



ALM – B – 3500 M

USER MANUAL

**PLEASE READ THIS MANUAL CAREFULLY.
IT CONTAINS IMPORTANT SAFETY INFORMATION.**

GASOLINE GENERATOR

Foreword

Thank you for purchasing the company generators. Our aim is to provide customers with high quality generators and to enable correct and satisfactory use of the generators by customers.

This manual, for generators and motors, provides you with all the basic use knowledge and makes sure you can use the company generators with reassurance and satisfactorily.



1. Please replace the lubricating oil after 50 hours of the first use, and replace it every 250 hours thereafter.
2. Do not connect them to general AC motors.
3. Please refer to the relevant operation instructions on gasoline engines for the engines in respect of use and maintenance.
4. Owing to the continuous improvement of products, the content of the manual is slightly different from products, and republications are subject to change without notice. Thank you for your understanding.

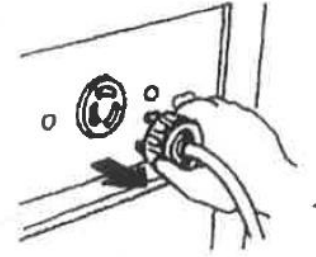
I. Technical Specifications and Control Panel

1 Technical Specifications

Unit Model	ALM-B-3500 M
Power (kVA)	3.0
Maximum Power (kVA)	3.5
Rated frequency (HZ)	50
Rated voltage (V)	220
Rated speed (rpm)	3000
Power factor (cosφ)	0.8
Phase	Single-phase
Dimensions (L×W×H)	620 x 470 x 530
Net weight (Kg)	38
Rated power (hp/rpm)	7.0/3000
Type	Single-cylinder, air-cooled, OHV, 4 Stroke
Displacement (cc)	208
Start mode	Recoil
Cooling mode	Air cooling
Lubricating oil capacity(L)	0.6

START THE GENERATING SET

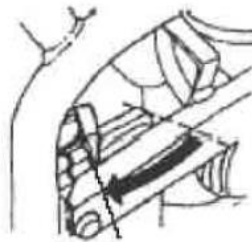
- If you are using the generator set to supply loads directly without connecting it to the building installation, first pull the plugs on the generator and turn the circuit breaker off.



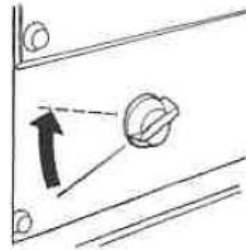
- Turn on the fuel cock



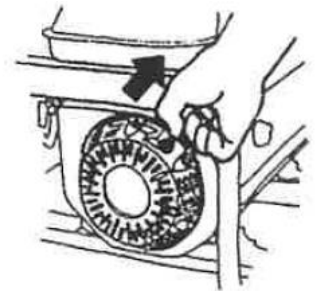
- Open the choke



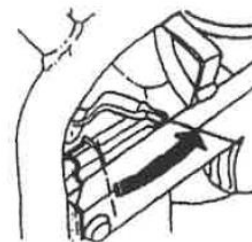
- Turn the engine switch to the on position



- Take up the slack of the starter rope in the twine pulling mechanism. Then, holding the handle tight, quickly pull the rope all the way in one go.



- Close the choke gradually when the generator starts



II. Preparatory Operation Procedures

1. Environmental Conditions

1.1 Outdoor Use

- (1) The gasoline generators shall be arranged in a dry and dust-free place.
- (2) To avoid direct sunlight, the gasoline generators shall be placed in a cool environment.
- (3) The generators shall be placed on the flat ground to prevent movement of the generator unit, and please fix the generators on the ground and fasten their wheels for the purpose of safe operation.

1.2 Indoor Use

- (1) Please use the generators in a well-ventilated environment so that the exhaust gases can be discharged outside. They shall be away from the air inlets of buildings, and make sure that air can circulate while the generators are running.
- (2) Air inlet and outlet and exhaust gas outlet shall be 1.5 meters from any obstructions.
- (3) Please use them below 40°C.
- (4) The generators shall be installed on a solid level surface.

2. Operation Preparation.

2.1 Pre-start checks.

Each part shall be checked correspondingly before starting.

It must be safe the generators and loaded machines, so people around them shall be informed before starting.

There are rotating parts, high temperature components, and high-voltage components inside the generators, so for mute (T-type) units, for the purpose of safety and of avoiding noise, operation preparation cannot be carried out until they stop.



After the warning light is on, stop the engine immediately and check the abnormalities.



Check leakage of engine oil, gasoline oil and air, as well as abnormal noises.

2.2 First-time start check



Dangerous Rotating Parts

There are high-speed moving parts inside the working machine, very dangerous.

The door must be closed and locked when they are working.

Internal maintenance cannot be carried out until the machine stops and cools.

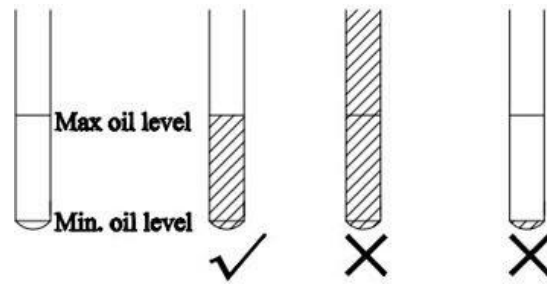
2.3 Performing following checks before starting

(1) Check the engine oil.

Please open the left cabin door silent generator set(Open generator please open the top square panel), and pull out the oil level gauge that is close to the joint of the output terminal of the engine and the motor, to check oil quantity.

(a) Use an oil level gauge to check the engine oil. Normally, the oil level shall be between the two scale lines.

As shown in the figure:



Note: For accurate oil level measurement, the generator must be on level ground. When you install the dipstick, make sure it is reliable.

(b) Add some engine oil immediately if the oil level is lower than the lowest point.

Note: Open the right cabin doorsilent generator set(open turbine please open the top square panel), and unscrew the red cap of the engine oil filler after the exhaust muffler. Add engine oil to the oil port with an engine oiler slowly to prevent oilspill, after which tighten the oil filler cap.



Attention

The oil decreases slowly when the machines run for a long time.

Please pay attention to the amount of oil, to avoid insufficiency of oil in the half way.

(2) Check the fuel volume. Open the right cabin doorsilent generator set , the oil-level display is mounted on the chassis, under the engine, and both the oil filler and the oil -level display are on the right (open generators in the top cover).



Attention

Due to the space between the oil port and the bottom, a certain amount of oil shall be kept in the tank.

(3) Battery check.



Check whether the wiring points are reliable.

The batteries are liquid-filled batteries (sealed maintenance-free type) with an indicator (commonly known as “electric eye”), whose charge status is shown on the mark on them. If it is shown green, they are OK, if black, they are to be charged, and if white, they are to be replaced. During standing or charging of batteries, there will be bubbles under the “electric eye”, so it is easy to be mistakenly shown as white. Before observation when they are standing, the batteries can be gently shaken, or the “electric eye” can be gently knocked to remove the bubbles, so that normal display can be achieved. It is strictly prohibited to dismantle the “electric eye”.

(4) Engine oil discharge valve check.

- a) Remove the oil filter and oil filter receiving disk with a professional tool.
- b) Check and clean up the foreign bodies on the filter screen of the discharge valve that is mounted on the engine body, on the left of the oil filter receiving pipe.
- c) Check the flexibility of the valve spool by slowly pushing it with a crosshead screwdriver.

(5) Other checks.

- a) Outer box frame ground check.

Please check reliable grounding of the rack of the unit and the load enclosure, which must be of protective grounding.

b) Oil leakage check

Go round the machine for a circle, open the machine's cabin door and check whether there is any leakage in it. If any, immediately contact Service Department of the company.

c) Check looseness of the screws and nuts of all parts. If any, tighten them. Pay particular attention to the installation fastening screws of the air cleaner, muffler, and AC generator.

Note: Check disconnection and short circuit of electrical wiring and looseness of terminals.

d) Remove foreign objects inside the machine.

Check whether there are any tools and wastes inside the machine. If any, remove them.

Check whether there are any wastes and flammables around the muffler and engine of the machine. If any, remove them. Check whether the air inlet and exhaust port of the machine are blocked by wastes and paper. If any, remove them.

e) Load power wiring check.

Make sure that the generator capacity can match the load.

III. Safety Procedures

1. Only qualified maintenance personnel can perform testing or maintenance of the generators.

2. The maintenance personnel must wear protective masks, rubber gloves and protective clothing when they work.
3. Do not touch any part of the generators or any loaded part with wet hands or bare hands.
4. When the generators are running, do not let hands, hair, tools, loose clothing, etc. get near their moving parts, such as crankshafts and rotors.
5. Do not inhale exhaust fumes.
6. The engine must be shut down while repairing, which must be carried out after cooling.
7. Supplement of fuel or engine oil cannot be carried out until the engine is shut down and cools completely.
8. Do not smoke while refueling, which shall be away from any open flame.
9. Connect the battery polarity correctly. Do not roll or invert the batteries.
10. Appropriate equipment is needed to lift or support the generator unit and its components.

IV. Fault and Maintenance

1. List of Regular Inspection and Maintenance

◇ Check & Cleaning ○ Replacement

	Inspection and Maintenance Items	Daily Inspection	50	250	500	1000
Engine	Check engine oil volume, and cleanliness	◇				
	Check the fuel, and waste discharge	◇		◇		
	Check the battery power	◇				
	Check air and oil leakage	◇				
	Check looseness of all parts	◇				
	Check the color of engine exhaust	◇				
	Check instruments, and alarm lamps	◇				
	Replace engine oil		☆ first time	○		
	Replace the engine oil filter		☆ first time	○		
	Clean air filter components			◇		
	Clean heat sinks				◇	
	Replace the fuel filter				○	
	Clean the interior of fuel tank					◇
	Clean the air filter element	◇				
	※Check the engine valve clearance				☆ first time	◇
	※ Check the fuel nozzle					◇
	※ Check valve tightness					
	※Check the fuel pump and putter					◇
	※ Check the shockproof rubber					◇
Check nylon hoses and rubber hoses					◇	
Generator	Check the protective grounding	◇				
	Insulation resistance measurement			◇		
	Check circuit terminals and wiring				◇	

※For items marked with , please consult Service Department of the company.

☆ For items marked with first-use time, the first-use time is the time for primary inspection, and they shall be inspected on a normal cycle basis thereafter. Inspection time may be slightly different, depending on engines, and please read the engine manual.

2. Precautions



Dangerous Rotating Parts

There are high-speed rotating parts in the machine, very dangerous.

Internal maintenance cannot be carried out until the machine stops.



Electric Shock

There are high-voltage parts in the working machine, very dangerous.

Please stop running during internal maintenance.



High Temperature Parts

There are high-temperature parts in the machine, dangerous.

Please stop the machine during internal maintenance.

There are heating parts in the engine hood after it stops. Please be careful before the engine is completely cooled down.



Battery Use

The batteries will explode when misused, which will cause serious damage.

The negative cables shall be released during machine maintenance.

3. Fault Diagnosis and Troubleshooting

Phenomena		Presumed Causes	Countermeasures
The engine fails to start	The starter motor fails to run, and even if it runs, it does at a slow speed.	Electric leakage of batteries, or insufficient power supply	Charge them.
		Loosening, disconnection or corrosion of the battery terminals	Install them well after cleaning.
		Poor grounding	Repair it.
		Poor starter switch	Replace it.
		Poor starter	Replace it.
		Broken wire	Repair it.
	The starter works, but the engine fails to start	Lack of fuel	Refuel it.
		Clogging of the fuel filter	Replace it.
		Air in the fuel pipeline	Remove the air. Repeatedly pull the refueling handle of the fuel pump for several times until the air in the pipeline is discharged.
		No engine oil in the lubricating oil gallery or insufficient pressure	Check the engine oil in the oil gallery, and repeat starting for three times.
	When it is cold	Fuel freezing	Use light oil for wintertime, or other fuels applicable in cold regions.
		Freezing of some water in the fuel system	Heat it; drain the water in the fuel tank, fuel filter, and fuel tubes.
		Air in the oil pipeline	Remove the air.
	Shut down automatically, and the speed does not increase	Clogging of the fuel filter	Replace the fuel filter.
		Serious leakage of the valve	Repair the engine.
Clogging of the air filter		Replace the air filter.	
The oil pump's failure to work		Check or replace the pump.	
Shutdown due to decreased oil pressure	Insufficient engine oil	Supplement it.	
	Poor oil pressure switch	Replace it.	
	Clogging of the oil filter	Replace the oil filter.	
Failure to reach the maximum speed	Insufficient fuel	Check fuel line and fuel supply pump	
	Air in the fuel pipeline	Remove the air	

Serious vibration		Not being fastened tightly	Fasten it tightly.
Abnormal sounds	For the engine	Abnormal noise	Repair it.
	For the engine hood	Looseness of fastening bolts	Fasten them.
Overheating		Foreign bodies around	Remove the stuff around the exhaust.
		Dust on the heat sinks	Clean the heat sinks.
		Obstruction of the cooling duct	Clean the air inlet cover.
		Incorrect valve clearance, and lack of oil in the oil pipeline	Adjust the valve clearance (to be maintained by professional personnel), and check the oil pipeline.
Incorrect or no voltage		Poor voltmeter	Replace it.
		Poor AVR	Contact Service Department.
		Short circuit of load	Exclude it.
		Incorrect engine speed	Check the engine.
		Broken line of rotor circuit	Repair it.
		Burning down of engine circuit	Repair it.
Failure to reach the rated voltage		Poor voltmeter	Replace it.
		Poor AVR	Contact Service Department.
		Overload	Reduce the load to the rated one.
		Too low engine speed	Insufficient amount of oil supplied
		Burning down of generator wire(s)	Repair it.
Over-voltage		Poor voltmeter	Replace it.
		Poor AVR	Contact Service Department.
		Looseness of AVR wiring	Re-plug the plug.
Voltage is reduced too much when there is load.		Too long distance of the wires between the generator and the load, or too small cross-sectional area of the wires	Adjust the mounting position to shorten the distance, and increase the wire diameter.
		Poor AVR	Contact Service Department.
		Burning down of coils of the primary winding	Replace the motor.
		Imbalanced load	Adjust it.

Annex III:

Spare Parts List

No.	Name	Spec.	Unit	Qty.	Remarks
1	Engine Manual			1	
2	Generator Unit Manual			1	
3	Fuel filter element	292F		1	
4	Engine Oil Filter	292F		1	
5	the air filter element	292F		1	
6	Engine Oil Filter Wrench	292F		1	
7	Attached Tools	Three-piece	set	1	
8	Plug			2	Supporting the panel
9	Packing List			1	
10	Certificate of Quality			1	
11	Engine Oiler			1	White