

Foreword

Thank you for using the DRJ series Electric fusion welding machine!

Please read the manual before operating the machine.

You can acquire the operation steps, the maintenance, and the safety matters from the manual packed with the machine. The manual is edited from the actual operation; the details are true and reliable. The content includes pictures and text, concise and easy for user to learn.

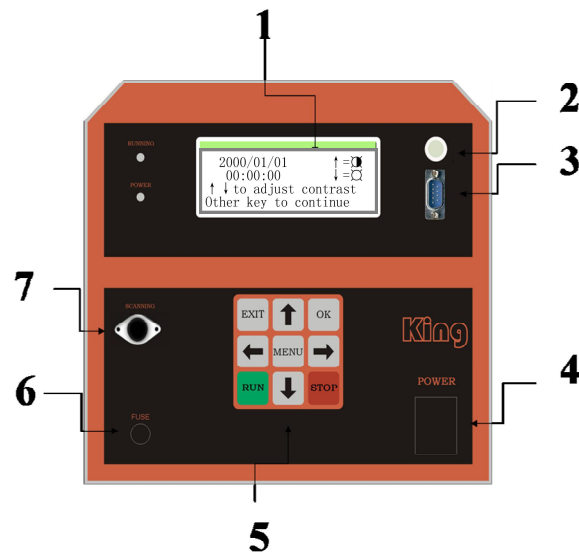
It is possible that we made the mistakes when we edited the manual, so if you find the careless mistakes, please tell us by phone, welcome to give us advices.

The parameters of product are subject to changes without prior notice. !

April 2014

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1 the introduction of operation panel and back layout

1) operation panel

Display

Used to display machine information.

Temperature compensation device

Used to detect environmental temperature.

Print interface

When you need to print data, the connection points between the printer and Electric welding machine.

The power switch

Control machine power supply off or open

Operating keyboard

To control the operation of the machine and check the machine information.

Overload protector

Prevent the machine from overloading Burn out electronic components

Printer The power supply interface

Printer power supply device when printing data

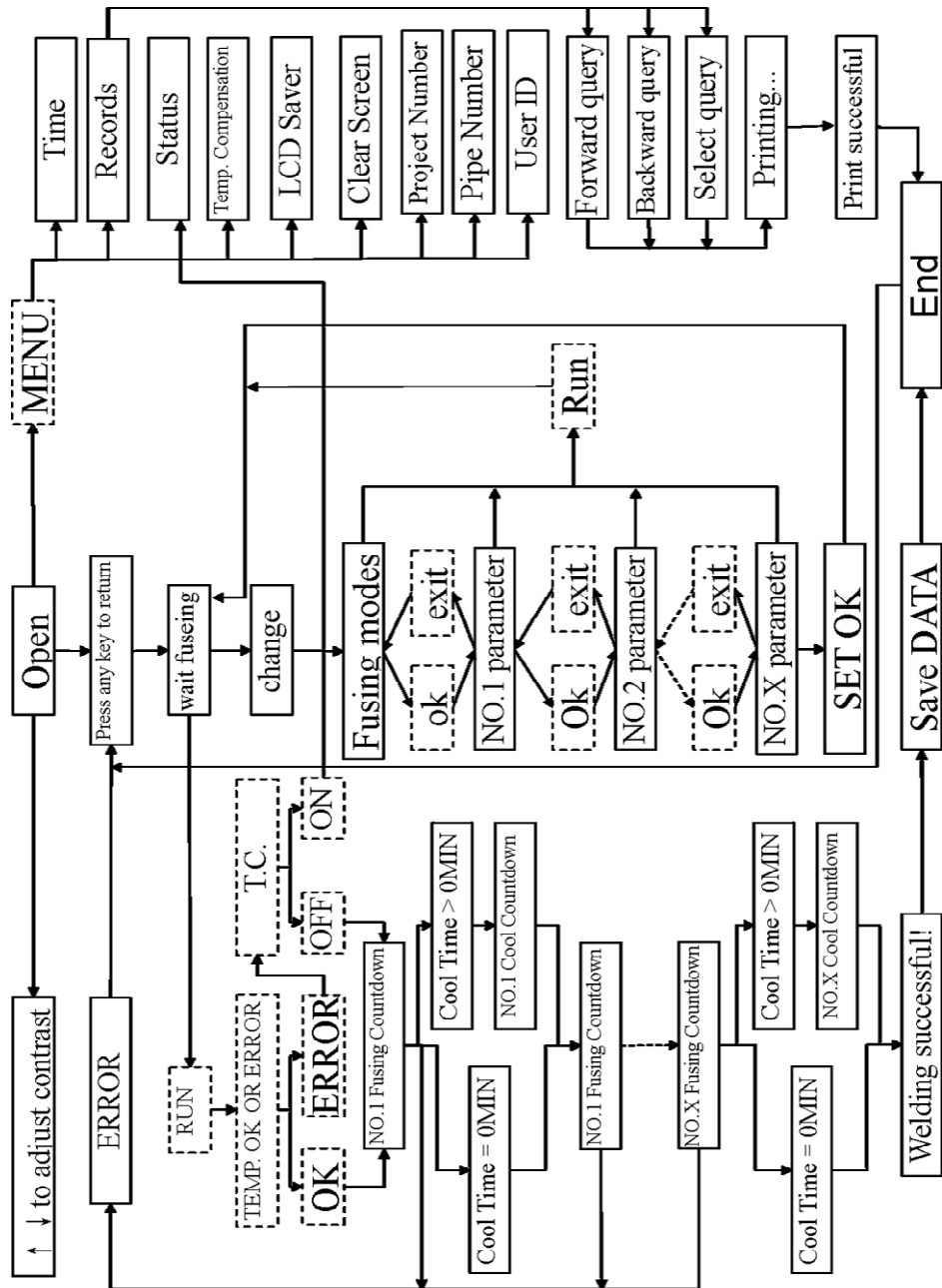
2, Function and Feature

- (1) Ultra wide input supply voltage and power frequency, sufficiently satisfies the power limitation in work site
- (2) Monitor the supply voltage, power frequency and the environment temperature of the work site constantly
- (3) Stabilize the supply voltage and compensate the temperature automatically, it will be not influenced by the environment.
- (4) The LCD screen menu is easy for using
- (5) The high precision output voltage, current and welding time, to ensure the welding quality.
- (6) With 10 segment programmable welding function, each manufacturer pipe fittings to meet the demand of the welding.
- (7) High-capacity storage space.
- (8) Welding parameters input mode: manual keyboard input. And data printing function.

3, Basic Parameters

Input supply power	170V-250V AC	
Output voltage	3V-60V AC	
Output current	3A-60A AC	
Supply frequency	40-70Hz	
The rated power output	2kw	3.5kw
Working environment temperature	-15 - +70	
Relative humidity	80%	
Range of time	1-9999s	
Time resolution	1s	
Time deviation	0.01	
Output voltage(current) deviation	0.5	
Stored record	500 pcs	
G.W. :	18.5kg	23kg
Size	L320*W210*H240(mm)	

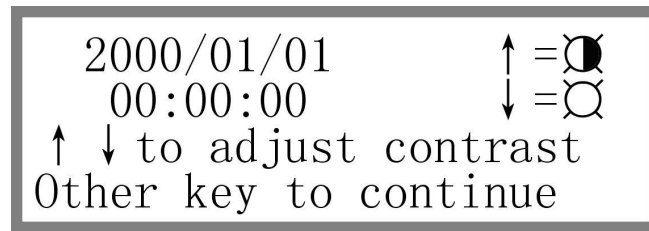
4,Operation flow chart



5, Operation Instruction

1. Power on

Turn on the power switch, the screen will show as picture 1. If the screen is not clear enough, you can use the "↑" and "↓" to adjust the contrast ratio before entering the menu. ("?" * V R G F U H D V H W H F R Q N D W U D M R ? ? * V R G F U H D V H W H F R Q N D W U D M R (e.g.chart)

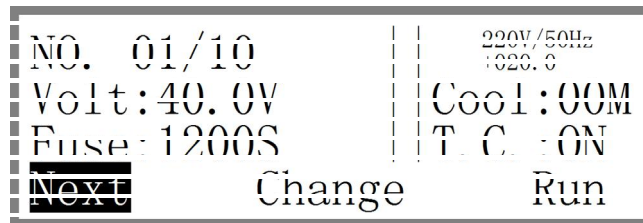


2. Welding

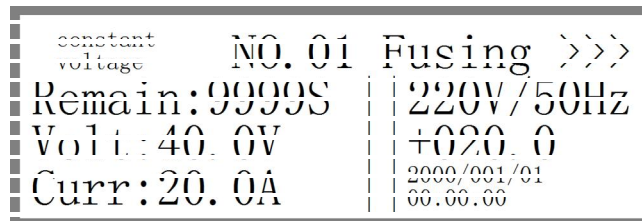
2.1 Start welding

Before power on, to ensure that equipment output terminal connected to the pipe. open the Power Supply LED screen is displayed after ,At this time you can press any key to (In addition to the "↑" and "↓" and menu button) a Get into, Display you are in the last time of the Weld parameters.Welding parameters for "n"(n

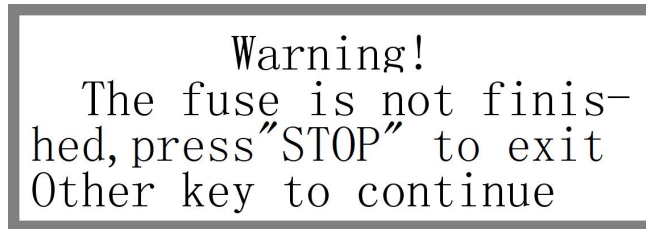
10).In the menu bar, press "↑" or "↓" to "next " Get into To view of the next section of the welding parameters. (e.g.chart)



If you are sure that the welding parameters are as Last time welding parameters Same as , press the "RUN" button and the machine will start Get into welding of the Countdown .(e.g.chart)



When you start welding, the machine will enter the welding countdown model automatically. The work indicator light starts flashing until the end of the welding is finished. If there has been an abnormal case, please press "stop" twice quickly to finish the work and if you only press once, then the screen will show the warning. If you want to stop the current process of welding, please repeat the above steps. (e.g. chart)



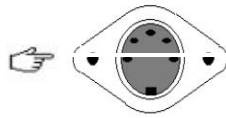
Noted: There may be a difference between the total countdown time and the preset time. This is caused by starting the temperature compensation model; this machine will help to supply the temperature according to the environment. The voltage shown on the screen is the current output voltage. The machine system will always test the power, and then adjust the output voltage, in order to get stable voltage. The data shown on the screen is the present current. The environment temperature is the current one, the system just does the temperature compensation according to the environment temperature shown on the screen.

2.2 Modifying parameters

Open After the power supply screen appears Display, you can press the "OK" button or press "start" button on Show you the last time the welding parameters. If your current welding parameters are different from the last welding parameters, you need to change or reset the welding parameters. This machine has bar code scanning or keyboard manual two input methods.

2.2.1 Barcode scanning input

If you select the barcode scanning input, please connect bar code scanning guns. You will hear will scan the gun "toot toot" the alarm sound several, when after the alarm sound finished, This time you might take up scan the gun to hold down scan on gun's switch alignment fitting's bar code to start to scan. When you hear "toot" a sound, scans successfully, Please choose the temperature compensation "Open" or "Close", press "OK" After the key, demonstrated that general presents you to scan on the bar code the content, the weld period, the cooling time and the welding voltage. If you need to start to enter the welding, please connect the fitting. In order to prevent the scan input the parameter to be wrong, after the confirmation, According to "iû" or "iú" key command "Fuse" nigrescence, Then presses again "OK" The key starts to enter the welding countdown, Otherwise the machine does not start to work. (e.g. chart)



NO. 01/01	220V/50Hz
Volt:40.0V	+020.0
Fuse:0500S	Cool:15M
Next	T. C. :ON
Change	Run

If the bar code not in the correct format or is not clear, you hear a "beep" sound, the display will do not show bar code. Note: scanning errors began to scan (Figure). Do you want to scan again, please press scanning gun the switch to start scanning . (e.g.chart)

ERROR!
Restart scanning...

2.2.2 Keyboard manual input

In the display interface as shown in the following image, Press left or right Will buttons ,Black block to the Move to "modify parameter", and then press the "OK" button to start the manual setting. This machine provides two kinds of welding method, " constant pressure and constant current". Below we make a detailed introduction to the "constant pressure". (e.g.chart)

NO. 01/10	220V/50Hz
Volt:40.0V	+020.0
Fuse:1200S	Cool:00M
Next	T. C. :ON
Change	Run

press "↑" or "↓" to setting voltage mode and current mode, press "←" or "→" to setting number "n" (n = 10)
press "OK" to save, start change fusing parameter is NO.1. (e.g. chart)

```

      Fusing modes
  Voltage      Current
      Number: 10
Click "OK" key to save
  
```

```

      NO. 01      Parameter
Volt: 40.0      Cool: 20MIN
Fuse: 0500S      T. C.: ON
Click "OK" key to save
  
```

press "←" key to add, press "→" key to minus, press "↑" key to move to the left, press "↓" key to Move to the right. Set up after the completion of press "OK" key save, start change the next parameter settings. (e.g. chart)

After setting up, If you want to enter the welding, Please refer to figure connected pipe fitting. Click "↑" or "↓" LED display the black square mobile to the welding Above, and then press OK or weld start button to enter the countdown, Otherwise the machine will not enter the work, Wait for you to set the welding time and cooling time all after, this time the welding process will be automatic storage, LED display screen appear prompting. (e.g. chart)

```

constant      NO. 01  Fusing >>>
voltage
Remain: 9999S  |  220V/50Hz
Volt: 40.0V    |  +020.0
Curr: 20.0A    |  2000/001/01
                |  00.00.00
  
```

```

      Cooling>>>

      Remain: 00Min00Sec
  
```

Welding successful!
Press any key to return

3, press menu, see picture (e.g.chart)

1. **Time**
2. Records
3. Status
"RUN" to start fusingng

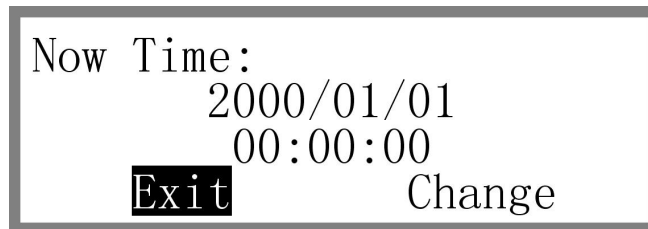
4. **Temp. Compensation**
5. LCD Saver
6. Clear Screen
"RUN" to start fusingng

7. **Project Number**
8. Pipe Number
9. User ID
"RUN" to start fusingng

3.1 Check and change data and time

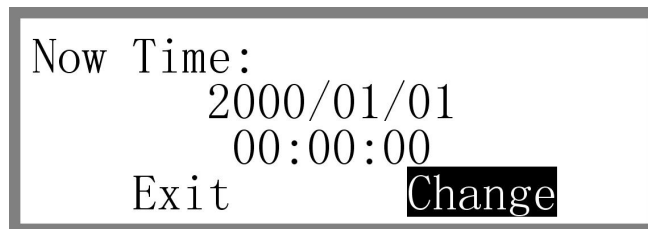
3.1.1 Check time

Press "Exit" or "menu" to be back to Menu, and then operate as the cue. Press "↑" or "↓" to select "1. Time", and then the present time will show after pressing "OK". Finish checking, press "Exit" or "OK" to return previous menu. (e.g.chart)

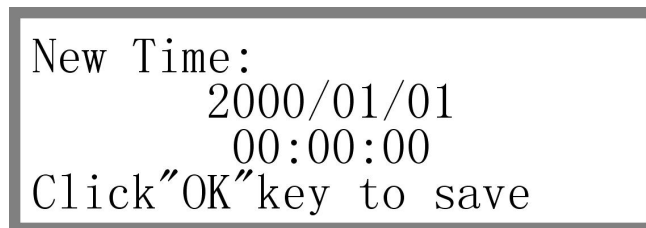


3.1.2 Change time

If time need to be modified, please select "Change" on the screen, and the press "OK"to confirm. (e.g.chart)



When the first number is flashing, use "↑" or "↓"to change the time, and use "←" or "→" to select the item which needs to be changed. (e.g.chart)



3.2 Check welding record

Use "↑" or "↓"to select in the menu, choose "2. machine situations", and then press "OK" to confirm. The machine need 3-5 seconds to read the records, users can choose the suitable way to check the data: (e.g.chart)

- 1, Forward query;
- 2, Backward query;
- 3, Select query

A total of 500 records
 1. **Forward query**
 2. Backward query
 3. Select query

In the query
 Please wait...

3.2.1 Search from front to back

Press "j" or "j" to select "1, query from front to back", and then press "OK" to check the first record.

If there is multi-steps, please use "j" or "j" to check the finished step, and select "page down", then press "OK" to see the next record. (e.g.chart)

NO. 01/10Finish	220V/50Hz
Volt:40.0V	1020.0
Fuse:0500S	Cool:20M
Pg Dn Print	T. C. : ON
	2000/01/01
	00.00.00

3.2.2 Search form back to front

Press "j" or "j" to select "1, and to query from back to front", and then press "OK" to check the last record. Select "page up", and then press "OK" to see the next record. (e.g.chart)

NO. 01/10Finish	220V/50Hz
Volt:40.0V	1020.0
Fuse:0500S	Cool:20M
Pg Up Print	T. C. : ON
	2000/01/01
	00.00.00

3.2.3 Search by inputting the numbers of the records

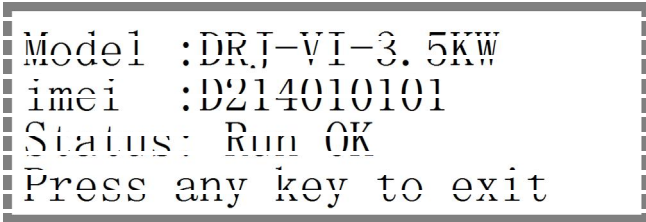
Press "↵" or "↩" to select "1 input the numbers" in the menu, and then press "OK" to confirm. The first number in the screen will be flashing, please use "↵" or "↩" to reduce or increase; "←" or "→" to right or left. (e.g.chart)



Please input:000

3.3 Check machine situation

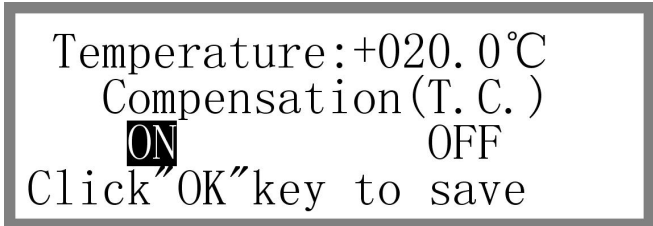
Use "↵" or "↩" to select "3 machine situation" in the menu, press "OK" to confirm. (e.g.chart)



Model :DRJ-VI-3.5KW
imei :D214010101
Status: Run OK
Press any key to exit

3.4 Temperature compensation

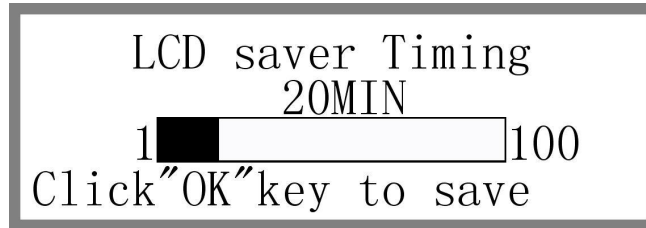
Use "↵" or "↩" to select "4 temperature compensation" in the menu, and then press "OK" to confirm. If want to open the "temperature compensation" model, please select the "ON". (e.g.chart)



Temperature:+020.0℃
Compensation(T.C.)
ON OFF
Click"OK"key to save

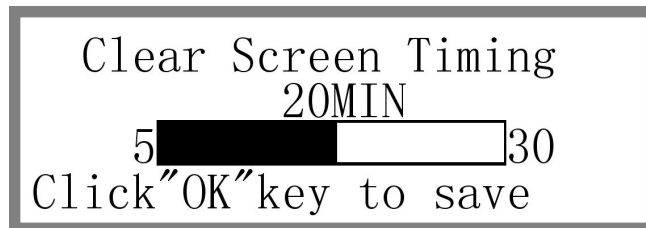
3.5 Backlight time

Use "↑" or "↓" to select "5 backlight time" in the menu and then press "OK" to enter the time setting. please use "↑" or "↓" to reduce or increase. (e.g.chart)



3.6 clean screen timing

Use "↑" or "↓" to select "6 clean screen timing", and then press "OK" to enter time delaying and cleaning setting. please use "↑" or "↓" to reduce or increase. (e.g.chart)



4, print

connect print, check the welding records (follow the instruction in 3.2), and select the print content , press "↑" or "↓" to select "print", and then press "ok" to confirm. At the same time, the machine will send the data to the print with "beep" , and prompt "printing finished". After finish printing, please don't take away the print immediately, please don't remove until finish the printing completely. (e.g.chart)



Printing...
Please wait...

Print successful!
Press any key to return

5, clean the welding records

Before power on, press and hold both of the “Exit” and “start”, and then power on, “deleting records” will be shown on the screen, it will cost 3-5 seconds to finish the operation process. (Please don't do this operation too often) (e.g.chart)

1. Delete records
2. Print Set

Delete the record,
Please wait...

6. Tips for welding

Importance before and after welding:

1, trial fit-up

Test the size of the pipe and fittings, to ensure there is no big gap between the matched fitting and pipe, if they are not matched properly, and then select other suitable one; if there has no choice, use planer to make the pipe to be flat and smooth.

2, mark

Mark on two pipes. The ways to mark are as follows:

- 1) Measure the depth (h) of the socket
- 2) from the end of the pipe, measure forward (h+ 10mm), make the mark on the pipe, the mark should be clear.

3, use centralizer

- 1) Clamped by two pipes;
- 2) Two clamp rings should be installed after the mark, or the socket connection will be failure;
- 3) Align the screw hole, and then tighten the nut

4, get rid of the oxide layer

- 1) Cleaning the pipe surface before chipping
- 2) Chipping by manual or mechanical planer in the marked part on pipe, in order to get rid of the oxide layer. DN110-DN200mm is suitable for manual planer; for having bigger surface area, DN225-DN630 is suitable for mechanical one.
- 3) Chipping evenly around the marked end
- 4) Big diameter pipe is allowed to get rid of the oxide player first when install underground, but should cover by cloth, and then put the centralizer and their son. Please pay attention to the cleaning.

5, clean the residue

Get rid of the oxide layer, clean the chipped area, any residue is not allowed; wash the cloth when it is dirty.

6, clean by alcohol (or acetone)

To ensure there has no dirt, sweat stain and other organic, and use cloth to clean with alcohol or acetone, to make sure that it is dry and dust-free.

7, dry

Before socket fusion, user has to sure that the joint area dry, or there will has bubble and bring strong impact on the welding quality.

8, install fitting

- 1) Find the correct direction of the fitting, and then joint the fitting and the electro connector.

2) Can use a mallet to rap around the connector until close the mark, but rapping is forbidden for joint pin

3) After installing one end of the fitting, a cleaned pipe will insert into the other end of the fitting. If matched tightly, there also can use a mallet, the mark area will be all in the fitting

4) If the inserted pipe exceeds the mark, please rap the fitting by mallet to make the pipe be back the mark.

5) When the pipe size is between DN110-DN250mm, the mallet can be used.

9,Correction

Adjust the position of pipes and fittings, pipes and fittings so on the same axis, to prevent the eccentric causing weak solder joints, poor air tightness.

10, serial number

Number the fitting for quality and responsibility controlling.

11, welding

1) Power on Please check for sure that the power is 220V, the cable should match the machine and the voltage of the wiring board should be within 10% of the standard voltage.

2) Testing

Try the machine at worksite for sure it can work.

3) Joint the fitting

Joint the output cable plug and fitting joint pin, if it is flexible, please change the copper connection.

4) Running the machine

Running the machine, operation as the instruction manual.

5) Adjust the parameters

Before welding, please testing the welding parameters. Lots of facts can influence the welding, such as the weather, the people experience, and material, etc. So for ensure the welding quality, the parameters need to be adjusted before welding. If there happens something unusual, such as current rises suddenly, please stop the machine, if the whole process cannot be finished, please change the fitting, then do the welding again.

6) Record

Please record the welding parameters during operation for tracking and analysis in future.

7) Demount

Disassemble the plug from the fitting. (When finish, please cut off the power first, then pull out the plug, keeps the cable in box)

12, checking

1) There should be obvious mark (to show length of onside part) on the inserting pipe or fitting.

2) The joint of HDPE pipeline system cannot overflow the melt.

3) The electric resistance wire cannot be forced out.

4) Through the prothole, there should be some overflowed melt (cannot be drop wise)

5) The operation will not pass if result is not accorded the above items.

13, cooling

The cooling process cannot be influenced by outside force, please don't move the joint and don't cooling mandatorily. The cooling time is according to the pipe size and weather.

7. Care and maintenance of the machine

- 1) after each use welding machine and turn off the power, remove the wire placed in the welding machine.
- 2) welding machine for a long time not to store when not in direct sunlight and moisture.
- 3) do not have any heavy pressure on the welding machine.
- 4) in transit Please put in a dedicated box welding machine and securely.
- 5) Do not put the machine on unsafe no guardrail height, to prevent falling.
- 6) do not wave or high frequency welding machines in use magnetic field region.

8. Safety Precautions

1. When using this device, ensure that the power line ground grounded, install the self-leakage protection.
2. Do not single-phase bipolar with grounding plug (three-pin safety plug) to change the two-pin plug.
- 3, before the device is powered on, select the appropriate output electrode connected to the tube.
4. Install the power plug, L.N.E .on the plug (≡) represent fire. Zero, the thread color may be different, generally yellow and green line is, if there is no yellow-green wire, black should be ground, red as FireWire or brown, yellow or blue zero line.
5. Make sure the input power to AC 220V (40-70HZ) of.
- 6, before construction, please do the safety measures. Do not barefoot or wear slippers operate any electrical equipment, construction pit in water or moist environments, wear insulated shoes (insulated boots) and helmet.
- 7, in case the device is powered, do not arbitrarily mobile devices. To move the equipment, turn off the power.
8. Do not use the welding machine in the rain or thunderstorm weather conditions prevent moisture EHV cable and machine generated when the conductive connective its security performance and thunderstorms cause electric shock or lightning struck the accident.
- 9, rain or prolonged wet weather when not in use, the device should be left to dry well-ventilated place.
- 10, the machine 220V AC high voltage parts, non-professionals without permission, please do not disassemble maintenance of equipment, in order to avoid accidents or increase the extent of damage to the equipment.Bare conductor similar to the case .
- 11, if found cable, plug or the output electrode insulation sleeve breakage, replace before use.

9. Common problems and solutions

Problem	Analysis	Solution
Indicator light cannot show on machine	Plug is flexible	Check plug
	Plug seat has no voltage	Check power supply or change it
	Power on-off is broken	Change on-off
	Cable is disconnected	Call professional
Indicator light on, screen off	Contrast ratio is not adjusted	Use ?I or ?I to adjust
	Wire unconnected inside machine	Call professional to check inside machine
	Connection has no problem	Call professional to repair
Show "frequency is too high or too low"	Frequency is not stable	Press "run" again
	Frequency is not between 40hz-70hz	Check or change power supply
Show voltage "too high or too low"	Use testing power	Wait for seconds then reboot
	Reboot is invalid	Check or change power supply
	Supply voltage is too high	Check or change power supply
	Power loading has low voltage	Check or change power supply
	Supply voltage is too low	Check or change power supply
	Front cable too long and too thin	Change power supply or find near by
	Power is not enough	Check or change power supply
Show "no output current, no connection" welding process stops	No fitting connection or loading	Connect fitting and load, run again
	The fitting connection or load invalid	Change the fitting or load
	Fitting or load is damaged or unconnect	Connect or check the fitting or load
	Output wire is broken	Call professional
Show "xxxV, voltage or current wrong adjusting"	Power voltage is not stable, exceed the standard	Check or change power supply
	Power voltage is too high (over 250V)	Reduce the voltage or change power supply
	Power voltage is too low (below 170V)	Raise voltage or change power supply
	Front cable too long and too thin	Change power supply or find near by

Problem	Analysis	Solution
Show" wrong running, reboot machine"	Wrong running	Cut off power,run after 3-5 seconds
	Repeat above process is invalid	Call professional
	Mark: the above problems and solutions just for your referance, please call us if there has other problems. Thank you for using our product.	