

ORIGINAL INSTRUCTIONS
PB12000EA/PB12003EA
PB15000E/PB15003E
GASOLINE GENERATING SET
OPERATOR'S MANUAL

⚠ WARNING

Read this manual carefully before operation.
This manual includes important guidance for safety operation.

This Manual contains important safety information and instructions for operating this generating set. **PLEASE READ THIS MANUAL CAREFULLY.**

Failure to do so could result in property damage and/or personal INJURY/DEATH.

Provide this manual to any operator of this generating set. This manual should be considered as a permanent part of your generating set and should remain with it when you sell it.

The pictures and figures in the manual shall be only for reference and perhaps there will be difference between pictures & figures and physical products.

All information in this publication is based on the latest product information available at the time of printing. We reserve the right to change, alter and/or improve the product and this document at any time without notice and without incurring any obligation.

Write down the serial number and purchase information of the generating set. Keep this manual and the receipt for future reference.

Model:

Serial number:

Date of purchase:

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I. Operator safety

1. Safety rules



Pay attention to this safety alert symbol. Obey all safety messages that followed by this symbol to avoid possible property damage, INJURY or DEATH.

Each safety message is preceded by a safety alert symbol and one of three words, DANGER, WARNING, or CAUTION.

DANGER

Indicates a hazardous situation which, if not strictly complied with, will result in substantial property damage, serious injury or DEATH.

WARNING

Indicates a hazardous situation which, if not strictly complied with, may result in property damage, serious injury or DEATH.

CAUTION

Indicates a hazardous situation which, if not strictly complied with, could result in property damage or injury.



WARNING

READ THIS MANUAL COMPLETELY BEFORE OPERATING.

DO NOT operate this generator until you have read ALL safety, operation, and maintenance Instructions listed in this manual.

Failure to follow the instructions may result in property damage, INJURY or DEATH.

The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be possessed by the operator.

WARNING

This generator is intended for residential consumer use only. Air cooled generators cannot be run full time.

No personal-modified any part of the generator or any unsuitable usage is allowed.



⚠ DANGER

TOXIC FUMES

The exhaust of the engine contains carbon monoxide, an odorless, colorless, poison gas. Using engine indoors **CAN KILL YOU!**

NEVER use inside any building or any kind of enclosure, **EVEN IF** doors and windows are open.

Place the engine in a well-ventilated area and carefully consider wind and air currents when positioning the engine.



⚠ WARNING

FIRE

Operation of this generator may create sparks that can start fires around dry vegetation.

This generator may not be equipped with a spark arresting muffler. If the generator will be used around flammable materials, or on land covered with materials such as agricultural crops, forest, brush, grass, or other similar items, then an approved spark arrester must be installed.

In some area, a spark arrester is required by law. Please contact local fire agencies for laws or regulations relating to fire prevention requirements.

⚠ WARNING

ACID

Be careful when using any battery.

Keep away from flame, heat or spark.

Battery will exhaust hydrogen while charging. Only charge a battery in a well ventilated place.

Avoid spilled battery acid. If acid liquid contact with skin, wash immediately with clean water.



WARNING

HOT SURFACE

Running engine generators produce heat. Severe burns can occur on contact.

DO NOT touch generator while operating or just after stopping. Avoid contact with hot exhaust gases.

Maintain at least three feet of clearance on all sides to ensure adequate cooling.

Combustible material can catch fire on contact. Maintain at least five feet of clearance from combustible materials.



DANGER

TOXIC FUMES

The exhaust of the engine contains carbon monoxide, an odorless, colorless, poison gas. Using engine indoors **CAN KILL YOU!**

NEVER use inside any building or any kind of enclosure, **EVEN IF** doors and windows are open.

Place the engine in a well-ventilated area and carefully consider wind and air currents when positioning the engine.



DANGER

FIRE OR EXPLOSION

Gasoline is highly flammable and extremely explosive.

Fire or explosion can cause severe burns or death.

Keep flammable items away while handling generator.

Fill fuel tank outdoors and in a well-ventilated area with the generator stopped.

Always wipe off spilled fuel and wait until the fuel has dried before starting the generator.

DO NOT operate the generator with known leaks in the fuel system.

Use proper fuel storage and handling procedures. **DO NOT** store fuel or other flammable materials nearby.

Empty the fuel tank before storing or transporting this generator.

Keep fire extinguisher handy and be prepared if a fire starts.



⚠ DANGER

MOVING PARTS

Moving parts can cause severe injury. Keep hands and feet away.

DO NOT operate engine with covers, shrouds, or guards removed.

DO NOT wear loose-fitting clothing, dangling drawstrings or items that could be caught. Tie up long hair and remove jewelry.

NEVER place fingers, hands, or body near the engine when it is running.



⚠ WARNING

KICKBACK

Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go.

Unintentional startup can result in entanglement, traumatic amputation or laceration. Broken bones, fractures, bruises or sprains.



⚠ DANGER

ELECTRICAL SHOCK

This generator produces powerful voltage and the electricity CAN KILL YOU.

This generator must be properly connected to an appropriate ground to help prevent electric shock. Failure to properly ground generator can result in electrocution, especially if the generator is equipped with a wheel kit. Consult an electrician for local grounding requirements.

Installation should be performed by a certified electrician. Improper installation can result in electrical shock and death.

⚠ WARNING

ACID

(For types equipped with battery)

Be careful when using any battery.

Keep away from open flame, heat or spark.

Battery will exhaust hydrogen while charging. Only charge a battery in a well ventilated place.

Avoid spilled battery acid. If contact with skin is made, wash immediately with clean water.

To reduce the risk of electrical shock, DO NOT use electrical cords that are worn, frayed, bare or otherwise damaged.

DO NOT touch bare wires or receptacles.

DO NOT operate generator in wet weather. Keep the generator dry.

DO NOT handle generator or electrical cords while standing in water, while barefoot, or while hands or feet are wet.

DO NOT allow unqualified persons or children to operate or service the generator.

DO NOT hook up any generator to a building electrical system without the proper use and installation of a transfer switch installed by a qualified electrician.

When using generator for backup power, notify utility company. Use approved transfer generator to isolate generator from electric utility.

Failure to isolate generator from power utility can result in death or injury to electric utility workers due to backfeed of electrical energy.

II. Getting started

1. Unpacking

Remove the Generator from the Shipping Carton

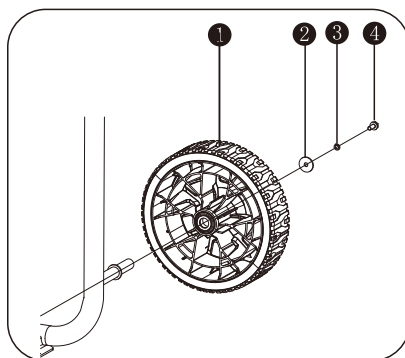
1. Place the shipping carton on a solid, flat surface.
2. Carefully cut each corner of the carton box from top to bottom. Unfold each side flat on the ground.
3. Remove everything from the carton except the generator.

2. Assembly

Your generator require may some assembly. If you have any questions regarding the assembly of your generator, please have your model number and serial number ready and consult your local dealer for help.

1 Install Wheel Kit

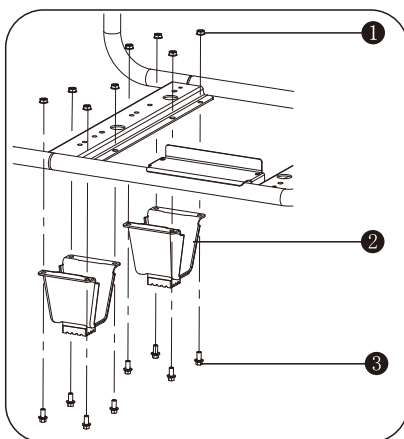
Put the wheel, gasket and spring gasket passing through the wheel shaft, and fix it with the bolt.



- ① Wheel
- ② Gasket
- ③ Spring gasket
- ④ Bolt

2 Install support bracket

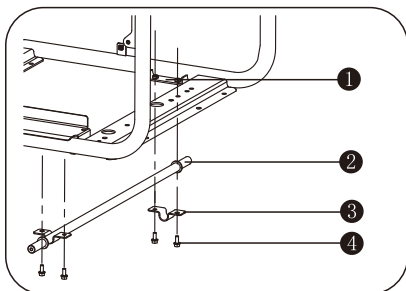
Put the supporting leg bolt passing through the mounting hole on rack, and fix it with the nut.



- ① Nut
- ② Supporting leg
- ③ Supporting leg mounting bolt

3 Install the shaft

Put wheel shaft support block across the mounting plug on the rack, and fix it with the mounting bolt.



- ① Wheel shaft mounting plug
- ② Wheel shaft
- ③ Wheel shaft support block
- ④ Wheel shaft mounting bolt

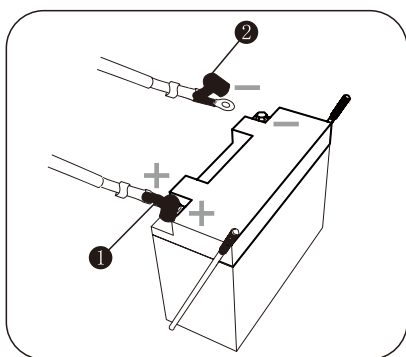
The sealed battery on the generator is fully charged and pre-installed except for the negative (black) battery cable.

install:

Cut off tie wrap that securing the loose end of negative (black) cable. Connect the negative (black) battery cable to the negative (-) terminal on the battery.

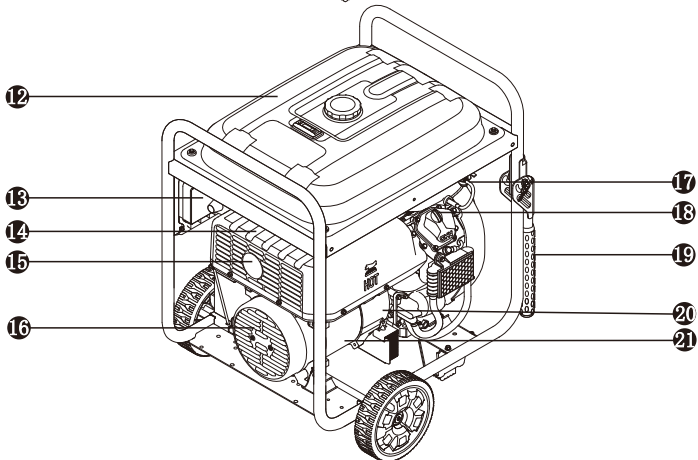
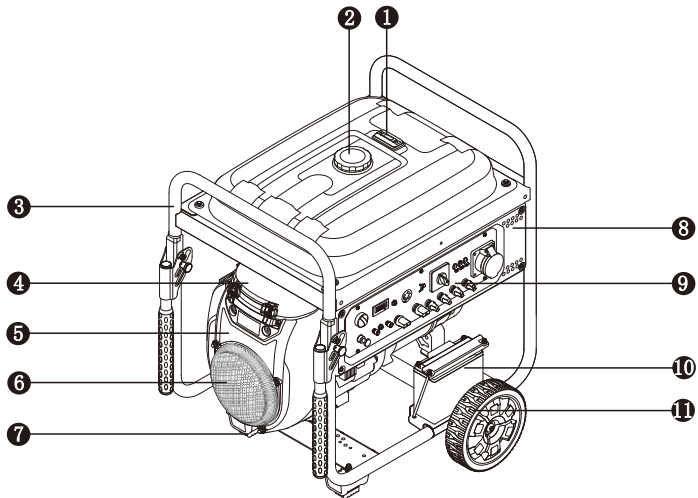
Verify if it is correct and secure that the connections between the battery and generator.

4 Connect Negative Battery Cable



- ① Positive (+) terminal (red)
- ② Negative (-) terminal (black)

3.Features and Controls



- | | | |
|------------------------|-----------------------|--------------------------|
| 1 Fuel level indicator | 2 Fuel cap | 3 Rack |
| 4 Air filter | 5 Engine | 6 Fuel hose |
| 7 Supporting leg | 8 Panel shield | 9 Control panel |
| 10 Battery | 11 Wheel | 12 Fuel tank |
| 13 Voltage regulator | 14 Muffler shield | 15 Muffler |
| 16 Rear cover | 17 Fuel switch | 18 Oil plug |
| 19 Long push handle | 20 Front support rack | 21 Rotor and stator rack |

III. Operating

1. Operating checklist

1 Operating Location

Only use OUTSIDE and place the generator in a well-ventilated area.

Only operate the generator on a flat, level surface and in a clean, dry operating environment.

Allow two feet clearance on all side of the generator while operating it outdoors.

Operate in specified area, if any problem on applicable occasion, Please consult the authorized local authority. In some areas, generators must be registered with the local utility. Generators used to construction sites may be subject to additional rules and regulations.



⚠ DANGER

TOXIC FUMES

The exhaust of the generator contains carbon monoxide, Using engine indoors **CAN KILL YOU!**

NEVER use inside any building or any kind of enclosure, **EVEN IF** doors and windows are open.

Place the generator in a well-ventilated and clean area. Note the wind direction and air current when place the engine.

High altitude

This engine may require a high altitude carburetor kit to ensure correct operation at high altitudes. Consult the authorized local dealer for high altitude kit information if you always operate your engine at altitudes above 5,000 feet (1,500 meters).

⚠ CAUTION

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

⚠ CAUTION

Operation the engine at altitude below 5,000 feet (1,500 meters) with modified carburetor may cause the generator overheat and result in serious engine damage.

2 Operating Condition

Check for loose or damaged parts, signs of oil or fuel leaks, and any other condition that may affect proper operation. Repair or replace all damaged or defective parts immediately.

⚠ WARNING

Failing to correct problem(s) before operation could result in property damage, serious injury or DEATH.

Remove any excessive dirt or debris, especially around the muffler and recoil starter.

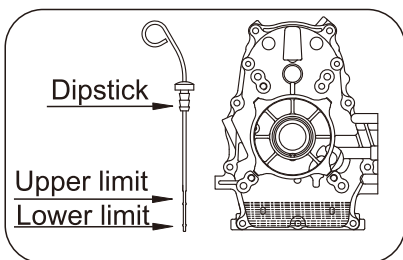
DO NOT move or tip the generator during operation.

3 Engine oil

Place the engine on a level surface with engine stopped.

Remove the dipstick and wipe it clean.

Reinstall dipstick into tube; rest on oil fill neck, DO NOT thread cap into tube.



Remove the dipstick again and check oil level. Level should be within the upper limit and lower limit range on dipstick.

Fill to the upper limit (marked with "H") of the dipstick with the recommended oil if the oil level is low.

Reinstall and fully tighten the dipstick.

Refer to **add oil** instruction in **MAINTENANCE** section for more information.

Oil capacity (rated):
See parameters.

⚠ WARNING

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil recommended in the **MAINTENANCE** section of this manual.

⚠ WARNING

This engine is not filled with oil before send out to the factory. Any attempt to crank or start the engine before it has been properly filled with the recommended type and amount of oil may result in engine damage and void your warranty.

⚠ CAUTION

Operate generator only on level surfaces. The engine is equipped with a low oil sensor (applicable types) that will automatic stop the engine when the oil level falls below the safe limit. To avoid the inconvenience of an unexpected shutdown, fill to the upper limit and check the oil level regularly.

4 Engine fuel

With the engine stopped, check the fuel level. Refill the fuel tank if necessary.

Use clean, fresh, regular unleaded gasoline Do not fill the fuel when generator is running indoors or in high temperture.

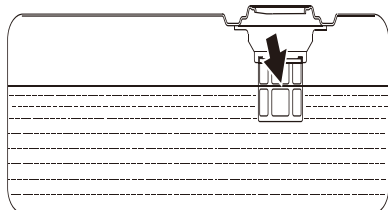
DO NOT mix oil with gasoline.

Always wipe up any spilled fuel.

Be sure not to fill above the upper limit mark. Always allow room for fuel expansion.

**Fuel capacity (rated):
See parameters.**

**Maximum fuel
Adding position**



⚠ DANGER

Do not fill the fuel tank above the upper limit. Over fill will results in engine die or damage the carbon canister (if equipped) and void your warranty.



⚠ DANGER

FIRE OR EXPLOSION

Gasoline is highly flammable and extremely explosive.

Keep flammable items away while handling gasoline.

Fill fuel tank outdoors and in a well-ventilated area with the generator stopped.

Always wipe off spilled fuel and wait until the fuel has dried before starting the generator.

DO NOT operate the generator with known leaks in the fuel system. Regularly check if there is any leak on fuel system.

Use proper fuel storage and handling procedures. **DO NOT** store fuel or other flammable materials nearby.

Keep fire extinguisher handy and be prepared if a fire starts.

NEVER use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.

It is important to prevent gum deposits from forming in essential fuel system parts, such as the carburetor, fuel filter, fuel hose or tank during storage. Also, experience indicates that alcohol-blended fuels (called gasohol, ethanol or methanol) can attract moisture, which leads to separation and formation of acids during storage.

Acidic fuel can damage the fuel system of the generating set while in storage. Be sure to review the instructions given in "Storage" section.

Gasoline/Alcohol Blends: up to 10% alcohol, 90% unleaded gasoline by volume is approved as a fuel. Other gasoline/alcohol

blends are not approved. Effects of old, stale or contaminated fuel are not warrantable.

CAUTION

To minimize gum deposits in your fuel system and to insure easy starting, do not use gasoline left over from the previous season.

CAUTION

Pressure can build up in the fuel tank. Allow the generator to cool for at least two minutes before removing fuel cap. Loosen the fuel cap slowly to relieve any pressure in the tank.

5 Electrical devices

Disconnect all electrical devices from the generator and switch off the AC circuit breaker before start the engine.

The generator may be hard to start with electrical devices connected.

6 Grounding

The generator must be properly connected to an appropriate ground. It helps prevent electrical shock if a ground fault condition exists in the generator or in connected electrical devices, especially when the unit is equipped with a wheel kit. Proper grounding also helps dissipate static electricity, which often builds up in ungrounded devices.



⚠ DANGER

Electrical Shock

Failure to properly ground the generator can result in electric shock.

A ground terminal on the frame of the generator has been provided on the generator end. For remote grounding, connect a length of heavy gauge (4 mm²) copper wire between the generator ground terminal and a copper rod driven into the ground.

Local electrical codes may also require proper grounding of the unit. We strongly recommend that you consult with a qualified electrician for grounding requirements in your area.

2. Starting the engine

1

Perform operating checklist (See page 9).

2

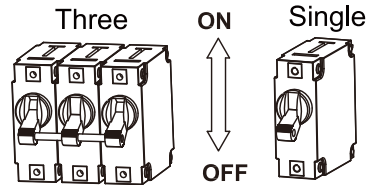
Turn fuel valve to the “**ON**” position.



Fuel valve

3

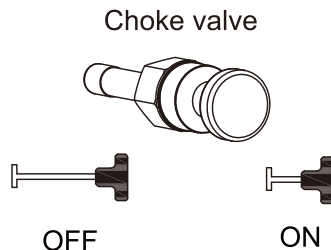
Turn off AC breaker protector.



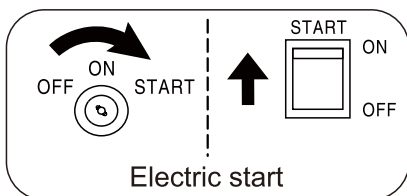
AC breaker protector

4

Turn choke valve to “**OFF**” position.



Electric start: Turn and keep the key to “**START**” position till the engine is started. After the engine is started, release the key to return to “**RUN**” position.



If the starter fails to start the engine, immediately turn off the starter. Don't attempt to restart the engine before the failure cause is identified. Don't restart the engine by replacement of other storage battery without authorization.

⚠ CAUTION

If the engine fails to start after attempt for 3 times or flames out after starting, inspect and ensure that the generator is placed in horizontal surface and enough engine oil is injected.

During starting, don't keep the starting switch to “start” position for more than 5s, and otherwise it is possible to damage the motor. If the unit fails to start within first time, restart after about 10s. After the unit is used for a period, if the starting

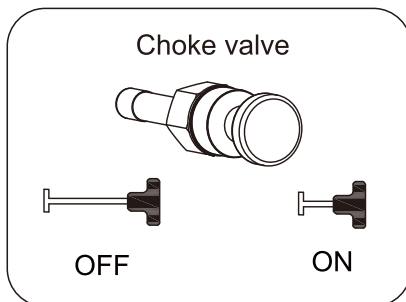
speed of the motor falls, please replace the battery.

During the operation of the unit, the battery supplies power for the solenoid valve of the carburetor. For this, when the unit is turned off, make sure that the starting switch is in “**OFF**” position and otherwise the storage battery voltage is reduced due to the operating solenoid valve of the carburetor, impacting on starting for next time.

If the engine is equipped with an engine oil alarm, it is possible to prevent engine start when the engine oil in the crankcase is lower than the minimum level.

During running-in, routinely inspect the engine oil. See maintenance section for recommended maintenance period.

Turn choke valve to “**ON**” position.



The generator may be normally loaded.

⚠ WARNING

Connect the output terminal of the generator with the electric equipment. Don't start or stop the engine when the electric equipment is in "ON" status.

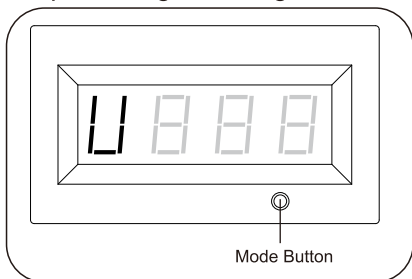
VFT meter (If applicable)

The VFT meter can be used for displaying voltage, frequency(hertz), run time, and total run time as applicable. (Display mode depends on the configuration). The LCD displays each mode by pressing the button below the display.

The display meter sets as either automatic switching mode or manual operation mode. In the manual state, press MODE BUTTON for mode switching; But in automatic mode, MODE BUTTON is used for reset (operate cautiously when necessary).

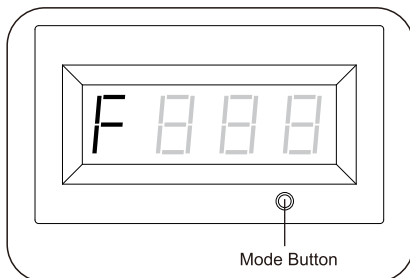
1. Voltage (U):

Output voltage of the generator.



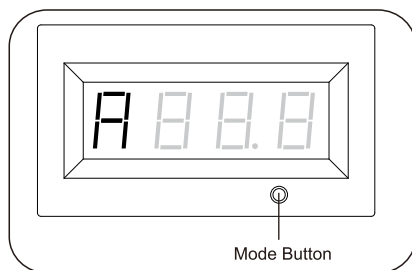
2. Frequency (F):

Output frequency in hertz.



3. Run time (R):

Run time of the generator for the current session.

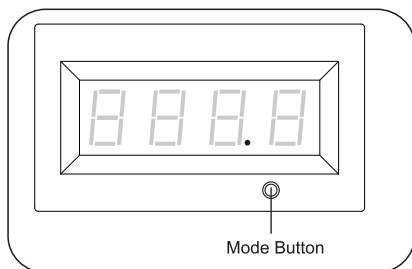


Note: If display value is less than 100, the numeric display will accurate to one decimal place. If the operation time is 100 hour or greater, the display will be "101", "102" and so on.

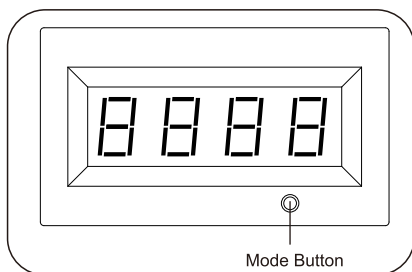
4. Total run time:

Total run time of the generator since first operation. (display mode depends on the configuration)

(1) The display value is accurate to one decimal place; or

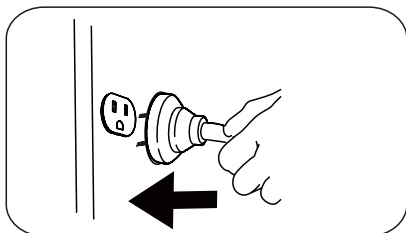


(2) The display value shows as an integer.



3. Connect to Electrical Devices

Inspect power cord for damage before using. There is a hazard of electrical shock from crushing, cutting or heat damage.



⚠ DANGER

ELECTRICAL SHOCK

To reduce the risk of electrical shock, DO NOT use electrical cords that are worn, frayed, bare or otherwise damaged.

DO NOT touch bare wires or receptacles.

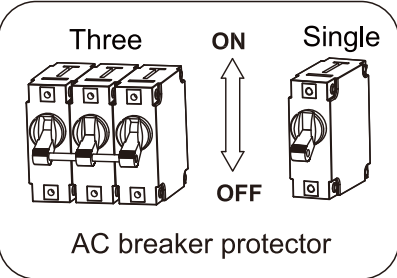
DO NOT handle generator or electrical cords while standing in water, or barefoot, or while hands or feet are wet.

1. Allow the engine to stabilize and warm up for a few minutes after starting.
2. Make sure the electrical devices in “OFF” position. and the load current is not higher than the maximum withstanding current of single socket.

⚠ CAUTION

If the current of single load is higher than the maximum withstanding current of single socket, please connect the load with the terminal.

3. Turn the AC breaker protector to “ON” position.



⚠ CAUTION

If connected devices overheat, turn them off and disconnect them from generator.

Loading capacity

⚠ WARNING

DO NOT overload the generator.

Exceeding the generator’s capacity can damage the generator and/or electrical devices connected to it.

You must make sure your generator can supply enough rated (running) and (starting) watts for the electrical devices at the same time. Follow these simple steps to calculate the running and starting watts necessary for your purposes.

a. Count the electrical devices you will power at the same time.

b. The amount of power you need to run with the devices is the total rated (running) watts of these items.

c. Starting power is the power needed shortly when electric devices start. Since not all devices start at the same time, starting power can be estimated by the max power of all devices plus the total power counted in step b.

Wattage Reference Chart

Electric equipment	Rated power(W)	Start power(W)
Air condition 3HP(400V)	2400	4800
Electric welding	2500	5000
Electric hammer	1000	1500
Water pump	800	1200
30A communication module 230V	1900	3700
50A communication module 230V	3200	6000

⚠ WARNING

It is necessary to equip with circuit protector or switch to isolate the generator from the electric utility when the generator is mainly used for backup. Failure to isolate the generator from the power utility may result in injury or death to electric utility workers and damage to the generator due to back feed of electrical energy.

4. Charging a Battery

Keep the full charge of the storage battery for use at any time.

Charge the storage battery in dry condition.

WARNING

batteries give off explosive hydrogen gas while recharging. An explosive mixture will remain around the battery for a long time after it has been charged. The slightest spark can ignite the hydrogen and cause an explosion, resulting in blindness or other serious injury.

WARNING

DO NOT allow smoking, flame, sparks or any other source of heat around a battery. Wear protective goggles, rubber apron and rubber gloves when working around a battery.

Electrolyte fluid in battery is an extremely caustic sulfuric acid solution that can cause severe corrosive burns. If leak occurs flush area with clear water immediately.

To recharge battery as follows:

- Check fluid level in all battery cells. If necessary, add **ONLY** distilled water to cover

separators in battery cells.

DO NOT use tap water.

- If the battery is equipped with vent caps, make sure they are installed and tight.
- If necessary, clean battery terminals.
- The battery connector should be connected on the output connector with mark “12-VOLTS D.S.” on it.
- Connect battery charge cable clamp with **red** handle to the **positive (+)** battery terminal.
- Connect battery charge cable clamp with **black** handle to the **negative (-)** battery terminal.
- Start engine. Let the engine run while battery recharges.
- When battery has full charged, shut down engine.

CAUTION

Use an automotive hydrometer to test battery state of charge and condition. Follow the hydrometer manufacturer's instructions carefully. Generally, a battery is considered to be at 100% state of charge when specific gravity of its fluid (as measured by hydrometer) is 1.260 or higher.

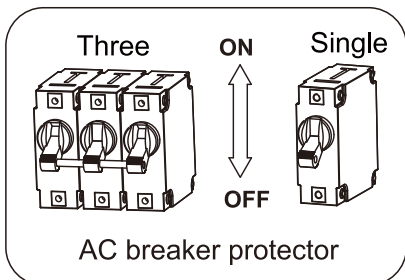
5. Stopping the engine

1

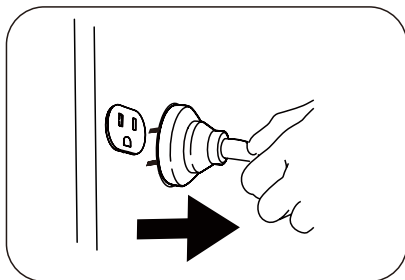
Remove all the load on generator.

2

Turn off AC breaker protector.



Remove the connectors of all electric equipment from the generator panel.



⚠ WARNING

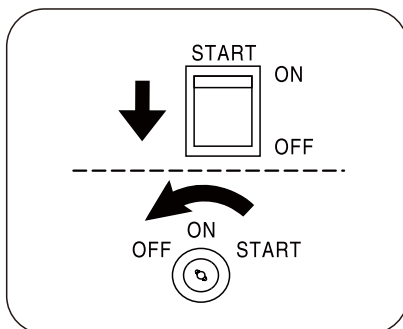
NEVER stop the engine with electrical devices connected and running.

3

Allow the generator run at no load for a few minutes to stabilize internal temperatures of the engine and generator.

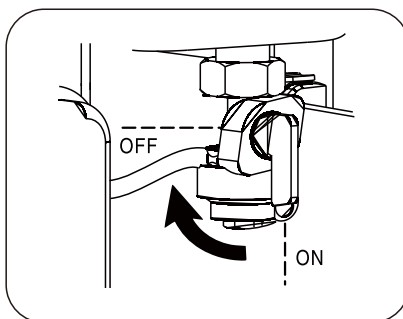
4

Turn off the flameout switch (turn the engine switch to “OFF” position).



5

Turn the fuel valve to “OFF” position.



IV. Maintenance

It is the operator's responsibility to complete all scheduled maintenance in a timely manner. Correct any issue before operating the generator. Always follow the inspection and maintenance recommendations and schedules in this manual.

WARNING

Improper maintenance or failure to correct a problem before operation can cause a malfunction and result in property damage, serious injury or DEATH.

Improper maintenance will void your warranty.



Accidental starts can cause severe injury or death. Remove and ground spark plug wire before performing any service.

CAUTION

The filter element may contains PAHs, PAHs are harmful for your health. Please wear gloves for protection during air filter maintenance.

1. Maintenance schedule

Stop the generator before serving, disconnect all electric devices and battery(if equipped), and cool down the generator completely.

Serve the generator in a clean, dry and flat area, so that no accident would happen during the serving.

Follow the service intervals indicated in the chart below. Service your generator more frequently when operating in adverse conditions.

Contact your local authorized service dealer for your generator or engine maintenance needs.

		Each time before use	10 hours or the first month ²	50 hours or every three months ²	100 hours or every six months ²	300 hours or every year ²
Engine oil	Inspection	√				
	Replacement		√		√	
Air filter	Inspection	√				
	Cleaning			√3		
Spark plug	Inspection and adjustment				√	
	Replacement					√
Spark extinguisher ¹	Cleaning				√	
Idle speed	Inspection and adjustment					√ ⁴
Valve clearance	Inspection and adjustment					√ ⁴
Carbon canister ¹	Inspection	Every two years ⁴				
Low permeability oil tube ¹	Inspection	Every two years ⁴				
Oil tube	Inspection	Every two years ⁴				

NOTE:

1. Applicable types (if available).
2. Before each season and after then (whichever comes first).
3. Service more frequently under severe, dusty, dirty conditions.
4. To be performed by knowledgeable, experienced owners or the authorized dealer.

2. Generator maintenance

Use a damp cloth to clean exterior surfaces of the generator. Use a soft brush to clean the dirt and oil.

Use an compressed air (25 PSI) to clear dirt and debris from the generator.

Inspect all air vents and cooling slots to ensure that they are clean and unobstructed.

WARNING

DO NOT use water to clean the generator. Water can enter the generator through the cooling slots and damage the generator windings.

WARNING

DO NOT modify the generator in any way.

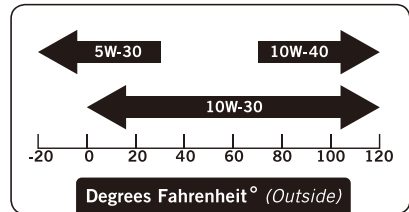
DO NOT tamper with modified the speed regulator. Generator supplies correct rated frequency and voltage when running at factory set.

Tampering with modify the factory set governor will void your warranty.

3. Engine maintenance

Engine Oil

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.



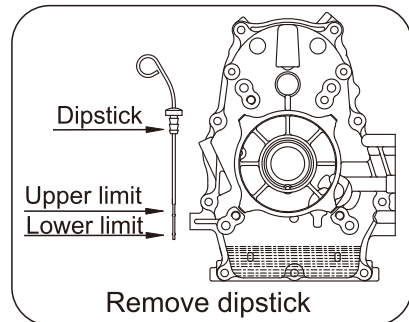
Ambient temperature

Oil capacity (rated):

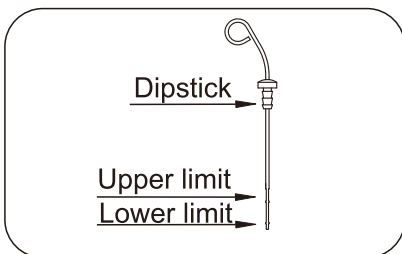
See parameters.

Add oil

- Place the engine on a level surface.
- Remove the dipstick and wipe clean.



- Add recommended oil to the upper limit.



⚠ CAUTION

Oil level check

Reinstall dipstick into tube; rest on oil fill neck.

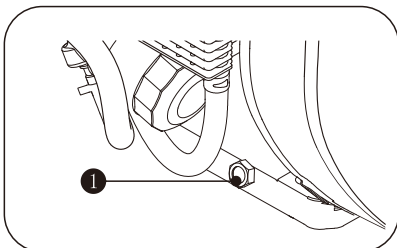
- d. Fully tighten the dipstick.
- e. Dispose of used oil at an approved waste management facility.

Change oil

⚠ CAUTION

Change oil when the engine is warm from operation.

- a. Place the engine on a level surface.
- b. Remove oil dipstick.



① Oil drain plug

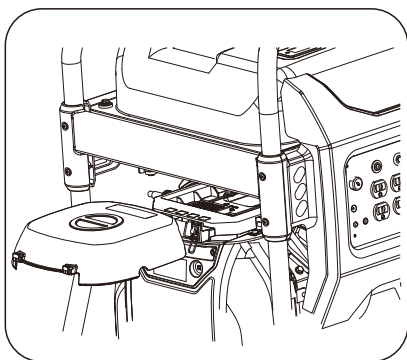
- c. Remove the oil drain plug and allow the oil to drain completely.
- d. fully tighten the drain plug.
- e. Add recommended oil to the upper limit (see add oil instruction above).
- f. Reinstall and fully tighten the dipstick.
- g. Dispose of used oil at an approved waste management facility.

⚠ WARNING

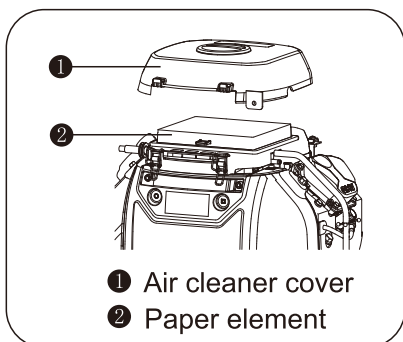
The engine is not filled with oil at the factory. Any operation before it has been properly filled with the recommended type and amount of oil may result in engine damage and void your warranty.

Air filter

- a. Clean area around the air filter.
- b. Unhook retaining clips and remove cover.



c. Remove the paper filter element from the cover.



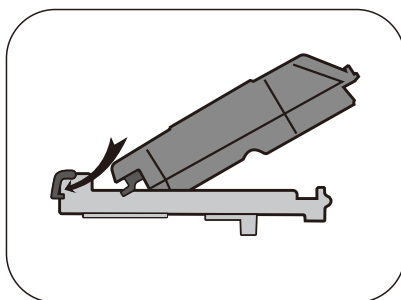
d. Check condition of rubber seal and replace if necessary.

e. Cleaning the paper element: gently tap the filter element for several times. Do not clean the paper filter element with brushes, etc..

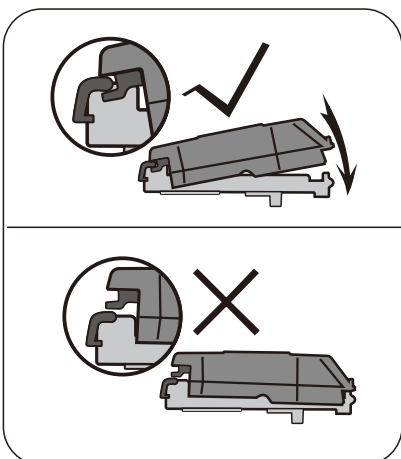
f. Install the paper filter element into the cover.

g. Reinstall air cleaner cover:

- Lean the cover against the base. Push the cover forward to position the knobs into the slots.



- Press the cover and secure the retaining clips.



⚠ CAUTION

The air filter is a critical emission related component and should not be altered or modified in any way.

Operating engine with loose or damaged air cleaner components could cause engine wear and failure, and void your warranty.

Paper element cannot be blown out with compressed air.

⚠ WARNING

Do not run the engine when the air filter is not installed; otherwise, this may cause damage to the engine.

⚠ DANGER

Do not use the gasoline or the cleaning agent with low ignition point to clean the air filter element; Otherwise, this may result in a fire or cause an explosion.

Spark plug

- a. Clean any dirt from the spark plug cap and spark plug base.
- b. Remove the spark plug cap.

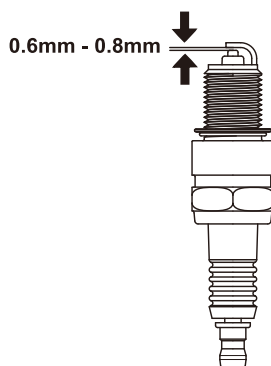
c. Using socket wrench to loose and remove the spark plug.

d. Inspect the spark plug and spark plug washer, if was broken or worn, replace with new one. Clean the spark plug with wire brush if reuse it.

e. Check spark plug gap. Carefully bend side electrode to adjust the gap if necessary.

Spark plug gap:

0.6mm - 0.8mm



Check spark plug gap

f. Carefully thread the plug into the engine **by hand**.

g. After the spark plug is seated, use spark plug wrench to tighten the plug.

Spark Plug tighten Torque: 20-25 N.m

h. Attach the spark plug wire to the plug.

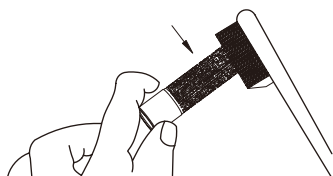
⚠ WARNING

Only use recommended spark plug or equivalent. **DO NOT** use spark plugs that have improper heat range.

Spark Arrester

(Applicable types)

- a. Allow the engine to cool completely before servicing the spark arrester.
- b. Remove the two bolt holding the cover plate which retains the end of the spark arrester to the muffler.
- c. Remove the spark arrester screen.
- d. Carefully remove the carbon deposits from the spark arrester screen with a wire brush.



Clean carbon deposits

- e. Replace the spark arrester if it is damaged.
- f. Reinstall the spark arrester in the muffler and attach with the two bolt.

Speed

The speed has been pre-set at the factory and should rarely require readjustment. Consult your local authorized dealer for such needs.

⚠ WARNING

Authorized adjustment will damage your engine and/or your electrical devices and void your warranty.

Adjustment

There has no other service and/or adjustment need for your generator.

Authorized adjustments or tampering can damage your generator and electrical devices and will void your warranty. Contact your local authorized dealer for such needs.

V. Trouble-shooting

Failure	Trouble	Solution
Engine won't start.	Engine switch is "OFF".	Turn engine switch to the "ON" position.
	No Fuel.	Fill tank per instructions in this manual.
	Inadequate engine oil.	Check oil level. This engine is equipped with a low oil sensor. The engine cannot be started unless the oil level is above the prescribed lower limit.
	No ignition.	Remove the spark plug cap. Clean any dirt around the plug base, then remove the spark plug. Install the spark plug in the plug cap. Turn the engine switch to "ON". Grounding the electrode to any engine ground, pull the recoil starter to see if sparks jump across the gap. If there is no spark, replace the plug. Reinstall the plug and start engine according to instructions in this manual. Consult Customer Service if necessary.
Generator has no output.	Breaker trip	Reset circuit breakers.
	Inadequate cord sets or extension cords.	Check cord sets or extension cords capabilities in section Controls; Cable Size in this manual. Consult Customer Service if necessary.

VI. Storage and transportation

Storage

The generating set should be started at least once every two weeks and allowed to run for at least 20 minutes. Follow the instructions below for longer term storage if the generating set will be out of service for 2 months or more.



⚠ DANGER

Fire or explosion

Gasoline is highly flammable and extremely explosive. Empty the fuel tank and shut off fuel valve before storing or transporting this generating set.

1. Allow the generating set to cool completely before storage.
2. Clean the generating set according to the instructions in the Maintenance section.
3. Drain all fuel completely from the fuel hose and carburetor to prevent gum from forming.
4. Turn off the fuel supply at the fuel valve.
5. Change the oil.
6. Reattach the spark plug.

7. Remove the spark plug and pour about 15 ml of oil into the cylinder. Crank the engine slowly to distribute the oil and lubricate the cylinder.

8. Store the unit in a clean, dry area out of direct sunlight.

Transportation

To prevent fuel spillage when transporting or during temporary storage, the generating set should be secured upright in its normal operating position, with the engine switch OFF. The fuel valve lever should be turned OFF.

⚠ WARNING

When transporting:

Do not overfill the tank.
Do not operate the generating set while it is on vehicle. Take the generating set off the vehicle and use it in a well-ventilated place. Avoid a place exposed to direct sunlight when putting the generating set on a vehicle. If the generating set is left in an enclosed vehicle for many hours, high temperature inside the vehicle could cause fuel to vaporize resulting in a possible explosion.
Do not drive on a rough road for an extended period with the generating set on board. If you must transport the generating set on a rough road, drain the fuel from the generating set beforehand.

VII. Specification

1.Specification Parameter Table

Model \ Feature		PB12000EA		PB12003EA	
Engine parameter	Engine model	GB680(2V78FE/P-A)			
	Style	OHV, air cooled, four stroke, horizontal			
	Displacement(cm ³)	679			
	Ignition system	Inductive			
	Start style	Electric start			
	Oil capacity(L)	1.5			
Generating set parameter	Frequency(Hz)	50	60	50	60
	Voltage(V)	230	120(120/240)	400	
	Rated power(kW)	10.0	11.0	10.0	11.0
	Maximum power(kW)	11.0	12.0	11.0	12.0
	Power factor	1.0		0.8	
	Insulation rate	F			
	Fuel capacity(L)	50			
	Operating temperature(℃)	-5~40			
	Max. site altitude of installation(m)	1500			
	Measured sound pressure level(dB(A))	≤74			
	Measurement uncertainty(dB(A))	≤1.5			
	Guaranteed sound power level(dB(A))	≤97			
	Net weight(kg)	138			

Model		PB15000E		PB15003E	
Feature					
Engine parameter	Engine model	GB750(2V82FE/P)			
	Style	OHV, air cooled, four stroke, horizontal			
	Displacement(cm ³)	750			
	Ignition system	Inductive			
	Start style	Electric start			
	Oil capacity(L)	1.5			
Generating set parameter	Frequency(Hz)	50	60	50	60
	Voltage(V)	230	120(120/240)	400	
	Rated power(kW)	12	13	12	13
	Maximum power(kW)	12.5	13.5	12.5	13.5
	Power factor	1.0		0.8	
	Insulation rate	F			
	Fuel capacity(L)	50			
	Operating temperature(℃)	-5~40			
	Max. site altitude of installation(m)	1500			
	Measured sound pressure level(dB(A))	≤73			
	Measurement uncertainty(dB(A))	≤1.5			
	Guaranteed sound power level(dB(A))	≤96			
	Net weight(kg)	157			

Notes: The gasoline engine with different specification and configurations may have different parameters and may change at any time without notice.



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