

OWNER'S MANUAL

GASOLINE WELDER

PREFACE

Thank you for purchasing a gasoline welder.

Based on the latest technology at home and abroad, our company has successfully developed the gasoline welder , Model 120A,150A,200A,250A, with gasoline engine 170F 、 190F 、 190FE.

The unit is strong in power, low in fuel noise, and convenient in transportation. The welder is characterized by smooth current, little splash and fine joints. It, in addition, provides AC supply at 220V for electrical appliances. Such controls as engine switch, welding current adjust knob and beaker located on the panel make sure that the unit is operated easily and runs safety . The auto - throttle system is designed to automatically reduce engine speed when all loads are turned off or disconnected , thus effectively saving on fuel.

The manual describes the operation and maintenance of the gasoline generator, and be sure to read it carefully first before operating. If any trouble occurs, call your dealer who will provide you the best after sale service.

This publication includes the latest information available at the time of printing. However, there may be minor differences between the actual product and illustrations and text in this manual. All rights reserved. Part of this publication may be not reproduced without our prior written permission.

The manual is subject to change without notice.

IMPORTANT NOTICES

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



A warning is used to alert the user to the 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 the fact that hazardous operating and maintenance procedures may result in damage to or destruction of the 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.

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1 ELECTRIC WELDER SAFETY

⚠ WARNING

- Use the specified brand of gasoline and oil. Before refueling, make sure to filter fuel first. The tool for adding fuel and oil should be clean and the oil should be replaced periodically.
- Periodically check the unit for proper installation and the connecting bolts for proper fastening, and tighten up them if necessary.
- Clean the air cleaner element periodically, and replace it with new one if necessary.
- Clean foreing matters of rediator – fan, housing , fan , etc. in time to make sure that the unit is cooled.
- Restrict the use of the unit to persons who have read, understand, and will follow the instructions and warnings on the unit and in the manual, and know how to stop the engine quickly in case of emergency and be familiar with controls. Never allow unqualified man to operate the unit.
- Never run the unit in enclosed area.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing or transporting the welder indoor.



WARNING

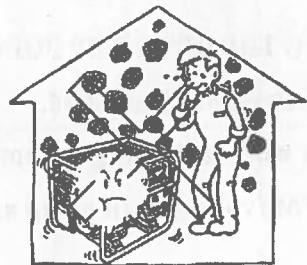
Pay attention to when using intermediate frequency electric welding machine

***household appliances are not useable with DC power .DO NOT PLUG INTO THE DC POWER POINT.**

***NOTE : Amps / voltage and engine RPM will all go up and down when AMP / voltage dial is adjusted.**

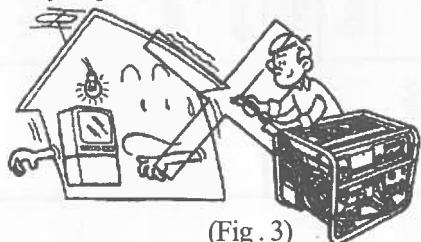
When you use the DC 220V power point you must watch the voltmeter while adjusting the amps/voltage dial TO 220V EXACTLY. When dialing up or down note engine RPM /voltage will go up and down also.

1.1 Never operate it in an enclosed room. Exhaust contains poisonous carbon monoxide. Breathing exhaust can cause loss of consciousness and may lead to death.



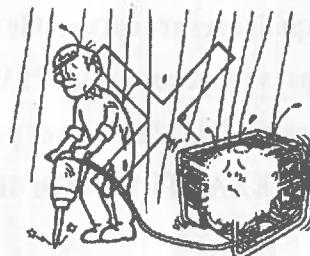
(Fig. 1)

1.3 Do not connect to a building's electrical system unless an isolation switch has been installed by a qualified electrician.



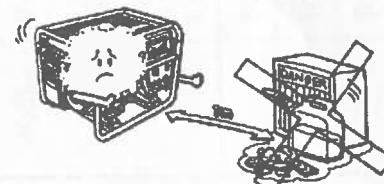
(Fig. 3)

1.2 Do not operate it under wet circumstances. Otherwise, moisture can cause a malfunction or short circuit in electrical components, or even a serious shock.



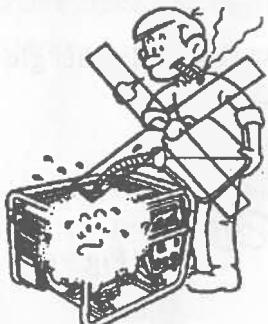
(Fig. 2)

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



(Fig. 4)

1.5 Do not smoke or allow flames or sparks where the welder is refueled



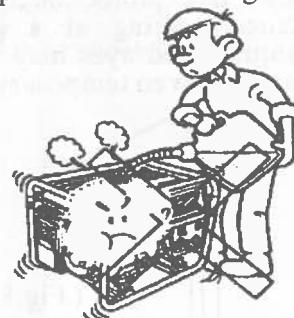
(Fig. 5)

1.7 Do not spill out when filling fuel. Fuel vapors are extremely flammable and may ignite after the engine has started. Make sure that any spilled fuel has been wiped up before starting the welder.



(Fig. 7)

1.6 Always fill fuel after stopping the engine. Do not spill out when filling fuel.

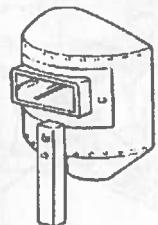


(Fig. 6)

⚠ WARNING

Gasoline is extremely flammable and is explosive under certain condition.

1.8 Use a face shield with adequate eye protection. Eye protection is the utmost importance. Looking at a welding arc with unprotected eyes may produce severe pain and even temporary blindness.



(Fig.8)

1.10 Always wear safety shoes.



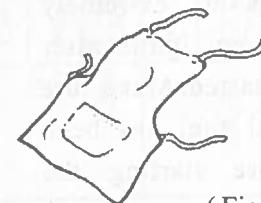
(Fig. 10)

1.9 Always wear leather gloves.



(Fig.9)

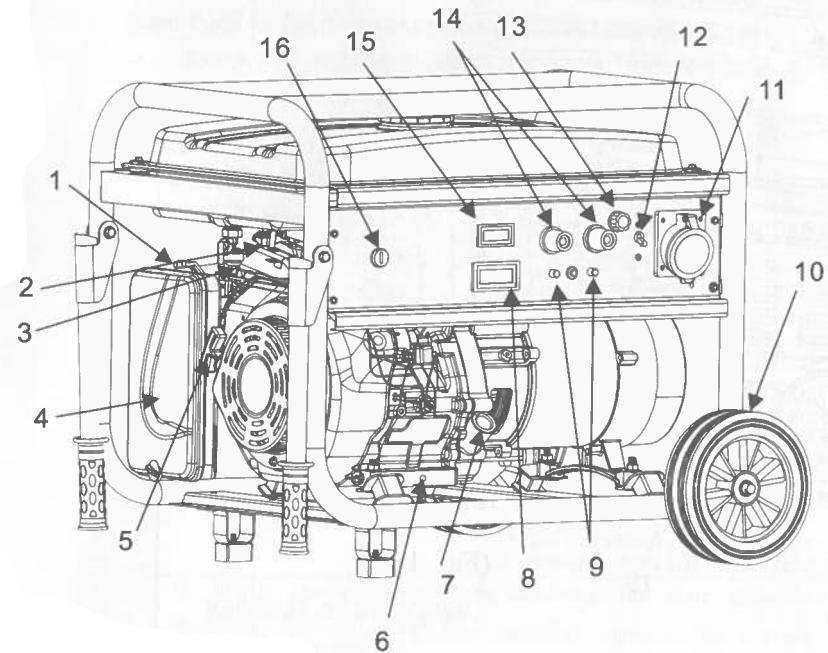
1.11 Wear an apron.



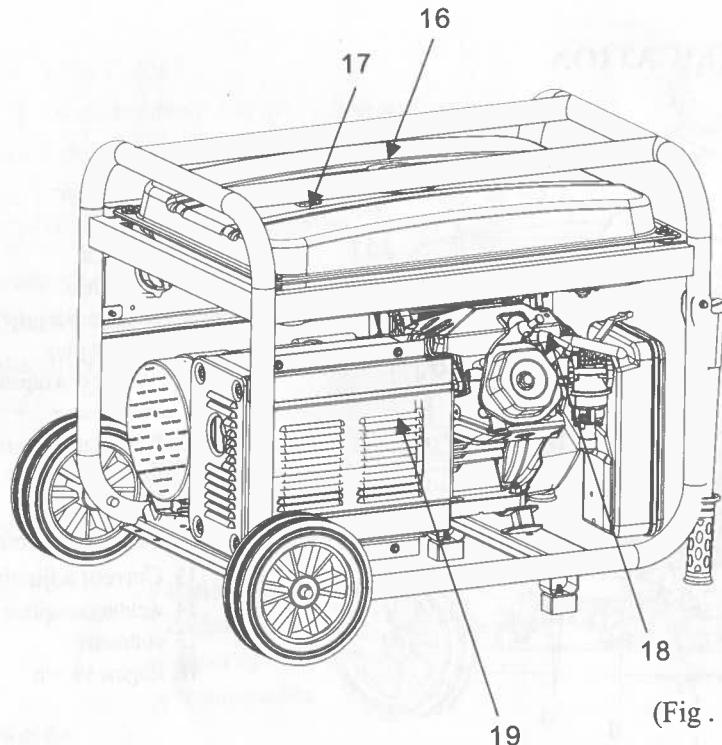
(Fig. 11)

2 COMPONENT IDENTIFICATION

(Fig . 12)



1. Choke lever
2. Welder/AC selector
3. Fuel cock
4. Air cleaner
5. Recoil starter grip
6. Oil drain plug
7. Oil filler cap/dipstick
8. amperemeter
9. DC output
- 10 .Travelling wheel
11. AC receptacles
12. Circuit protector
13. Current adjusting knob
14. welding coupling post
15. voltmeter
16. Engine switch



- 16. Fuel filler cap
- 17. Fuel meter
- 18. Spark plug
- 19. Muffler

(Fig. 13)

3 PRE-OPERATING INSPECTION

3. ENGINE OIL

NOTE

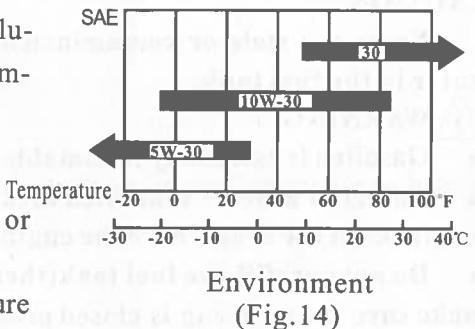
- Engine oil is a major factor affecting engine performance and service life. Non-detergent and 2-stroke engine oils will damage the engine and are not recommended.
- Check the oil level before each use with the unit on a level surface with the engine stopped.

As viscosity varies with regions and temperatures, so the lubricant has to be selected in accordance with our recommendation.

Recommended engine oil: 4-stroke gasoline engine oil
(Class SE, SF from API Service Classification or
SAE10W-30 engine oil equivalent to Class SG)

SAE10W-30 is recommended for general, all-temperature use. Other viscosities shown in Fig. 14 may be used when the average temperature in your area is within the indicated range, for example;

- Low air temperature(below 10°C) : engine oil SAE10W-30;
- Frigid air temperature(below -15°) : engine oil SAE5W-30



CAUTION

Run with insufficient engine oil may damage the engine severely.

3.2 FUEL

Fuel is a key factor in deciding the exhaust emissions from the engine, so selection of fuel must follow the rules below. Selected fuel must be unleaded gasoline with octane No. RQ - 86 or higher. Using unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life.

CAUTION

Never use stale or contaminated gasoline or oil/ gasoline mixture. Avoid getting dirt or water in the fuel tank.



WARNING

- Gasoline is extremely flammable and is explosive under certain conditions.
- Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
- Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Avoid repeated or prolonged contact with skin or breathing of vapor.
- Keep out of reach of children.

- The battery contains sulfuric acid(electrolyte) . Contacting with skin or eyes may cause severe burns. Wear protective clothing and a face shield.
 - If electrolyte gets in your skin, flush with water.
 - If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician immediately.
- Electrolyte is poisonous. If swallowed, drink large quantities of water or milk and follow with mild of magensia or vegetable oil and call a physician.
- Keep out of reach of children.

CAUTION

- Add distilled water into the battery. Do not use tap water instead,otherwise, the battery's service life may be shortened.
- Do not fill above the upper mark level. Electrolyte may erode parts of the unit. If electrolyte over flows, wash the surfaces with water.
- Do not to misconnect the battery cable polarity. Otherwise, short – circuiting may happen or the breaker will cut off.

3.3 CONNECTION OF BATTERY (FOR STARTING MOTOR)

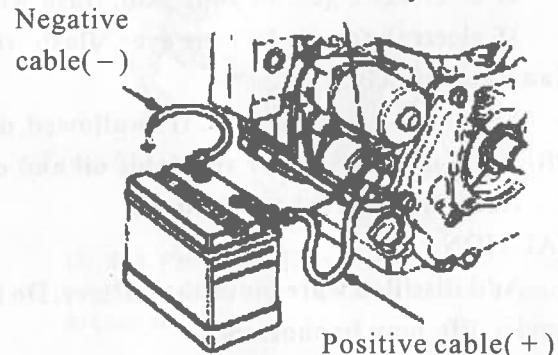
Use battery at a voltage of 12 V and a capacity of 18 ampere – hour or greater as power for starting motor. The sequence of connection is as follows: connect the positive cable to the start relay and connect the negative cable to installation bolt of the welder or basd, or to the point that can be grounded with the unit.

Check the battery cables to make sure that connection is reliable and free from erosion. Should erosion be detected, remove it.

WARNING

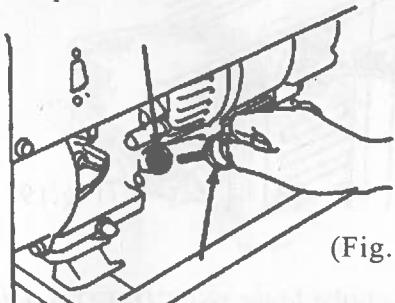
- The battery gives off explosive gases; keep sparks, flames, and cigarettes away. Provide adequate ventilation when charging or using the battery in an enclosed space.

(Fig.15) Start relay



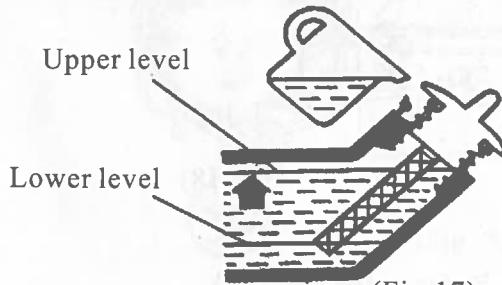
3.4 PRE - OPERATING INSPECTION

3.4.1 Remove the oil filler cap and wipe the dipstick clean.



(Fig.16)

3.4.2 Check the oil level by inserting the dipstick into the filler neck without screwing it in. If the level is low ,fill to top of the oil filler neck with the recommended oil.

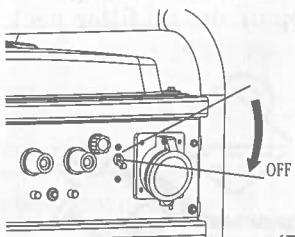


(Fig.17)

3.4.3 check the fuel level by opening the fuel filler cap. Refill the tank if the fuel level is low. Do not fill above the shoulder of the fuel strainer.

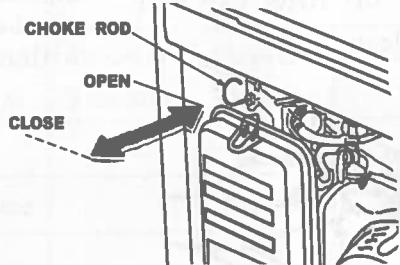
4 START THE ENGINE

4.1 Turn off the circuit breaker.



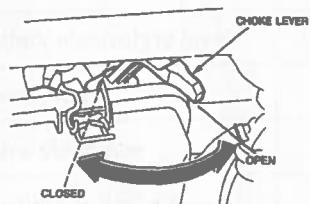
(Fig.18)

4.2 A-Open the fuel cock.



(Fig.19)

4.2 B-Open the fuel cock.

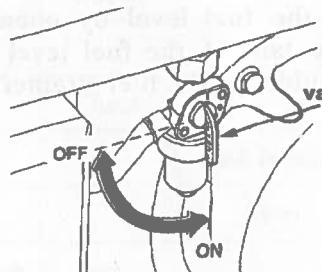


(Fig.20)

NOTE

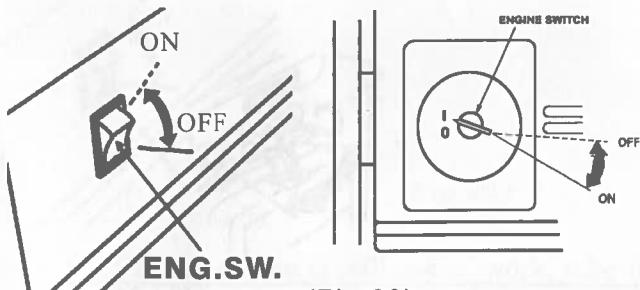
Do not use the choke if the engine is warm or the air temperature is high.

4.4 Push the choke lever to CLOSED position.



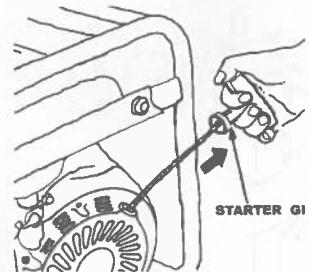
(Fig.21)

4.5 Turn the engine switch to ON (or turn the engine switch key for starting motor type).



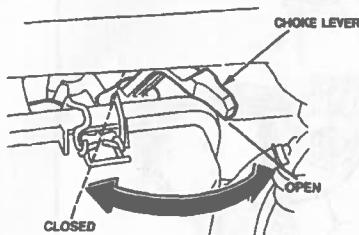
(Fig.22)

4.6 Pull the starter grip lightly until resistance is felt, then pull briskly.

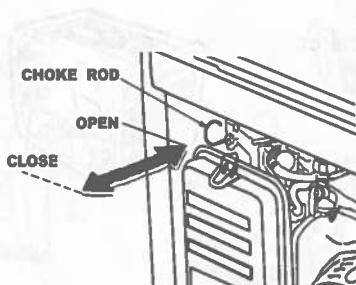


(Fig.23)

4.7 Open the choke lever.

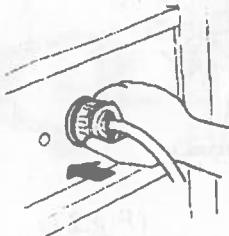


(Fig.24)



5 USE GENERATOR

5.1 Connect load to the welder's AC output receptacle.



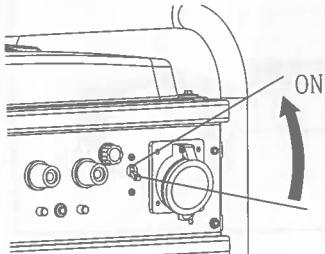
(Fig.25)

5.2 Set the welder / AC 50Hz selector to AC 50Hz position.

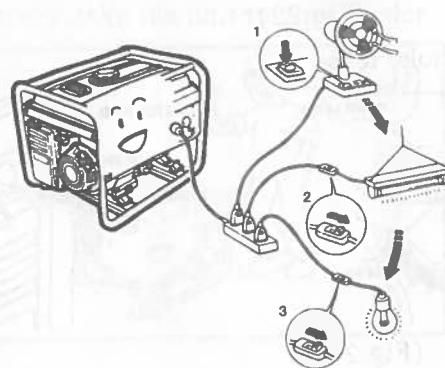


(Fig. 26)

5.3 Switch ON the circuit breaker.



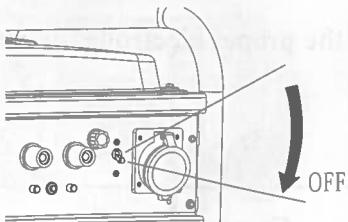
(Fig. 27)



(Fig. 28)

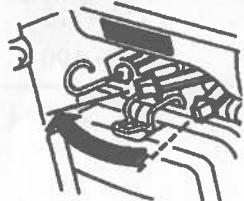
6 USE WELDER

6.1 Switch OFF the circuit breaker.



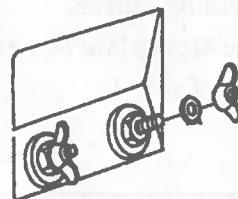
(Fig. 29)

6.3 Set the welder / AC 50Hz selector to the WELDER position.



(Fig.31)

6.2 Connect the welding cables to the welder's terminals.



(Fig.30)

6.4 Set the current adjust knob to the proper current level for the job being done.



(Fig.32)

CAUTION

Never fit any type of electrical appliance into the AC receptacles under any circumstance when the selector is in the WELDER position.

7 WELDING

7.1 Selecting the correct welding current

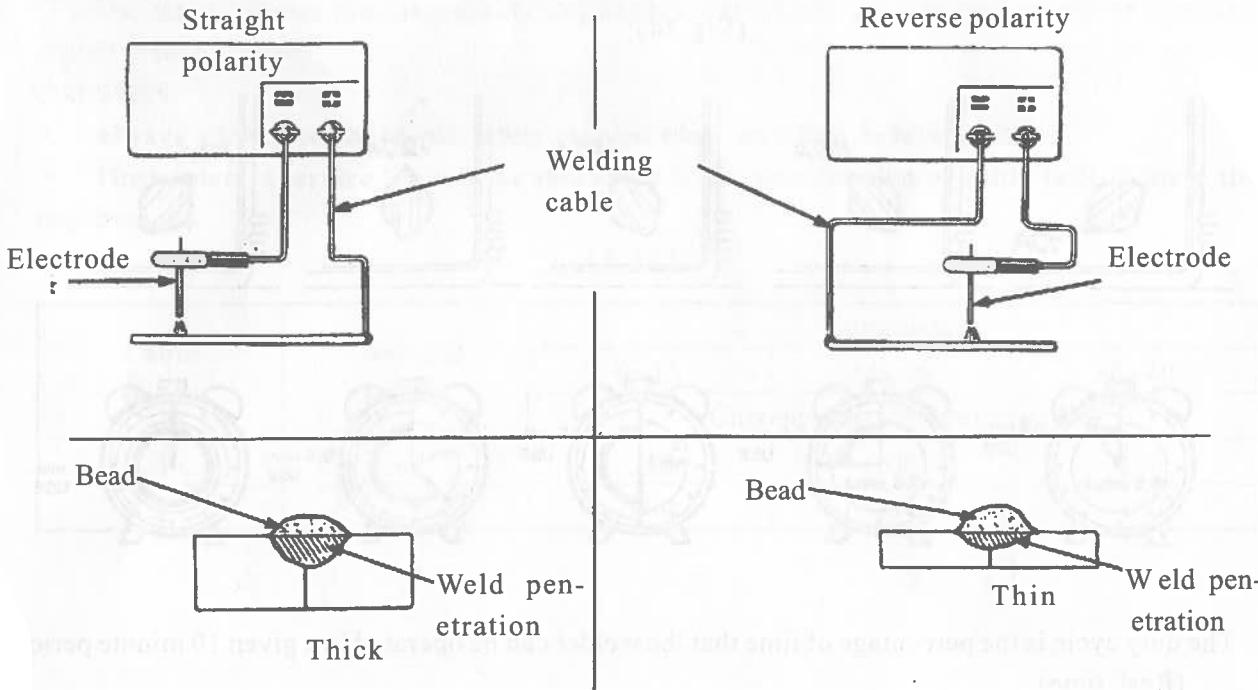
Measure the thickness of the steel plate to be welded, then select the proper electrode diameter and current with reference to Table 1.

TABLE 1

Plate thickness(mm)	Electrode dia. (mm)	Current setting(A)
2.0~3.0	2.0	50~80
3.0~4.0	3.2	70~120
4.0~6.0	4.0	110~170
7.0以上	5.0	140~190

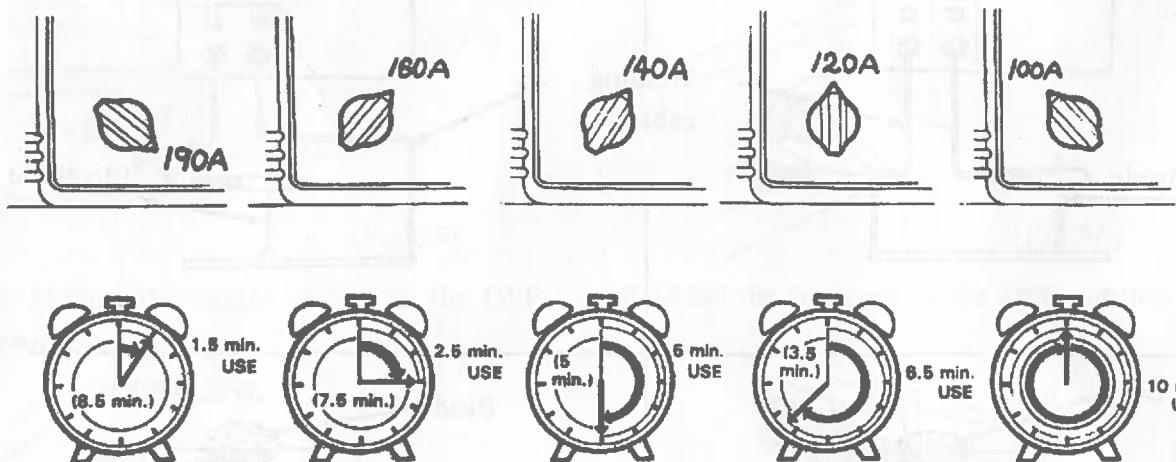
7. 4 Polarity selection

(Fig.33)



7. 3 Welding duty cycle

(Fig.34)



The duty cycle is the percentage of time that the welder can be operated in a given 10 minute period.
(Rest time)

7. 2 Selecting the welding cable

The table 2 shows the current carrying capacity of various lengths and gauges of standard copper welding cable.

CAUTION

- Always allow a considerable safety margin when selecting welding cable.
- The welder's service life will be shortened if the specification of cable fails to meet the requirement.

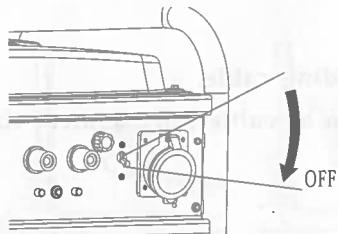
TABLE 2

Cable gauge	Cable SQ (mm ²)	Length(m)		
		0~15	15~30	30~40
		Current capacity amperes(A)		
1	35	250	200	150
2	25	200	150	100

8 STOPPING THE EGNIEN

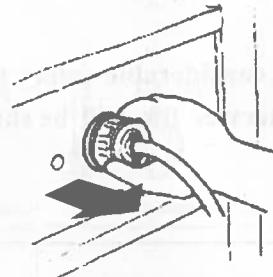
8. 1 In generating condition

8. 11 Switch OFF the circuit breaker .



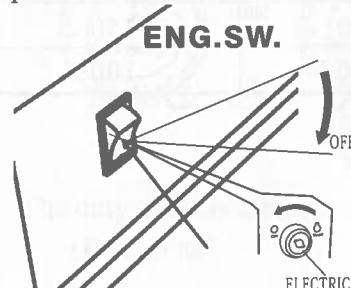
(Fig.35)

8. 12 Diconnect the load from the AC receptacle.



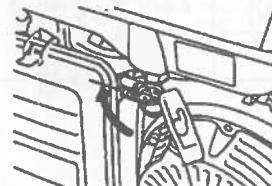
(Fig.36)

8. 13 Turn the engine switch to the OFF position.



(Fig.37)

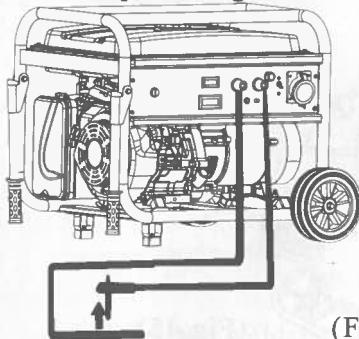
8. 14 Set the fuel cock to the OFF position .



(Fig.38)

8.2 In welding position

8.21 Stop welding.



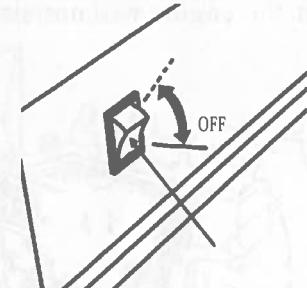
(Fig. 40)

8.23 For starting motor type, set the key to OFF position.



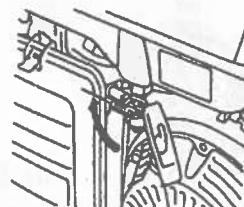
(Fig. 42)

8.22 Turn the engine switch to the OFF position.



(Fig. 41)

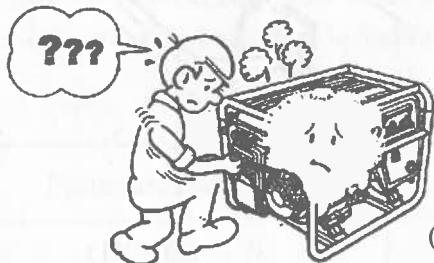
8.24 Set the fuel cock to OFF position.



(Fig. 43)

9 TROUBLE SHOOTING

9. 1 When the engine will not start, do as follows:



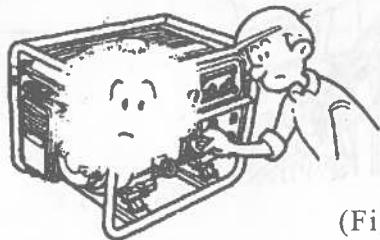
(Fig. 44)

9. 11 Open the fuel filler cap, check to see there is fuel in the tank.



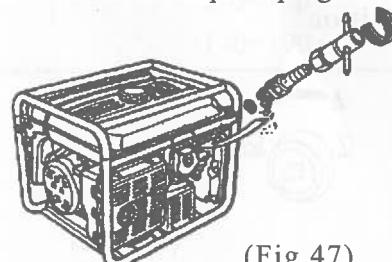
(Fig. 45)

9. 12 Remove the oil filler cap, check the oil level.



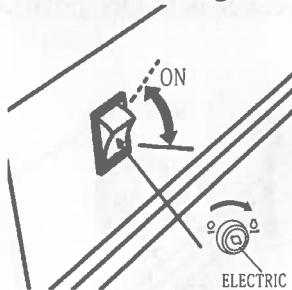
(Fig. 46)

9. 13 Remove the spark plug.



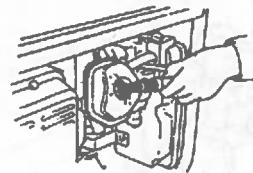
(Fig. 47)

9.14 Turn the engine switch to ON position.



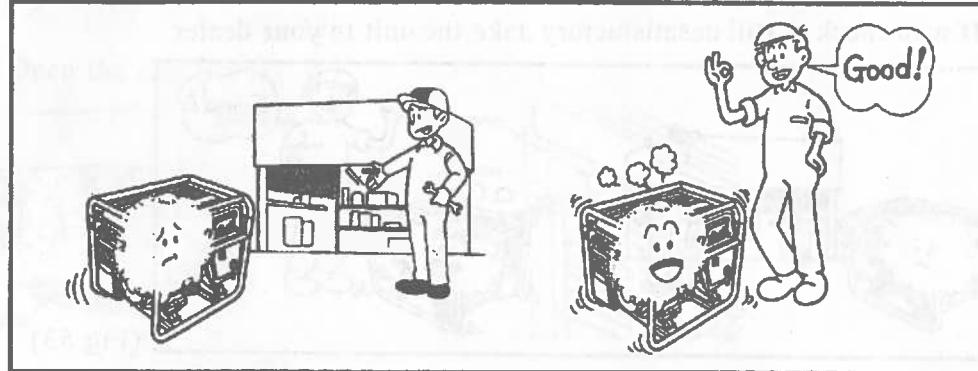
(Fig.48)

9.15 Check to see there is spark from the spark plug.



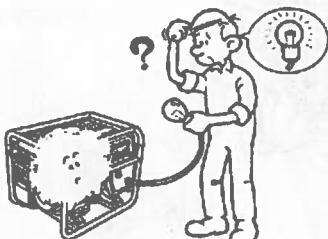
(Fig. 49)

9.16 If the engine is still out of work, take the unit to your dealer.



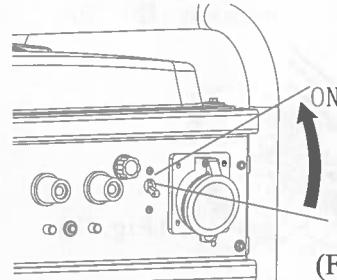
(Fig. 50)

9.2 No electricity at the AC receptacles.



(Fig. 51)

9.2.1 Check if the circuit breaker is at ON position.



(Fig.52)

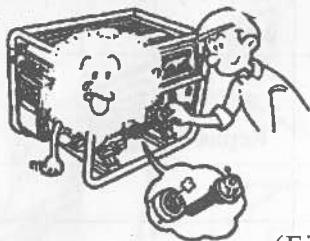
9.2.2 If such check is still unsatisfactory, take the unit to your dealer.



(Fig.53)

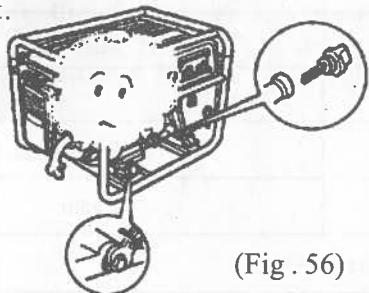
10.2 Engine oil

10.2.1 Remove the oil filler cap and check the oil level.



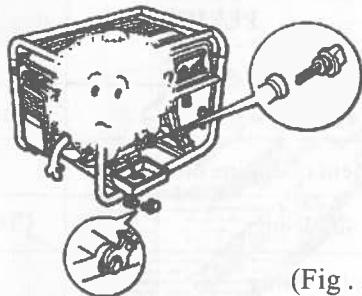
(Fig.54)

10.2.3 Reinstall the drain plug and tighten up it.



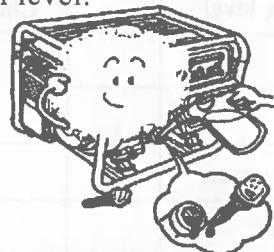
(Fig. 56)

10.2.2 Remove the drain plug and drain the oil.



(Fig. 55)

10.2.4 Add the recommended oil to the upper level.



(Fig. 57)

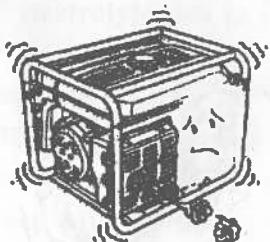
10 MAINTENANCE

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

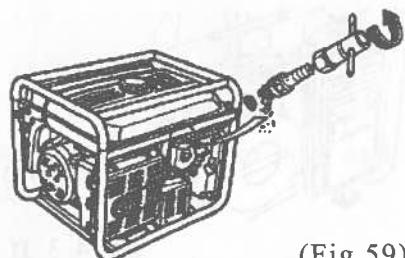
ITEM	PERIOD	Each use	Or first month	Or every 3 months	Or every 6 months	Or every one Year	Ref. Page
Check of engine oil		Check					
Replacement of engine oil			Replace		Replace		
Check of air cleaner		Check					
Washing air cleaner				Chean			
Oil filter cup					Check		
Battery electrolyte level		Check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

10.3 Spark plug

If the engine works in no good condition, do a follows:



(Fig. 58)



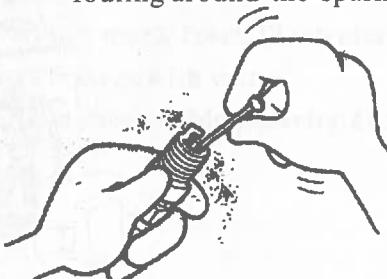
(Fig. 59)

10.3.2 Check the spark plug for carbon fouling.



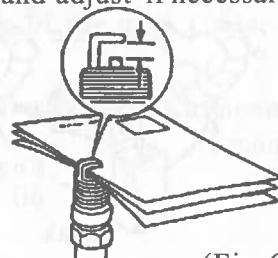
(Fig. 60)

10.3.3 Clear away carbon fouling around the spark plug.



(Fig. 61)

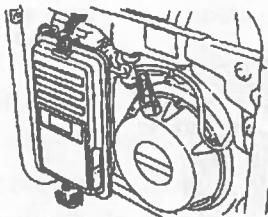
10.3.1 Remove the spark plug by means of a special wrench.



(Fig. 62)

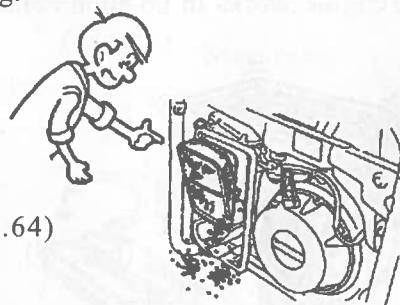
10.4 Air cleaner

10.4.1 Unsnap the air cleaner cover clips, remove the air cleaner cover.



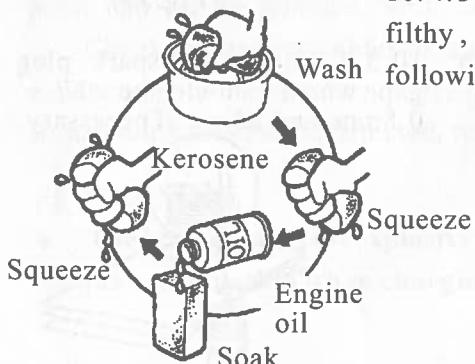
(Fig.63)

10.4.2 Take the filter element out of the housing.



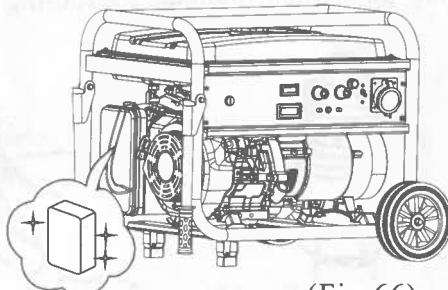
(Fig.64)

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



(Fig.65)

10.4.4 Put the filter element into the original position, install the cover and secure it well.



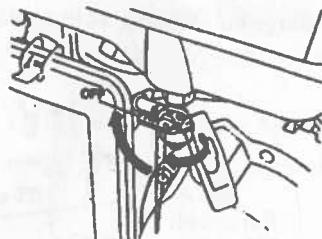
(Fig.66)

10.5 Fuel sediment cup

NOTE

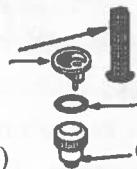
The spark arrester must be serviced every 100 hours to maintain its efficiency.

10.5.1 Turn the fuel cock to the OFF position.



(Fig.67)

10.5.2 Remove the sediment cup, O-ring, and filter, then clean them in nonflammable or high flash point solvent.



(Fig.69)

Clean the spark arrester as follows.

10.6.3 Install the spark arrester in the reverse order of removal.

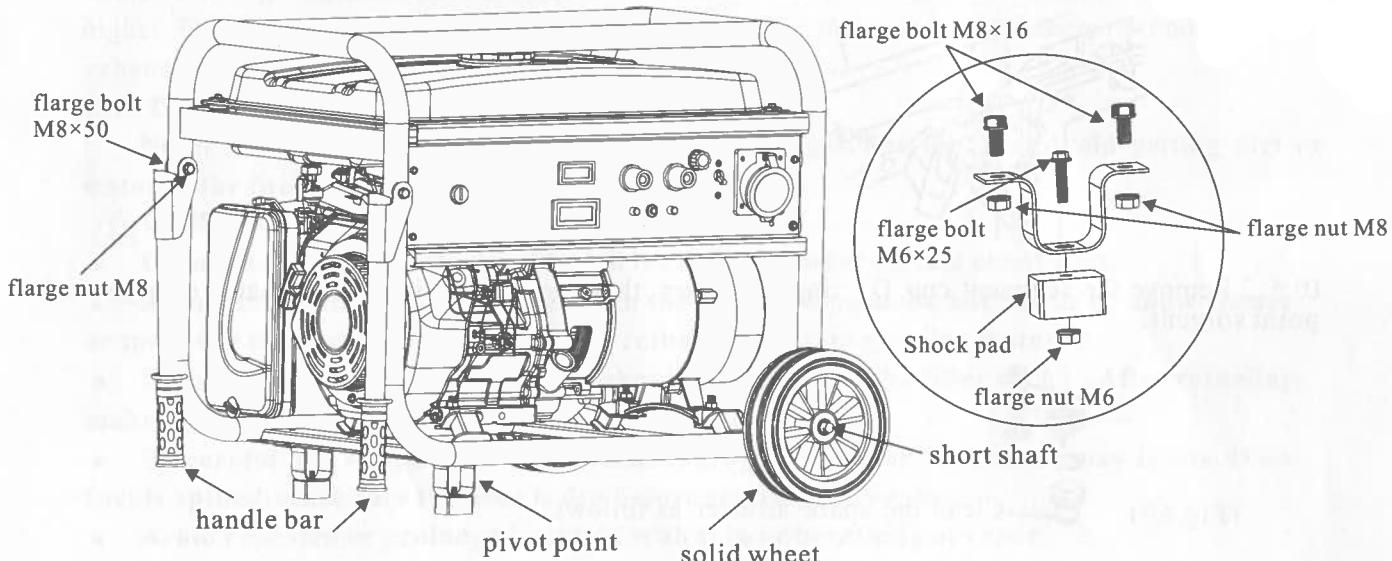


WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in the area during this procedure.

12 ASSEMBLY OF OPTIONAL PARTS

(Fig.68)



11 TRANSPORTING AND STORAGE

When transporting the welder, turn the fuel cock OFF.



WARNING

- Contact with a hot engine or exhaust system can cause serious burns or fires. Let the engine cool before transporting or storing the welder.
- Keep the welder level to prevent fuel spillage. Fuel vapor or spilled fuel may ignite.

Before storing the unit for an extended period:

1. Be sure storage area is free of excessive humidity and dust.
2. Service according to the table below:

STORAGE TIME	RECOMMENDED SERVICE PROCEDURE TO PREVENT HARD STARTING
Within one month	No preparation required
1~2 months	Drain out original fuel in the fuel tank, and then refuel
2 months ~ 1 year	Drain out original fuel in the fuel tank, and then refuel; Discharge fuel from the carburetor①; Discharge fuel from the fuel sediment cup②
Above 1 year	Drain out original fuel in the fuel tank, and then refuel; Discharge fuel from the carburetor①; Discharge fuel from the fuel sediment cup②; Remove the spark plug, pour a spoon of engine oil into the cylinder, turn the engine slowly by pulling the starter grip to scatter evenly the oil inside the cylinder. Reinstall the spark plug; Change the engine oil; After removal from storage, drain the stored fuel into a suitable container, and fill with fresh fuel before starting

① Drain the carburetor by loosening the drain screw. Drain fuel into a suitable container.
Reinstall the drain plug.

② Having switched the fuel cock off, remove the sediment cup, empty it of fuel, then reinstall the cup and secure it.

12.2 BATTERY TRAY KIT.

To install the battery tray kit, proceed as follows:

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

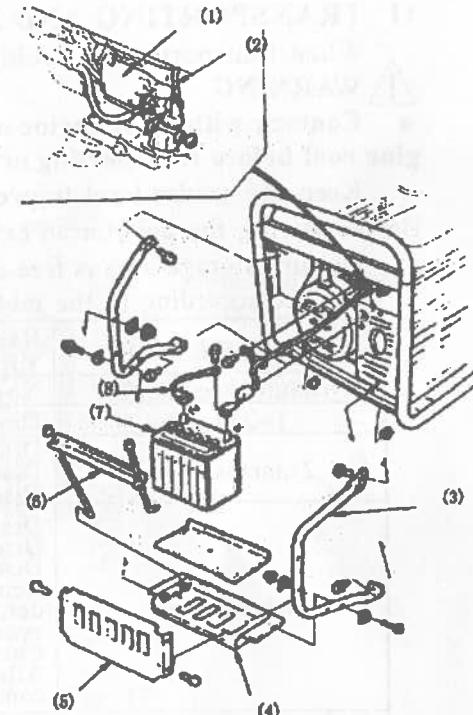
12.2.2 Route the starter cable under the tank and connect it to the starting motor.

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

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

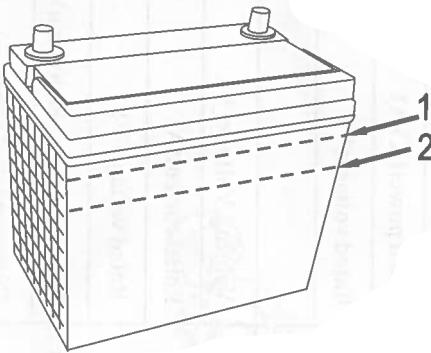


(Fig. 70)

12.3 BATTERY

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

- 1) Upper level mark
- 2) Lower level mark



(Fig. 71)

13 SPECIFICATIONS

	Model	AXQ160A
Engine	Model	170FB
	Displacement(cm ³)	211
	Ignition system	Transistor
Generator	start system	Recoil start
	Type	18 – pole, rotating type
	Phase	Signal
Welder	Rated power(KVA)	DC 1.0
	Rated voltage(V)	220V
	Welding Voltage(V)	55
Others	Rated current(A)	120
	Rated voltage(V)	22-28
	Rated rotating speed(r/min)	3600
Others	Current control range(A)	50-150
	Rated duty cycle(%)	80%-100A
	Electrode dia. (mm)	2.0-3.2
Others	Fuel tank capacity(L)	12
	Overall dimensions(mm)	515x435x465
	Dry mass(kg)	33

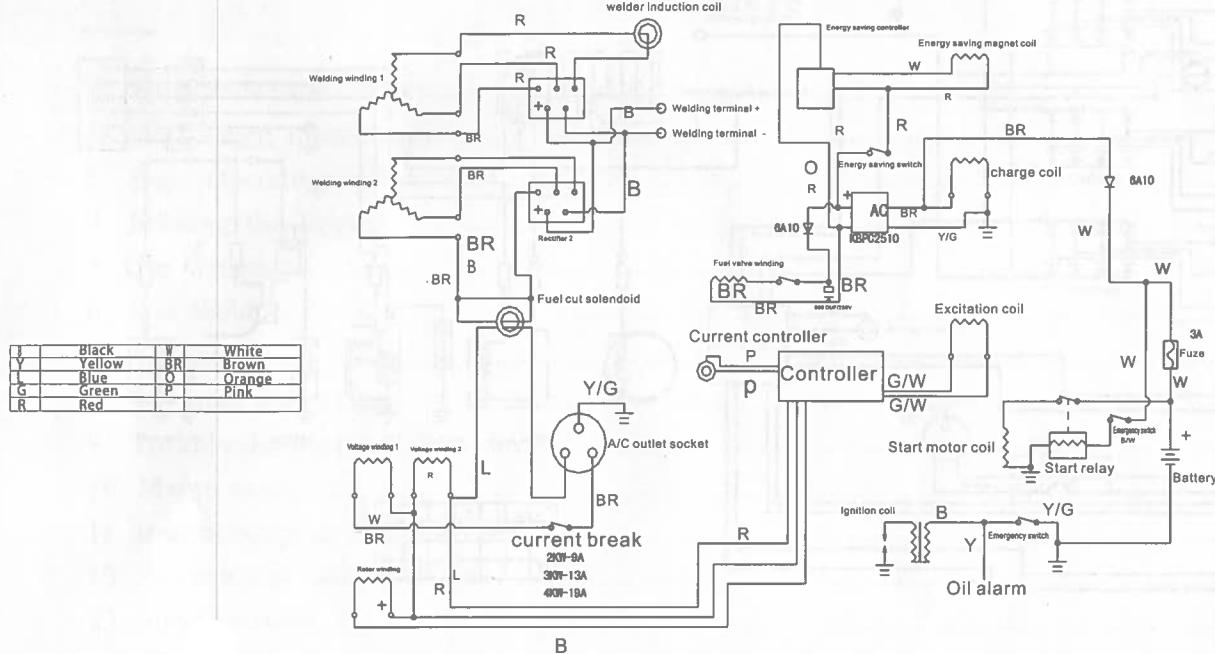
Intermediate frequency welder

	Model	230A
Engine	Model	190F/190FE
	Displacement(cm ³)	420
	Ignition system	Transistor
	start system	Recoil/electric start
Generator	Type	6-pole, rotating type
	Phase	Signal
	Rated power(kW)	2.0(DC)
	Rated voltage(V)	220V
Welder	Rated power factor	1.0
	Rated voltage(V)	22-28
	Rated current(A)	200
	Rated rotating speed(r/min)	3600
	Current control range(A)	70-230
	Rated duty cycle(%)	60
	Electrode dia. (mm)	2.0-5.0
	Fuel tank capacity(L)	25
Overall dimensions(mm)		710x545x575
Dry mass(kg)		66/72

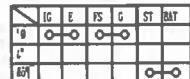
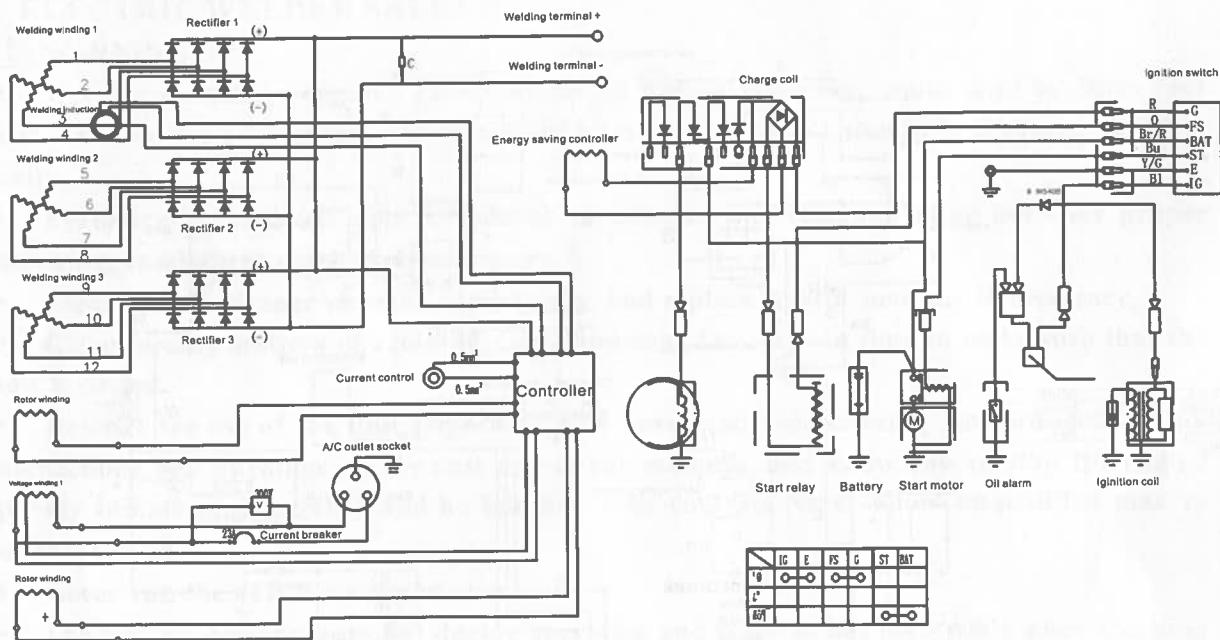
Model		200A
Engine	Model	190F/190FE
	Displacement(cm ³)	420
	Ignition system	Transistor
	start system	Recoil/electric start
Generator	Type	2 - pole, rotating type
	Phase	Signal
	Rated power(kVA)	
Welder	50Hz	5.0
	60Hz	5.0
	Rated voltage(V)	230V
	Rated power factor	1.0
	Rated voltage(V)	22-28
	Rated current(A)	200
	Rated rotating speed(r/min)	3600
	Current control range(A)	50-250
	Rated duty cycle(%)	50
	Electrode dia. (mm)	2.5-5.0
	Fuel tank capacity(L)	25
	Overall dimensions(mm)	710x545x575
	Dry mass(kg)	87/93

14 Wiring diagram

14.1 200A WELDER WIRING DIAGRAM(RECOIL START)



14.2 250A WELDER WIRING DIAGRAM (ELECTRIC START)



14.3 230A Intermediate frequency welder

