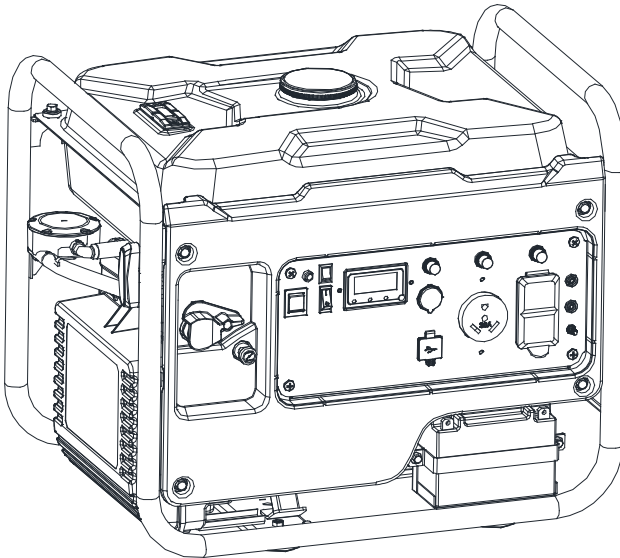




# INVERTER GENERATOR 3850 WATT

## GEN3850W120VD



**IMPORTANT – READ THE USER'S MANUAL BEFORE OPERATION**

## INTRODUCTION

Thank you for purchasing this Inverter Generator from AIMS Power. Before using this product, read the manual thoroughly and carefully, follow the instructions and all safety warnings. This will ensure the safety of yourself and others around you. The inverter generator ships without gas or oil. Do not operate until all checks have been made according to this manual. **YOU MUST ADD OIL AND GAS TO OPERATE. CHECK OIL AND GAS LEVELS OFTEN. WARRANTY VOIDED IF PROPER CARE ISN'T TAKEN.**

## Contents

SAFETY INFORMATION.....	3
CONTROL FUNCTIONS .....	6
PRE-OPERATION CHECK.....	10
OPERATION.....	12
PERIODIC MAINTENANCE .....	17
TROUBLESHOOTING.....	20
STORAGE.....	21
SPECIFICATIONS.....	22

## **WARNING!**

READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THE INVERTER GENERATOR. THE GENERATOR NEEDS OIL AND GAS. OPERATING WITHOUT PROPER OIL AND GAS WILL VOID ALL WARRANTIES.

## **SAFETY INFORMATION**

### **EXHAUST FUMES ARE POISONOUS**

- Never operate the engine in a closed area or it may cause unconsciousness and can cause death within a short period of time. Operate the engine in a well-ventilated area.
- Gasoline and liquefied petroleum gas (propane) are highly flammable and toxic.
- Always turn off the engine when refueling.
- Never refuel while smoking or near an open flame.
- Do not spill any fuel on the engine or muffler when refueling.
- If you swallow any fuel, inhale fuel vapor, or allow any to get in your eyes, see your doctor immediately. If any fuel spills on your skin or clothing, immediately wash with soap and water and change your clothes.
- When operating or transporting the generator, be sure it is kept upright. If it tilts, fuel may leak from the carburetor or fuel tank.
- Use a qualified liquefied petroleum gas tank. Only use a tank with OPD valve.
- The liquefied petroleum tank must be placed upright when it is in use.
- Do NOT expose to direct sunlight or near an open flame. Keep generator out of heat.
- Make sure all fuel lines are well connected and there are no leaks before starting the generator. To do this, use soapy water to see if there are any leaks. Make sure you do not smell propane, that may indicate a bad connection.
- If large quantities of LPG are inhaled and symptoms such as difficulty breathing, vomiting or throat discomfort occur, seek medical advice immediately.
- In case of fire caused by liquefied petroleum gas leakage, first turn off the gas then use fire extinguisher.

## ENGINE AND MUFFLER MAY BE HOT

- Place the generator out of reach so passers-by and children are not likely to touch the generator.
- Avoid placing any flammable materials near the exhaust outlet during operation.
- Keep the generator at least 3 ft from buildings or other equipment, or the engine may overheat.
- Avoid operating the engine with a dust cover.
- Be sure to carry the generator only by its carrying handle.
- Put the generator on flat ground, allowing generator to vent heat freely.

## ELECTRIC SHOCK PREVENTION

- Never operate the engine in rain or snow.
- Never touch the generator with wet hands or electrical shock may occur.
- Be sure to ground (earth) the generator. **FIG.1**

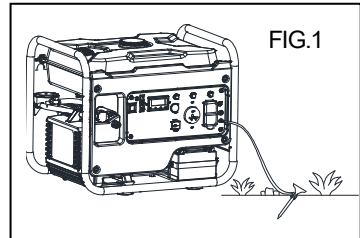
### NOTE:

Use ground (earth) lead that can support capacity.

Diameter: 0.12mm (0.005 in)/ampere

EX: 10 Ampere –1.2mm (0.055 in)

8 AWG



## CONNECTION NOTES

- Do not connect the generator to commercial power outlet.
- This generator is parallel ready and can be operated in parallel with another Aims unit to increase the total available electrical power.

## SAFETY SYMBOLS



Caution - The user should be aware of a general hazard.



Dangerous Voltage



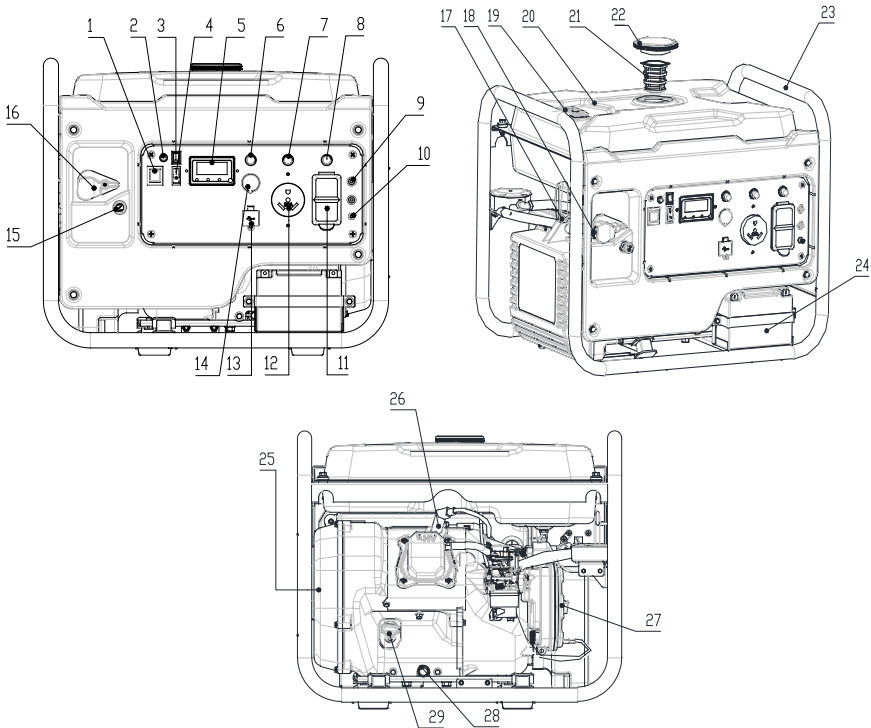
Flammable



Hot Surface - Do not touch.

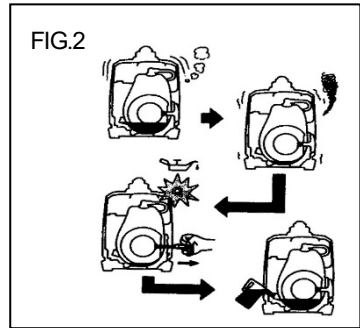
# CONTROL FUNCTIONS

- |                              |                           |                            |
|------------------------------|---------------------------|----------------------------|
| (1) Engine switch            | (2) Output reset          | (3) Economy control switch |
| (4) Battery switch           | (5) Digital display meter | (6) DC breaker             |
| (7) AC breaker 30A           | (8) AC protector 20A      | (9) Parallel outlets       |
| (10) Ground (earth) terminal | (11) 120V OUTPUT          | (12) RV socket             |
| (13) USB output              | (14) DC 12V output        | (15) Choke                 |
| (16) Fuel selector switch    | (17) Recoil starter       | (18) Connection for LP     |
| (19) Fuel meter              | (20) Fuel tank            | (21) Fuel filter           |
| (22) Fuel tank cap           | (23) Carrying handle      | (24) Battery               |
| (25) Muffler                 | (26) Spark plug           | (27) Air filter            |
| (28) Oil drain               | (29) Dip stick            |                            |



## OIL WARNING SYSTEM . FIG. 2

When the oil level falls below the lower level, the engine stops automatically. Unless you refill with oil, the engine will not start again.



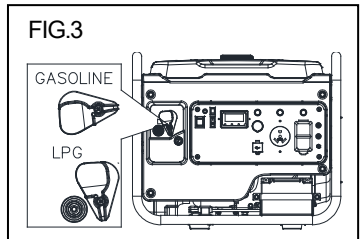
## FUEL SELECTOR SWITCH. FIG. 3

### ① GASOLINE

Shift to gasoline operation, the gasoline fuel valve is open.

### ② LPG

Shift to LPG operation, the gasoline fuel valve is closed, LPG hose quick connect inlet ready for operation.



## ENGINE SWITCH. FIG.4

The engine switch controls the ignition system.

### ① START

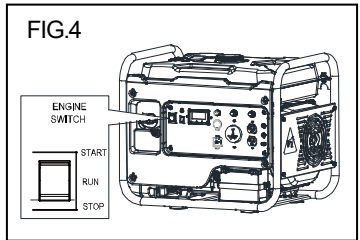
Starting circuit is switched on. The starter motor starts.

### ② RUN

Ignition circuit is switched on. The engine can start.

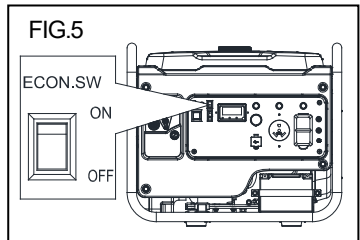
### ③ STOP

Ignition circuit is switched off. The engine will shut off.



## ECONOMY CONTROL SWITCH. FIG.5

When the economy control switch is turned **ON**, this controls the engine's speed according to the connected load for more efficient fuel consumption and less noise.

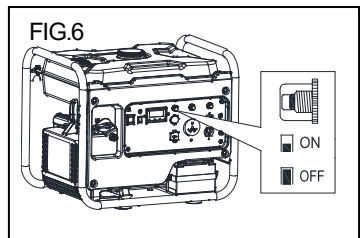


## DC CIRCUIT PROTECTOR. FIG.6

The DC circuit breaker turns off automatically when the load exceeds the generator's rated output.

### **CAUTION:**

Reduce the load to within specified generator's rated output if the DC circuit breaker is off.



## AC OVERLOAD BREAKER

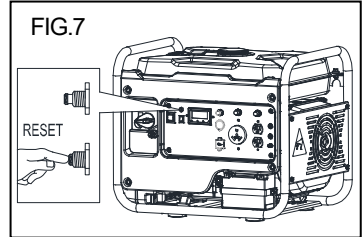
The AC overload breaker will trip when the load exceeds the rated output power of the generator. Reduce the AC load to within the rated output limit of the generator then press ON to reset.

### OUTPUT RESET. FIG.7

Push reset button for 2 seconds, the generator's AC will recover.

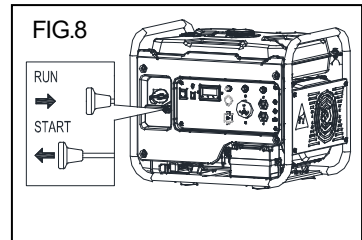
#### NOTE:

Reduce the load of generator to ensure that the total load is within the rated power.



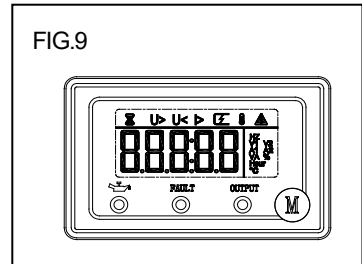
### CHOKE. FIG.8

- ① RUN
- ② START



### DIGITAL DISPLAY METER. FIG.9

The digital display meter shows the voltage, electric current, power and run time by pressing the multifunction button.



- Normal
- Short circuit
- Over current
- Maintenance
- High Volt of AC output with E1AC indicated
- High Volt DC mother line with E2DC indicated
- Low Volt of AC output with E1AC indicated
- Low Volt of DC mother line with E2DC indicated
- MCU high temperature with E3 indicated inverter over temp
- IGBT high temperature with E4 indicated inverter over temp
- Yellow light indicates low oil

**FAULT** Red light indicates overload or fault

**OUTPUT** Green light indicates normal output

- Mode Selections: V1→A1→Hz→VA→Loading PCT→Total Run Time →Current Run Time



## BATTERY SWITCH. FIG.10

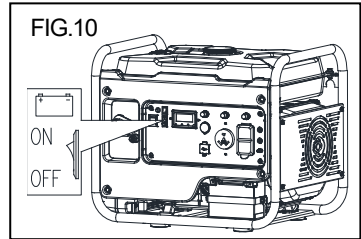
The battery switch controls the circuit of the start motor and carburetor solenoid

### ① ON

Turn the battery switch to **ON**, the circuit of the start motor and carburetor solenoid is connected.

### ② OFF

Turn the battery switch to **OFF**, the circuit of the start motor and carburetor solenoid is disconnected.



**CAUTION:** Always turn the battery switch to the “OFF” position when unit is not in use, this will stop the battery from being drained.

# PRE-OPERATION CHECK

Pre-operation checks should be made each time the generator is used.

## CHECK ENGINE FUEL

- Make sure there is sufficient fuel in the tank. **FIG.11**
- If fuel is low, refill with unleaded automotive gasoline.
- Be sure to use the fuel filter screen on the fuel filter neck.
- Recommended fuel: Unleaded gasoline.
- Fuel tank capacity: **2.3 GAL**

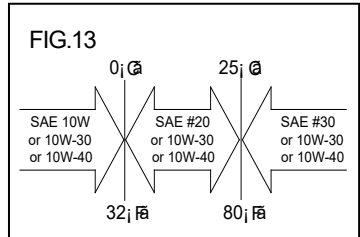
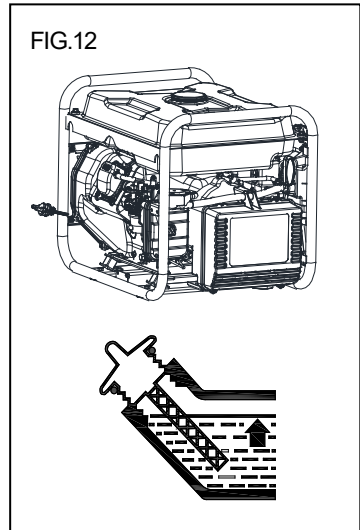
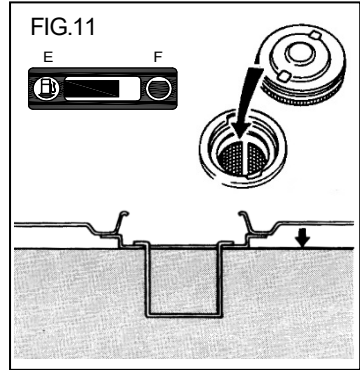
### WARNING:

- Do not refill tank while engine is running or hot.
- Close fuel cock before refueling.
- Do not allow dust, dirt, water or other foreign objects into fuel tank.
- Do not fill above the top of the fuel filter or it may overflow when the fuel heats up and expands.
- Wipe off spilled fuel thoroughly before starting engine.
- Keep away from open flames.

## CHECK ENGINE OIL

Make sure the engine oil is at the upper level of the oil filler hole. Add oil as necessary. **FIG.12**

- Remove oil filler cap and check the engine oil level.
- If oil level is below the lower level line, refill with suitable oil to upper level line.
- Do not screw in the oil filler cap when checking oil level.
- Change oil if contaminated.
- Oil capacity: **0.7 quart**
  - Recommended engine oil:  
API Service "SJ" **FIG.13**

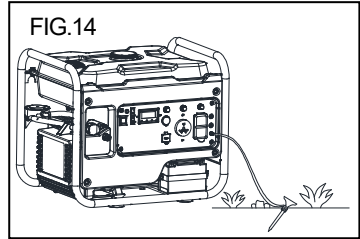


## GROUND (Earth)

### WARNING:

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- We recommend grounding your generator before use. 8 AWG wire and a small metal earth spike. The wire and earth spike are not supplied with the unit. **FIG.14**
- 

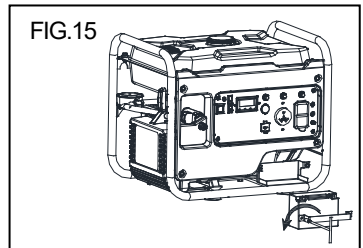


### CONNECT BATTERY (for electric starting system)

- Loosen the screw and remove the battery holder. **FIG.15**

Bolt **red** wire to the **positive (+)** terminal and the **black** wire to the **negative (-)** terminal of the battery. Do not reverse these positions.

- Be sure the battery is securely installed on the battery mount tray.
- Install the cover and tighten the screw.



### NOTE:

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- Recommended battery: 12V 6.5AH.
-

# OPERATION

**WARNING:** The generator is shipped without engine oil. Fill with oil or it will not start.

## CAUTION

Do not tilt the generator when adding engine oil. This could result in overfilling and damage to the engine, voiding the warranty. If motor runs without oil warranty is voided.

## STARTING THE ENGINE

### NOTE:

- Do not connect electric appliance before starting the engine.

## RUNNING WITH GASOLINE

### Recoil Start

1. Shift the fuel selector switch to **GASOLINE** position. **FIG.16**
2. Turn the battery switch to “**ON**”, the LED indicator will light. **FIG.16**
3. Turn the engine switch to the **RUN** position. **FIG.17**
4. Pull the choke to the **START** position. Not necessary if the engine is already warm. **FIG.18**

5. Pull the starter cord slowly until resistance is felt. **FIG.19**

Return the cord to its original position and pull rapidly. Do not completely pull out the rope. After starting, allow the starter cord to return to its original position slowly. Grasp the carrying handle firmly to prevent the generator from falling over when pulling the recoil starter. **FIG.19**

FIG.16

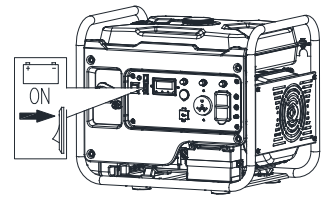
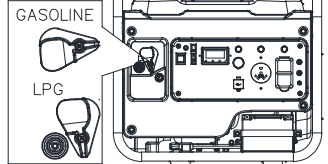


FIG.17

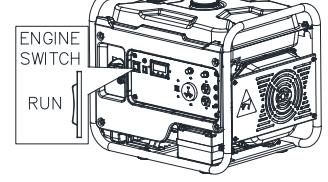


FIG.18

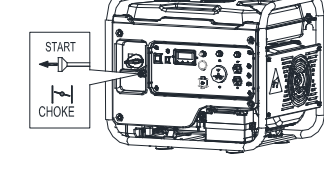
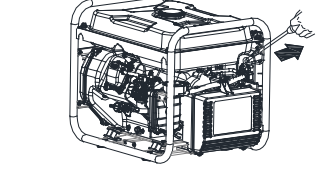


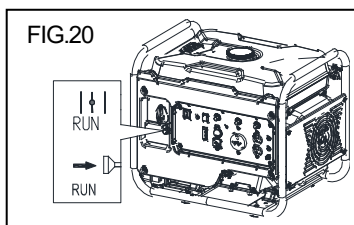
FIG.19



6. Warm up the engine.
7. Push the choke back to the **RUN** position.

**FIG.20**

8. Warm up the engine without a load for a few minutes.

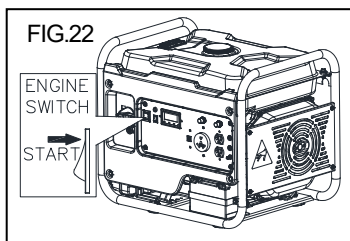
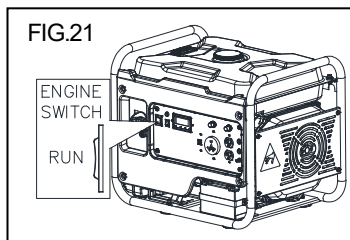


### Electric Start

1. Shift the fuel selector switch to **GASOLINE** position. **FIG.16 (page 12)**
2. Turn the battery switch to “**ON**”, the LED indicator will light. **FIG.16 (page 12)**
3. Pull the choke to the **START** position. Not necessary if the engine is already warm.
4. Turn the engine switch to the **RUN** position.

**FIG.21**

5. Press and hold the engine switch to the “**START**” position. Release as the engine begins to start. If the engine fails to start within five seconds, release the switch and wait at least ten seconds before attempting to start the engine again. **FIG.22**



6. Push the choke lever back to the **RUN** position.
7. Warm up the engine without a load for a few minutes.

**WARNING:** If the engine switch is held down in the “start” position longer than 5 seconds, it could damage the starter

### RUNNING WITH LPG

#### Recoil Start

1. Shift the fuel selector switch to **LPG** position. **FIG.16 (page 12)**
2. Turn the battery switch to “**ON**”, the LED indicator will light. **FIG.16 (page 12)**
3. Connect the reducing valve to the **LPG** tank first, then insert the reducing valve tapered joint into the **LPG** quick connect.
4. Open the **LPG** tank valve, testing for leakage.
5. Pull the choke out to **CHOKE** position. **FIG.18 (page 12)**

6. Pull the starter cord slowly until resistance is felt. Return the cord to its original position and pull rapidly. Do not completely pull out the rope. After starting, allow the starter cord to return to its original position slowly. Grasp the carrying handle firmly to prevent the generator from falling over when pulling the recoil starter. **FIG.19 (page 12)**
7. Push the choke back to the **RUN** position.
8. Warm up the engine without a load for a few minutes.

### Electric start

1. Turn the fuel selector switch to **LPG** position. **FIG.16 (page 12)**
2. Connect the reducing valve to the **LPG** tank first, then insert the reducing valve tapered joint into the **LPG** quick connect inlet.
3. Open the **LPG** tank valve, testing for leakage.
4. Turn the battery switch to "**ON**", the indicator light should turn on. **FIG.16 (page 12)**
5. Pull the choke out to **CHOKE** position. **FIG.18 (page 12)**
7. Turn the engine switch to the **RUN** position. **FIG.22 (page 13)**
8. Press and hold the engine switch to the "**START**" position. Release as the engine begins to start. If the engine fails to start within five seconds, release the switch and wait at least ten seconds before attempting to start the engine again. **FIG.21 (page 13)**
8. Push the choke back to the **RUN** position.
9. Warm up the engine without a load for a few minutes.

## PLUGGING ELECTRIC APPLIANCES TO GENERATOR

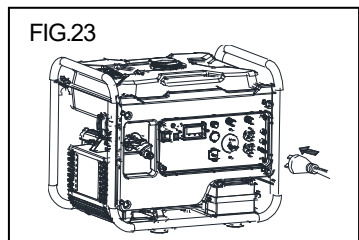
### 1. AC APPLICATION

Check the AC output LED for proper voltage.

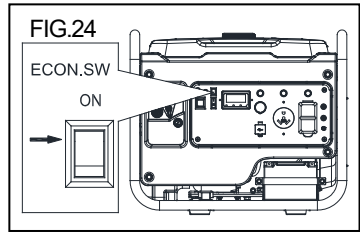
Turn off the switch(es) of the electrical appliance(s) before connecting to the generator. Insert the plug(s) of the electrical appliance(s) into the receptacle. **FIG.23**

### CAUTION

- Make sure the electric appliance is turned off before plugging in.
- Confirm the total load is within the generator's rated output.
- Verify the socket load current is within socket rated current.



- The economy control switch must be turned to **OFF** when using electric devices that require a large starting current, such as a compressor or a submergible pump. **FIG 24**

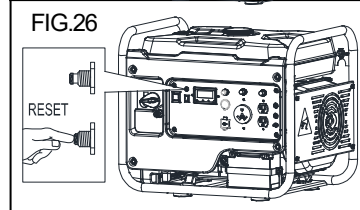
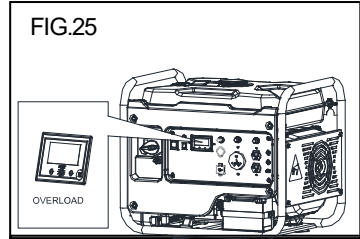


## 2. OVERLOAD INDICATOR LIGHT FIG.25

The overload indicator light will blink when the rated load is exceeded. Reduce the loads to its normal range and the overload indicator light will turn off. When the maximum load is reached, output pilot light will turn off, the overload indicator light will turn on and cut power to the receptacles. To reset the output:

- Turn off any connected electric devices
- Reduce the total wattage of connected electric.
- Check for blockages in the cooling air inlet, muffler air exhaust pipe opening and the control unit.
- After inspection, press the reset button to restore

the power: **FIG.26**

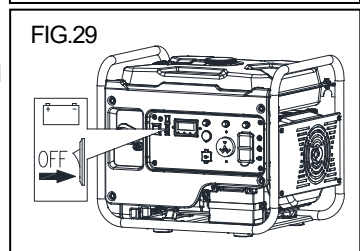
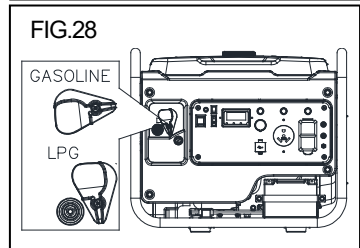
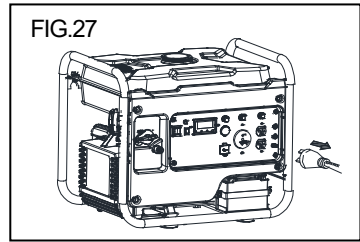


### **CAUTION**

- The generator AC output automatically resets when the engine restarted.
- The overload indicator light may come on for a few seconds at first when using electric devices that require a large starting current, such as a compressor or a submergible pump. This is not a malfunction.

## STOPPING THE ENGINE

1. Turn off and unplug all electric loads. Never start or stop the generator with electrical devices plugged in or turned on. **FIG.27**
2. Running with **GASOLINE**: Press the engine switch to **OFF**, turn the battery switch to **OFF**
3. Running with **LPG**: Turn off the LPG tank valve. Press the engine switch to **OFF**, turn the battery switch to **OFF**, disconnect the quick connect from the generator, shift the fuel selector switch to **GASOLINE**. **FIG.28**
4. Make sure battery switch is always **OFF** after every use. This will disconnect the battery from the circuit, and prevent the battery from draining. **FIG.29**
5. When turning off the generator after **LPG** operation, make sure the **LPG** cylinder knob is in the fully closed position.





# PERIODIC MAINTENANCE

Item	Remarks	Daily	Initial 1 month or 20 Hr	Every 3 months or 50Hr	Every 6 months or 100Hr	Every 12 months or 300Hr
Spark Plug	Adjust gap and clean. Replace if necessary.			●		
Engine Oil	Check oil level	●				
	Replace		●		●	
Air Filter	Clean. Replace if necessary.			●		
Fuel Filter	Clean fuel cock filter. Replace if necessary				●	
Choke	Check choke operation.	●				
Valve Clearance	Check and adjust when engine is cold.					●
Fuel Line	Check fuel hose for cracks or damage. Replace if necessary.	●				
Exhaust System	Check for leakage. Retighten or replace gasket if necessary	●				
	Check muffler screen. Clean / replace if necessary.					●
Carburetor	Check choke operation	●				
Cooling System	Check for fan damage.					●
Starting System	Check recoil starter operation.	●				
Idle speed	Check and adjust engine idle speed					●
Fittings / Fasteners	Check all fittings and fasteners				●	
Crankcase Breather	Check breather hose for cracks or damage. Replace if necessary					●
Generator	Check the pilot light comes on	●				

**Regular maintenance is important for the best performance and safe operation.**

## ENGINE OIL REPLACEMENT

1. Place the generator on a level surface and warm up the engine for several minutes, then stop the engine
2. Remove the oil filler cap.
3. Place an oil pan under the engine. Tilt the generator to drain the oil completely. FIG.30
4. Replace the generator on a level surface.
5. Add engine oil to the upper level. **FIG.31**
6. Install the oil filler cap.
7. Install the cover and tighten the screw

Recommended engine oil: API Service "SJ" **FIG.31**

### CAUTION

Do not allow any foreign material to enter the crankcase.  
Do not tilt the generator when adding engine oil. This could result in overfilling and damage to the engine

## AIR FILTER

Maintaining the air filter is very important. If dirt penetrates through the filter because it is neglected, or operated in a poor environment, this will cause premature failure and will wear out the engine. Keep the air filter element clean.

### FIG.32

1. Remove the cover.
2. Remove the air filter element.
3. Wash the element in solvent and dry.
4. Oil the element and squeeze out excess oil. The filter should be wet but not dripping.
5. Insert the element into the air filter.
6. Replace the cover.

FIG.30

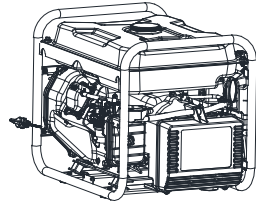


FIG.31

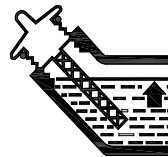
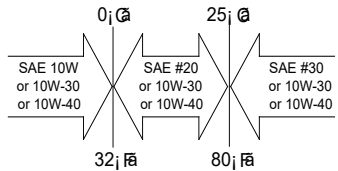
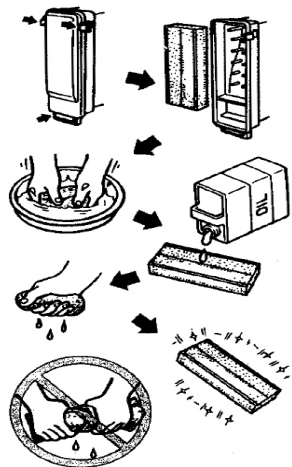


FIG.32



## CAUTION

The engine should never run without the element; excessive piston and/or cylinder wear may result.

## CLEANING AND ADJUSTING SPARK PLUG

1. Remove the cover.
2. Check for carbon build-up and remove the carbon.

### FIG.33

3. Check the spark plug type and gap.
4. Install the spark plug.
5. Install the cover.

## CAUTION

- Standard electrode color: Tan Color.
- Standard Spark Plug: F7RTC (TORCH)
- Spark Plug Gap: 0.6-0.7 mm (0.024-0.028 in)

## FUEL TANK FILTER

1. Remove the fuel tank cap and filter. **FIG.34**
2. Clean the filter with solvent. If damaged, replace.
3. Wipe the filter and insert it.

## WARNING

- Be sure the tank cap is tightened securely.

## MUFFLER SCREEN

## WARNING

- The engine and muffler will be very hot after the engine has been run.
- Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.

FIG.33

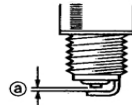
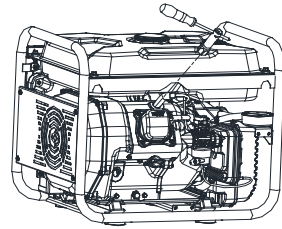
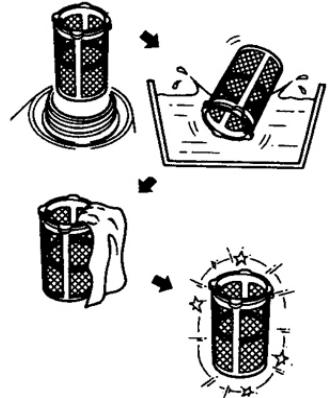
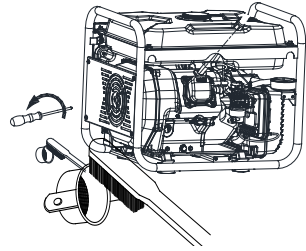


FIG.34



1. Use a flathead screwdriver to pry the spark arrester out from the muffler.
2. Remove the carbon deposits on the muffler screen and spark arrester using a wire brush. **FIG.35**
3. Install the muffler screen.

FIG.35



## TROUBLESHOOTING

### ENGINE WON'T START

#### 1. Fuel system

No fuel supplied to combustion chamber.

- No fuel in tank....supply fuel
- Fuel in tank.... fuel cock knob to **ON**
- Clogged fuel line....clean fuel line
- Clogged carburetor....clean carburetor

#### 2. LPG system

There is no gas in the combustion chamber

- The gas tank is empty .....change to a full tank
- The carburetor is clogged.....clean the carburetor

#### 3. Engine oil system

Insufficient

- Oil level is low....add engine oil

#### 4. Electrical systems

Poor spark

- Spark plug dirty with carbon or wet....remove carbon or wipe spark plug dry
- Faulty ignition system....contact AIMS Power

#### 5. Compression insufficient

- Worn out piston and cylinder....contact AIMS Power

### NO OUTPUT POWER

Safety device (AC) to "OFF" ...stop the engine, then restart

Safety device (DC) to "OFF" ...press to reset the DC protector

# STORAGE

Long term storage of your generator will require some preventive maintenance to guard against deterioration.

## **DRAIN THE FUEL**

1. Remove the fuel tank cap, drain the fuel from the fuel tank
2. Remove the cover, drain fuel from the carburetor by loosening the drain screw.

## **ENGINE**

1. Remove the spark plug, pour in about one tablespoon of SAE 10W30 or 20W40 motor oil into the spark plug hole and reinstall the spark plug.
2. Use the recoil starter to turn the engine over several times (with ignition off).
3. Pull the recoil starter until you feel compression.
4. Stop pulling.
5. Clean exterior of the generator and apply a rust inhibitor.
6. Store the generator in a dry, well-ventilated place, with the cover place over it.
7. The generator must remain in a vertical position.

## **BATTERY**

1. Remove the protective cover from the black/negative battery lead.
2. Disconnect the black/negative lead from the black/negative terminal on the battery and store the cap screw and nut.
3. Repeat step 1 for the red/positive battery lead.
4. Store the battery in a cool, dry place.

# SPECIFICATIONS

MODEL		GEN3850W120VD - EPA
GENERATOR	Type	Inverter Generator – Pure Sine
	AC Voltage	120V / 60Hz
	Starting wattage (gasoline)	3850W
	Running wattage (gasoline)	3500W
	Starting wattage (LPG)	3500W
	Running wattage (LPG)	3300W
	Power Factor	1.0
	DC Output	12V / 8.0A 5V / 1A & 2.1A USB
ENGINE	Model	XY170F-1A
	Type	Air-cooled, 4 cycle, OHV, Gasoline Engine
	Bore×Stroke mm×mm	70×58
	Displacement	223 cc
	Max. Output	4.5KW / 3800rpm
	Fuel	Unleaded Automobile Gasoline / LPG
	Fuel tank Capacity	4.5 GAL
	Rated Continuous Operation	7.5 hours (100% Load)
	Lubricating oil	SAE 10W30
	Lubricating oil Capacity	0.70 liter
	Starting System	Recoil + Electrical Starter
	Ignition system	C.D.I.
	Spark Plug: Type	F7RTC (TORCH)
DIMS	Net dimensions L×W×H	22.5" × 17" × 19"
	Overall dimensions L×W×H	25" × 19.5" × 20.5"
	Net Weight / Gross Weight	97 lbs /101 lbs

\*Specifications subject to change without prior notice.

# WIRING DIAGRAM

