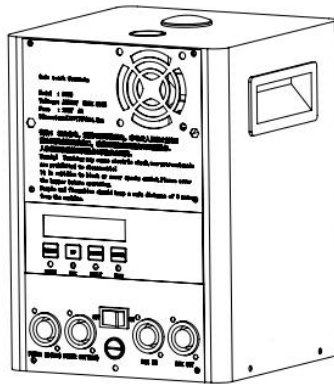


# Electronic Sparks machine User Manual

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**Please read this manual carefully before use**

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**◆ Important notes ◆**

1. If the machine has run sparking **CONTINUOUSLY** for 60seconds for one time , then we suggest user to close the machine to cool it down and restart it again 60seconds later. a long time continuous' running may cause a high temperature protection alarm from the machine itself, control program will force machine to stop & cool down.
2. Each time when finish operating machine, user should clear up consumables powder **COMPLETELY** inside the filling hopper & feeding rod channel, the best way is to make the machine **STILL** working for at least 30seconds after consumables powder run out. Please note that a remain consumable powder may block machine and there is no sparks when user operate this machine next time.
3. When this machine is operated with **DMX** controller, user should push the rod of the second channel to top quickly and remain it, because a emergency stop will occur when user slide the rod slowly from 240~255.
4. Please use designated dedicated consumable powder from us with this machine, otherwise we will not provide warranty service.

# I. Safety Instructions

## Warnings & Cautions



This symbol reminds the operator of danger and provides important information on safe and effective operation.

Example of safety statement:

Warning: Remind the operator of hazards or potential danger. This manual contains the hazard description and consequences.

## Eye Protection



This warning symbol reminds the operator to protect the eyes when operating machine.

## Caution! High Temperature!



The spark outlet is in a high temperature and hot , please DO NOT touch the outlet.

## Caution! Electricity Shock!



Warning: The dangerous voltage in the equipment and controller may cause electric shock.

Do not open the sparks machine and controller or remove any part inside without authorization. The machine and controller must be opened by person who received professional training.

## Warning of Moisture Prevention



Warning: Remind the operator to keep the machine and controller dry.

## Safety Distance



Keep a 3m safety distance away from this machine.

## **Emergency**

In case of emergency, stop the sparks machine quickly, and switch off the machine.

## **Noise Emission**

The noise of the sparks machine is less than 80dB, which is not harmful to the ears.

## **Cleaning**

When finish operating machine, the remain consumables inside machine may affect sparks effect next time or even damage machine, therefore please pour out the remain consumables inside machine, then switch on machine and make it working again, until there is no sparks coming out, to clear machine completely.

Please keep remain consumables in a dry and sealed container for use next time.

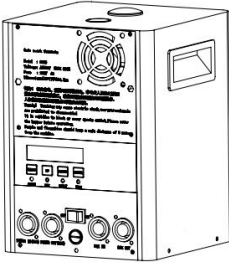
## **Disclaimer**

1. The company will not be responsible for any damage or injury arising from violation of the operating instructions included in this manual.
2. The company will not be responsible for free maintenance or repair in case of damage caused by failure to use original consumables.

## II. Safety Precautions

- 2.1 Do not open the case for repair, otherwise, serious accidents may be caused.
- 2.2 Keep the machine dry.
- 2.3 Properly close the top consumables cover, and prevent it from accidental opening. If consumables are accidentally ignited, cover them with sand until fire is extinguished. Keep consumables in a dry and sealed place to prevent moisture.
- 2.4 Keep people and flammables at least 3m away from the machine.
- 2.5 When finish operating machine each time, please pour out the remain consumables inside machine, then switch on machine and make it working again, until there is no sparks coming out, to avoid block or damage to machine.
- 2.6 One standard power supply (including connecting power cables) can be connected with at most six sparks machines in series. Otherwise, damage or fire may be caused.
- 2.7 Do not block the air inlet and outlet to avoid influence on ventilation.
- 2.8 Do not cover the nozzle.

### III. Product Parameters

Model	SP600
Specs	
Picture	
Item	Cold spark machine
Power	600W
Power input	AC220V/110V±10% 50HZ
Heating power	≤500W, 4.6A/110V, 2.3A/220V
Ffuse	250V, 6.3A
Preheat time	1~3min
Sparks style	fountain
Sparks height	adjustable 1.5-4.0m (depends on consumables)
Casing materail	steel / impact resistance / high density
Interface	double DMX port. double ac port
Connection Qty	6 pieces
Working Temp	- 30°C~50°C
Product size	178x178x252mm
N.W.	4.5kg
Accessories	Power cable, DMX cable, Remote

## IV. Operating Instructions of Electronic Sparks Machine

### 4.1 Operation Interface



4.1.1 LCD display area: displaying the operation menus and equipment running status.

4.1.2 LED indicator:

**READY:** If the system is running normally, this indicator will flash once a second.

**DMX:** If a DMX controller is connected, this indicator will flash frequently.

**FAULT:** If a fault is detected, this indicator will be normally ON.

**HEAT:** If the real-time temperature of the heating rod is less than the set value in the operation process, this indicator will flash.

4.1.3 Control button operation area



**MENU:** short-press it to switch the setting interfaces.

**UP:** increase the value.

**DOWN:** decrease the value.

**ENTER:** confirm and save the setting.

## 4.2 Operating Instructions

### 4.2.1 Contents displayed after startup:



**RUN Time**  
**00000.01 Minute**

**Note:** Once the machine is started, the cumulative running time will be displayed automatically, including the actual sparks time but excluding the standby and warm-up time.

### 4.2.2 Initialization interface: The initialization interface is shown below



**DMX Address 001**  
**Ready For Work**

The **DMX** address saved last time and “**Ready**” will be shown on the standby interface. User can warm-up machine via **DMX** controller or pressing **MENU** button on this panel interface to enter working status as below:





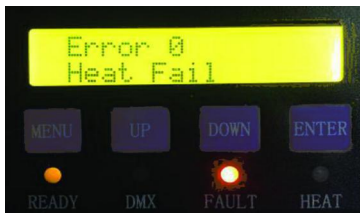
When machine enter to working status, the warm-up function will be enabled automatically, and the **DMX** address and real-time core temperature will be shown. If the temperature sensor's defect is detected, the **FAULT** indicator will flash, and the following interface will appear.



**Error 1**  
**Temp Sensor**

If the temperature sensor is in the normal status, warm-up will be started. The **HEAT** indicator will flash during warm-up process. After warm-up, the **HEAT** indicator will be OFF.

If the heating module's defect is detected during warm-up process, the following interface will appear.

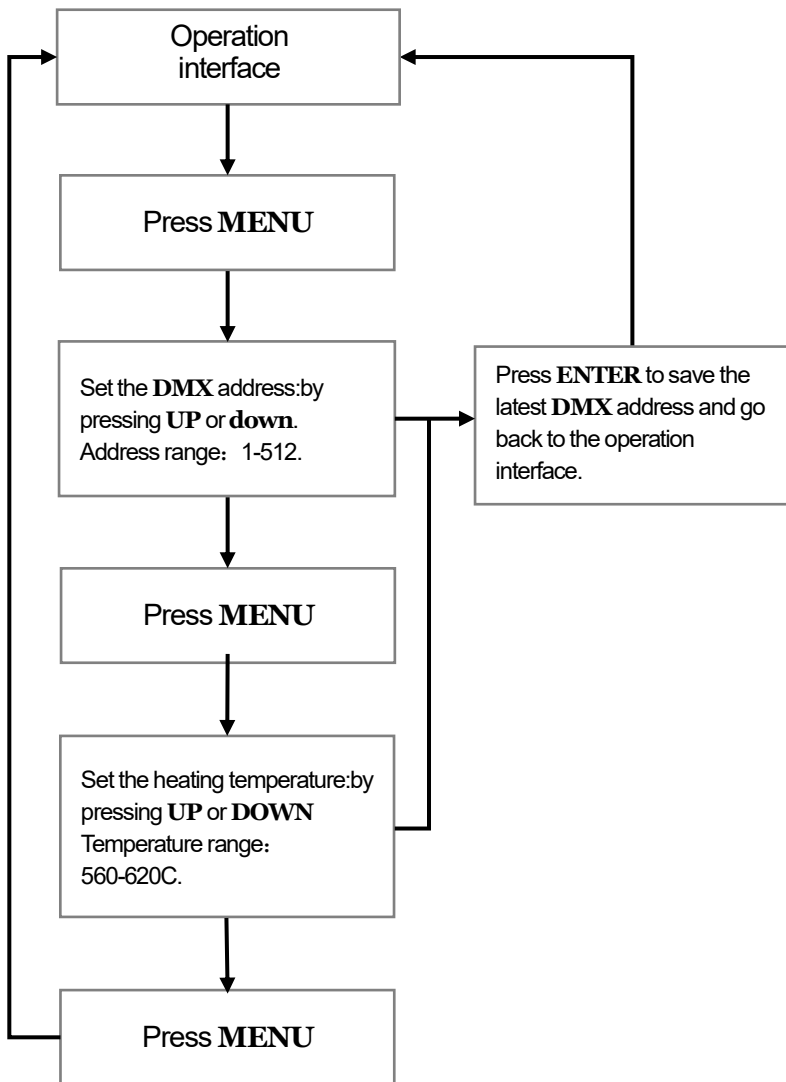


**Error 0**  
**Heat Fail**

### 4.2.3 Button operation process

There are four buttons: **MENU**, **UP**, **DOWN** and **ENTER**.

Operator can press **MENU** to set the parameters, the specific operation process is shown as below:



#### 4.2.4 Parameter setting

When the machine is in the working status, press **MENU** to enter the setting interface to set different parameters. Then go back to the main interface.

The interface of **DMX** address is shown below:



Press **UP** or **DOWN** to select the value within 1-512. Then press **ENTER** to go back to the working status interface or **MENU** to enter the core temperature setting interface.

The temperature setting interface is shown below:



Press **UP** or **DOWN** to set the temperature between 560°C and 620°C. Then press **ENTER** or **MENU** to go back to the working status interface.

#### 4.3 DMX Control

Each machine occupy 2 channels. For example: when setting machine's **DMX** address to 001, then this machine occupy 1st Channel & 2nd Channel on console controller.

Performances of 1st channel & 2nd channel as below:

1 <sup>st</sup> channel	Function
0-9	Sprak OFF
10-255	Sprak ON
2 <sup>nd</sup> channel	Function
0-9	Warm-up OFF
10-239	Warm-up ON
240-255	Emergency stop

## V. Connection of machines

### 5.1 Connection Mode



### 5.2 Machines Connection

#### 5.2.1 Cable between machine and power supply.



#### 5.2.2 Power cables between sparks machines.

connecting power cable is in "hand-in-hand" style connection between multiple machines, and maximum 6 machines. All power plugs are industrial plugs with lock.



#### 5.2.3 Communication cable between main controller and sparks machines.



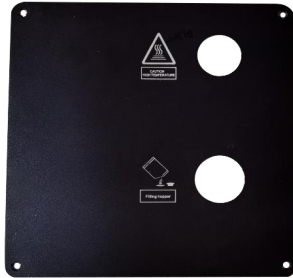
#### 5.2.4 Communication cables between sparks machines



## VI. Preparation before operation

### 6.1 Adding consumables into sparks machine

Add consumables through the top consumables filling hopper.



6.2 To Connect cable between power supply and spark machines.

6.3 To Connect communication cable between the console controller and sparks machine.

6.4 Switch on console controller.



6.5 Switch on sparks machine



## 6.6 Parameter setting

Set the **DMX** address and sparks effects according to Part III of this manual and the instructions of the console controller.

## 6.7 Startup

After parameter setting, make the corresponding button **ON**.



6.8 Push the second push rod of the controller to 10~239 to warm up machine.



6.9 When the core temperature reaches the set value, push the first push rod of the console controller to start sparks according to the sparks height. The sparks height depends on the push rod data: 10-19 as the first gear, 20-29 as the second gear, 30-39 as the third gear, 40-49 as the fourth gear, and so on.



**Note:** If the core temperature reaches the alarm value after long-time operation, sparks will be conducted intermittently and the **FAULT** indicator will flash. In this case, stop sparks, and wait for a while until the core temperature is equal to the set value.

## 6.10 Cleaning & switch off

After operation, switch off sparks machine, pour out excess consumables, then switch on machine and make it working again until there is no sparks coming out, to clear sparks machine completely, finally switch off sparks machine and main controller.

**Note:** Put remain consumables powder in a sealed & dry container for use next time.

## VII. Fault & Troubleshoot

Error code	Cause	Troubleshoot
Emergengc stop Please Restart	touch off 2# channel 240-255	switch off and restart
Error 1 Temp Sensor	sensor fault	replac sensor
Error 0 Heat Fail	heating fault	replace heat PCB
Error 2 High Temperature	high temperature	stop sparking 60~100s
Feeding channel blocked	/	clear feeding channel, heating rod

### machine operation steps:

Connect power supply ➡ Switch on machine for 30seconds ➡ Connect **DMX** cable  
➡ Run

## VIII. Remote Controller



A- Preheat, Star/Stop

B- Low

C- Medium

D- High

## IX. Warranty

- \* Thank you for choosing this product, as the company's customer, you will enjoy our considerate after-sales services.
- \* The warranty of this product will be valid for one year from purchase date, if any hardware fault occurs in the warranty period, the company will provide maintenance services free of charge. Do not disassemble and repair this product without authorization.
- \* Following cases are excluded from the warranty:
  1. Product is damaged as a result of improper handling, installation, operation, or other man-made reasons.
  2. Product has been disassembled, modified or repaired without authorization.
  3. Product is damaged by external factors (lightning, power supply, etc).
  4. Failure in pour out the remain consumables inside machine and restart machine to keep it working each time after finishing operating machine.