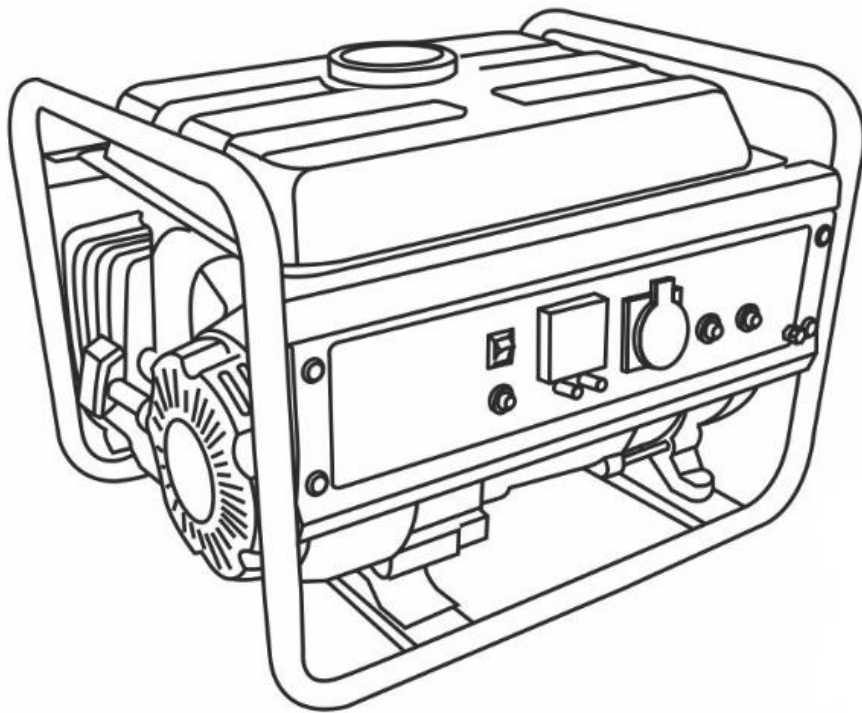




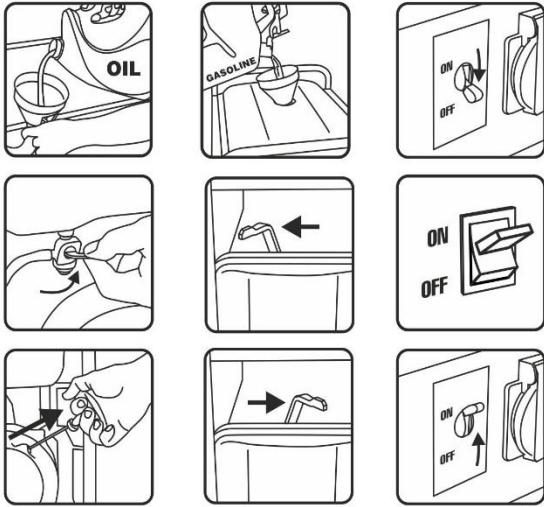
Gasoline Generator

**PE-3001RS / PE-4001RS / PE-7001ES /
PE-8501E3 / PE-9001ES / PE-9001E3FP**

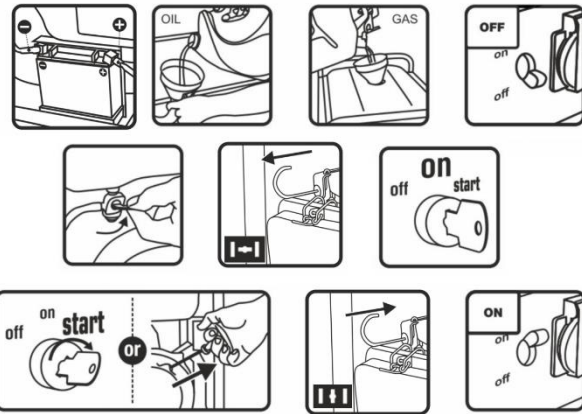


USER MANUAL

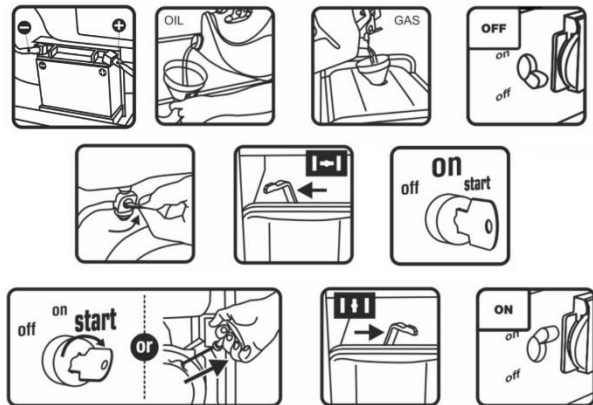
QUICK START



**PE-3001RS
PE-4001RS**

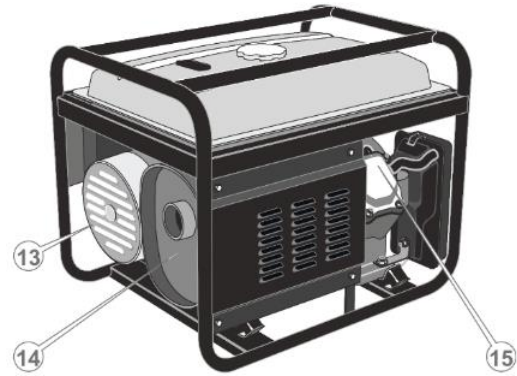
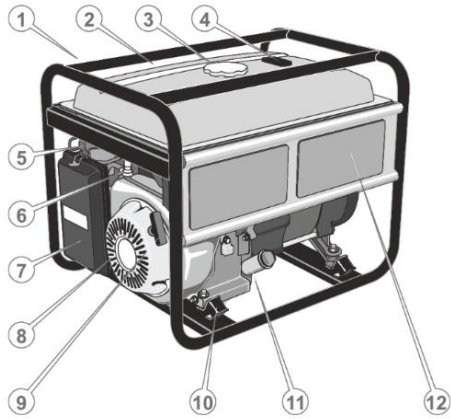


PE-9001ES

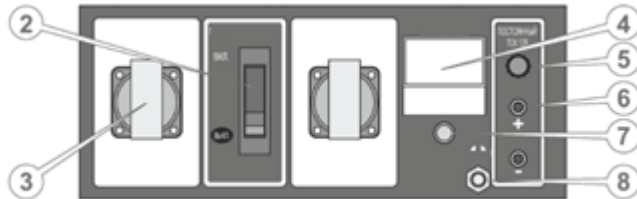
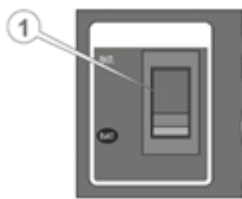


**PE-7001ES
PE-8501E3
PE-9001E3FP**

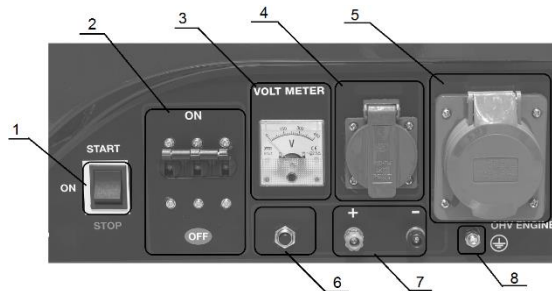
LOCATION OF COMPONENTS AND CONTROLS



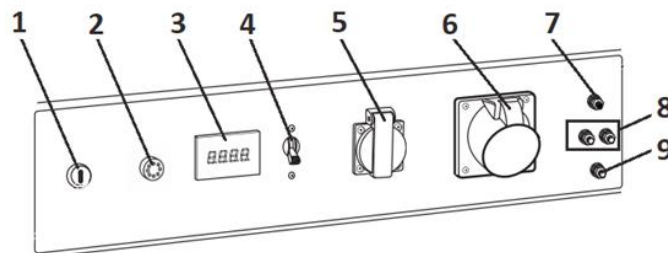
PE-3001RS / PE-4001RS



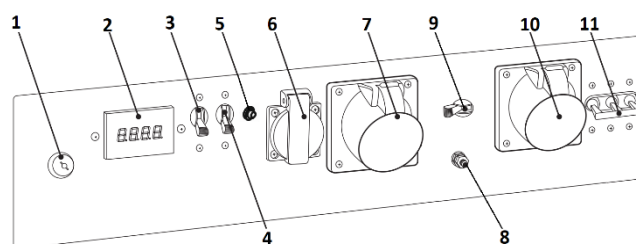
PE-8501E3



PE-9001ES / PE-7001ES



PE-9001E3FP



SPECIFICATIONS

MODEL	PE-3001RS	PE-4001RS	PE-7001ES	PE-8501E3	PE-9001ES	PE-9001E3FP
GENERATOR						
Type	Synchronous / Brushed					
Rated voltage, V	220±10			380±10 / 220±10	220±10	380±10 / 220±10
Nominal frequency, Hz.	60±3					
Maximum power, kW.	2,5	2,8	5,5	6.5 3f~/ 2.0 1f~	6,5	6.5 3f~/ 6.5 1f~
Rated power, kW.	2,3	2,5	5,0	6.0 3f~/ 2.0 1f~	6,0	6.0 3f~/ 6.0 1f~
Number of phases	1			3 / 1	1	3 / 1
AC Overload Protection	+					
AVR Unit	+					
DC Pins	12 V, 8.3 A					-
Sockets 380V/220V/12V, pcs.	0/2/1			1/1/1	0/2/1	1/2/0
DC Circuit Fuse	+					
ENGINE						
Model	170F		190F	190F	190F	190F
Engine Type	Gasoline, single-cylinder, four-stroke, air-cooled					
Maximum power, kW/hp	5,2 / 7,0	5,2 / 7,0	11 / 15,0	11 / 15,0	11 / 15,0	11 / 15,0
Rotation speed, rpm	3000±300					
Engine displacement, cm³	210	210	420	420	420	420
The volume of heating. Baka, l.	15	15	25	25	25	25
Launching	Manual		Manual/Electric Starter	Manual/Electric Starter	Manual/Electric Starter	Manual/Electric Starter
Crankcase volume (oil filling), l.	0,6	0,6	1,1	1,1	1,1	1,1
Engine Oil Type	SAE 30, SAE 10W-30, SAE 10W-40					
Fuel Type	AI-92 gasoline					
Low Oil Protection	+					
Fuel consumption, l/h (at 3/4 load)	1,9	1,9	2,86	2,86	2,86	2,86
Possible operating time at one refueling, hours	7,8	7,8	8,7	8,7	8,7	8,7
Accumulator	-		12V, 17Ah	12V, 17Ah	12V, 17Ah	12V, 17Ah
TOTAL						
Type	Gasoline					
Frame type	Open					
Cooling	Air					
Net weight, kg.	36.5	38	72	73	80	82
Gross weight, kg	38	40	74	75	83,5	84
Dimensions, LxWxH, mm	610x450x470	610x450x470	710x560x570	680x515x555	680x550x550	700x540x540
Operating temperature range, °C	from -5 to +40					
Operating relative humidity, %	no more than 85					
Connector for connecting an automation unit	-				8 pin	-
Voltmeter	Analog	Digital 3-in-1	Digital	Analog	Digital 3-in-1	Digital 3-in-1
Degree of protection	IP23					
Power Factor	0,87					
Noise level, dBA.	74	74	96	96	96	96

DEAR USER!

Thank you for purchasing ECO products. This manual provides the operating rules for the ECO gasoline generator. Read the manual carefully before starting work. Operate the tool in accordance with the rules and safety requirements, as well as using common sense. Save the instructions, you can always refer to them if necessary.

The ECO range is constantly expanding with new models. The products feature ergonomic design for ease of use, thoughtful design, high power and performance.

Due to changes in technical specifications, the content of the manual may not fully correspond to the tool purchased. The manufacturer reserves the right to make changes to the design of individual parts without prior notice. Keep this in mind when reading the instruction manual.

This unit belongs to the class of gasoline generator for non-professional, domestic use. It is not recommended to operate the gasoline generator continuously for more than 5 hours. It is forbidden to operate the gasoline generator for more than 5 minutes without load, or for a long time under a load of less than 10% of the rated capacity of the gasoline generator.

GENERAL SAFETY RULES

Please read this manual carefully. Pay attention to the WARNING stickers on the generator body! Familiarize yourself with the gasoline generator and its operation before you start operating. Familiarize yourself with the operation of the control levers. Know what to do in emergency situations. Pay close attention to the information preceded by the following headings:

**WARNING:**

indicates a hazardous situation that, if not avoided, could result in death or serious injury.

**WATCH OUT:**

indicates a dangerous situation that, if not avoided, could result in moderate injury.

**ATTENTION:**

indicates the likelihood of damage to the equipment if the instructions for use of the product are not followed.

WORK AREA

Keep the work area clean and well-lit. Clutter and poor lighting are the cause of injury.

Do not operate the power station near flammable gases, liquids, or dust. When operating, the exhaust system parts of the gasoline generator become very hot, which can cause ignition of these materials or an explosion.

During the operation of the gasoline generator, do not allow the presence of unauthorized persons, children or animals in the work area. If necessary, provide a fence for the working area of the gasoline generator.

ELECTRICAL SAFETY

- The gasoline generator generates electricity that may cause electric shock if instructions are not followed.

- For safety reasons and to reduce power losses, it is recommended to use wires of the minimum possible length, the cross-section is selected depending on the power of consumers.

- Avoid direct contact with grounded surfaces such as pipes, radiators, and others.

- Do not allow moisture to enter the gasoline generator. Water that enters the gasoline generator increases the risk of electric shock.

- Handle the power wire with care. Replace the damaged wire immediately, as this increases the risk of electric shock.

- When operating power equipment outdoors, use an extension cord designed for outdoor use. Such extension cords reduce the risk of electric shock.

- Before operation, the gasoline generator must be connected to a protective grounding made in accordance with the rules of electrical safety.

- Do not attempt to connect or disconnect electricity consumers while standing in water or on wet, damp ground.

- Do not touch live parts of the gasoline generator.

- Keep all electrical equipment clean and dry. Replace wires with damaged or damaged insulation. Replace contacts that are worn, damaged, or rusted.

- Insulate all connections and disconnected wires.

- To avoid fire, keep the gasoline generator at least 1 meter away from walls and other equipment during operation.

PERSONAL SAFETY

- Be careful. Do not use the gasoline generator if you are tired, under the influence of strong medicines or alcohol. When working with a gasoline generator, inattention can cause serious injuries.

- Do not wear loose-fitting clothing or jewelry while working. Long hair, jewelry, and loose clothing can get caught in the moving parts of the gasoline generator and cause injury.

- Avoid inadvertent triggering. When servicing the gasoline generator, make sure the voltage switch is in the Off position.

- Make sure the power station is free of foreign objects before turning it on.

- Always maintain a stable position and balance when starting the gasoline generator.

- Use protective devices. Always wear personal protective equipment: safety glasses, non-slip shoes, ear muffs or earplugs.

- Before starting pre-operation tests, make sure that the gasoline generator is located on a horizontal surface and the voltage switch is in the Off position. Before replacing attachments or storing the power station, disconnect the spark plug wire. These safety measures reduce the risk of inadvertently starting the gasoline generator.

- Store the non-operating power station in a dry, well-ventilated area, out of the reach of unauthorized persons.

- Do not overload the gasoline generator. Use the power station only for its intended purpose. Proper use will allow the gasoline generator to do the job for which it is intended to do better and safer.

- Check the connection of the moving parts, no breakage of parts that affect the operation of the gasoline generator. If the gasoline generator is damaged, repair it before putting the gasoline generator into operation.

- Leave labels and stickers on the gasoline generator and engine. They carry important information.

- Maintenance of the gasoline generator should be carried out only by qualified personnel.

- When servicing the gasoline generator, follow all relevant instructions in this manual. Use of inappropriate parts and failure to follow the instructions of the manual may create a risk of electric shock and increase the risk of injury.

SAFETY REQUIREMENTS

To avoid accidents during the operation, maintenance or repair of the gasoline generator, follow these rules.

- Do not smoke when filling the tank with fuel.
- Wipe up spilled fuel and store clothing soaked in fuel in a safe place.

- Do not fill the tank with fuel when the engine is running.

- Do not clean or maintain the gasoline generator while the engine is running.

- Do not touch hot components of the unit, such as the exhaust pipe, or place combustible materials on them. Do not allow sparks or sources of fire to appear near the battery pack, as electrolyte gas is highly flammable (especially when charging batteries).

- Avoid contact of the fuel with the skin. Use protective gloves in your work.

- To avoid accidental engine starting, make sure the engine switch is in the OFF position and disconnect the spark plug wire before performing repairs. Place a sign on the control panel that says: "Do not start, repair work is underway!"

- Do not use gasoline and other flammable liquids to clean gasoline generator parts. Use only appropriate non-flammable solvents.

- Do not use defective, poorly insulated, or temporarily connected cables.

- Do not touch bare wires or unplugged connectors.

- Oils are a toxic and dangerous substance. Do not allow it to enter the gastrointestinal tract.

Avoid prolonged and repetitive contact of the oil with the skin. Avoid inhaling the oil vapors of these substances.

- Do not allow hot oil to come into contact with the skin. Before performing any service work, it is necessary to relieve excess pressure in the lubrication system. To avoid oil spills, do not start the engine when the oil filler cap is open.

LOCATION OF COMPONENTS AND CONTROLS

The figures show the location of the main components and controls of a gasoline generator.

1. Frame.
2. Fuel tank.
3. Fuel cap.
4. Fuel level indicator in the tank
5. Choke lever.
6. Fuel valve.
7. Air cleaner.
8. Internal combustion engine.
9. Manual starter.
10. Shock absorbers.
11. Oil filler neck / oil dipstick.
12. Control panel.
13. Alternator.
14. Silencer.
15. Spark plug.

CONTROL PANEL

PE-3001RS / PE-4001RS	PE-8501E3
1. Engine switch. 2. AC fuse. 3. AC sockets 220V. 4. Voltmeter. 5. DC fuse. 6. DC output. 7. Warning light. 8. Grounding terminal.	1. Engine switch. 2. AC fuse. 3. Voltmeter. 4. AC socket 220V 16A – maximum 2.1kW. 5. AC socket 380V 16A. 6. DC fuse. 7. DC terminals 12V 8.3A. 8. Grounding terminal.

PE-9001ES / PE-7001ES	PE-9001E3FP
1. Motor switch (positions: OFF, ON, START). 2. Connector for connecting an automation unit (ATS*). 3. Digital Display (Voltage, Frequency, Operating Time) 4. AC fuse 220V 5. AC socket 220V 16A. 6. AC socket 220V 32A. 7. DC fuse 12V 8. 12V DC connectors 9. Grounding terminal. <i>*only for PE-9001ES</i>	1. Motor switch (positions: OFF, ON, START). 2. Digital Display (Voltage, Frequency, Operating Time) 3. General AC circuit breaker. 4. AC fuse 220V 32A. 5. AC fuse 220V 16A. 6. AC socket 220V 16A. 7. AC socket 220V 32A. 8. Grounding terminal. 9. Voltage switch (220-380 Volts). 10. AC socket 380V 16A. 11. AC fuse 380V 16A.

EQUIPMENT

1. Gasoline generator – 1 pc.
2. Spark plug wrench – 1 pc.
3. Product passport – 1 pc.
4. Cardboard packaging – 1 pc.
5. Transportation kit (wheels, handles) -1 pc.
6. Rechargeable battery (for models with a rechargeable battery)

**ATTENTION!**

Carrying out self-repair or maintenance (except for those specified in the instructions), as well as any change in the design of the gasoline generator, deprives you of the right to warranty service.

TERMS OF USE OF THE GASOLINE GENERATOR

The gasoline generator is intended to be used as an emergency source of power supply. Do not use the gasoline generator for a long time. It is not recommended to operate the gasoline generator continuously for more than 5 hours. It is forbidden to operate the gasoline generator for more than 5

minutes without load, or for a long time under a load of less than 10% of the rated power of the gasoline generator. Do not exceed the rated power of the gasoline generator. Always be sure to take into account the total power of all connected devices, taking into account the coefficients of starting currents for each device. Do not connect two or more gasoline generator in parallel.

Never exceed the values (in amperes and/or watts) of the rated power of the gasoline generator during its operation.

- Operation at maximum power is 3 minutes, once every 2 hours. For continuous operation, do not exceed the rated power of the generator.

- Do not exceed the current rate calculated for the outlets.

- If the power of electricity consumers exceeds the maximum power of the generator, or the value of the starting current exceeds the maximum, or the circuit is closed, in this case, it is necessary to turn off the engine. Understand the cause of the power outage, eliminate the cause and start the engine again.

- If the current consumer suddenly starts working intermittently, reduces the speed, or stops, it must be turned off immediately. Disconnect the current consumer and find out what caused the failure - a malfunction of the current consumer or a change in the rated power of the gasoline generator.

- Constant overloading of the generator can severely damage the gasoline generator and deprive you of the right to warranty service.



ATTENTION!
Use of the gasoline generator for any other purpose not covered by this manual is a violation of the terms of warranty service and terminates the supplier's warranty obligation. The manufacturer and supplier are not responsible for damage caused by the use of the gasoline generator for other than its intended purpose.



WARNING!
Connection of the gasoline generator to a source of consumption for domestic use as an emergency power source must be carried out by a certified specialist who has a license and admission to carry out this type of work.



ATTENTION!
Connect to the gasoline generator only those consumers who meet the electrical characteristics and rated power of the gasoline generator.



ATTENTION!
Use the recommended oil, fuel, replacement filter elements, and factory-recommended spare parts for repair and maintenance of the gasoline generator. The use of non-recommended lubricants, non-original consumables and spare parts deprives you of the right to warranty service of the unit.



WATCH OUT!
After connecting the load to the gasoline generator, you need to carefully check the reliability and safety of the electrical connection. An incorrect electrical connection can lead to damage to the gasoline generator or fire.



ATTENTION!
It is forbidden to operate the gasoline generator without connecting the load for more than 2-3 minutes. The minimum load of the consumer is not less than 10% of the rated capacity of the gasoline generator.



ATTENTION!
Consumers sensitive to overvoltage and/or undervoltage may be damaged when powered by the power supply! Use voltage stabilizers!

RECHARGEABLE BATTERY (for models with a rechargeable battery)

The generator is equipped with a maintenance-free 12V/17Ah battery.



ATTENTION!
When connecting the battery, do not confuse the polarity of the "+" and "-" of the battery, this can cause serious damage to the starter motor and battery pack. The positive wire (red) is connected to the "+" terminal of the battery and the terminal of the starter relay. The negative

wire (black) is connected to the "-" terminal of the battery and the alternator housing.



ATTENTION!
First, the positive wire is connected. Otherwise, the battery may be short-circuited.



ATTENTION!
The accumulator battery must be fixed to the generator in its regular place using the provided fasteners. Unreliable fastening of the battery leads to its mechanical damage, premature destruction of terminals and short circuits.



ATTENTION!
During the storage period of the generator, the battery must be charged every 3 months. Charger not included.



ATTENTION!
Do not disconnect the battery when the generator engine is running.

PROTECTIVE EARTHING DEVICE

To arrange grounding in an open area, it is necessary to use one of the following grounding conductors:

- a metal rod with a diameter of at least 15 mm, a length of at least 1500 mm;
- a metal pipe with a diameter of at least 50 mm, a length of at least 1500 mm;
- a sheet of galvanized iron with a size of at least 1000 x 500 mm.

Any grounding conductor must be immersed in the ground to permanently moist soil layers. Grounding conductors must be equipped with clamps or other devices that ensure a reliable contact connection of the grounding wire with the grounding conductor. The opposite end of the wire is connected to the ground terminal of the gasoline generator. The resistance of the grounding loop must be at least 4 ohms, and the grounding loop must be located in the immediate vicinity of the gasoline generator.

When installing a gasoline generator at facilities that do not have a grounding loop, metal pipes of the water supply system, sewerage system or metal frames of buildings connected to the ground can be used as grounding conductors. It is strictly forbidden to use pipelines of flammable and explosive gases and liquids as grounding conductors! In all cases, grounding work must be performed by a specialist!



WARNING!
It is strictly forbidden to use the gasoline generator without grounding!

POWER REQUIREMENTS



ATTENTION!
When choosing a gasoline generator, it is necessary to take into account the total capacity of all connected consumers. Take into account the type of load, the inrush current factor of each consumer, the procedure for connecting and disconnecting consumers.

If necessary, consult a specialist to choose the right gasoline generator.

The total capacity of connected consumers (taking into account the inrush current coefficients) should not exceed the rated capacity of the gasoline generator.



ATTENTION!
Gasoline generator failure as a result of overload is not subject to warranty repair

LOAD TYPES AND INRUSH CURRENT

Loads (an electrical device connected to a gasoline generator) are divided into ohmic (active) and inductive (reactive). Active loads include all loads in which the consumed energy is converted into heat (incandescent lamps, irons). Reactive consumers include all consumers who have an electric motor. When starting an electric motor, starting currents occur for a short time, the value of which depends on the design of the motor and the purpose of the power tool. The value of the resulting inrush currents must be taken into account when choosing a gasoline generator. Most electric tools have a starting current factor of 2-3. This means that when such consumers are turned on, a gasoline generator is required, the capacity of which is 2-3 times higher than the power of the connected load. The highest inrush

current coefficient is 7-9 for consumers who do not have an idle phase (compressors, submersible pumps).

Table of Inrush Current Factors to Consider When Choosing a Gasoline generator

Electric power, Station	Consumer	Starting Currents
1	incandescent lamp	1
2	stove	1
3	television set	1
4	Heat Heater	1
5	fluorescent lamp	1.5
6	mercury lamp	2
7	microwave oven	2
8	electric chain saw, planer, drilling machine, grinder, lawn mower, trimmer, cash register	2-3
9	Concrete mixer, circular saw	2-3
10	pressure washer, drill, milling machine, hammer drill	3
11	air conditioner	3
12	washing machine	5-7
13	refrigerator, freezer, compressor	7-9
14	submersible pump	7-9

The data given in the table are averaged and do not reflect the real situation of each specific case. The exact values of the inrush current factor must be obtained from the tool manufacturer.

Approximate calculation of the required gasoline generator capacity

It is necessary to connect a manual electric planer with a motor power of $P = 1000 \text{ W}$ and $\cos\phi = 0.8$. The total power that the planer will consume from the gasoline generator is $1000:0.8=1250 \text{ VA}$. But any gasoline generator has its own $\cos\phi$, which also needs to be considered. With an average $\cos\phi$ value of 0.85, your planer will consume $1250:0.85=1470 \text{ VA}$. If we take into account the minimum required margin of 25% and the coefficient of starting currents indicated in the table, then for the operation of an electric planer, a gasoline generator with a capacity of approximately $P = (1470 + 25\%) \times 2 = 3674 \text{ VA}$ is required. Conclusion: for the normal operation of an electric planer with a capacity of 1000W, a gasoline generator with a capacity of 3700VA is required.

RULES FOR CONNECTING (DISCONNECTING) CONSUMERS TO THE GASOLINE GENERATOR

1. The consumer with the highest starting current is connected first.
2. Next, consumers are connected in descending order of inrush currents.
3. The last to connect is the consumer with the starting current coefficient $K = 1$ (for example, an incandescent lamp).
4. Consumers must be disconnected in reverse order.



ATTENTION!
Failure to comply with the rules for connecting/disconnecting consumers can lead to the failure of the gasoline generator and is not subject to warranty repair.

12V SOCKET

The 12V outlet is only used to charge 12V batteries with a capacity of 40Ah or less. The load capacity of this output is $12\text{V} \times 8.3\text{A} = 100\text{W}$.

It is possible to use a 12V and 230V socket at the same time, provided that the total power of consumers does not exceed the rated power of the gasoline generator.

CHECK BEFORE YOU START

MOTOR OIL



ATTENTION!!!! The gasoline generator is supplied without oil in the engine crankcase and gasoline in the fuel tank!



ATTENTION!
Each time before starting the engine, it is necessary to check the oil level in the crankcase, if necessary, top up. Engine oil is an important factor that affects the life of an engine. It is necessary to change the oil in the crankcase in a timely manner.


ATTENTION!

Do not use oil for two-stroke engines. It is recommended to use ECO OM4-11 (OM4-106) or other engine oil for SE four-stroke gasoline engine and SFAP1 according to the API classification system, or SAE10W-30, which is the equivalent of the SG class. The viscosity of the oil is selected depending on the ambient temperature at which the gasoline generator will operate.

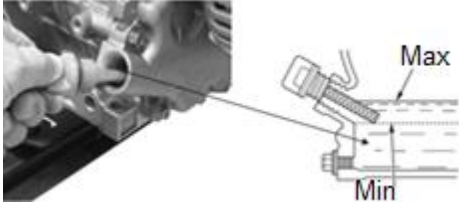

ATTENTION!

Untimely oil change, working on oil that has exhausted its resource, working at a constantly low oil level, working on oil that does not correspond to the ambient temperature, will lead to the failure of the gasoline generator engine and is not subject to repair under warranty.


ATTENTION!

The first oil change is made after 5 hours of engine operation. The second oil change after 20 hours of engine operation. All subsequent oil changes are made every 100 hours of engine operation.

If there is not enough oil in the crankcase when starting the engine, the engine will not start. This can happen if there is no or low oil level. If the oil level is insufficient during operation, the generator (engine) will automatically stop. If the oil is not changed in time, the fuel sensor can jam in one position, so you cannot rely only on protection, check the oil level before each start. The engine must be filled with engine oil to the appropriate mark on the oil dipstick.

CHECKING THE OIL LEVEL IN THE CRANKCASE

ATTENTION!

The oil level in the crankcase is checked when the engine is not running.

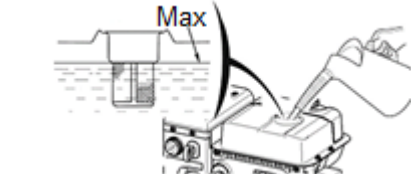
1. Install the power station on a flat horizontal surface. If the gasoline generator has been in operation before, allow the engine to stand for about 5 minutes after stopping.
2. Clean the area around the oil filler neck of debris.
3. Remove the dipstick and wipe it with a clean cloth. Install it without screwing it into the oil filler neck.
4. Remove the dipstick again and check the oil level. It should reach the top mark, which corresponds to the lower edge of the neck opening.
5. If necessary, add oil to the required level.
6. Replace the dipstick.


ATTENTION!

Before starting the engine, check whether the dipstick is installed correctly or not.

FUEL

Use unleaded gasoline, with an octane rating of 92. Never use old and contaminated gasoline or oil-gasoline mixture. Avoid getting dirt or water into the fuel tank.


ATTENTION!

Engine failure due to the use of low-quality or old fuel, as well as fuel with an inappropriate octane number, is not subject to warranty service.


ATTENTION!

Store fuel in containers specially designed for this purpose. Do not use food-grade plastic canisters for storage.


WARNING:

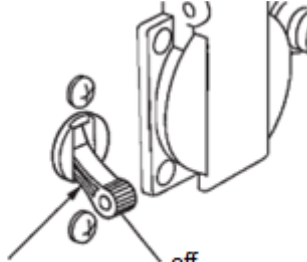
Refueling is carried out with the engine turned off and in places with good

ventilation. When working with fuel, it is forbidden to smoke and use open flame. Fuel spillage is not allowed. It is necessary to prevent repeated or long-term contact of the skin with fuel, as well as inhalation of fuel vapors. Children's access to fuel is prohibited.

Do not fill the fuel tank completely. Pour gasoline into the fuel tank to a level about 25 mm below the top edge of the filler neck to leave room for thermal expansion of the fuel. After filling the fuel tank, make sure that the filler cap is closed properly.

OPERATION OF THE GASOLINE GENERATOR STARTING THE ENGINE

1. Make sure the AC circuit breaker is set to the "OFF" position. If a current consumer is connected to the gasoline generator, it may be difficult to start the engine.



AC Circuit Breaker

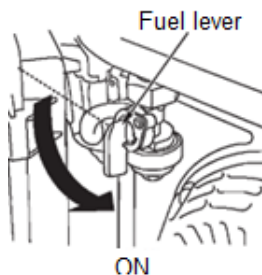
For models with phase selection, set the 220/380V switch to the desired position.



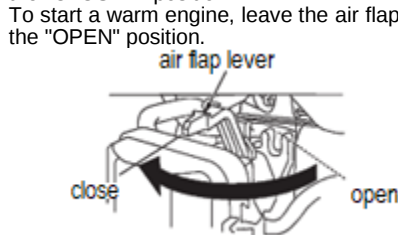
ATTENTION! Switching of 220/380V modes on the model is carried out only when the engine is stopped.

230 V **380 V**

2. Turn the fuel lever to the "ON" position and turn the engine switch to the "ON" position.

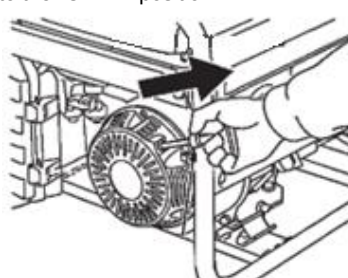


3. To start a cold engine, turn the air flap lever to the "CLOSED" position. To start a warm engine, leave the air flap lever in the "OPEN" position.



4. **MANUAL START** - Slowly pull the starter handle until resistance appears, then pull sharply in the direction indicated by the arrow. Do not pull the rope all the way through. After starting, while still holding the handle, allow the starter to return to its original position.

If the engine does not start after several attempts, repeat the start procedure by setting the air flap lever to the "OPEN" position.


For models with electric start

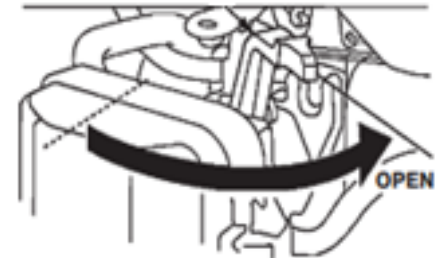
5. Turn the key in the ignition to the ON position

- 5.1 **ELECTRIC START** - Turn the key to start the engine in the ignition switch to the START position and hold it.


ATTENTION!

Hold the key in position for no more than 5 seconds.

7. If the air flap lever was set to the "CLOSED" position during starting, gradually move it to the "OPEN" position as the engine warms up.



6. Let the motor idle for a minute and connect the consumer to the gasoline generator and turn the AC circuit breaker to the "ON" position. (See the section "Rules for connecting consumers").


ATTENTION!

Do not release the starter handle abruptly from the upper position, otherwise the cord will wrap around the flywheel and the starter will break. Release the handle slowly to avoid damage to the starter. Failure to comply with these requirements of the instructions often leads to a breakdown of the starter and is not subject to warranty service.

ENGINE SHUTDOWN

In the event of an emergency, turn the ignition switch to the OFF position and close the fuel lever to stop the gasoline generator in an emergency. To stop the gasoline generator in normal operating mode, the following actions must be performed:

1. Disconnect all consumers sequentially (See the section "Rules for connecting consumers").
2. Let the gasoline generator idle for 20-30 seconds. Do not turn off the engine immediately, as this can lead to a sharp increase in the temperature inside the engine and, as a result, to the failure of the unit.
3. Turn the ignition switch to the OFF position.
4. Close the fuel valve.


ATTENTION!

Do not stop the engine if a load is connected to it. To stop, set the motor switch to the "OFF" - "OFF" position. Be sure to turn off the fuel tap.

BREAK-IN OF THE GASOLINE GENERATOR

The first 20 hours of the gasoline generator operation are the time during which the parts are running-in to each other. Therefore, for this period, observe the following requirements.


ATTENTION!

During the break-in period, do not connect a load whose power exceeds 50% of the rated (operating) power of the unit.

MAINTENANCE

To maintain high efficiency of the gasoline generator, it is necessary to periodically check its technical condition and make the necessary adjustments. The table below shows the frequency of maintenance and the types of work performed.


ATTENTION!

Carrying out self-repair or maintenance (except for those specified in the instructions), as well as any change in the design of the gasoline generator, deprives you of the right to warranty service.

MAINTENANCE SCHEDULE

REGULAR MAINTENANCE SCHEDULE Runs in each specified month or each number of hours, whichever comes first.			Each Use	20 hours of operation	Every 3 months or 50 hours	Every 6 months or 100 hours	Every year or 300 hours	If necessary
1	Motor oil	Check the level	X					
		Replace	After 5 hours of operation	X		X		
2	Air cleaner	Check	X		X(1)			
		Purify						
		Replace				X(1)		X
3	Gas Tank Filter	Check	X					
		Purify				X		
4	Combustion chamber	Purify			500 Engine Hours(2)			
5	Valve clearance	Purify					X(2)	
6	Fuel filter	Purify				X(1)		
7	Fuel line	Replacement						X(2)
8	Fasteners	Check/Replace	X					X
9	Checking for Fuel and Oil Leaks	Check/Tighten	X					
10	Spark plug	Check				X		

(1) - Service should be carried out more frequently when working in dusty conditions.

(2) - These points must be carried out in a specialized service center.



ATTENTION!

The maintenance schedule is applicable to normal operating conditions. If you operate the engine in extreme conditions, such as long-term high load, operation at high temperatures, with high humidity or dust, it is necessary to reduce the time between maintenance.



WARNING!

The exhaust gases of the engine contain carbon monoxide, so maintenance should be carried out when the engine is switched off. If it is necessary to make adjustments on the running engine, ensure good ventilation in the working area.



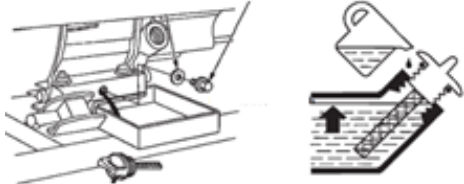
ATTENTION!

Use only original spare parts for maintenance and repairs. The use of spare parts, consumables of inadequate quality, as well as the use of non-original spare parts, can damage the gasoline generator.

ENGINE OIL CHANGE

Before changing the oil, warm up the engine for 1-2 minutes. This will ensure that the oil is drained quickly and completely. Drain the engine oil while the engine is still cool down - this will ensure a quick and complete drain of the oil.

1. Place an oil drain tank under the engine, then remove the filler plug and the drain plug with a sealing washer.



2. Drain the oil completely, then install the drain plug with the new washer. Tighten the cork securely.



NOTE

Follow the rules for disposing of used oil, protect the environment. When changing the oil yourself, dispose of it in accordance with the rules. Drain the oil into a container with a hermetically sealed lid and take it to a disposal point. Do not pour oil into garbage cans, the ground, or gutters.

3. With the power station in a horizontal position, fill the recommended oil up to the top edge of the filler neck.

4. Install the oil filler plug/oil dipstick securely.



ATTENTION!

Change the oil in the engine in a timely manner. Engine failure as a result of working on exhausted oil is not subject to warranty repair.



ATTENTION!

Check the reliability of the oil dipstick before each engine start.



WATCH OUT!

Do not allow the skin of your hands to come into contact with the oil for a long time. Always wash your hands thoroughly with soap and clean water. Store used oil in a special container. It is forbidden to pour used oil on the ground or in the sewer.

AIR FILTER MAINTENANCE

Contamination of the air filter can prevent the passage of air to form a fuel mixture. To prevent engine malfunctions, it is necessary to carry out regular maintenance of the air filter. When working in dusty conditions, it is necessary to service the air filter more often.



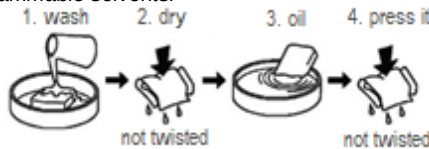
ATTENTION!

Do not operate the engine with a dirty, damaged air filter. It is forbidden to operate the engine with the air cleaner removed or without the filter element. Otherwise, the ingress of dirt and dust will lead to rapid wear of engine parts. Engine failure in this case is not subject to warranty repair.



WATCH OUT!

The air filter can be washed with a warm soapy solution. Do not use gasoline or flammable solvents.



1. Remove the air filter cover.

2. Check the integrity and cleanliness of the air filter.

3. In case of slight contamination, rinse the filter with a warm soapy solution and dry.

4. A dirty or damaged filter must be replaced.

5. Saturate the filter with clean engine oil, squeeze out the excess oil.

6. Replace the air filter.

7. Close the air filter lid.

SPARK PLUG MAINTENANCE

BRISK Recommended Spark Plugs: LR15YC; LR15YS; LR14YC.



ATTENTION!

The use of a spark plug for engine operation, which is different in its parameters from the recommended one, can lead to engine failure. The engine cannot be repaired under warranty.



1. Disconnect the spark plug cap and remove the dirt around the spark plug.

2. Unscrew the spark plug with a spark plug wrench.



ATTENTION!

Never unscrew the spark plug until the engine has completely cooled down - the risk of damage to the threaded part of the cylinder head.

3. Check the spark plug If the electrodes are worn or the insulation is damaged, replace it.

4. Measure the gap between the electrodes of the spark plug with a special dipstick. The gap should be 0.7-0.8 mm. When increasing or decreasing the required gap, it is recommended to replace the plug, since adjusting the gap can lead to a change in the quality of sparking.

5. Gently screw the spark plug in with your hands.

6. After the spark plug is installed in place, tighten it with a spark plug wrench. Install a cap on the candle.



ATTENTION!

When installing a new spark plug to ensure the required tightening, wrap the spark plug with a wrench 1/2 turn after placing the spark plug shoulder on the sealing washer. When installing a used spark plug, to ensure the required tightening, wrap the spark plug with a wrench for 1/4 - 1/8 part of a turn after placing the spark plug shoulder on the sealing washer.



ATTENTION!

The spark plug must be securely tightened. A spark plug that is not properly wrapped or over-tightened can cause damage to the engine.

VALVE ADJUSTMENT



ATTENTION!

The clearance in the valves must be checked every 100 hours of operation.

STORAGE AND TRANSPORTATION

STORAGE

If it is assumed that the gasoline generator will not be operated for a long time, then it is necessary to carry out special conservation measures. The storage place of the unit must be protected from dust and atmospheric influences (rain, snow, sudden temperature changes, etc.).



ATTENTION!

All conservation work is carried out on a cold engine.

1. Drain the fuel from the fuel tank

2. If necessary, change the oil in the engine.

3. Turn out the spark plug and pour about one tablespoon of pure engine oil into the engine cylinder. Slowly turn the engine shaft with a manual starter several times so that the oil spreads over the rubbing surfaces, then screw the spark plug into place with your hands.

4. Slowly turn the motor shaft with the manual starter until you feel resistance.

5. Clean the cylinder fins and surfaces of the gasoline generator from debris and dust, treat all damaged places.

**ATTENTION!**

Gasoline oxidizes and deteriorates during storage. Old fuel is the cause of poor starting, and it leaves tarry deposits that contaminate the fuel system and can be the cause of engine failure. The warranty does not cover damage to the fuel system or engine caused by negligent preparation for storage.

END OF STORAGE

Check the gasoline generator as outlined in the chapter "CHECK BEFORE YOU START WORK". If the fuel has been drained during preparation for storage, fill the fuel tank with fresh gasoline. If you

are storing a container of gasoline for refueling, make sure it contains fresh gasoline. Gasoline oxidizes and deteriorates over time, impairing engine starting.

If the cylinders have been coated with oil during preparation for storage, the engine may smoke a little during start-up. It is ok.

TRANSPORTATION

If the gasoline generator has been used, allow it to cool for at least 15 minutes before loading it into the vehicle. Hot engine and exhaust system components can cause burns and ignite some materials.

To exclude the possibility of fuel leakage during transportation, the gasoline generator must be in a horizontal position. Do not tilt the power station more than 20° toward the air filter.

Turn the engine switch to the "OFF" position and the fuel lever lever to the "OFF" position.

When using transport slings to secure the gasoline generator, they should only be attached to the frame components. Do not attach the slings to the body of the gasoline generator in any part of it.

POSSIBLE MALFUNCTIONS OF THE UNIT AND METHODS OF THEIR ELIMINATION**ENGINE**

Possible cause	Method of elimination
The engine does not start	
The engine stop switch is in the "STOP" or "OFF" position	Move the engine stop switch to the "ON" position
Low oil level	Check and top up the oil
Fuel does not flow into the carburetor	Check whether the fuel lever is open or not, check the availability of fuel
No spark on the spark plug	Check the position of the engine switch and the condition of the spark plug
The engine stops, does not develop power	
Clogged air filter	Check the air filter, clean or replace the filter
Low oil level	Check and top up the oil
Contamination of the fuel filter, malfunction of the carburetor, malfunction of the ignition system, souring of valves, etc.	Take the gasoline generator to an authorized dealer for service
Engine overheating	
Cylinder fins are dirty	Clean the cylinder fins

GENERATOR

Possible cause	Method of elimination
No voltage in the AC outlet	
Circuit breaker test.	Move the circuit breaker to the ON position.
Checking the serviceability of the current consumer or power tool by supplying a predetermined correct voltage.	Replacement or repair of the current consumer or power tool.
The mini-gasoline generator is out of order.	Take the gasoline generator to an authorized dealer for service
Unstable voltage	
Bad contacts	Check contacts
Variable motor speed	Check the engine settings

**CRITERIA FOR LIMIT STATES, CRITICAL FAILURES AND PERSONNEL ACTIONS
ERRONEOUS ACTIONS OF PERSONNEL
THAT LEAD TO AN INCIDENT OR ACCIDENT**

To prevent erroneous actions, personnel should carefully study the operating manual before use. Compliance with the requirements and recommendations of the instruction manual will prevent possible erroneous actions when working with the device, ensure the optimal functioning of the product and extend its service life.

Main erroneous actions:

Start using the device without reading the instruction manual and familiarizing yourself with the gasoline generator structure.

Leaving a working device unattended.

Approval of the device for use by persons (including children) with reduced physical,

sensory or mental capabilities, or lack of life experience or knowledge.

Not using personal protective equipment (ear muffs, goggles or face mask) while operating the device.

LIST OF CRITICAL FAILURES

Failure of internal combustion engine controls.

Failure of the device's security system elements.

Critical damage to the hull elements.

PERSONNEL ACTIONS IN THE EVENT OF AN INCIDENT, CRITICAL FAILURE OR ACCIDENT

In the event of an incident, critical failure and/or accident, further work should be stopped and the cause of the incident should be assessed.

In case of equipment failure, and there is no information in the operating instructions for eliminating the problem, you must contact the service department.

Replacement of worn parts must be carried out by qualified service technicians.

CRITERIA FOR LIMIT STATES

The criteria for the limit state are:

irreversible deformation of parts (assemblies), excluding the operation of equipment in normal mode;

achievement of the assigned indicators; violation of the geometric shape and dimensions of parts, which prevents normal functioning;

Irreversible damage to parts caused by corrosion, erosion, and aging of materials.

INFORMATION FOR THE CUSTOMER

Manufacturer: Eco Group Hong Kong Limited, Taizhou Bizon Machinery Co. Ltd., No25 Building Fexia Gangwan, Jojiang, Taizhou City, Jejiyang province, China, at the manufacturing plant in China for ECO GROUP (Italy).



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