

SPARK TITAN PLUS

SF-X0 PRO

USER MANUAL



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DISCLAIMER

Please read the manual carefully before instaling and using this product Failure to read orcomply with this manual may result in injury to products and personnel, and Spark Fabrica will not be responsible 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, SparkFabrica will 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 is one of the special effect devices and is for professional use only. It uses CST technology, heating special metal powder and silver spark fountain, which is safer than traditional cold fireworks. It has three controllable variables: height, density and duration. This product is widely used in weddings, concerts, sports events, meetings and so on, stimulating interest and enlivening activities.

1.1 PRODUCT OVERVIEW



1.2 PRODUCT ACCESSORIES

1.6 Meter Power Plug or 3 Meters Power Pair Cable
3 Meters DMX Pair Cable
T-type Wrench
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 high content, low residue characteristics, belonging to special consumables with no smoke, odour 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 TITAN PLUS / SF-X0 PRO
	IP Rate	IP55
AC Power	Input Voltage & Frequency	100-120V, 60HZ 200-240V, 50HZ
	Current Limiter Specifications	25A,100-120V / 12A,200-240V
	Constant Current	16.3A,100-120V / 8.1,200-240V
	Power	2300W
	DMX Signal Interface	3PIN/5PIN
Heating	Heating Time	7~9min
Hopper	Powder Tank Capacity	700g
Technical Parameters	Adjustable Height	4-8m
	Height Level	1-10 Level
	Powder Consumption (100% Output)	55g/Minute
	Maximum Single Continuous Duration	30s
Control	Control Protocol	DMX-512
	RFID Proximity Card	√
Accessory	Power Plug	1.6Meter
	DMX Cable	3Meter
	Power Cable	3Meter
	Safety Rope	Optional
	Safety Loop	√
	Bottom Mounting Screw	√
	Update Box	Optional
Certification	120ohms Terminal Resistance	Optional
	CE	√
Weight	ROHS	√
	Net Weight	25kg
Dimensions	Gross Weight(2 unit flight case)	73kg
	Machine Dimensions - L*W*H	465mm*345mm*330mm
	Size of 2 unit flight case size - L*W*H	950mm*590mm*520mm
Granule	Granule	Spark Fabrica Granule

3 SCREEN OPERATION GUIDE

3.1 BACK PANEL INTRODUCTION

READY

Equipment Readiness Indication:When this indicator light flashes,it means that the machine is heating up but has not reached the default temperature.And the "Always-On" light means the chip temperature has reached the sparking requirement.

DMX

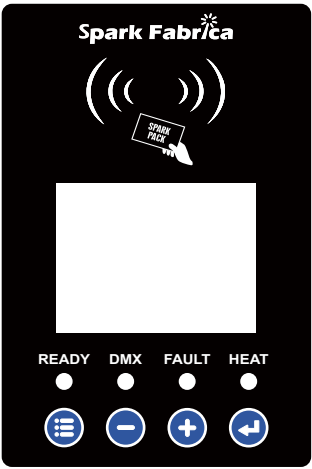
DMX Input mode indication:Always-On" light indicates that the DMX signal has been received.

FAULT

Error message indication:When the device runs wrong, the indicator light will be always on and the LCD will display error message

HEAT

Power Supply Indication and Heating Indication:Always-On light indicates that it is under heat.



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



Decrease button for Decreasing the set value or switching modes.



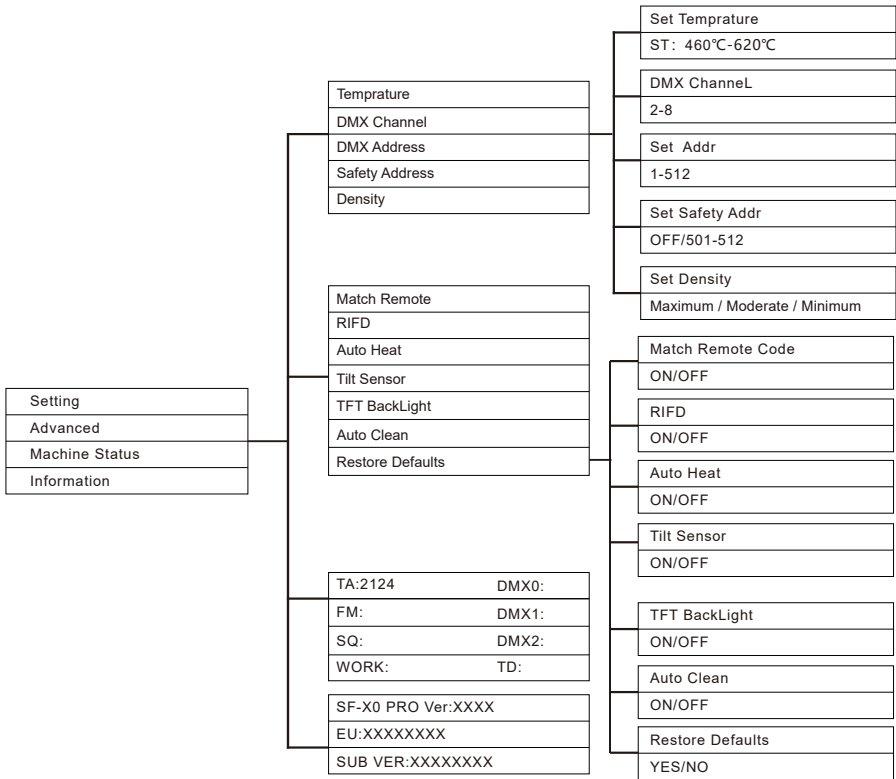
Increase button for increasing the set value or switching modes .



ENTER OR MENU

Save button for saving the change after setting.

3.2 MENU SETTING



NOTICE

Press <  > 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 <  > key to save the change.

NOTICE

Press <  > key will return to previous page.

3.3 STATUS ICONS



	Blower Motor		Shutter On The Nozzle
	Shaft Motor		Temp Over Heat
	Hopper Motor		Tip Over
	Shutter Motor		PCB Too Hot
	Temp Sensor Unconnected		Lack Of Time
	2 Channel Mode		

NOTICE

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

3.4 DMX PARAMETER LIST

FIRST CHANNEL	FUNCTION
0~10	Stop
11~255	Fountain Height
SECOND CHANNEL	FUNCTION
0-200	Heat Off
56~200	Clear Material
240-255	Heating

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

Keep audience 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 °C).

⚠ WARNING

Do not use the machine indoors.

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

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

⚠ 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

The noise level generated from the spark machine unit is estimated at 100dB depending on the point nearest to the machine(s) during operational discharge mode.

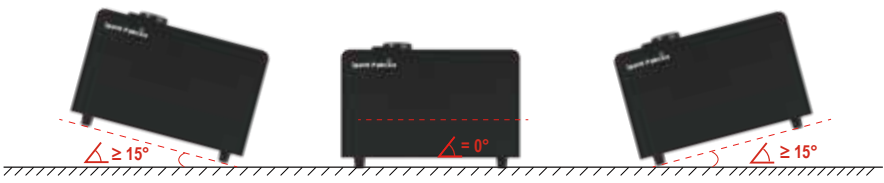
⚠ WARNING

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 audience 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 fireworks effect for stage.

Tear the vacuum package of granule, and fill in the Spark Fabrica Granule through the granule filling port on the top of the machine.

***Fill the consumable into the feed port. NOT into the outut nozzis**

***Close the lid securely after filling.**

***The capacity of storage bin is 700g**

**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 2 units in series at most for this product.

5.3 INITIAL SETTING

SETTING	DEFAULT	RANGE
Set Temperature	600 C	460 C-620 C
DMX Channel	2	2-8
DMX Address	1-512	1-512
Safety Address	OFF	OFF/501~512
Density	Maximum	Maximum /Moderate / Minimum
Match Remote	OFF	ON/OFF
RIFD	OFF	ON/OFF
Auto Heat	ON	ON/OFF
Tilt Sensor	OFF	ON/OFF
TFT BackLight	OFF	ON/OFF
Auto Clean	OFF	ON/OFF
Restore Defaults	NO	YES/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.

**CAUTION**

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”.

**CAUTION**

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

5.3.1 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.

5.4 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 201~255, 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**

According to the particle size of granules, the maximum height can reach 10 meters.

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.

5.6 CLEAR MATERIAL

This product has the function of cleaning material, which can clean up the heated but not sparked consumables, so as to avoid agglomeration 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 machine surfaces. Unused Spark Fabrica Granules should be stored in a cool, dry place, vacuum-packed in sealed foil bags and away from moisture, heat and away from damp, heat, hot surfaces, naked flames and other sources of ignition.

6 MACHINE MAINTENANCE

NOTICE

Some steps are needed in order to clean and maintain the product for maximum usage.
The recommended procedure is as follows:

NOTICE

After a period of using, check if there is any consumable accretion inside the nozzle. Do necessary cleaning up if there 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 booster. 2.Replace heating booster
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.



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