INSTRUCTIONS FOR USE

3ZZ9020073

⚠ WARNING: ⚠

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

FEDERAL EMISSION COMPONENT DEFECT WARRANTY

EMISSION COMPONENT DEFECT WARRANTY COVERAGE - This emission warranty applicable in all States, except the State of California

Fuji Heavy Industries Ltd. and Robin America Inc., Wood Dale Illinois, (herein "ROBI AMERICA") warrant to the initial retail purchaser and each subsequent owner, that this utili equipment engine (herein "engine") has been designed, built, and equipped to conform at th time of initial sale to all applicable regulations of the U.S. Environmental Protection Agenc (EPA), and that the engine is free of defects in materials and workmanship which would caus this engine to fail to conform with EPA regulations during its warranty period.

For the components listed under PARTS COVERED, the dealer or service center authorize by ROBIN AMERICA will, at no cost to you, make the necessary diagnosis, repair, or replace ment necessary to ensure that the engine complies with applicable U.S. EPA regulations.

EMISSION COMPONENT DEFECT WARRANTY PERIOD

The warranty period for this engine begins on the date of sale to the initial purchaser an continues for a period of 2 years.

PARTS COVERED

Listed below are the parts covered by the Emission Component Defect Warranty. Some of th parts listed below may require scheduled maintenance and are warranted up to the first sched uled replacement point for that part.

1) Fuel Metering System
   - (i) Carburetor and internal parts
   - (ii) Choke System
   - (iii) Fuel strainer, if applicable
2) Air Induction System
   - (i) Air filter element
   - (ii) Intake pipe, if applicable
3) Ignition System
   - (i) Spark plug
   - (ii) Magneto
4) Exhaust pipe, if applicable
5) Miscellaneous Items Used in Above Systems
   - (i) Fuel hoses, clamps and sealing gaskets

OBTAINING WARRANTY SERVICE

To obtain warranty service, take your engine to the nearest Authorized Robin America, Inc distributor or dealer. Bring your sales receipts indicating date of purchase for this engine.

The dealer or service center authorized by ROBIN AMERICA, will perform the necessar repairs or adjustments within a reasonable amount of time and furnish you with a copy of th repair order.

All parts and accessories replaced under this warranty become the property of ROBI AMERICA.

WHAT IS NOT COVERED

* Conditions resulting from tampering, misuse, improper adjustment (unless they were mad by the dealer or service center authorized by ROBIN AMERICA during a warranty repair alteration, accident, failure to use the recommended fuel and oil, or not performing require maintenance services.
* The replacement parts used for required maintenance services.
* Consequential damages such as loss of time, inconvenience, loss of use of the engine c equipment, etc.

* Diagnosis and inspection charges that do not result in warranty-eligible service being performed.
* Any non-authorized replacement part, or malfunction of authorized parts due to use of non-authorized parts.

OWNER'S WARRANTY RESPONSIBILITIES

As the engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. ROBIN AMERICA recommends that you retain all receipts covering maintenance on your engine, but Robin America can not deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the engine owner, you should however be aware that the ROBIN AMERICA may deny your warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your engine to the nearest dealer or service center authorized by ROBIN AMERICA when a problem exists.

If you have any questions regarding your warranty rights and responsibilities, you should contact the Robin America Inc. Customer service department at 1-630-350-8200 for the information.

THINGS YOU SHOULD KNOW ABOUT THE EMISSION CONTROL SYSTEM WARRANTY MAINTENANCE AND REPAIRS

You are responsible for the proper use and maintenance of the engine. You should keep all receipts and maintenance records covering the performance of regular maintenance in the event questions arise. These receipts and maintenance records should be transferred to each subsequent owner of the engine. ROBIN AMERICA reserves the rights to deny warranty coverage if the engine has not been properly maintained. Warranty claims will not be denied, however, solely because of the lack of required maintenance or failure to keep maintenance records.

MAINTENANCE, REPLACEMENT OR REPAIR OF EMISSION CONTROL DEVICES AND SYSTEMS MAY BE PERFORMED BY ANY REPAIR ESTABLISHMENT OR INDIVIDUAL ; HOWEVER, WARRANTY REPAIRS MUST BE PERFORMED BY A DEALER OR SERVICE CENTER AUTHORIZED BY ROBIN AMERICA. THE USE OF PARTS THAT ARE NOT EQUIVALENT IN PERFORMANCE AND DURABILITY TO AUTHORIZED PARTS MAY IMPAIR THE EFFECTIVENESS OF THE EMISSION CONTROL SYSTEM AND MAY HAVE A BEARING ON THE OUTCOME OF A WARRANTY CLAIM.

If other than the parts authorized by ROBIN AMERICA are used for maintenance replacements or for the repair of components affecting emission control, you should assure yourself that such parts are warranted by their manufacturer to be equivalent to the parts authorized by ROBIN AMERICA in their performance and durability.

HOW TO MAKE A CLAIM

All repairs qualifying under this limited warranty must be performed by a dealer or service center authorized by ROBIN AMERICA. In the event that any emission-related part is found to be defective during the warranty period, you shall notify ROBIN AMERICA customer service department at 1-630-350-8200 and you will be given the appropriate warranty service facilities where the warranty repair can be performed.

Emission Control System Warranty Stateme

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board and Fuji Heavy Industries Ltd. (herein "FUJI") ar to explain the emission control system warranty on your 1997 and later utility and garden equipment engine (herein "engine"). In California, the engine must be desig and equipped to meet the State's stringent anti-smog standards. FUJI must warrant t sion control system on your engine for the periods of time described below, provided th been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor and the ignition system. Also included may be hoses, connectors and other emission-related assemblies.

Where a warrantable condition exists, FUJI will repair your engine at no cost to you incl diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE :

The 1997 and later engines are warranted for two (2) years. If any emission related on your engine is defective, the part will be repaired or replaced by FUJI.

OWNER'S WARRANTY RESPONSIBILITIES :

–As the engine owner, you are responsible for the performance of the required mainte nance listed in your Owner's Manual. FUJI recommends that you retain all receipts covering maintenance on your engine, but FUJI cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

–As the engine owner, you should ,however, be aware that FUJI may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

–You are responsible for presenting your engine to a dealer, distributor or warranty station authorized by ROBIN AMERICA Inc., 940 Lively Blvd., Wood Dale, IL60191 (herein "ROBIN AMERICA") as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact the ROBIN AMERICA Inc. customer service manager at 630-350-8200.

LIMITED WARRANTY
on Emission Control Systems
— California Only —

FUJI, Tokyo, Japan warrants to the owner of the 1997 and later engine that the engine been designed, built and equipped so as to conform at the time of manufacture with th able regulations of the California Air Resources Board, and (2) is free from defects in and workmanship which could cause it to fail to conform with those regulations as applicable in the terms and conditions stated below.

A. COMMENCEMENT DATE

The warranty period begins on the date the engine is delivered to a first retail pu

B. LENGTH OF COVERAGE

FUJI warrants to a first retail purchaser and each subsequent purchaser that free from defects in materials and workmanship which cause the failure of emission-related part for a period of two (2) years after the date of delivery to purchaser.

C. WHAT IS COVERED :

1. REPAIR OR REPLACEMENT PARTS

Repairs and replacement of any warranted part will be performed at no cha authorized dealer, distributor or a warranty station. You may contact the R Inc. customer service manager at 630-350-8200 to get the nearest app where your warranty repairs are performed.

2. WARRANTY PERIOD

This warranty continues for a period of two (2) years and shall apply replacement or adjustment of the component parts which are not schedu as required maintenance. Further, component parts which are schedu inspection to the effect of "repair or replace as necessary" shall b warranty period. Any warranted part which is scheduled for replacemen nance shall be warranted for the period of time up to the first schedul for that part.

3. DIAGNOSIS

You shall not be charged for diagnostic labor which leads to the warranted part is defective, if the diagnostic work is performed at distributor or warranty station.

4. DAMAGES

If a warranted part failed causing damage to other engine compo station.

D. WHAT IS NOT COVERED

1. This limited warranty does not cover any part which malfunctions, fails or is damaged due failure to follow the maintenance and operating instructions set forth in the 1997 and lat Owner's Manual including :
   (1) improper or inadequate maintenance of any warranted parts
   (2) improper installation, adjustment or repair of the engine or of any warranted part unle performed by an authorized dealer
   (3) failure to follow recommendations on fuel use contained in the 1997 and later Owne Manual
   (4) repairs performed outside of the authorized warranty service facilities
   (5) use of parts which are not authorized by FUJI
2. Add-on or modified parts
   This warranty does not cover any part which malfunctions, fails or is damaged due to alt ations by changing, adding to or removing parts from the engine.
3. Expenses incurred by processing warranty claims
   FUJI, any authorized dealer, distributors and warranty station shall not be liable for any lo of use of the engine, for any alternative usage, for any damage to goods, loss of time inconvenience.

E. HOW TO FILE A CLAIM

All repairs qualifying under this Limited Warranty must be performed by a dealer who sold y the engine or distributors or warranty stations authorized by ROBIN AMERICA. In the eve that any emission-related part is found to be defective during the warranty period, you sh notify ROBIN AMERICA Inc. customer service manager at 630-350-8200 and you will be giv the appropriate warranty service facilities where the warranty repair is performed.

F. WHERE TO GET WARRANTY SERVICE

It is recommended that warranty service be performed by the authorized dealer who sold y the engine, although warranty service will be performed by any authorized dealers, distributc and warranty stations anywhere in the United States. When warranty repair is needed, t engine must be brought to an authorized dealer, distributorship or warranty station's place business during normal business hours. In all cases, a reasonable time, not to exceed days, must be allowed for the warranty repair to be completed after the engine is received the authorized dealer, distributor or service station.

G. MAINTENANCE, REPLACEMENT AND REPAIR OF EMISSION-RELATED PART

Only warranted engine replacement parts approved by FUJI should be used in the perfc mance of any warranty maintenance or repairs on emission-related parts. If other than auth rized parts are used for maintenance, replacement or repair of components affecting emissi control, you should assure yourself that such parts are warranted by their manufacturer to equivalent to authorized parts in performance and durability. FUJI ,however, assumes no liab ity under this warranty with respect to parts other than authorized parts. The use of non-auth rized replacement parts does not invalidate the warranty on other components unless the no authorized parts cause damage to warranted parts.

H. PARTS COVERED UNDER THE CALIFORNIA EMISSIONS WARRANTY

1) Fuel Metering system
   (i) Carburetor and internal parts
   (ii) Choke System
   (iii) Fuel strainer
2) Air Induction System
   (i) Air filter element
3) Ignition System
   (i) Spark plug
   (ii) Magneto
4) Miscellaneous Items Used in Above Systems
   (i) Fuel hoses, clamps and sealing gaskets

I. MAINTENANCE STATEMENTS

It is your responsibility to have all scheduled inspection and maintenance services performed at the times recommended in the 1998 and later Owner's Manual and to retain proof that inspection and maintenance services are performed at the times when recommended. FUJI will not deny a warranty claim solely because you have no record of maintenance ; however, FUJI may deny a warranty claim if your failure to perform required maintenance resulted in the failure of warranted part. The proof which you maintain should be given to each subsequent owner of the engine. You are responsible for performing the scheduled maintenance described below based on the procedures specified in the 1998 and later Owner's Manual. The scheduled maintenance below is based on the normal engine operating schedule.

PROCEDURE	INTERVAL
1) Clean engine and check bolts & nuts	: Every 8 hours (daily)
2) Check and refill engine oil	: Every 8 hours (refill daily up to upper limit)
3) Change engine oil	: Initial 20 hours and every 50 hours afterward
4) Clean spark plug	: Every 50 hours (weekly)
5) Clean air cleaner	: Every 50 hours
6) Clean fuel strainer	: Every 200 hours (Monthly)
7) Clean and adjust spark plug and electrodes	: Every 200 hours (Monthly)
8) Clean carburetor	: Every 500 hours
9) Clean cylinder head	: Every 500 hours
10) Check and adjust tappet clearance	: Every 500 hours
11) Replace spark plug	: Every 500 hours
12) Replace fuel lines	: Every 1000 hours (Yearly)
13) Overhaul engine	: Every 1000 hours

FOREWORD

Thank you for purchasing this portable generator. This manual contains information and operating procedures necessary for the effective, economical and safe operation of the generator. For the proper operating procedures, read this manual thoroughly before operating the generator.

For further details or questions, consult your nearest dealer.

NOTE

● Due to a constant effort to improve the product and because of a continuous program of research and development, certain procedures, specifications and equipment are subject to change without notice.

TABLE OF CONTENTS

1. SAFETY PRECAUTIONS

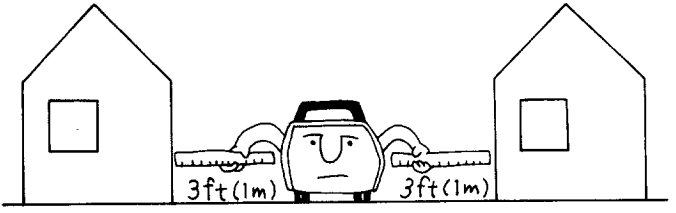
Fire prevention

- When refueling :

— Stop the engine.
— Extreme care must be taken to prevent fire hazards. Avoid smoking and the use of matches or open flame.
— Be sure to fill fuel tank up to the specified level. Do not overfill.
— Spilled fuel must be wiped off thoroughly. After spilled fuel has dried, start the engine.

- Location of generator :

— The generator should be placed at least 1 meter (3 ft) away from buildings or other facilities.
— The surrounding area should be free of inflammables (trash, chips of wood, etc.) and hazardous materials (lubricants, celluloid items, explosives, etc.).



- While in use :

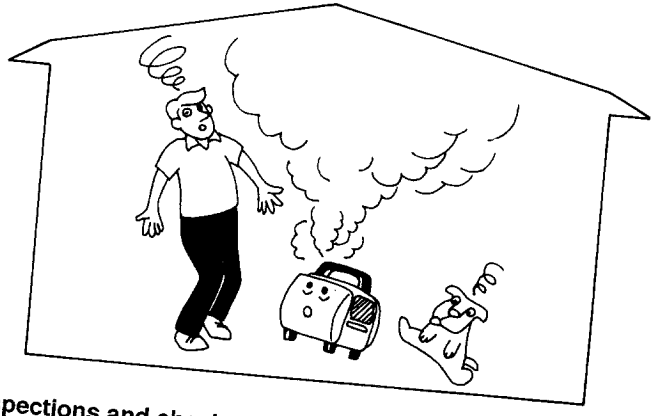
— Be sure to operate the generator on a level surface. Avoid tilting or moving while in operation.
— The generator should not be covered or enclosed by a box.

Prevention of electrical shock

— Never use the generator in the rain or snow.
— Never operate the generator with wet hands.
— Never spray water to clean the generator.

Exhaust gas precautions

— Exhaust gas contains toxic gases. Extreme care must be taken about people a
domestic animals in the surrounding area.
— Never operate the generator indoors.
— Never oprate in an enclosed area not adequately ventilated such as in a warehous
tunnel, well, hold, reservoir, etc.
— The exhaust pipe should be pointed toward a well-ventilated open area.



Necessary inspections and checks

- Before operation (Refer to pages 7 and 8.) :

— Check oil level and refill if necessary.
— Check fuel level.
— Check the surrounding area of the generator.
— Be sure to disconnect the load appliance.

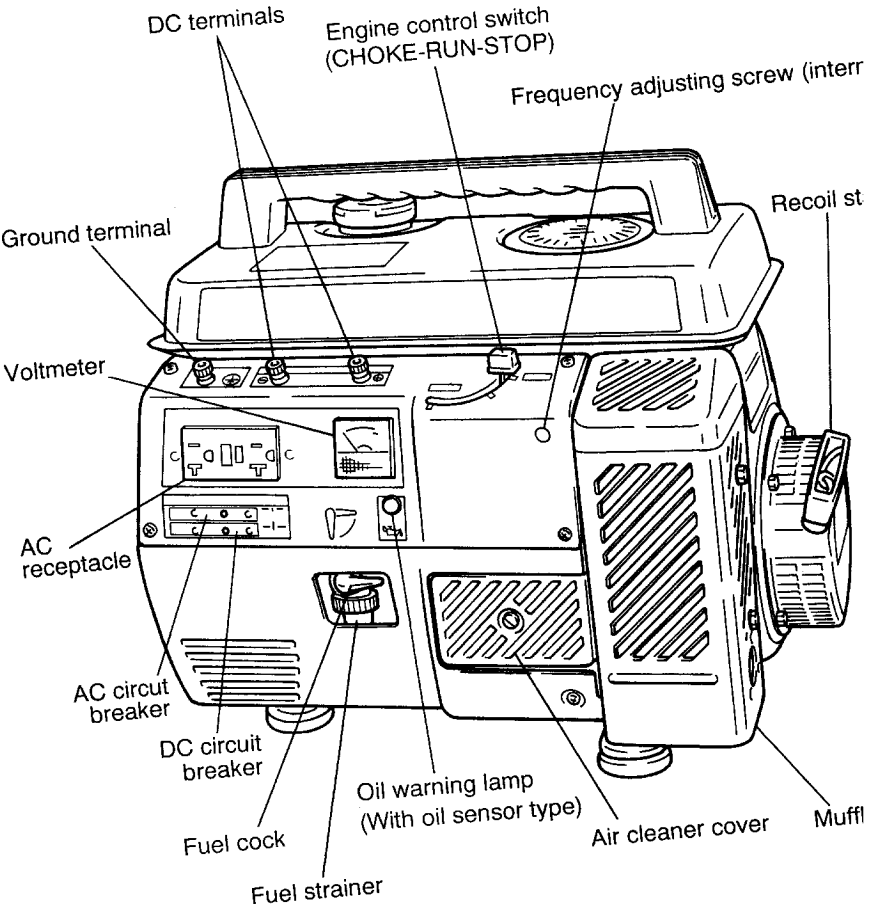
- Easy checking and maintenance (Refer to pages 15 and 16.) :

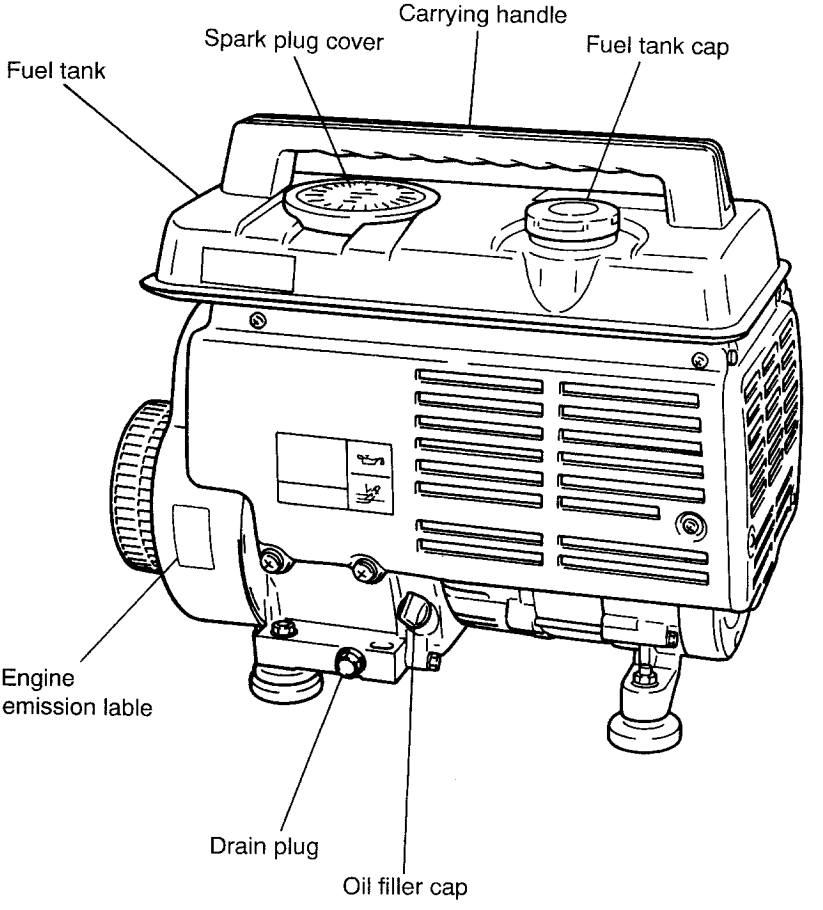
— Attached tools.
— Air cleaner element.
— Oil change interval.
— Spark plug inspection/adjustment.

Other safety instructions

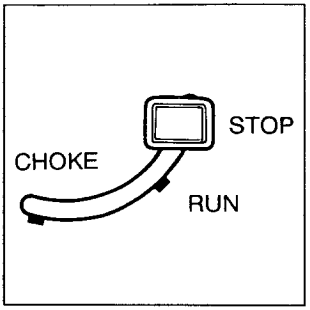
— Never connect the generator to indoor electrical wiring. If connected, malfunctions in
home electrical units or generators, fire and / or electric shock may result.
— Be sure to use the generator on a level surface, never use on a soft or uneven surface
with small rocks, soil, gravel, etc.
— If abnormal conditions such as excessive noise or odor or vibration appears, stop the
engine immediately and consult your dealer for the necessary information.

2. COMPONENT IDENTIFICATION




Carrying handle
Spark plug cover
Fuel tank cap
Fuel tank
Engine
emission lable
Drain plug
Oil filler cap

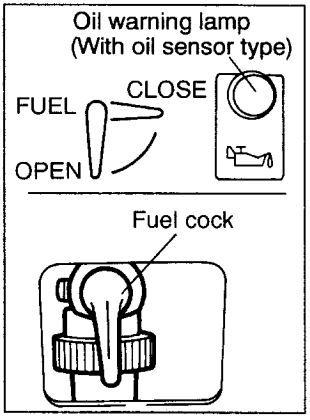
3. CONTROLS AND INDICATORS



Engine Control Switch

● By pushing and sliding this switch, the CHOKE-RUN-STOP functions of the engine can be controlled.
It has the following three positions:

CHOKE	To start the engine, turn the knob to this position. (Choke valve is closed.)
RUN	Keep the knob in this position after the engine starts. (The engine can be started with the knob at this position when the engine is warm.)
STOP	To stop the engine, return the knob to this position.

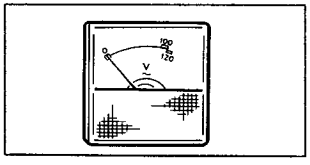


Fuel Cock

● Controls the supply of fuel.
CLOSE : Engine stops.
OPEN : Engine runs.

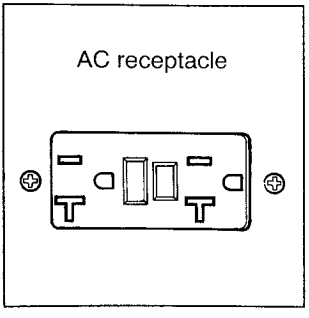
Oil Warning Lamp (With oil sensor type)

● When the engine oil level falls below the prescribed value, the engine oil warning lamp lights up, and the engine stops automatically. When the starter handle is pulled with the engine oil at a low level, the engine rotates during a few seconds but it stops automatically when the engine oil warning lamp lights up.
In such a case, make sure of replenishing engine oil up to the level of the mouth of the oil filling port.
(Refer to "Section 7" for details about the engine oil replenishing method).



Voltmeter

● Indicates the AC voltage output of generator.



AC receptacle

● AC electric power is available through this receptacle. Use a ground type, three-leg plug.

Ampere	Receptacle	AC plug	Description
up to 20A	NEMA 5-20R	NEMA 5-20P	GFCI (Ground fault circuit interrupter) Receptacle, duplex

DC terminals

- DC electric power for battery charge is available.
  — Red is positive (+) terminal.
  — Black is negative (−) terminal.

AC circuit breaker
DC circuit breaker

- Both AC and DC circuit breakers shut off electric current when the current exceeds its limit or a malfunction occurs in the connected appliance. Check for excessive current consumption or defects in the appliance. After making sure everything is in order, push the button to the "ON" position.

Frequency adjusting screw

- Frequency can be finely adjusted by turning the frequency adjusting screw with a Phillips screwdriver.

[CAUTION]
Do not adjust frequency unnecessarily because it is preset at the factory.

Starter handle

- Pull this handle to start the generator.

Ground (Earth) Terminal

- Terminal for grounding the generator.

4. BEFORE OPERATION (NECESSARY INSPECTIONS /

Checking engine oil level

- Remove oil gauge and check oil l

— If level is low, fill to the top of the
— Change oil if badly contaminat
procedure.)

Use class SC (API classification)
oil.

SAE 10W-30 or 10W-40 is r
all-temperature use. If single
the appropriate viscosity fo
your area.

SAE 10W-30 — For gen
SAE 5W — For co

[CAUTION]
Oil level checkin
on a level surfac

Checking fue

— If fuel leve
position.
— Refill fu
the "L
shown

Tan

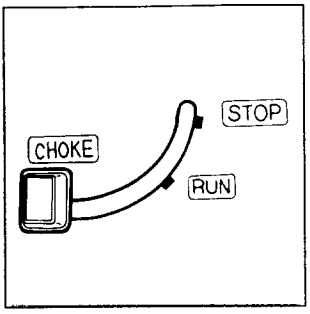
F

Checking the area around the generator

— Area should be free of inflammables and hazardous materials.
— The generator is placed at least 1 meter (3 ft) away from buildings or other facilities.
— Generator is located in well-ventilated, open area.
— The exhaust pipe is pointed toward a well-ventilated open area.
— The generator is positioned away from any type of open flame or sparks.
— The generator is placed in a stable condition on a level surface, not on an inclined or uneven surface.
— The generator is not enclosed or blocked by obstacles such as pieces of wood, cardboard, etc.

• Be sure to disconnect the appliance from the generator before starting. It is very dangerous to start the engine with the appliance on since the appliance may start suddenly.
Check to make sure that the switch of the appliance is turned off or its plug is disconnected from the receptacle.

5. OPERATING PROCEDURES

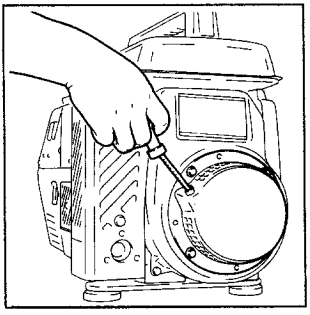


Starting

— Check oil and fuel levels.

— Make sure the appliance is disconnected.

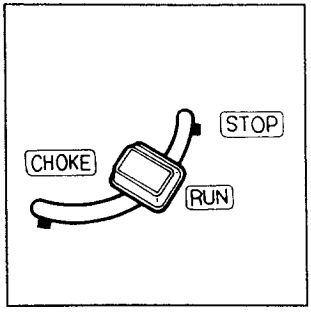
— Turn engine switch to "CHOKE" position. (When engine is warm or temperature is high, start engine with the switch at "RUN" position.)



— Pull the starter handle slowly until passing the compression point (resistance will be felt), then return the handle to its original position and pull swiftly.

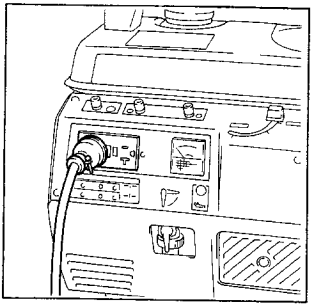
— After starting, allow the starter handle to return to its original position with the handle still in your hand.

NOTE : When engine fails to start after several attempts, repeat the starting procedures mentioned above with the engine switch placed at "RUN" position.



— After 20 to 30 seconds of warm-up is completed, turn the engine switch to "RUN" position.

AC application



— Check the voltmeter for proper voltage.
The generator is thoroughly adjusted and tested in the factory. If the generator does not produce the specified voltage, consult your nearest Generator dealer.
— Check the electrical appliance to see if its switch is turned off, then connect the appliance to the generator.
— Switch on the appliance.

• Applicable AC wattage :

The following table shows the maximum wattage of various appliances which can be connected to the generator. Before connecting an appliance, make sure its wattage is within the range.

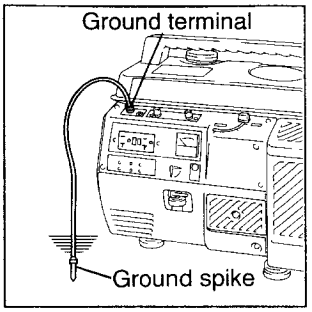
Appliance	Applicable wattage
	60Hz
Incandescent lamp, hot plate	up to 1000W
Fluorescent lamp, mercury lamp Electric tool	up to about 800W
Pump, compressor	up to about 250W

[CAUTION]

1. When connection plural appliances make sure the total wattage does not exceed the generator's rated output. Otherwise the generator will not operate due to excessive wattage.

2. Some power tools require a large starting current. In these cases, it may not be possible to use the generator. Refer to page 20, or consult your dealer to obtain the necessary information.

3. When overloaded, the AC circuit breaker pops out to cut off the current. In such a case, make sure that the applied wattage of the appliance has not exceeded the wattage limit and that there are no defects in the appliance. Then push the circuit breaker back into the "ON" position.



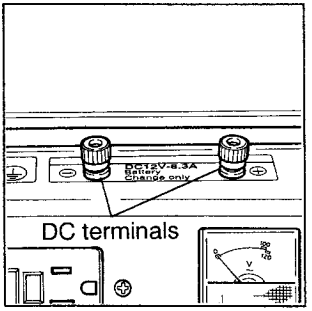
- Grounding the generator

— To ground the generator to the earth, connect the grounding lug of the generator to the gounding spike driven into the earth or to the conductor which has been already grounded to the earth.

— If such grounding conductor or grounding electrode is unavailable, connect the grounding lug of the generator to the grounding terminal of the using electric tool or appliance.

[CAUTION]

Generator must be grounded when the electrical appliance is grounded.
Failure to ground generator may lead to electric shock.



DC application (For charging 12V battery only)

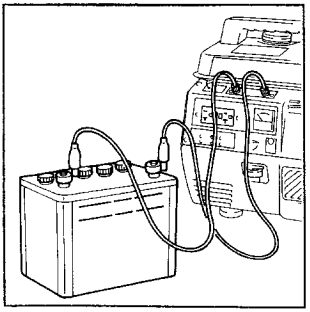
- DC terminals are used only for charging a 12V battery.
- Connection of battery charging cables :

— Positive (+) terminal (red) on generator to positive (+) terminal on battery.

— Negative (−) terminal (black) on generator to negative (−) terminal on battry.

[CAUTION]

Do not use DC output and AC output simultaneously.



- Battery charging procedures :

— Make the proper connection as mentioned above, be careful not to make a wrong connection. Be sure to disconnect all cables connected from battery to any other appliance.

— Remove all plugs from top of battery.

— Check electrolyte level and add distilled water if necessary, to bring the electrolyte level to the level marked "UPPER".

— Start engine to charge battery.

The charging time varies depending on the condition of discharge. The specific gravity of a battery electrolyte indicates the state of charge in each battery cell. While charging battery, check the specific gravity with a hydrometer, using a thermometer to correct hydrometer reading for temperature. A corrected specific gravity reading of 1.26 to 1.28 in all cells indicates a fully charged battery.

Example : In case of 12V-40Ah automobile battery, it takes 5 to 6 hours to bring a completely discharged battery to a state of full-charge.

• Charging safety :

Batteries produce explosive hydrogen gas. This gas is emitted from the vent hole of each battery cap. Safety precautions must be observed to prevent ignition and subsequent explosion of the hydrogen gas caused by open flame or sparks.

— No smoking and open flame near a charging battery.
— Be sure to perform the battery charging operation in a well-ventilated area.

Extreme care must be taken as electrolyte will burn eyes, skin and clothing. If injured, use a large quality of water to clean the affected area immediately, then consult a doctor for medical treatment.

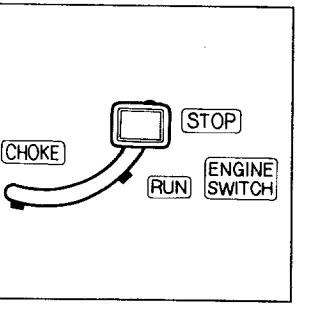
[CAUTION]

1. When charging a large capacity battery, DC output will exceed the limit and the DC circuit breaker will pop out to the "OFF" position. In such a case, push DC circuit breaker into the "ON" position after checking the battery.
2. Do not use DC and AC output simultaneously.

Stopping generator

• Proceed as follows :

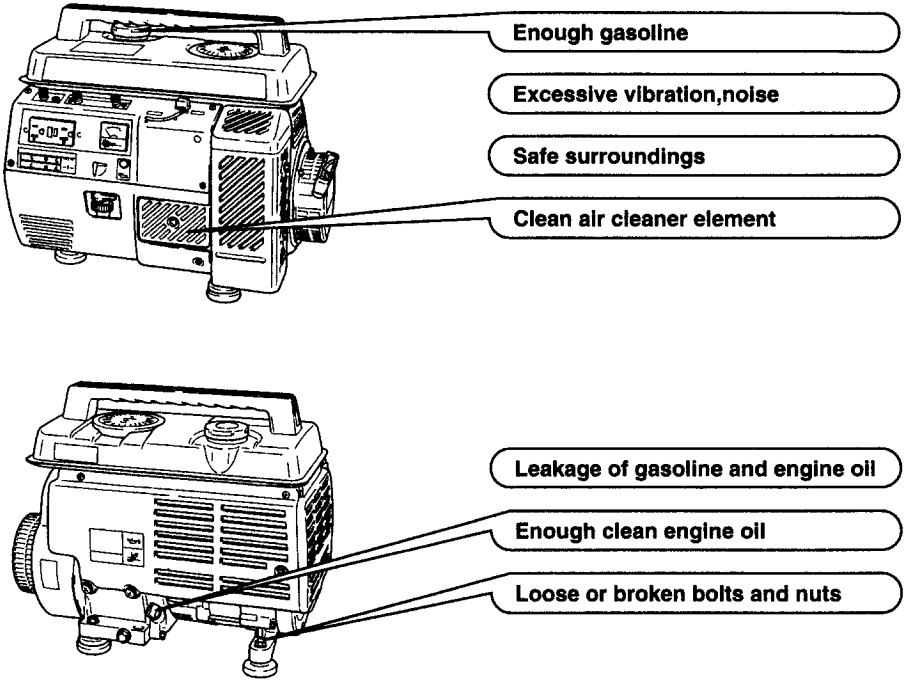
— Turn off electrical appliance switch and disconnect cable from receptacle.
— Turn engine switch to "STOP" position.



6. MAINTENANCE SCHEDULE

DAILY INSPECTION

Before running the engine, check the following service items.



PERIODIC MAINTENANCE

Periodic maintenance is vital to safe and efficient operation of your engine.
Check the table below for periodic maintenance intervals.
It is also necessary for the user of this engine to conduct the maintenance and adjustments on the emission-related parts listed below to keep the emission control system effective.
The emission control system consists of the following parts:

(1) Carburetor and internal parts	(2) Choke system	(3) Fuel strainer
(4) Air cleaner elements	(5) Intake pipe	(6) Spark plug
(7) Magneto	(8) Fuel hoses, clamps, and sealing gaskets	

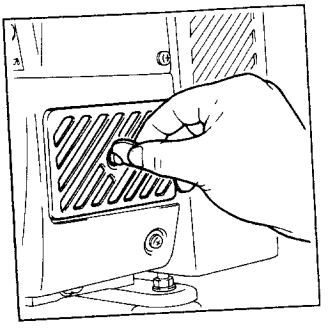
The maintenance schedule indicated in the following table is based on the normal engine operation. Should the engine be operated in extremely dusty condition or in heavier loading condition, the maintenance intervals must be shortened depending on the contamination of oil, clogging of filter elements, wear of parts, and so on.

	8 hours (daily)	20 hours	50 hours	200 hours	500 hours	1000 hours
CLEAN ENGINE AND CHECK BOLTS AND NUTS	X (daily)					
CHECK AND REFILL ENGINE OIL	X (Refill daily up to upper limit.)					
CHANGE ENGINE OIL (*Note 1)		X (Initial)	X			
CLEAN SPARK PLUG			X			
CLEAN AIR CLEANER ELEMENTS			X			
CLEAN AND ADJUST SPARK PLUG GAP				X		
CLEAN FUEL STRAINER				X		
REPLACE SPARK PLUG					X	
REMOVE CARBON FROM CYLINDER HEAD (*Note 2)					X	
CHECK AND ADJUST TAPPET CLEARANCE (*Note 2)					X	
CLEAN AND ADJUST CARBURETOR (*Note 2)					X	
REPLACE FUEL LINES						X (yearly)
OVERHAUL ENGINE (*Note 2)						X

*Note :1. Initial oil change should be performed after first twenty (20) hours of operation. Thereafter change oil every fifty (50) hours. Before changing oil, check for a suitable way to dispose of old oil. Do not pour it down into sewage drains, onto garden soil or into open streams. Your local zoning or environmental regulations will give you more detailed instructions on proper disposal.

*Note :2. As to the procedures for these items, please refer to the SERVICE MANUAL or consult your nearest Robin service dealer.

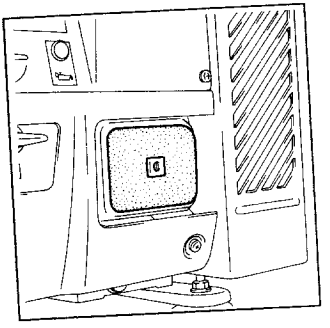
7. EASY CHECKING AND MAINTENANCE



Air cleaner servicing

● If the air cleaner element is clogged, a decrease in generator output, erratic engine operation and / or excessive fuel consumption may result. Be sure to clean air cleaner periodically as follows :

Interval : Every 50 hours or clean every day (or every 10 hours) when operating in extremely dusty conditions.

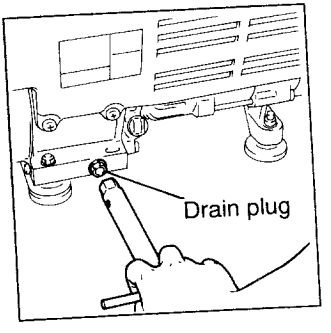


Cleaning procedure

— Using a coin, loosen screw securing air cleaner cover in place and remove cover.
— Remove element and clean with fresh cleaning solvent.
— After cleaning, soak element in a clean fuel mixture (3 parts gasoline to 1 part engine oil), then squeeze out excess oil and reinstall.

[CAUTION]

1. Extreme care must be taken to prevent fire especially when cleaning air cleaner element.
2. When squeezing excess oil out of element, do not twist element, just grasp and squeeze it tightly



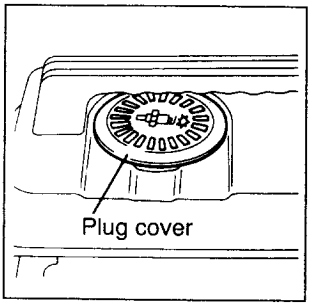
Engine oil change

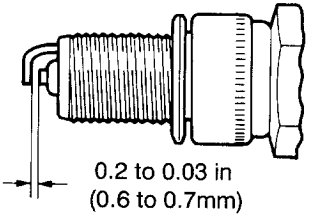
● Servicing period :
— Initial servicing : 20 hours after initial operation.
— Regular servicing period : Every 100 hours.
● Drain oil by removing the drain plug and the oil cap while the engine is warm.
● Reinstall the drain plug and refill with fresh oil to the upper level mark on the oil gauge.
● Use fresh and high quality oil as specified in page

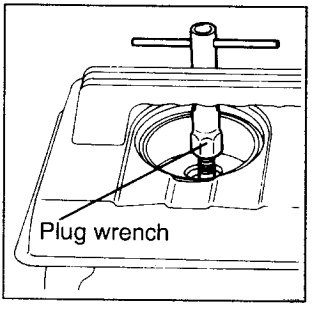
Checking the spark plug

- Inspection and adjustment procedure :

— Open spark plug cover.
— Remove plug cap and remove spark plug using a plug wrench.
— Using plug cleaner or wire brush, clean plug electrode of burnt or deposited carbon.
— Check for proper gap between electrodes. Adjust gap to 0.02 to 0.03 in (0.6 to 0.7 mm) by bending the side electrode if necessary.
— Recommended replacement plug type : BR6HS (make : NGK).

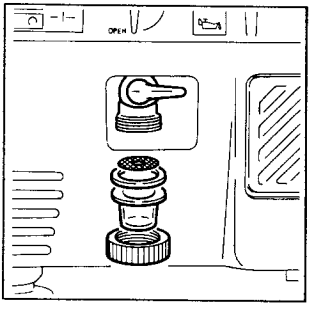






Cleaning fuel strainer

- Check for water or contaminants in the fuel strainer.
- To remove contaminants, close fuel cock and remove strainer cup.
- After removing contaminants and water, wash the cup and strainer with gasoline. Reinstall securely to prevent leakage.



8. PREPARATION FOR STORAGE

— Remove fuel strainer cup, open fuel cock and completely drain fuel from tank.

— After draining fuel, reinstall strainer cup and close the fuel cock.

— Start and run the generator without an appliance connected until the carburetor is completely empty of fuel.

— Change old lubricating oil with fresh oil.

— Clean air cleaner element.

— Remove spark plug and pour 5-10 cc (1 fl.oz.) of lubricating oil through the plug hole. Then pull starter handle several times and reinstall the spark plug.

— Check for loose bolts and nuts. Retighten if necessary.

— Clean generator throughly and spray completely with a preservative spray if available.

— Be sure to place engine switch at the "STOP" position.

— Pull starter handle until resistance is felt and leave it in that position.

— Storage indoors in a well-ventilated, low humidity area is recommended.

[CAUTION]

Extreme care must be taken when draining fuel tank. Never use water to clean the generator.

9. TROUBLESHOOTING

When engine fails to start or if the engine turns but there is no electricity at the receptacles, perform the following checks.

When engine fails to start :

Check if engine switch is in its proper position.	Place engine switch to "CHOKE" position to start engine. ("RUN" position when starting a warm engine.)
Check fuel cock is open.	If closed,open fuel cock.
Check fuel level.	If empty, refill fuel tank.
Check to make sure that the generator is not connected to an appliance.	If connected, turn off the power switch on the connected appliance or disconnect power cable.
Check spark plug for loose plug cap.	Be sure to press spark plug cap securely.
Check spark plug for contamination.	Remove spark plug and clean electrode.

When no electricity is generated at receptacle :

Check AC or DC circuit breaker if it is at the normal operating "ON" position.	After making sure that the total wattage of the electrical appliance is within permissible limits and there are no defects in the electrical appliance, push AC or DC circuit breaker back into "ON" position.
Check AC receptacle and DC terminals for loose connections.	Secure connection, if necessary.
Check if engine starting was attempted with the electrical appliance connected.	Turn off switch of the electrical appliance or disconnect plug from receptacle and after the generator is in a stable condition, make the connection again.

* If engine still does not start, contact your dealer for further infomation.

10. APPLICABLE WATTAGE OF THE GENERATOR

Electric appliances normally come with a label indicating voltage, cycle and (input) wattage, the electric power which the appliance consumes. However, when the generator is used as the power source both power factor and starting current should be considered.

HEATING RESISTANCE (Power factor 1.0, No starting current)

Electrical loads such as incandescent lamps and hot plates require the same wattage as indicated on the label.

Example : A 1kW generator can power ten 100W lamps.

ELECTRIC DISCHARGE TUBE (Power factor less than 1.0, Discharge starting valtage is required.)

Loads such as fluorescent lamps and mercury lamps require 1.2 to 2 times the stated wattage to start discharge.

Example : A 1kW generator can power three to seven 80W mercury lamps.

ELECTRIC MOTOR (Power factor less than 1.0, Starting current is required.)

Electric motors require large starting wattage. Its power requirement depends on kind and circumstance.

Electric tool (Driven by commutator motor, Shaft free in starting)

It speeds up quickly in starting, that is,it requires 1.2 to 3 times its wattage for starting.

Example : A 1kW generator can power a 600W electric drill.

Loads such as submersible pumps and air compressors (Driven by induction motor, Initially loaded by water or compressed air at starting.)

Large power is required to start such load. Therefore, the generator has to supply 3 to 5 times the wattage for starting.

Example : A 1kW generator is only able to drive a home use pump (up to about 250W).

Appliance	Applicable wattage
	60Hz
Incandescent lamp,hot plate	up to 1000W
Fluorescent lamp,mercury lamp Electric tool	up to about 800W
Pump,compressor	up to about 250W

NOTE :

1. Appliances equipped with electric motors.
   They need large starting current as mentioned above. However after starting, the appliance requires only 1.2 to 2 times the wattage to continue running.Therefore, the generator has reserve power for another appliance.
2. Some appliances will indicate output work instead of (input) wattage.

Example : 40W fluorescent lamp means 40W of the light beam is emitted from the lamp.

In such case, efficiency should be considered between the (input) wattage and output work,

Efficiency
0.6 to 0.8 . . . . motor
0.7 to 0.8 . . . . fluorescent lamp

The (input) wattage determined by the efficiency subjects to the same as above.

3. Voltage drop in long extension wires
   When a long wire is used to connect an appliance with the generator, a certain amount of voltage drop occurs in the wire which lessens effective voltage to the appliance.
   The table below shows the values for a 100m wire.

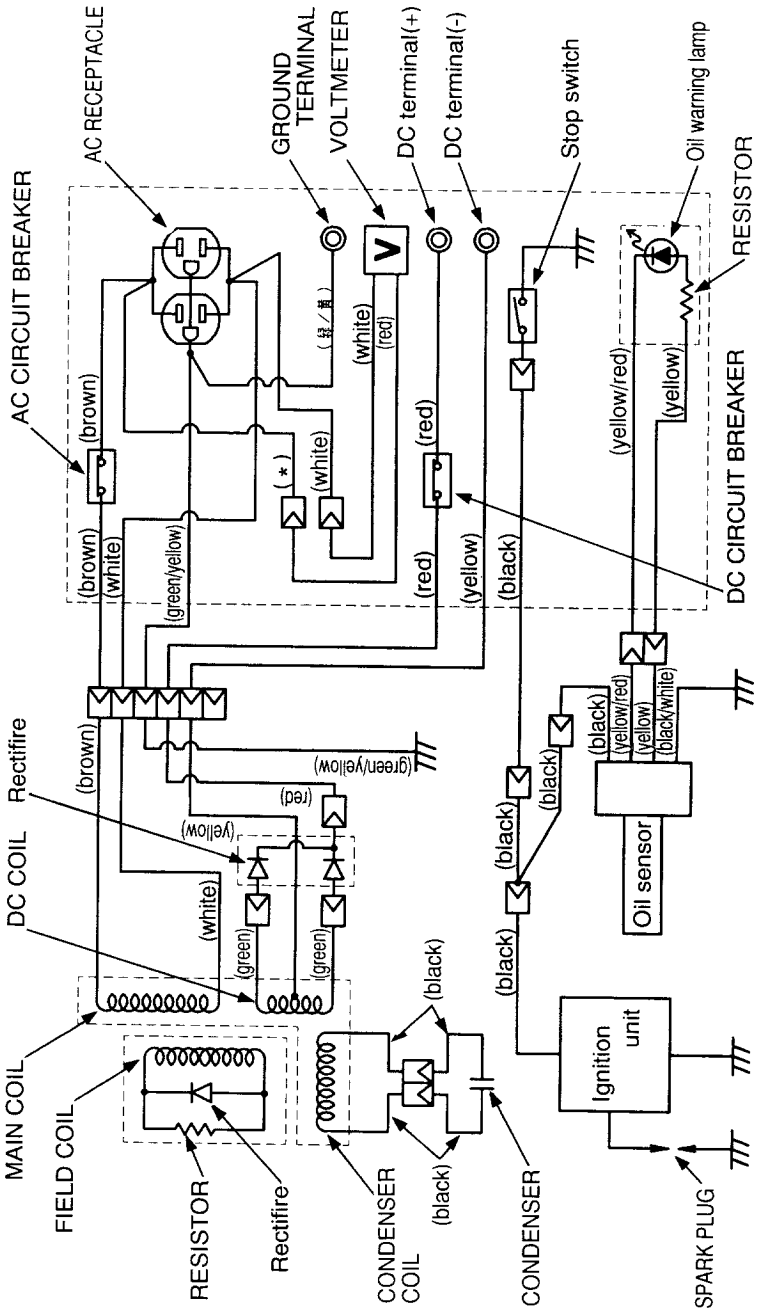
Sectional area mm^2	Allowable current A	Gauge No./ wire element No./mm	Resistance Ohm/100m	Voltage drop per 100 m						
				1A	3A	5A	8A	10A	12A	15A
0.75	7	30/0.18	2.477	2.5V	8V	12.5V				
1.25	12	50/0.18	1.486	1.5V	5V	7.5V	12V	15V	18V	
2.0	17	37/0.26	0.952	1.0V	3V	5.0V	8V	10V	12V	15V
3.5	23	45/0.32	0.517		1.5V	2.5V	4V	5V	6.5V	7.5V
5.5	35	70/0.32	0.332		1V	2V	2.5V	3.5V	4V	5V

11. SPECIFICATIONS

Generator	Type		Brushless, self-exciting, 2-pole, single phase, revolving field
	Frequency		60Hz
	AC Voltage		120V (8.3 A)
	AC Output	Max.	1300 W
		Rated	1000 W
	DC Output		12V-8.3A (100 W)
	Voltage regulation system		Condenser system
Engine	Type		Forced air-cooled, 4-stroke, side valve, gasoline engine
	Displacement		8.73 cu.in (143 cc)
	Bore × Stroke		2.48 × 1.81 in (63 × 46 mm)
	Fuel		Automotive gasoline
	Fuel tank capacity		0.9 U.S.gal (3.5 liters)
	Oil pan capacity		1.3 U.S.pints (600 cc)
	Rated continuous operating hours		Approx. 3.6 hours
	Ignition system		Solid state ignition
	Starting system		Recoil starter
Dimensions (L × W × H)			19.3 × 11.3 × 16.1 in (490 × 288 × 410 mm)
Dry Weight			60.6 lbs (27.5 kg)

Specifications are subject to change without notice.

12. WIRING DIAGRAM



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