



GASOLINE GENERATOR USER MANUAL

**MODEL: BGG-22MR
BGG-28MR
BGG-55ER
BGG-65ER**



Foreword

Thank you for purchasing our gasoline generator and hope that you will enjoy operating your unit, one of the finest models in the market.

This Manual provides information regarding the safe operation and maintenance of this product. This manual should be considered a permanent part of the unit and should remain with the product if it is resold.

Every effort has been made to ensure the accuracy of the information in this manual. We reserve the right to change this product and specifications at any time without prior notice.

Important Message

This manual contains special messages to bring attention to potential safety concerns, generator damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

Pay special attention to statements with the following symbols and words.

! WARNING indicates a hazard, if instructions are not strictly followed, can result in human injury or death.

! CAUTION indicates a hazard, if instructions are not strictly followed, could result in human injury and/or property damage.

NOTE uses to give helpful information.

TABLE OF CONTENTS

Foreword.....	1
Table of Contents.....	2
1. Safety Instructions.....	3
2. Introduction to Parts and Components.....	6
3. Pre-operation Check/Inspection.....	6
3.1 Engine Oil Level.....	7
3.2 Fuel Level.....	8
3.3 Air Cleaner.....	9
3.4 Battery.....	10
3.5 Grounding the Unit.....	10
4. Starting the Engine.....	11
5. Use of the Generator Set.....	13
5.1 Grounding.....	13
5.2 Wattage of Electrical Devices.....	13
5.3 Connecting Sequence.....	14
5.4 Connecting Method.....	14
5.5 Instructions on AC Usage.....	15
5.6 Instruction on DC Usage.....	16
6 Stopping the Engine.....	17
7 Maintenance.....	18
7.1 Maintenance Schedule.....	18
7.2 Replacement of Engine Oil.....	18
7.3 Maintenance of Spark Plug.....	19
7.4 Maintenance of Fuel Filter Cup.....	20
8 Electrical Start.....	21
9 Storage and Transportation.....	22
10 Troubleshooting.....	24
11 Specifications.....	25

1. Safety Instructions

! CAUTION *Read the manual carefully. Do not operate the equipment until you have read the manual and familiarized yourself with the safety, assembly, operation, and maintenance instructions.*

! CAUTION *This equipment should only be operated on a stable, level surface.*

! CAUTION *Don't overload the unit, or its service life will be shortened.*

! CAUTION *Don't operate or store the unit in humid places and/or on metal surfaces.*

1.1 Don't operate the unit in enclosed or partially enclosed places, such as rooms, basements, garages, caves, tunnels, etc (Figure 1)

! WARNING DANGER: Carbon Monoxide. Using a generator indoors (or enclosed or partially enclosed places without good ventilation) CAN KILL YOU IN MINUTES. Generator exhaust contains Carbon Monoxide, a colorless, odorless, but deadly gas.



Figure 1



Figure 2

1.2 Don't operate the unit under wet circumstances (Figure 2)

! WARNING DANGER: Electric Shock. The generator produces powerful voltage, operation in wet circumstances can result in electrocution.

1.3 Don't connect the unit to building circuit (Figure 3)

! WARNING DANGER: Fire and Equipment Damage. Improper connection

may result in generator damage or a fire.



Figure 3

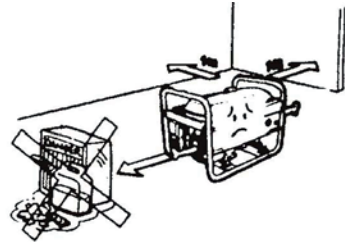


Figure 4

1.4 Keep inflammables at least 1 meter away from the unit (Figure 4)

! WARNING DANGER: Fire and/or Explosion. The generator set produces heat when it is working. Operation near inflammables can cause the inflammables over-heated and thus cause a fire.

1.5 Prohibit to smoke during fuel filling (Figure 5)

! WARNING DANGER: Fire and/or Explosion. Gasoline and its vapors are highly flammable and explosive under certain conditions. Gasoline and its vapor can easily be ignited by cigarette ends, as well as sparks, open flames, hot surfaces, etc to result in fire or explosion.



Figure 5



Figure 6



Figure 7

1.6 Take care to avoid fuel spillage when filling. (Figure 6)

! WARNING DANGER: Fire and/or Explosion. Gasoline spillage and its vapors are highly flammable and explosive under certain conditions.

1.7 Be aware to fill fuel after stopping the engine. (Figure 7)

! WARNING DANGER: Fire and/or Explosion. Gasoline and its vapors are highly flammable and explosive under certain conditions.

1.8 Be aware of hot surfaces.

! WARNING Danger: Burns. The muffler is very hot during and/or immediate after engine operation. Accidental contact with hot surfaces such as the muffler will result in serious burns.

1.9 Keep children and other people away from the unit during operation.

2. Introduction to Parts and Components

Main parts and components of the unit are illustrated as follows:

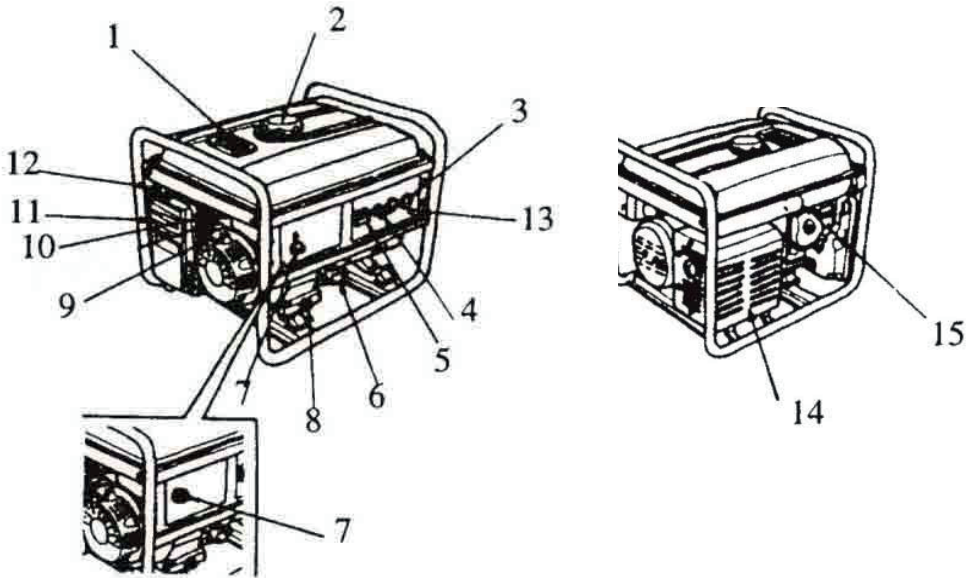


Figure 8

- | | | |
|---------------------|--------------------|-------------------|
| 1. Fuel Gauge | 2. Fuel Tank Cover | 3. AC Plug Socket |
| 4. Circuit Breaker | 5. Voltmeter | 6. Dipstick |
| 7. Ignition Switch | 8. Drain Plug | 9. Recoil Starter |
| 10. Fuel Switch | 11. Air Cleaner | 12. Choke Lever |
| 13. Ground Terminal | 14. Muffler | 15. Spark Plug |

Note: Pictures and drawings used in this manual are for reference only and do not represent any specific model.

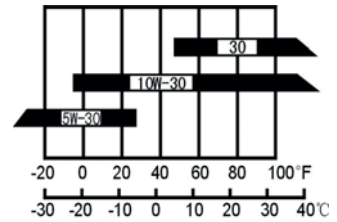
3. Pre-operation Check

Please do the following preparation before operation to ensure the reliable function of the unit, or it may result in equipment damage and service life abridgement.

3.1 Engine Oil Level

Little engine oil is filled in the engine when you purchase the unit. Before operating the unit, please fill in adequate amount of engine oil of the proper type.

SAE10W-30 engine oil is recommended for general, all-temperature usage. Other viscosities oil (as shown in the chart) may be used when the average temperature in your area is within the indicated range.



Surrounding Temperature

NOTE: Do the check only when the unit stops operation on a level ground.

3.1.1 Take out the oil filler cover and have the dipstick cleaned (Figure 9)

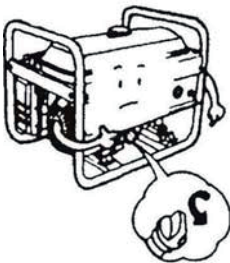


Figure 9



Figure 10

3.1.2 Insert the dipstick into the oil filler hole without screwing it in (Figure 10)

3.1.3 If the oil level is below the lower mark of the dipstick, add oil to its higher

mark (Figure 11)



Fig. 11

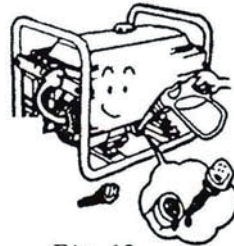


Fig. 12

3.1.4 Re-screw in the oil filler cover/dipstick and fasten it securely (Figure 12)

3.2 Fuel Level

To ensure the smooth performance of the unit, fresh, unleaded gasoline 90# or higher is recommended to be added into the engine by the following steps.

3.2.1 Put the unit on a level surface.

3.2.2 Remove the fuel filler cover (Figure 13)



Fig. 13

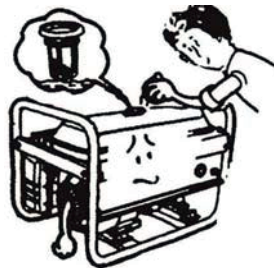


Fig. 14

3.2.3 Check the fuel level, and add fuel if necessary. Be sure not to add too full.

! CAUTION The fuel expansion in the tank can result in fuel spillage and possible fire or explosion. Please don't add fuel to the ceiling of the tank to leave room for fuel expansion.

3.2.4 Fill fuel to the shoulder of the fuel filter /Strainer.(Figure 15)



Fig. 15

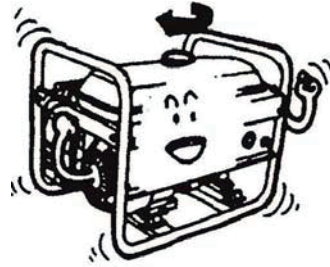


Fig. 16

3.2.5 Re-mount the fuel filler cover and tighten it well (Figure 16)

! CAUTION Don't add a mixture of gasoline and engine oil used for 2-stroke petrol engines.

Don't use stale fuel.

Avoid foreign matters getting into the tank, such as dusts, water etc.

Drain fuel in the tank and carburetor if the unit is not to be used for long time as fuel degeneration owing to long-time storage may cause it difficult to start the engine.

3.3 Air Cleaner

3.3.1 Remove the air cleaner housing (Figure 17)

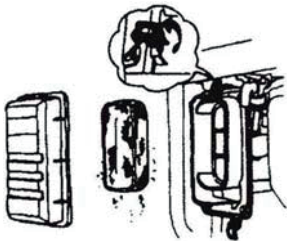


Fig. 17

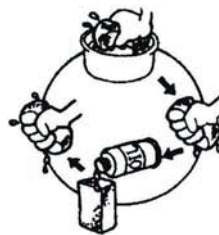


Fig. 18

3.3.2 Check it to see if the air cleaner core is intact and/or clean. If it is broken, have it replaced with a new one.

3.3.3 If the core is dirty, have it cleaned in the following way. (Figure 18)

- Clean the core in cleansing solvent
- Dry it up

- c) Dip a few drops of engine oil on it
- d) Squeeze out excess oil

3.3.4 Put the filter element back to its original place, mount the cover and fasten it securely (Figure 19)

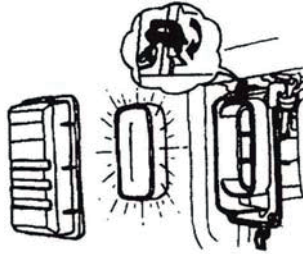


Fig. 19

3.4 Battery (For Electrical Start Models only)

3.4.1 Check the battery and connecting ports.

3.4.2 Check each cell of the battery to see if the electrolyte level of the battery is between the upper and lower level marked on the battery. (Figure 20)

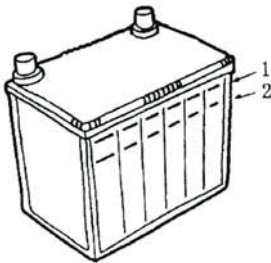


Fig. 20

- 1. Upper Level
- 2. Lower Level

3.4.3 Check the specific gravity of electrolyte

3.5 Grounding the Unit

Keep the generator properly grounded to avoid electrocution. (Figure 27)

There is a grounding nut on the lower right of the control panel. Connect the nut and the earth firmly with a wire before

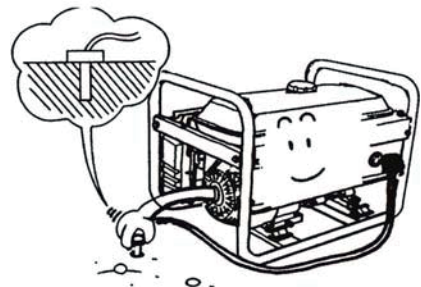


Fig. 27

operation.

! WARNING **DANGER: Electrical Shock.** Failure to properly ground the generator can result in electrocution.

4. Starting the Engine

NOTE Before starting the engine be sure that all the pre-operation check has been done.

- 4.1 Unplug all AC sockets to disconnect loads
- 4.2 Check if the unit has been properly grounded.
- 4.3 Check the level of engine oil and fuel.

Set the fuel switch to ON position (Figure 22)

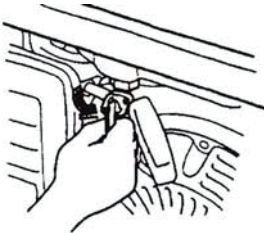


Fig. 22

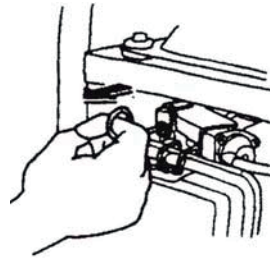


Fig. 23

- 4.4 Set the Choke Lever to OFF position (Figure 23)

NOTE Don't close the choke when the engine is hot.

- 4.5 Set the Ignition Switch to ON position for hand start models; Turn the key-switch to ON position for E-start units (Figure 24)



Fig. 24

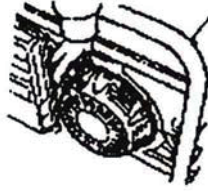


Fig. 25

4.6 Pull up the Starting Handle gently until resistance is felt, then pull it up rapidly. Put back the handle slowly to avoid damage to the starting system. Turn the key-switch to START position for E-start Models, for details please consult Chapter 8.(Figure 25)

4.7 If the engine fails to start, please turn on the choke lever and repeat what you do in Section 4.6.

! WARNING After the engine started, release the starting handle gently to avoid personal injury and/or equipment damage due to the bouncing back.

4.8 Once the engine is started, set the choke lever to ON position. (Figure 26)

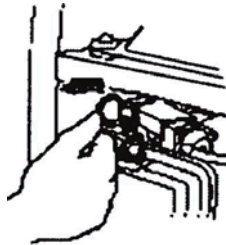


Fig. 26

5. Use of the Generator Set

Constantly do the following to keep the unit in sound, workable condition.

! WARNING **DANGER: Electrical Shock.** Failure to properly ground

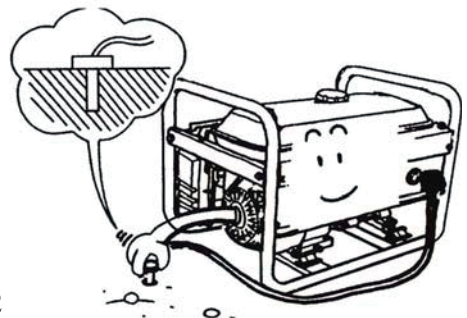


Fig. 27

the generator can result in electrocution.

5.1 Grounding

Keep the generator properly grounded to avoid electrocution. (Figure 27)

5.2 Wattage of Electrical Devices

Reference data of the rating wattage and (the way to calculate) the starting wattage of the electric appliances connecting to the generator.

Description	Wattage		Species	Examples		
	Start	Rating		Electric Devices	Start	Rating
Incandescent Lamp Heating Devices	X 1	X 1	Incandescent Lamp  TV 	Incandescent Lamp  100W	100VA (W)	100VA (W)
Fluorescent Lamp	X 2	X 1.5	Fluorescent Lamp 	Fluorescent Lamp  40W	80VA (W)	60VA (W)
Drive Device	X3-5	X 2	Refrigerator  Electric Fan 	Refrigerator  150W	450---750VA (W)	300VA (W)

Table 5.1

! WARNING Electric motors require far more wattage than the rated ones at starting, be sure not to exceed the rated output of the generator set when connecting loads to it.

5.3 Connecting Sequence

If there are two or more loads needing power supply from the generator, be sure to connect them one by one with the one of highest start current first, followed by the

2nd highest, until the lowest. (Figure 28)

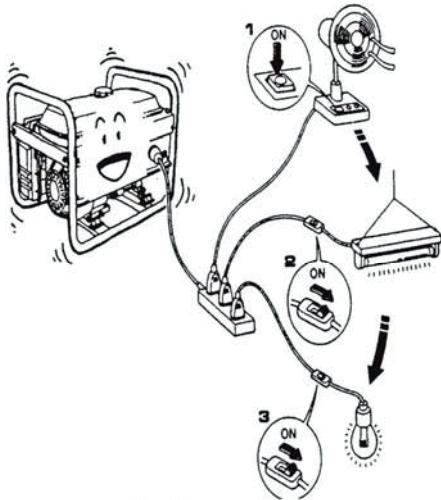


Fig. 28

c) Correct

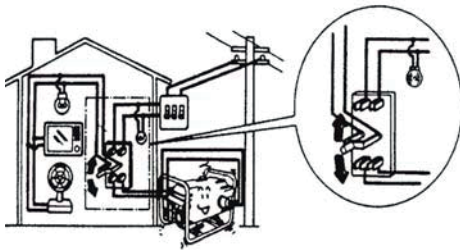


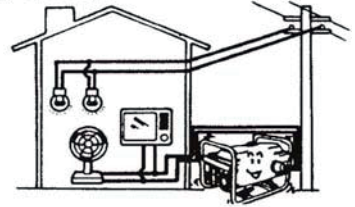
Fig. 29

5.4 Connecting Method

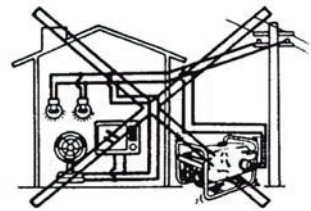
Illustration of connecting methods (Figure 29)

! WARNING DANGER: Generator Damage and/or Fire. When it is needed to connect the generator to building power supply, be sure to have a skilled electrician to do the job. Improper connection between the generator and loads may result in generator damage, even a fire.

a) Correct



b) Forbidden



5.5 Instructions on AC Usage

NOTE Acquaint yourself with the parameters on the Control Panel to ensure correct usage within the rated output of the generator set.

! CAUTION The generator set can work at its rated output only under constant temperature, pressure and humidity. The variation of temperature, pressure and humidity may influence the output of the generator.

The temperature range in which the unit can be started is 15°C-40°C.
The standard condition is

- Surrounding temperature: 25°C
- Surrounding Pressure: 100kPa
- Relevant Humidity: 30%
- Height above Sea Level: 1000m

5.5.1 Start the generator (Figure 30)

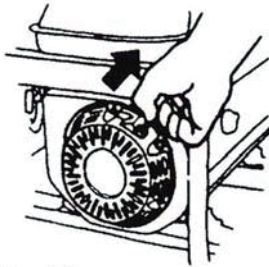


Fig.30

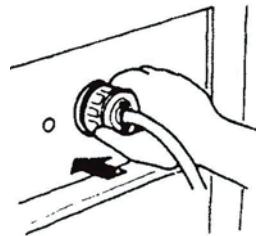


Fig.31

5.5.2 Connect the devices (Figure 31)

5.5.3 The generator can supply 110/220V AC, set the voltage selector (if there is such a selector) to the position suitable to equipment (Figure 32). If the generator is not equipped with a voltage selector, there will be sockets of 110V and 220V respectively, please plug the load wire in the relevant sockets suitable for the loads.

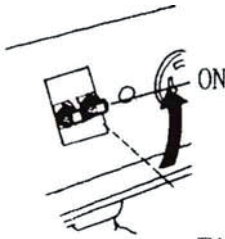


Fig. 32

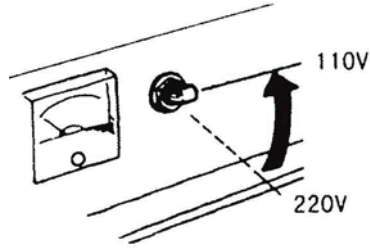


Fig. 33

5.5.4 Turn on the AC breaker (Figure 33)

5.6 Instruction on DC Usage

Pay special attention to the connection of positive and negative poles in DC application.

CAUTION The DC output should not be used as power supply for battery charging.

6 Stopping the Engine

6.1 For Emergency: Set the ignition switch to OFF position directly to stop the generator.

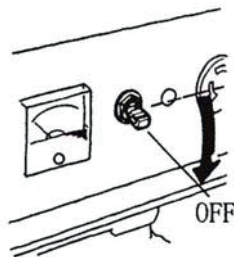


Fig. 34

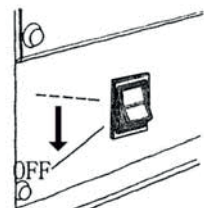


Fig. 35

6.2 Under Normal Condition

6.2.1 Turn off the AC breaker and unplug all the loads (Figure 34)

6.2.2 Run the unit for several minutes without load to cool down the generator set.

6.2.3 Set the ignition switch to OFF position(Figure 35)

6.2.4 Set the fuel switch to OFF position (Figure 36)

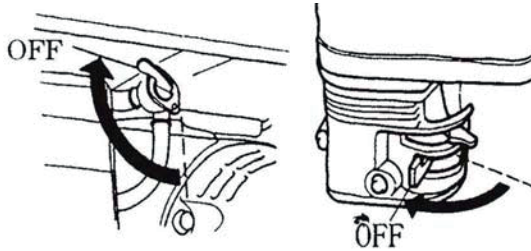


Fig . 36

! WARNING Don't touch the heating components before the unit cools down after stopping the engine to avoid burns.

! CAUTION Fuel storage in unit which is not to be used for long time will cause it difficult to start the engine. Drain the fuel for long-time storage of the unit.

7 Maintenance

7.1 Maintenance Schedule: The Unit should be serviced according to the following Maintenance Schedule:

Item \ Period	Each Time	20 Hrs or 1st Month	50Hrs or Every 3 Month	100Hrs or every 6 Month	300Hrs or every one year
Check engine oil	Check				
Replace engine oil		Replace		Replace	
Check air cleaner	Check				
Wash air cleaner			Clean		

Oil filter cover				Clean	
Battery electrolyte level	Check				
Spark plug				Clean	
Valve clearance					Check & readjust
Wash cylinder cover					Clean
Wash fuel tank		Replace every 3 years			
Battery		Replace if necessary			

! WARNING Don't carry out any maintenance when the unit is working.

7.2 Replacement of Engine Oil

Please drain thoroughly the engine oil before the engine completely cooled down to guarantee the adequate oil fluidity.

7.2.1 Unscrew and take out the dipstick (Figure 37)

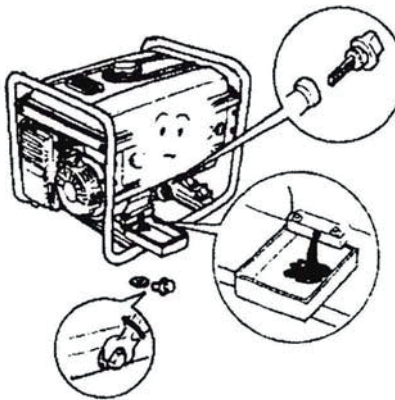


Fig. 37

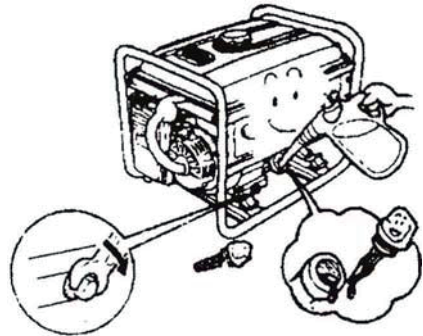


Fig. 38

7.2.2 Unscrew the drain plug, and drain engine oil from the crankcase.

7.2.3 Put the drain plug back(Figure 38)

7.2.4 Fill engine oil to the upper level of the dipstick.

Engine Oil recommended: 4-stroke gasoline engine oil---engine oil class SE,

SF from API Service Classification or SEA 10W-30 engine oil equivalent to Class SG.

7.2.5 Re-mount the dipstick to its original position.

! CAUTION Please put discard oil into specified container. Don't pour it on earth.

7.3 Maintenance of Spark Plug

Please do the job with a special tool

7.3.1 Disconnect the spark plug cap and the spark plug, clear the dirt around the spark plug (Figure 39)

7.3.2 Remove the spark plug with a special tool (Figure 40)



Fig. 39

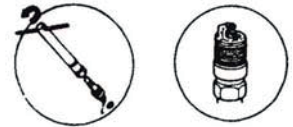


Fig. 40

7.3.3 Check the spark plug, if the insulator is broken, have the spark plug replaced. Do away with carbon fouling around the spark plug with a metal brush. (Figure 41)



Fig. 41

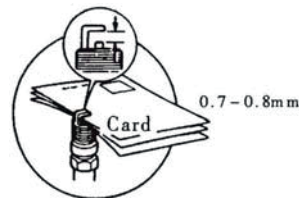


Fig. 42

7.3.4 Check the spark plug clearance to see if it is between 0.7-0.8mm, adjust it if necessary (Figure 42)

7.3.5 Re-mount the spark plug and its cap. (Figure 43)

Spark Plug recommended: F7TC

NOTE Screw in half round more after the spark plug compresses its washer if a new spark plug is used. Screw in one-fourth round more only if the old one is used.



Fig. 43

! CAUTION The spark plug must be tightened securely, or it may result in machine damage owing to over-heating.

! CAUTION Please be careful to choose the heat value of the spark plug. Please adopt spark plug of recommended or equivalent model and type

7.4 Maintenance of Fuel Filter Cup

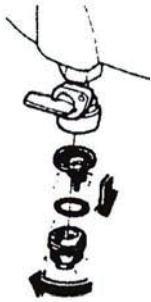


Fig. 44

7.4.1 Set the fuel switch to OFF position, Dismantle the fuel filter cup and gauze (Figure 44)

7.4.2 Clean the fuel filter cup and gauze.

7.4.3 Mount the fuel filter cup and gauze to their original position. (Figure 45)

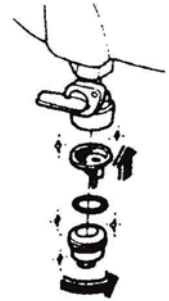


Fig. 45

8. Electrical Start

! WARNING Poisonous liquid sulfuric acid inside battery. Tilting generator set with battery may result in sulfuric acid leakage.

Keep children away from the unit.

Avoid liquid acid from touching your skin or eyes.

! CAUTION If the unit is not to be used for long time, please disconnect the positive pole of the battery and have the pole wrapped up with insulated tape.

8.1 Starting the Unit (Please consult Chapter 5 for relevant instructions)

Turn the ignition switch to START position for 2-3 seconds.

! CAUTION If the unit cannot be started within 10 seconds, please release the

key for 10 seconds and repeat the previous operation to avoid power lack. If the unit still cannot be started, please consult Chapter Troubleshooting.

8.2 Operation methods same as Chapter 6

8.3 Stopping the Unit

8.3.1 For emergency

Directly turn the ignition switch key to OFF position.

8.3.2 For normal condition

8.3.2.1 Turn off the AC breaker and unplug all the loads

8.3.2.2 Run the unit for several minutes without load to cool down the generator set.

8.3.2.3 Set the ignition switch to OFF position

8.3.2.4 Set the fuel switch to OFF position

8.4 Replacement of the Battery

If your unit can be started by recoil start, but cannot be started by electrical start, please run the unit with recoil start and have your battery charged for 20 minutes. If the unit still cannot be started by electrical start, please have the battery replaced as follows.

8.4.1 Disconnect the positive and negative poles of the battery with wires.

8.4.2 Remove the battery hold-down plate.

8.4.3 Install a new battery and the hold-down plate.

8.4.4 Connect the relevant wires with the positive and negative poles.

9. Storage and Transportation

Turn off fuel switch and ignition switch to avoid fuel leakage during transportation. Gasoline vapor and leakage can be easily ignited.

! WARNING Allow the unit to cool down before storage and/or transportation so as to prevent burns resulting from accidentally touching the hot surfaces of the engine. Take care to avoid the unit from falling down during transportation. Don't place heavy objects on the unit.

9.1 When storing the unit for long time pay attention to the following:

9.1.1 The storing places should be dry and clean

9.1.2 Carry out maintenance according to the table below:

Storing Time	Recommended Maintenance
<1 month	No need
1-2 months	Add fresh fuel and adequate amount of gas stabilizer
2-12 months	Add fresh fuel and adequate amount of gas stabilizer
	Drain fuel in carburetor
1 year or up	Add fresh fuel and adequate amount of gas stabilizer
	Remove the spark plug and pour into the cylinder a spoon of engine oil, pull the recoil start slowly to distribute the oil evenly
	Re-mount the spark plug
	Replace engine oil
**Gasoline stabilizer can ensure a longer storing time of gasoline	

9.2 Preparation before Storage

Carry out the following procedures for long-time storage.

9.2.1 Loosen the drain bolt on carburetor and drain fuel inside it(Figure 46)

! WARNING Gasoline is highly flammable and explosive. Carry out the operation in well-ventilated place with the unit stopping working. Smoking, open flames, and sparks are prohibited in the operation area.

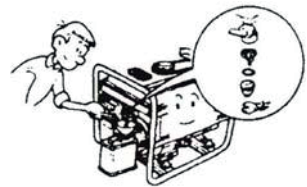


Fig. 46

9.2.2 Replace engine oil

9.2.3 Remove the spark plug and pour into the cylinder a spoon of engine oil, pull the recoil start slowly to distribute the oil evenly.

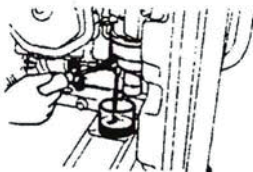


Fig. 47

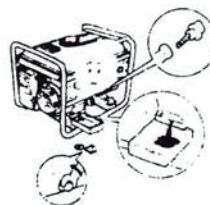


Fig. 48

9.2.4 Pull up the recoil start handle slowly until an anti-action is felt, keep pulling until over passing the resistance. At this position, the inlet and outlet valves of the engine are closed so as to prevent the rusty crankcase.

10. Troubleshooting

10.1 Failure to Start the Engine: the generator cannot be started. (Figure 52)

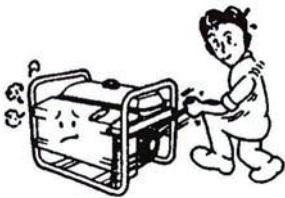


Fig . 52

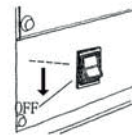


Fig.-53

10.1.1 Check if the ignition switch is at ON position. (Figure 53)

10.1.2 Check if the engine oil level is too low. (Figure 54)



Figure 54



Fig . 55

10.1.3 Check the fuel inside the tank. (Figure 55)

10.1.4 Remove the spark plug, check if there is spark jumping out. (Figure 56)

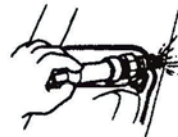


Fig . 56

10.1.5 If the generator set still can not be started after the above steps, consult your dealer for help. (Figure 57)

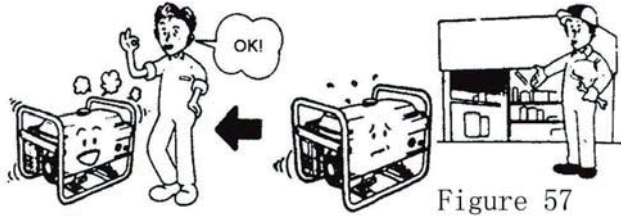


Figure 57

10.2 Failure to Generate Power: the unit doesn't generate electricity when the engine is running.

10.2.1 Check the lamps (Figure 58)

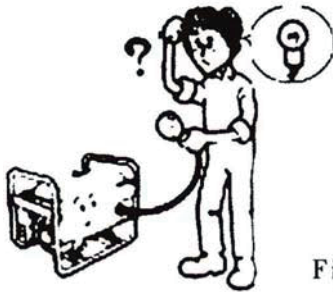


Fig. 58

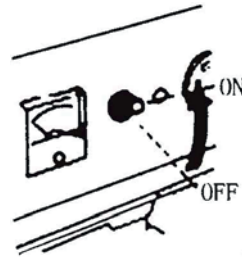


Fig. 59

10.2.2 Check if the AC breaker is at ON position. (Figure 59)

10.2.3 If the problem still exists after the above steps, consult your dealer for help. (Figure 60)

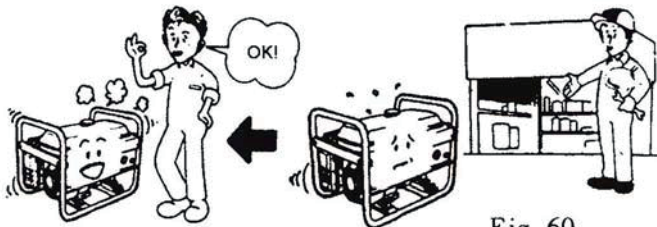


Fig. 60

IF PROBLEMS PERSIST, CONTACT AN APPROVED  SERVICE TECHNICIAN. ALWAYS USE A CERTIFIED TECHNICIAN / ELECTRICIAN.

11. Specifications

Model	BGG-22MR	BGG-28MR	BGG-55ER	BGG-65ER
Rated frequency	50Hz	50Hz	50Hz	50Hz
RPM	3000	3000	3000	3000
Phase	Single	Single	Single	Single
Power factor	1.0	1.0	1.0	1.0
Rated voltage	230V	230V	230V	230V
Current	8.7A	10.9A	21.8A	26.0A
Rated power	2.0kW	2.5kW	5.0kW	6.0kW
Max. power	2.2kW	2.8kW	5.5kW	6.5kW
Fuel tank capacity	15 L	15 L	25 L	25 L

Environment Friendly Disposal



*You can help protect the environment!
Please remember to respect the local regulations:
hand in the non-working electrical equipments to
an appropriate waste disposal center*

BRÜHM products are intended for household use only.

BRÜHM has policy of continuous improvement in product quality and design. The company, therefore reserves the right to change the specification of its model at any time.