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| 1 | BD63212 | Jaltest SW 1 year licence of use. Commercial vehicles . | 1,00 | vnt. | | |

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PVM 21,0% (EUR):

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Pirkėjo atstovas:

(pareigos, vardas, pavardė, parašas)

ARC140/ARC160
ARC180/ARC200



ARC SERIES IGBT INVERTER MMA WELDER

► Read this manual entirely before getting down to work with your new machine!

Thanks for your purchase of this series of welder products! This series of products are safe, reliable, firm, durable, convenient to maintain, and capable of greatly raising the welding productivity. This user's manual contains important information on use, maintenance and safety of the product. See technical parameters of the equipment in Technical Parameter in this manual. Please go through this manual for the first use. In order to ensure the personal safety of the operator and the safety of the working environment, please read the safety attentions in this manual carefully, and operate according to the instructions. For more details of JASIC products, please contact JASIC, consult JASIC authorized dealers or visit JASIC website (<http://www.jasicttech.com>).

DECLARATION

SHENZHEN JASIC TECHNOLOGY CO., LTD. solemnly promises: This product is manufactured according to relevant standards of China and relevant international standards, and meets IEC60974-1 international safety standard. Relevant design plans and manufacturing technologies of this product are patented.

Operate after reading this manual carefully.

- Information in this manual is accurate and complete. The company will not be responsible for any mistakes and omissions due to the operation out of this manual.
- JASIC has the right to modify this manual at any time without prior notice.
- Though contents in this manual have been carefully checked, inaccuracies might have occurred. For any inaccuracy, please contact us.
- Any copy, record, reprint or spread of the contents in this manual without preauthorization of JASIC is prohibited.
- This manual was released in June, 2012.

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Notes:

To avoid loss and personal injury, please be careful with the parts with "NOTE!".
Go through these chapters and articles, and operate according to this manual.

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1. SAFETY

Welding may result in injury to you and others, so please implement protection during welding. See more details in Safety Protection Guidebook for Operator which meets the requirements to manufactures on accident prevention.



Operate this equipment by trained professional only

- Use welding labor protection supplies with approval of safety supervisory authority.
- Operators must be the special workers with valid work permits of "Metal Welding (Gas Cutting) Operation".
- Do not maintain and repair welder with power.



Electric shock-may result in serious injury or even death!

- Install grounding device according to application standard.
- Do not touch live parts with naked skin, wet gloves or wet clothes.
- Be sure you are insulated from ground and workpiece.
- Confirm the safety of your working position.



Smoke-may be harmful to your health!

- Keep your head away from the smoke to avoid inhalation of waste gas in welding.
- Keep the working environment well ventilated with exhaust or ventilation equipment when welding.



Arc radiation-may hurt your eyes and burn your skin!

- Use proper welding mask and wear protective clothing to protect your eyes and body.
- Use proper mask or curtain to protect onlooker from being injured.



Improper use and operation may result in fire or explosion

- Welding spark may result in fire, so please make ensure there are no inflammables near the welding position, and pay attention to fire safety.
- Ensure there is fire extinguisher nearby, and make sure someone has been trained to operate the fire extinguisher.
- Do not weld closed container.
- Do not use this machine for pipe thawing.



Hot workpiece can cause severe scald.

- Do not touch hot workpiece with bare hands.
- Cool the welding torch for a while after continuously working.



Excessive noise does great harm to people's hearing.

- Wear ear covers or other hearing protectors when welding.
- Give warning to onlooker that noise may be potentially hazardous to hearing.



Magnetic field can make cardiac pacemaker a bit wonky.

- People with cardiac pacemaker should stay away from the welding spot without first talking to a doctor.



Moving parts may injure your body.

- Please keep away from moving parts (like fan).
- Each door, panel, cover, baffle plate, and protective device the like should be closed and located correctly.



Seek professional support when trouble strikes.

- When trouble strikes in installation and operation, please inspect according to related contents in this manual.
- If you still cannot understand fully, or you still cannot solve the problem, please contact the dealer or the service center of JASIC to obtain professional support.

2. SYMBOL EXPLANATION

WARNING



Matters to be noticed in operation



Objects to be specially described and pointed out



More details in CD



It is prohibited to dispose the electrical waste together with other common wastes. Please protect the environment.

3. PRODUCT OVERVIEW

Unique electric structure and air channel design in this series of machines can speed up the heat rejection of the power device as well as improving the duty cycles of the machines. The unique heat rejection efficiency of the air channel can effectively prevent the power devices and control circuits from being damaged by the dust absorbed by the fan, and the reliability of the machine is greatly improved thereby.

The whole machine is in form of coherent streamline, the front and rear panels are naturally integrated via large-radian transition manner. The front panel and the rear panel of the machine and the handle are coated with rubber oil[®], so the machine has soft texture, good hand feeling, and seems warm and pleasant.



Fig. 1

①: Not every piece of machine has the same design. Differences may exist upon customers' requirements.

4. FUNCTION OVERVIEW

➤ Various function designs

- ◆ Hot start arc ignition function: make the arc ignition in MMA welding easier and more reliable.
- ◆ VRD function: keep the operator safe when the machine is idle.
- ◆ Anti-sticking function: reduce working strength in welding.
- ◆ Self-adaptive arc force technology: obviously improve the performance of the machine in long-cable welding and contribute to long-distance welding.
- ◆ Advanced arc ignition by scraping: support TIG welding without HF arc ignition circuit.

5. PERFORMANCE CHARACTERISTICS

- **Advanced IGBT inverter technology**
 - ◆ Inverting frequency of 33~43 KHz greatly reduces the volume and weight of the welder.
 - ◆ Great reduction in magnetic and resistance loss obviously enhances the welding efficiency and energy saving effect.
 - ◆ Working frequency is beyond audiorange, which almost eliminates noise pollution.
- **Leading control mode**
 - ◆ Advanced control technology meets various welding applications and greatly improves the welding performance.
 - ◆ It can be widely used in acid and basic electrode welding.
 - ◆ Easy arc starting, less spatter, stable current and good shaping.
- **Nice shape and structure design**
 - ◆ Front and rear panels in shape of streamline make the whole shape nicer.
 - ◆ Front and rear panels made of high-intensity plastics can effectively ensure the machine to efficiently work in severe conditions.
 - ◆ Excellent insulating property.
 - ◆ Waterproof, antistatic and anticorrosion.

6. ORDER INFORMATION

| Model | Function Configuration | Product Code | Product No. |
|---------|---|--------------|-------------|
| ARC140 | Hot start arc ignition, anti-sticking, self-adaptive arc force, lift arc, VRD | Z210 | 10037710 |
| ARC160 | Hot start arc ignition, anti-sticking, self-adaptive arc force, lift arc, VRD | Z211 | 10037709 |
| ARC180 | Hot start arc ignition, anti-sticking, self-adaptive arc force, lift arc, VRD | Z208 | 10037712 |
| ARC200 | Hot start arc ignition, anti-sticking, self-adaptive arc force, lift arc, VRD | Z209 | 10037706 |
| ARC160* | Hot start arc ignition, anti-sticking, self-adaptive arc force, lift arc, VRD | Z213 | 10037708 |
| ARC180* | Hot start arc ignition, anti-sticking, self-adaptive arc force, lift arc, VRD | Z214 | 10037711 |
| ARC200* | Hot start arc ignition, anti-sticking, self-adaptive arc force, lift arc, VRD | Z215 | 10037707 |

* - product with low duty cycle

7. TECHNICAL PARAMETERS

| Technical Parameter | Unit | Model | | | |
|-------------------------------|--------------------------|--------------------|-------------|-------------|-------------|
| | | ARC140 | ARC160 | ARC180 | ARC200 |
| Rated input voltage | V | AC230V±15% 50/60HZ | | | |
| Rated input power | KVA | 6 | 7.11 | 8 | 9.4 |
| Welding current range | A | 10~140 | 10~160 | 10~180 | 10~200 |
| | V | 20.4~25.6 | 20.4~26.4 | 20.4~27.2 | 20.4~28 |
| Rated duty cycle ^① | % | 35 | 35 | 35 | 35 |
| No-load voltage | V | 63 | 63 | 63 | 63 |
| Overall efficiency | % | 85 | 85 | 85 | 85 |
| Housing protection grade | IP | 21 | 21 | 21 | 21 |
| Power factor | cosφ | 0.7 | 0.7 | 0.7 | 0.7 |
| Insulation grade | | F | F | F | F |
| Standard | | EN60974-1 | EN60974-1 | EN60974-1 | EN60974-1 |
| Noise | db | <70 | <70 | <80 | <80 |
| Size | without handle | 313*130*206 | 313*130*206 | 313*130*206 | 351*130*206 |
| | with handle ^② | 313*130*250 | 313*130*250 | 313*130*250 | 351*130*250 |
| Weight | kg | 4.7 | 4.7 | 4.7 | 5.2 |
| Applicable electrode | mm | 1.0~4.0 | 1.0~4.0 | 1.0~5.0 | 1.0~5.0 |

| Technical Parameter | Unit | Model | | |
|-------------------------------|--------------------------|--------------------|-------------|-------------|
| | | ARC160* | ARC180* | ARC200* |
| Rated input voltage | V | AC230V±15% 50/60HZ | | |
| Rated input power | KVA | 7.11 | 8 | 9.4 |
| Welding current range | A | 10~160 | 10~180 | 10~200 |
| | V | 20.4~26.4 | 20.4~27.2 | 20.4~28 |
| Rated duty cycle ^① | % | 15 | 15 | 15 |
| No-load voltage | V | 63 | 63 | 63 |
| Overall efficiency | % | 85 | 85 | 85 |
| Housing protection grade | IP | 21 | 21 | 21 |
| Power factor | cosφ | 0.7 | 0.7 | 0.7 |
| Insulation grade | | F | F | F |
| Standard | | EN60974-1 | EN60974-1 | EN60974-1 |
| Noise | db | <70 | <80 | <80 |
| Size | without handle | 313*130*206 | 313*130*206 | 313*130*206 |
| | with handle ^② | 313*130*250 | 313*130*250 | 313*130*250 |
| Weight | kg | 4.7 | 4.7 | 4.7 |
| Applicable electrode | mm | 1.0~4.0 | 1.0~5.0 | 1.0~5.0 |

* product with low duty cycle

① - under the environment temperature of 40°C

② - Not every piece of machine has the same design. Differences may exist upon customers' requirements.

8. ELECTRICAL SCHEMATIC DIAGRAM

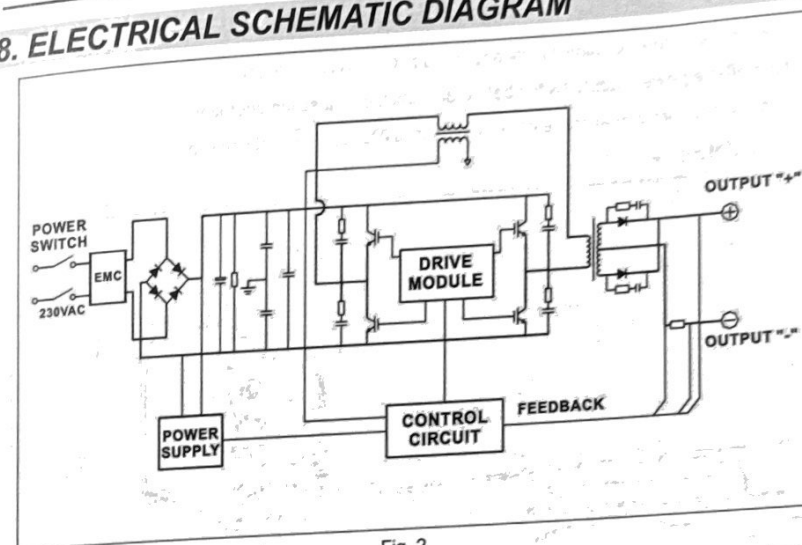


Fig. 2

9. OPERATION CONTROL AND DESCRIPTION

- Overheating LED:** To indicate overheating. Overheating LED on indicates that the temperature inside the machine is too high and the machine is under overheating protection status.
- Power LED:** To indicate the power. Power LED on indicates that the power switch of the machine is on.
- MMA/TIG switch:** To toggle between MMA and TIG.
- "+" output terminal:** To connect the electrode holder.
- "-" output terminal:** To connect the work clamp.
- Trademark**
- Welding current knob:** To adjust the output current.
- Handle**

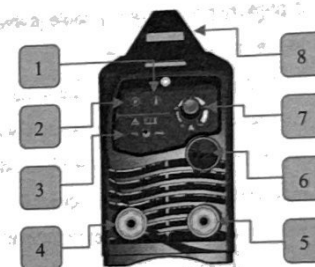


Fig. 3

- Power switch:** Power ON/OFF switch.
- Warning sign**
- Power input:** power input cable
- Cooling fan**

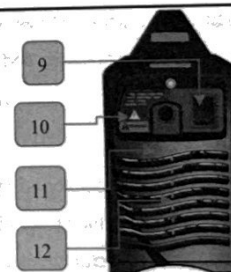


Fig. 4

10. INSTALLATION, DEBUGGING AND OPERATION

Note: Please install the machine strictly according to the following steps.

Turn off the power supply switch before any electric connection operation.

The housing protection grade of this machine is IP21S, so do not use it in rain.

10.1 Installation

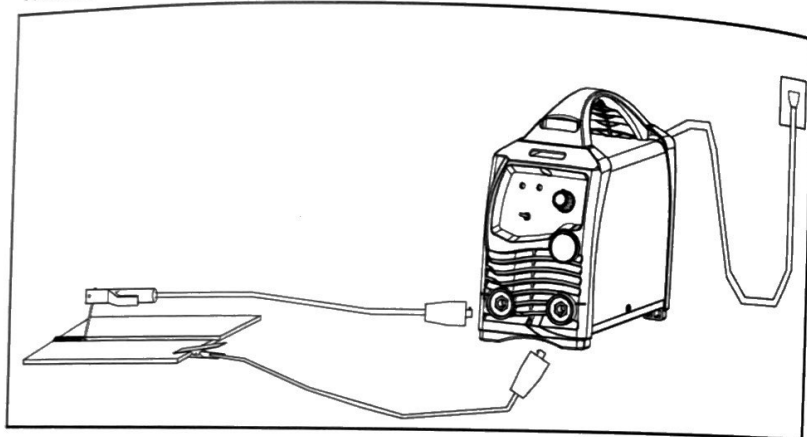


Fig.6 Schematic Diagram of MMA Welding

- 1) A primary power supply cable is available for this welding machine. Connect the power supply cable to the rated input power.
- 2) The primary cable should be tightly connected to the correct socket to avoid oxidation.
- 3) Check whether the voltage value varies in acceptable range with a multi-meter.
- 4) Insert the cable plug with electrode holder into the "+" socket on the front panel of the welding machine, and tighten it clockwise.
- 5) Insert the cable plug with work clamp into the "-" socket on the front panel of the welding machine, and tighten it clockwise.
- 6) Ground connection is needed for safety purpose.

The connection as mentioned above in 4) and 5) is DCEP connection. Operator can choose DCEN connection according to workpiece and electrode application requirement. Generally, DCEP connection is recommended for basic electrode, while there is no special requirement for acid electrode.

10.2 Operation

- 1) After being installed according to the above method, and the power switch being switched on, the machine is started with the power LED on and the fan working.
- 2) Pay attention to the polarity when connecting. Phenomena such as unstable arc, spatter, and electrode sticking could happen if improper mode is selected. Exchange the polarity if necessary.

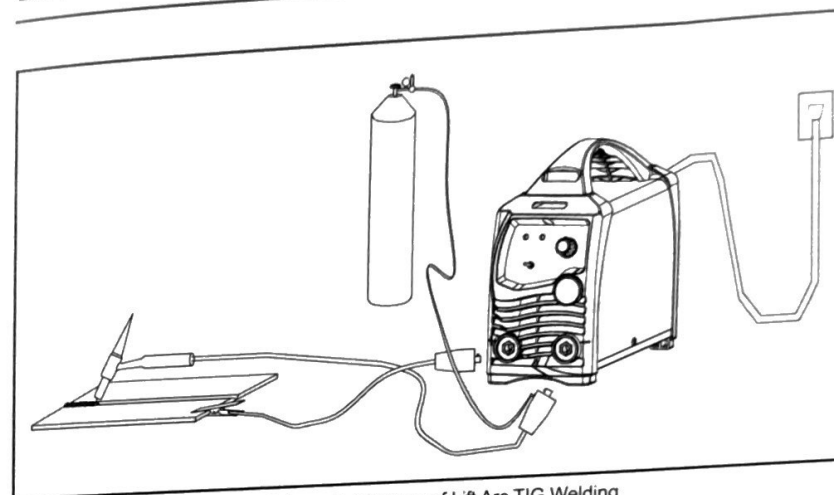


Fig. 7 Schematic Diagram of Lift Arc TIG Welding

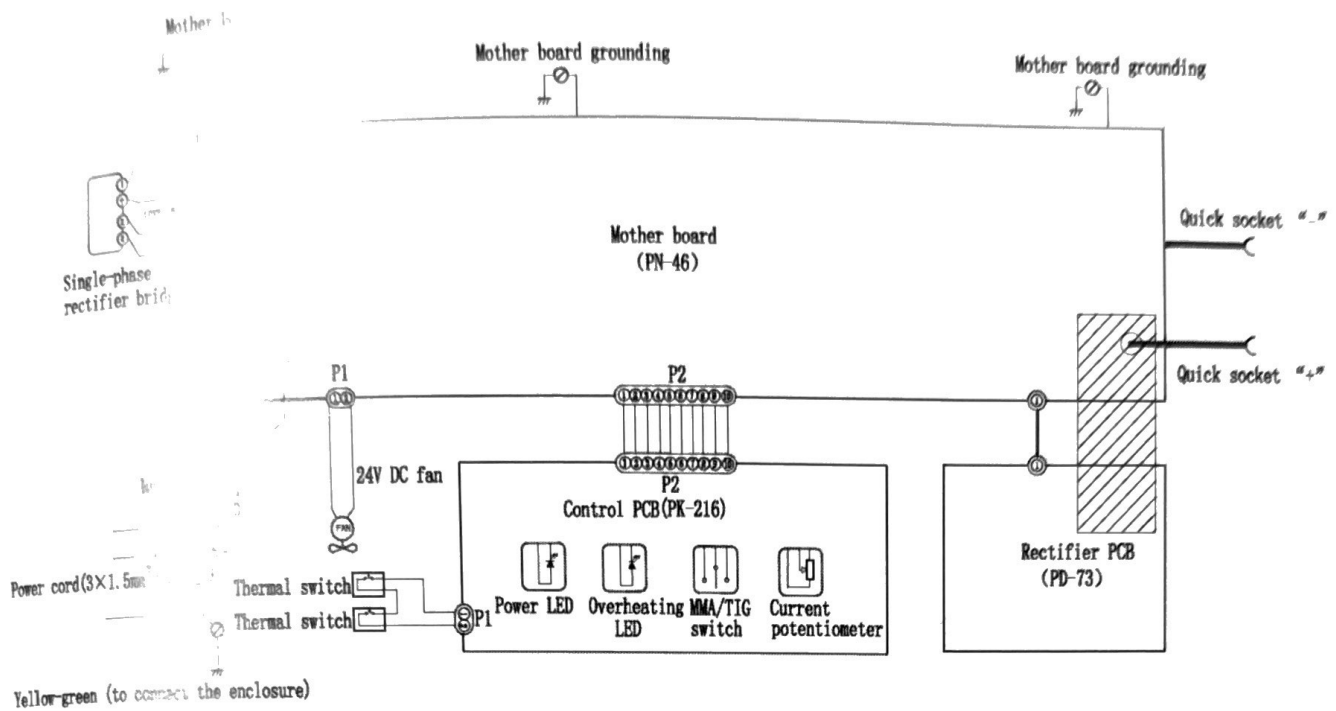
- 3) Switch the MMA/TIG switch to MMA, welding can be carried out with output current in rated range. Switch the MMA/TIG switch to TIG, ignite arc and weld in lift arc mode, arc can be ignited with lift arc ignition current in rated range, and welding can be carried out with welding current in rated range. (See Fig.7 above.)
- 4) Select cable with larger cross-section to reduce the voltage drop if the secondary cables (welding cable and earth cable) are long.
- 5) Preset the welding current according to the type and size of the electrode, clip the electrode and then welding can be carried out by short circuit arc ignition. For welding parameters, please refer to the below table.

10.3 Welding parameters table (for reference only)

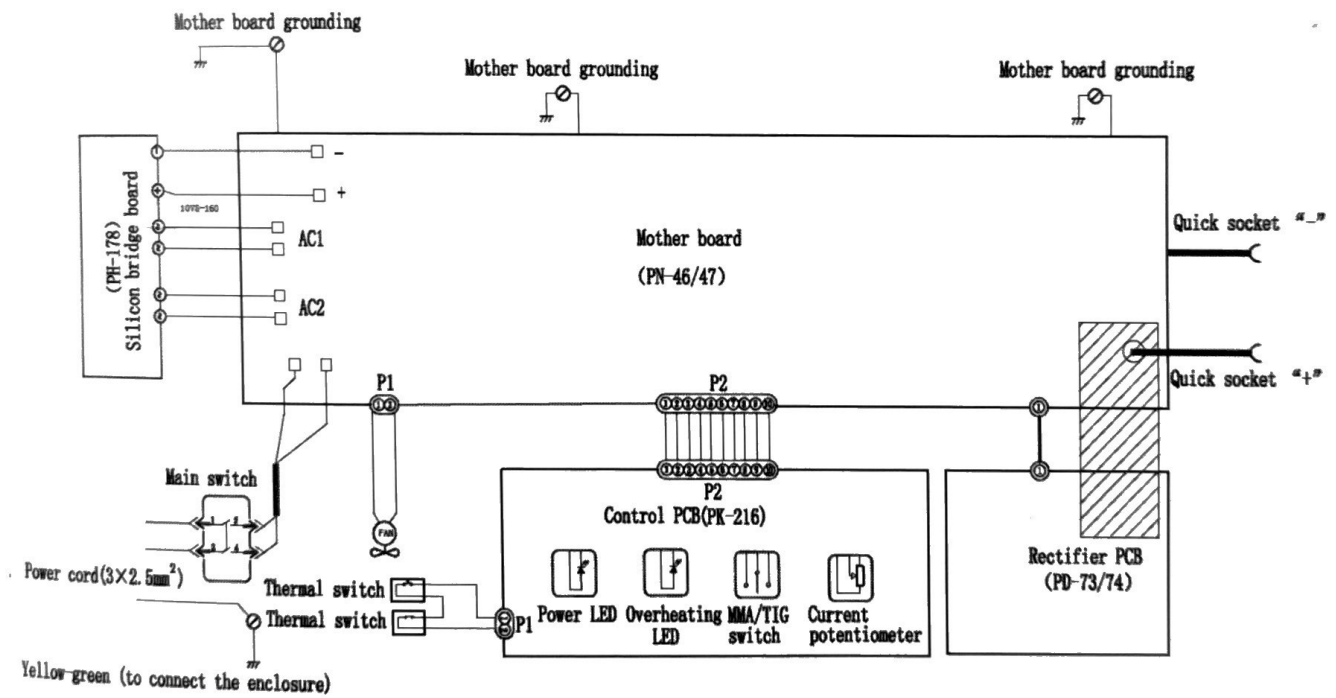
| Electrode Diameter (mm) | Recommended Welding Current (A) | Recommended Welding Voltage (V) |
|----------------------------|------------------------------------|------------------------------------|
| 1.0 | 20~60 | 20.8~22.4 |
| 1.6 | 44~84 | 21.76~23.36 |
| 2.0 | 60~100 | 22.4~24.0 |
| 2.5 | 80~120 | 23.2~24.8 |
| 3.2 | 108~148 | 23.32~24.92 |
| 4.0 | 140~180 | 24.6~27.2 |
| 5.0 | 180~220 | 27.2~28.8 |
| 6.0 | 220~260 | 28.8~30.4 |

Note: This table is suitable for mild steel welding. For other materials, consult related materials and welding process for reference.

APPENDIX C: WIRING DIAGRAM OF COMPLETE MACHINE



Wiring Diagram of Z210/Z211/Z213



Wiring Diagram of Z208/Z209/Z214/Z215