SPARK TIDE

SF-X5

USER MANUAL

CONTENTS

DISCLAIMER

Please read the manual carefully before installing and using this product. Failure to read or comply with this manual may result in injury to products and personnel, and Spark Fabrica shall not beresponsible for this.

This product is a professional machine, we do not assume any responsibility for accidents or lossescaused by the use or maintenance of this product by personnel without professional training anopermission.
if the information contained in the manual or the product specifications are changed, Spark Fabricawill not inform you further and responsible for any errors or omissions.
Our company reserves the right to modify the user manual at any time.

PREFACE

This manual includes warning, caution and notice concerning the safe operation of equipment. These warning, caution and notice come with the following icons. Please read them carefully!

⚠ WARNING   This warning indicates a dangerous situation that may result in death or serious injury if not avoided.

⚠ CAUTION   This alert indicates a dangerous situation that may result in mild or moderate injury if not avoided.

NOTICE   This means that you need to be careful.

1 PRODUCT INTRODUCTION

This product belongs to special effects equipment, only for professional use.This product belongs to the cold fireworks simulation special effects equipment, using CST technologyheating special metal powder, and sparking silver spark fountain which is safer than the traditional coldfireworks.lt has three controllable variables: height, density and duration.This product is widely used in weddings, concerts, sports events, event meetings and so on.Stimulate yourinterest and light up your activity.

1.1 PRODUCT OVERVIEW

GRANULE FILLING PORT
BIN BUTTON
HOPPER COVER
OUTPUT NOZZLE
ENTER/MENU
HANDLE
GO BACK
AIR OUTLET
AIR INLET
LCD SCREEN
INCREASE
N/A
DECREASE
FUSE
POWER SWITCH
POWER IN
POWER OUT
DMX IN
DMX OUT
DMX / CAN IN
DMX / CAN OUT
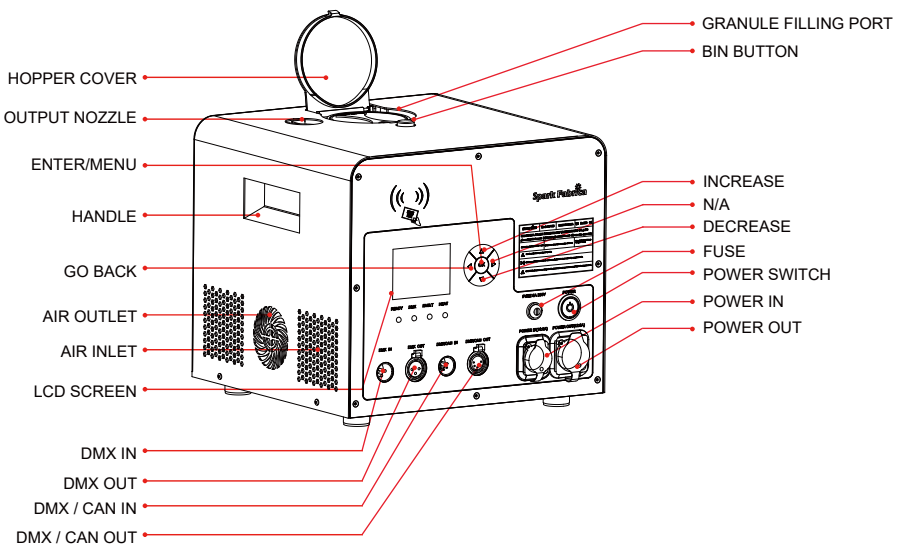
1.2 PRODUCT ACCESSORIES

1.6 Meter Power Plug or 3 Meters Power Pair Cable
3 Meters DMX Pair Cable
User Manual

NOTICE   Open the package carefully and check to make sure the goods are in good condition.

1.3 SPARK FABRICA GRANULE

A special metal powder has the characteristics of high content, little residue, belonging to a special consumables with no smoke, odor and other toxic gas when sparking.
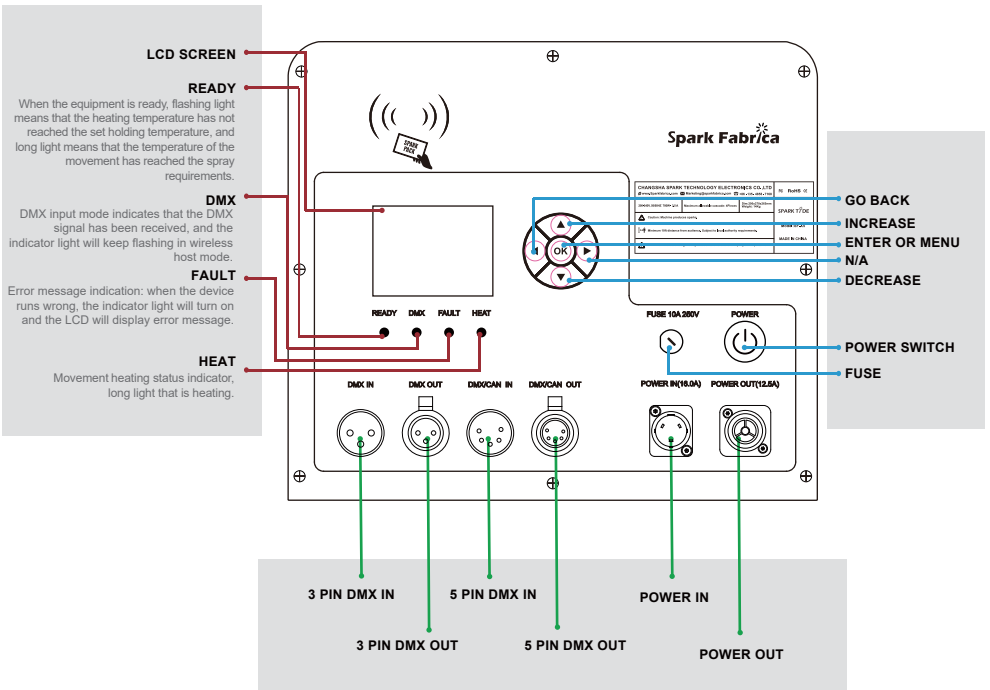
⚠ WARNING   Only the consumables provided by Spark Fabrica are allowed to be used. Spark Fabrica shall not be liable for any damage to machines, personnel and property caused by the use of consumables not provided by the company.
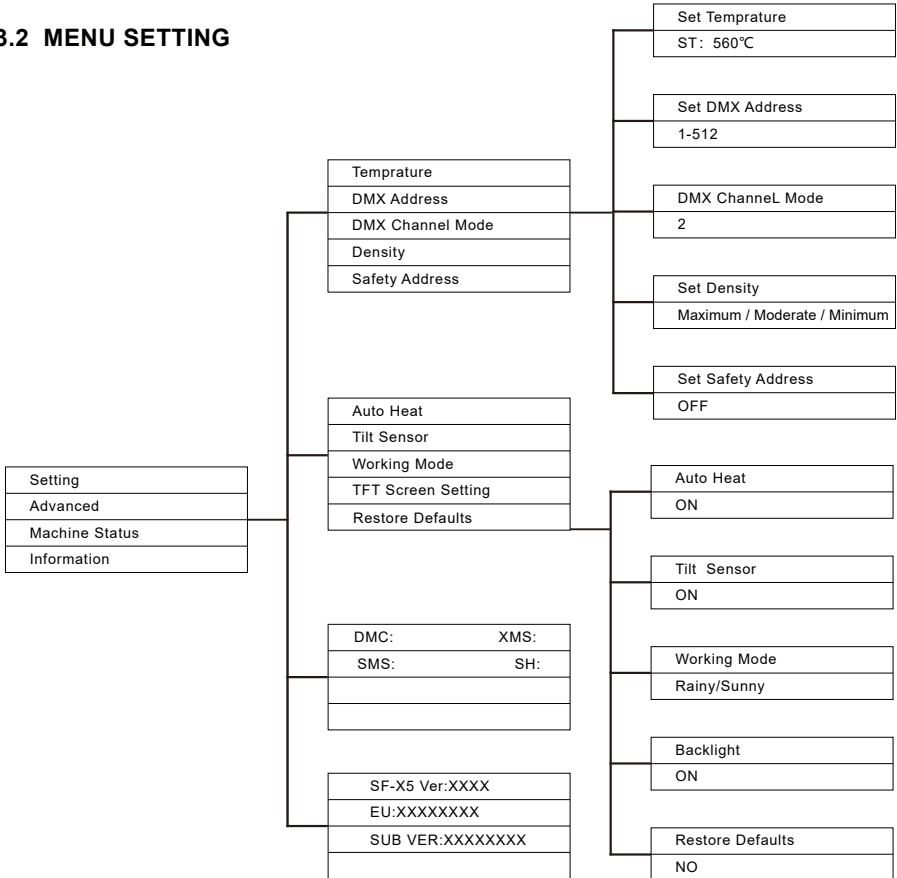
2 TECHNICAL PARAMETER

Identification	Manufacturer	SPARK FABRICA
	Name / Model	SPARK TIDE / SF-X5
	IP Rate	IP55
AC Power	Input Voltage & Frequency	100-120V，60HZ
		200-240V，50HZ
	Current Limiter Specifications	10A,100-120V / 5A,200-240V
	Constant Current	6.5A,100-120V / 3.5A,200-240V
	Nominal Total Power Consumption	700W
	Power Input Connector	SEETRONIC
	Power Output Connector	SEETRONIC
	DMX Signal Interface	3PIN/5PIN
Heating	Heat Up Time	<5 Minutes
Hopper	Powder Tank Capacity	300g
Technical Parameters	Lineary Adjustable Density	Maxmum/Moderate/Minmum
	Adjustable Height	3-5m
	Height Level	1-10 Level
	Powder Consumption (100% Output)	17-20g/Minute
	Maximum Single Continuous Duration	30s
Control	Control Protocol	DMX-512
	RFID Proximity Card	√
	SMPTE	Music Triggered
Accessory	Power Plug	SEETRONIC　(1.6Meter)
	Remote Controller	Optional
	DMX Cable	√ 3Meter
	Power Cable	√ 3Meter
	Safety Rope	Optional
	Safety Loop	√
	Bottom Mounting Screw	x
	Update Box	Optional
	120ohms Terminal Resistance	Optional
Certification	CE	√
	ROHS	√
Weight	Net Weight	14.6kg
	Gross Weight	17kg
Dimensions	Machine Dimensions - L*W*H	294mm*310mm*318mm
	Packing Dimensions - L*W*H	360mm*380mm*410mm
Granule	Granule	Spark Fabrica Granule

3 SCREEN OPERATION GUIDE

3.1 BACK PANEL INTRODUCTION

LCD SCREEN

READY

When the equipment is ready, flashing light means that the heating temperature has not reached the set holding temperature, and long light means that the temperature of the movement has reached the spray requirements.

DMX

DMX input mode indicates that the DMX signal has been received, and the indicator light will keep flashing in wireless host mode.

FAULT

Error message indication: when the device runs wrong, the indicator light will turn on and the LCD will display error message.

HEAT

Movement heating status indicator, long light that is heating.

READY   DMX   FAULT   HEAT

Spark Fabrica

GO BACK

INCREASE

ENTER OR MENU

N/A

DECREASE

FUSE 10A 280V   POWER

POWER SWITCH

FUSE

DMX IN   DMX OUT   DMX/CAN IN   DMX/CAN OUT   POWER IN(16.0A)   POWER OUT(12.5A)

3 PIN DMX IN   **5 PIN DMX IN**   **POWER IN**

3 PIN DMX OUT   **5 PIN DMX OUT**   **POWER OUT**

3.2 MENU SETTING

Set Temprature
ST： 560℃

Set DMX Address
1-512

Temprature
DMX Address
DMX Channel Mode
Density
Safety Address

DMX ChanneL Mode
2

Set Density
Maximum / Moderate / Minimum

Set Safety Address
OFF

Auto Heat
Tilt Sensor
Working Mode
TFT Screen Setting
Restore Defaults

Auto Heat
ON

Setting
Advanced
Machine Status
Information

Tilt Sensor
ON

DMC:	XMS:
SMS:	SH:

Working Mode
Rainy/Sunny

Backlight
ON

SF-X5 Ver:XXXX
EU:XXXXXXXX
SUB VER:XXXXXXXX

Restore Defaults
NO

NOTICE Press <OK> to enter the menu setting. The screen will automatically return to the main state interface with no modification.
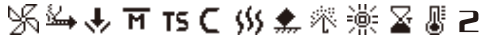
NOTICE Press ▲ key or ▼ key to modify parameters. The parameters will flash after the modification, and please press < 0K > key to save the change.

NOTICE Press ◄ key will return to previous page.

3.3 STATUS ICONS

NOTICE	When the icons are green means the machine is working normally, and yellow means abnormal.

Icon	Description	Icon	Description
✕	Blower Motor	C	Shutter On The Nozzle
↳	Shaft Motor	⚡	Temp Over Heat
↓	Hopper Motor	♠	Tip Over
⊓	Shutter Motor	❄	Rainy Mode
TS	Temp Sensor Unconnected	☀	Sunny Mode
⌛	Lack Of Time	🌡	PCB Too Hot
근	2 Channel Mode		

3.4 DMX PARAMETER LIST

FIRST CHANNEL	FUNCTION
0~10	Stop
11~255	Fountain Height 1~25
SECOND CHANNEL	**FUNCTION**
0~200	Pre-heat Off
11~39	Emergency Stop
56~200	Clear Material
240~255	Pre-heat On
SAFTY CHANNEL	**FUNCTION**
0~200	Control Off
201~255	Control On

4 OPERATION NOTES

The designed Ingress Protection Rate of this machine is IP55, the machine can be used in rainy weather which is under or similar to the testing condition of IP55.

4.1 WORKING CONDITION REQUIRED

⚠ WARNING — Do not mount the product on a flammable surface (linoleum，carpet, wood, paper, carton, plastic, etc). Make sure there are no inflammable or combustible materials in the using environment.

⚠ WARNING — Do not use in a confined space. Always install the product in a location with adequate ventilation, at least 20 in (50 cm) from adjacent surfaces.

⚠ WARNING — This product has no lightning arrester, please do not use this product in thunderstorm weather.

⚠ WARNING — Keep people or flammable materials at least 10 feet (3 meters) away from the machine, and make sure that debris does not fall on flammable objects.

⚠ WARNING — Do not use the machine at temperature above 122 'F (50℃).

4.2 SAFETY TIPS

⚠ WARNING   Always connect the ground wire to avoid electric shock.The machine cannot be submerged in water while operating it.

⚠ WARNING   Ground water entering or covering the bottom of the machine will cause machine failure or electrical leakage risk. Make sure the bottom of the machine is at a safe distance from the surface water in rainy weather to avoid surface the machine from the bottom.

⚠ WARNING   Do Not touch the sparks.During heating up and operation, do not touch the housing.

⚠ WARNING   Ensure nothing drop(s) into the nozzle of Spark Tide unit. Do Not cover output nozzle port.

⚠ WARNING   The product is very hot during operation and it remains hot for a long time after operation has stopped. Do not touch or put finger in the output nozzle.

⚠ WARNING   Make sure that children, unauthorized people and animals do not obtain access to the machine.

⚠ WARNING   The noise level generated from the spark machine unit is estimated at 80dB depending on the point nearest to the machine(s) during operational discharge mode.

⚠ WARNING   Wear eye protection to avoid eye injury while filling granules and testing spark machine(s).
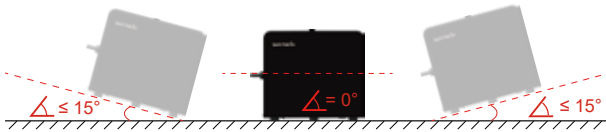
⚠ WARNING   The proper firefighting extinguishers are recommended as follows:Any type of sand or substance that can suffocate the active metals.Class "D" Fire Extinguishers for Metal Substance Fires.

5 MACHINE OPERATION

5.1 PERPARATION

Install the machine on a firm and level ground, and the maximum tilt angle shall not exceed 15 degrees.

5.1.1 INSTALL MACHINE

Install the product on truss by using the attached accessories.

> ⚠ **WARNING** Keep people or flammable materials at least 10 feet (3 meters) away from the machine, and make sure that debris does not fall on flammable objects.

*Specific installation notes please refer to "4 OPERATION NOTES".

5.1.2 FILL IN SPARK FABRICA GRANULE

Spark Fabrica Granule is the consumable specially designed for spark machine, to simulate cold fountain fire-works effect for stage.
Tear the vacuum package of granule, and fill in the Spark Fabrica Granule through the granule filling port on thetop of the machine.

*Fill the consumable into the feed port. NOT into the output nozzle
*Close the lid securely after filling
*The capacity of storage bin is 300g.

> ⚠ **WARNING** Make sure to fill the Spark Fabrica Granule through the feed port on the top of the fixture when power supply is off.

> ⚠ **WARNING** Wear eye protection to avoid eye injury while filling granules and testing spark machine(s).

5.2 CONNECT MACHINE

Connect power and DMX signal line.

*Connect the first machine's power plug.

*Connect the other machines in series with the power cable

*Connect the other machines in series with DMX connection cable.

*Connect PYRO SIM CONTROLLER or DMX512 controller

⚠ WARNING — Do not use damaged power plug and power cable.One power plug is recommended to connect 4 units in series at most for this product.

⚠ CAUTION — Please attach the configured 120 ohm terminal resistor to the outlet of the last machine to enhance the anti-interference of the machine.

⚠ CAUTION — Please calculate all products' total current required according to the power supply and fuse parameters of the products.

NOTICE — The standard length of the power connection line and the signal connection line is 3 meters, and a longer length can be reached by connecting in series.

5.3 INITIAL SETTING

Setting	Range	Default
Set Temperature	400-620	560
DMX Address	1~512	1
DMX Channel Mode	2-8	2
Density	Maximum / Moderate / Minimum	Maximum
Auto Heat	ON/OFF	ON
Tilt Sensor	ON/OFF	ON
Working Mode	Rainy/Sunny	Rainy
TFT BackLight	ON/OFF	ON
Safety Addresss	0~512	OFF(0)
Restore Default	Yes/No	No

*Turn on power

*Check the machine status icon(refer to icon introductions of 3.3)

⚠ **CAUTION**   When the icon shows yellow, it indicates that the machine is abnormal. Please use it after asking the professional to check and repair the machine.

*The sparking temperature of the machine is the factory default temperature. The product will heat up automatically when disconnected with DMX signal.Automatic heating function can be set to on or off, and the concrete operation please refer to "3.2 MENU SETTING".

*When spark machines connect DMX signal, the heating function can be started only on the Sim Pyro Console.

5.3.1 SET CHANNEL MODE

⚠ **CAUTION**   This machine has 2 channel mode and 3 channel mode, the specific setting please refer to "3.2 MENU SETTING".

5.3.2 SET DMX ADDRESS

Please set DMX address according to channel mode:

*In the 2 channel mode, please set spark machines' DMX address to 1.3.5.7......

NOTICE   Please do not set address code repeatedly.

5.3.3 SET SUNNY/RAINY MODE

NOTICE   In sunny mode, the sparking nozzle baffle is in the normally open state, and the sparking speed can be faster.

NOTICE   Specific settings please refer to "3.2 MENU SETTING".

5.4 SWIPE RFID TIME CARD

In order to avoid machine failure or other safety accidents caused by bad-qualified consumables, this product can only be used with special RFID time card.

> **NOTICE** Each swipe of the card can be recharged for 12 minutes, and each machine can swipe up to 2 time cards for 24 minutes at most.The card can only be swiped again when the remaining time is less than 20 minutes.

> **NOTICE** If the customer breaks the card swiping function or cancels the card swiping function at the customer's request, no quality guarantee and after-sales service will be provided by Spark Fabrica. Spark Fabrica shall not be liable for any accidents and losses about this.

5.5   START TO SPARK

The machine can be controlled by Pyro Sim Controller console or DMX512 console.

5.5.1 TURN ON CONSOLE'S POWER

5.5.2 TURN ON HEATING FUNCTION

> **NOTICE** The heating function of the second channel DMX value is 240~255, and it takes about 5 minutes to preheat after turning on.

> **NOTICE** When heating is turned on, the <HEAT> indicator light on the machine will turn to red, and the <READY> indicator light flashes green to indicate that the machine is heating.

> **NOTICE** Heating will complete after the <READY> indicator light turns green for a long time, and the spark machine will enter sparking status.

> **NOTICE** When using the Pyro Sim Controller,the screen will display the real-time temperature of each machine. When the temperature value of the control board turns green, it means that the heating is completed and the machine enters the status of sparking.

5.5.3 ADJUST SPARKING HEIGHT

Adjust sparking height through the first channel, and the height adjustment values is DMX parameter values 11-255.

⚠ WARNING Do Not touch the sparks or put finger in the output nozzle.

⚠ WARNING During heating up and operation, do not touch the housing.

⚠ WARNING Keep a minimum distance of 10 ft (3 m) from the machine to the nearest human or flammable material. And make sure no falling residue fly to flammable material.

⚠ WARNING The maximum height of indoor and outdoor granule is different. The maximum height of indoor granule is 3.5 meter, while outdoor granule is 5 meter.

NOTICE If spark machines are affected by wind, sparking height will be reduced, sparking direction will also be affected by the wind and inclined.

NOTICE The proper firefighting extinguishers are recommended as follows:Any type of sand or substance that can suffocate the active metals.Class "D" Fire Extinguishers for Metal Substance Fires.

5.5.4 SPARK THROUGH REMOTE CONTROLLER

Battery : 23VA 12V
Please check the spark machine and remote controller before use.
Step 1: Connect the power supply to the device, start the machine, and pull out the antenna in the remote controller.
Step 2: Hold down the < SET> key until the screen displays :Control Pair code 433M,it means code success.
Note: It is recommended that one remote controller controls up to 3 groups of spark machines at most (the same group should set the same DMX address).

OPERATE THE SPARK MACHINE AFTER CODING

Step 1: Connect the power supply and start the spark machine.
Step 2: Open feed port cover and add consumables.
Step 3: If the DMX console is not connected, the machine will automatically heat up.
When the < READY> light turns green, it means that the heating is complete, and the spark machine enters the spark mode.
Step 4: Press the <1 ON> key to start sparking, the default spark height is the highest height.
Step 5: Press <1 OFF> to end sparking
Step 6: After the show, press < CLEAR> to clear the material, and press this button repeatedly until no sparks are emitted.
Step 8: Turn off the machine, unplug the power, and pour out the remaining consumables.
Step 9: Keep the remaining consumables away from fire and in a dry place.

5.6 CLEAR MATERIAL

This product has the function of cleaning material, which can clean up the heated but not sparked consumables, so as to avoid nodulation in the heating chamber and causing stuck machine.

NOTICE   Use the cleaning function of the second channel for cleaning, DMX value is 56-200.

NOTICE   This function must be performed at the end of each show.

5.7 CLEAN MACHINE

● After clearing material, please clean the machine to extend the service life of the machine.
● Turn off the machine's power
● Remove power connection and DMX signal line cable.
● Use a damp cloth to remove dust and debris from the surface of the machine
● Unused Spark Fabrica Granule should be stored in a cool, dry place, vacuum packed insealed foil bags, and protected from moisture, heat, hot surface. open fire and other iganition sources

⚠ **WARNING** | The product is very hot during operation and it remains hot for a long time after operation has stopped.

⚠ **CAUTION** | Wear gloves to take out the hopper after cooling down machine. Don't touch the casing of the hopper to avoid scalding.

⚠ **CAUTION** | Dry the water on the machine when taking the hopper out in rainy days to avoid consumable accretion.

⚠ **CAUTION** | To eliminate unnecessary machine wear and improve its lifespan,unplug the power of the machine during the period of not-in-use.Never power off the product by pulling or tugging on the power cord.

6 MACHINE MAINTENANCE

Some steps are needed in order to clean and maintain the product for maximum usagehe recommended procedure is as follows;
After a period of using, check if there is any consumable accretion inside the nozzle. Do necessary cleaning up ifthere has some. or it may affect spark performance, even damage the machine.

7 FAILURE HANDLING

ERROR CODE	DESCRIPTION	SOLUTION
System Error E0 Storage Fail	System error: Storage fail.	Replace main board.
Motor Protect E1 M1	Blower motor protection /disconnected.	1. Restart machine to clear alerts,stop operating for 15 minutes until temperature return to normal. 2. Check wire connection of motor. 3. Replace motor. 4. Replace main board.
Motor Protect E1 M2	Shaft motor protection /disconnected.	1. Shaft motor clog (perform clean material function manually). 2. Check wire connection of motor. 3. Replace motor. 4. Replace main board.
Motor Protect E1 M3	Hopper motor protection /disconnected.	1.Hopper motor clog (perform clean material function manually). 2. Check wire connection of motor. 3. Replace motor. 4. Replace main board.
Motor Protect E1 M4	Shutter motor protection /disconnected.	1.Check wire connection of motor. 2. Replace motor. 3. Replace main board.
Temp Sensor E2 Unconnected	Temperature sensor disconnected.	1. Check wire connection of temperature sensor. 2. Replace temperature sensor. 3. Replace main board.
PCB Too Hot E3	Main board too hot.	Stop operating machine until main board temperature return to normal.

Error Code	Description	Solution
Time Remain E4	Insufficient time.	Please scan new RFID card.
Temp Over Heat E5	Heating protection due to over-temperature.	Stop operating machine until temperature return to normal.Alert will clear off automatically.
Heat Fail E6	Heating process fail.	1.Inspect wire connection of heating board. 2.Replace heating coil. 3.Replace heating board.
Tip Over E7	Tip over alert.	Machine will activate tip over protection if the angle is more than 45degrees. The alert will clear off automatically after put the machine back to normal position.
Sub PCB Unconnected E8	Sub-PCB disconnected.	1. Check wire connection of Sub-PCB. 2. Replace Sub-PCB. 3. Replace main board.
Shutter Sensor E9	Shutter sensor malfunction.	1.Check wire connection of shutter sensor. 2.Check the space between shutter and sensor (2-8mm is ideal space) 3.Replace shutter sensor.
Illegal Card Machine Locked	Machine locked because of using illegal or copy RFID card.	Use illegal or copy RFID card will lock the machine. If so ,seller will stop providing warranty and after sale service. To unlock the machine,please contact seller.
Out Of Control Heat AC OFF	Temperature out of control, AC shut off.	Stop operating, and restart machine after the fault was overcome.

Spark Fabrica

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