator with fuel in the fuel tank inside a building with potential sources of ignition such as hot water tanks, space heaters, clothes dryers, electric motors, etc.

Notes: DO NOT mix gasoline and oil directly in the fuel tank.

USE NMMA or TC-WII or TC-W3 or JASO FB or JASO FC classified oil.

- Make sure fuel container is outside and in a well ventilated area.
- Fill the approved, clean red gasoline container with $\frac{1}{4}$ of the recommended gasoline amount.
- Add the required amount of oil to the gasoline.
- Tighten the cap on the fuel container.
- Shake vigorously to mix the gasoline and oil.
- Undo the fuel cap and add the remainder of the recommended fuel. Wipe away any spilled fuel or oil.

Mixing Ratios: 50:1

- To 1 gallon gasoline, add 2.5 oz 2 cycle oil
- To 2 gallon gasoline, add 5 oz 2 cycle oil
- To 5 gallon gasoline, add 13 oz 2 cycle oil

Step 3-FILLING THE FUEL TANK

WARNING: This generator may emit highly flammable and explosive gasoline vapors, which can cause severe burns or even death if ignited. A nearby open flame can lead to explosion even if not directly in contact with gasoline.

- Do not operate near open flame.
 - Do not smoke near generator.
 - Always operate on a firm, level surface.
 - Always turn generator off before refueling. Allow generator to cool for at least 2 minutes before removing fuel cap. Loosen cap slowly to relieve pressure in tank.
 - Do not overfill fuel tank. Gasoline may expand during operation. Do not fill to the top of the tank.
 - Allow for expansion.
 - Always check for spilled fuel before operating. Clean up any spilled fuel before starting.
 - Empty fuel tank before storing or transporting the generator.
 - Before transporting, turn fuel valve to off position and disconnect spark plug wire.
1. Be sure generator is outdoors and in a well ventilated area.
 2. Clean the area around the fuel fill cap and remove the fuel fill cap.
 3. Using the approved red gasoline container with the gasoline and oil mixture, slowly add the fuel to the tank. DO NOT overfill the fuel tank. Leave space for expansion.
 4. Replace the fuel cap and wipe up any spills.

Step 4-GROUND THE GENERATOR



WARNING: Failure to properly ground the generator can result in electrocution.

Ground the generator by tightening the grounding nut on the front control panel against a grounding wire. A generally acceptable grounding wire is a No. 12 AWG (American Wire Gauge) stranded copper wire. This grounding wire should be connected at the other end to a copper, brass, or steel-grounding rod that is driven into the earth. Wire and grounding rods are not included in generator contents.

Grounding codes can vary by location. Contact a local electrician to check the area codes.



Grounding Nut

NOTE: After completing the above preparation, the generator is ready to be started.

STARTING THE GENERATOR

Before starting the generator, make sure you have read and performed the steps in the “Generator Preparation” section of this manual. If you are unsure about how to perform any of the steps in this manual, please call (872) 314-0005, Mon-Fri 9-5 EST or email: support@amerisuninc.com / support@powersmartusa.com for customer service.



DANGER: CARBON MONOXIDE.

Using a generator indoors CAN KILL YOU IN MINUTES.

Generator exhaust contains carbon monoxide (CO). This is a poison gas you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. Even if you cannot smell the exhaust, you may be breathing CO.

NEVER use a generator inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does NOT supply enough fresh air.

ONLY use a generator outside and far away from windows, doors, and vents. These openings can pull in generator exhaust. Even if you use a generator correctly, CO may leak into the home. **ALWAYS** use a battery-powered or battery-backup CO alarm in the home.

If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air **RIGHT AWAY**. See a doctor. You may have carbon monoxide poisoning.



WARNING: This generator produces powerful voltage, which can result in electrocution.

ALWAYS ground the generator before using it (see the “Ground the Generator” portion of the “Generator Preparation” section).

- Generator should only be plugged into electrical devices, either directly or with an extension cord. **NEVER** connect to a building electrical system without a qualified electrician. Such connections must comply with local electrical laws and codes. Failure to comply can create a back-feed, which may result in serious injury or death to utility workers.
- Use a ground fault circuit interrupter (GFCI) in highly conductive areas such as metal decking or steel work. GFCIs are available in-line with some extension cords.
- Do not use in rainy or wet conditions.
- Do not touch bare wires or receptacles (outlets).
- Do not allow children or non-qualified persons to operate.

CAUTION: Disconnect all electrical loads from the generator before attempting to start.

STARTING THE ENGINE

To start the generator, perform the following steps:

1. Unplug all electrical devices from the generator during ignition. Otherwise it will be difficult for the engine to start.
2. Check that the generator is properly grounded (Refer to “GROUND THE GENERATOR”).
3. Check the oil and fuel levels.
4. Open the Fuel Valve.(See Picture 1)
5. To start a cold engine, move the Choke to the START position.
To restart a warm engine, leave the Choke in the RUN position.(See Picture 2)
6. Turn the Engine Switch on.(See Picture 3)
7. 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.(See Picture 4)

Note: Do not let the Starter Handle snap back against the engine. Hold it as it recoils so it doesn't hit the engine.

IMPORTANT: If engine fails to start, repeat step 7. **NOTE:** After repeated failed attempts to start the engine, please consult the troubleshooting guide before attempting again.

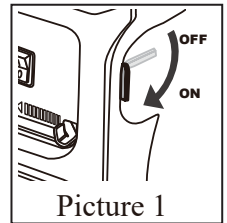
8. Allow the Engine to run for several seconds. Then, if the Choke lever is in the START position, move the Choke Lever very slowly to its RUN position.(See Picture 5)

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

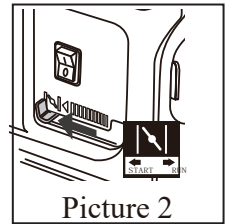
IMPORTANT: Allow the engine to run at no load for five minutes after each start-up so that the engine can stabilize.

Break-in Period:

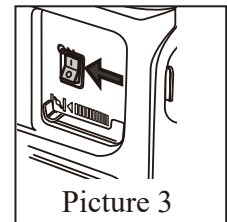
- a. Breaking-in the engine will help to ensure proper equipment and engine operation.
 - b. The break-in period will last about 25 hours of use. **DO NOT** exceed 75% of the Generator’s rated capacity during this period.
- Change the engine fuel/oil mixture after this period. Under normal operating conditions subsequent maintenance follows the schedule explained in the Maintenance section.



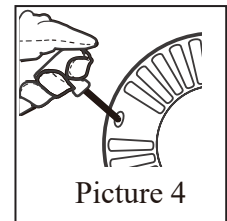
Picture 1



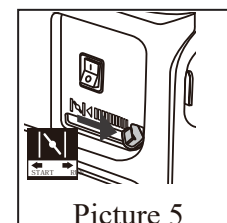
Picture 2



Picture 3



Picture 4



Picture 5

High Altitude Operation from 1640 feet to 7000 feet

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.

The fuel system on this Engine or Equipment may be influenced by operation at higher altitudes. It must install an altitude kit at altitudes from 1640ft. to 7000ft. above sea level. Kits should be installed by a qualified individual.



WARNING: To prevent serious injury from fire: Follow the kit procedures 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.

NOTICE: The warranty may be void if necessary adjustments are not made for high altitude use.

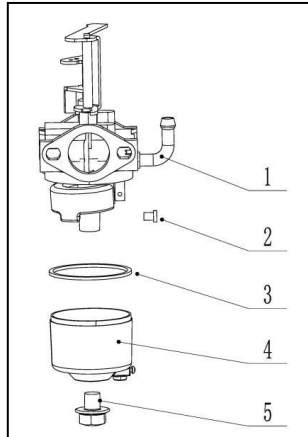
NOTICE: Even with carburetor modification, engine horsepower will decrease in high altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

Altitude kit replacement

1. Turn off the engine.
2. Close the fuel valve.
3. Place a bowl under the fuel cup to catch any spilled fuel.
4. Using a 10mm wrench, take off the fixing bolt and bolt seal (5) from the body of the carburetor.
5. Remove the fuel cup (4) and seal (3).
6. Take off main jet (2).
7. Replace the main jet (altitude kit supplied) with suitable one applying to altitude height.
8. Reassemble the fuel cup seal , fuel cup , bolt seal and bolt . Tighten in place.
9. Commissioning. Make sure generator works correctly after installation.



WARNING: 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.

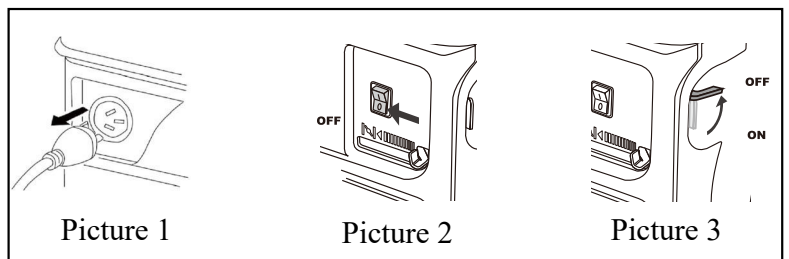


Part #	Description	Qty
022010600103	Main jet	1

STOPPING THE GENERATOR

TO STOP THE GENERATOR

1. When finished using the appliance/tool, turn it off and unplug it from the AC Outlet on the Generator.
2. To stop the engine in an emergency, turn the Engine Switch off.
3. Under normal conditions, use the following procedure:
 - a. Remove all electrical load devices from the Generator.(See Picture 1)
 - b. Turn the Engine Switch off.(See Picture 2)
 - c. Close the Fuel Valve.(See Picture 3)



WARNING: Allow the generator to cool for several minutes before touching areas that become hot during use.

CAUTION: Allowing gasoline to sit in the fuel tank for long periods of time can make it difficult to start the generator in the future. Never store the generator for extended periods of time with fuel in the fuel tank. Refer to Generator Storage Section.

USING THE GENERATOR

WARNING: When this generator is used on a building's wiring system, the generator must be installed by a qualified electrician and connected to a transfer switch as a separately derived system in accordance with the National Electrical Code, NFPA 70. The generator shall be connected to a transfer switch that switches all conductors other than the equipment grounding conductor. The frame of the generator shall be connected to an approved grounding electrode.

For power outages, permanently installed stationary generators are better suited for providing backup power to the home. Even a properly connected portable generator can become overloaded. This may result in overheating or stressing the machine's components, possibly leading to a generator failure.

Before connecting electrical devices, allow the generator to run for a few minutes to stabilize the speed and voltage output.

CAUTION: Become familiar with the markings on the panel before connecting electrical devices.

AC Usage

Connect electrical devices running on AC current according to their wattage requirements. The chart below shows the rated and surge wattage of the generator.

Model	Rated Wattage	Surge Wattage
PS50	900W	1200W

The rated (running) wattage is the wattage the generator can produce on a continuous basis.

The surge wattage is the maximum amount of power the generator can produce for an extremely short period of time (seconds). Many electrical devices such as refrigerators require short bursts of extra power in addition to the rated wattage listed by the device to start their motors. The surge wattage ability of the generator covers this extra power requirement.

The total running wattage requirement of the electrical devices connected to the generator should not exceed the rated wattage of the generator itself. To calculate the total wattage requirement of the electrical devices you plan to connect, find the rated (or running) wattage of each device. This number should be listed somewhere on the device or in its instruction manual. If this wattage cannot be found, calculate it by multiplying the Voltage requirement by the Amperage drawn:

$$\text{Watts} = \text{Volts} \times \text{Amperes}$$

If these specifications are not available, estimate the wattages requirement of the device by using the chart in next page.

When the rated wattage requirement of each electrical device has been determined, add these numbers to find the total rated wattage needed. If this number exceeds the rated wattage of the generator, **DO NOT** connect all these devices. Select a combination of electrical devices, which have a total rated wattage lower than or equal to the rated wattage of the generator.

CAUTION: The generator can run at its surge wattage capacity for only a short time. Connect electrical devices requiring a rated (running) wattage equal to or less than the rated wattage of the generator. Never

connect devices requiring a rated wattage equal to the surge wattage of the generator. This can trip the circuit protectors (circuit breakers).

Tool or appliance	Rated watts	Additional surge watts
Electric water heater (40 Gal)	4000	0
Hot plate	2500	0
Radial arm saw	2000	2000
Electric stove (each element)	1500-2800	0
Circular saw	1500	1500
Air compressor (1 HP)	1500	3000
Window air conditioner	1200	1800
Miter saw	1200	1200
Microwave	1000	0
Well water pump	1000	1000
Reciprocating saw	960	1040
Sump pump	800	1200
Refrigerator freezer	800	1200
Furnace blower	800	1300
Computer	800	0
Electric drill	600	900
Television	500	0
Deep freezer	500	500
Garage door opener	480	0
Stereo	400	0
Box fan	300	600
Clock radio	300	0
Security system	180	0
DVD player	100	0
Common light bulb	75	0

Estimated wattage requirements of common electrical devices

Note: The above wattage figures are estimates. Check the wattage listed on the electrical device before consulting this chart. Once the electrical devices that will be powered by the generator have been determined, connect these devices.

Once you have determined what electrical devices you will be powering with the generator, connect these devices according to the following procedure:

1. Plug in each electrical device with the device turned off. NOTE: Be sure to attach appliances to the correct receptacles (outlets).
2. Push in the circuit reset buttons to the “on” position (NOTE: They may be already pushed in which is the “on” position).
3. Start each appliance/device one at a time. Do not overload the capacity of the generator.

CAUTION: Do not connect 50Hz loads to the generator.

SOME NOTES ABOUT POWER CORDS

Long or thin cords can drain the power provided to an electrical device by the generator. When using such cords, allow for a slightly higher rated wattage requirement by the electrical device. See below for recommended cords based on the power requirement of the electrical device.

Ampere Rating		Total Length of Cord in feet			
More Than	Not More Than	25	50	100	150
0	6	18	16	16	14
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not Recommended	

Maximum extension cord lengths by power requirement

If an overload occurs, shut down the generator. Unplug all electrical devices and wait five minutes. Then, start the unit back up again to get power back.

DC Usage

This Generator is equipped with a 12V DC receptacle. The 12V DC receptacle is not intended for use to charge automotive batteries. The receptacle permits the use of any electrical device designed for use in a 12V DC.



DC Receptacle

MAINTENANCE

Proper routine maintenance of the generator will help prolong the life of the machine. Please perform maintenance checks and operations according to the schedule in below chart.

Recommended maintenance schedule		Each 8 hours or daily	First 8 hours	Every 25 hours	Every 3 months or 50 hours	Every 6 months or 100 hours	Every year	As necessary
Fuel tank	Check level	x						
Air cleaner	Check			x		x		
	Clean					x		
Spark plug	Check /Clean					x		
	Change						x	x
1. Clean fuel tank, strainer and carburetor 2. Clean carbon build-up from combustion chamber							x	
Replace fuel line if necessary							x	

CLEANING THE GENERATOR

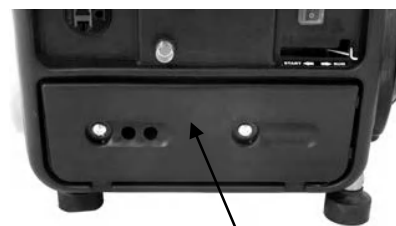
Never clean the generator when it is running! Never clean with a bucket of water or a hose. Water can get inside the working parts of the generator and cause a short circuit or corrosion.

Always try to use the generator in a cool, dry place. If the generator becomes dirty, clean the exterior with a damp cloth, a soft brush, a vacuum or pressurized air.

AIR CLEANER MAINTENANCE

Routine maintenance of the air cleaner helps maintain proper airflow to the carburetor. Occasionally check that the air cleaner is free of excessive dirt. Refer to Recommended Maintenance Schedule in last page. For air cleaner detail:

1. Undo the 2 bolts holding the air cleaner cover in place.
2. Remove the sponge-like elements from the casing.
3. Wipe the dirt from inside the empty air cleaner casing
4. Wash the sponge-like elements in household detergent and warm water. Allow to dry.
5. Drip the sponge-like element in clean engine oil, squeeze out extra oil and reinsert into the casing.
6. Attach the air cleaner cover with the 2 bolts.



Air Cleaner Cover

CAUTION: running the engine with dirty, damaged or missing air cleaner element will cause the engine to wear out prematurely.

SPARK PLUG MAINTENANCE

The spark plug is important for proper engine operation. A good spark plug should be intact, free of deposits, and properly gapped. Refer to Recommended Maintenance Schedule. To inspect the spark plug:

1. Remove spark plug boot. Be careful not to tear insulation or wire.
2. Unscrew the spark plug from the engine using the spark plug wrench provided. There is limited space for the wrench to turn. Use both rows of holes in the spark plug wrench to gain leverage to loosen the plug.
3. Visually inspect the spark plug for cracks or excessive electrode wear. Replace as necessary.
4. Measure the plug gap with a wire gauge. The gap should be 0.7 to 0.8 mm (0.028-0.031 in).
5. If re-using the spark plug, use a wire brush to clean any dirt from around the spark plug base then re-gap the spark plug.
6. Screw the spark plug back into the spark plug hole using the spark plug wrench. Do not over-tighten spark plug. Recommended tightening of spark plug is $\frac{1}{2}$ to $\frac{3}{4}$ of a turn after spark plug gasket contacts spark plug hole. Reinstall the spark plug boot.

DRAINING THE FUEL TANK

Clean fuel tank each year or before storing the generator for extended periods of time. To drain the fuel tank and carburetor:

1. Turn the fuel valve to the “OFF” position.
2. Remove the fuel line between the fuel valve and carburetor. Caution: A small amount of fuel may leak from the hose during removal.
3. Attach a fuel line (not included with the generator) to the exposed end of the fuel valve.
4. Position fuel line into an appropriate container and open the fuel valve allowing fuel to flow into the container.
5. Once fuel is drained, shut off the fuel valve.
6. Start and run the engine until fuel runs out.
7. Store the emptied gasoline in a suitable place.

CAUTION: Do not store fuel for more than 3 months.

STORAGE & TRANSPORT PROCEDURES

CAUTION: Never place any type of storage cover on the generator while it is still hot.

If the generator is being stored for short periods of time (30 to 60 days), add stabilized fuel to the fuel tank until full. NOTE: Filling the tank reduces the amount of air in the tank and helps reduce deterioration of fuel. Run the engine for 2 – 3 minutes allowing stabilized fuel mixture to circulate through the carburetor.

When storing the generator for extended periods of time:

- Drain the fuel tank (see “Draining the Fuel Tank” in the “Maintenance” section).
- Change oil.
- Do not obstruct any ventilation openings.
- Keep the generator in a cool dry area.

When transporting generator:

- Drain the fuel tank if possible (see “Draining the Fuel Tank” in the “Maintenance” section).
- Keep the generator upright. Never place the generator side down. Doing so will make it difficult to start.

TROUBLESHOOTING

Problem	Possible Causes	Probable Solutions
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/oil mixture. 5. Dirty fuel passageways. 6. Carburetor needle stuck. Fuel can be smelled in the air. 7. Too much fuel in chamber. This can be caused by the carburetor needle sticking. 8. Clogged Fuel Filter.	FUEL RELATED: 1. Fill fuel tank with 87+ octane stabilizer-treated unleaded gasoline/oil mixture and open fuel valve. 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/oil mixture only. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 4. Use fresh 87+ octane stabilizer-treated unleaded gasoline/oil mixture. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 5. Clean out passageways using fuel additive. Heavy deposits may require further cleaning. 6. Gently tap side of carburetor float chamber with screwdriver handle. 7. 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. 8. 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. 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. 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.)	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.
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/oil mixture. 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/oil mixture. 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.)

Problem	Possible Causes	Probable Solutions
<i>Engine stops suddenly</i>	1. Fuel tank empty or full of impure or low quality gasoline/oil mixture. 2. Defective fuel tank cap creating vacuum, preventing proper fuel flow. 3. Faulty magneto. 4. Disconnected or improperly connected spark plug cap.	1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline/oil mixture. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Test/replace fuel tank cap. 3. Have qualified technician service magneto. 4. Secure spark plug cap.
<i>Engine stops when under heavy load</i>	1. Dirty air filter 2. Engine running cold.	1. Clean element. 2. Allow engine to warm up prior to operating equipment.
<i>Engine knocks</i>	1. Old or low quality gasoline/oil mixture. 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/oil mixture. 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.
<i>Engine backfires</i>	1. Impure or low quality gasoline/oil mixture. 2. Engine too cold. 3. Incorrect timing.	1. Fill fuel tank with fresh 87+ octane stabilizer-treated unleaded gasoline/oil mixture. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Use cold weather fuel additives to prevent backfiring. 3. Check engine timing.
<i>Attached device doesn't have power</i>	1. Device not plugged in properly. 2. Circuit Breaker tripped. 3. Bad connecting wires/cables. 4. Capacitance is broken 5. Bad electrical device connected to generator 6. Product needs service.	1. Turn off and unplug the device, then plug it back in again and turn on. 2. Turn off and unplug device, Wait for 2 minutes and move the circuit breaker button to the "ON" position, Plug in device and turn on. 3. If you are using an extension cord, try a different one. 4. Replace Capacitance 5. Try connecting a different device. 6. Have product repaired.
<i>Generator runs but doesn't support all electrical devices connected.</i>	1. Generator is overloaded.	Perform these steps: 1. Turn off all electrical devices. 2. Unplug all electrical devices. 3. Turn off generator. 4. Wait several minutes. 5. Restart generator. 6. Try to connect fewer electrical loads to the generator.
	1. Short in one of the connected devices.	1. Try disconnecting any faulty or short-circuited electrical loads.
	1. Air cleaner is dirty.	1. Clean or replace air cleaner.
<i>Attached device begins to operate abnormally</i>	1. Problem with device.	1. Immediately unplug device. Have device repaired by a qualified technician, or replace device.

! Follow all safety precautions whenever diagnosing or servicing the generator or engine. !

The diagram illustrates the electrical system for a vehicle, showing the connection between a generator, a DC converter, and an ignition coil assembly. The system is powered by a 12V battery (labeled '12v out').

Generator and DC Converter:

- The **generator** (labeled 'generator') has three output wires: **red**, **black**, and **purple**.
- The **DC converter** (labeled 'DCW') has three input wires: **red**, **black**, and **purple**.
- The **DC converter** has two output wires: **black** and **ash**.

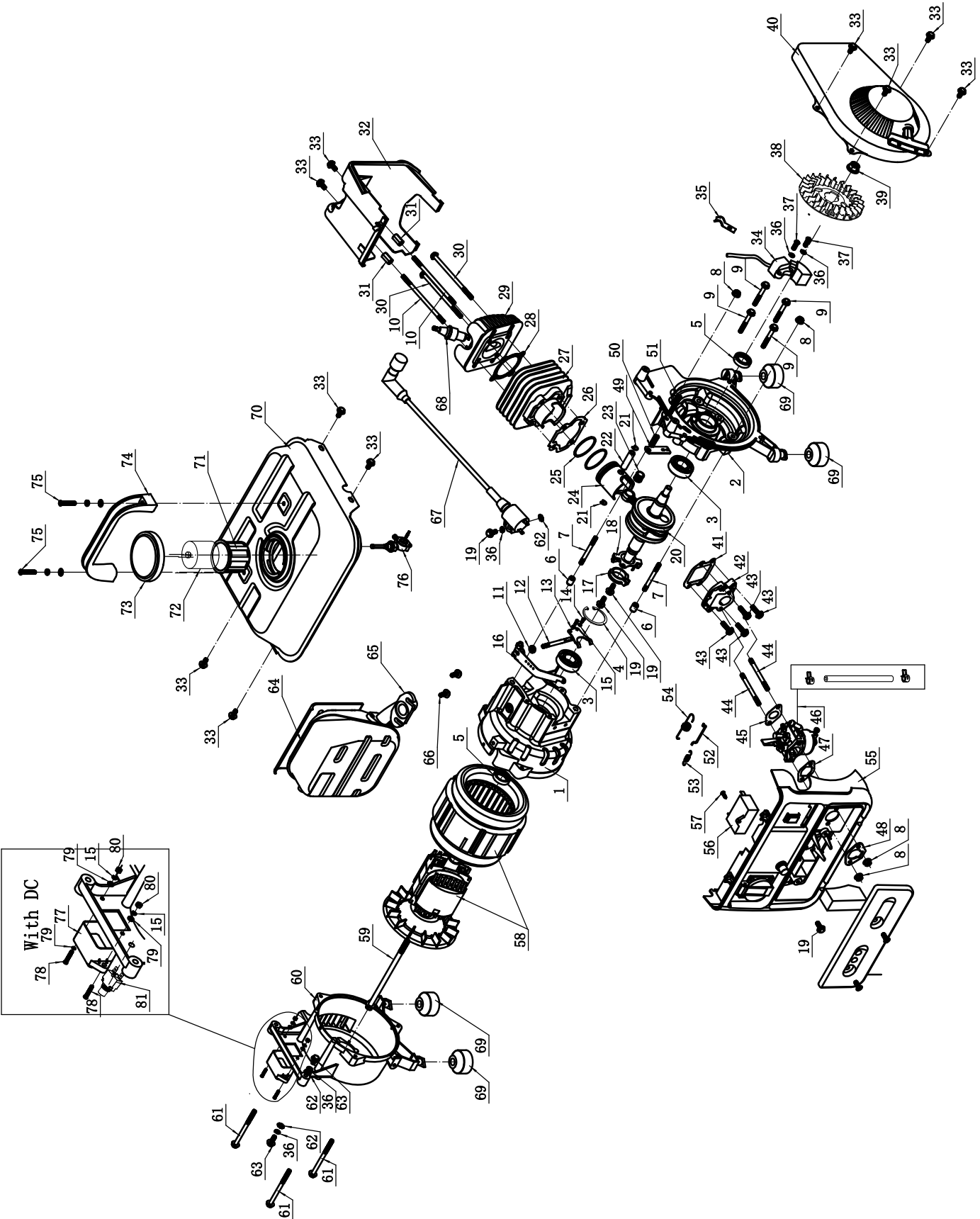
Ignition Coil Assembly:

- The **ignition coil assembly** (labeled 'ignition coil assembly') has three output wires: **black**, **ash**, and **red & white**.
- The **CDI winding** (labeled 'CDI winding') is connected to the **black** wire of the ignition coil assembly.
- The **spark plug** (labeled 'spark plug') is connected to the **red & white** wire of the ignition coil assembly.

Other Components:

- The **AC socket** (labeled 'AC socket') is connected to the **red** and **black** wires of the generator.
- The **DC reset** (labeled 'DC reset') is connected to the **purple** wire of the generator.
- The **12v out** (labeled '12v out') is connected to the **black** wire of the DC converter.
- The **ENG.SW** (labeled 'ENG.SW') is connected to the **ash** wire of the DC converter.

EXPLODED VIEW AND PARTS LIST



NO.	CODE	DESCRIPTION	QTY.
1	022010000100	left crankcase	1
2	022010000200	right crankcase	1
3	521010010201	bearing 6004	2
4	518014200001	hole circlip $\phi 45$	1
5	522010100301	oil seal 20*30*7	2
6	514011001400	pin 10*7*14	2
7	516030605005	stub AM6*50	2
8	512040600001	dentiform flange nut M6	4
9	511050604501	flange bolt M6*45	4
10	516030610005	stub AM6*100	2
11	522010100101	oil seal 6*12*4	1
12	022010000300	governor shaft	1
13	022010000400	governor fork	1
14	515010300800	cross round head bolt M3*8	2
15	513020300000	spring washer $\phi 3$	4
16	022010000500	governor arm	1
17	022010000600	collar bush	1
18	022010100000	weight comp	1
19	511130601601	flange bolt M6*16	4
20	022010200000	crankshaft assembly	1
21	022010000700	circlip	2
22	022010000800	piston pin	1
23	022010004800	roller bearing 14*10*13	1
24	022470000100	piston	1
25	022470000200	first piston ring	1
26	022010001200	cylinder gasket	1
27	022470000402	cylinder	1
28	022470000500	cylinder cap gasket	1
29	022010001500	cylinder cap	1
30	511050610501	flange bolt M6*105	2
31	512060601801	thick nut M6*18	2
32	022010001603	the cover of cylinder cap	1
33	511050601201	flange bolt M6*12	10
34	022010001700	ignition coil assembly	1
35	022010001800	clamp	1
36	513020600000	spring washer $\phi 6$	5
37	515010601601	cross round head bolt M6*16	2
38	022011100001	flywheel	1
39	512101000000	flange nut M10*1.25	1
40	022010400013	recoil starter assembly	1
41	022010001900	intake valve gasket	1

NO.	CODE	DESCRIPTION	QTY.
42	02201050000004	intake vavle assembly	1
43	511050601801	flange bolt M6*18	4
44	516030606001	stub AM6*60	2
45	022010002000	intake gasket	1
46	022010600012	carburetor	1
47	022010002100	carbureor gasket B	1
48	022010002200	carbureor gasket A	1
49	022010002300	supporting plate	1
50	022010002400	compression spring	1
51	515060604000	cross round head bolt M6*40	1
52	022010002500	rod link	1
53	022010002600	tension spring	1
54	022010002700	governor spring	1
55	02501070000404	controll pannel	1
56	029030800112	capacitance	1
57	517090401400	self-tapping screw ST4.2*14	1
58	3VDJ340201	alternator rotor	1
59	511050816001	flange bolt M8*160	1
60	029030400103	rear cover	1
61	511050608001	flange bolt M6*80	3
62	513030600000	dentiform washer $\phi 6$	3
63	511050601001	flange bolt M6*10	2
64	022010800043	muffler	1
65	022010003000	muffler gasket	1
66	511050601601	flange bolt M6*16	2
67	022010003101	CDI winding	1
68	02201000330004	spark plug	1
69	022010003400	absorber	4
70	022010003511	fuel tank	1
71	029019900606	fuel filter	1
72	022010004100	fuel cup	1
73	029019901101	fuel tank cap	1
74	022010003801	handlebar	1
75	51507060300002	cross round head bolt M6*30	2
76	029019900703	fuel switch	1
77	029029101003	DC socket	1
78	515010301600	cross round head bolt M3*16	2
79	513040300000	washer $\phi 3$	2
80	51201030000003	nut M3	2
81	02902921060104	breaker 6A	1

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