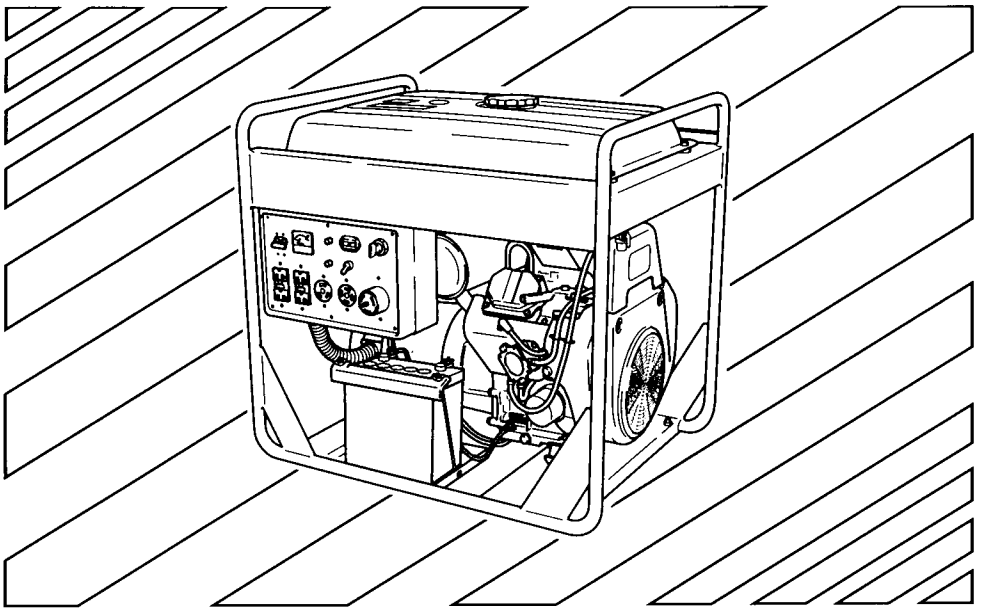
アメリカ

makita
GENERATOR

G series

MODEL **G12000R**



INSTRUCTIONS FOR USE

3ZZ9020092

⚠ 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 is applicable in all States, except the State of California

MAKITA U.S.A. Inc., La Mirada, California, (herein "MAKITA") warrants to the initial retail purchaser and each subsequent owner, that this utility equipment engine (herein "engine") has been designed, built, and equipped to conform at the time of initial sale to all applicable regulations of the U.S. Environmental Protection Agency (EPA), and that the engine is free of defects in materials and workmanship which would cause this engine to fail to conform with EPA regulations during its warranty period.

For the components listed under PARTS COVERED, Makita Factory Service Center or Service Center authorized by MAKITA will, at no cost to you, make the necessary diagnosis, repair, or replacement 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 and continues for a period of 2 years.

PARTS COVERED

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

1) Fuel Metering System
   (a) Carburetor and internal parts
2) Ignition System
   (a) Spark plug
   (b) Flywheel Magneto
   (c) Ignition Coil
3) Other Miscellaneous Items Used in Above System
   (a) Fuel Hoses
   (b) Sealing Gaskets

OBTAINING WARRANTY SERVICE

To obtain warranty service, take your engine to the nearest Makita Factory Service Center or Service Center authorized by MAKITA. Bring your sales receipts indicating date of purchase for this engine. Makita Factory Service Center or Service Center will perform the necessary repairs or adjustments within a reasonable amount of time and furnish you with a copy of the repair order.

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

WHAT IS NOT COVERED

* Conditions resulting from tampering, misuse, improper adjustment (unless they were made by Makita Factory Service Center or Service Center authorized by MAKITA during a warranty repair), alteration, accident, failure to use the recommended fuel and oil, or not performing required maintenance services.
* The replacement parts used for required maintenance services.
* Consequential damages such as loss of time, inconvenience, loss of use of the engine of 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. MAKITA recommends that you retain all receipts covering maintenance on your engine, but MAKITA 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 MAKITA 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 Makita Factory Service Center or Service Center authorized by MAKITA when a problem exists.

If you have any questions regarding your warranty rights and responsibilities, you should contact the MAKITA Warranty department at 1-800-4-MAKITA 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. MAKITA 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 MAKITA FACTORY SERVICE CENTER OR SERVICE CENTER AUTHORIZED BY MAKITA. 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 MAKITA 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 MAKITA in their performance and durability.

HOW TO MAKE A CLAIM

All repairs qualifying under this limited warranty must be performed by Makita Factory Service Center or Service Center authorized by MAKITA. In the event that any emission-related part is found to be defective during the warranty period, you shall notify MAKITA Warranty department at 1-800-4-MAKITA and you will be given the appropriate warranty service facilities where the warranty repair can be performed.

California Emission Control Warranty Statement
(This warranty does not apply in any other state.)

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board and Makita U.S.A., Inc. are pleased to explain the emission control warranty on your 1995 utility and /or lawn and garden equipment engine. In California, new utility and lawn and garden equipment engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Makita U.S.A., Inc. must warrant the emission control system on your utility and/or lawn and garden equipment engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your utility and/or lawn and garden equipment engine.

Your emission control system includes parts such as the carburetor or fuel injection systems, the ignition system and the catalytic converter. Also included are the hoses, and connectors and other emission-related assemblies.

Where a warrantable condition exists, Makita U.S.A., Inc. will repair your utility and/or lawn and garden equipment at no cost to you including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE :

The 1995 and later utility and/or lawn and garden equipment engines are warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by Makita U.S.A., inc.

OWNER'S WARRANTY RESPONSIBILITIES :

As the utility and lawn and garden equipment engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Makita U.S.A., Inc. recommends that you retain all receipts covering maintenance on your utility and /or lawn and garden equipment engine, but Makita U.S.A., Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the utility and/or lawn and garden equipment engine owner, you should be aware, however, that Makita U.S.A., Inc. may deny you warranty coverage if your utility and/or lawn and garden equipment engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your utility and/or lawn and garden equipment engine to a Makita U.S.A., inc. service center as a problem exists. The warranty repairs should be completed in a reasonable time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a Makita Factory Service Center Manager nearest you. A list of the Factory Service Center locations and phone numbers is provided below for your convenience.

LIMITED WARRANTY

— California Only —

Makita U.S.A., Inc., a distributor of utility and lawn and garden equipment in the U.S., warrants to the owner of 1995 and later utility and/or lawn and garden equipment engines that the engine(1) has been designed, built, and equipped at the time of manufacture so as to conform with the applicable regulations of the California Air Resources Board and, (2) is free from defects in materials and workmanship which may cause it to fail to conform with those regulations as applicable according to the terms and conditions stated below.

WARRANTY PERIOD

The warranty period begins on the date which the utility and/or lawn and garden equipment engine is delivered to the original retail purchaser and ends two years after that date. During this two year period Makita U.S.A.., inc. warrants to the original retail purchaser and each subsequent purchaser that the engine is free from defect in material and workmanship that can cause the failure of a warranted emission - related part.

WHAT IS COVERED UNDER THIS WARRANTY

Repair and/or replacement of any warranted emission-related part will be performed at no charge provided the work is performed at an authorized warranty station. There will also be no charge for any diagnostic labor performed at an authorized warranty station which leads to the determination that a warranted emission - related part is defective.

Any warranted part which is not scheduled for replacement as required maintenance, or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance shall be warranted for the period of time up to the first scheduled replacement of that part. This warranty shall apply only towards the repair, replacement, and/or adjustment of the component parts listed below.

EMISSION-RELATED PARTS COVERED UNDER THIS WARRANTY

1. Fuel Metering Systems
   (a) Carburetor and its internal parts
2. Ignition Systems
   (a) Spark plug
   (b) Flywheel Magneto
   (c) Ignition Coil
3. Other Miscellaneous Items Used in Above Systems
   (a) Fuel Hoses
   (b) Sealing Gaskets

If it is determined by an authorized warranty station that other engine components have been damaged due to the failure of a warranted emission-related part during the warranty period, Makita U.S.A., Inc. will repair and/or replace the necessary components.

WHAT IS NOT COVERED UNDER THIS WARRANTY

This warranty does not cover any emission-related part which malfunctions, fails, or is damaged due to alterations and/or modifications such as changing, adding, or removing parts.

When an engine is being serviced under warranty, Makita U.S.A., Inc. and any of its authorized dealers, distributors, or warranty stations shall not be liable for any loss of use of the engine, for any damage to goods, or loss of time or inconvenience.

This limited warranty also does not apply to any emission-related part which malfunctions, fails, or is damaged due to failure to follow the maintenance and operating instructions specified in the 1995 and later Owner's Manual including.

(a) Improper or inadequate maintenance of any warranted emission-related part.
(b) Improper installation, adjustment, or repair of the engine or any warranted emission-related part unless performed by a factory authorized warranty station.
(c) Failure to use recommended fuel as specified in the 1995 and later Owner's Manual.
(d) Repairs and diagnosis performed outside of an authorized warranty station.
(e) Use of parts which are not authorized by Makita U.S.A., Inc.

MAINTENANCE SCHEDULE

The engine owner is responsible for having all scheduled inspection and maintenance services performed at the intervals specified in the 1995 and later Owner's Manual and to retain records of these services as having been performed. These records should be transferred to each subsequent owner of the engine. Makita U.S.A., Inc. cannot deny a claim solely because there are no records of scheduled maintenance, however, a warranty claim may be denied if the failure to perform the scheduled maintenance and inspection resulted in the failure of a warranted emission-related part. As a minimum, the engine owner is responsible for the scheduled inspection and maintenance described below which are based on the procedures described in the Owner's Manual.

PROCEDURE	INTERVAL
a) Check all nut and bolts and tighten as necessary.	Every 8 hours of use or daily.
b) Check air passages and engine cylinder fins for clogging. Remove all obstructions as necessary.	Every 8 hours of use or daily.
c) Check air cleaner.	Every 8 hours of use or daily.
d) Check spark plug. Clean and adjust if necessary.	Every 8 hours of use or daily.
e) Check muffler exhaust port. Clean if necessary.	Every 50 hours of use or monthly.
f) Replace fuel lines.	Every 200 hours of use or annually.
g) Overhaul engine.	Every 200 hours of use or annually.
h) Replace packings and gaskets.	Every time engine is reassembled.

REPAIR AND REPLACEMENT OF EMISSION-RELATED PARTS

It is recommended that only engine replacement parts which have been authorized and approved by Makita U.S.A., Inc. should be used in the performance of any warranty maintenance or repairs of emission-related parts. These replacement parts will be provided at no charge if the part is still under warranty.

HOW TO FILE A WARRANTY CLAIM AND WHERE TO GET WARRANTY SERVICES

Contact the nearest Makita Factory Service Center Manager to determine the appropriate location where the required warranty services are to be performed. A list of the Factory Service Center locations and phone numbers are provided below for your convenience.

14930-B Northam Street
La Mirada, CA90638
(714) 522-8088

1401 N.Clovis Ave.,Ste. 110
Fresno, CA93727
(209) 252-5166

392 S. Arrowhead, #A-1
San Bernardino, CA92408
(714) 885-1289

180 S Spruce Ave, Unit D
South San Francisco, CA94080
(415) 875-1002

16735 Saticoy St, Ste. 105
Van Nuys, CA91406
(818) 782-2440

41850 Christy Street
Fremont, CA94538
(510) 657-9881

4554 Roseville Rd., Ste. E
North Highlands, CA95660
(916) 331-6211

7674 Clairemont Mesa Blvd.
San Diego, CA92111
(615) 278-4471

15722-B Tustin Village Way
Tustin, CA92680
(714) 667-5066

Thank you for purchasing a Makita generator.

This manual covers operation and maintenance of the Makita generators. All information in this publication is based on the latest production information available at the time of approval for printing.

Pay special attention to statements preceded by the following words:

⚠ WARNING

Indicates a strong possibility of severe personal injury, loss of life and equipment damage if instructions are not followed.

[CAUTION]

Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE:

Gives helpful information.

If a problem should arise, or if you have any questions about the generator, consult an authorized dealer or factory service center.

⚠ WARNING

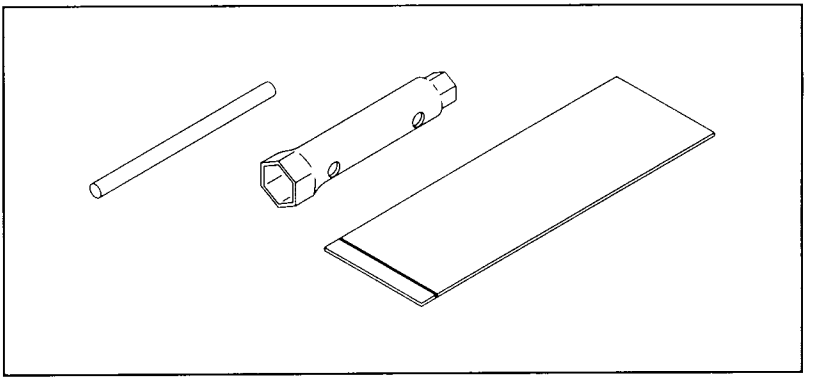
- **The generator is designed to give safe and dependable service if operated according to instructions.**
- **Do not operate the generator before you have read and understood the instructions. Failure to do so could result in death, personal injury or equipment damage.**

■ Check that following accessories come with your Makita Generator.

(1) Instruction for use

(2) Servicing tools

(3) Battery mounting bracket
(See page 8 and 9.)



■ Be sure to replenish with engine oil. (See page 6 for details.)

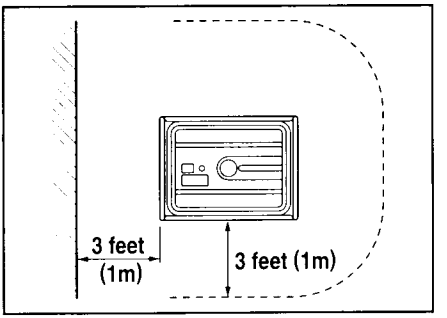
CONTENTS

1. SAFETY PRECAUTIONS

⚠ Do not operate the generator near gasoline or gaseous fuel because of the potential danger of explosion or fire.
Do not fill the fuel tank with fuel while the engine is running. Do not smoke or use open flame near the fuel tank. Be careful not to spill fuel during refueling. If fuel is spilt, wipe it off and let dry before starting the engine.

⚠ Do not place inflammables near the generator.
Be careful not to place fuel, matches, gunpowder, oily cloths, straw, trash, or any other inflammables near the generator.

⚠ Do not operate the generator inside a room, cave, tunnel, or other insufficiently ventilated area. Always operate it in a well-ventilated area, otherwise the engine may become overheated, and the poisonous carbon monoxide gas contained in the exhaust gases will endanger human lives. Keep the generator at least 3 feet (1 meter) away from any structure or building during use.



If the generator must be used indoors, the area must be well-ventilated and extreme caution must be taken regarding the discharge of exhaust gases.

⚠ Do not enclose the generator nor cover it with a box.
The generator has a built-in forced air cooling system, and may become overheated if it is enclosed. If generator has been covered to protect it from the weather during non use, be sure to remove it and keep it well away from the area during generator use.

⚠ Operate the generator on a level surface.
It is not necessary to prepare a special foundation for the generator. However, the generator will vibrate on an irregular surface, so choose a level place without surface irregularities.
If the generator is tilted or moved during operation, fuel may spill and/ or the generator may tip over, causing a hazardous situation.
Proper lubrication cannot be expected if the generator is operated on a steep incline or slope. In such a case, piston seizure may occur even if the oil is above the upper level.

⚠ Pay attention to the wiring or extension cords from the generator to the connected device.
If the wire is under the generator or in contact with a vibrating part, it may break and possibly cause a fire, generator burnout, or electric shock hazard. Replace damaged or worn cords immediately.

⚠ Do not operate in rain, in wet or damp conditions, or with wet hands.
The operator may suffer severe electric shock if the generator is wet due to rain or snow.

⚠ If wet, wipe and dry it well before starting. Do not pour water directly over the generator, nor wash it with water.

⚠ Be extremely careful that all necessary electrical grounding procedures are followed during each and every use. Failure to do so can be fatal.

⚠ Do not contact the generator to a commercial power line. Connection to a commercial power line may short circuit the generator and ruin it or cause electric shock hazard. Use the transfer switch for connecting to domestic circuit.

⚠ No smoking while handling the battery. The battery emits flammable hydrogen gas, which can explode if exposed to electric arcing or open flame.
Keep the area well-ventilated and keep open flames/sparks away when handling the battery.

⚠ Engine becomes extremely hot during and for some time after operation.
Keep combustible materials well away from generator area.
Be very careful not to touch any parts of the hot engine especially the muffler area or serious burns may result.

⚠ Keep children and all bystanders at a safe distance from work areas.

⚠ It is absolutely essential that you know the safe and proper use of the power tool or appliance that you intend to use. All operators must read, understand and follow the tool/appliance owners manual. Tool and appliance applications and limitations must be understood. Follow all directions given on labels and warnings. Keep all instruction manuals and literature in a safe place for future reference.

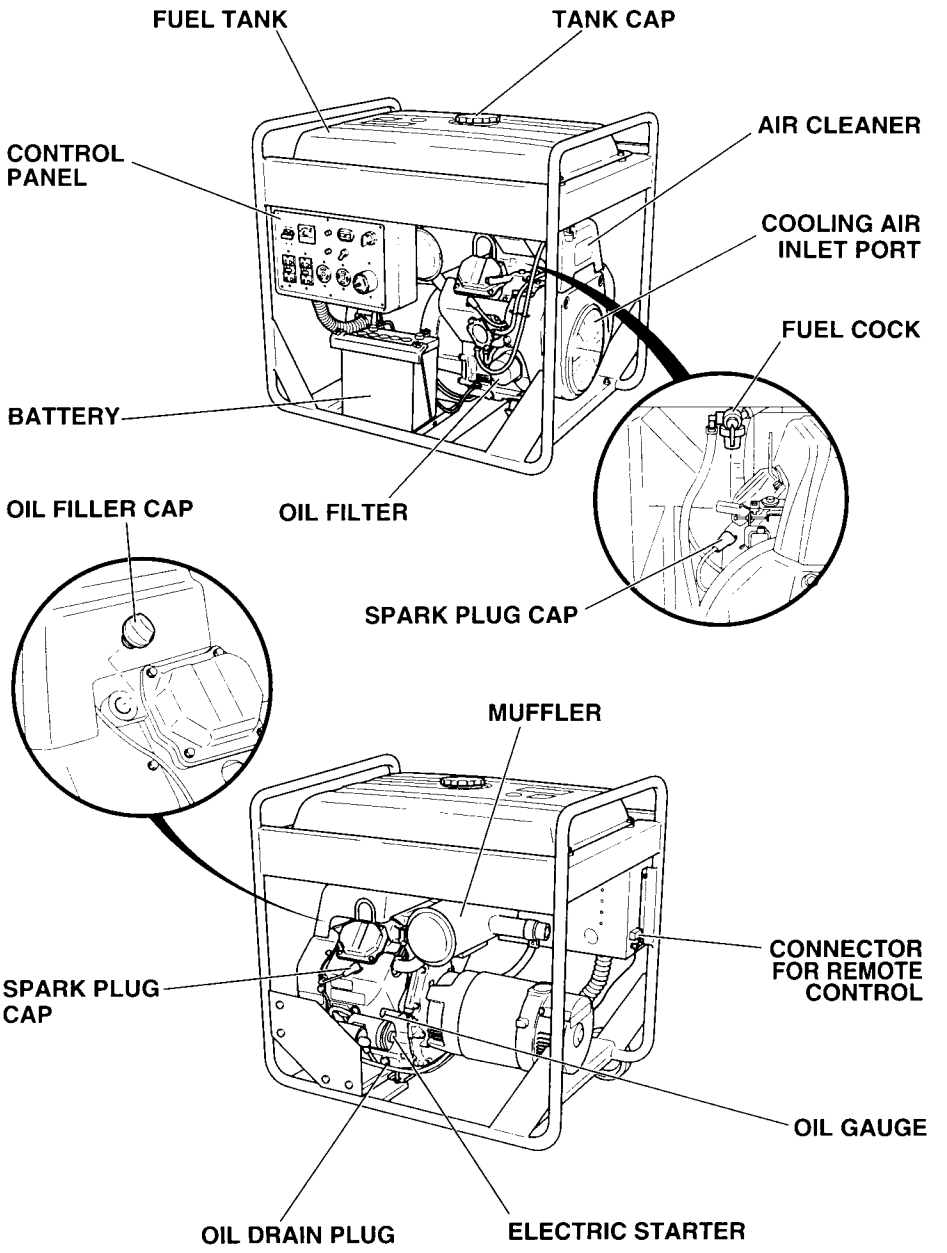
Notes on installation

1. Select a place which allows you to maintain and inspect the generator, which is not exposed to contamination caused by exhaust gas.
   If you are planning to install the generator without its wheels attached, consider the work efficiency in terms of an oil change.
2. In ground connection, be sure to use the designated ground terminal.
   (A grounding cable is not included in the set of accessories.)
3. During use, be sure not to disconnect the battery.
4. While the power is on, do not unplug the unit or disconnect cables from the terminals.

2. SPECIFICATIONS

Model			G12000R
Alternator	Type		Brush, Self-exciting, 2-pole, Single-phase
	Rated frequency		60 Hz
	Rated voltage		120V / 240V
	Maximum output		12000 W
	Rated output		9500 VA
	Power factor		1.0
	Voltage regulator		A.V.R type
Engine	Model		EH65D
	Type		Twin cylinder, Air-cooled, 4-stroke, Overhead valve engine
	Displacement		653 cm^3
	Fuel		Unleaded automobile gasoline
	Oil capacity		0.41 US-gal (1.55 liters)
	Starting system		Electric starter
Fuel tank capacity			11.38 US-gal (44 liters)
Rated continuous operation per a tankful of fuel		Rated	Approx. 8.2 hours
Dimension	Length		32.5 in. (826 mm)
	Width		24.1 in. (611 mm)
	High		30.4 in. (771 mm)
Dry weight			310.9 lb (141 kg)
Remote controller terminal (Auto choke)			Standard

3. COMPONENTS



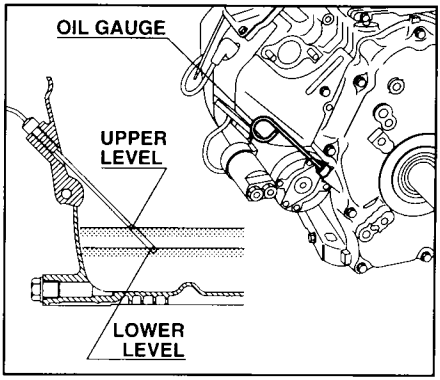
4. PRE-OPERATION CHECK

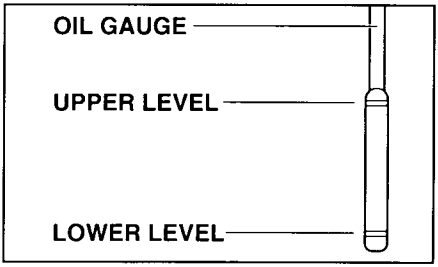
CHECK ENGINE OIL

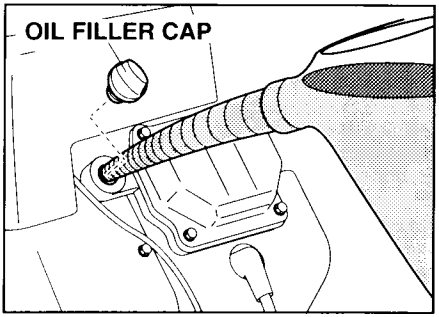
Before checking or refilling oil, be sure generator is located on stable and level surface with engine stopped.

1) Remove oil level gauge and check the engine oil level.
2) If oil level is below the lower level **"L"** refill with suitable oil (see table) to upper level **"F"** after removing the engine oil filler cap.
3) Change oil if contaminated. (See "How-To" Maintenance.)

Oil capacity ····· 0.41 US-gal (Upper level)
1.55 liters (Upper level)





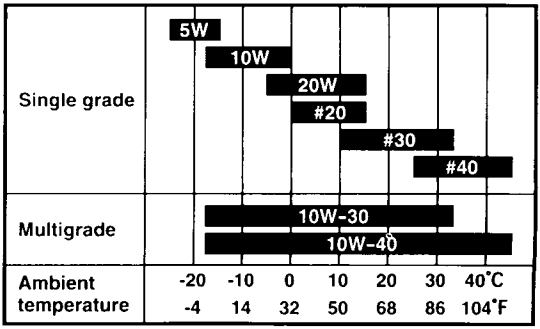


NOTE :

- The engine is equipped with an oil sensor unit (hydraulic pressure detection type) that will automatically stop the engine if oil in the crank case is reduced below the specified level. Should the engine be automatically stopped, be sure to check the amounts of fuel and oil.
- When the oil is reduced below the specified level, add new oil to the upper limit. Since the oil sensor will not detect the deterioration of oil, visually check the quality or determine it by the specified time and then change the oil if necessary. (Refer to page 24.)

Recommended engine oil :

Use class **"SE"** (API classification) oil or a higher grade oil according to the table below. **SAE 10W-30** is recommended for general, all-temperature use. If single viscosity oil is used, select the appropriate viscosity for the average temperature in your area.

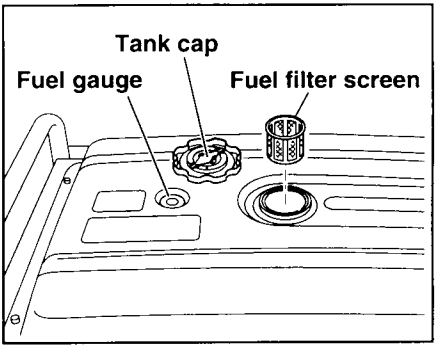


CHECK ENGINE FUEL

⚠ WARNING

Do not refuel while smoking or near open flame or other such potential fire hazards. Otherwise fire accident may occur.

1) Check fuel level at fuel level gauge.
2) If fuel level is low, refill with unleaded automotive gasoline.
3) Be sure to use the fuel filter screen on the fuel filter neck.

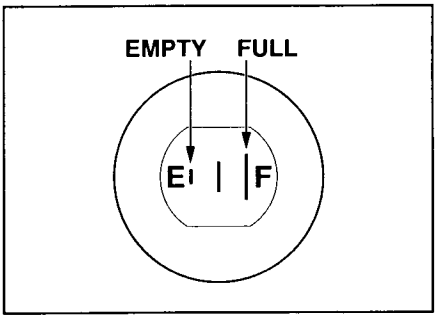


Recommended fuel :

Unleaded automotive gasoline of octane rating RON87 or higher.

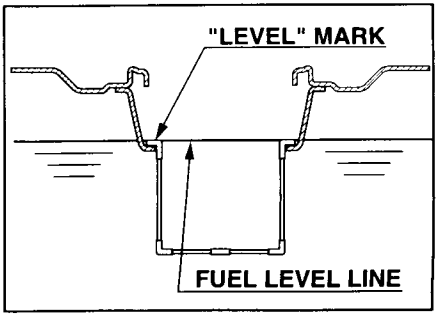
Fuel tank capacity :

11.38 US-gal (44 liters)



NOTE :

- The full level of fuel is the upper surface of the fuel filter.
- Refuel through each filler hole alternately for easier operation. In this case, be sure to add the fuel little by little when the fuel level approaches to the full level.
- Since the pair of tanks are connected in parallel, the fuel levels are changed during refueling. You cannot use each tank alternately.



Continuous operation time in normal use (rated load)	
G12000R	Approx. 8.2 hours

⚠ WARNING

Make sure you review each warning in order to prevent fire hazard.

- **Do not refill tank while engine is running or hot.**
- **Close fuel cock before refueling with fuel.**
- **Be careful not to admit dust, dirt, water or other foreign objects into fuel.**
- **Do not fill above the top of the fuel filter (marked "LEVEL") or the fuel may overflow when it heats up later and expands.**
- **Wipe off spilt fuel thoroughly before starting engine.**
- **Keep open flames away.**

BATTERY INSTALLATION

Recommended Battery

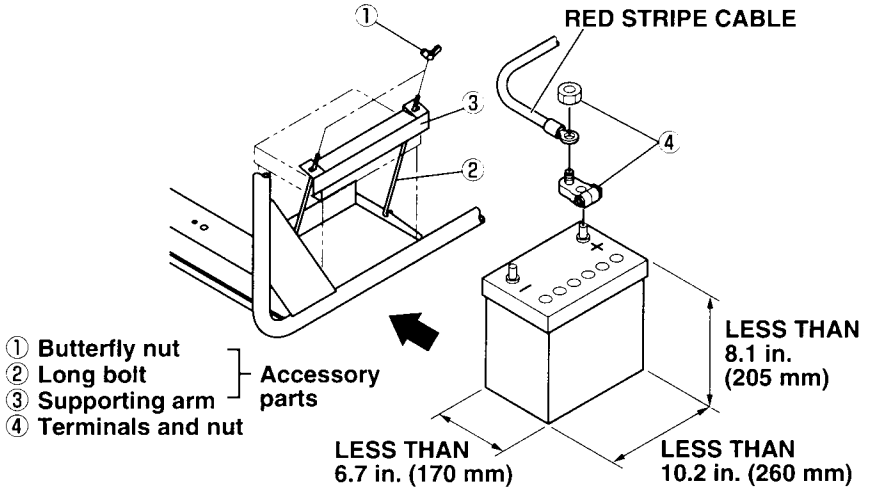
Lead-acid battery : A capacity of 12V-32A•h or larger.
For the generators used in low temperature (below -5°C), 12V-40A•h or larger battery is recommended.

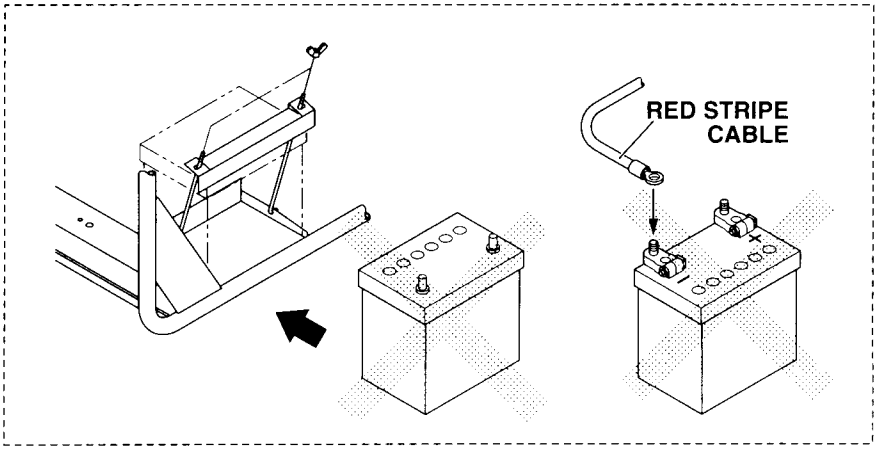
1) Attach terminals to a lead-acid battery already charged. Mount the battery onto the position as specified below, with its terminals facing inward.
2) Insert each long bolt through the specified hole, its tip pointing outward.
3) Put the supporting arm on the long bolts and tighten with the butterfly nuts. (Push the lead-acid battery all the way inward.)
4) Arrange the wiring so that it won't be damaged by possible vibration caused by the engine.
5) Only after checking that the engine's starter key is in the "OFF" position, securely connect the cable with a red stripe, to the positive (+) terminal. And then connect the other cable to the negative (-) terminal.

Cable with red stripe : to the (+) terminal
Cable with no stripe : to the (-) terminal

[CAUTION]

Should the connection be made in incorrect manner, the engine will be broken.





CHECK COMPONENT PARTS

Check following items before starting engine:

- Fuel leakage from fuel hose, etc.
- Bolts and nuts for looseness.
- Components for damage or breakage.
- Generator not resting on or against any adjacent wiring.

CHECK GENERATOR SURROUNDINGS

⚠ WARNING

Make sure you review each warning in order to prevent fire hazard.

- **Keep area clear of inflammables or other hazardous materials.**
- **Keep generator at least 3 feet (1 meter) away from buildings or other structures.**
- **Only operate generator in a dry, well ventilated area.**
- **Keep exhaust pipe clear of foreign objects.**
- **Keep generator away from open flame. No smoking!**
- **Keep generator on a stable and level surface.**
- **Do not block generator air vents with paper or other material.**

5. OPERATING PROCEDURES

STARTING THE ENGINE

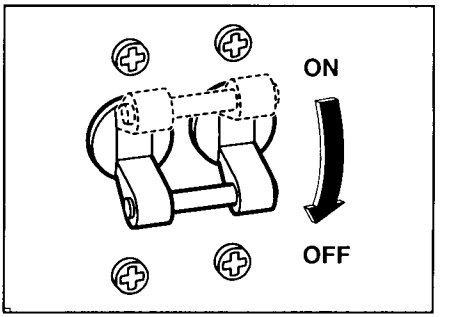
[CAUTION]

- **Check the oil level before each operations. (See page 6)**
- **Perform the specified Daily Inspection to see if it is in normal condition.**

(1) Make sure that the no-fuse breaker is off.

(2) Turn the fuel cock to the vertical (open) position

(3) Turn the key switch to the "START" position.
If the engine won't start, turn the switch back to "RUN" position and then wait for approximately 10 seconds to try it again.



NOTE :

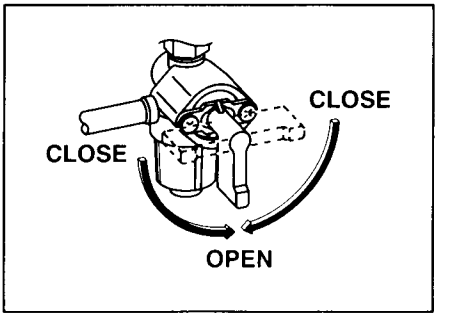
- You might have to keep the starter running for at least 3 to 5 seconds, since the engine incorporates the mechanism in it where the ignition circuit is activated by the increase of hydraulic pressure.
- In the following occasion, two or three trials may be required for starting the engine :

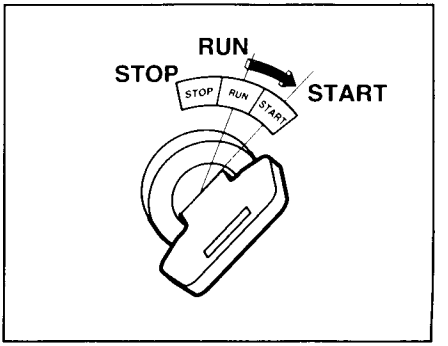
(1) The very first starting of a new generator.

(2) After the refueling of the engine which has been stopped due to fuel shortage.

(3) Starting after the oil filter change.

(4) Warm the engine up for a minute or two. Longer time would be needed in cold weather.



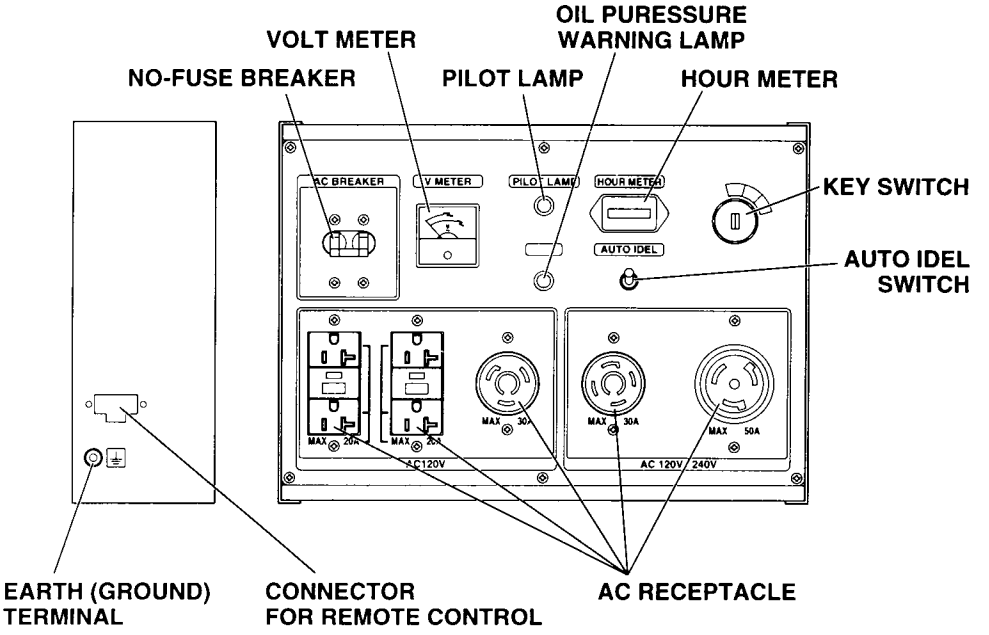


USING ELECTRIC POWER

⚠ WARNING

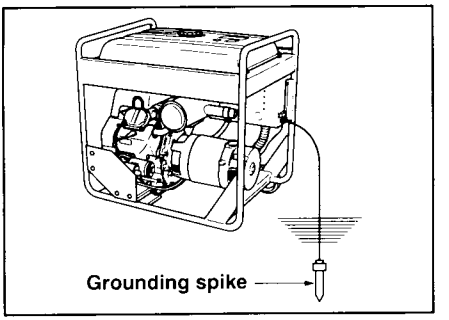
- **Make sure that the appliance is switched OFF before connecting it to the generator.**
- **Do not move the generator while it is running.**
- **Be sure to ground the generator if the connected appliance is grounded. Failure to ground unit may lead to electrical shock.**

CONTROL PANEL

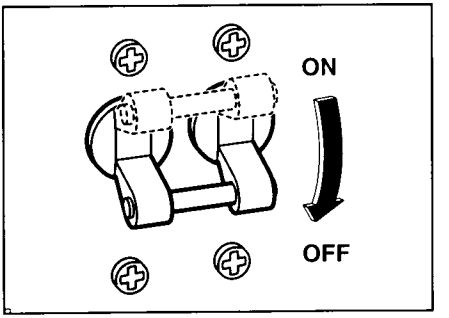


(1) AC APPLICATION

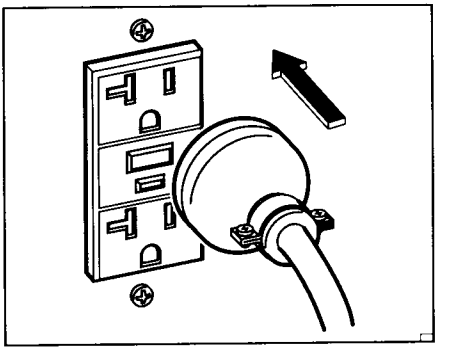
(a) Ground the generator, using the ground terminal located at the side of the panel.



(b) Before starting the engine, check that the no-fuse breaker of the generator and the power switches of the appliances are turned off.



(c) Connect the plugs of the appliances to the receptacles before starting the engine. If you wish to use for a long period of time, connecting to the output terminal is recommended.



(d) Start the engine and check that the voltage meter is indicating correct voltage.

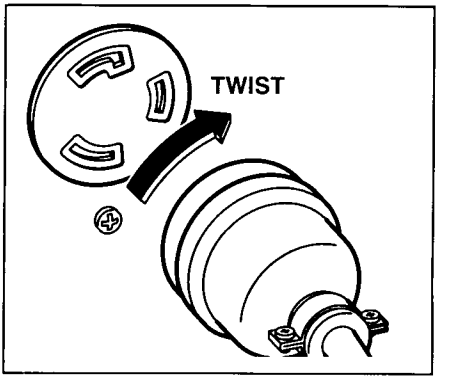
- Check the amperage of the receptacles used referring to **TABLE 1**, and be sure not to take a current exceeding the specified amperage.
- Be sure that the total wattage of all appliances dose not exceed the rated output of the generator.

Style	Ampere	Receptacle	AC plug	Description
	up to 20A	NEMA 5-20R	NEMA 5-20P	GFCI (Ground Fault Circuit Interrupter) Receptacle, duplex (REC1)
	up to 30A	NEMA L5-30R	NEMA L5-30P	Locking Receptacle (REC2)
	up to 30A	NEMA L14-30R	NEMA L14-30P	Locking Receptacle (REC3)
	up to 50A	Locking Receptacle (REC4)		

TABLE 1

⚠ WARNING

- **To take power out from the TWIST LOCK RECEPTACLE, insert the plug into the receptacle, and turn it clockwise to the lock position.**
- **Be sure to ground the generator if the connected electrical device Is grounded.**



NOTE :

When the no-fuse breaker turns off during operation, the generator is over loaded or the appliance is defective. Stop the generator immediately, check the appliance and / or generator for overloading or detect and have repaired as necessary by Makita dealer or service shop.

[CAUTION]

The duplex 120V receptacle is protected by a GFCI (Ground Fault Circuit Interrupter). GFCI shuts off the output current from the duplex 120V receptacle when a ground fault occurs in the generator or the appliance. Please note that other receptacles are not protected by GFCI.

GFCI RECEPTACLE

After starting the engine, check the GFCI for proper functioning by the following test procedure.

- Push blue TEST button, The red RESET button will pop out exposing the word TRIP. Power is now off at the outlets protected by the GFCI, indicating that the device is functioning properly.
- If TRIP dose not appear when testing, do not use the generator. Call a qualified electrician.
- To restore power, push RESET button.

⚠ WARNING

If the RESET button pops out during operation, stop the generator immediately and call a qualified electrician for checking generator and the appliances.

(2) CONNECTING TO DOMESTIC CIRCUIT (HOUSE WIRING)

⚠ WARNING

This generator is neutral grounded type.

If a generator is to be connected to residential or commercial power lines, such as a stand-by power source during power outage, all connections must be made by a licensed electrician.

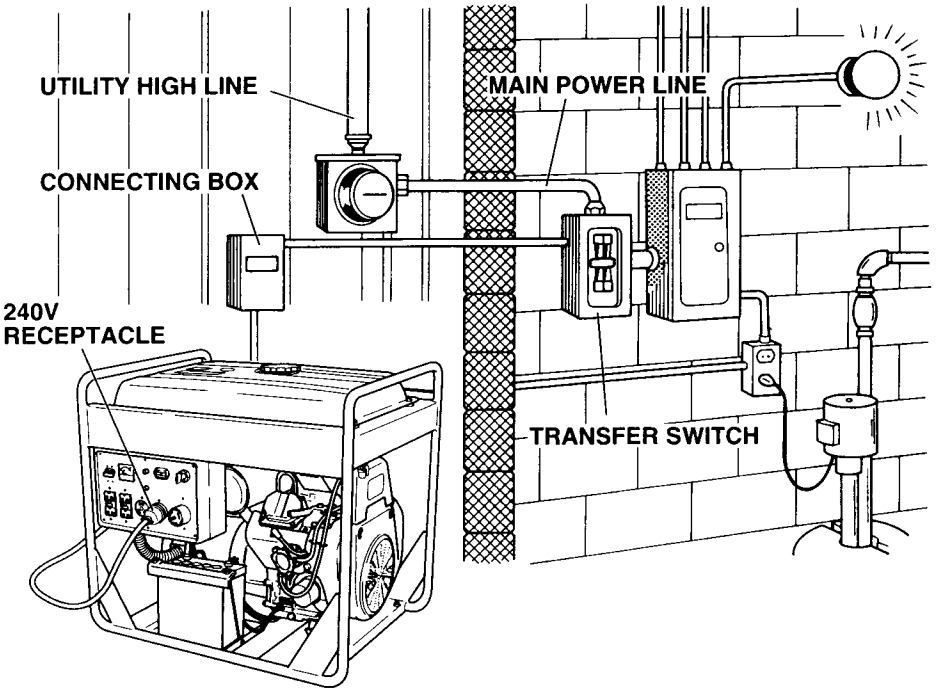
Failure in connection may result in death, personal injury, damage to generator, damage to appliances, damage to the building's wiring or fire.

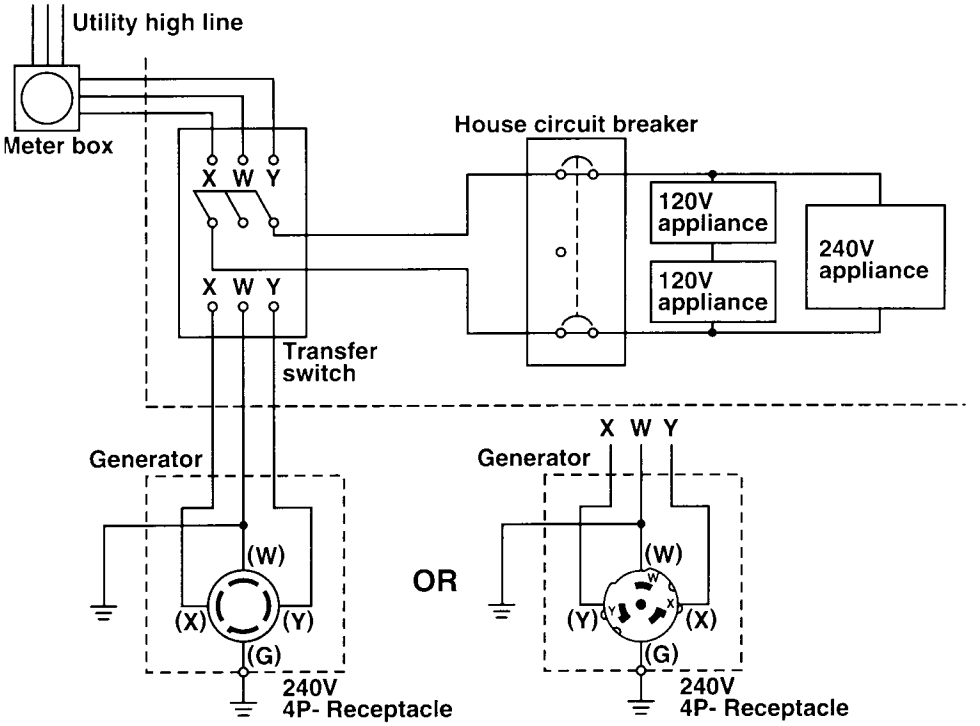
(a) When connecting a Makita generator to a house wiring, generator output power must be taken from the 240V-4P receptacle.

(b) Install a transfer switch.
A transfer switch must be installed to transfer the load from the commercial power source to the generator. This switch is necessary to prevent accidents caused by the recovery from power outage. Use a transfer switch of the correct capacity.
Install transfer switch between the meter and the fuse or AC breaker box.

[CAUTION]

If the neutral wire of house wiring is grounded, be sure to ground the ground terminal of the generator, Otherwise an electric shock may occur to the operator.





(c) Operating the generator.

- Set the full power switch to 120V/240V side.
- Turn the house AC breaker off before starting the generator.
- Start the generator and warm it up.
- Turn the house AC breaker on.

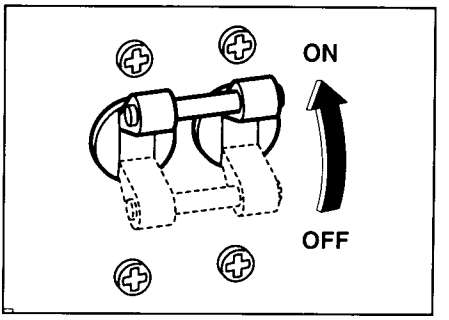
[CAUTION]

Do not start the generator with electrical appliance (s) connected and with their switches on.

Otherwise the appliance (s) may be damaged by the surge voltage at starting.

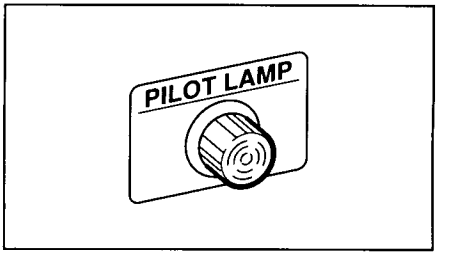
NOTE :

When the no-fuse breaker turns off during operation, the generator is over loaded or the appliance is defective. Stop the generator immediately, check the appliance and / or generator for overloading or detect and have repaired as necessary by Makita dealer or service shop.



(d) Turn the breaker on to see if the pilot lamp lights up.

(e) Turn on the switch of the appliance.



(3) AUTO IDLE SWITCH

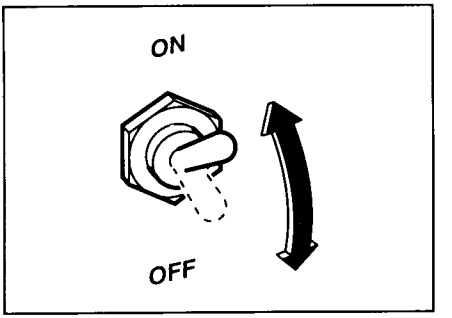
AUTO IDLE SWITCH automatically reduces engine speed when load is OFF, and automatically increases engine speed to rated r.p.m. when load is ON.
AUTO IDLE SWITCH provides fuel economy and low noise operation at no-load running.

(1) HOW TO USE AUTO IDLE SWITCH

- Start the engine with AUTO IDLE SWITCH off.

NOTE :
Warm up the engine without a load for a few minutes.

- Turn AUTO IDLE SWITCH on.



(2) CHECKING THE OPERATION

When AUTO IDLE SWITCH does not operate normally, please check following :

- Overloaded ?
  Please make it sure that the generator is not overload.

NOTE :
Most induction loads such as electric motors require three to five times more wattage than their ratings during starting.
This starting wattage should not exceed the rated output of the generator for proper operation of AUTO IDLE SWITCH.

- Turn AUTO IDLE SWITCH off when the AUTO IDLE SWITCH does not work normally under the rated output.

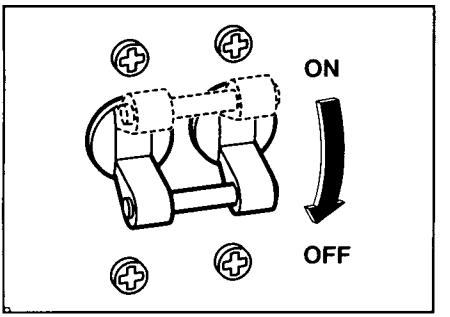
NOTE :
The AUTO IDLE SWITCH may not operate when the applied load is under 40W. In such cases turn the AUTO IDLE SWITCH off.

STOPPING THE GENERATOR

(1) Turn off the power switch of the electric equipment.

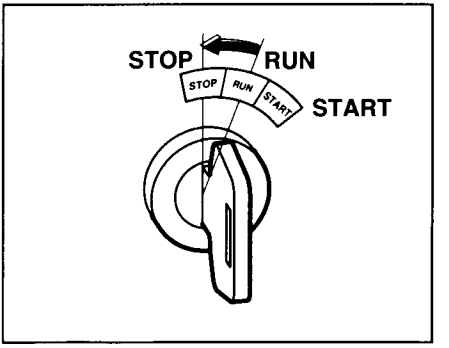
(2) Turn the no-fuse breaker to off.

(3) Unplug the cord from receptacle of the generator.

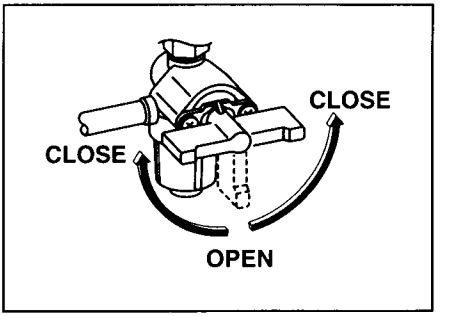


(4) Allow the engine to run at no-load for about 3 minutes to cool down before stopping.

(5) Turn the key switch to the STOP position.



(6) Close the fuel cock.



6. WATTAGE INFORMATION

Some appliances need a "surge" of energy when starting.
This means that the amount of electrical power needed to start the appliance may exceed the amount needed to maintain its use.
Electrical appliances and tools normally come with a label indicating voltage, cycles/Hz, amperage (amps) and electrical power needed to run the appliance or tool.
Check with your nearest dealer or service center with questions regarding power surge of certain appliances or power tools.

- Electrical loads such as incandescent lamps and hot plates require the same wattage to start as is needed to maintain use.
- Loads such as fluorescent lamps require 1.2 to 2 times the indicated wattage during start-up.
- Loads for mercury lamps require 2 to 3 times the indicated wattage during start-up.
- Electrical motors require a large starting current. Power requirements depend on the type of motor and its use. Once enough "surge" is attained to start the motor, the appliance will require only 50% to 30% of the wattage to continue running.
- Most electrical tools require 1.2 to 3 times their wattage for running under load during use. (For example, a 9,000 watt generator can power a 3,200 to 7,000 watt electrical tool.)
- Loads such as submersible pumps, air conditioners and air compressors require a very large force to start. They need 3 to 5 times the normal running wattage in order to start. (For example, a 5,000 watt generator would only be able to drive a 1,800 to 3,100 watt pump.)
- If the power consumption of electrical appliances exceeds the operating range or if there is short circuit or other problems in the appliances, the AC breaker could trip "OFF" or the rotation of the generator could be abnormally reduced. In this case, stop the generator to see if the power consumption of the appliances is too large and if there is a problem in the appliances.
- The frequency (the number of the generators rotation) was adjusted before the time of shipment. Changing the frequency could result in the generators breakdown, so refrain from changing it.

To determine the total wattage required to run a particular electrical appliance or tool, multiply the voltage figure of the appliance/tool by the amperage (amps) figure of same. The voltage and amperage (amps) information can be found on a name plate which is normally attached to electrical appliances and tools.

Applications	Applicable Wattage (W)
	G12000R
	60 Hz
Incandescent lamp, Heater	9,500
Fluorescent lamp, Electric tool	4,700
Pump, Compressor	2,400

NOTE :

- The above wattage chart is general guide only. Refer to your specific appliance for correct wattage.
- When you use two or more alternating current outlets at a time, be careful that the sum of the appliances' power consumption does not exceed the value specified in the above chart.

VOLTAGE DROP IN ELECTRIC EXTENSION CORDS

When a long electric extension cord is used to connect an appliance or tool with the generator, a certain amount of voltage drop occurs in the extension cord which lessens the effective voltage available to the appliance or tool.
The chart below has been prepared to illustrate the approximate voltage loss when an extension cord of 300 feet (approx. 100 meters) is used to connect an appliance or tool to the generator.

Nominal cross section	A.W.G. Gauge No.	Allowable current	No.of strands / strands dia.	Resistance	Current Amp.							
mm^2	No.	A	No./mm	Ω/100m	1A	3A	5A	8A	10A	12A	15A	
0.75	18	7	30/0.18	2.477	2.5V	8V	12.5V	—	—	—	—	Voltage drop
1.27	16	12	50/0.16	1.486	1.5V	5V	7.5V	12V	15V	18V	—	
2.0	14	17	37/0.26	0.952	1V	3V	5V	8V	10V	12V	15V	
3.5	12 to 10	23	45/0.32	0.517	—	1.5V	2.5V	4V	5V	6.5V	7.5V	
5.5	10 to 8	35	70/0.32	0.332	—	1V	2V	2.5V	3.5V	4V	5V	

7. MAINTENANCE SCHEDULE

DAILY INSPECTION

(1) Amount of fuel (See page 7)

(2) Water on fuel strainer (See page 26)

(3) Amount of engine oil

(4) Amount of electrolyte in lead-acid battery
(Not supplied ; Refer to the instruction for use.)

(5) Dust in intake port

(6) Looseness of each fastened point

(7) Abnormal vibration and noise

(8) Leakage of fuel and oil (See page 6.)

PERIODICAL MAINTENANCE

EVERY 25 HOURS	■ Cleaning of outer element of air cleaner.
50 HOURS	■ Changing of air cleaner element.(inner and outer) ■ Changing of engine oil.(*)
200 HOURS	■ Changing of oil filter. ■ Cleaning of fuel strainer. ■ Adjustment of spark plug gap.
500 HOURS	■ Check and replace carbon brushes.
EVERY 1,000 HOURS	■ Engine overhaul. ■ Checking of bearings in generator. ■ Changing of rubber mounts.
EVERY 2 YEARS	■ Cleaning of engine's cooling air intake port and generators cover. ■ Changing of fuel pipes.

*: Initial oil change should be performed after first twenty (20) hours of use.
Thereafter change oil every 50 hours or six (6) months whichever comes first.

[CAUTION]

Before changing the oil, check for a suitable way to dispose of the old oil. Do not pour it down sewage drains, onto garden soil or into open streams. Your local zoning or environmental regulations will give you more detailed instructions on proper disposal.

8. "HOW-TO" MAINTENANCE

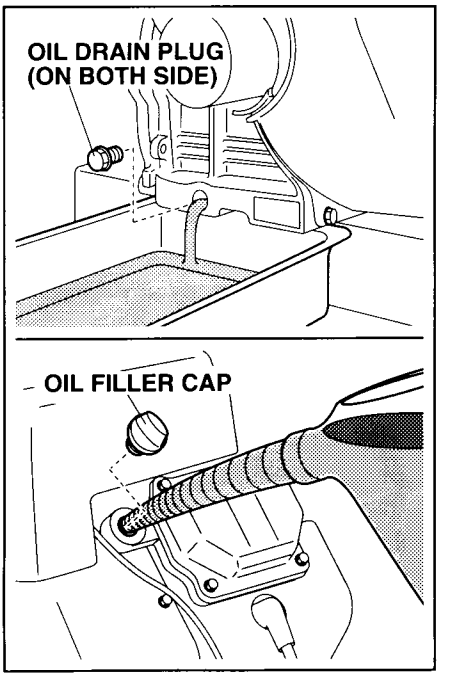
ENGINE OIL CHANGE

■ Initial oil change
· · · · · After 20 hours of operation

■ Thereafter
· · · · · Every 50 hours of operation

1. When changing oil, stop the engine and loosen the drain plug.
2. Re-install the drain plug before refilling oil.
3. Refer to the recommended oil table on page 6.
4. Always use the best grade and clean oil. Contaminated oil, poor quality oil and shortage of oil cause damage to engine or shorten the engine life.

Oil capacity · · · · · 0.41 US-gal (Upper level)
1.55 liters (Upper level)

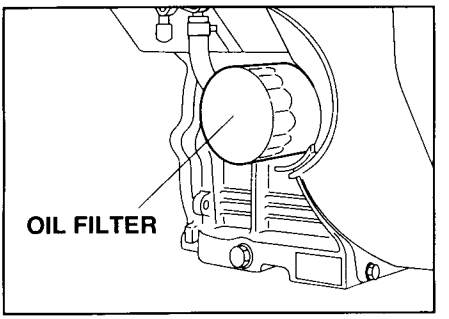


ENGINE OIL FILTER REPLACEMENT

■ Initial engine oil filter replacement should be performed after 20 hours of operation. Thereafter replace the engine oil filter every 200 hours.

■ When installing a new oil filter, apply oil to O-ring, attach the oil filter in position and tighten 2/3 turns by hand or with wrench after touching the O-ring to the sealing surface of engine.

■ Run the engine for a minute ; stop the engine and check for oil leakage around the oil filter and recheck the oil level.



⚠ CAUTION

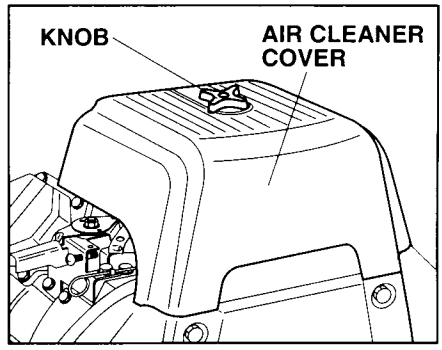
To prevent injury, pay attention to the spilled hot engine oil when replacing engine oil filter.

SERVICING AIR CLEANER

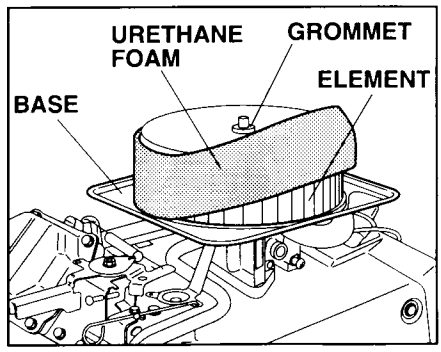
A dirty air cleaner element will cause starting difficulty, power loss, engine malfunctions, and shorten engine life extremely.

Always keep the air cleaner element clean. Replaced the air cleaner element set more often in dusty environments.

The air cleaner paper inner element and urethane foam outer element can be removed after removing knob and air cleaner cover. When installing, set the paper element and urethane foam on the air cleaner base. Check that the grommet is in position, and then install the cover with knob tightened securely.



■ Urethane Foam cleaning
Wash and clean the urethane foam in kerosene. Saturate in a mixture of 3 parts kerosene and 1 part engine oil, and then squeeze to remove excess oil. Clean or replace the urethane foam element every 50 hours. (more often in dusty environments)



■ Paper element
Clean by tapping gently to remove dirt and blow off dust. Never use oil.
Clean or replace the paper element every 50 hours of operation, and replace element set every 200 hours or once a year.

CLEANING AND ADJUSTING SPARK PLUG

(a) Unplug the high-voltage cables (located at the outlet panel and lead-acid battery).

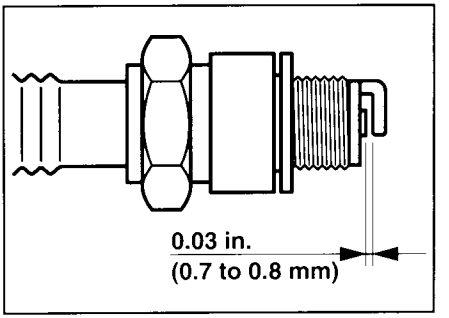
(b) Using the supplied plug wrench and handle, turn it counterclockwise until it comes off.

(c) Clean the area around the mounting hole.

(d) Clean the electrodes if they are dirty. Adjust the clearance to 0.03 in. (0.7-0.8 mm). Replace it with a new one if the abrasion has developed to the degree where a flat surface cannot be obtained on its projection.
If the electrodes turn black, also inspect the air cleaner.

(e) Attach and tighten the plug with the specified torque : 25 to 30 Nm (2.5 to 3.0 kg-m).

(f) After checking that the contact area inside the plug cap is not corroded, connect the high-voltage cables.



Spark plug
NGK BPR6ES (CHAMPION RN9YC)

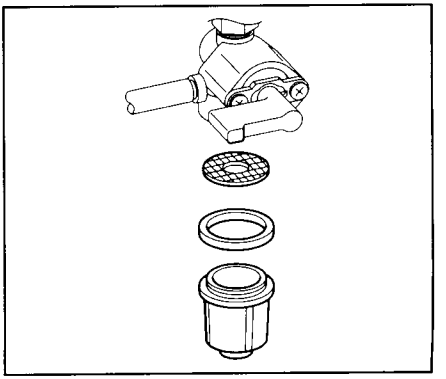
CLEANING FUEL STRAINER

Dirt and water in the fuel are removed by the fuel strainer.

(a) Remove the strainer cup and throw away water and dirt.

(b) Clean the screen and strainer cup with gasoline.

(c) Tightly fasten the cup to main body, making sure to avoid fuel leak.



CHECKING CARBON BRUSH

If the brush become excessively worn, its contact pressure with the slip ring changes and causes a roughened surface on the slip ring, resulting in irregular generator performance.

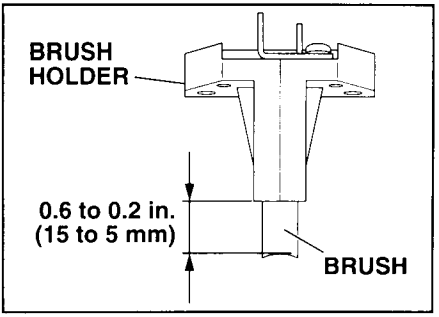
Check the brush every 500 hours or if generator performance is irregular.

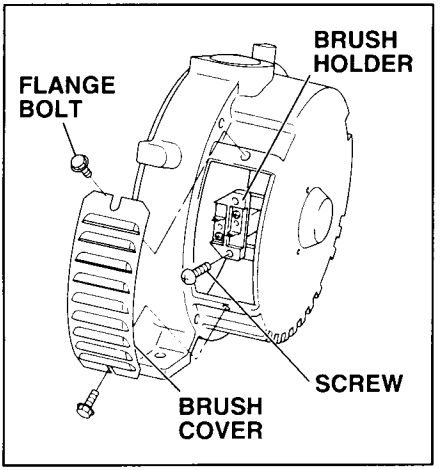
If the brush is 0.2 in.(5 mm) long or less, replace it with a new one.

(a) Remove the brush cover.

(b) Disconnect the wire connector and remove the brush.

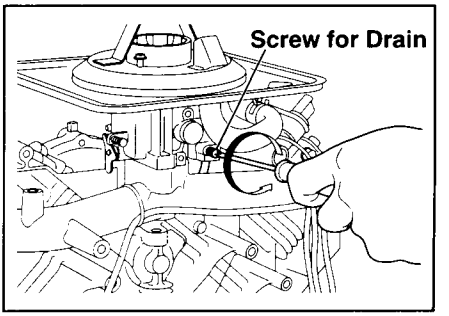
(c) Carefully note the brush direction and relative position with the slip ring when installing new brush.





9. PREPARATION FOR STORAGE

The following procedures should be followed prior to storage of your generator for a period of 6 months or longer.



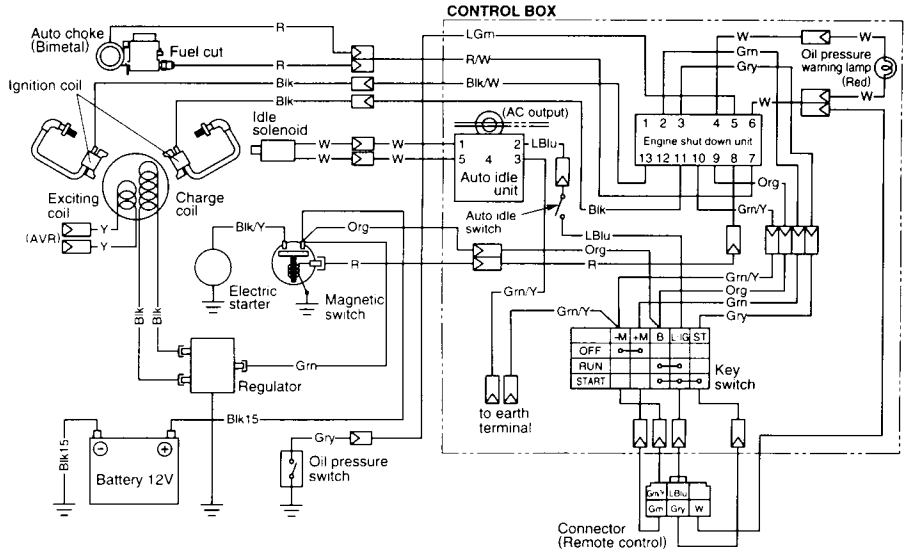
- Drain fuel from fuel tank and strainer (cup) carefully by disconnecting the fuel line. Gasoline left in the fuel tank will eventually deteriorate making engine-starting difficult.
- In order to remove the fuel in the carburetor, run the engine at no-load until it stops.
- Disconnect the terminal of the battery.
- Change engine oil.
- Check for loose bolts and screws, tighten them if necessary.
- Clean generator thoroughly with oiled cloth. Spray with preservative if available. NEVER USE WATER TO CLEAN GENERATOR !
- Store generator in a well ventilated, low humidity area.

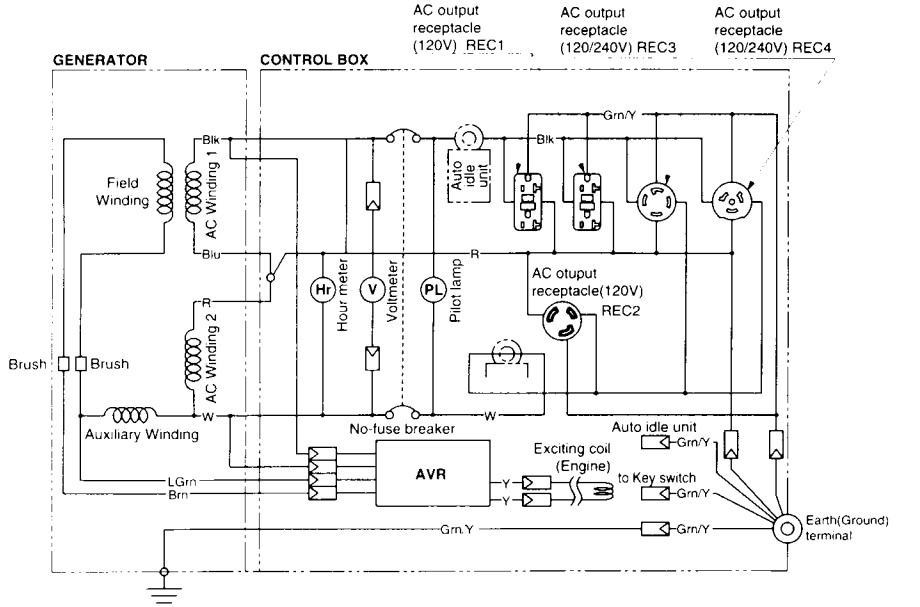
10. TROUBLESHOOTING

When generator engine fails to start after several attempts, or if no electricity is available at the output receptacles, check the possible causes in accordance with the following table. If your generator still fails to start or generate electricity, contact your nearest Makita dealer or authorized service center for further information or corrective procedures.

Problem \ Possible causes		Low battery	Blown fuse	Deteriorated fuel	Fuel piping		Clogging of Air cleaner	Clogging of Cooling air intake	Low oil level	Faulty spark plug	Overload by connected appliance	Incorrect or poor connection of wires	Insufficient capacity of extension cable	Carbon brushes are excessively worn
					Leakage	Clogging								
Starter won't run		X	X											
Starter runs, but Engine won't start.				X	X		X		X	X				
During operation	Rotation decreased			X	X		X	X	X	X	X			
	Unstable rotation			X	X		X	X		X				
	Breaker turned off										X	X		
	Low power			X	X		X	X		X	X	X	X	X

11. WIRING DIAGRAM





Wiring color cord

Blk	: Black	Brn/W	: Brown/White	R	: Red	Blk/R	: Black/Red
Blk/W	: Black/White	Grn	: Green	W	: White	R/W	: Red/White
Blu	: Blue	Grn/W	: Green/White	Y	: Yellow	LGrn	: Light green
LBlu	: Light blue	Org	: Orange	Pik	: Pink		
Brn	: Brown	Gry	: Gray	Grn/Y	: Green/Yellow		

MAKITA LIMITED ONE YEAR WARRANTY

Warranty Policy

Every Makita tool is thoroughly inspected and tested before leaving the factory. It is warranted to be free of defects from workmanship and materials for the period of ONE YEAR from the date of original purchase. Should any trouble develop during this one-year period, return the COMPLETE tool, freight prepaid, to one of Makita's Factory or Authrorized Service Centers. If inspection shows the trouble is caused by defective workmanship or material, Makita will repair (or at our option, replace) without charge.

This Warranty does not apply where:

- repairs have been made or attempted by others;
- there is evidence of normal wear and tear;
- The tool has been abused, misused or improperly maintained;
- alterations have been made to the tool.

Defects are due to the use of parts, accessories or attachments which are not Makita genuine products, specifically recommended for use with this tool.
Damage may be caused in transit. (This must be the responsibility of the carrier.)
Claims arise from regulations such as for noise levels, exhaust gas emissions, etc. This product has been operated for racing purposes or other competitve activities. This product has been employed for powering equipment that is operated on, in or near water or explosive atmospheres.

The following parts are expendable (not durable), so warranty does not apply:
Expendable parts including, but not limited to:
Spark plugs, packings, gaskets, rubber materials, washers, nuts, V-belt, engine oil, grease, paper elements , brushes, mechanical seal, pump impeller and volute casing.

IN NO EVENT SHALL MAKITA BE LIABLE FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM THE SALE OR USE OF THE PRODUCT. THIS DISCLAIMER APPLIES BOTH DURING AND AFTER THE TERM OF THIS WARRANTY.

MAKITA DISCLAIMS LIABILITY FOR ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF "MERCHANTABILITY" AND "FITNESS FOR A SPECIFIC PURPOSE," AFTER THE ONE-YEAR TERM OF THIS WARRANTY.

This Warranty gives you specific legal rights, and you may also have other rights which very from state to state. Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

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PRINTED IN JAPAN