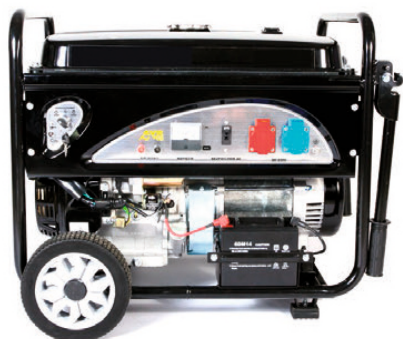


ELECTRICAL GASOLINE GENERATORS EL-GF SERIES



IMPORTANT NOTICES

Please pay special attention to statements preceded by the following words:

⚠ WARNING

A warning is used to alert the user to fact that hazardous operating and maintenance procedures may result in injury to or death of personnel if not strictly observed.

CAUTION

A caution is used to alert the user to fact that hazardous operating and maintenance procedures may result in damage to or destruction of equipment if not strictly observed.

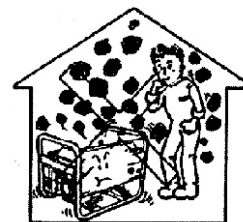
NOTE



This symbol indicates points of particular interest for more efficient and convenient operation. This manual should be considered as a permanent part of the unit and should remain with the unit when resold.

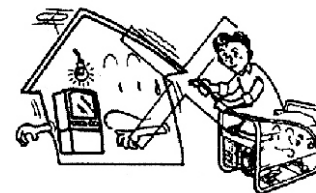
1 GENERATOR SAFETY

1.1 Never operate it in an enclosed room .



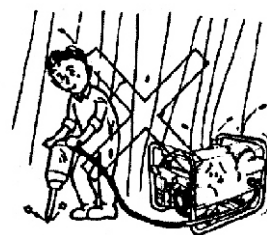
(Fig.1)

1.2 Do not operate it under wet circumstances.



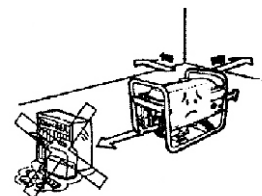
(Fig.2)

1.3 Never connect it to home circuit.

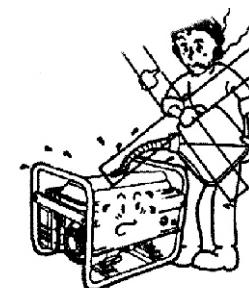


(Fig.3)

1.4 Place inflammables away from the unit at least one meter.

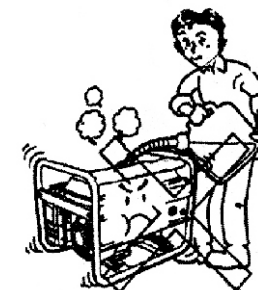


1.5 No smoking when filling fuel.



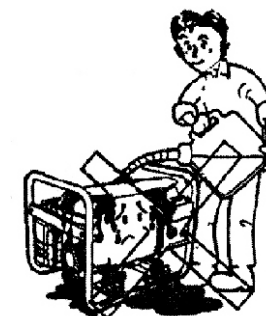
(Fig.5)

1.6 Do not spill out when filling fuel.



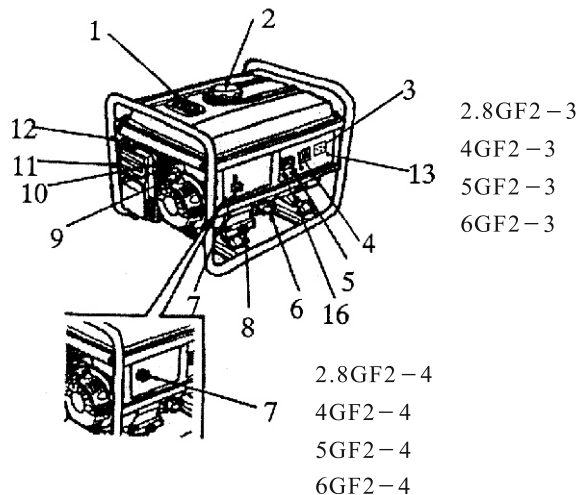
(Fig.6)

1.7 Always fill fuel after stopping the engine.

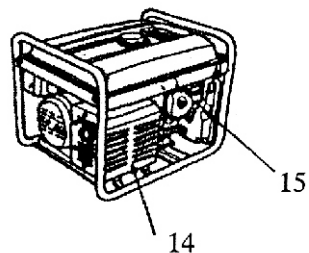


(Fig.7)

2 INTRODUCTION TO PARTS AND COMPONENTS **ELMARK**



1. Fuel sensor
2. Fuel filler cap
3. AC plug socket
4. AC breaker
5. Voltameter
6. Dipstick
7. Engine switch
8. Oil drain plug
9. Recoil starter grip
10. Fuel cock
11. Air cleaner
12. Choke lever
13. Ground terminal
14. Muffler
15. Spark plug
16. AC terminal

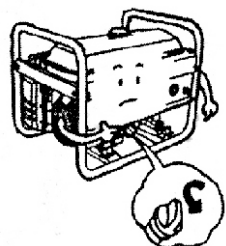


3 PRE - OPERATING INSPECTION

3.1 ENGINE OIL LEVEL

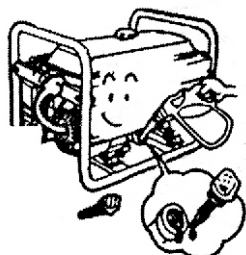
NOTE: always check the generator in the case of stopping the generator on a level ground.

3.1.1 Turn out the oil filler cap and clean the dipstick with a clear cloth



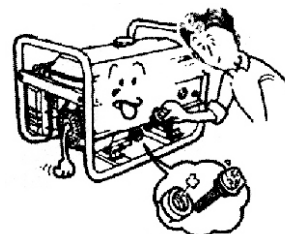
(Fig.9)

3.1.2 Insert the dipstick back into the oil filler hole without turning it in



(Fig.10)

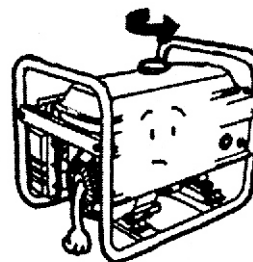
3.1.3 In the case that the oil level is below the lower level mark of the dipstick, pour the recommended oil to the upper level mark of the dipstick



(Fig.11)

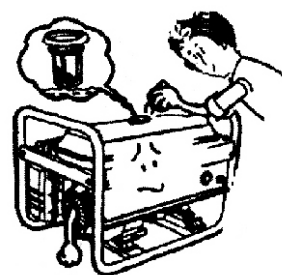
3.2 FUEL LEVEL

3.2.1 Open the fuel filler cap.



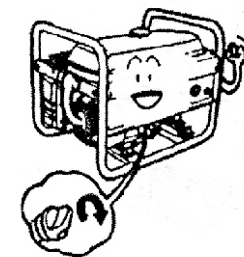
(Fig.13)

3.2.2 Check the fuel level, and fill fuel if necessary.



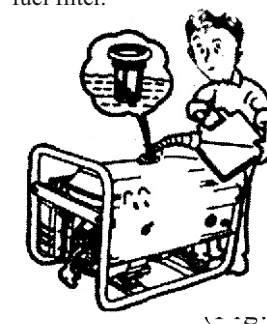
(Fig.14)

3.1.4 Reinstall the oil filler cap well

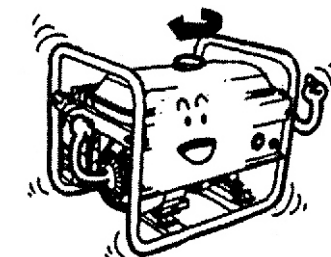


(Fig.12)

3.2.3 Fill fuel to the shoulder of the fuel filter.



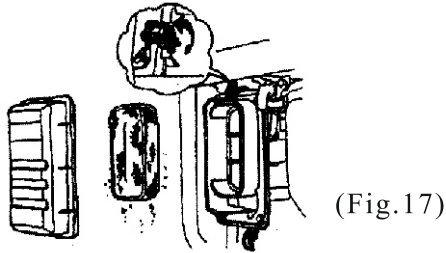
3.2.4 Reinstall the fuel filler cap well.



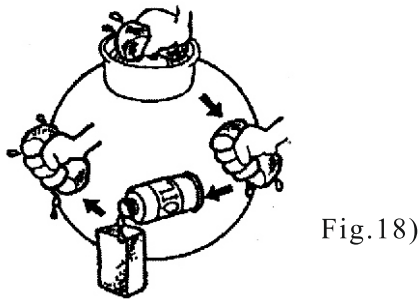
(Fig.16)

3.3 AIR CLEANER

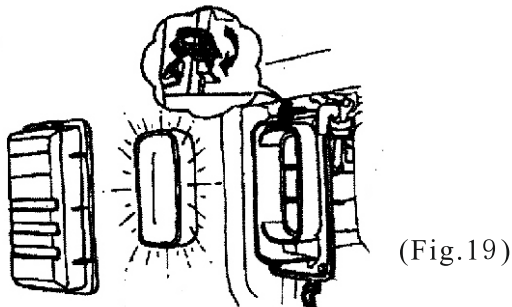
3.3.1 Remove the air cleaner cover.



3.3.2 Check and make sure the air cleaner core is intact and clean. If it is broke, replace it with a new one.



3.3.3 If the core is filthy, clean it in the following sequence:

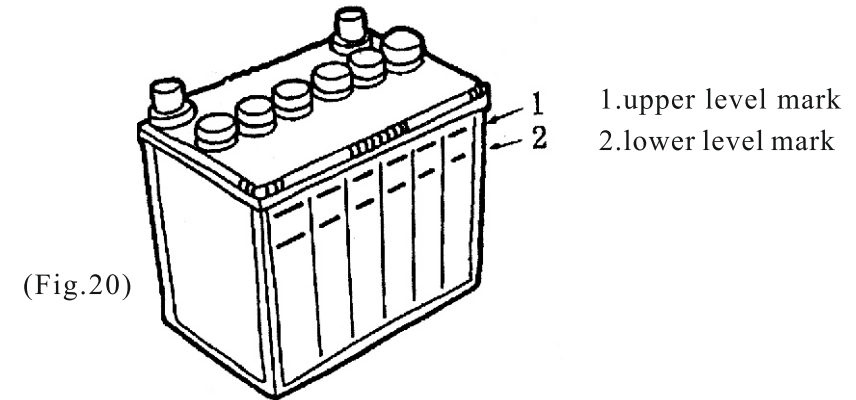


- Clean the core in the cleansing solvent.
- Dry it up.
- Dip a few drops of engine oil into it.
- Squeeze excess oil.

3.3.4 Put the filter element into the original position, install the cover and secure it well (Fig. 19).

3.4 BATTERY (only for 2.8GF2-4, 4GF2-4, 5GF-4 & 6GF2-4).

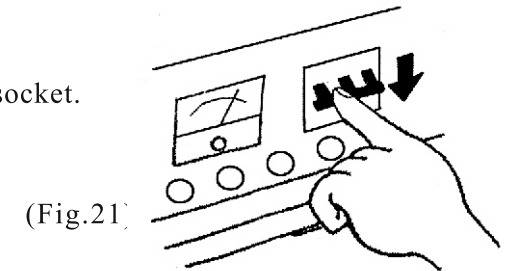
Check and make sure that the electrolyte level of each battery cell is between upper and lower level marks.



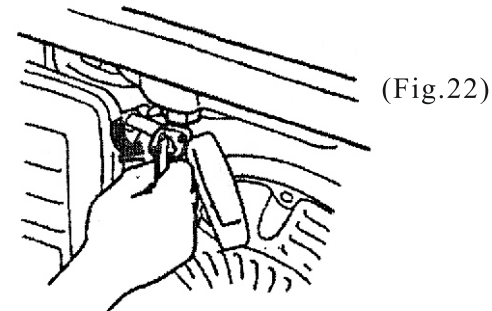
4 STARTING THE ENGINE

4.1 Remove all loads from AC socket.

4.2 Switch off the AC breaker.

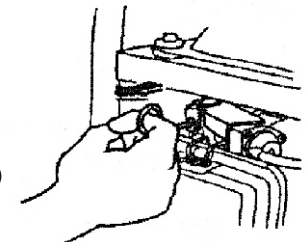


4.3 Turn on the fuel cock.



4.4 Set the choke lever to OFF position

(Fig.23)



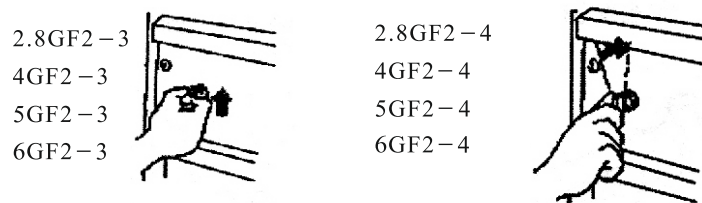
NOTE

Don't close the choke when starting the engine in hot condition.

CAUTION

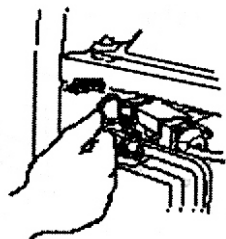
After starting up, release the starting lever slightly so avoid injuring personnel or damaging equipment due to its bouncing back.

4. 5 Turn on the engine switch.



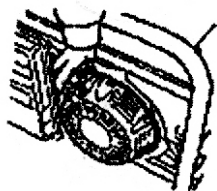
(Fig.24)

4.6 Pull the starter grip gently until feeling an anti — action, and then pull it up strongly.



(Fig.25)

4. 7 Once the engine is warmed up, set the choke lever to ON position.



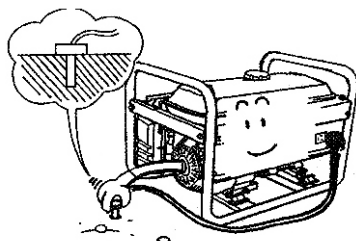
(Fig.26)

5 SERVICE

Always do as the following so as to keep the generator in a sound condition.

⚠ WARNING

5. 1 Always connect the generator to the earth to prevent misusing.

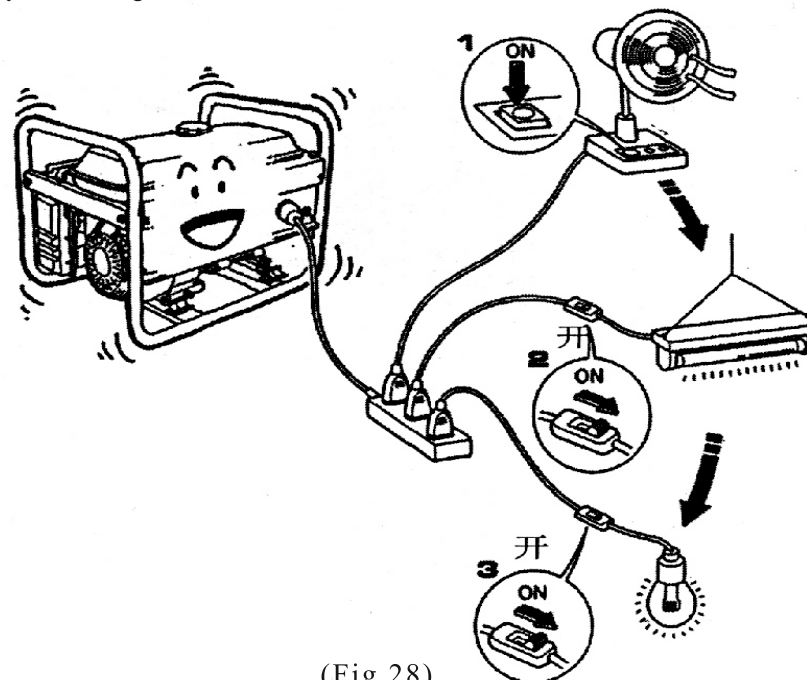


(Fig.27)

5.2 The following table gives reference information for connection the electric appliances to the generator:

Description	Wattage		Typifier	Example		
	Start	Rating		Electric	Start	Rating
● Incandescent lamp ● Heating device	X1	X1	Incandescent lamp TV	Incandescent lamp 100W	100VA (W)	100VA (W)
● Fluorescent Lamp	X2	X1.5	Fluorescent lamp	Fluorescent Lamp 40W	80VA (W)	60VA (W)
● Motor drive device	X3~5	X2	Refrigerator Electric fan	Refrigerator 150W	450~750VA (W)	300VA (W)

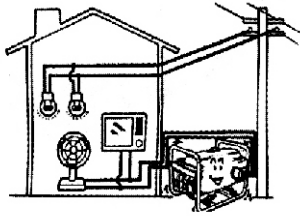
5. 3 If the generator is to supply two or above loads with power supply, be sure to connect them one by one with higher start current first.



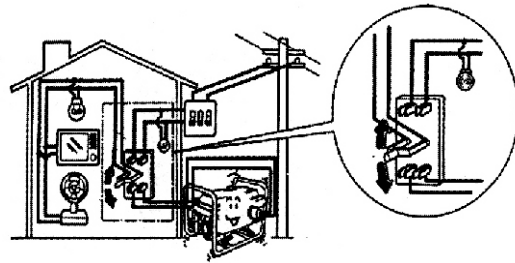
(Fig.28)

(Fig.29)

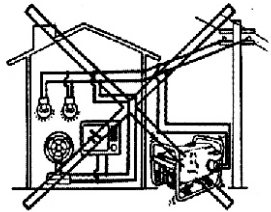
(1)Good



(2)Good



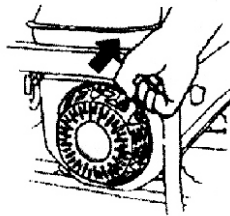
(3)Forbidden

**⚠ WARNING**

When connect the generator to home power supply, be sure that a skilled electrician does this job. Improper connecting between the generator and loads may cause damage to the generator, even a fire.

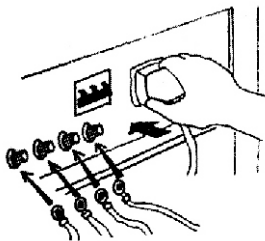
5.5 USE INSTRUCTION WHEN PROVIDING ALTERNATIVE CURRENT SUPPLY

5.5.1 Start the generator by using the starter grip.



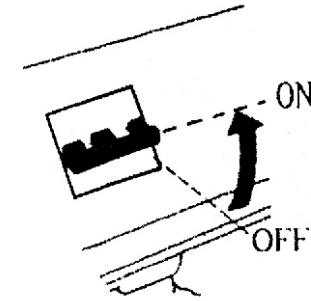
(Fig.30)

5.5.2 Connect devices.



(Fig.31)

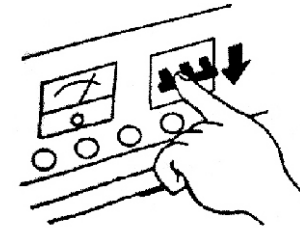
5.5.3 Switch on the AC breaker.



(Fig.32)

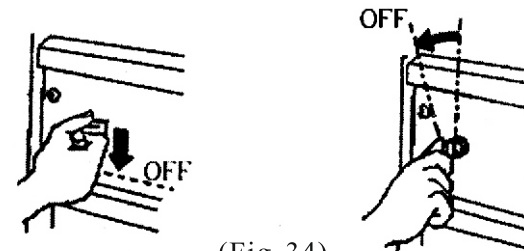
6 STOPPING THE ENGINE

6.1 Switch off the AC breaker.



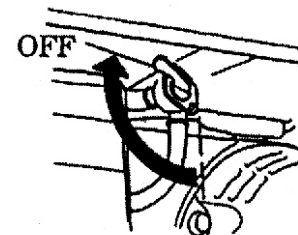
(Fig.33)

6.2 Turn the ignition switch to OFF.



(Fig.34)

6.3 Set the fuel cock to OFF.



(Fig.35)

NOTE:

To stop the generator in an emergency, turn the engine switch to OFF.

7 MAINTENANCE

ELMARK

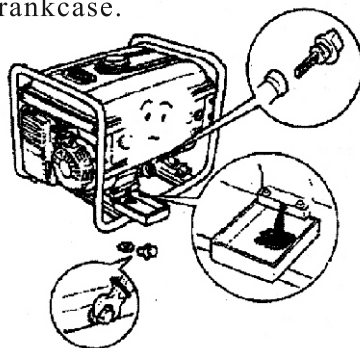
User should service the unit according to the Maintenance Schedule as follows

PERIOD		ITEM	Each use	Or first month	Or every 3 months	Or every 6 months	Or every one Year	Ref. page
Check of engine oil			Check					
Replacement of engine oil				Replace		Replace		
Check of air cleaner			Check					
Washing air cleaner					Clean			
Oil filter cup						Check		
Battery electrolyte level			Check					
Spark plug						Check		
Valve clearance							Check & readjust	—
Washing cylinder cover							Clean	—
Washing fuel tank			Replace every 3 – year					—

7.1 REPLACEMENT OF ENGINE OIL

7.1.1 Turn and then take out the dipstick.

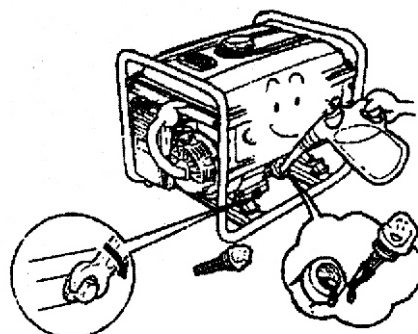
7.1.2 Unscrew the drain plug, and empty the engine oil from the crankcase.



(Fig.36)

7.1.3 Screw on the drain plug.

7.1.4 Fill engine oil to the upper level mark of the dipstick.



(Fig.37)

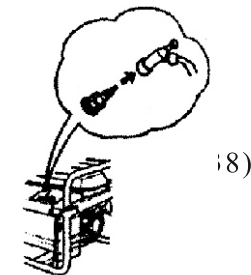
7.1.5 Fit the dipstick to the original position.

Engine oil recommended: 4 — stroke gasoline engine oil Class SE, SF from API Service Classification or SAE10W — 30 engine oil equivalent to Class SG.

7.2 SPARK PLUG

ELMARK

7.2.1 Withdraw the spark plug cap front the spark plug.



(8)

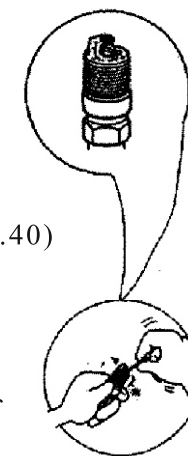
7.2.2 Dismantle the spark plug by means of a special tool.



(Fig.39)

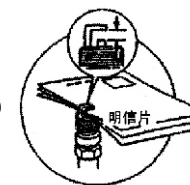
7.2.3 Clear away carbon fouling around the spark plug.

(Fig.40)



7.2.4 Check the spark plug gap and adjust if necessary. The gap should be 0.7~0.8mm.

(Fig.41)



7.2.5 Reinstall the spark plug and cap well.

Spark plug recommended: F6RTC

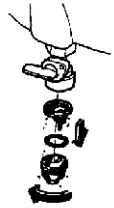
(Fig.42)



7.3 MAINTENANCE OF FUEL FILTER CUP

ELMARK

- 7.3.1 Set the fuel cock to OFF, and dismantle the fuel filter cup and gauze.
- 7.3.2 Clean the fuel filter cup and gauze thoroughly.
- 7.3.3 Fit the fuel filter cup and gauze to the original positions.



(Fig.43)

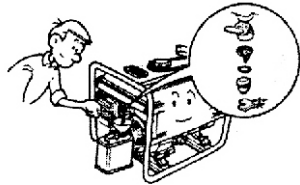


(Fig.44)

8 STORAGE

During long — term storage of the unit which is not kept in use, carry out procedures as follows:

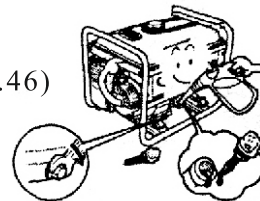
- 8.1 Empty the fuel from the fuel tank.



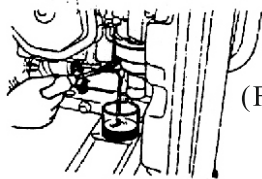
(Fig.45)

- 8.2 Having washed the fuel filter cup and gauze, install them to the original positions

(Fig.46)



- 8.3 Discharge the fuel from the carburetor



(Fig.47)

- 8.4 Turn off the oil filler cap and oil drain plug, and empty the engine oil from the crankcase.

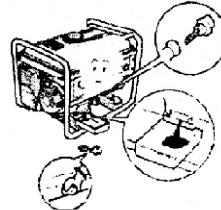
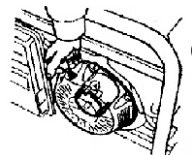


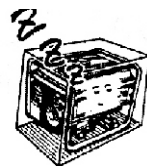
Fig.48)

- 8.5 Reinstall the oil drain plug, fill engine oil to the upper level mark of the dipstick, followed by fitting the oil filler cap to the original position.



(Fig.49)

- 8.6 Pull up the starter grip gently until feeling an anti-action



(Fig.50)

- 8.7 Place the generator set in the clean area

9 TROUBLESHOOTING

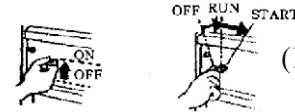
ELMARK

For electric starter type: set the switch to RUN position when using the starter grip, or set it to START position when using the electric starter.

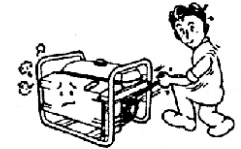
If such setting is still not workable, check that the connecting cables and its poles of battery properly.

- 9.1 TROUBLE: the generator fails to start.

- 9.1.1 Check to see if the ignition switch is at ON.

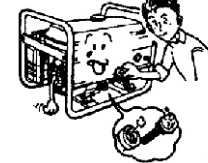


(Fig.52)



(Fig.51)

- 9.1.2 Check engine oil level.



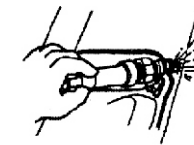
(Fig.53)

- 9.1.3 Check the fuel in-tank



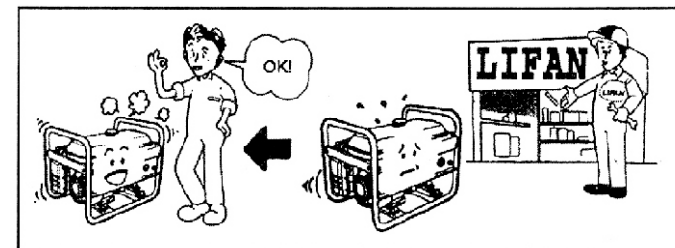
(Fig.54)

- 9.1.4 Remove the spark plug, and check it for proper sparks.



(Fig.55)

- 9.1.5 If the generator set is still out of work, see your dealer for help.

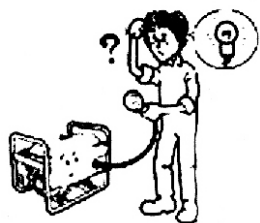


(Fig.56)

9.2 TROUBLE: The unit fails to generate electricity.

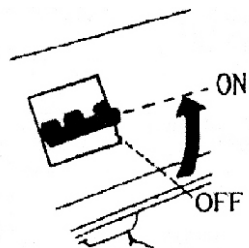
ELMARK

9.2.1 Check the light bulb .



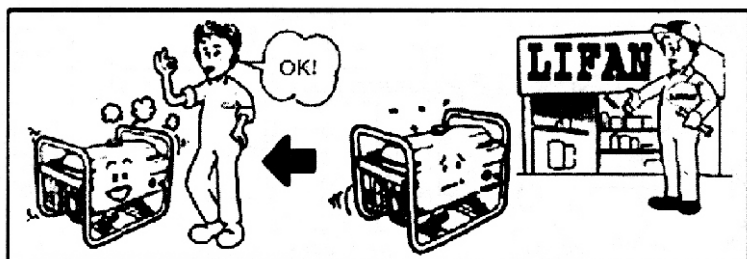
(Fig.57)

9.2.2 Check to see if the AC breaker is at ON.



(Fig.58)

9.2.3 If such check is still unsatisfactory, see your dealer for help.



(Fig.59)

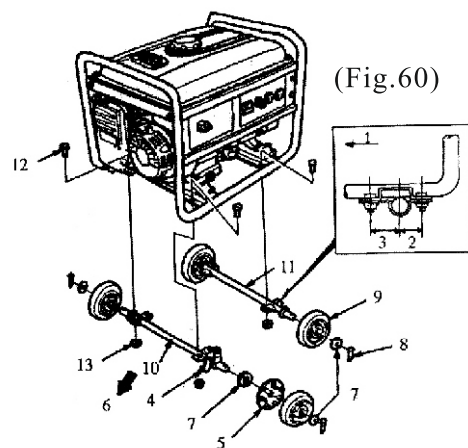
10 ASSEMBLY OF OPTIONAL PARTS

10.1 4 – WHEEL KIT

Assmle 4 – wheel kit, to this end :

10.1.1 Fit 4 wheels onto the axles, the secure them with washers and split pins.

10.1.2 Mount the assembled axles on the frame with bolts and nuts.



(Fig.60)

1. Inside
2. Shorter end
3. longer end
4. Latch
5. Stopping disc
6. Engine location
7. Retainer
8. Split pin
9. Wheel
10. Right axle
(close to engine)
11. Left axle
(close to generator)
12. Nut
13. Bolt

10.2 BATTERY TRAY KIT.

ELMARK

To install the battery tray kit, proceed as follows:

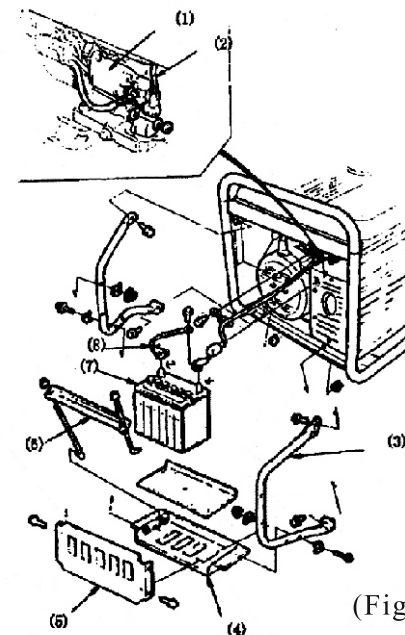
10.2.1 Install the battery guard on the frame, set the battery tray on the guard and secure them with bolts, washers and nuts.

10.2.2 Route the starter cable under the tank and connect it to the starting motor.

10.2.3 Connect the ground cable to the rear housing of the generator.

10.2.4 Connect the starting cable to the positive lead of the battery first, and then to the negative one. Disconnect in the reverse order.

1. Starting motor
2. Starter cable
3. Battery guard
4. Battery tray
5. Battery guard plate
6. Battery bracket
7. Battery (with a rating of 12V – 35Ah)
8. Ground cable



(Fig.61)

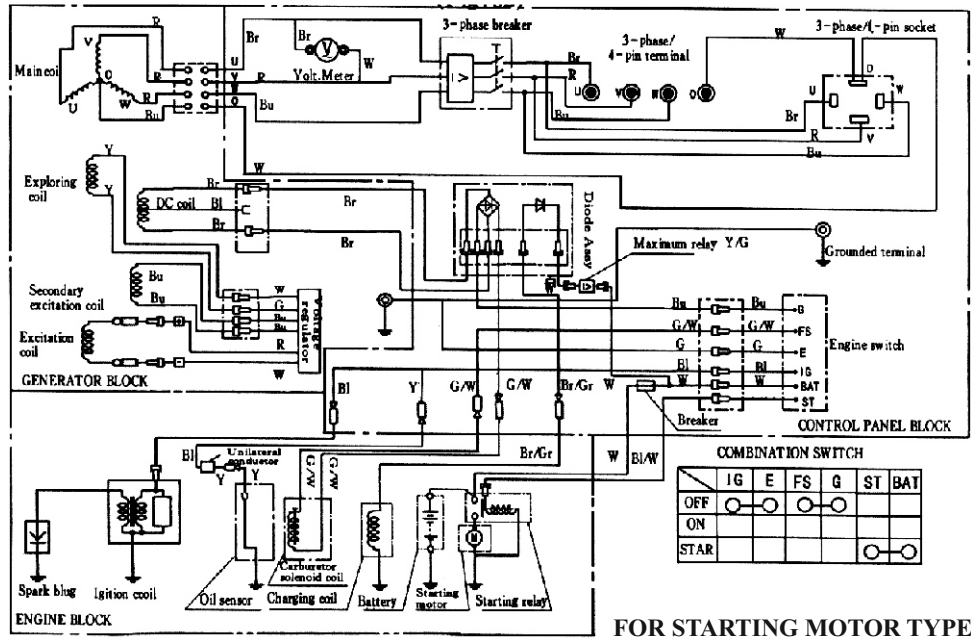
11 SPECIFICATIONS

Model		4GF2 – 3/4/D	5GF2 – 3/4/D	6GF2 – 3/4/D	7GF2 – 3/4
Engine	Engine model	182F – AV/182F – CV	188F – AV/188F – CV	190F – AV/190F – CV	
	Type	4 – stroke OHV single – cylinder gasoline engine with forced air – cooled			
	displacement(cm ³)	337	389	420	460
	Max. power output(kW/rpm)	6.1/3600	8.5/3600	8.5/3600	12/3600
	Ignition system	Non – contact transistor			
	Start system	Manual & electric			
	Fuel tank capacity(L)	25	25	25	25
	Fuel consumption(L/hr)	2.45	2.7	3	3.5
	Duration of runs(hr)	10	9	8	7
	Engine oil capacity(L)	1.1	1.1	1.1	1.1
Generator	Noise (7meters away)(dB)	72	74	75	78
	Rated frequency(Hz)	50	50	50	50
	Rated voltage(V)	Signal – phase 230/3 – phase 400			
	Rated power(kW)	2.5(balanced 3 – phase load)	4.0(balanced 3 – phase load)	5.0(balanced 3 – phase load)	6.0(balanced 3 – phase load)
Generator set	Max. power(kW)	3.1(balanced 3 – phase load)	4.5(balanced 3 – phase load)	5.5(balanced 3 – phase load)	6.5(balanced 3 – phase load)
	Rated power factor	0.8			
	Overall length(mm)	680/855			
	Overall width(mm)	510			
Generator set	Overall height(mm)	540			
	Dry mass(kg)	80/87	83/91	88/94	90/96

CAUTION

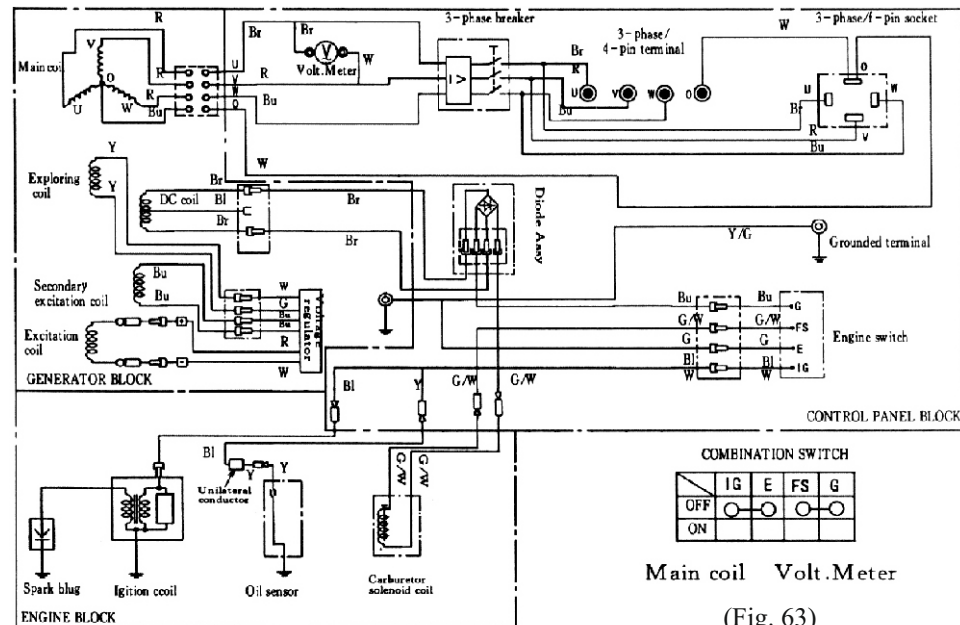
Make sure to balance any load applied to 3 – phase with each other as far as possible when the unit is operated. Output power may achieve 1/3 of the total power in the case of using one of 3 phases. Do not connect loads to 2 – phase, otherwise, the generator's service life will be shortened, even the generator will be damaged.

12 WIRING DIAGRAM



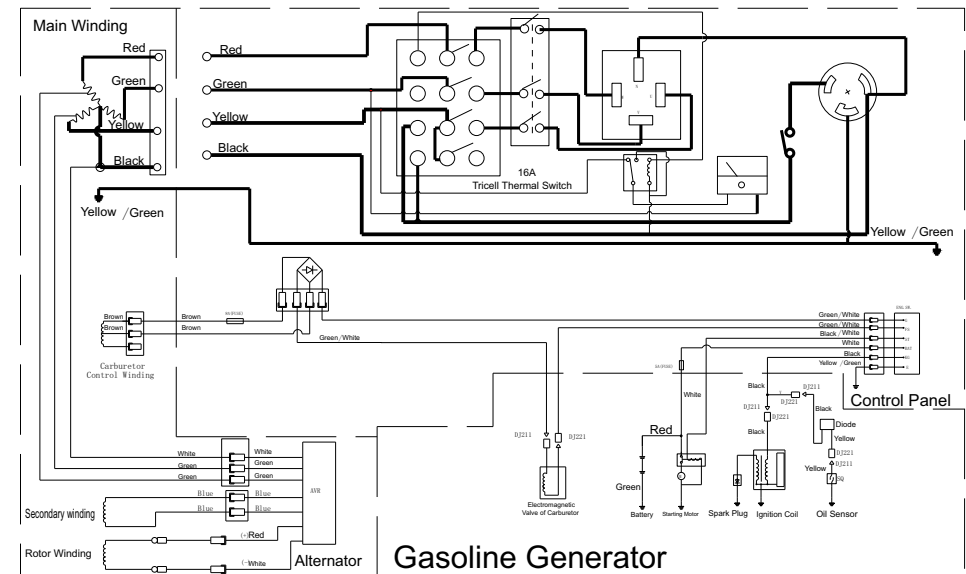
(Fig. 62)

12.2 FOR NON – STARTING MOTOR TYPE



(Fig. 63)

12.3 Control Panel Diagram of Three Phase Equal-power Genrator



Gasoline Generator

	RG	E	RG	ST	G	VS
OFF						
ON						
START						

2. 8kw-8kw

13.The Operation of Equal-power Generator

1. Please refer to operational manual for its startup/swift-off and regular maintenance.
2. Connection and Application:
3. To use voltage 220V, you need to put Voltage Selector towards 220V and electrical plug to socket AC 220V ; to use 380V, you need to Voltage Selector towards 380V and connect 3 phase plug to socket AC 380V.
4. In case of an application of voltage 220V, the generator has no voltage output for 380V; vice versa.
5. Notice: In case the generator is working at voltage either 220V or 380V, any change of Voltage Selection will probably damage the alternator.