



# Generator

## OWNER'S MANUAL



Read this manual carefully before operating this machine.

# EF1000iS

LIT-19626-01-96  
7CG-28199-15

## **WARNING**

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

YAMAHA

LIT-CALIF-65-01



**Read this manual carefully before operating this machine. This manual should stay with this machine if it is sold.**

## INTRODUCTION

Congratulations on your purchase of your new Yamaha.

This manual will provide you with a good basic understanding of the operation and maintenance of this machine.

If you have any questions regarding the operation or maintenance of your machine, please consult a Yamaha dealer.

### PRI-I.D. NUMBER

<b>MODEL</b>	
<input type="text"/>	
<b>PRI-I.D. CODE</b>	<b>SERIAL No.</b>
<input type="text"/>	<input type="text"/>

AE00012

#### Identification number records

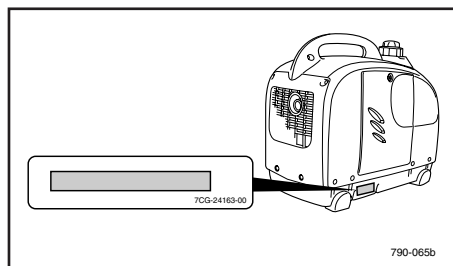
Record your Primary I.D., and serial numbers in the spaces provided, to assist you in ordering spare parts from a Yamaha dealer.

Also record and keep these I.D. numbers in a separate place in case your machine is stolen.

AE00011

#### Machine identification

The machine serial number is stamped in the location as shown.



#### TIP

The first three digits of these numbers are for model identification; the remaining digits are the unit production number. Keep a record of these numbers for reference when ordering parts from a Yamaha dealer.

AE00022

**EF1000iS  
OWNER'S MANUAL**  
© 2013 by Yamaha Motor Corporation, U.S.A.  
1st Edition, November 2013  
All rights reserved.  
Any reprinting or unauthorized use  
without the written permission of  
Yamaha Motor Corporation, U.S.A.  
is expressly prohibited.  
Printed in Japan.  
P/N LIT-19626-01-96

Particularly important information is distinguished in this manual by the following notations.



**This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**



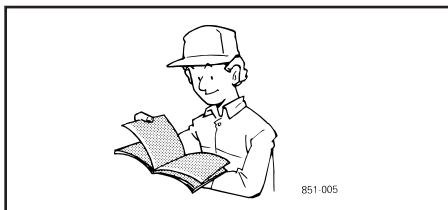
**A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

### **NOTICE**

**A NOTICE indicates special precautions that must be taken to avoid damage to the machine or other property.**

### **TIP**

**A TIP provides key information to make procedures easier or clearer.**



AE00032



**PLEASE READ AND UNDERSTAND THIS MANUAL COMPLETELY BEFORE OPERATING THE MACHINE.**

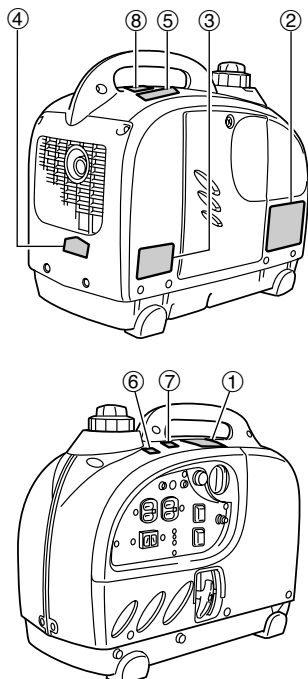
### **TIP**

- Yamaha continually seeks advancements in product design and quality. Therefore, while this manual contains the most current product information available at the time of printing, there may be minor discrepancies between your engine and this manual. If there is any question concerning this manual, please consult a Yamaha dealer.
- This manual should be considered a permanent part of this engine and should remain with this engine when resold.

\* Product and specifications are subject to change without notice.

# CONTENTS

<b>LOCATION OF IMPORTANT LABELS</b> .....	1
<b>SAFETY INFORMATION</b> .....	2
Exhaust fumes are poisonous .....	3
Fuel is highly flammable and poisonous .....	3
Engine and muffler may be hot .....	3
Electric shock prevention .....	4
Connection notes .....	5
Connection .....	5
Extension cord notes .....	5
<b>DESCRIPTION</b> .....	6
Control panel .....	6
Engine switch .....	7
Oil warning light (Red) .....	7
Economy control switch .....	7
DC protector .....	8
Fuel tank cap air vent knob .....	8
Fuel cock knob .....	9
<b>PRE-OPERATION CHECK</b> .....	10
Fuel .....	10
Engine oil .....	12
Ground (earth) terminal .....	12
<b>OPERATION</b> .....	13
Starting the engine .....	13
Application range .....	15
Connection .....	16
Overload indicator light (Red) .....	17
Battery charging .....	18
Stopping the engine .....	21
High altitude operation .....	22
<b>PERIODIC MAINTENANCE</b> .....	23
Maintenance chart .....	23
Spark plug inspection .....	25
Carburetor adjustment .....	26
Engine oil replacement .....	26
Muffler screen and spark arrester .....	28
Air filter .....	30
Fuel tank filter .....	31
<b>TROUBLESHOOTING</b> .....	32
<b>STORAGE</b> .....	34
Drain the fuel .....	34
Engine .....	36
<b>EXHAUST EMISSION CONTROL SYSTEM AND COMPONENTS</b> .....	37
<b>SPECIFICATIONS</b> .....	38
Dimensions .....	38
Engine .....	38
Generator .....	38
<b>WIRING DIAGRAM</b> .....	39
<b>YAMAHA EXTENDED SERVICE (Y.E.S.)</b> .....	40



## LOCATION OF IMPORTANT LABELS

Please read the following labels carefully before operating this generator.

### TIP

Maintain or replace safety and instruction labels, as necessary.

①

**⚠ DANGER**

**Using a generator indoors CAN KILL YOU IN MINUTES.**  
**Generator exhaust contains carbon monoxide.**  
**This is a poison you cannot see or smell.**

**NEVER** use inside a home or garage, **EVEN IF** doors and windows are open.

Only use **OUTSIDE** and far away from windows, door, and vents.

②

**⚠ WARNING**

- Read the owner's manual and all labels before operating.
- Only operate in well-ventilated areas.
- Exhaust gas contains poisonous carbon monoxide.
- Check for spilled fuel or fuel leaks.
- Stop engine before refueling.
- Do not operate near flammable materials.
- Electrocuting can occur if generator is used in rain, snow, or near water. Keep this unit dry at all times.
- Electrocuting or property damage can occur:
- Do not connect this generator to any building's electrical system unless an isolation switch has been installed by a licensed electrician. Refer to the owner's manual.
- When operating the generator:
- Never place a partition or other barrier around the generator.
- Do not cover the generator with a box.
- Do not place any objects on the generator.

TCG-24162-10

③

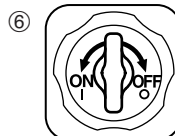
**OIL**

**YAMAHA EF1000is**

AC output 60Hz  
Rated 300VA  
120V

Phase Single  
DC output 12V 8A  
Fuel Gasoline

YAMAHA MOTOR POWERED PRODUCTS CO., LTD.  
MADE IN JAPAN  
7VV-24164-11



④

**HOT EXHAUST**

7VV-28176-10

⑦

**STARTING INSTRUCTION**

- Disconnect all electrical devices.
- Turn ECON. switch to OFF
- Open fuel cap vent
- Turn fuel knob ON
- Turn engine switch to ON
- Pull choke knob out
- Pull recoil starter
- Push choke knob in

TCG-25154-10

⑤

**EMISSION CONTROL INFORMATION**  
**YAMAHA MOTOR POWERED PRODUCTS CO., LTD.**  
This engine meets 20" California exhaust and evaporative emission regulations for small off-road engines.  
**THIS ENGINE MEETS U.S. EPA EXH./EVP REGS FOR 20"**

EMISSION COMPLIANCE PERIOD : "" HOURS  
EP: """""""" DISPLACEMENT: "" cc  
EVAP F: """""""" EMISSION CONTROL SYSTEM: ""  
This engine is certified to operate on unleaded gasoline.  
ENGINE OIL: SAE """" TYPE: ""  
No other adjustments needed.

The air index of this engine is 3  
(California only)

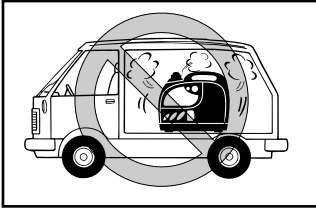
Note: The lower the air index, the less the pollution.  
This engine is certified to be emissions compliant for the following use:  
☐ MODERATE ( "" HOURS) ☐ INTERMEDIATE ( "" HOURS) ☒ EXTENDED ( "" HOURS)  
Check owner's manual for further details.

⑧

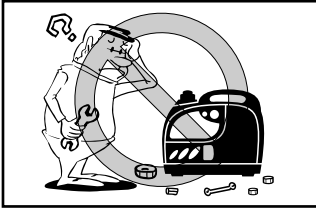
**NOTICE**

Use the specified spark plug only.  
Specified plug: CR4HSB (NGK)

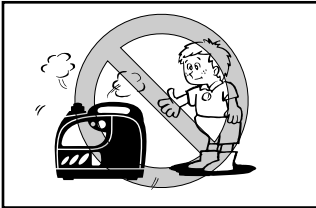
## SAFETY INFORMATION



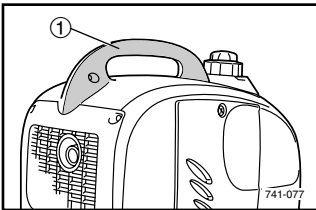
- This generator is not designed for on-board use. Do not use it while installed on the vehicle.



- Do not modify the generator or use it with its parts removed.

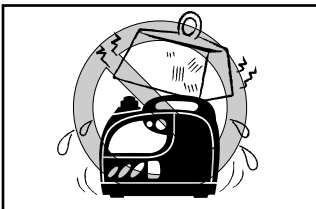


- Do not allow children to operate the generator.



- Be sure to carry the generator only by its carrying handle.

① Carrying handle



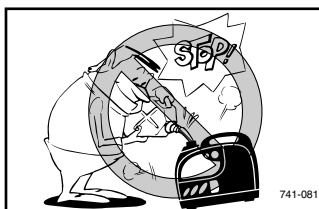
- Do not place any obstacles on the generator.



AE00072

### **Exhaust fumes are poisonous**

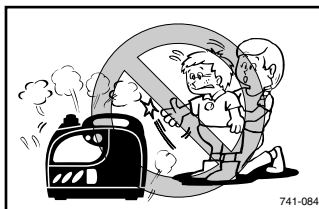
- Using a generator indoors **CAN KILL YOU IN MINUTES**. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.
- **NEVER** use inside a home or garage, **EVEN IF** doors and windows are open.
- Only use **OUTSIDE** and far away from windows, doors, and vents.



AE01018

### **Fuel is highly flammable and poisonous**

- Always turn off the engine when refuelling.
- Never refuel while smoking or in the vicinity of an open flame.
- Take care not to spill any fuel on the engine or muffler when refuelling.
- Do not leave the generator inside the vehicle or in the trunk.
- If you swallow any fuel, inhale fuel vapor, or allow any to get in your eye(s), 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. Also, be sure the fuel tank cap air vent knob is tightened when transporting the generator.



AE01019

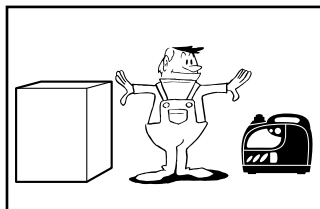
### **Engine and muffler may be hot**

- Place the generator in a place where pedestrians or children are not likely to touch the generator.

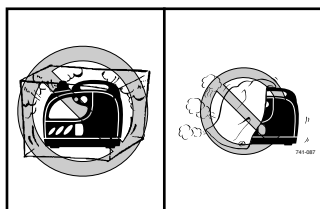




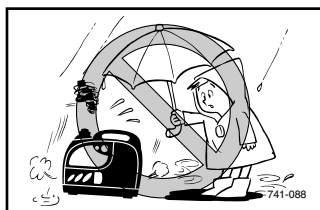
- Avoid placing any flammable materials near the exhaust outlet during operation.



- In order to prevent overheating, ensure adequate airflow by keeping the machine at least 1 m (3 ft) from objects or other equipment.



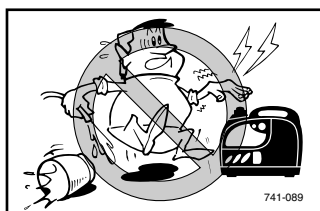
- Do not operate the engine with a dust cover or other objects covering it.
- When covering the generator, be sure to do so only after the engine and muffler have completely cooled down.



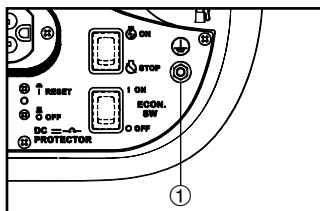
AE01020

### Electric shock prevention

- Never operate the engine in rain or snow.

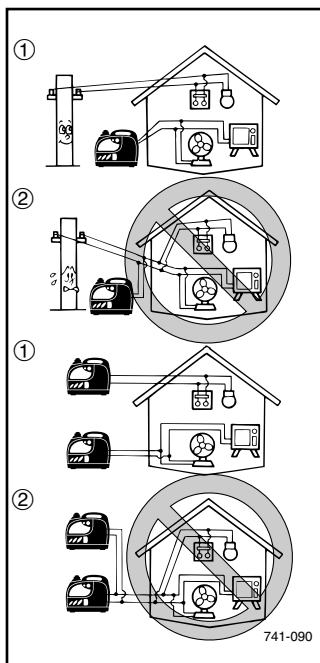


- Never touch the generator with wet hands or electrical shock will occur.



- Connect the Ground (earth) terminal to a ground source. In order to prevent electrical shock, the generator must be grounded when using an electrical device with a ground plug.

① Ground (earth) terminal



AE00088

### Connection notes

- Avoid connecting the generator to commercial power outlet.
- Avoid connecting the generator in parallel with any other generator.

① Correct

② Incorrect

AE00091

### Connection

#### **⚠ WARNING**

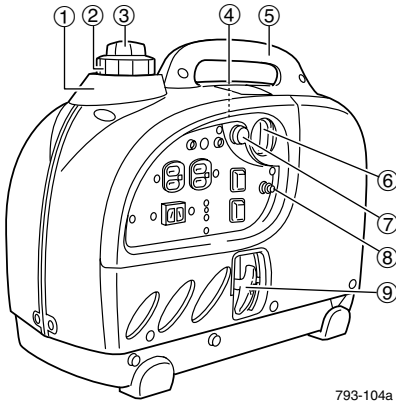
Before the generator can be connected to a building's electrical system, a licensed electrician must install an isolation (transfer) switch in the building's main fuse box. The switch is the connection point for generator power and allows selection of generator or main line power to the building. This will prevent the generator from charging the main power line (backfeeding) when the main power supply has failed or has been turned off for line repair. Backfeeding can electrocute or injure line maintenance personnel. Also, generator and building electrical system damage can occur when normal operating power returns if unit is used without an isolation switch.

AE00086

### Extension cord notes

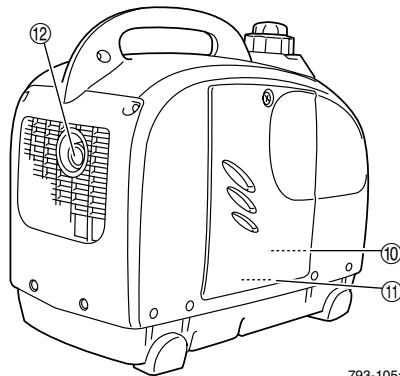
- Extension cords should be protected by a tough flexible rubber sheath (IEC 245) or the equivalent to withstand mechanical stresses.

## DESCRIPTION



793-104a

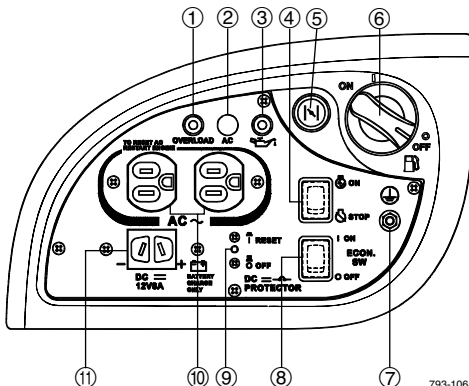
- ① Fuel tank
- ② Fuel tank cap
- ③ Fuel tank cap air vent knob
- ④ Spark plug
- ⑤ Carrying handle
- ⑥ Fuel cock knob
- ⑦ Choke knob
- ⑧ Ground (earth) terminal
- ⑨ Recoil starter
- ⑩ Air filter cover
- ⑪ Oil filler cap
- ⑫ Muffler



793-105a

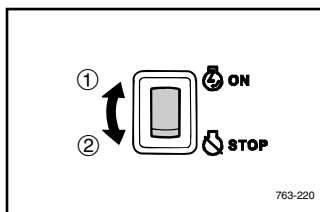
AE00103

### Control panel



793-106a

- ① Overload indicator light
- ② AC pilot light
- ③ Oil warning light
- ④ Engine switch
- ⑤ Choke knob
- ⑥ Fuel cock knob
- ⑦ Ground (earth) terminal
- ⑧ Economy control switch
- ⑨ DC protector
- ⑩ AC receptacle
- ⑪ DC receptacle



AE00939

### Engine switch

The engine switch controls the ignition system.

#### ① ⚡ "ON"

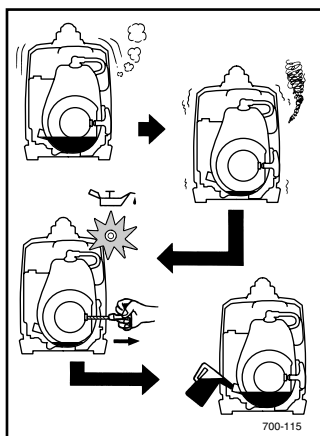
Ignition circuit is switched on.

The engine can be started.

#### ② ⛔ "STOP"

Ignition circuit is switched off.

The engine will not run.



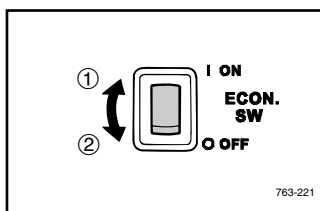
AE00111

### Oil warning light (Red)

When the oil level falls below the lower level, the oil warning light (Red) comes on and then the engine stops automatically. Unless you refill with oil, the engine will not start again.

#### TIP

If the engine stalls or does not start, turn the engine switch to "ON" and then pull the recoil starter. If the oil warning light flickers for a few seconds, the engine oil is insufficient. Add oil and restart.



AE00988

### Economy control switch

#### ① | "ON"

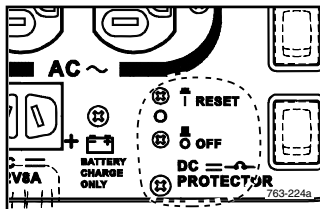
When the economy control switch is turned to "ON", the economy control unit controls the engine speed according to the connected load. The results are better fuel consumption and less noise.

#### ② ○ "OFF"

When the economy control switch is turned to "OFF", the engine runs at the rated r/min (5,000 r/min) regardless of whether there is a load connected or not.

## TIP


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 submersible pump.



AE01099

### DC protector

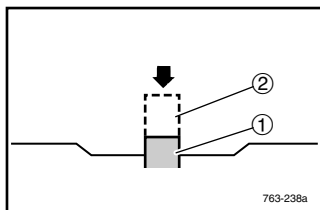
The DC protector turns “OFF” automatically when electric device being connected to the generator is operating and current above the rated flows. To use this equipment again, turn on the DC protector by pressing its button to “RESET”.

- ①  | “RESET”

Direct current is output. (This is the default position.)

- ②  | “OFF”

Direct current is not output.



## NOTICE

**Reduce the load of the connected electric device below the specified rated output of the generator if the DC protector turns off. If the DC protector turns off again, stop using the device immediately and consult a Yamaha dealer.**

AE01021

### Fuel tank cap air vent knob

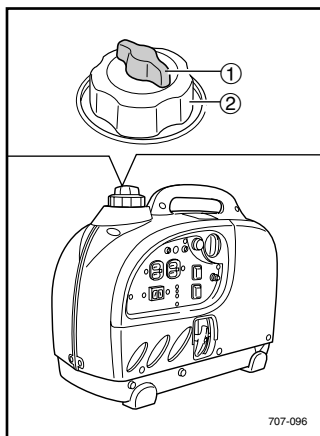
The fuel tank cap is provided with an air vent knob to stop fuel flow.

The air vent knob must be turned 1 turn counterclockwise from the tightened position. This will allow fuel to flow to the carburetor and the engine to run.

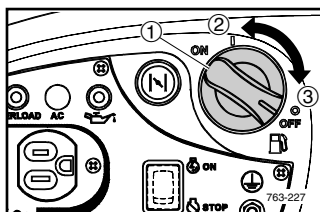
When the engine is not in use, tighten the air vent knob clockwise until it is finger-tight to stop fuel flow.

- ① Air vent knob

- ② Fuel tank cap



AE01034



### Fuel cock knob

The fuel cock knob is used to supply fuel from the fuel tank to the carburetor.

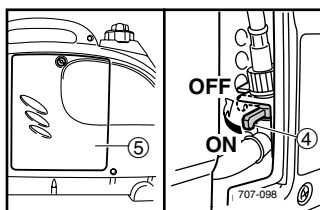
① Fuel cock knob

② "ON"

With the knob in this position, fuel flows to the carburetor. Normal using is done with the knob in this position.

③ "OFF"

With the knob in this position, fuel will not flow. Always turn the knob to this position when the engine is not running.



### TIP

If for some reason the fuel cock knob cannot be turned, use the fuel cock lever inside the cover to supply fuel.

④ Fuel cock lever

⑤ Cover

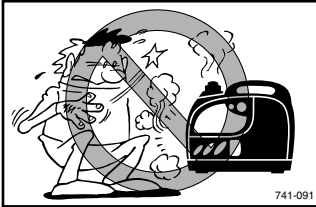
## PRE-OPERATION CHECK

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

### **WARNING**

The engine and muffler will be very hot after the engine has been run.

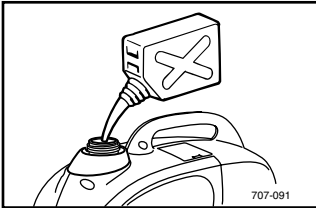
Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



AE00212

### **Fuel**

Make sure there is sufficient fuel in the tank.



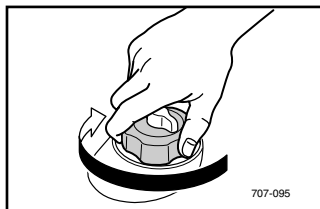
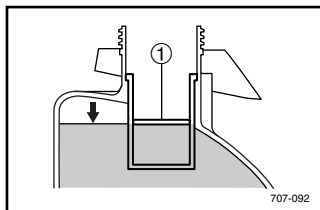
Recommended fuel:

Unleaded gasoline

Fuel tank capacity:

Total: 2.5 L (0.66 US gal, 0.55 Imp gal)

Your Yamaha engine has been designed to use regular unleaded gasoline with a pump octane number  $((R + M)/2)$  of 86 or higher, or research octane number of 91 or higher.



## **⚠ WARNING**

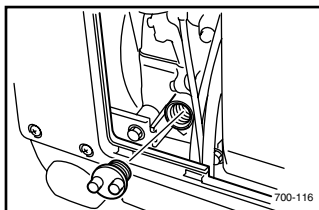
- Fuel is highly flammable and poisonous. Check “SAFETY INFORMATION” (See page 3) carefully before refueling.
- Do not fill above the “LEVEL” mark (Red) in the fuel tank filter or it may overflow when the fuel heats up later and expands.
- After refueling, make sure the tank cap is tightened securely.

① “LEVEL” mark (Red)

## **NOTICE**

- Immediately wipe off spilled fuel with a clean, dry, soft cloth, since fuel may deteriorate painted surfaces or plastic parts.
- Use only unleaded gasoline. The use of leaded gasoline will cause severe damage to internal engine parts.





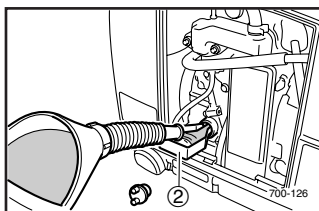
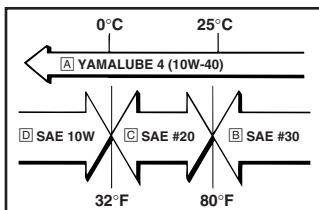
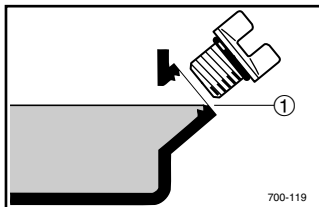
AE01158

## Engine oil

Make sure the engine oil is at the correct level of the oil filler hole. Add oil as necessary.

### TIP

Place the generator on a level surface and check the oil level of the oil filler hole.



### ① Correct level

Recommended engine oil:

☐ A YAMALUBE 4 (10W-40),  
SAE 10W-30 or 10W-40

☐ B SAE #30

☐ C SAE #20

☐ D SAE 10W

Recommended engine oil grade:

API Service SE type or higher

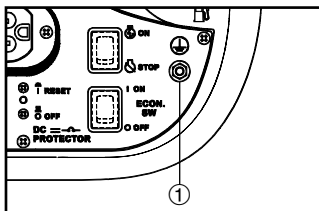
Engine oil quantity:

0.32 L (0.34 US qt, 0.28 Imp qt)

### ② Oil filler guide

## NOTICE

- The generator has been shipped without engine oil. Do not start the engine until you have filled it with the sufficient engine oil.
- Do not tilt the generator when adding engine oil. This could result in overfilling and damage to the engine.



AE00241

## Ground (earth) terminal

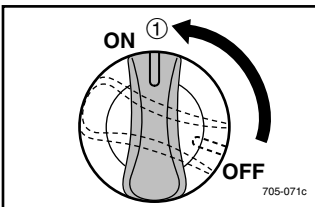
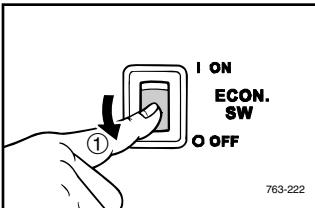
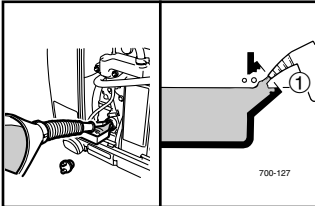
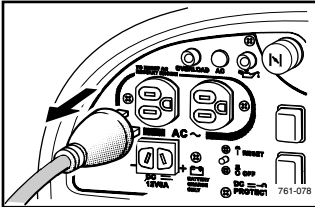
Make sure to ground (earth) terminal the generator. Check "SAFETY INFORMATION" (see page 4).

### ① Ground (earth) terminal

## OPERATION

### **⚠ WARNING**

- Never operate the engine in a closed area or it may cause unconsciousness and death within a short time. Operate the engine in a well ventilated area.
- Before starting the engine, do not connect any electric devices.
- Clean dusts, dirt or water off the receptacle before use.



### **NOTICE**

- The generator has been shipped without engine oil. Do not start the engine until you have filled it with the sufficient engine oil.
- Do not tilt the generator when adding engine oil. This could result in overfilling and damage to the engine.

① Correct level

AE01104

### **Starting the engine**

1. Turn the economy control switch to “OFF”.

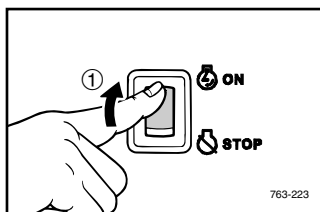
① ○ “OFF”

2. While holding the fuel tank cap so that it will not move, turn the air vent knob 1 turn counterclockwise to open the fuel tank air vent.

① Air vent knob

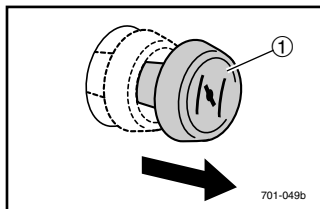
3. Turn the fuel cock knob to “ON”.

① “ON”



4. Turn the engine switch to "ON".

① ② "ON"

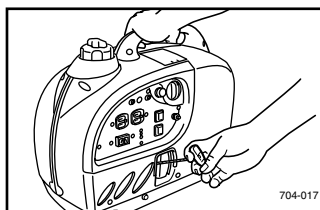


5. Pull the choke knob fully out.

① Choke knob

#### TIP

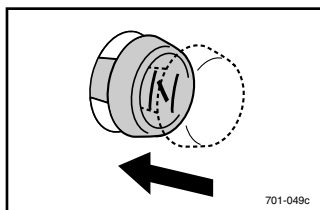
The choke is not required to start a warm engine. Push the choke knob in to the original position.



6. Pull the recoil starter slowly until it is engaged, then pull it briskly.

#### TIP

Grasp the carrying handle firmly to prevent the generator from falling over when pulling the recoil starter.



7. After the engine starts, warm up the engine until the engine does not stop when the choke knob is returned to the original position.

8. Push the choke knob back to the original position.





#### TIP

When starting the engine, with the economy control switch "ON", and there is no load on the generator:

- in ambient temperature below 3°C (37°F), the engine will run at the rated r/min (5,000 r/min) for 5 minutes to warm up the engine.
- in ambient temperature above 3°C (37°F), the engine will run at the 4,000 r/min for 3 minutes to warm up the engine.

The economy control unit operates normally after the above time period, while the economy control switch is "ON".

## Application range

AC				DC 
Power factor	1	0.8–0.95	0.4–0.75 (Efficiency 0.85)	
EF1000iS	–900W	–720W	–300W	Rated voltage 12V Rated current 8A

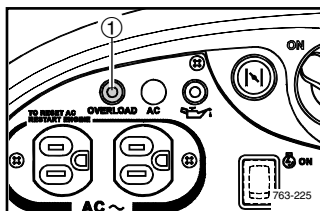
### TIP

- “–” means below.
- Application wattage indicates when each device is used by itself.
- The simultaneous usage of AC and DC power is possible but total wattage should not exceed the rated output.

EX:

Generator rated output		900VA
Frequency	Power factor	
AC	1.0	–800W
	0.8	–620W
DC	—	96W (12V/8A)

- The overload indicator light comes on when total wattage exceeds the application range. (See page 17 for more details.)



① Overload indicator light

### NOTICE

- Do not overload. The total load of all electrical appliances must not exceed the supply range of the generator. Overloading will damage the generator.
- When supplying precision equipment, electronic controllers, PCs, electronic computers, microcomputer-based equipment or battery chargers, keep the generator a sufficient distance away to prevent electrical interference from the engine. Also ensure that electrical noise from the engine does not interfere with any other electrical devices located near the generator.
- If the generator is to supply medical equipment, advice should first be obtained from the manufacturer, a medical professional or hospital.
- Some electrical appliances or general-purpose electric motors have high starting currents, and cannot therefore be used, even if they lie within the supply ranges given in the above table. Consult the equipment manufacturer for further advice.

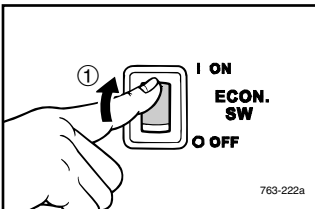
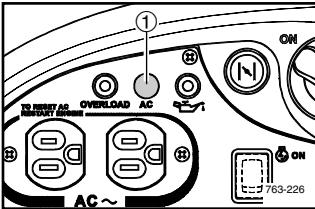
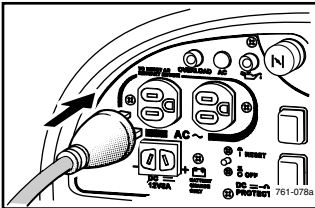
## Connection Alternating Current (AC)

### **⚠ WARNING**

Be sure any electric devices are turned off before plugging them in.

### **NOTICE**

- Be sure all electric devices including the lines and plug connections are in good condition before connection to the generator.
- Be sure the total load is within generator rated output.
- Be sure the receptacle load current is within receptacle rated current.



1. Start the engine.
2. Plug in to the AC receptacle.
3. Make sure the AC pilot light (Green) is on.

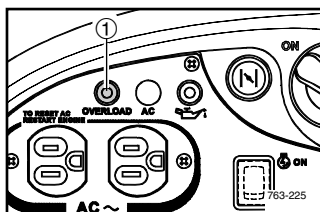
① AC pilot light (Green)

4. Turn the economy control switch to "ON" and turn on any electric devices.

① "ON"

### **TIP**

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 submersible pump.



AE00953

### Overload indicator light (Red)

The overload indicator light (Red) comes on when an overload of a connected electrical device is detected, the inverter control unit overheats, or the AC output voltage rises. The electronic breaker will then activate, stopping power generation in order to protect the generator and any connected electric devices. The AC pilot light (Green) will go off and the overload indicator light (Red) will stay on, but the engine will not stop running.

#### ① Overload indicator light (Red)

When the overload indicator light comes on and power generation stops, proceed as follows:

1. Turn off any connected electric devices and stop the engine.
2. Reduce the total wattage of connected electric devices within the application range.
3. Check for blockages in the cooling air inlet and around the control unit. If any blockages are found, remove them.
4. After checking, restart the engine.

### TIP

- The generator AC output automatically resets when the engine is stopped and then 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 submersible pump. However, this is not a malfunction.

## Battery charging

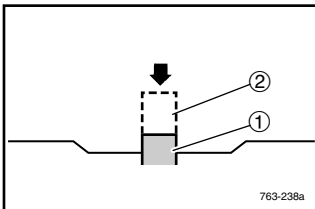
### NOTICE

**Do not connect a VRLA (Valve Regulated Lead Acid) battery. To charge a VRLA battery, a special (constant-voltage) battery charger is required.**

### TIP

- The generator DC rated voltage is 12V.
- Start the engine first, and then connect the generator to the battery for charging.
- Before starting to charge the battery, make sure that the DC protector is turned on.

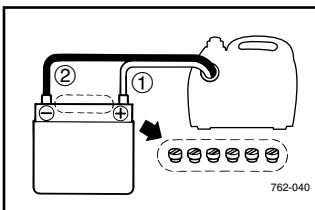
1. Start the engine.



2. Press in the DC protector.

① "RESET"

② "OFF"

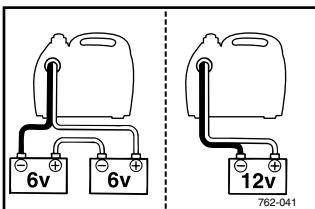


3. Connect the red battery charger lead to the positive (+) battery terminal.

① Red wire

② Black wire

4. Connect the black battery charger lead to the negative (-) battery terminal.



5. Turn the economy control switch "OFF" to start battery charging.

## **NOTICE**

---

- Be sure the economy control switch is turned “OFF” while charging the battery.
- Be sure to connect the red battery charger lead to the positive (+) battery terminal, and connect the black lead to the negative (–) battery terminal. Do not reverse these positions.
- Connect the battery charger leads to the battery terminals securely so that they are not disconnected due to engine vibration or other disturbances.
- Charge the battery in the correct procedure by following instructions in the owner’s manual for the battery.
- The DC protector turns off automatically if current above the rated flows during battery charging.

To restart charging the battery, turn the DC protector on by pressing its button to “RESET”. If the DC protector turns off again, stop charging the battery immediately and consult a Yamaha dealer.

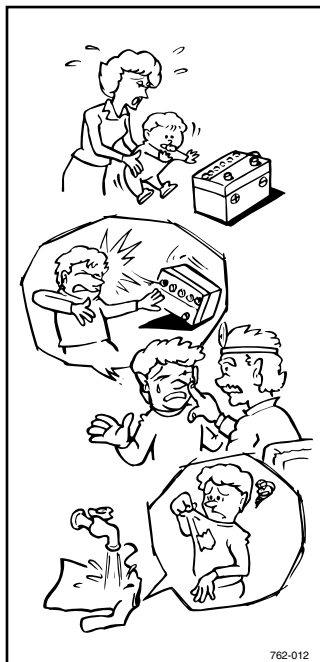
---

## **TIP**

---

- Follow instructions in the owner’s manual for the battery to determine the end of battery charging.
  - Measure the specific gravity of electrolyte to determine if the battery is fully charged. At full charge, the electrolyte specific gravity is between 1.26 and 1.28.
  - It is advisable to check the specific gravity of the electrolyte at least once every hour to prevent overcharging the battery.
-





## **⚠ WARNING**

- Electrolyte is poisonous and dangerous since it contains sulfuric acid, which causes severe burns. Avoid any contact with skin, eyes or clothing and always shield your eyes when working near batteries. In case of contact, administer the following FIRST AID.
  - **EXTERNAL:** Flush with plenty of water.
  - **INTERNAL:** Drink large quantities of water or milk and immediately call a physician.
  - **EYES:** Flush with water for 15 minutes and seek prompt medical attention.
- Batteries produce explosive hydrogen gas. Therefore, keep sparks, flames, cigarettes, etc., away from the battery and provide sufficient ventilation when charging it in an enclosed space.
- **KEEP THIS AND ALL BATTERIES OUT OF THE REACH OF CHILDREN.**

## **Operating range of DC power supply (exclusively for charging 12V battery)**

This power source is designed to charge batteries up to 40Ah that are half-discharged. Do not charge batteries of a higher capacity than 40Ah.

### **12V battery**

The time required for recharging a battery varies depending on the discharge level of the battery. When the specific gravity of the battery reaches 1.26 to 1.28, charging is complete. When charging, check the battery's specific gravity once an hour.

The average time for charging a half-discharged 40Ah battery is approximately 5 hours. Be sure to check the battery fluid level before charging.

## **NOTICE**

- Do not connect any load to the battery or use the engine starter motor while charging. This causes high current to flow through the generator which will burn out the coil.
- Do not connect a VRLA (Valve Regulated Lead Acid) battery. To charge a VRLA battery, a special (constant-voltage) battery charger is required.

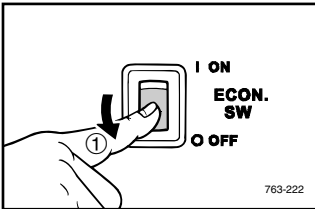
## Stopping the engine

### TIP

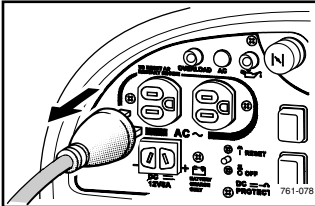
Turn off any electric devices.

1. Turn the economy control switch to "OFF".

① ○ "OFF"

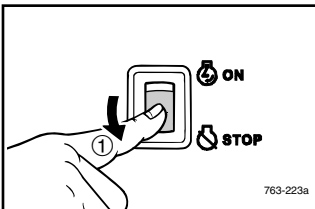


2. Disconnect any electric devices.



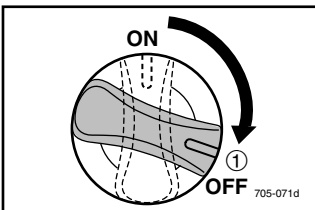
3. Turn the engine switch to the "STOP" position.

① ⏻ "STOP"

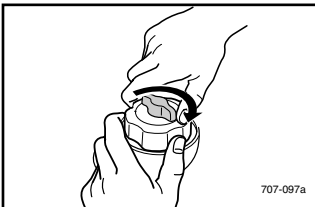


4. Turn the fuel cock knob to "OFF".

① "OFF"



5. Turn the fuel tank cap air vent knob clockwise until it is finger-tight after the engine has cooled down.



**High altitude operation**

This engine may require a high altitude carburetor kit to ensure correct engine operation at altitudes above 4000 ft. (1219 meters). If you operate your engine at altitudes above 4000 ft. (1219 meters) consistently, have your local Yamaha dealer perform the necessary carburetor modification. This engine should be operated in its original configuration below 4000 ft. (1219 meters) as damage may occur if high altitude carburetor kit is installed and operated below 4000 ft. (1219 meters).

## PERIODIC MAINTENANCE

Safety is an obligation of the owner. Periodic inspection, adjustment and lubrication will keep your generator in the safest and most efficient condition possible. The most important points of generator inspection, adjustment, and lubrication are explained on the following pages.


**WARNING**

**If you are not familiar with maintenance work, have a Yamaha dealer do it for you.**

### Maintenance chart


**WARNING**

**Stop the engine before starting maintenance work.**

### NOTICE

**Use only Yamaha specified genuine parts for replacement. Ask an authorized Yamaha dealer for further information.**

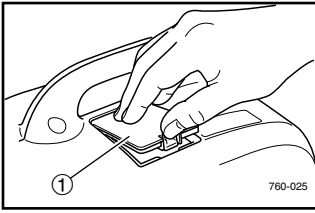
Item	Routine	Pre-operation check	Every	
			6 months or 100 Hr	12 months or 300 Hr
Spark plug	<ul style="list-style-type: none"> <li>• Check condition.</li> <li>• Clean and replace if necessary.</li> </ul>		○	
Fuel	<ul style="list-style-type: none"> <li>• Check fuel level and leakage.</li> </ul>	○		
Fuel hose	<ul style="list-style-type: none"> <li>• Check fuel hose for cracks or damage.</li> <li>Replace if necessary.</li> </ul>	○		
Engine oil	<ul style="list-style-type: none"> <li>• Check oil level in engine.</li> </ul>	○		
	<ul style="list-style-type: none"> <li>• Replace.</li> </ul>		○(*1)	
Air filter element	<ul style="list-style-type: none"> <li>• Check condition.</li> </ul>		○(*2)	
	<ul style="list-style-type: none"> <li>• Clean.</li> </ul>			
Muffler screen	<ul style="list-style-type: none"> <li>• Check condition.</li> <li>• Clean and replace if necessary.</li> </ul>		○	
Spark arrester	<ul style="list-style-type: none"> <li>• Check condition.</li> <li>• Clean and replace if necessary.</li> </ul>		○	
Fuel tank filter	<ul style="list-style-type: none"> <li>• Clean and replace if necessary.</li> </ul>			○

Item	Routine	Pre-operation check	Every	
			6 months or 100 Hr	12 months or 300 Hr
Crankcase breather hose	<ul style="list-style-type: none"> <li>• Check breather hose for cracks or damage.</li> <li>• Replace if necessary.</li> </ul>			○
Cylinder head	<ul style="list-style-type: none"> <li>• Decarbonize cylinder head.</li> <li>• More frequently if necessary.</li> </ul>	After every 300 Hrs.		
Valve clearance	• Check and adjust when engine is cold.			★
Idle speed	• Check and adjust idle speed.			★
Recoil starter	• Check recoil starter for damage.			★
Fittings / fasteners	<ul style="list-style-type: none"> <li>• Check all fittings and fasteners.</li> <li>• Correct if necessary.</li> </ul>			★
The point where abnormality was recognized by use.		○		

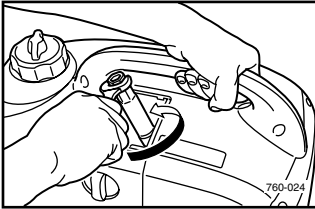
\*1..... Initial replacement of the engine oil is after one month or 20 hours of operation.

\*2..... The air filter element needs to be cleaned more frequently when using in unusually wet or dusty areas.

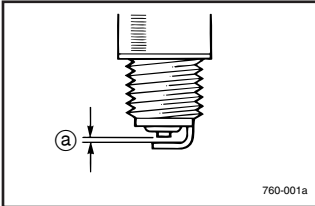
★..... Since these items require special tools, data and technical skills, have a Yamaha dealer perform the service.



① Cover



2. Remove the spark plug with a tool.
3. Check for discoloration and remove the carbon. The porcelain insulator around the center electrode of spark plug should be a medium-to-light tan color.



② Gap

Standard spark plug:  
CR4HSB (NGK)  
Spark plug gap:  
0.6–0.7 mm (0.024–0.028 in)

**TIP**

The spark plug gap should be measured with a wire thickness gauge and, if necessary, adjusted to specification.

5. Install the spark plug.

Spark plug torque:  
13 Nm (1.3 m·kgf, 9.4 ft·lbf)

**TIP**

If a torque wrench is not available when installing a spark plug, a good estimate of the correct torque is 1/4-1/2 turn past finger tight. However, the spark plug should be tightened to the specified torque as soon as possible.

6. Install the spark plug cap, and then install the cover.

AE00431

### Carburetor adjustment

The carburetor is a vital part of the engine. Adjusting should be left to a Yamaha dealer with the professional knowledge, specialized data, and equipment to do so properly.

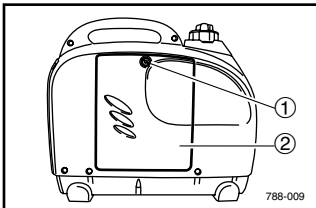
AE01159

### Engine oil replacement



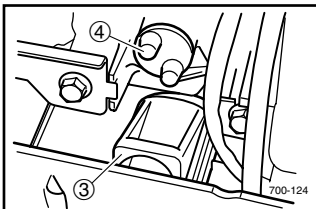
**Avoid draining the engine oil immediately after stopping the engine. The oil is hot and should be handled with care to avoid burns.**

1. Place the generator on a level surface and warm up the engine for several minutes.  
Then stop the engine and turn the fuel cock knob to "OFF". Turn the fuel tank cap air vent knob clockwise.



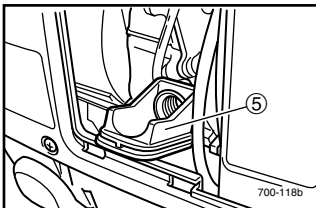
2. Remove the screw and the cover.

- ① Screw
- ② Cover



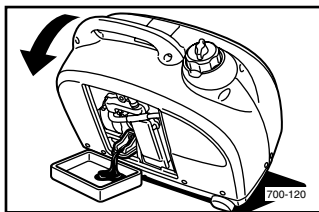
3. Remove the oil drain joint pushing downward from the bottom of the generator and remove the oil filler cap.

- ③ Oil drain joint
- ④ Oil filler cap



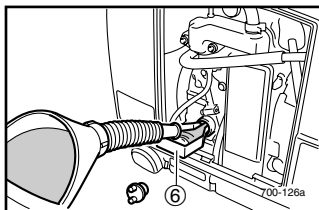
4. Attach the oil drain joint to the oil filler hole.

- ⑤ Oil drain joint



5. Place an oil pan under the engine. Tilt the generator to drain the oil completely.

6. Place the generator on a level surface and remove the oil drain joint.

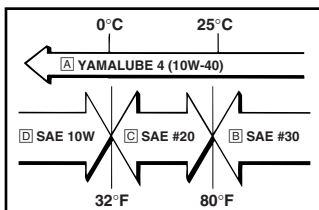


7. Add engine oil to the upper level of the filler hole using the oil filler guide.

#### ⑥ Oil filler guide

### NOTICE

- Do not tilt the generator when adding engine oil. This could result in overfilling and damage to the engine.
- Be sure no foreign material enters the crankcase.



Recommended engine oil:

A) YAMALUBE 4 (10W-40),  
SAE 10W-30 or 10W-40

B) SAE #30

C) SAE #20

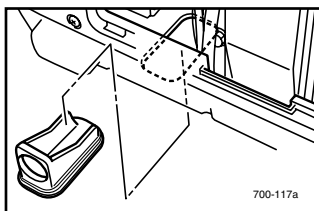
D) SAE 10W

Recommended engine oil grade:

API Service SE type or higher

Engine oil quantity:

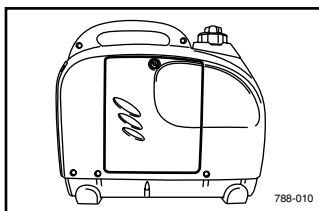
0.32 L (0.34 US qt, 0.28 Imp qt)



8. Wipe the oil drain joint clean, and wipe up any spilled oil.

9. Install the oil filler cap.

10. Install the oil drain joint in its original position.



11. Install the cover and the screw.



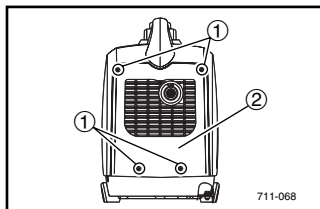
AE01028

## Muffler screen and spark arrester

### **WARNING**

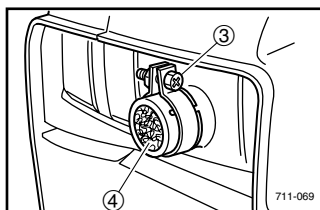
The engine and muffler will be very hot after the engine has been run.

Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



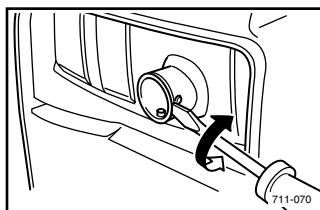
1. Remove the screws and the cover.

- ① Screw
- ② Cover

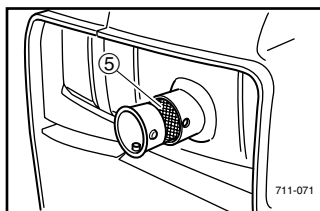


2. Loosen the bolt and then remove the muffler screen.

- ③ Bolt
- ④ Muffler screen

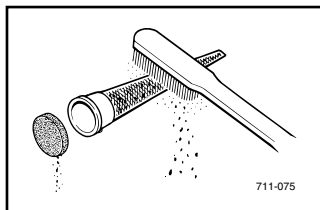


3. Use a flathead screw driver to pry the spark arrester out from the muffler.



4. Remove the spark arrester.

- ⑤ Spark arrester

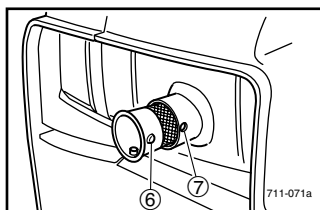


5. Remove the carbon deposits on the muffler screen and spark arrester using a wire brush.

### **NOTICE**

**When cleaning, use the wire brush lightly to avoid damaging or scratching of the muffler screen and spark arrester.**

6. Check the muffler screen and spark arrester. Replace them if damaged.



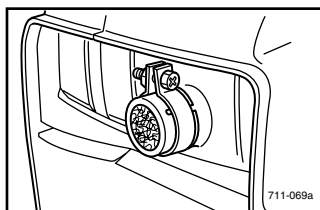
7. Install the spark arrester.

### **TIP**

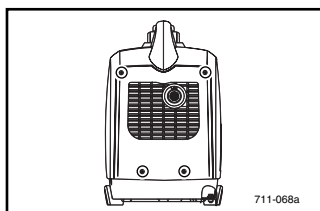
Align the spark arrester lump to the hole in the muffler pipe.

⑥ Spark arrester lump

⑦ Hole



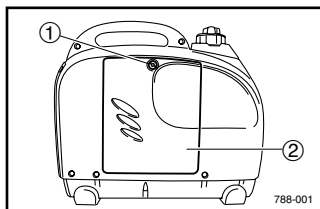
8. Install the muffler screen and then tighten the bolt.



9. Install the cover and tighten the screws.

## Air filter

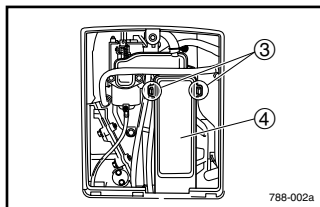
1. Remove the screw and the cover.



① Screw

② Cover

2. Remove the clips holding the air filter case cover.



③ Clip

④ Air filter case cover

3. Remove the air filter case cover and foam element.

⑤ Foam element

4. Wash the foam element in solvent and dry it.

### **⚠ WARNING**

**Never use solvent while smoking or in the vicinity of an open flame.**

5. Oil the foam element and squeeze out excess oil.  
The foam element should be wet but not dripping.

Recommended oil:  
Foam-air-filter oil  
or  
engine oil (See page 27)

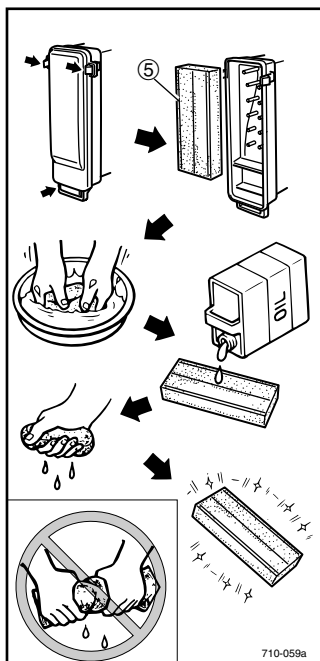
### **NOTICE**

**Do not wring out the foam element when squeezing it. This could cause it to tear.**

6. Insert the foam element into the air filter case.

### **NOTICE**

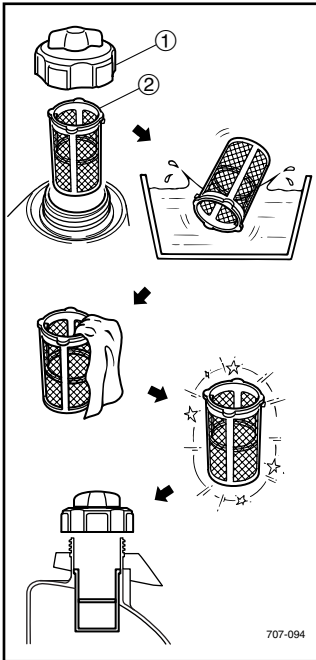
**The engine should never run without the foam element; excessive piston and cylinder wear may result.**



### TIP

Be sure the foam element sealing surface matches the air filter so there is no air leak.

7. Install the air filter case cover in its original position and install the clips.
8. Install the cover and tighten the screw.



AE00471

### Fuel tank filter

#### **⚠ WARNING**

**Never use the gasoline while smoking or in the vicinity of an open flame.**

1. Remove the fuel tank cap and fuel tank filter.

- ① Fuel tank cap
- ② Fuel tank filter

2. Clean the fuel tank filter with gasoline.  
Replace it if damaged.
3. Wipe the fuel tank filter and insert it.
4. Install the fuel tank cap.

#### **⚠ WARNING**

**Be sure the fuel tank cap is tightened securely.**

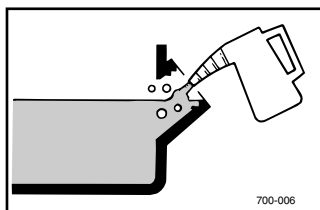
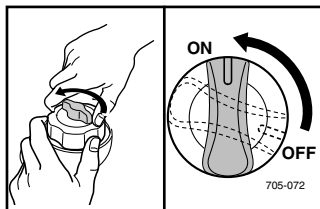
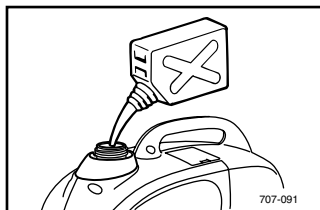
## TROUBLESHOOTING

### Engine won't start

#### 1. Fuel systems

No fuel supplied to combustion chamber.

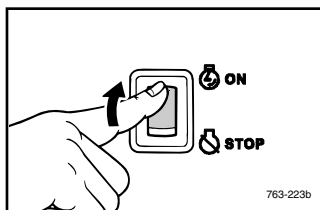
- No fuel in tank .... Supply fuel.
- Fuel in tank .... Fuel tank cap air vent knob and fuel cock knob to "ON".
- Clogged fuel line .... Clean fuel line.
- Clogged carburetor .... Clean carburetor.



#### 2. Engine oil system

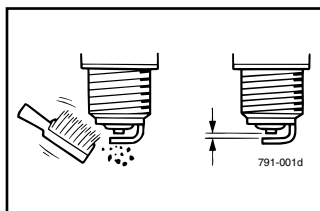
Insufficient

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



#### 3. Electrical systems

- Engine switch to "ON" and pull the recoil starter.



Poor spark

- Spark plug dirty with carbon or wet .... Remove carbon or wipe spark plug dry.
- Faulty ignition system .... Consult a Yamaha dealer.

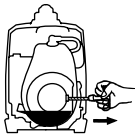
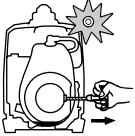
### Generator won't produce power

- Safety device (AC) to "OFF" .... Stop the engine, then restart.
- Safety device (DC protector) to "OFF" .... Press to "RESET" the DC protector.

A	ENGINE DOES NOT START
---	-----------------------



B	Turn the engine switch to "ON", then pull the recoil starter and check if the oil warning light flickers.
---	---

C	Does not flicker	D	Flickers.
---	------------------	---	-----------



H	Pull the recoil starter and check the spark plug for spark strength. (See "WARNING")
---	--



**⚠ WARNING**

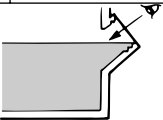
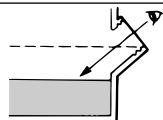
- To prevent **FIRE HAZARDS** be sure fuel is not present in the spark plug area.
- To prevent **FIRE HAZARDS** be sure to place the spark plug as far away as possible from the spark plug hole and carburetor area.
- To prevent **ELECTRIC SHOCK** do not hold spark plug lead with hand while testing.

I	OK	J	Dose not spark
---	----	---	----------------



N	Check the following	O	Clogged
	<ul style="list-style-type: none"> <li>• Fuel line clogging</li> <li>• Air cleaner element clogging.</li> </ul>	P	OK

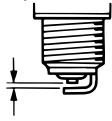

E	Check engine oil level.	
---	-------------------------	--

F	OK	G	Level low
Consult a Yamaha dealer.		Add engine oil.	

K	Check the spark plug.	
---	-----------------------	--

- Type: CR4HSB
- Gap: 0.6–0.7 mm (0.024–0.028 in)

L	Incorrect	M	OK
Replace or adjust gap.		Clean the spark plug.	

Q	Clean or replace	R	OK
S	Engine does not start.		



T	Consult a Yamaha dealer.
---	--------------------------

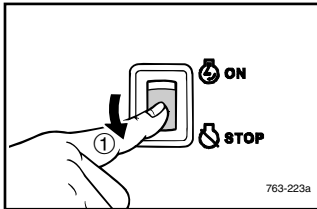
## STORAGE

Long term storage of your machine will require some preventive procedures to guard against deterioration.

AE01177

### Drain the fuel

1. Turn the engine switch to "STOP".



- ① "STOP"

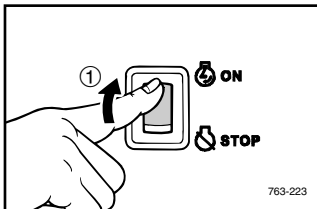
2. Remove the fuel tank cap and the fuel tank filter. Extract the fuel from the fuel tank into an approved gasoline container using a commercially available handsiphon. Then, install the fuel tank filter and the fuel tank cap.

### WARNING

**Fuel is highly flammable and poisonous. Check "SAFETY INFORMATION" (See page 3) carefully.**

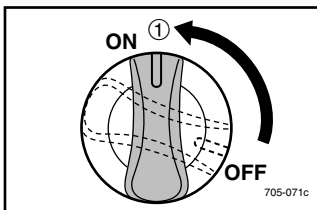
### NOTICE

**Immediately wipe off spilled fuel with a clean, dry, soft cloth, since fuel may deteriorate painted surfaces or plastic parts.**



3. Turn the engine switch to "ON".

- ① "ON"



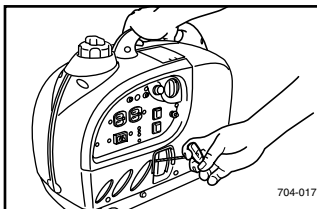
4. Turn the fuel cock knob to "ON".

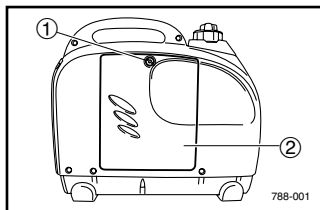
- ① "ON"

5. Start the engine and leave it run until it stops. The engine stops in approximately 20 minutes time by running out of fuel.

### TIP

- Do not connect with any electrical devices. (unloaded operation)
- Duration of the running engine depends on the amount of the fuel left in the tank.

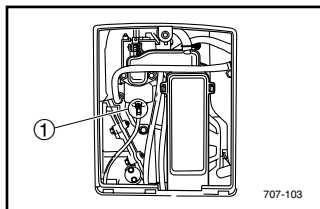




6. Remove the screw and the cover.

① Screw

② Cover



7. Drain the fuel remaining in the carburetor into an approved container by loosening the drain screw on the carburetor float chamber.

① Drain screw

8. Tighten the drain screw.

9. Turn the engine switch to "OFF".

10. Turn the fuel cock knob to "OFF".

11. Install the cover and tighten the screw.



12. Tighten further if any screws, bolts and nuts are loose.

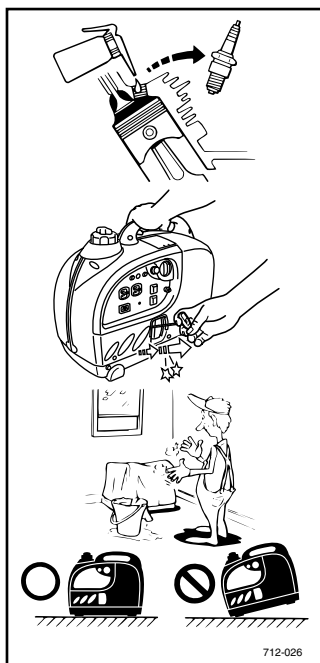
13. Store the generator in a dry, well-ventilated place, with the cover placed over it.



**Engine**

Perform the following steps to protect the cylinder, piston ring, etc. from corrosion.

1. Remove the spark plug, pour about one tablespoon of SAE 10W-30 or 20W-40 motor oil into the spark plug hole and reinstall the spark plug. Recoil start the engine by turning over several times (with ignition off) to coat the cylinder walls with oil.
2. Pull the recoil starter until you feel compression. Then stop pulling. (This prevents the cylinder and valves from rusting).
3. Clean exterior of the generator and apply a rust inhibitor.
4. Store the generator in a dry, well-ventilated place, with the cover placed over it.
5. The generator must remain in a vertical position when stored, carried or operated.



## EXHAUST EMISSION CONTROL SYSTEM AND COMPONENTS

Item	Acronym
• CARB. ASSY., LH. & JT., ..... CARBURETOR2	CARB (Carburetor)
• T.C.I. MAGNETO ASSY. & ..... PLUG, SPARK	EI (Electronic Ignition)
• CRANKCASE1 & HEAD, ..... CYLINDER1	PCV (Positive Crankcase Ventilation)
• AIR FILTER ASSY. ....	ACL (Air Cleaner)
• MUFF., 2, CAP, NET, WIRE2 & ARRESTER, SPARK	

The above items and the corresponding acronyms are provided in accordance with U.S. EPA REGULATIONS FOR NEW NONROAD SPARK-IGNITION NONHANDHELD ENGINES and the CALIFORNIA REGULATIONS FOR 1995 AND LATER SMALL OFF-ROAD ENGINES.

The acronyms conform to the latest version of the SAE's recommended practice document J1930, "Diagnostic Acronyms, Terms, and Definitions For Electrical/Electronic System".

It is recommended that these items be serviced by a Yamaha dealer.

## SPECIFICATIONS

### Dimensions

	Unit	EF1000iS
Overall Length	mm (in)	450 (17.7)
Overall Width	mm (in)	240 (9.4)
Overall Height	mm (in)	380 (15.0)
Dry Weight	kg (lb)	12.7 (28.0)

### Engine

	Unit	EF1000iS
Type		Air cooled 4-stroke gasoline OHV
Cylinder Arrangement		Vertical 1 cylinder
Displacement	cm <sup>3</sup>	50
Bore × Stroke	mm (in)	41.0 × 38.0 (1.61 × 1.50)
Operation Hours	Hr	4.3–12.0 (rated load–1/4 load)
Fuel		Unleaded gasoline
Fuel Tank Capacity	L (US gal, Imp gal)	2.5 (0.66, 0.55)
Engine Oil Quantity	L (US qt, Imp qt)	0.32 (0.34, 0.28)
Ignition System		TCI
Spark Plug: Type		CR4HSB (NGK)
Gap	mm (in)	0.6–0.7 (0.024–0.028)
Noise Level*	dB / LWA	86
	dB (A) / 7 m	48.5–60.5

\* : Noise level is measured when the economy control switch is turned to “ON”.

LWA shows the sound power level under the ISO3744 satisfied test conditions.

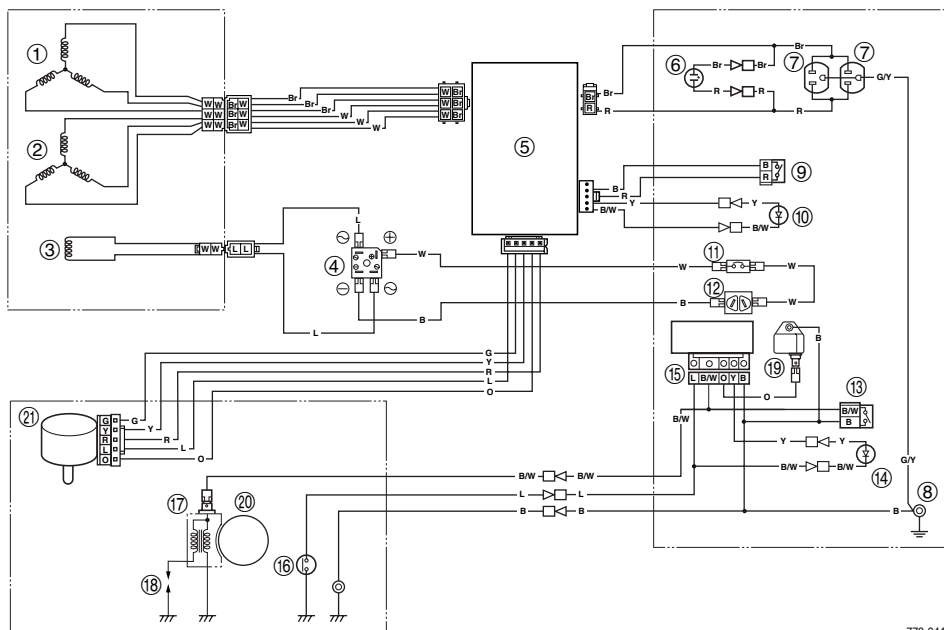
The noise level in “dB (A) / 7 m” is the arithmetic mean value in four directions measured 7 meters away from each side of the generator.

The noise level may vary in different environments.

### Generator

	Unit	EF1000iS
AC Output		
Rated Voltage	V	120
Rated frequency	Hz	60
Rated current	A	7.5
Rated Output	VA	900
Safety Device: Type		Electronic
DC Output		
Rated voltage	V	12
Rated current	A	8
Safety Device: Type		DC protector

# WIRING DIAGRAM



770-044f

- |                            |                     |
|----------------------------|---------------------|
| ① Main coil                | ⑫ DC receptacle     |
| ② Sub coil                 | ⑬ Engine switch     |
| ③ DC coil                  | ⑭ Oil warning light |
| ④ DC rectifier             | ⑮ Speed limiter     |
| ⑤ Control unit             | ⑯ Oil level gauge   |
| ⑥ AC pilot light           | ⑰ Ignition coil     |
| ⑦ AC receptacle            | ⑱ Spark plug        |
| ⑧ Ground (earth) terminal  | ⑲ TCI unit          |
| ⑨ Economy control switch   | ⑳ TCI magneto       |
| ⑩ Overload indicator light | ㉑ Stepping motor    |
| ⑪ DC protector             |                     |

## Color code

B	Black
Br	Brown
G	Green
L	Blue
O	Orange
R	Red
W	White
Y	Yellow
B/W	Black/White
G/Y	Green/Yellow

## YAMAHA EXTENDED SERVICE (Y.E.S.)

Keep your Yamaha Generator protected even after your warranty expires with genuine Yamaha Extended Service (Y.E.S.).

- Y.E.S. is designed and administered by Yamaha Motor Corporation to provide maximum owner satisfaction. You get uninterrupted factory-backed coverage for extra peace of mind.
- Y.E.S. is flexible. You can choose the plan that's right for you: 12 months, 24 months or 36 months coverage.
- Y.E.S. is administered by the same Yamaha people that handle your warranty - and it shows in the comprehensive coverage benefits. There are no hour limitations and Y.E.S. covers manufacturing defects just like your warranty. See a sample contract at your Yamaha dealer and see how comforting uninterrupted factory backed protection can be.
- There are no "out-of-pocket" expenses for covered repairs. Yamaha will never ask you to pay a deductible.
- Nationwide coverage. Y.E.S. coverage is honored at any authorized Yamaha Outdoor Power Equipment Service dealer.
- Y.E.S. coverage is transferable to a new owner if you sell or trade-in. That can make you Yamaha much more valuable.

This excellent Y.E.S. plan coverage is only available to Yamaha owners like you, and only while your Yamaha is still within the Yamaha Limited Warranty period. So visit your authorized Yamaha dealer to get all the facts. He can show you how easy it is to protect your investment with Yamaha Extended Service.

### Special note:

If visiting your dealer isn't convenient, contact Yamaha with your Primary ID number (your frame number). We'll be happy to help you get the Y.E.S. coverage you need.


Yamaha Service Marketing  
P.O. Box 6555  
Cypress, CA 90630  
1-866-YES-EXTD  
(1-866-937-3983)

— MEMO —





PRINTED ON RECYCLED PAPER

PRINTED IN JAPAN  
2013.12-0.5×1   
(E)



## Register Your Generator at

Or complete the card below and Mail

## Generator Warranty Registration

**To begin your 3 year warranty coverage, please register online within 30 days of purchase:**

**www.yamahawarrantyregistration.com**

If you prefer, you can complete and mail this card. Be sure to attach proper postage.

Owner's Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone Number ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_

E-mail address \_\_\_\_\_

Yamaha Generator Model Name: \_\_\_\_\_ (Example) EF2000iS

Yamaha Generator Primary I.D. Serial Number: \_\_\_\_\_ (Example) 7DK - 0000000  
(See "Machine Identification" in your Owner's Manual for location of this number)  
(The engine stamp is not the valid Primary ID Number)

Date Purchased \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Month Day Year

Selling Dealer Name \_\_\_\_\_

- Please register online or complete and mail this form. It will help ensure that Yamaha has accurately registered your purchase for warranty.
- Manufacturers are required to maintain a complete up-to-date list of all first purchasers of products in the event of a safety-related defect or recall.

REGISTER ONLINE OR MAIL THIS CARD TO YAMAHA MOTOR CORPORATION, U.S.A.

PLACE  
STAMP  
HERE

**YAMAHA MOTOR CORPORATION U.S.A.  
P.O. BOX 6555  
CYPRESS, CA 90630**

**ATTN: WARRANTY DEPARTMENT**