

## **Butt Welder Controller Setting**

# **Operation Manual**

## I、 Function Profile

1. Automatic voltage compensation function: constant voltage control, by changing the primary voltage signal of the welding transformer to the set value, automatically changing the trigger phase shift angle to achieve the purpose of maintaining the welding voltage constant.

It can compensate the change of grid voltage and the change of secondary circuit impedance to ensure the welding quality of the workpiece.

2. Counting function: It has a counting function to count the number of welding. Use this feature to view the number of welds.

3. Current display function: It can directly display the welding voltage value of the primary of the welding transformer.

4. 9 settings of welding specifications can be stored for the user to call.

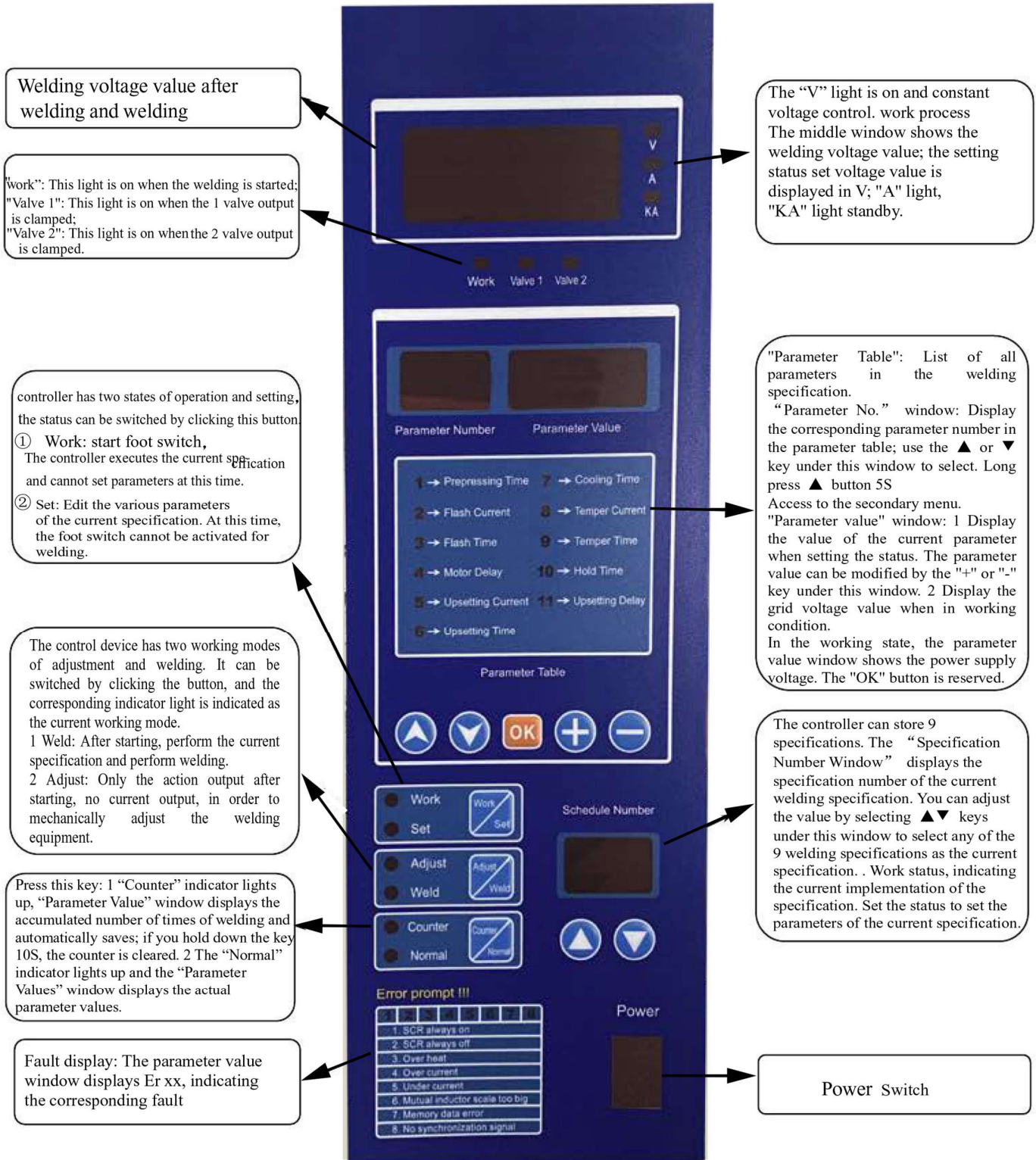
5. Fault diagnosis and automatic protection function: During the working process, if the controller detects abnormal condition, the machine will automatically close the output and display the fault code.

## II、 Technical Parameters

parameter	Value
Work Environment	Temperature $\leq 45^{\circ}\text{C}$ ; Dampness $\leq 85\%$ ; No strong magnetic field; no sharp vibration and impact;
Power	Single phase $380\text{V} \pm 10\%$ AC, $50\text{Hz} \pm 1\%$
Incoming signal	Voltage input signal
Driving ability	5 sets of output, each group capacity DC $24\text{V}/150\text{mA}$
Action output	5 sets of output, each group capacity DC $24\text{V}/150\text{mA}$
Power Consumption	$\leq 25\text{W}$
Automatic compensation of grid voltage	When the power supply voltage changes to the rated value of $+15\%$ to $-25\%$ , the output current changes $\leq 2\%$
Constant voltage trigger mode	When the secondary impedance changes by $\pm 15\%$ , the output voltage changes $\leq 2\%$
Sampling speed	0.5 cycle
Control response speed	1 cycle
Pre-press, Pressurized, spaced, Maintain, stop	0-250 cycle

Pre-heating, welding, annealing, boost, slow rise, slow down	0-250 cycle
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### III、 Panel description



### **III、 How to operate**

#### Parameter Setting

This controller has 11 pcs parameter (See the table below) The user needs to set according to the actual situation. When setting the parameters, the controller should be in the setting state, and press the  $\triangle$   $\nabla$  key to set the parameter value:

Select the specification number by pressing the key, then press the “ $\blacktriangle$   $\blacktriangledown$ ” key to select the parameter number, and then set the parameter value with the “ $\triangle$   $\nabla$ ” key.

No.	Parameter Name	Setting range	Function
1	Pre-Time	0-250Cycle	The time which from system startup to output flash current
2	Flash Current	0-450V	Flash current (voltage) setting or meaning Flash power setting
3	Flash Time	0-999Cycle	Duration of flash current
4	push time delay	0-250Cycle	When the flash current is over, the motor delays the time
5	Upset Current	0-450V	Set value of forging current (voltage) or meaning forging power setting
6	Upset Time	0-999Cycle	Duration of the top forging current
7	Interval	0-250Cycle	The output time of the top forging current to the tempering current
8	Temp-Current	0-450V	Setting value of tempering current (voltage)
9	Temp-Time	0-999Cycle	Duration of tempering current
10	Hold Time	0-250Cycle	After the tempering current is over, the holding time of the clamping valve is released, and the time is up, the clamping valve is released.
11	Upset Delay	0-999Cycle	After the end of the maintenance time, the time for the top forging valve to maintain the pressure (time to the top forging valve release, while the motor is reset)

② Mechanical adjustment

Before the welding work, in addition to setting the parameters, the machine needs to be mechanically adjusted to ensure that the actions are accurate. Methods as below:

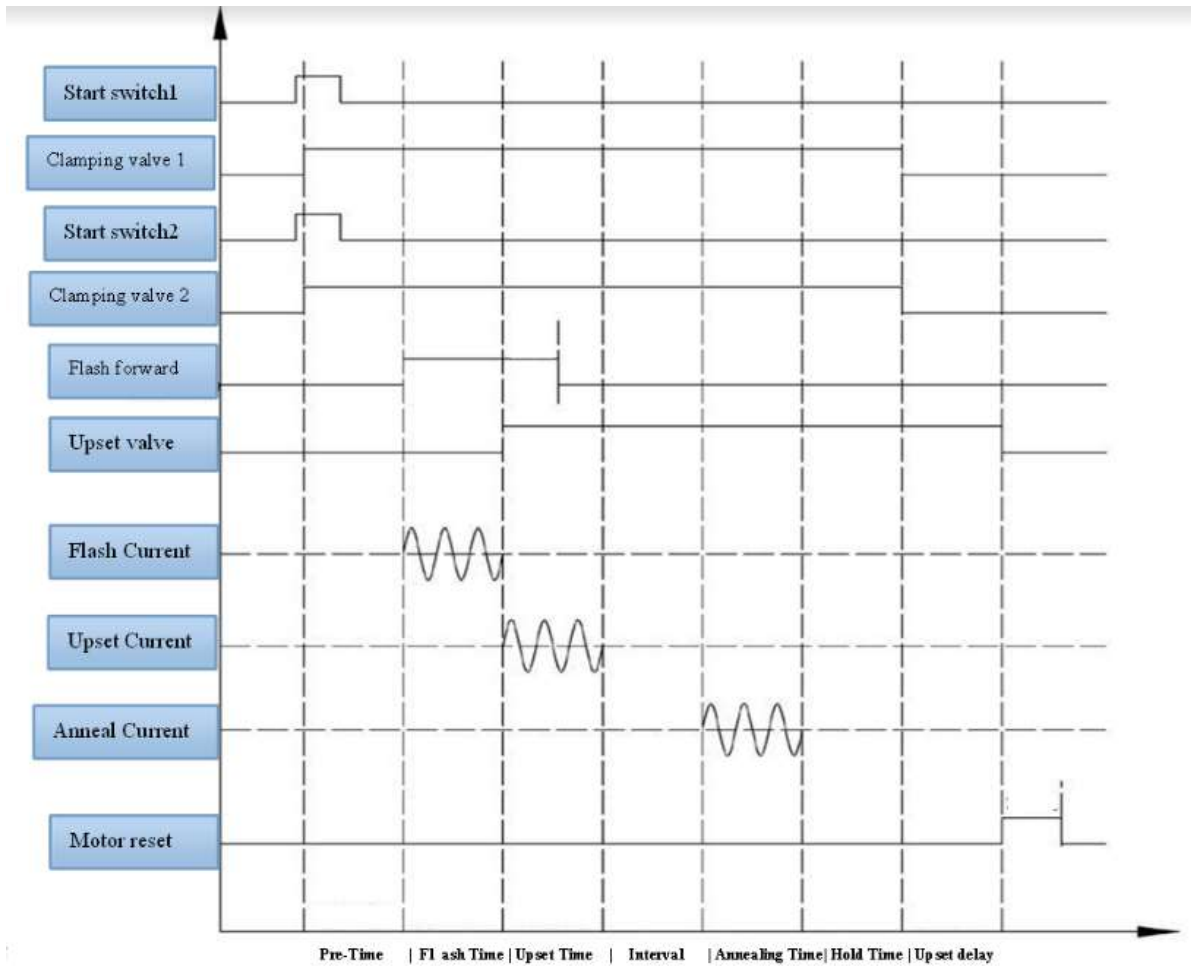
- 1、 Press the “Adjust/Weld” button to make the adjustment indicator light;
- 2、 Press the “Set/Work” button to make the work indicator light;
- 3、 The foot switch is activated, the controller has only the action output, and there is no welding current output.

③ Weld

After the parameters are set and the adjustment is normal, the welding can be performed. Methods as below:

- 1、 Press the "Adjust/Weld" button to make the welding indicator light on;
- 2、 Press the “Set/Work” button to make the work indicator light;
- 3、 Put in the work-piece, close the foot switch, and weld.

**IV、 Timing diagram**



## **V、 Troubleshooting and Tips**

During operation, the controller automatically turns off the output and displays it if it detects the following:

Serial	Code	Mean	Fault display reason	Solution
1	E r 01	SCR direct current	When the controller has no output, it detects a single or double tube conduction of the thyristor.	Check if the thyristor is damaged and the wiring is correct.
2	E r 02	SCR is not powered	When the controller outputs a pulse, it detects a single or double tube cut-off of the thyristor.	Check if the thyristor is damaged and the controller power supply 7 and 8 are wired
3	E r 03	Overheat	Switch action or abnormality when external thermal protection switch.	Check the protection circuit
4	E r 04	Overcurrent		
5	E r 05	Undercurrent		
6	E r 06	Contact wire error	Contact wire error	Check if the wiring matches the
7	E r 07	Memory data error	Controller parameter settings are incorrect	wiring diagram Check parameter settings
8	E r 08	No sync signal	Sync signal loss	Check if the wiring matches the wiring diagram