

KeyGree

ARC-200

IGBT INVERTER WELDER

May, 2021

Do it easy, comfortable, trustable.



Dear user

Thank you very much for using our products. This manual tells you how to carry on installation, debug, usage and maintenance of the MMA series electric welding machine, carefully reading the manual will help you to get the using of MMA series welding machine, reducing the operation error, and ensure the machine work normally



CONTENTS

SAFETY ITEMS	01
INTRODUCTION	01
TECHNICAL INSTRUCTION	01
INSTALLMENT	03
PRODUCTS INTRODUCTION	04
OPERATION METHODS	04
PROBLEMS AND CORRESPOND MEASURES	05
THE DIAGRAM OF MAIN ELECTRIC PRINCIPLE	06
TRANSPORTATION AND STORAGE	07



SAFETY ITEMS

Protect Yourself From Electric Shock

- To avoid getting an electric shock, please let professional or experienced man install.

Consider Work Area Environment

- Please install welding machine be being above apart from the wall 50 cms. and assurance well ventilated for spread heat good
- Make sure the machine surroundings has no combustibile thing to avoid surprised safe trouble.
- The machine should install be having no sun keep shooting, avoid rair pouring, temperature at-10-+40°C, humidity small place.

Dress Properly

- In bar of your eyes and skin burm, please must obey to labor safe health ru les, wear protection tools and implements
- Use the mask to protect own head while welding
- Only through the mask of window to observe the arc welding

The Safe Protection Of Machine

- Please Fix The Machine Well Enough When Install At Bracket, In Order To Preve Ent Machine Slide
- Don't Put Any Metal Materials And Spark Into The Inner Parts Of Machine.
- Make Sure That The Input Wire And Output Wire Are Good, Didn't Bare In The Outside

INTRODUCTION

- The MMA series arc welding machine is not only portable but also save energy It introduced the advanced IGBT/MOS(insulated gate bipolar transisor) and recover quic kly diode as the main parts of controlling and delivering. IGBT/MOS can change 50Hz or 60Hz to 20 KHz. Because the electric current can regulate, the arc electric current obtain to weld craft adaptability goodly. Had superheat, superpress, protection function.
- The technique of MMA inverter welder compared with the traditional technique, its advantage lies in saving energy, more lighter, the structure more better. Fit for decorate outdoors and fieldwork, mainly weld a low carbon steel, stainless steel, metal alloy steel, iron casting etc. Because the adoption controls appropriate of lea d arc electric circuit, it can weld well.

TECHNICAL INSTRUCTION

Welding Machine Uses Environmental Condition

- When welding:-10-+40°C
- In transportation storage process:-25-+55°C
- Air relative humidity:40°C:≤50%≤20 °C: ≤90%
- In the surrounding air dust sour caustic gas or the material do not surpass the normal content (except which produces as a result of welding process in). Uses the place to be not fierce vibrates.
- The altitude above sea level does not surpass 1000M
- Avoid carry on the welding in the sunlight or the rain, do not let the water permeato machinc.



The Machine Power Supply Electrical Network Request

- Power line voltage profile should be for the actual unreliable wave.
- The power line voltage undulation should not surpass 15% of the rated voltage

Welding Machines Main Principles (for Details See Attached Schematic Diagram)

The welding machine obtains the 220V power frequency alternating current through switch sw101, after the inductance coil filter for the single plane rectification bridge MDQ3504*2 rectification, and has the electric capacity C1-C4 filter to turn the direct current, by way of the IGBT/MOS composition bridge type inverter inversion existing agreement is the 20KHZ alternating current, passing through the intermediate frequency Transformer TI live pressure, and restores the diode DK 1-DK6 rectification quickly, at last filters by the output reactor L101 and outputs steadily the direct-current power supply for the welding.

The Structure Of Welding Machine

MMA series product adoption design beauty of plastics shape in front and back front-panel. the front panel is first half part have a yellow indicator, white indicator, weld electric current and regulate and choose knob. the lower part loads separately the electric welding pliers fast electric outlet(electric current output"+"pole), connecting earth clamp and clipping quick connector(electric current output"-pole), behind the plank have power switch, power supply importation fuse and fan-cooled, the roof has plastic handle and bottom contain 4 rubber mats. Open the shell you can see two pieces of control a printing circuit plank. the scale board has an outputs electric shock anti-machine. main transformer and radiator.

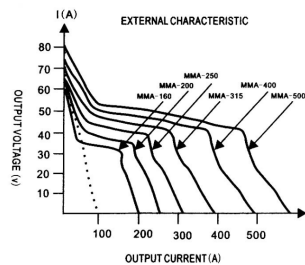
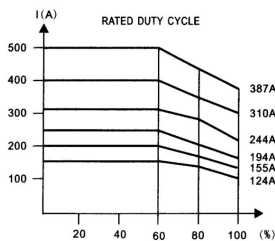
Weld Feature

- High efficiency, energy-saving, lightness and portable , good dynamic characteristic
- Stable arc, good arc force, high duty cycles and easy to control the bath
- Suit for welding all kinds of acid and alkaline welding rod: stainless steel, alloy steel, copper and so on, be able to weld cellulose rod

Temperature Controllers

- The machine has temperature controllers. It can protect the machine when over-load or over-current. The temperature will reach the set figure(80-95°C) and block the PWM. Then the machine stops working. O.C light will turn on. But the fan will stillwork and continue to cool. The machine won't start work until the temperature reach the figure and O.C light turn off, PWM be unlock.

Rated Duty Cycle And External Characteristic



When the current increases, terminal voltage reduces over 9V/100A. The output current increases in the operating range, then the terminal voltage reduces sharply, and the curve plumbs down is called constant current characteristic. When the length of arc changes, the welding current changes little.

Forbidden To Use The Welding Power To Thaw The Pipelines

MODEL	ARC-100	ARC-120	ARC-140	ARC-160	ARC-180	ARC-200
Rated Input Voltage(V)	1P 110/220V					
Frequency(Hz)	50/60					
Input Capacity(KVA)	3.0	3.4	4.6	5.5	6.5	7.5
Output Power(KW)	2.4	3	110V: 3.0 220V: 3.6	110V: 3.0 220V: 4.2	110V: 3.0 220V: 4.9	110V: 3.0 220V: 5.6
No-Load Voltage(V)	60					
Current Range(A)	20-100	20-120	20-140	20-160	20-180	20-200
Max Output Current(A)	100	120	140	160	180	200
Rated Working Voltage(V)	24.0	24.8	25.6	26.4	27.2	28.0
Electrode Diameter(MM)	1.6-2.5	1.6-3.2	1.6-4.0	1.6-4.0	1.6-4.0	1.6-4.0
Duty Cycle(%)	35					
Efficiency(%)	85					
Net Weight(KG)	4.5	4.5	5.0	5.6	6.0	6.0
Machine Dimension(MM)	272x120x190					

MODEL	ARC-100	ARC-120	ARC-140	ARC-160	ARC-180	ARC-200
Rated Input Voltage(V)	1P 220V					
Frequency(Hz)	50/60					
Input Capacity(KVA)	3.0	3.8	4.5	5.3	6.2	7.1
Output Power(KW)	2.4	3.0	3.6	4.2	4.9	5.6
No-Load Voltage(V)	65					
Current Range(A)	20-100	20-120	20-140	20-160	20-180	20-200
Max Output Current(A)	100	120	140	160	180	200
Rated Working Voltage(V)	24.0	24.8	25.6	26.4	27.2	28.0
Electrode Diameter(MM)	1.6-2.5	1.6-3.2	1.6-4.0	1.6-4.0	1.6-4.0	1.6-4.0
Duty Cycle(%)	35					
Efficiency(%)	85					
Net Weight(KG)	3.2	3.2	3.5	3.6	3.8	4.0
Machine Dimension(MM)	272x120x190				307x120x190	



INSTALLMENT

Connect Machine And Power

- Put the welding machine rear panel power line plug connect to the AC220V powerplug, the machine must earth reliably. Forbid strictly using the AC380V power source, otherwise the consequence is proud.

Connet Machine And Torch

- Please connect quick connector with torch and machine according to the sign on machine, then clockwise rotation to screws tight

Connect Machine And Earth Clamp

- Please connect quick connector with earth clamp and machine according to the sign on machine, then clockwise rotation to screws tight.

PRODUCTS INTRODUCTION

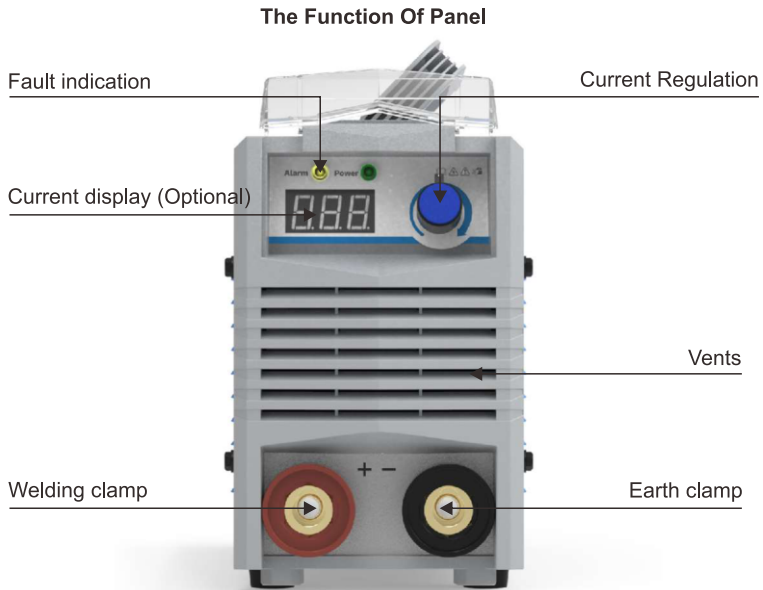
Congratulations for your purchase ARC-200 are hand inverter welder series which is made by international most advantaged invert technical. Inverter MMA welding power supply is inverter arcwelding machine which is sprung up in 1980s in international market 50Hz/60Hz frequency is inverted to high frequency (frequency is over 100KHz) by MOSFET, then step down voltage and rectificate current inverter are welding power supply generates powerful DC welding curent through PWM technical. Because inverter technical of switch power is used, dimensions and weight of welding machine has reduced substantially and efficiency has increased 30%. Stabilizing, reliability, lightness, save-en ergy and no electromagnetic noise are characleristics of weldine machine series . Inverter welding machine is developed that is given praise of revolution of welding field by specialist

ARC machine has characteristics as following:

- High quality
- Stable arc
- Molten bath is easy to control
- No-load voltage is higher
- Able to be used widely
- Suitable for job of high-altitude and outdoor and fitmct ol inside or outside
- Lightweight
- Simple installing and operation



OPERATION METHODS



Operation Steps

- Connect the power first and turn power switch.
- To adjust electric current which you need
- Connect the earth clamp and workpieces

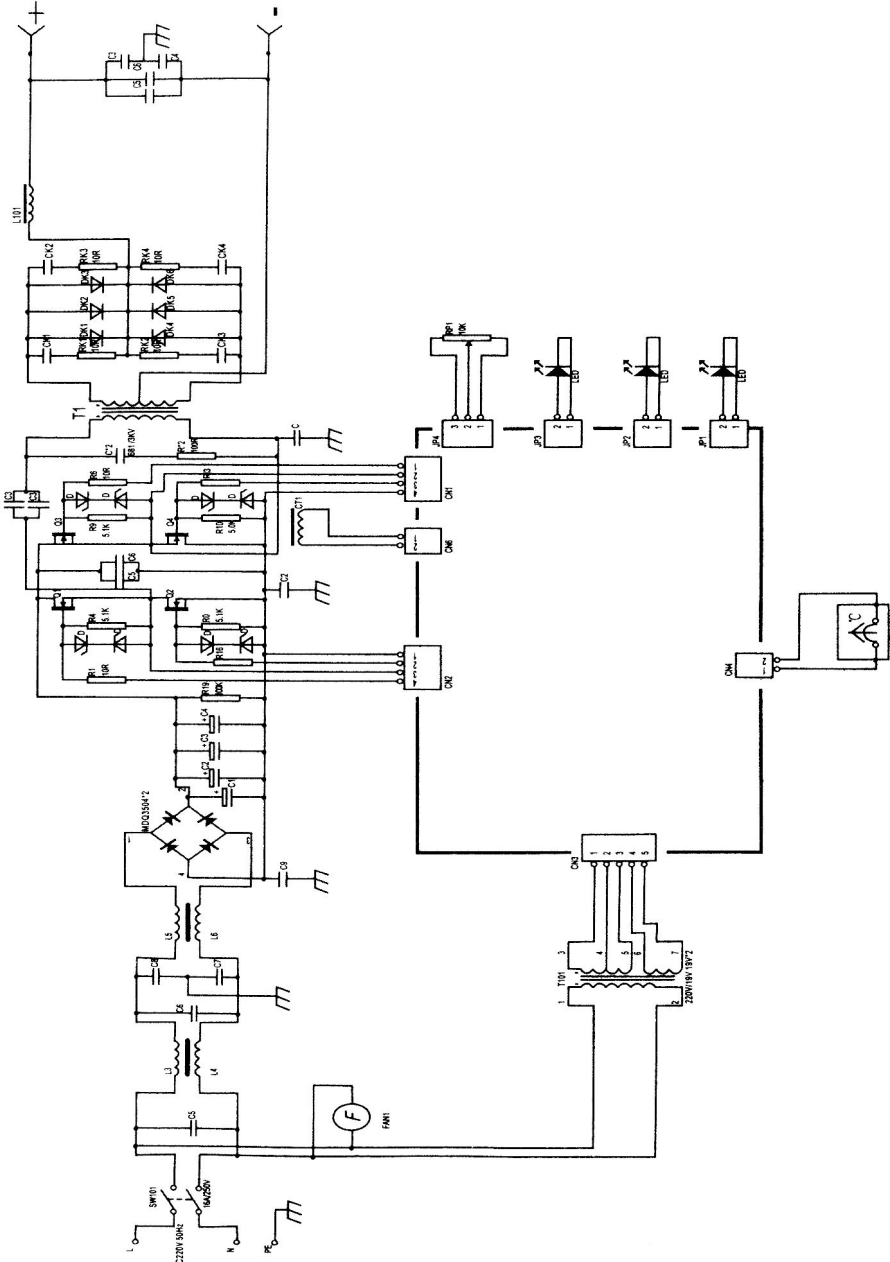
When the welding rod burns to leave 1-2 mms, you need to change the new one

When welding has completed you should clean the surface of machine

Normal condition, Electrode and welding current corresponding value $\Phi 2.5$ 70-100A; $\Phi 3.2$ 110-160A; $\Phi 4.0$ 170-220A; $\Phi 5.0$ 230-280A;



THE DIAGRAM OF MAIN ELECTRIC PRINCIPLE LE



PROBLEMS AND CORRESPOND MEASURES

Problems	Measures
The power supply indicator isn't bright, the fan doesn't work, no weld exportation	<ol style="list-style-type: none"> 1.The power switch is bad 2.Confirm to whether wire net that the importation power cable connects has an electricity or not 3.Confirm to whether output power cable have short-circuit place or not
the yellow indicator bright	<ol style="list-style-type: none"> 1.The ventilated condition isn't good causing the heat protect, needing to improve ventilated condition 2.The environment temperature is too high, recover automatically after waiting temperature to lower 3.Exceed rated duty cycle resulted in a hot protection 4. The thermometer was broken
Current changer out of control	<ol style="list-style-type: none"> 1. It may loose you just need to screw tight 2. the current changer is broken
The Fan Doesn't Work	<ol style="list-style-type: none"> 1. input voltage is not right 2. the fan is broken 3. there are something in fan just to take them away
Weld Pliers, cable and fast plug are too hot	<ol style="list-style-type: none"> 1. the capacity of weld pliers is too small, needing to replace big one 2. The cable is too thin 3. the weld pliers and the cable get in touch with electric resistance greatly,
The power light but no voltage	<ol style="list-style-type: none"> 1. Lead heat to result in protection appearance inside machine 2. Electronics circuit inside electric welding machine the plank is bad, 3. Result in leading to flow a protection, need to close a power failure source to re-start
others	Please contact the manufactory/supplier

TRANSPORTATION AND STORAGE

The electric welding machine is a common indoor usage equipments, should avoid rain and snow during the period of transporting, the warehouse wants to keep dry and clean, the air ventilated, have no causticity air or dust. Temperature should at -25---+55°C. The degree of humidity is no bigger than 90%.

SERVICE

Customer according to the manual to gearing, using and maintaining machine, from purchase a day since in 1 years,(take date of draft as quasi), if have a quality problem, or part damage or can't work normally, we will free provide a service for you.



KeyGree®

info@keygree.com



CHENGDU KEYGREE TECHNOLOGY CO.,LTD.

Add : European Industrial Zone, Qingbaijiang District, Chengdu, Sichuan
Phone : 0086-13587752681 Tel : 0086-577-62678899 Fax : 0086-577-62555100
E-mail : Info@keygree.com Web : www.keygree.com

