

SPARK SPIN

SF-X2

USER MANUAL



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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 be responsible for this.

This product is a professional machine, we do not assume any responsibility for accidents or losses caused by the use or maintenance of this product by personnel without professional training and permission.

The information contained in the Manual and the product specifications are subject to change without notice, and we assume no responsibility for any errors or omissions.

Our company reserves the right to modify the 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 to moderate injuries if not avoided.

NOTICE

This means that you need to be careful.

1 PRODUCT INTRODUCTION

This product is a special effects device. For professional use only.

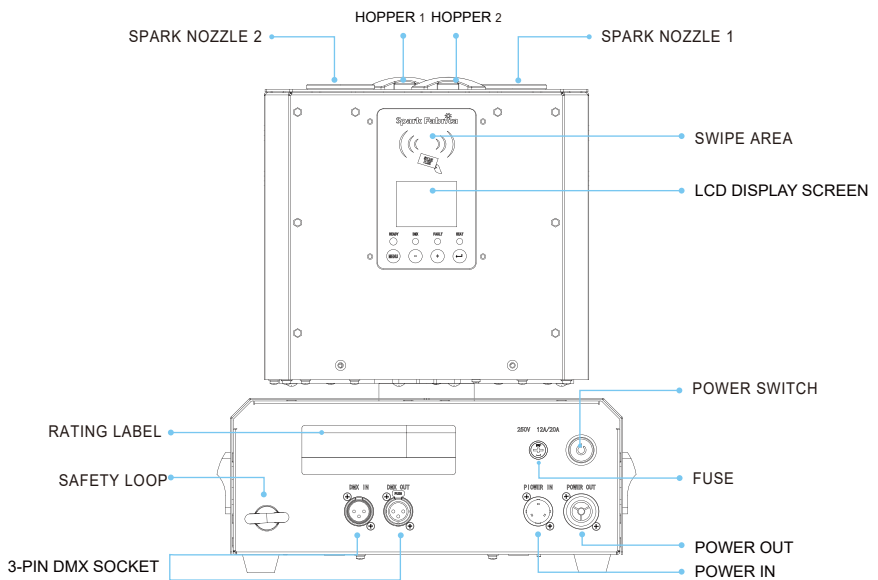
This product is a special effects device for the dynamic and static simulation of cold pyrotechnics.

Using CST technology, the tailor-made metal powder is heated to produce a dynamic and static fountain of silver sparks, which is safer than traditional cold fireworks.

With 9 static and dynamic effects adjustable: height, rotation, steering and static.

This product is widely used in weddings, concerts, sports events, meetings and so on. Spark your interests and ignite your events.

1.1 PRODUCT OVERVIEW



1.2 PRODUCT ACCESSORIES

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

NOTICE

Carefully unpack! Check and make sure the item is intact.

1.3 SPARK FABRICA GRANULE

A Kind Of Special Metal Powder With Full Spark And Less Residue, No Smoke, No Odor And No Toxic Gas During Use

WARNING

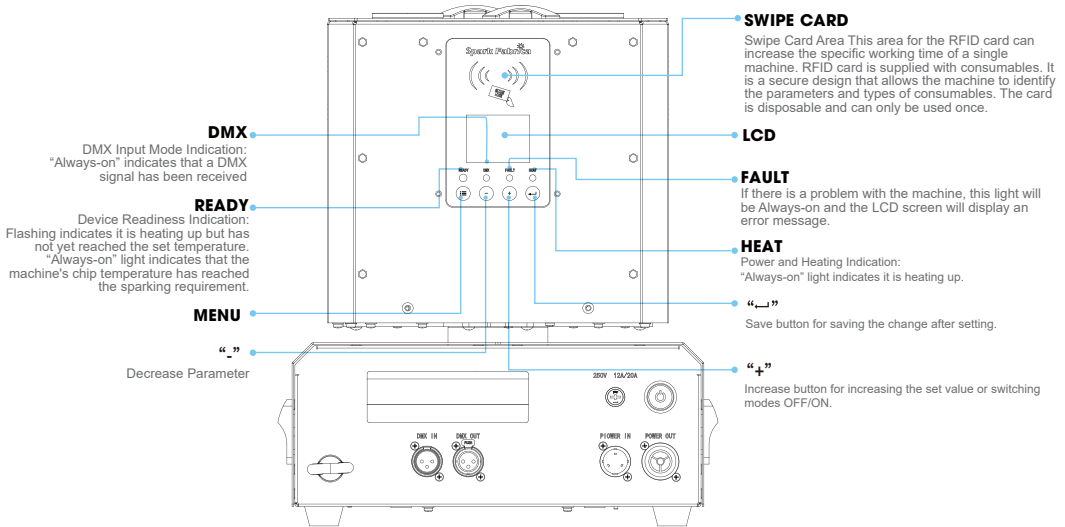
Only the consumables provided by Spark Fabrica are allowed to be used. Spark Fabrica shall not be liable for any machine breakdown, personal injury and property loss caused by the use of consumables not provided by the company.

2 TECHNICAL PARAMETER

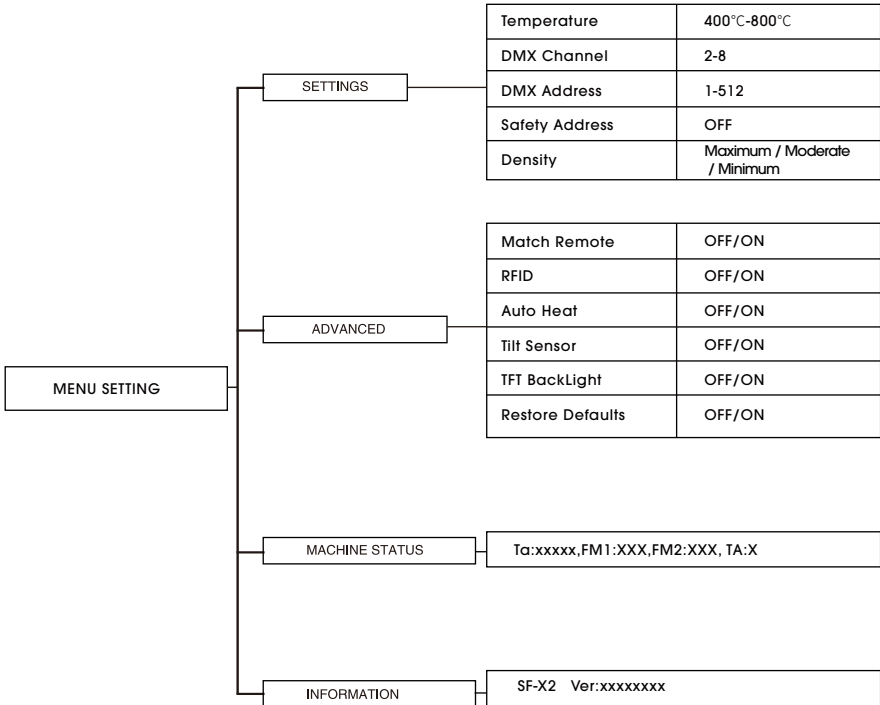
Identification	Manufacturer	SPARK FABRICA
	Name	SPARK SPIN
	Model	SF-X2
AC Power	Input Voltage & Frequency	100-120V, 60HZ 200-240V, 50HZ
	Current Limiter Specifications	20A,100-120V / 12A,200-240V
	Constant Current	11.8A,100-120V / 5.9A,200-240V
	Nominal Total Power Consumption	1300W
	Power Input Connector	SEETRONIC
	Power Output Connector	SEETRONIC
	DMX Signal Interface	3PIN
Heating	Heat Up Time	<5 Minutes
Hopper	Powder Tank Capacity	150g
	Lineary Adjustable Density	Maximum / Moderate / Minimum
Technical Parameters	Adjustable Height	3-5m
	Level	1-10
	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)
	DMX Cable	√ 3Meter
	Power Cable	√ 3Meter
	Safety Rope	Optional
	Safety Loop	x
	Bottom Mounting Screw	x
	Software Upgrade Box	Optional
	120ohms Terminal Resistance	Optional
Certification	CE	√
	ROHS	√
Weight	Net Weight	22kg
	Gross Weight	25kg
Dimensions	Machine Dimensions - L*W*H	319mm*320mm*404mm
	Packing Dimensions - L*W*H	450mm*425mm*475mm
Granule	Granule	Spark Fabrica Granule

3 ON-SCREEN OPERATING INSTRUCTIONS

3.1 BACK PANEL INTRODUCTION



3.2 MENU SETTING



NOTICE

Press the "☰" button to enter the menu settings, and the screen will automatically return to the main menu interface if no changes are made.

NOTICE

Press the "-" or "+" key to modify the parameter, and it will blink after modification, press "↵" key to save the change.

NOTICE








Press "↵" to save the settings.

3.3 STATUS ICONS

NOTICE

When the icons are all green, it indicates normal operation and when the icons are yellow, it indicates an abnormality.



	Blower Motor		Chip Temperature
	Shaft Motor		Tilt Sensor
	Hopper Motor		PCB Temperature
TS	Temp. Sensor		
	Time Remaining		

3.4 DMX PARAMETER LIST

3.4.1 DMX 2 CHANNEL MODE

FIRST CHANNEL	FUNCTION
0-15	Sparking OFF
16-39	Height Low, not spin (related firing height on HOST CONTROLLER is 1)
40-63	Height Middle, not spin (related firing height on HOST CONTROLLER is 2)
64-87	Height High, not spin (related firing height on HOST CONTROLLER is 3)
88-111	Height Low, Clockwise spin (related firing height on HOST CONTROLLER is 4)
112-135	Height Middle, Clockwise spin (related firing height on HOST CONTROLLER is 5)
136-159	Height High, Clockwise spin (related firing height on HOST CONTROLLER is 6)
160-183	Height Low, anticlockwise spin (related firing height on HOST CONTROLLER is 7)
184-207	Height Middle, anticlockwise spin (related firing height on HOST CONTROLLER is 8)
208-231	Height High, anticlockwise spin (related firing height on HOST CONTROLLER is 9)
232-255	Height High, anticlockwise spin (related firing height on HOST CONTROLLER is 10)

SECOND CHANNEL	FUNCTION
60-80	Clear Material (perform after each show)
20-40	Emergency Stop
0-10	HEAT OFF (disabled when auto-heat ON)
240-255	HEAT ON (disabled when auto-heat ON)

3.42 DMX 4 channel mode

FIRST CHANNEL (NOZZLE 1)	FUNCTION
0-15	Nozzle 1 Fountain OFF
16-255	Nozzle 1 Fountain ON(height adjustable)
SECOND CHANNEL (HEATING/CLEAR MATERIAL/EMERGENCY STOP)	FUNCTION
11-39	Emergency Stop
56-200	Clear Material (perform after each show)
240-255	Preheat On ((disabled when auto-heat ON)
THIRD CHANNEL (NOZZLE 2)	FUNCTION
0-15	Nozzle 2 Fountain OFF
16-255	Nozzle 2 Fountain ON(height adjustable)
FOURTH CHANNEL (SPINNING CONTROL)	FUNCTION
0-15	Not Spin
16-135	Clockwise Spin
136-255	Counterclockwise Spin

4 PRECAUTIONS FOR OPERATION

Please read the following precautions carefully before operating this machine.

4.1 ENVIRONMENTAL REQUIREMENTS

WARNING

Do not mount the product on flammable surfaces (linoleum, carpet, wood, paper, cardboard, plastic, etc.)

WARNING

Do not use in a confined space. Install the product in a well-ventilated location at least 20 inches (50 centimeters) from adjacent machinery.

WARNING

Please do not use this product during thunderstorms as it does not have lightning protection.

WARNING

Keep people or flammable materials at least 10 feet (3 meters) away from the machine and make sure that residue does not fall on flammable items.

WARNING

Operate the device only in an ambient temperature between 0°C (32°F) - 50°C (122°F).

WARNING

Ensure that there are no flammable or explosive materials in the vicinity.

4.2 SAFETY TIPS

WARNING Make sure to connect the ground wire properly to avoid electric shock.

WARNING If water enters or covers the bottom of the machine, it will cause machine to malfunction or electrical leakage. Make sure that the bottom of the machine is far enough away from the impounded surface water on rainy days, so as to prevent the water from entering the inside of the machine

WARNING Do not touch sparks. Do not touch the machine casing while heating or operating the machine.

WARNING Ensure that no objects fall into the nozzle. Do not cover the nozzle.

WARNING Keep animals, children and unauthorized persons away from the machine.

WARNING Noise level of the operation of the spark machine is 80 db (at the point closest to the machine).

WARNING Please wear safety glasses when adding consumables or testing the machine to prevent eye injury.

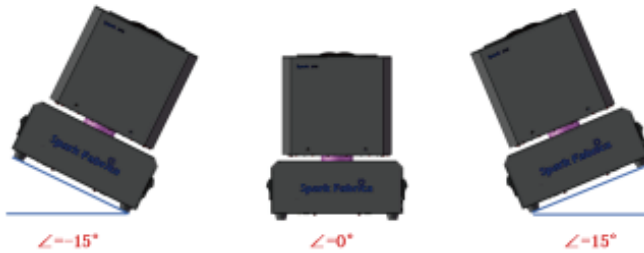
WARNING Suitable fire extinguishers are as follows:
1.Any items similar to sand or soil can be used to cover and put out the fire.
2.Please use Class D Fire extinguishers for metal materials on fire.

WARNING The temperature of the product is quite high during operation and remains high for a long time after operation. It is strictly forbidden to put your fingers into the nozzle.

5 OPERATE THE MACHINE

5.1 PREPARATIONS

Place machines on a firm and level ground, with a recommended maximum tilt angle of 15 degrees or less.



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”.

5.2 ADD CONSUMABLES

Consumables designed specifically for spark machines, to create cold pyrotechnic effects for the stage.

*Tear open the packaging bag of the consumables, pour the consumables through the feeding port at the top of the machine.

*Pour the consumables into the feeding port rather than the sparking nozzle.

*Remember to close the lid after adding the consumables.

*The storage bin capacity is 150 gram.

⚠ WARNING

Please pour the consumables into the feeder at the top of the machine **with the power off**.

⚠ WARNING

Please wear safety glasses when adding consumables or testing the machine to prevent eye injury.

5.3 MACHINE CONNECTION

Power supply connection and DMX signal cables connection

- *Get the first unit plugged in
- *Connect the other machines in parallel with power connection cables.
- *Connect the other machines in parallel with DMX signal cables.
- *Connect PYRO SIM CONTROLLER or DMX512 console with the machines.

WARNING

Do not use damaged power plugs and power connecting cords. 1 power plug is recommended to connect up to 4 units of this product in parallel at most.

CAUTION

Please calculate the total current of all machines in accordance with the power supply and safety parameters of the product.

CAUTION

Please connect the configured 120 Ohm termination resistor to the signal output port of the last device. It may improve the noise immunity of the device.

NOTICE

The standard length of a power connecting cord and a signal cable is 3 meters. Multiple tandem cords can achieve a longer length.

5.4 INITIAL SETTING

SETTING	RANGE	DEFAULT
Temperature	400°C-800°C	590
DMX Channel	2-8	2
DMX Address	1-512	1
Safety Address	0-512	OFF
Density	20-100	100
Auto Heat	OFF/ON	ON
Tilt Sensor	OFF/ON	ON
TFT BackLight	OFF/ON	ON
Restore Defaults	OFF/ON	OFF

*Turn on power

*Check machine status icons (refer to 3.3 Status Icons)

CAUTION

When the icon shows yellow, it means that the machine is in abnormal condition, and can only be used again after professional inspection and repair.

CAUTION

The sparking temperature of the machine is the factory default. The automatic heating function will be automatically turned on if the DMX signal is not connected, but it can be set to on or off. For details, please refer to 3.2 Menu Settings.

CAUTION

When connected to the DMX signal, the machine can only be heated by turning on the heating function on the host controller.

5.4.1 DMX ADDRESS SETTING

Set the DMX address of the spark machine according to the channel mode:

*In 2-channel mode, please set the DMX address to 1, 3, 5, 7

*In 4-channel mode, please set the DMX address to 1, 5, 9, 13

NOTICE

Do not set the DMX address repeatedly.

5.5 SWIPE RFID TIME CARDS

To avoid machine malfunction or other safety accidents caused by poor quality consumables, Only the RFID time cards provided by our company are allowed.

NOTICE

Each card enables the unit to work 12 minutes, with a maximum of 2 time cards per machine and a maximum accumulation of 24 minutes. A new card can only be swiped if there is less than 20 minutes remaining.

NOTICE

If the customer cracks the swipe function by himself or cancel the swipe function at his request, he will not enjoy the quality assurance and after-sale service provided by our company, and we will not be responsible for any accidents and losses caused by this.

5.6 START TO SPARK

The spark machine can be controlled by the dedicated host controller or a DMX512 console

5.6.1 POWER ON THE CONSOLE

5.6.2 TURN ON THE HEATING FUNCTION

NOTICE

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

NOTICE

When the heating function is on, the HEAT indicator on the machine will light up in red and the READY indicator will flash green at the same time to indicate that the machine is heating up.

NOTICE

When the READY indicator turns a steady green, it means the heating is complete and the machine enters the sparking state.

NOTICE

The real-time temperature of each machine will be displayed on the screen if you use the host controller to control. When the temperature value on the console turns green, it means that the heating is complete and the machine is ready to spark.

5.6.3 PRECAUTIONS FOR SPARKING

WARNING

Never touch the sparks or put your fingers into the nozzle of Spark Spin, danger of getting burnt.

WARNING

Do not touch the fixture during operation as the housing heats up.

WARNING

Keep people or flammable materials at least 10 feet (3 meters) away from the machine. Make sure that residues do not fall on flammable items.

WARNING

The maximum height of the materials differs between indoor and outdoor, with indoor materials up to 3.5 meters and outdoor materials up to 5 meters.

NOTICE

If affected by the wind, the height of the sparks will be reduced and the direction of that will also be tilted.

NOTICE

Suitable fire extinguishers are as follows:

- 3.Any items similar to sand or soil can be used to cover and put out the fire.
- 4.Please use Class D Fire extinguishers for metal materials on fire.



5.6.4 USE THE REMOTE CONTROLLER TO CONTROL THE SPARKING

1 ON	The first set of machines sparking	2 ON	The second set of machines sparking	CW	Clockwise spin
1 OFF	The first set of machines OFF Sparking	2 OFF	The second set of machines OFF Sparking	CCW	Counterclockwise spin
SET	Match remote code	5 S	Sparking for 5 seconds	30 S	Sparking for 30 seconds
CLEAR	Clear material	15 S	Sparking for 15 seconds	OFF	Stop all the machines

WARNING

The remote controller needs to be matched code first to control the machine, and it must be used in the case of DMX disconnect, otherwise the remote control will not be available.

WARNING

The spark shooting will stop automatically after 30 seconds, and the clearing material time is 5 seconds at most every single time

5.7 CLEAR MATERIAL

This product offers the function of clearing material, which can clean the consumables that have been heated but not ejected. It may prevent the machine from being stuck by clogging in the combustion chamber effectively.

NOTICE

Clearing material is the function of the second channel. DMX values are 60-80.

NOTICE

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

5.8 CLEAN MACHINE

To prolong the lifetime of the machine, clean the machine thoroughly each time after clearing material as below.

*Power off the machine

*Disconnect the power cord and the DMX signal cable from the machine.

*Clean dust and debris from the surface of machine with a damp cloth

*Place unspent consumables in the vacuum bag and seal tightly. Store in a cool, dry place away from moisture, high temperatures, naked flames, and other sources.

WARNING

The maximum height of the materials differs between indoor and outdoor, with indoor materials up to 3.5 meters and outdoor materials up to 5 meters.

CAUTION

In order to avoid unnecessary wear and tear on the machine and to increase the service life of the machine, please follow the steps below:

1. Do not disconnect the power supply of the machine by pulling or jerking the cord from the outlet.

2. When not in use, please unplug and disconnect the power cord.

6 MACHINE MAINTENANCE

To maintain optimum performance, the spark machine requires some maintenance as follows :

*After using the machine for a while, please check whether there is any consumable stuck in the sparking nozzle.

If necessary, please clean it, otherwise it may affect the sparking effect and even damage the machine.

*Please test your spark machine once a month to maintain optimal performance.

7 FAILURE HANDLING

ERROR CODE	DESCRIPTION	SOLUTION
System Error E0 Storage Fail	System Error: StorageFail	Replace main board
Motor Protect E1 M1	Blower motor protection/ disconnected	1.Restart machine to clear alerts,stop operating for 15 minutes until temperature returns 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 stuck (manual cleaning required) 2.Check wire connection of motor 3.Replace motor 4.Replace main board
Motor Protect E1 M3	Hopper motor protection/ disconnectd	1.Hopper motor stuck (manual cleaning required) 2.Check wire connection of motor 3.Replace motor 4.Replace main board
Temp Sensor E2 Unconnected	Temperature sensor disconnected	1.Check wire connection of temperature sensor 2.Replace Temperation sensor 3.Repalce Main board
PCB Too Hot E3	Main board too hot	Stop operating machine until main board temperature returns to normal
Time Remain E4	Insufficient time	Please swipe a new RFID card
Temp Over Heat E5	Heating protection due to over-temperature.	Stop operating machine until temperature returns to normal. Alert will go 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 45 degrees. The alert will clear off automatically after putting 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
Illegal Card Machine Locked	Machine locked because of using illegal or piratic RFID card.	Using illegal or piratic RFID card will lock the machine. If so ,seller Will stop providing warranty and after sale service. To unlock The machine,please contact seller.

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