



MANUAL BOOK

ZX7-400E

**DC INVERTER MMA
WELDING MACHINE**

SAFETY PRECAUTIONS

Follow these precautions carefully. Improper use of any welder can result in injury or death.

1. ONLY CONNECT WELDER TO A POWER SOURCE FOR WHICH IT WAS DESIGNED. The specification plate on the welder lists this information. When welding outdoors only use an extension cord intended for such use.
2. ONLY OPERATE WELDER IN DRY LOCATIONS and on cement or masonry floor. Keep area clean and uncluttered.
3. KEEP ALL COMBUSTIBLES AWAY FROM WORK SITE.
4. DO NOT WEAR CLOTHING THAT HAS BEEN CONTAMINATED with grease or oil.
5. KEEP CABLES DRY AND FREE FROM OIL AND GREASE and never coil around shoulders.
6. SECURE WORK WITH CLAMPS or other means; don't over reach when working.
7. NEVER STRIKE AN ARC ON A COMPRESSED GAS CYLINDER
8. DON'T ALLOW THE INSULATED PORTION OF THE ELECTRODE HOLDER TO TOUCH THE WELDING GROUND WHILE CURRENT IS FLOWING.
9. SHUT OFF POWER AND UNPLUG MACHINE WHEN REPAIRING OR ADJUSTING. Inspect before every use. Only use identical replacement parts.
10. FOLLOW ALL MANUFACTURER'S RULES on operating switches and making adjustments.
11. ALWAYS WEAR PROTECTIVE CLOTHING when welding . This includes: long sleeved shirt(leather sleeves), protective apron without pockets, long protective pants and boots. When handling hot materials, wear asbestos gloves.
12. ALWAYS WEAR A WELDER'S HELMET WITH PROTECTIVE EYE PIECE when welding. Arcs may cause blindness. Wear a protective cap underneath the helmet.
13. WHEN WELDING OVERHEAD, BEWARE OF HOT METAL DROPPINGS. Always protect the head, hand, feet and body.
14. KEEP A FIRE EXTINGUISHER CLOSE BY AT ALL TIMES.
15. DO NOT EXCEED THE DUTY CYCLE OF THE MACHINE. The rated cycle of a welding machine is the percentage of a ten minute period that the machine can operate safely at a given output setting.
16. KEEP ALL CHILDREN AWAY FROM WORK AREA. When storing equipment, make sure it is out of reach of children.
17. GUARD AGAINST ELECTRIC SHOCK. DO not work when tired. Do not let body come in contact with grounded surfaces.

I. MAIN USAGE AND THE RANGE OF USAGE

ZX7-400E inverse arc welder produced with international advanced technology is a new variety of welding machine using MOSFEET (or IGBT) . It has performance and high efficiency that the traditional welder can not be compared with. The welding current is infinitely and independently adjustable. All ferrous metal, copper and stainless steel material can be omnibearing welding in all position. The welding current is stable. The welding seam is nice. few spatters and low noise occurs during welding. The welder has outstanding feature of minimum current. The minimum current can be up to 30A. Protection measures of the welder are perfect. The welder is reliable, light in weight and easy to use. It is particularly suitable for enterprise of plant and mine, build, decoration and maintenance sectors.

II. MAIN TECHNICAL SPECIFICATIONS

MODEL		ZX7-400E
INPUT	Voltage	AC 380V/400V/415V \pm 10% 50/60Hz Three phase
MMA	No-load Voltage	70~80V
	current Adjusting Range	400A
	Rated Output Current	30-400A
	Rated Duty Cycle	60%
Efficiency		\geq 70%
Protection Class of enclosure		IP21S
Mass		28Kg
Outline Dimensions mm ³		500×245×400

III. OPERATING CONDITION AND WORK SURROUNDING

1. Operating condition:

Voltage of power source: three phases AC 380V/400V/415V \pm 10%

Frequency: 50/60Hz

Reliable grounding protection

2. Work surrounding

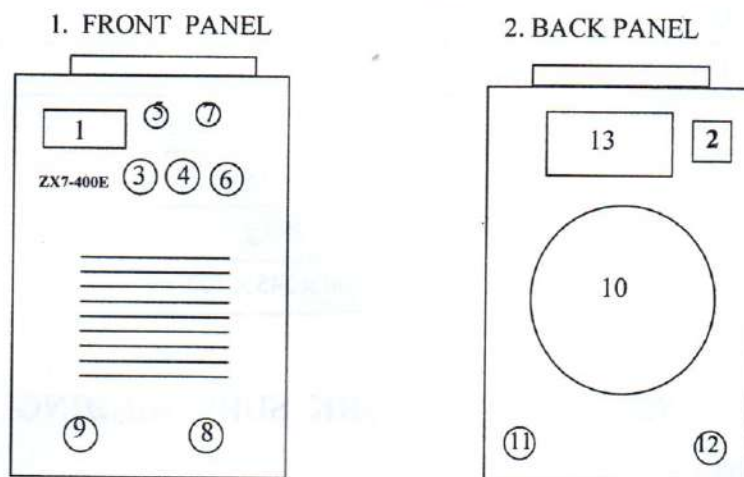
- ①. relative humidity: not more than 90 % (average monthly temperature not more than 20°C)
- ②. ambient temperature: -10°C ~ 40°C
- ③. The welding site should have no harmful gas, Chemicals, molds and inflammable matter, explosive and corrosive medium, no big vibration and bump to the welder.
- ④. Avoiding rain water. Operating in rain is not allowed.

IV. DESCRIPTION OF THE ERECTION

1. Before welding, the operator should read the operation instructions.

2. Check the welder appearance for deformation and damage.
3. For the safety of the equipment and the persons, the customer must correctly make grounding or protection according to the power supply system: using 4mm² lead to connect the protection grounding of the welder
4. Welding operation should be carried out in dry and good ventilating area. The surrounding objects should be not less than 0.5m away from the welder.
5. Checking the welder output connector for tightness.
6. The welder can not be moved and the cover can not be opened during the power is on and welding operation is carried out.
7. The welder should be cared, used and managed by specialized person.
8. Current of the distribution board: not less than 35A

V. SKETCH THE PANEL FUNCTION



1. indication of welding current 2. power switch 3. welding current regulator 4. ARC force regulator
5. indicating light of power 6. Hot Start regulator 7. warning indicating light 8. output "+"
9. output "-" 10. fan 11. safety earthing column 12. power supply 13. nameplate

VI. METHOD OF THE OPERATION

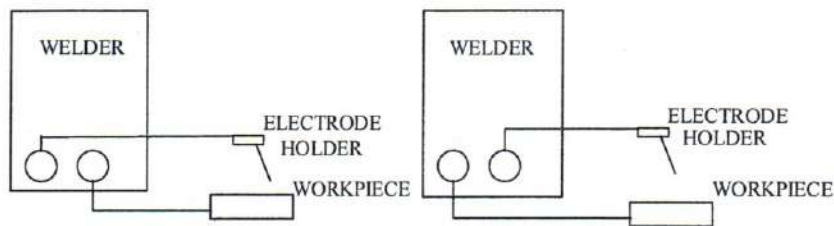
1. Hand welding with electrode

- ①. Regulating Current Knob "3" (current regulator) to select right welding current
select empiric formula: $I=40D$, D is dia. of the electrode

②..Notice positive and negative connection during welding.

A. NEGATIVE CONNECTION

B. POSITIVE CONNECTION

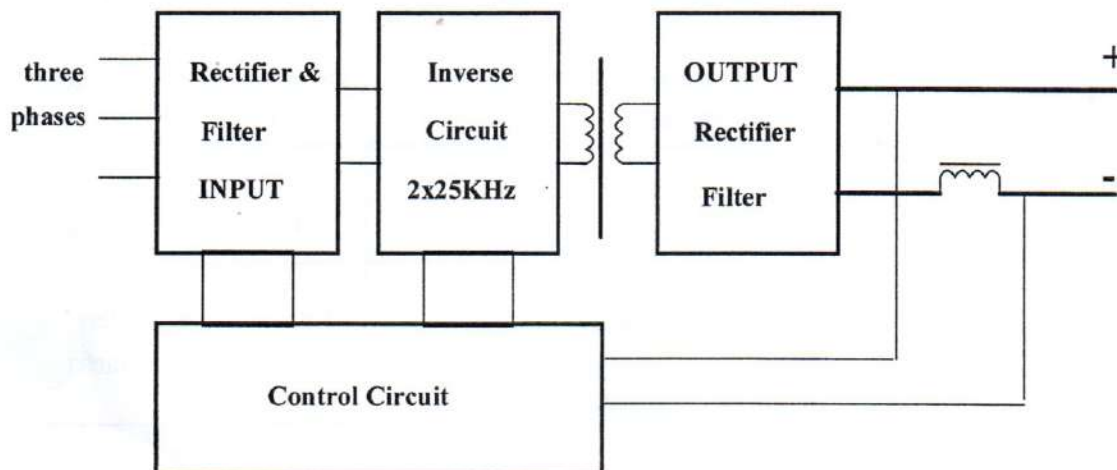


④.Connecting input power for the welder, then switch on the power and current indicating light "5" is on .

⑤.Pay attention to rated welding current and rated duty cycle of the welder. Overload is not allowed.

⑥.After the welding operation is finished, let the welder be ventilated for a few minutes and then cut off the power switch.

VII.SYSTEMATIC BLOCK DIAGRAM



VIII.This product is sold subject to the understanding that if any defect in manufacture or material shall appear within 12 months from date of consumer sale, the manufacturer will arrange for such defect to be rectified without charge on the sales invoice and warranty card . (except for any personal trouble)

General Troubles and Problem Solving:

Trouble	Causes	Problem Solving
Power lamp not light	<ol style="list-style-type: none"> 1.No electricity input 2.Switch of welder fails. 3.Absence phase(fan rotating) 	<ol style="list-style-type: none"> 1.Check incoming line . 2.Replace the switch 3.Check incoming line.
Fan not rotating	<ol style="list-style-type: none"> 1.Fan power line is off. 2.Enclosure blocks the fan due to deformation 3.The fan fails. 4.Absence phase (red lamp lights). 	<ol style="list-style-type: none"> 1.Reconnect the line 2.Reform the enclosure . 3.Replace the fan 4.Check the input power source.
Warning lamp lights	<ol style="list-style-type: none"> 1.Over heat(yellow lamp lights) 2.Over current(Green lamp lights) 3.Absence phase(red lamp lights) 	<ol style="list-style-type: none"> 1.Welding after cooling. 2.Input voltage too low or the machine fails. 3.Cneck incoming line
No output of welder	<ol style="list-style-type: none"> 1.Absence phase protection (red lamp lights) 2.Over current protection 3.Welder fails 	<ol style="list-style-type: none"> 1.Check the input pouer 2.Over load using 3.Maintenance in manufacturer or service center
Output current decreased	<ol style="list-style-type: none"> 1. Input Voltage is low 2. Input line is too thin 	<ol style="list-style-type: none"> 2. Power line is thickened
Current can not be regulated	<ol style="list-style-type: none"> 1.Connecting line of the potentiometer is off 2.Potentiometer for current regulation fails 	<ol style="list-style-type: none"> 1.Reconnecting the line 2.Replace potentiometer