

 **Read this manual carefully before operating this machine.**


# **EF2400iSHC**

## **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

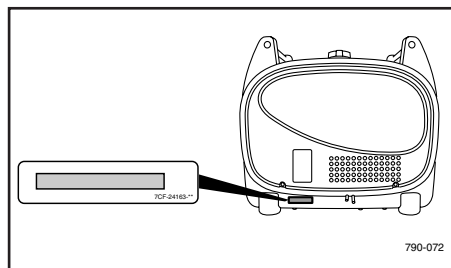
<b>MODEL</b>	
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
<b>PRI-I.D. CODE</b>	<b>SERIAL No.</b>
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>

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

**EF2400iSHC**  
**OWNER'S MANUAL**  
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 Printed in Japan.  
 P/N LIT-19626-01-64

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.**



## **WARNING**

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

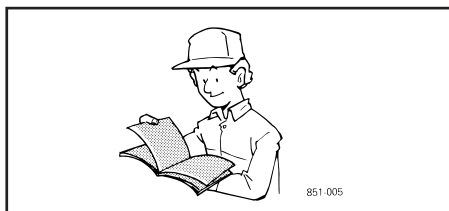
## **NOTICE**

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



## **WARNING**

**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>LIMITED WARRANTY (EF- AND EDL-SERIES)</b> .....	1	CARBURETOR ADJUSTMENT.....	25
<b>LOCATION OF IMPORTANT LABELS</b> ..	3	ENGINE OIL REPLACEMENT .....	25
<b>SAFETY INFORMATION</b> .....	5	MUFFLER SCREEN AND SPARK ARRESTER .....	26
EXHAUST FUMES ARE		AIR FILTER.....	28
POISONOUS .....	5	FUEL TANK FILTER.....	29
FUEL IS HIGHLY FLAMMABLE AND POISONOUS .....	5	<b>TROUBLESHOOTING</b> .....	30
ENGINE AND MUFFLER MAY BE HOT.....	5	<b>STORAGE</b> .....	32
ELECTRIC SHOCK PREVENTION.....	6	DRAIN THE FUEL .....	32
CONNECTION NOTES .....	7	ENGINE .....	34
CONNECTION.....	7	<b>EXHAUST EMISSION CONTROL SYSTEM AND COMPONENTS</b> .....	35
EXTENSION CORD NOTES .....	7	<b>SPECIFICATIONS</b> .....	36
<b>CONTROL FUNCTION</b> .....	8	DIMENSIONS .....	36
DESCRIPTION .....	8	ENGINE .....	36
CONTROL PANEL .....	8	GENERATOR.....	36
OIL WARNING LIGHT (Red) .....	9	<b>WIRING DIAGRAM</b> .....	37
ENGINE SWITCH.....	9		
DC PROTECTOR .....	9		
<b>PRE-OPERATION CHECK</b> .....	11		
FUEL.....	11		
ENGINE OIL .....	12		
GROUND (earth) .....	12		
<b>OPERATION</b> .....	13		
STARTING THE ENGINE .....	13		
APPLICATION RANGE.....	15		
CONNECTION.....	16		
STOPPING THE ENGINE.....	21		
<b>PERIODIC MAINTENANCE</b> .....	22		
MAINTENANCE CHART .....	22		
SPARK PLUG INSPECTION .....	24		

## YAMAHA MOTOR CORPORATION U.S.A. EF- AND EDL-SERIES GENERATOR LIMITED WARRANTY

Yamaha Motor Corporation, U.S.A. hereby warrants that new Yamaha consumer generators purchased from an authorized Yamaha consumer generator dealer in the continental United States will be free from defects in material and workmanship for the period of time stated herein, subject to certain stated limitations.

**THE PERIOD OF WARRANTY** Any new EF-series or EDL-series Yamaha Generator purchased for private, non-commercial use from an authorized Yamaha consumer generator dealer in the continental United States will be warranted against defects in material or workmanship for a period two (2) years from date of purchase, subject to exclusions noted herein. Any Yamaha non-commercial generator purchased and utilized for commercial or rental applications will be warranted for a period one (1) year from the date of purchase, subject to exclusions noted herein.

**DURING THE PERIOD OF WARRANTY** any authorized Yamaha consumer generator dealer will, free of charge, repair or replace, at Yamaha's option, any part adjudged defective by Yamaha due to faulty workmanship or material from the factory. Parts used in warranty repairs will be warranted for the balance of the product's warranty period. All parts replaced under warranty become property of Yamaha Motor Corporation U.S.A.

**GENERAL EXCLUSIONS** from this warranty shall include any failures caused by:

- a. Installation of parts or accessories that are not qualitatively equivalent to genuine Yamaha parts.
- b. Abnormal strain, neglect, or abuse.
- c. Lack of proper maintenance.
- d. Accident or collision damage.

**SPECIFIC EXCLUSIONS** from this warranty shall include parts replaced due to normal wear or routine maintenance.

**THE CUSTOMER'S RESPONSIBILITY** under this warranty shall be to:

1. Operate and maintain the generator as specified in the appropriate Owner's Manual;

2. Give notice to an authorized Yamaha consumer generator dealer of any and all apparent defects within ten (10) days after discovery, and make the unit available at that time for inspection and repairs at such dealer's place of business.

**WARRANTY TRANSFER:** To transfer the warranty from the original purchaser to any subsequent purchaser(s), it is imperative that the unit be inspected and registered for warranty by an authorized Yamaha consumer generator dealer. In order for this warranty to remain in effect, this inspection and registration must take place within ten (10) days after transfer. An inspection and registration fee will be charged for this service. In no case will the warranty be extended beyond the original period.

**YAMAHA MOTOR CORPORATION, U.S.A. MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE OBLIGATIONS AND TIME LIMITS STATED IN THIS WARRANTY ARE HEREBY DISCLAIMED BY YAMAHA MOTOR CORPORATION, U.S.A. AND EXCLUDED FROM THIS WARRANTY.**

**SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. ALSO EXCLUDED FROM THIS WARRANTY ARE ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING LOSS OF USE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.**

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.**

YAMAHA MOTOR CORPORATION, U.S.A.  
Post Office Box 6555  
Cypress, California 90630

## WARRANTY QUESTIONS AND ANSWERS

Q. What costs are my responsibility during the warranty period?

A. The customer's responsibility includes all costs of normal maintenance service, non-warranty repairs, accident damages, as well as oil and spark plugs.

Q. What are some examples of "abnormal" strain, neglect, or abuse?

A. These terms are general and overlap each other in areas. Specific examples include: Running the machine out of oil; lack of proper maintenance; operating the machine with a broken or damaged part which causes another part to fail; and so on. If you have any specific questions on operation or maintenance, please contact your dealer for advice.

Q. Does the warranty cover incidental costs such as transportation due to a failure?

A. No. The warranty is limited to repair of the machine itself.

Q. May I perform any or all of the recommended maintenance shown in the Owner's Manual instead of having the dealer do them?

A. Yes, if you are a qualified mechanic and follow the procedures specified in the Owner's and Service Manual. We do recommend, however, that items requiring special tools or equipment be done by a Yamaha generator dealer.

Q. Will the warranty be void or cancelled if I do not operate or maintain my new Yamaha exactly as specified in the Owner's Manual?

A. No. The warranty on a new Yamaha cannot be "voided" or "cancelled."

**However, if a particular failure is caused by operation or maintenance other than as shown in the Owner's Manual, that failure may not be covered under warranty.**

Q. What responsibility does my dealer have under this warranty?

A. Each Yamaha generator dealer is expected to:

1. Check the operation of the generator before sale.
2. Explain the operation, maintenance, and warranty requirements to your satisfaction at the time of sale, and upon your request at any later date.

In addition, each Yamaha generator dealer is held responsible for his setup, service and warranty repair work.

Q. Is the warranty transferable to second owners?

A. Yes. The remainder of the existing warranty can be transferred upon request.

The unit has to be inspected and reregistered by an authorized Yamaha generator dealer for the policy to remain effective.

## CUSTOMER SERVICE

If your machine requires warranty service, you must take it to any authorized Yamaha generator dealer within the continental United States. Be sure to bring your warranty registration identification or other valid proof of the original date of purchase. If a question or problem arises regarding warranty, first contact the owner of the dealership. Since all warranty matters are handled at the dealer level, this person is in the best position to help you. If you are still not satisfied and require additional assistance, please write:

YAMAHA MOTOR CORPORATION U.S.A.  
CUSTOMER RELATIONS DEPARTMENT  
P.O. BOX 6555  
Cypress, California 90630

## CHANGE OF ADDRESS

The federal government requires each manufacturer to maintain a complete, up-to-date list of all first purchasers against the possibility of a safety-related defect and recall. This list is compiled from the purchase registrations sent to Yamaha Motor Corporation, U.S.A. by the selling dealer at the time of your purchase. If you should move after you have purchased your new generator, please advise us of your new address by sending a postcard listing your Yamaha model name, engine number, dealer number (or dealer's name) as it is shown on your warranty identification, your name and new mailing address. Mail to:

YAMAHA MOTOR CORPORATION, U.S.A.  
WARRANTY DEPARTMENT  
P.O. Box 6555  
Cypress, California 90630

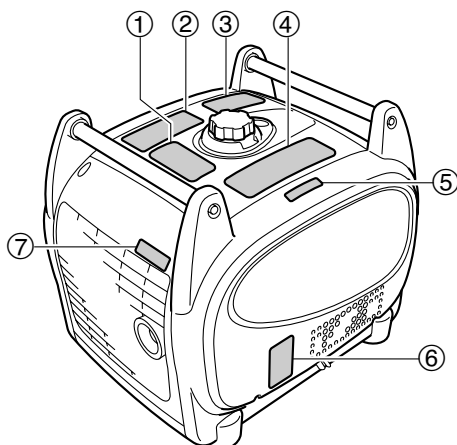
This will ensure that Yamaha Motor Corporation, U.S.A. has an up-to-date registration record in accordance with federal law.

## 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

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

②

<b>⚠ WARNING</b>	<b>⚠ AVERTISSEMENT</b>
<ul style="list-style-type: none"> <li>● Read the owner's manual and all labels before operating.</li> <li>● Only operate in well-ventilated areas.</li> <li>● Exhaust gas contains poisonous carbon monoxide.</li> <li>● Check for spilled fuel or fuel leaks.</li> <li>● Stop engine before refueling.</li> <li>● Do not Operate near flammable materials.</li> <li>● Electrocutation can occur if generator is used in rain, snow, or near water, keep this unit dry at all times.</li> <li>● 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.</li> </ul>	<ul style="list-style-type: none"> <li>● Lisez le mode d'emploi et toutes les étiquettes avant de faire fonctionner la machine.</li> <li>● Faites fonctionner uniquement dans des lieux bien aérés.</li> <li>● Les gaz d'échappement contiennent du monoxyde de carbone.</li> <li>● Vérifiez si du carburant a été renversé ou s'il fuit.</li> <li>● Arrêtez le moteur avant de faire le plein de carburant.</li> <li>● N'utilisez pas à proximité de matériaux inflammables.</li> <li>● Il y a risque d'électrocution si le générateur fonctionne sous la pluie, dans la neige, ou près de l'eau, gardez la machine à sec en toutes circonstances.</li> <li>● Quand la génératrice est en marche:            Ne jamais entourer la génératrice de cloisons ou d'écrans.            Ne jamais recouvrir la génératrice d'une boîte.            Ne jamais disposer d'objets sur la génératrice.</li> </ul>

7CF-24162-20

③

## ⚠ WARNING

Electrocution 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.

7XF-2415A-10

④

### Important Emissions Information

YAMAHA MOTOR POWERED PRODUCTS CO.,LTD.

This engine meets \*\*\*\* California exhaust and evaporative emission regulations for small off-road engines.

This engine conforms to Phase 2 U.S.EPA regulations for small nonroad engines.

EMISSIONS COMPLIANCE PERIOD : CATEGORY A(EPA)

EF: \*\*\*\*\* DISPLACEMENT: \*\*\* cc

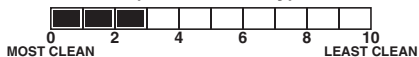
EVAP F: \*\*\*\*\* EMISSION CONTROL SYSTEM: EM

This engine is certified to operate on unleaded gasoline.

ENGINE OIL: SAE10W-30 TYPE: SE

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.

⑤

## NOTICE

Use the specified spark plug only.  
Specified plug: BPR4ES(NGK)

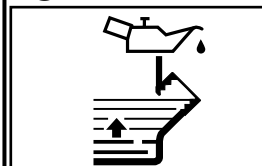
⑦

## HOT EXHAUST

7WL-28176-10

⑥

## OIL



### YAMAHA EF2400iSHC

AC output	60Hz
Rated	2.0KVA
	120V
Phase	Single
DC output	12V 8A
Fuel	Gasoline

YAMAHA MOTOR POWERED PRODUCTS CO.,LTD.  
MADE IN JAPAN

7CF-2415A-10

AE00071

## SAFETY INFORMATION

AE00072

### EXHAUST FUMES ARE POISONOUS

- 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.

AE00075

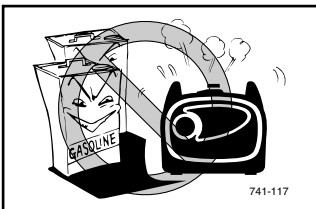
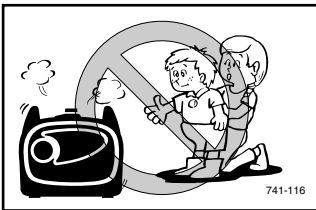
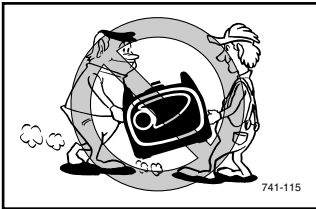
### FUEL IS HIGHLY FLAMMABLE AND POISONOUS

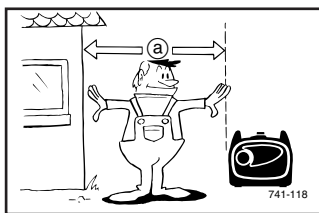
- Always turn off the engine when refuelling.
- Never refuel while smoking or in the vicinity of an open flame.
- Take care not to spill any fuel on the engine or muffler when refuelling.
- If you swallow any fuel, inhale fuel vapor, or allow any to get in your eye(s), see your doctor immediately. If 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.

AE00843

### ENGINE AND MUFFLER MAY BE HOT

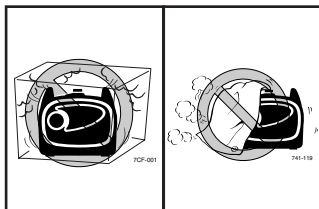
- Place the generator in a place where pedestrians or children are not likely to touch the generator.
- Avoid placing any flammable materials near the exhaust outlet during operation.



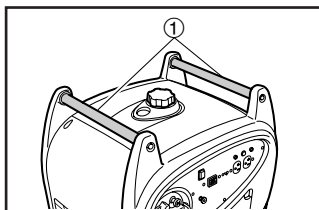


- Keep the generator at least 1 m (3 ft) from buildings or other equipment, or the engine may overheat.

Ⓐ 1 m (3 ft)

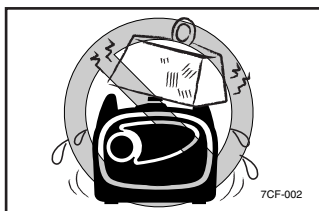


- Do not operate the engine with a dust cover or other objects covering it.
- When covering the generator, be sure to do so only after the engine and muffler have completely cooled down.



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

① Carrying handle(s) (shaded)



- Do not place any obstacles on the generator.

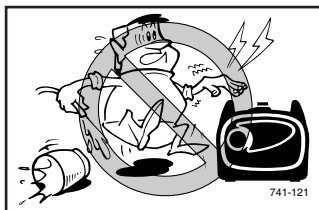
AE00083

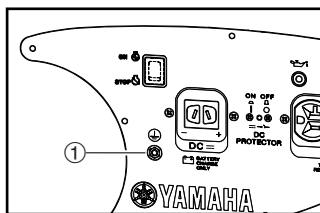
## ELECTRIC SHOCK PREVENTION

- Never operate the engine in rain or snow.



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





- Connect the ground lead of the generator to the ground (earth) terminal and connect the end to the ground electrode buried in the ground.

① Ground (earth) terminal

AE01181

## CONNECTION NOTES

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

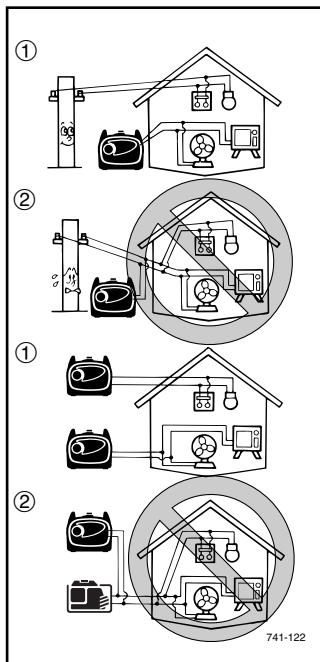
- ① Correct  
② Incorrect

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.

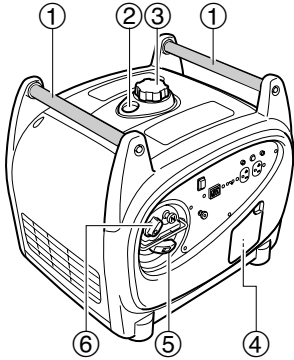


AE00086

## EXTENSION CORD NOTES

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

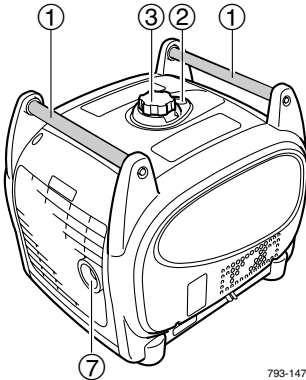
## CONTROL FUNCTION



AE00102

### DESCRIPTION

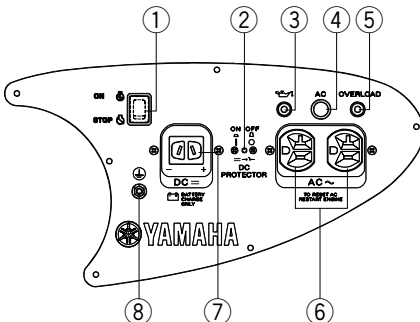
- ① Carrying handles (shaded)
- ② Fuel level gauge
- ③ Fuel tank cap
- ④ Oil filler cap
- ⑤ Recoil starter
- ⑥ Fuel cock
- ⑦ Muffler



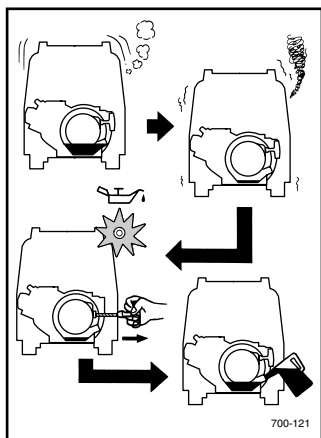
793-147

AE00103

### CONTROL PANEL



- ① Engine switch
- ② DC protector
- ③ Oil warning light
- ④ AC pilot light
- ⑤ Overload indicator light
- ⑥ AC receptacle
- ⑦ DC receptacle
- ⑧ Ground (earth) terminal



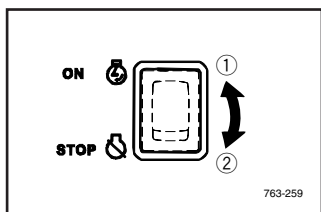
AE00111

## 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.



AE00124

## ENGINE SWITCH

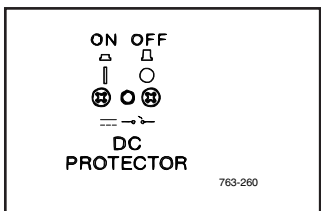
The engine switch controls the ignition system.

### ① "ON"

Ignition circuit is switched on.  
The engine can be started.

### ② "STOP"

Ignition circuit is switched off.  
The engine will not run.



## DC PROTECTOR

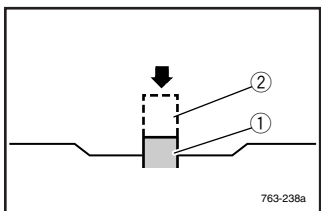
The DC protector turns to "OFF" ② automatically when electric device being connected to the generator is operating and current above the rated flows. To use this equipment again, turn on the DC protector by pressing its button to "ON" ①.

### ① "ON"

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

### ② "OFF"

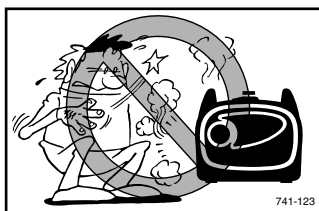
Direct current is not output.



## 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.





AE00845

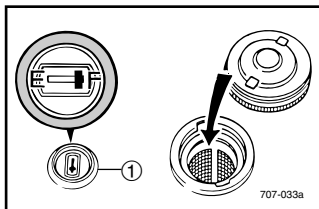
## PRE-OPERATION CHECK

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.

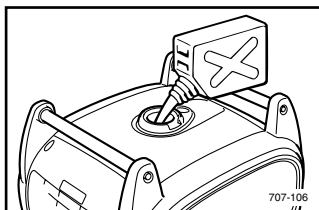
Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



AE00856

### FUEL

Make sure there is sufficient fuel in the tank.



Recommended fuel:

Unleaded gasoline

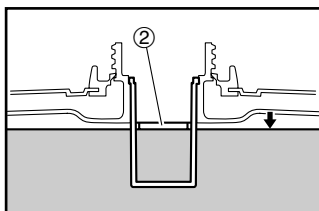
Fuel tank capacity:

Total: 6.0 L (1.32 Imp gal, 1.59 US 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.

① Fuel level gauge

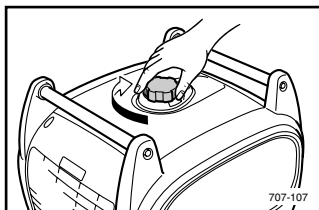
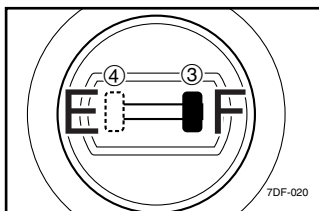
② "LEVEL" mark (Red)



③ "F"	Full
④ "E"	Empty

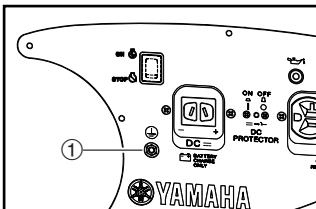
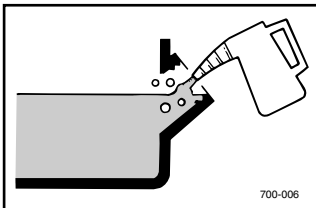
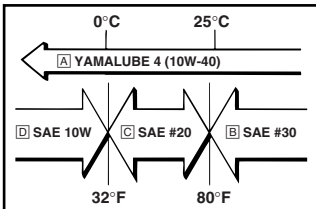
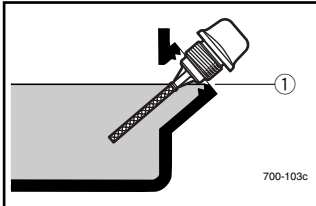
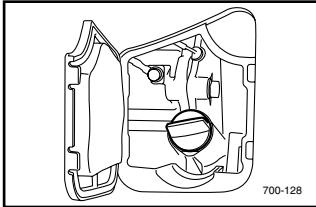
### **! WARNING**

- Fuel is highly flammable and poisonous. Check "SAFETY INFORMATION" (See page 5) carefully before refueling.
- Do not fill above the "LEVEL" mark ② in the fuel filter or it may overflow when the fuel warms up and expands.
- After refueling, make sure the tank cap is tightened securely.



## 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.



AE00222

## ENGINE OIL

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

- ① Upper 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:

0.6 L (0.63 US qt, 0.53 Imp qt)

## NOTICE

The generator has been shipped without engine oil. Do not start the engine till fill with the sufficient engine oil.

AE00241

## GROUND (earth)

Make sure to ground (earth) the generator.

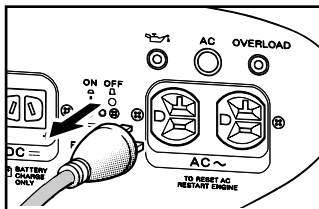
Check “SAFETY INFORMATION” (see page 5).

- ① Ground (earth) terminal

## OPERATION

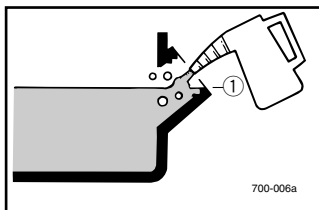
### WARNING

- 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.

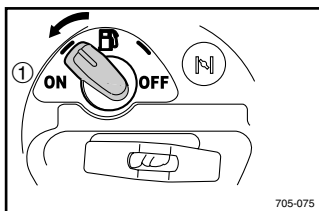


### NOTICE

The generator has been shipped without engine oil. Do not start the engine till fill with the sufficient engine oil.



- ① Upper level

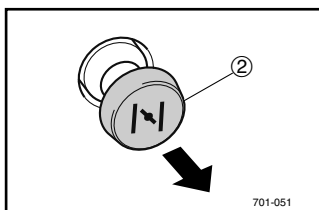


AE01171

### STARTING THE ENGINE

1. Turn the fuel cock lever to "ON".

- ① "ON"

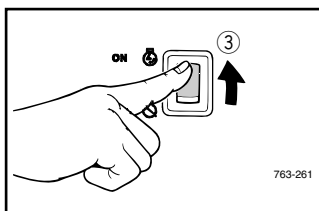


2. Pull the choke lever fully out.


- ② Choke lever

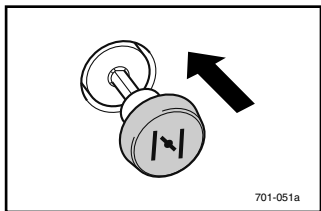
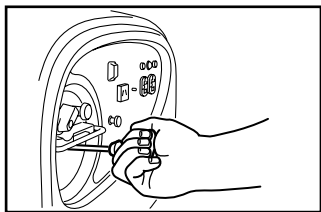
### TIP

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



3. Turn the engine switch to "ON".

- ③  "ON"



4. Pull slowly on the recoil starter until it is engaged, then pull it briskly.
5. After the engine starts, warm up the engine until the engine does not stop when the choke lever is returned to the original position.
6. Push the choke lever back to the original position.

---





**TIP**

When starting the engine in areas where the ambient temperature is below 0°C (32°F), the engine automatically operates at the rated r/min (3,200 r/min) for 3 minutes to warm up the engine

---

APPLICATION RANGE

When using the generator, make sure the total load is within rated output of a generator. Otherwise, generator damage may occur.

AC				DC 
Power factor	1	0.8–0.95	0.4–0.75 (Efficiency 0.85)	
EF2400iSHC	–2,000W	–1,600W	–680W	Rated voltage 12V Rated current 8A

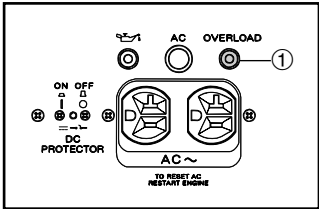
TIP

- “–” 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		2,000VA
Frequency	Power factor	
AC	1.0	–1,900W
	0.8	–1,500W
DC	—	96W (12V/8A)

- The overload indicator light ① comes on when total wattage exceeds the application range. (See page 17 for more details.)



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)

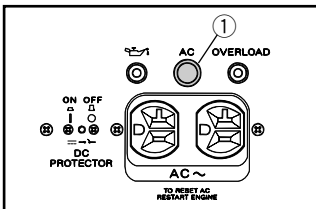
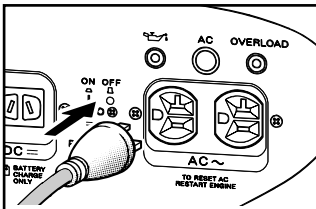
#### **WARNING**

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

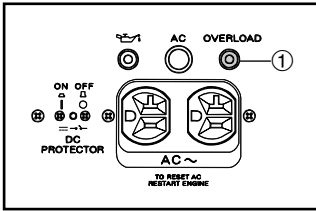
#### **NOTICE**

- 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 on any electric devices.



## Overload indicator light (Red)

The overload indicator light (Red) ① 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.

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.
4. After checking, restart the engine.

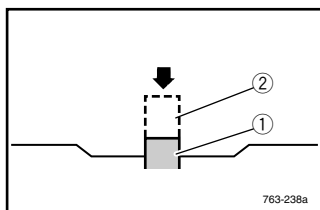
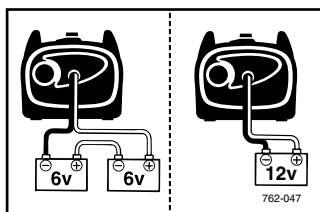
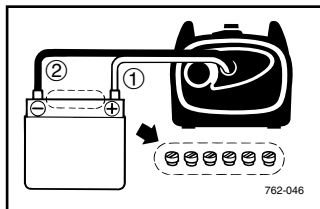
## TIP

- The generator AC output automatically resets when the engine is stopped and then restarted.
- The overload indicator light (Red) 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

### 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 Red wire
- ② Black wire

1. Start the engine.
2. Press in the DC protector.
3. Connect the red battery charger lead ① to the positive (+) battery terminal.
4. Connect the black battery charger lead ② to the negative (-) battery terminal.

### NOTICE

- 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 ② 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 "ON" ①. If the DC protector turns off again, stop charging the battery immediately and consult a Yamaha dealer.

- ① "ON"
- ② "OFF"

## **TIP**

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- 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 over-charging the battery.
- 

## **Operating range of DC power supply (exclusively for charging 12-V 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.

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.

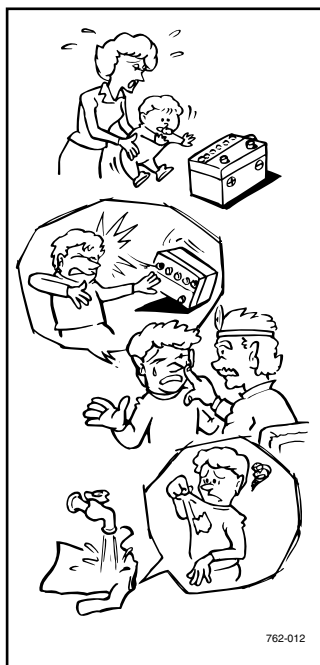
The average time for charging a half-discharged 40AH battery is approximately 5 hours.

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.**
-



## **WARNING**

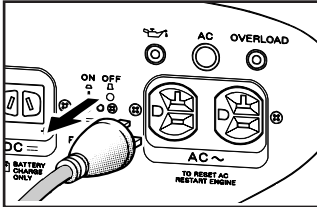
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- Electrolyte is poisonous and dangerous since it contains sulfuric acid, which causes severe burns. Avoid any contact with skin, eyes or clothing and always shield your eyes when working near batteries. In case of contact, administer the following 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.**
-

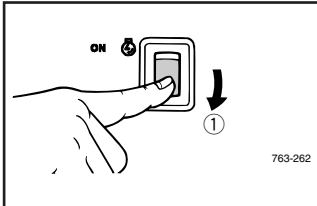
## STOPPING THE ENGINE

### TIP

Turn off any electric devices.

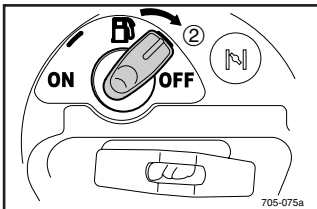


1. Disconnect any electric devices.



2. Turn the engine switch to "STOP".

① "STOP"



3. Turn the fuel cock lever to "OFF".

② "OFF"

## 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 attention.**

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. 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> </ul>		○	
	<ul style="list-style-type: none"> <li>• Clean and replace if necessary.</li> </ul>			
Spark arrester	<ul style="list-style-type: none"> <li>• Check condition.</li> </ul>		○	
	<ul style="list-style-type: none"> <li>• Clean and replace if necessary.</li> </ul>			
Fuel 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>			★
Valve clearance	<ul style="list-style-type: none"> <li>• Check and adjust when engine is cold.</li> </ul>			★
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		○		

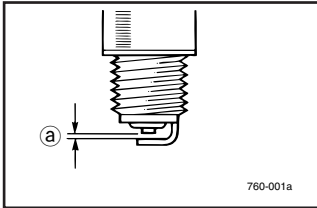
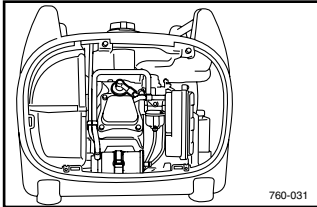
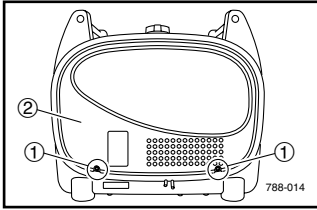
\*1.....Initial replacement of the engine oil is after one month or 20 hours of operation.

\*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.

**SPARK PLUG INSPECTION**

The spark plug is important engine components, which should be checked periodically.



1. Remove the screws ① and side cover ②.

2. Remove the spark plug cap and the spark plug.

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.

4. Check the spark plug type and gap ③.

Standard Spark Plug:

BPR4ES (NGK)

Spark Plug Gap ③:

0.7–0.8 mm (0.028–0.031 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:

20 Nm (2.0 m·kgf, 14 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.

7. Install the side cover and tighten the screws.

## CARBURETOR ADJUSTMENT

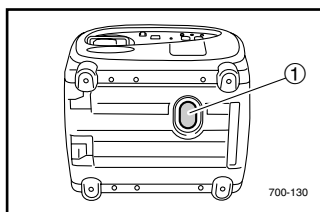
The carburetor is a vital part of the engine. Adjusting should be left to a Yamaha dealer with the professional knowledge, specialized data, and equipment to do so properly.

## ENGINE OIL REPLACEMENT



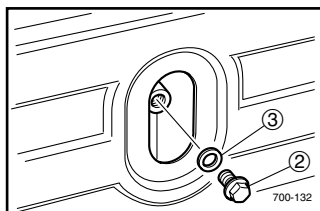
### WARNING

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

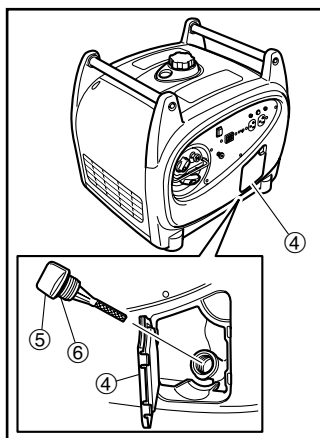


1. Place the generator on a level surface and warm up the engine for several minutes. Then stop the engine.

2. Remove the rubber cap (1) on the bottom.

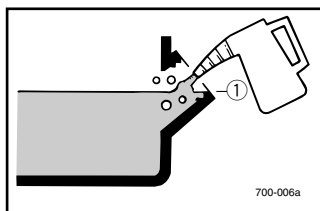


3. Place an oil pan under the engine. Remove the drain bolt (2) and gasket (3).



4. Open the oil filler cover (4) as shown and remove the oil filler cap (5) so that the oil can be completely drained.

5. Check the drain bolt, gasket, oil filler cap and O-ring (6). If damaged, replace.



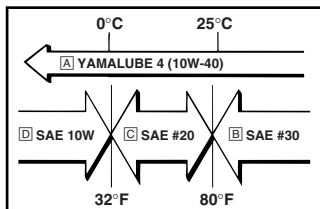
6. Install the oil drain bolt.

Drain Bolt Torque:

17 Nm (1.7 m·kgf, 12 ft·lbf)

7. Add engine oil to the upper level.

① Upper 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:

0.6 L (0.63 US qt, 0.53 Imp qt)

### NOTICE

**Be sure no foreign material enters the crankcase.**

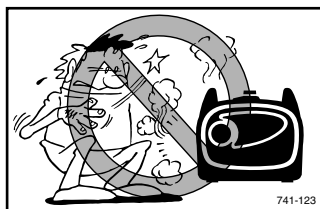
8. Install the oil filler cap.

9. Install the rubber cap on the bottom.

### TIP

Be sure to install securely to prevent from falling off during operation.

10. Close the oil filler cover.



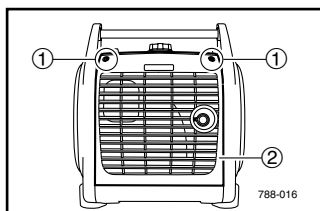
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### MUFFLER SCREEN AND SPARK ARRESTER

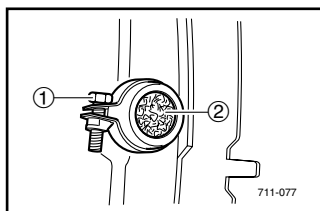
### WARNING

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

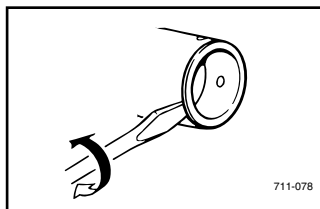
Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



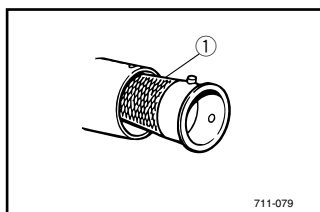
1. Remove the screws ① and the cover ②.



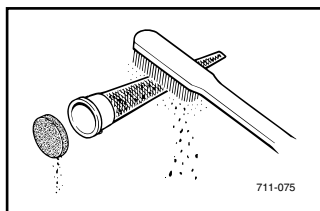
2. Loosen the bolt ① then remove the muffler screen ②.



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



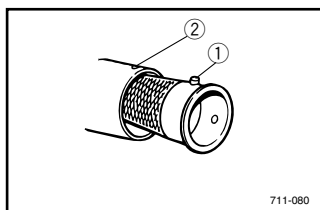
4. Remove the spark arrester ①.



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

### NOTICE

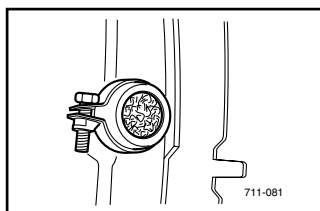
**When cleaning, use the wire brush lightly to avoid damaging or scratching of the muffler screen and spark arrester.**



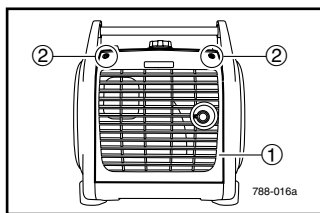
6. Check the muffler screen and spark arrester. Replace them if damaged.
7. Install the spark arrester.

### TIP

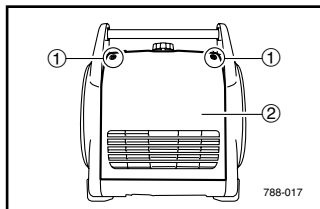
Align the spark arrester projection ① with the hole ② in the muffler pipe.



8. Install the muffler screen and tighten the bolt.



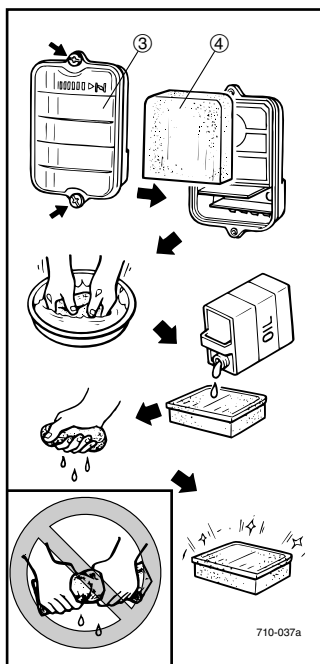
9. Install the cover ① and tighten the screws ②.



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## AIR FILTER

1. Remove the screws ① and remove the cover ②.



2. Remove the air filter cover ③ and foam element ④.

3. Wash the foam element in solvent and dry.

## ⚠ WARNING

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

4. 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 SAE #20 motor oil

## NOTICE

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

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

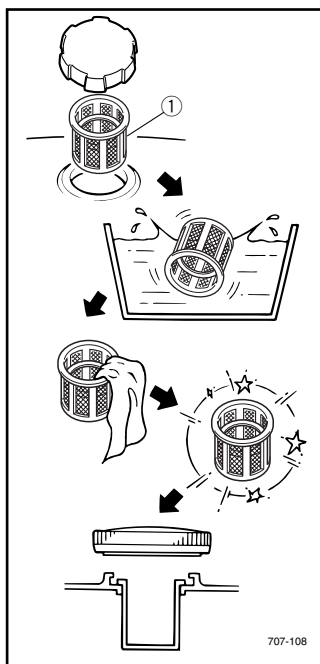
## TIP

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

## NOTICE

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

6. Install the air filter cover.
7. Install the cover and tighten the screws.



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 filter ①.
2. Clean the filter with gasoline.  
If damaged, replace it.
3. Wipe the filter and install 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 cock lever 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

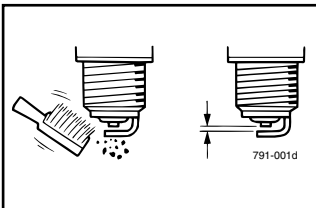
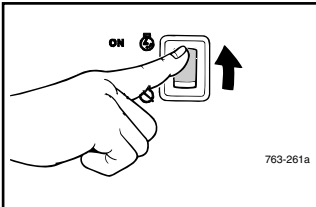
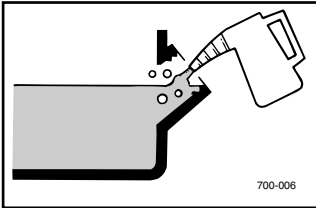
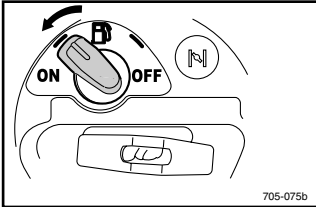
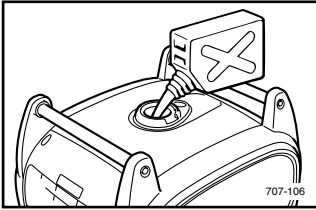
- Engine switch to "ON".

#### Poor spark

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

### Generator won't produce power

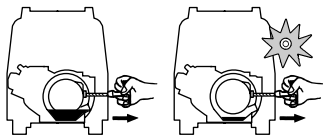
- Safety device (AC) to "OFF" .... Stop the engine, then restart.
- Safety device (DC protector) to "OFF" .... Press to reset the DC protector.



**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 way 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** Does not spark



**N** Check the following

- Fuel line clogging
- Air cleaner element clogging.

**O** Clogged      **P** OK

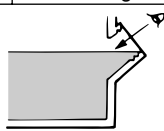


**Q** Clean or Replace; Consult a Yamaha dealer.



**R** Consult a Yamaha dealer.

**E** Check engine oil level.



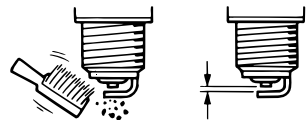
**F** OK      **G** Level low

Consult a Yamaha dealer.

Add engine oil.

**K** Check the spark plug.

- Type: BPR4ES
- Gap: 0.7–0.8 mm (0.028–0.031 in)



**L** Incorrect      **M** OK

Replace or Adjust Gap.

Clean the spark plug.

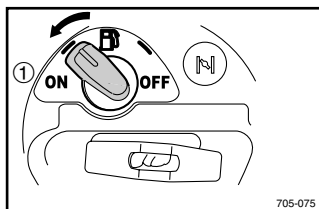
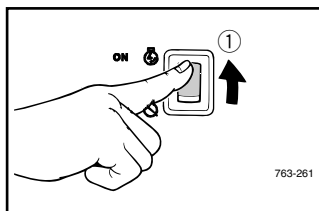
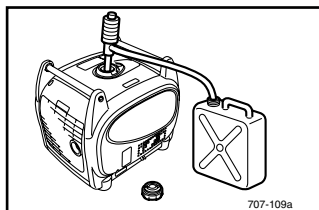
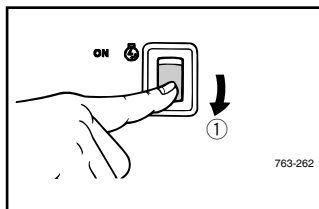
## STORAGE

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

AE01177

### DRAIN THE FUEL

1. Turn the engine switch to "STOP" ①.
2. Remove the fuel tank cap. Extract the fuel from the fuel tank into an approved gasoline container using a commercially available handsiphon. Then, install the fuel tank cap.



### **WARNING**

**Fuel is highly flammable and poisonous. Check "SAFETY INFORMATION" (See page 5) carefully.**

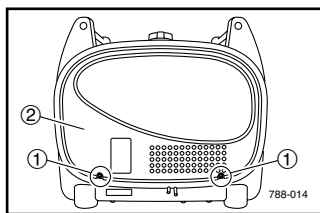
### **NOTICE**

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

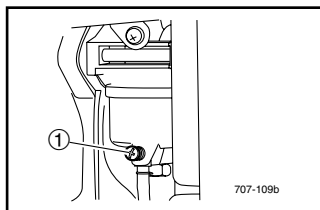
3. Turn the engine switch to "ON" ①.
4. Turn the fuel cock lever to "ON" ①.
5. Start the engine and leave it run until it stops. The engine stops in approx. 20 mins. time by running out of fuel.

### **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 screws ①, and then remove the cover ②.



7. Drain the fuel remaining in the carburetor into an approved container by loosening the drain screw ① on the carburetor float chamber.
8. Turn the engine switch to "OFF".
9. Turn the fuel cock lever to "OFF".
10. Tighten the drain screw ①.
11. Install the cover and tighten the screws.

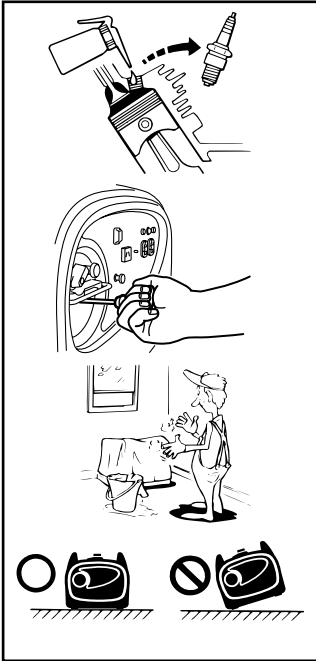


12. Tighten further if any screws, bolts and nuts are loose.
13. Store the generator in a dry, well-ventilated place, with the cover placed over it.

## 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 install 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 Ventilation)	PCV (Positive Crankcase)
• AIR FILTER ASSY. .... ARRESTER, SPARK	ACL (Air Cleaner)

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.

AE00701

## SPECIFICATIONS

AE00702

### DIMENSIONS

	Unit	EF2400iSHC
Overall Length	mm (in)	527 (20.7)
Overall Width	mm (in)	419 (16.5)
Overall Height	mm (in)	461 (18.1)
Dry Weight	kg (lb)	34 (75)

AE00704

### ENGINE

	Unit	EF2400iSHC
Type		Forced air cooled 4-stroke gasoline OHV
Cylinder Arrangement		Inclined, 1 cylinder
Displacement	cm <sup>3</sup>	171
Bore × Stroke	mm (in)	66.0 × 50.0 (2.60 × 1.97)
Operation Hours	Hr	5.0–8.6 (rated load–1/4 load)
Fuel		Unleaded gasoline
Fuel Tank Capacity	L (US gal, Imp gal)	6.0 (1.59, 1.32)
Engine Oil Quantity	L (US qt, Imp qt)	0.6 (0.63, 0.53)
Ignition System		TCI
Spark Plug: Type Gap	mm (in)	BPR4ES (NGK) 0.7–0.8 (0.028–0.031)
Noise Level*	dB (A)	60

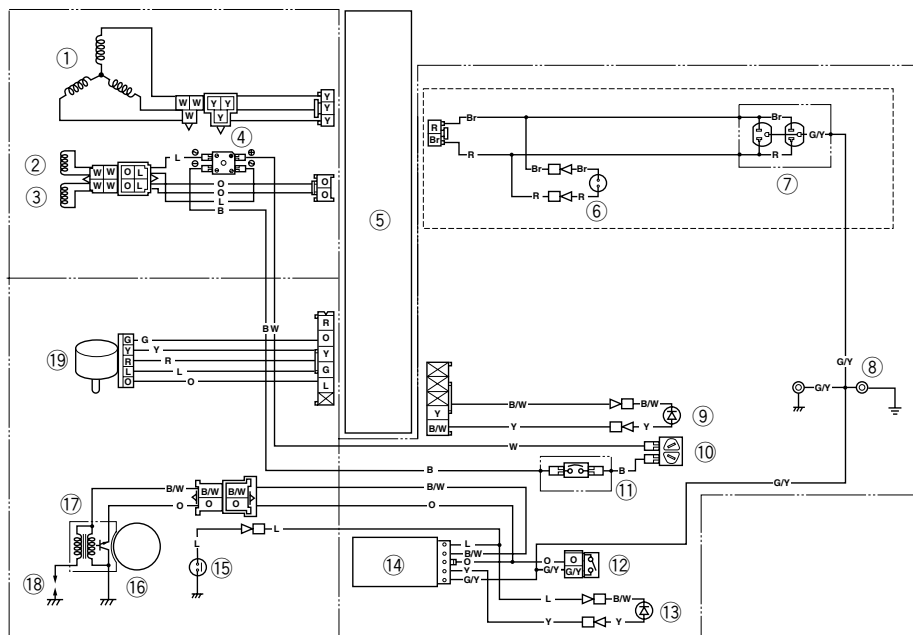
\*: Measured at rated operation from 7 m (23 ft) distance.

AE00707

### GENERATOR

	Unit	EF2400iSHC
AC Output		
Rated Voltage	V	120
Rated frequency	Hz	60
Rated current	A	16.7
Rated Output	kVA	2.0
Safety Device: Type		Electronic
DC Output		
Rated voltage	V	12
Rated current	A	8
Safety Device: Type		DC protector

# WIRING DIAGRAM



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


## 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





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