

Bio Gas Generators Operation Manual



SHENZHEN PUXIN TECHNOLOGY CO., LTD

[Http:www.puxintech.com](http://www.puxintech.com)

Tel:0086-755-28938251/28938252

Content

I .Safety Precautions.....	2
II .Preparation before Operation.....	2
III.Start, Stop and Storage.....	3
IV.Maintenance.....	4
V .Troubleshooting.....	5
VI.Specification.....	8
VII.Certificate of Compliance.....	9
VIII.Packing List.....	9

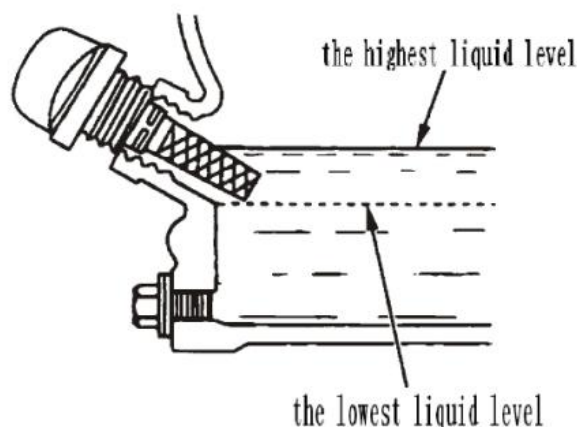
I .Safety Precautions

To ensure safe and reliable, please comply with the following precautions when using the generators. Otherwise, it may lead to the invalidity of the generator guarantee commitment, also may damage the generator or injury people.

1. To prevent from being poisoned, never use the machine indoor or anywhere with air blocked
2. Do not use in rain, snow and other wet environment.
3. Do not connect with the public power supply line.
4. Please keep the generators from the combustibile at least one meter.
5. Please operate the machine on the flat floor.
6. Do not leave children or pets near the machine when using the generator.
7. This is air-cooled generator. To ensure normal engine cooling, you should remove the dirt on the heat sink, fan cover, fan, etc.
8. Operator should be familiar with operation principle and generator structure. know how to emergency stop and control the operation of all components. Not allow untrained personnel to operate the machine, insist on periodic maintenance, and fix up the machine on time when there is problem. Prohibit working when out of work.
9. Gas inlet should be sealed tightly , prohibit gas leakage.
10. To avoid scalding, don't touch the muffler and related hot parts during operation or when just finished using the generator.

II . Preparation before Operation

1. Engine oil is a main factor to affect the performance and the working life of generator, please don't use the two stroke oil and the lubricant which mixed with additive, otherwise, it will reduce the generator working life because of lacking of lubricating property.
2. Please stop running and put it on the flat floor when you check the engine oil level. SAE10W-30 is recommended at normal temperature. Please see the following for checking step:



- 1) Remove the oil feet, and wiped the oil.
- 2) Feet into the oil filler, do not tighten it, check oil level.
- 3) If the oil-foot oil is not stained, indicating that the oil level is too low, then you should add the recommended oil to the fuel filler
- 4) Replace the oil-foot .

Notice: it would damage the engine if you run the generator when the oil level is too low.

3. Hand-pulling the starter 2 to 3 laps to check whether it is in normal compression

III.Start, Stop and Storage

1. Turn on the gas valve and ignition switch, and pull the choke to the closed position
2. Pull the starter rope slowly several times, and then quickly tug starter rope, open the choke immediately after starting the engine.

Notice:

- Keep the generator running for 3~5minutes without load, and check weather there are parts loose, any oil leakage or governor failure. By listening auscultation to check for percussion, loosen and other abnormal noises, if found, you should stop the generator and check.
 - Suddenly increase the load after starting is prohibited, for it would damage the spare parts.
3. Stop Gradually lifted load, and keep the generator running 4 to 5 minutes without load to cooling the engine, then turn off the gas valve and ignition switch for stopping the engine.

Notice:

- Suddenly stop the generator when it is running with heavy load is prohibited, for it would damage the spare parts.
4. Storage If the generator needs long-term storage, you should keep it according to the bellows t o prevent rust:
 - 1) Remove the engine oil and dust on the engine surface.
 - 2) Remove the spark plug, drop 20~25 drops engine oil for lubrication from the spark plug hole to the cylinder, turn the crankshaft for a few laps, then put the piston on the top position where it walks, fit on the spark plug and clean the generator surface.
 - 3) Pack in poly bag and place in dry and ventilated place

IV.Maintenance

To have generator in good condition, reduce parts depreciation and prolong its working life, technical maintenance of the system must be strictly enforced. .please stop the engine before maintenance.

Item	Specific operation	Check before running	Every month or the first 20 hours operation	every 3 months or every 50 hours	every 6 months or every 100 hours	every year or every 300 hours
Spark plug	Check the ignition system, adjust the electrode gap to 0.7-0.8mm,clean the carbon deposit or change the spark plug				✓	
Lubricant	Check the engine oil level, oil leakage, air leakage	✓				
	change the lubricant		✓			
Air filter	Clean and replace if necessary			✓		
Valve lash	Check and adjust after the engine cooling					✓
All cleaning	Remove the cylinder head, cylinder body and piston rings, then clean all the carbon deposit					✓

1. Change the lubricant

- 1) Put the generator on the flat floor, start for a few minutes to raise the temperature of the oil then stop, unscrew the filler plug.
- 2) Put a box under the engine, unscrew the oil drain plug, then the oil will discharge from the crankcase
- 3) Check the oil drain plug, seal and screw down.
- 4) Fill enough lubricant to the prescribed maximum of the oil filler.
- 5) Fit with oil drain plug and packing washer (change if it was broken), don't fall off foreign body into the crankshaft box

2. Clean the air filter

Don't start the generator without air filter, or it would lead to cylinder damaged, don't twist the foam filter, it will make damage.

- 1) Unscrew the nut, and remove the shell of the air filter,
- 2) Take out foam filter from the shell of the air filter
- 3) Clean the foam filter by unflammable wash buffer and squeeze dry.
- 4) Use air filter oil or SAE#20 lubricant to soak the foam filter, then nipping out a folded excess oil, remain the foam filter slightly oily state.

5) Put the foam filter back into the shell of the air filter and make sure the foam filter at the right position without spare room

6) Install the shell of the air filter then fix the clips

V. Troubleshooting

1. Engine startup failure, causes and troubleshooting

phenomenon				causes	solutions
Normal compression ratio	Normal spark plug	Abnormal intake system	Poor intake or no intake	Did not open the gas valve	Open the gas valve
				The main plug jet	Re-cleaning, blowing through
		Normal intake		Inlet pressure error	Adjust the inlet pressure
				The gas composition error	Use the regulated gas
	Normal intake system	Normal high voltage spark	Abnormal spark plug	Electrode dirt , carbon deposit	Remove the dirt and carbon deposit
				Insulator damage, severe burning cloud electrode	Change the spark plug
				Electrode gap not proper	Adjust the electrode gap
		Abnormal high voltage spark	Normal spark plug	High-voltage damage	Change the high-voltage
				Magneto stator coil damage	Change the ignition stator
				Magnet demagnetization	Change the flywheel
Abnormal compression ratio	Normal Gas supply system	Abnormal ignition system		Piston ring wear overrun	Change with new piston ring set
				Piston ring break off	Change with new piston ring set
				Piston ring cement	Remove the carbon deposit
				No spark plug gasket or not tighten	Fixed with gasket and tighten
				Between Cylinder body and cylinder head joint surface leakage,	Check cylinder head gasket and cylinder block roughness of cylinder head joint surface, screw cylinder head bolt according to the required torque and sequence.
				Valve leakage	Check Valve lash and valve sealing, repair if necessary

2. Power decline, causes and Solutions.

phenomenon	causes		solutions
the speed slowed, and in severe decline or extinction speed When rise the Throttle	Gas supply system	Intake system jet	Cleaning, blowing through or change the new parts
		Combustion chamber have carbon deposit	Remove the carbon deposit
		Muffler or exhaust dirt	Remove the dirt
		Air filter jet	Clean the air filter
		Inlet is leaking	Repair or change
	Abnormal compression ratio	Piston, Cylinder, piston ring attrition	Change the damage part
		Cylinder block, cylinder head joint surface leakage	Change cylinder gasket
		Valve lash too big or small	Readjust
		The valve not sealed	repair

3. Engine abnormal running, causes and Solutions.

phenomenon	cause	solutions
Percussion noise from engine	Piston, cylinder, piston ring excessive wear	Change the damage parts
	Piston pin and pin hole wear	Change the piston pin and pin hole
	Connecting rod hole excessive wear	Change the Connecting rod
	Bearing which connected with Crankshaft broken	Change the bearing
deflagration	Engine excessive heat	Find possible cause
	Cylinder have carbon deposit	Clean the carbon deposit
	Unqualified gas	Change with qualify gas
Engine missing	Spark plug electrode gap improper	Adjust the electrode gap
	Faulty Magneto	Check and change the broken parts

4 Engine suddenly stop running, cause, and solutions

phenomenon	Causes		Solutions
Suddenly stop running	Intake system	Empty fuel	Change the gas supply
		Air pipe Jet	Check the pipe and make it through
	Ignition system	Spark plug broken or short circuit because of carbon deposit	Change spark plug
		Side electrode spark plug off	Change the spark plug, and fixed the electrode
		Ignition coil took off	Re-welding
		Magneto short circuit	Change
		The stopping-line touch the engine body	Find the bond strap, re-insulation
	others	scuffing, air valve off	Repair the broken parts

5. Engine overheating, cause, and solution.

phenomenon	causes	solutions
Engine Overheating	Lack of lubricant	Fill lubricant
	Exhaust jet	Clean the exhaust
	Wind guide cover is leaking	Repair the broken parts
	Radiator jet	Clean the Radiator
	Cooling-fan loosen and can not work	Re-install
	Connecting rod deformation cause damage between piston and cylinder	Change the connecting rod
	Cylinder, piston, piston ring wear, cause unsealed between cylinder and crankcase	Change the wear parts
	Generator governor improperly adjusted, resulting in high speed	Adjust governor
	Bearing which connected with Crank shaft was burned	Change the bearing

Notice: keeps the engine running with normal temperature, generally speaking, 80 ℃~110 ℃ is allowed at the air outlet in front of Wind guide cover. And the temperature of crankcase should be around 60 ℃, or we say the engine is overheating.

6. Percussion noise when running, causes and solutions

phenomenon	causes	Solutions
Percussion noise	Piston, cylinder, piston ring wear	Change broken parts
	Connecting rod, Piston pin and pin hole wear	Change broken parts
	The main bearing wear	Change bearing
	Piston ring broken	Change piston ring
Metal percussion when deflagration	Carbon deposit in cylinder	Remove the carbon deposit
	Spark plug electrode gap improper	Adjust electrode gap
	Cam Bushing loosen	Re-install or change
	Engine overheating	Find the cause and troubleshooting
others	Improper adjustment of valve lash	Re-adjust the valve lash
	Flywheel and crankshaft connection loose	Reinstall

VI.Specification

		PX1200BG	PX1500BG/EBG	PX3600BG/EBG
engine	Model	PX154F	PX168-1	PX188F
	Type	Single cylinder, air-cooled, 4-strock, OHV		
	Ignition system	C. T. I.		
	Reference inlet air pressure(Kpa)	2.8 ± 0.5		
	Oil volume(L)	0.4	0.6	1.1
	Noise level at seven meters(db)	63	67	74
Generator	Related frequency(Hz)	50 60		
	Related voltage(V)	110 220	380 110/220	120/240
	Related power(KW)	0.5	1.5	3.0
	Max power (KW)	0.6	1.8	3.5
packing	length(mm)	460	610	700
	width(mm)	370	440	525
	height(mm)	385	450	560
	Weight(KG)	28	41/44	72/76

VII. Certificate of Compliance

Bio Gas Generator

Qualification Certificate

We hereby certify that this generator is in conformity with the relative standard, agree to delivery.

FQC:_____

VIII. Packing List

NO.	Item	Unit	quantity	remark
1	Bio Gas generator	Set	1	
2	Plug	Piece	1 or more than 1	According to the control panel socket
3	Attached tools, screwdriver and special wrench socket for spark plug	Piece	each have 1	
4	Technology document	Piece	1	
5	Operation manual	Piece	1	
6	certificate	piece	1	Part of the operation manual

Carrier: