

ENGLISH

MAG:CFX[®]

USER AND INSTALLATION MANUAL

SPARXTAR



CE

PART01213 rev 01-03

DISCLAIMER

⚠ WARNING

Read this manual carefully before installing and/or using this product. Failure to read the manual and to follow the printed instructions may lead to personal injury and/or damage to the product.

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We further refer to the General Conditions. These are available on request, free of charge.

Although considerable care has been taken to ensure a correct and comprehensive description of all relevant components, the manual may nonetheless contain errors and inaccuracies.

Should you detect any errors or inaccuracies in the manual, we would be grateful if you would inform us. This helps us to further improve our documentation.

TABLE OF CONTENTS

Introduction	4
Target group	4
Language	4
Abbreviations	5
Revision table	5
1. Description	6
1.1. Main parts	6
1.2. Technical data	7
1.3. Product identification	8
1.4. SPARXTAR powder	8
1.5. Accessories	8
1.6. DMX control	9
1.7. Display panel	10
1.8. RDM capability	12
2. Safety	13
2.1. General safety rules	13
2.2. Rigging	13
2.3. Noise levels	13
2.4. Safety symbols	14
2.5. Safety warnings	14
2.6. Risk zones	16
3. Installation and use	18
3.1. Install on stage	18
3.2. Mount on a truss	19
3.3. (Re)fill the hopper	22
3.4. Connect the machine	24
3.5. Link multiple machines	25
3.6. Fire with DMX	26
3.7. Clean up	27
4. Troubleshooting	28
5. Maintenance	28
6. Correct disposal	29
7. EC Declaration of Conformity	30

INTRODUCTION

Congratulations! You have bought a great new product from MAGIC FX.

This manual contains all information required for the intended use of the equipment. Deviation from the described intended use can result in a hazardous situation and/or property damage.

This manual includes notes and warnings on safe operation of the equipment. These notes and warnings are accompanied by the following icons. Read them attentively!

 DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.
 WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
 NOTICE	Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

TARGET GROUP

This manual is targeted at authorised personnel in the event industry that install and operate the SPARXTAR.

Authorised personnel are those who:

- Are appointed by their supervisor to install and/or operate the SPARXTAR.
- Are trained in recognizing and avoiding hazards related to SFX applications at events.
- Are familiar with and abide by the applicable local, national and international laws and regulations.

LANGUAGE

This document contains the original instructions in English. In case you require other languages please contact MAGIC FX.

ABBREVIATIONS

Abbreviation	Description
SFX	Special effects
DMX	Digital Multiplex
RDM	Remote Device Management
SPARXTAR	MAGICFX® SPARXTAR®

Abbreviations

REVISION TABLE

Doc nr	Revision	Date	Description	Author	Approved
PART01213	01-00	08-01-2019	Initial release	TFR	TvA
PART01213	01-01	26-03-2019	Software update	TFR	TvA
PART01213	01-02	30-04-2019	Cover change	TFR	TvA
PART01213	01-03	17-04-2025	Preparing for CMS	VV	GM
			Updated risk zones	MB	

1. DESCRIPTION

The SPARXTAR is a special effects machine for controlled emission of sparks into the air.

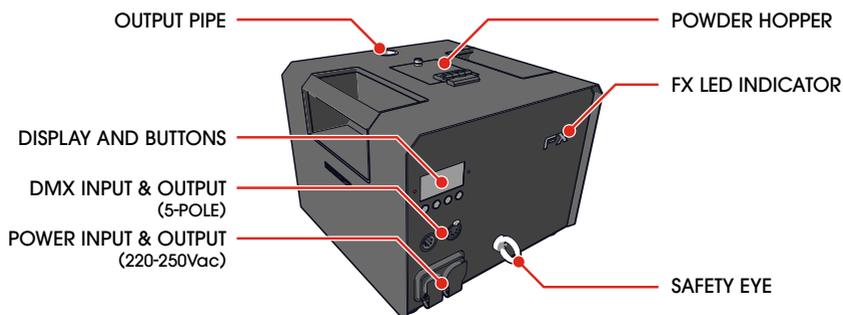
The machine transports SPARXTAR powder from the hopper through an internal heater and blows the resulting sparks upwards through the output pipe.

The maximum continuous duration of the effect is 40 seconds. After this period the effect will stop automatically. With a full hopper a SPARXTAR can deliver sparks for a total duration of 9 up to 17 minutes (depending on the set effect height).

The SPARXTAR is outfitted for operation:

- with DMX and RDM;
- in sequence with multiple machines.

1.1. MAIN PARTS



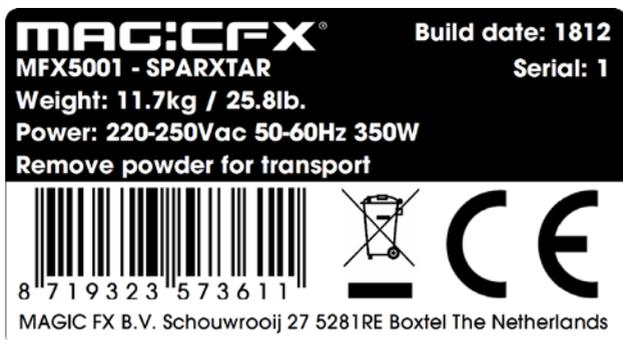
Main parts

1.2. TECHNICAL DATA

Product	Product Name	MAGICFX® SPARXTAR®	
	Product Code	MFX5001	
	Product Type	SPARK FX	
Main Dimensions	Length	300 mm	11.8 in
	Width	318 mm	12.5 in
	Height	243 mm	9.6 in
Weight	Weight	11.7 kg	25.8 lbs
Package	Length	416 mm	16.4 in
	Width	416 mm	16.4 in
	Height	333 mm	13.1 in
	Packaged Weight	12.5 kg	27.6 lbs
Environment	Minimum Temperature	- 10 °C	14 °F
	Maximum Temperature	50 °C	122 °F
	Humidity (Relative)	20 to 90 % (non-condensing)	
Electrical	Voltage Input (VAC)	220 - 250 VAC	
	Voltage Frequency	50 - 60 Hz	
	Power Consumption (VAC)	350 W	
	Power Connector (VAC)	Neutrik® powerCON TRUE1 (in&out)	
Controlling	Control Options	DMX	
	Control Protocols	DMX512-A (ANSI E1.11) RDM (ANSI E1.20)	
	Control Connectors	Neutrik® 5-pole male/ female XLR	
Configuring	Configure Options	On Device RDM	
	Usage	Consumable(s)	MAGICFX® SPARXTAR Powder
	Consumable Consumption	< 20 g/min	

Technical data

1.3. PRODUCT IDENTIFICATION



Type plate

1.4. SPARXTAR POWDER

The SPARXTAR uses SPARXTAR powder to create the effect. Fill the powder hopper of the machine with powder (maximum of two bags).

CAUTION

Do not fill the hopper with anything else than the prescribed powder. Use of any other powder or substance could lead to injuries and damage.

NOTICE

The powder is packed in vacuum bags. Do not open the bags until right before use. This will prevent degradation and malfunctioning of the powder.

Code	Type of powder
MFX5101	MAGICCFX® SPARXTAR Powder

Type of powder

1.5. ACCESSORIES

Code	Product
MFX0305	MAGICCFX® BASEPLATE II
MFX3103	Twenty Clamp (20kg) M10
SPR00119	Safety Steel
MFX5002	Powder Removal Funnel

Accessories

Please contact MAGIC FX for additional possibilities.

1.6. DMX CONTROL

The SPARXTAR is controlled with 1 safety address and 2 operational addresses:

DMX Address	Address range	Control
Safety address	1-512	Device enable / disable
Start address	1-511	Effect height
Start address + 1	2-512	Effect trigger

DMX addresses

The safety address cannot be the same as (one of) the operational address(es). Operating of these addresses results in the following:

DMX Address	DMX Value (decimal)		Result
Safety address	0	99	Device disabled
	100	154	Device enabled
	155	255	Device disabled
Start address (Effect height)	0	255	Effect height (2 to 4.5 m)
Start address + 1 (Effect trigger)	0	63	No output
	64	127	Empty heater (only when previously set to 'no output' and after a delay of 10 seconds)
	128	255	Output effect at set height

Operation of the DMX addresses

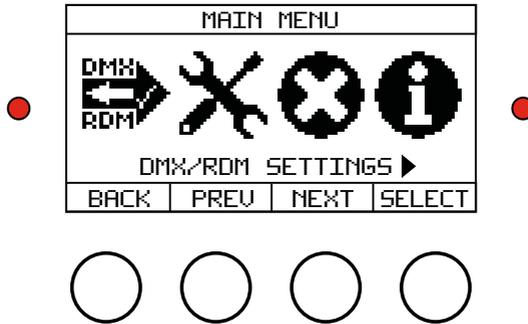
NOTICE

The maximum continuous duration of the effect is 40 seconds. After this period the effect will stop automatically. To start the effect again you must disable and re-enable the Effect trigger.

NOTICE

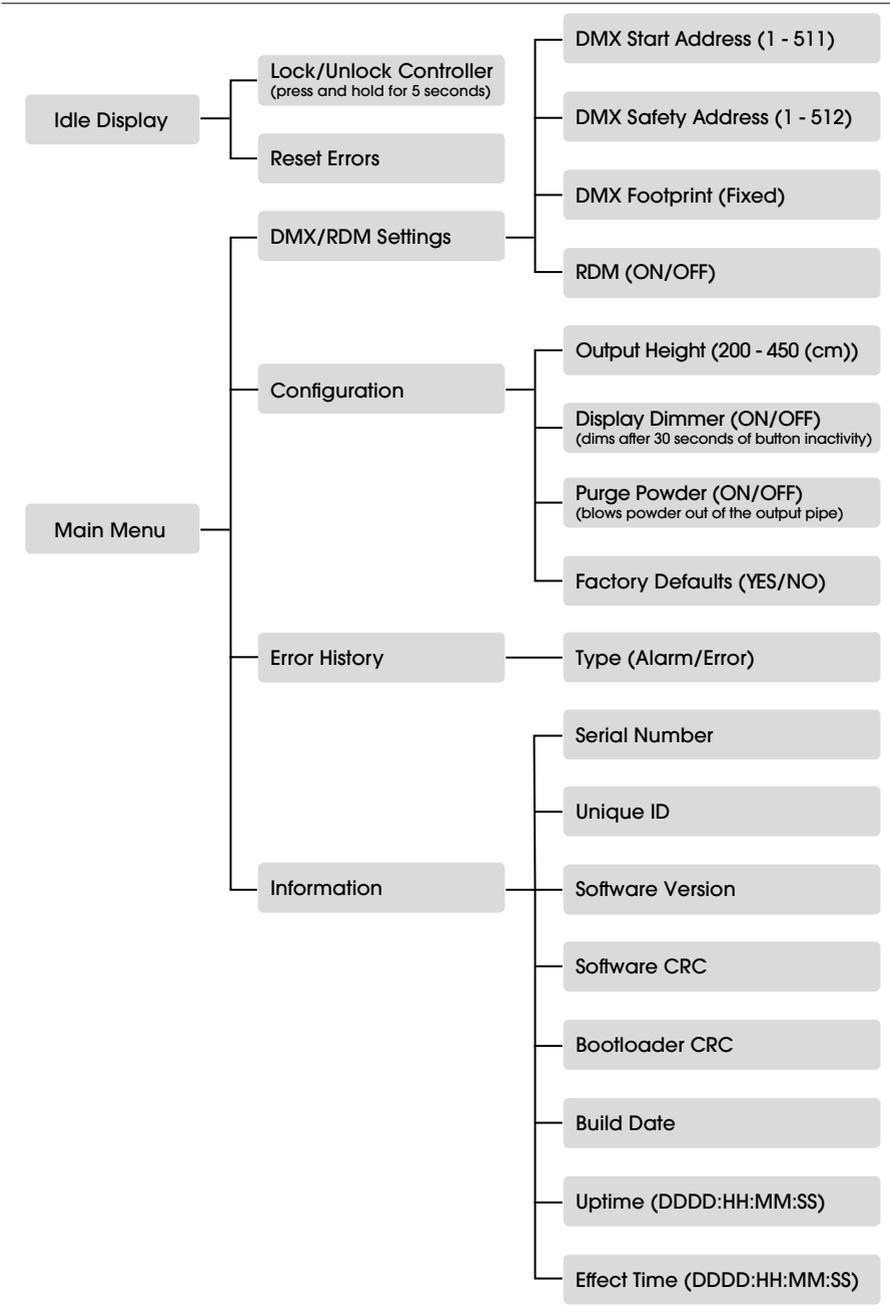
Always plug in a DMX Terminator into the DMX output of the final unit in the control sequence. Using a DMX Terminator improves signal reliability.

1.7. DISPLAY PANEL



Display panel

The display panel is located on the backside of the SPARXTAR. Check the following menu structure for all options in the menu. Use the buttons for navigation and selection. The left-hand LED blinks red when DMX is active. The right-hand LED continuously lights red when an error is present.



Menu structure

1.8. RDM CAPABILITY

Remote Device Management Protocol (RDM) is an enhancement of the DMX512 communication protocol. RDM can be used for configuration and status monitoring while DMX512 takes care of the default controlling.

For RDM you will need an RDM compatible controller.

The following RDM parameters are supported by the SPARXTAR.

Parameter ID	Discovery	GET	SET
DISC_UNIQUE_BRANCH	X		
DISC_MUTE	X		
DISC_UN_MUTE	X		
DEVICE_INFO		X	
SUPPORTED_PARAMETERS		X	
SOFTWARE_VERSION_LABEL		X	
DEVICE_MODEL_DESCRIPTION		X	
MANUFACTURER_LABEL		X	
SLOT_DESCRIPTION		X	
DMX_PERSONALITY_DESCRIPTION		X	
SENSOR_DEFINITION		X	
SENSOR_VALUE		X	
DMX_START_ADDRESS		X	X
IDENTIFY_DEVICE		X	X
DEVICE_LABEL		X	X
FACTORY_DEFAULTS		X	X
DMX_PERSONALITY		X	X
RESET_DEVICE			X

RDM parameters

RDM parameters are subject of change due to software updates. Contact MAGIC FX for the latest information and updates.

2. SAFETY

The SPARXTAR has been designed and constructed in such a manner that it can be used safely. This applies to the use, the circumstances and the regulations as described in this documentation. Reading this documentation and following the instructions are therefore necessary for everyone who is authorised to work with the SPARXTAR.

The SPARXTAR must be used in surroundings that:

- Have a reasonably stable temperature of between -10 and 50 °C.
- Have a relative humidity degree between 20 % and 90 % (non condensing).
- Are free of dust, corrosive gases and high concentrations of organic vapours.
- Are not situated in the vicinity of a source of vibration.

2.1. GENERAL SAFETY RULES

- Only authorised persons may work with the SPARXTAR.
- Do not use the SPARXTAR if there are people or animals in the direct output.
- Make sure that children, unauthorised people and animals do not obtain access to the SPARXTAR.
- Do not connect more units to a single electrical circuit than the installed fuse is able to handle. (Calculate the summed load with the electrical data from Chapter 1)
- Do not remove any safeguards, safety caps and safety symbols.
- All required safety devices must be in good condition and function properly.
- Ensure sufficient lighting of the surroundings.
- Keep the workplace clean.

2.2. RIGGING

Please follow the European and national guidelines for safe rigging and trussing.

2.3. NOISE LEVELS

The measured maximum noise levels of the product are 72 dB(A) at 1 m and 65 dB(A) at 5 m distance away. Please follow the European and national guidelines regarding hearing protection.

2.4. SAFETY SYMBOLS

Symbol	Meaning	Position
	Read the manual carefully before use!	Front of the machine.
	Wear certified safety goggles!	In the manual.
	Warning: Hot Surface! Do not touch.	Top of the machine, near the output pipe.

Safety symbols

2.5. SAFETY WARNINGS

	Eye contact with flying sparks and hot particles from the machine can lead to serious eye injury. Always wear safety goggles when you enter the hazardous zone.
	
	Using a damaged or an improper installed machine can lead to death, serious injury or property damage. Always inspect the machine thoroughly before operation.
	Unauthorized operation of the machine can lead to death, serious injury or property damage. Never leave the machine unattended when the machine is ready for use.
	Missing or obscured safety symbols on the machine can lead to death or serious injury. Make sure all safety symbols are correctly in place, see section 2.4.
	Always follow the safety instructions from the powder packaging when handling and working with the powder. Consult the MSDS from our website for detailed safety instructions.
	Do not use wet consumables. This may lead to serious injury or death.

⚠ WARNING

Always make sure that the safety address is not activated (FX LED indicator on the machine is dimmed) when you approach a machine.

⚠ WARNING

Do not connect more units to a single electrical circuit than the installed fuse is able to handle. (Calculate the summed load with the electrical data from Chapter 1.)

⚠ CAUTION

Any material that blocks the output pipe could result in injuries, fire, and damage to the machine when the machine is used. Always inspect the output pipe before operating and remove any obstructing material.

⚠ CAUTION

Do not obscure the air inlets on the side of the machine. Obscured air inlets can result in injuries, fire and damage to the machine when the machine is used.

⚠ CAUTION

Only open the hopper lid when the machine is not powered.

⚠ CAUTION

The output pipe heats up during operation and causes burns when touched. Do not touch the output pipe of a (recently) powered machine.

NOTICE

Always keep the machine dry and do not let excessive amounts of liquids such as rain or snow wet the machine.

2.6. RISK ZONES

NOTICE

Note that the risk zones shift accordingly when the machine is installed in a tilted position. Keep the entire zone and all areas beneath it clear from unauthorized people, animals, and flammable objects.

NOTICE

Note that the risk zones shift and increase with wind.

NOTICE

Note that overlap of risk zones in a setup with multiple machines is allowed, as long the air inlets are not obstructed.

2.6.1. DANGER ZONE

Symbol

Meaning



Make sure **ALL** people, animals, and objects are clear of this area. Failure to do so could result in death, serious injury, or damage.

⚠ WARNING



Always create a danger zone around the output pipe of the SPARXTAR as indicated in the illustration.

2.6.2. HAZARDOUS ZONE

Symbol

Meaning

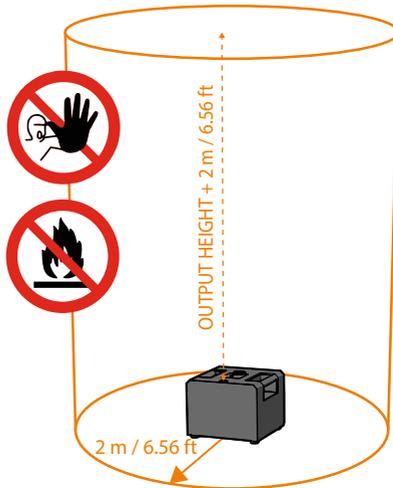


Make sure unauthorized personnel and animals are clear of this area. Failure to do so could result in death or serious injury.



Make sure there are no flammable objects or materials in this area. Failure to do so could result in death, serious injury, or damage.

⚠ WARNING



Always create a hazardous zone around the output pipe of the SPARXTAR as indicated in the illustration.

⚠ WARNING

Stop operating the machine immediately when the emitted particles remain glowing or cause fire in other objects or materials. Extinguish any burning or glowing particles with sand or foam. Consult the MSDS of SPARXTAR powder from our website for detailed safety instructions.

⚠ WARNING

Any material that blocks the output pipe could result in injuries, fire, and damage to the machine when the machine is used. Always inspect the output pipe before operating and remove any obstructing material.

NOTICE

Keep the entire zone and all areas beneath it clear from unauthorized people, animals, and flammable objects.

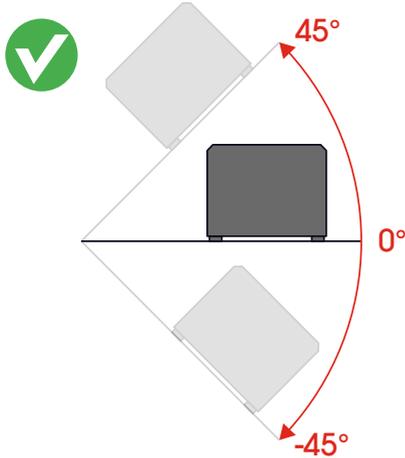
3. INSTALLATION AND USE

The SPARXTAR can be positioned on a stage or floor or can be mounted on a truss.

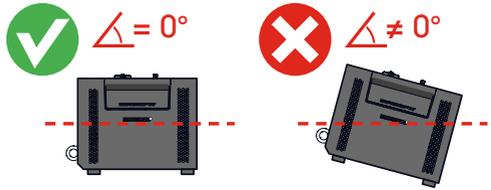
NOTICE

The SPARXTAR will also remain functioning correctly when angled sideways at a maximum of 45° or -45° . However the greater the angle becomes, the more powder will remain unused in the hopper. Therefore level installation is preferred.

front view



side view



3.1. INSTALL ON STAGE

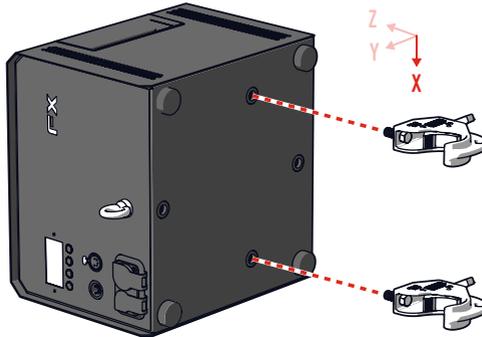
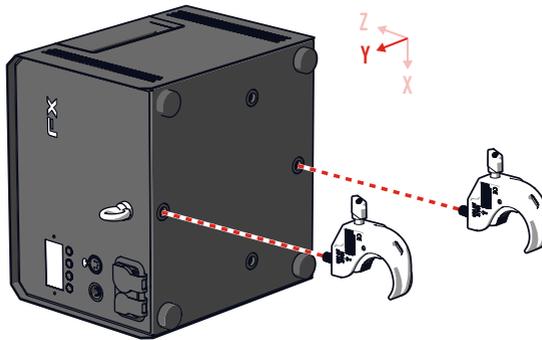
1. Install the SPARXTAR on a firm and preferably level surface.
2. Inspect the machine and remove any foreign objects and material that will block or obscure the output pipe or the air inlets of the machine during operation.
3. Take the necessary safety precautions, including:
 - a. Creating a hazardous zone with a safety distance of 2 m around the effect of the SPARXTAR and a clearance of 2 m from the OUTPUT HEIGHT set in the menu.
 - b. Making sure that the direct output will be free from persons and animals.
 - c. Making sure there are no objects near the machine and within the output distance that can be damaged or catch fire by the emitted powder and sparks from the SPARXTAR.

3.2. MOUNT ON A TRUSS

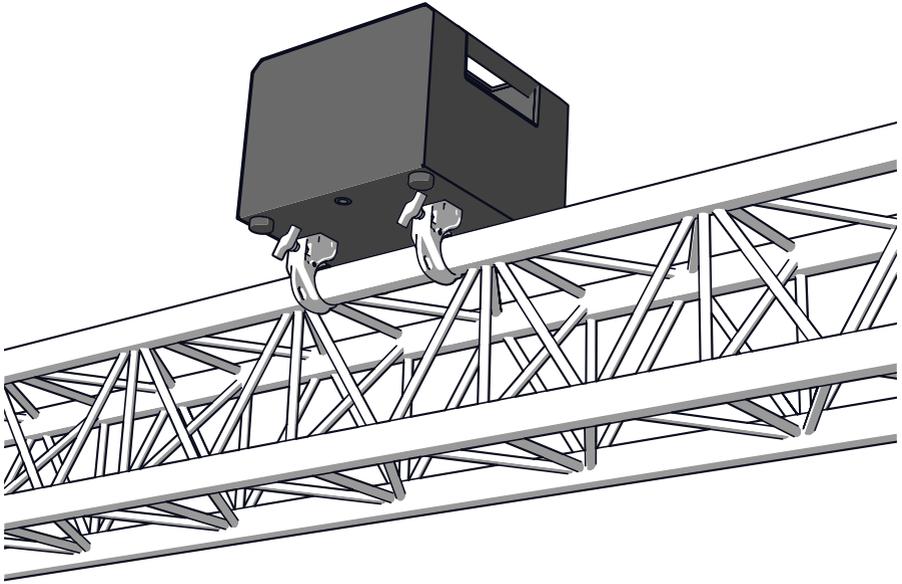
NOTICE

Use a BASEPLATE II for mounting on top of an upright truss, see the User and Installation manual of the BASEPLATE II (PART01575).

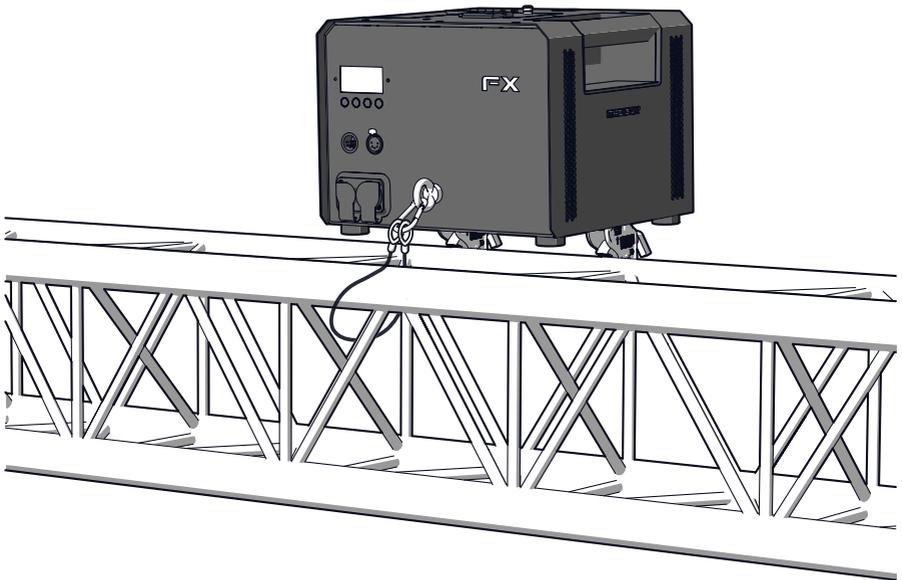
1. Screw two clamps into threaded holes on the bottom of the machine. Use two M10 twenty clamps for truss mounting (product code MFX3103) and place the pair in x or in y direction.



2. Mount the clamps firmly on a truss.
-



3. Secure the SPARXTAR onto the truss.
-



4. Inspect if the SPARXTAR is mounted firmly and secured correctly.
5. Inspect the machine and remove any foreign objects and material that will block or obscure the output pipe or the air inlets of the machine during operation.
6. Take the necessary safety precautions, including:
 - a. Creating a hazardous zone with a safety distance of 2 m around the effect of the SPARXTAR and a clearance of 2 m from the OUTPUT HEIGHT set in the menu.
 - b. Making sure that the direct output will be free from persons and animals.
 - c. Making sure there are no objects near the machine and within the output distance that can be damaged or catch fire by the emitted powder and sparks from the SPARXTAR.

3.3. (RE)FILL THE HOPPER

⚠ WARNING

Always make sure that the safety address is not activated (FX LED indicator on the machine is dimmed) when you approach a machine.

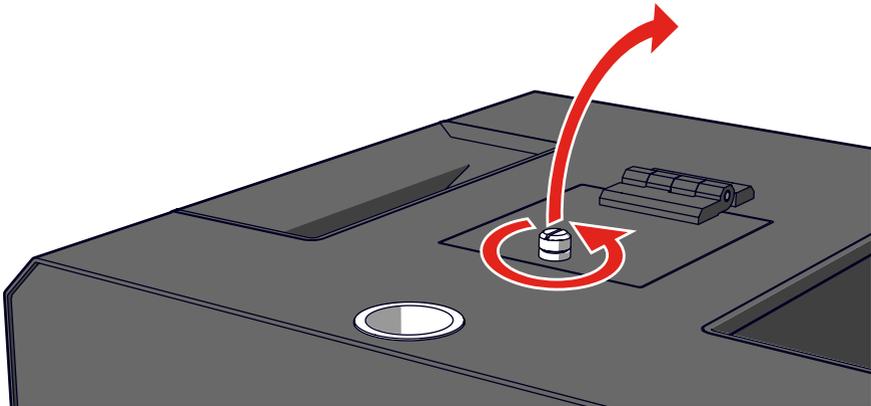
⚠ WARNING

Eye contact with flying sparks and hot particles from the machine can lead to serious eye injury. Always wear safety goggles when you enter the hazardous zone.

⚠ CAUTION

The output pipe heats up during operation and causes burns when touched. Do not touch the output pipe of a (recently) powered machine.

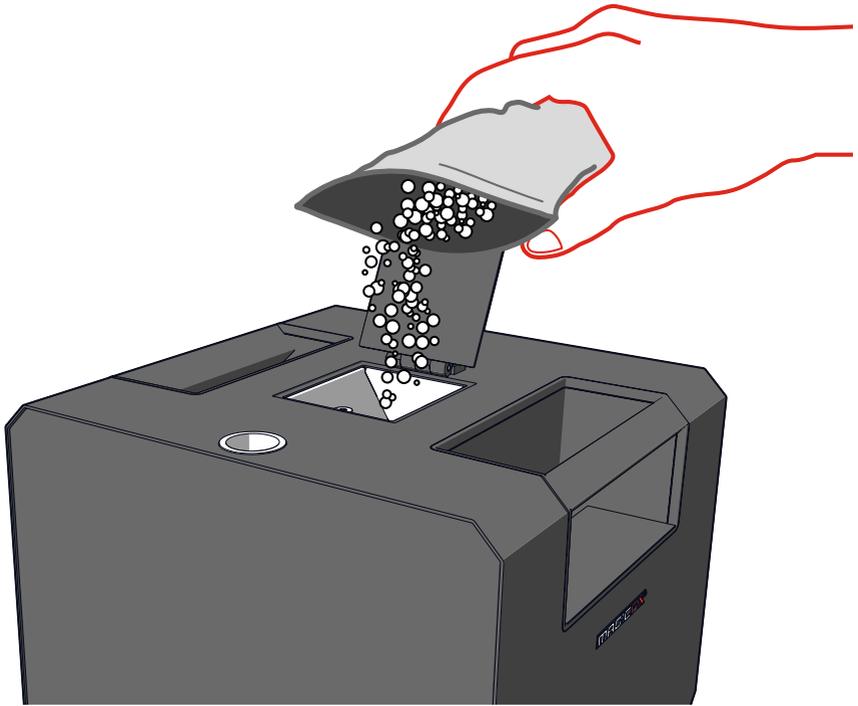
1. Disconnect the machine from the power supply.
2. Unlock and open the lid of the hopper.



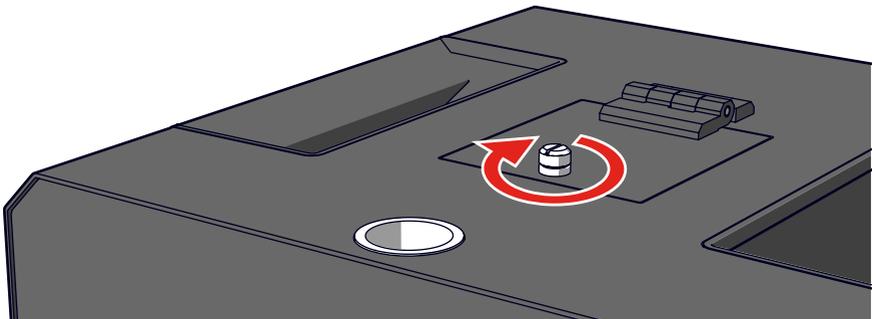
NOTICE

Make sure that the hopper interior is dry and free from foreign material at all times. Do not use the machine when the hopper interior is wet. Remove any moist and/or clumped powder. Remove any foreign material.

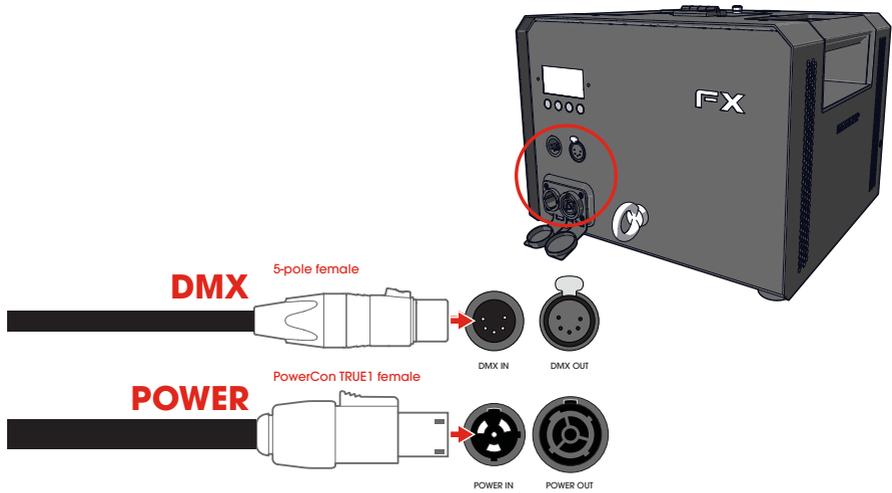
3. Open the powder bag(s) and fill the hopper with powder (maximum of two bags).
-



4. Close and lock the lid of the hopper.
-



3.4. CONNECT THE MACHINE

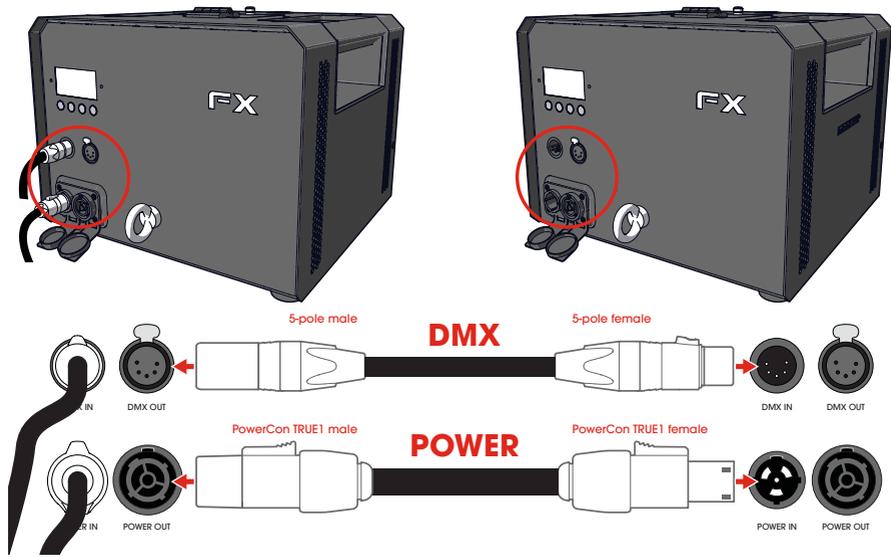


1. Connect a power cable with a PowerCon TRUE1 female connector to the power input.
2. Connect the other end of the power cable to a 220-250Vac (50-60Hz) power source. The machine starts heating and the fan starts blowing.
3. Connect the female connector of a 5-pole DMX cable in the DMX input.
4. Connect the other end of the DMX cable to your DMX controller.
5. Use the display and buttons or a RDM controller to assign DMX addresses, see Chapter 1.
6. Optionally see Section 3.5. for adding more machines to the same sequence.

NOTICE

Always plug in a DMX Terminator into the DMX output.
Using a DMX Terminator improves signal reliability.

3.5. LINK MULTIPLE MACHINES



1. Connect a power link cable to the power output.
2. Connect the other end to the power input of the next machine.
3. Connect a DMX cable to the DMX output.
4. Connect the other end to the DMX input of the next machine.
5. Use the buttons or a RDM controller to assign DMX addresses, see Chapter 1.
6. Repeat step 1 to 5 for each subsequent machine.

WARNING

Do not connect more units to a single electrical circuit than the installed fuse is able to handle. (Calculate the summed load with the electrical data from Chapter 1)

NOTICE

Always plug in a DMX Terminator into the DMX output of the final unit in the control sequence. Using a DMX Terminator improves signal reliability.

3.6. FIRE WITH DMX

NOTICE

The machine starts heating automatically when connected to a power source. The heating cycle takes approximately 25 minutes. The heating process is visualised on the display with a progress bar.

NOTICE

Wind can influence the effect and cause sparks to blow away.

1. Power the machine.

NOTICE

Directly after powering the machine the device will check automatically if the output and air inlet are blocked.

2. Change the **Output height** (200-450 cm) in the configuration menu if desired, see Section 1.7. The effect will not exceed the set height.
3. Wait until the device is heated up and ready.
4. Set the DMX value for **Effect height** to the desired initial height of the output, see Section 1.6.
5. Make sure that the prescribed risk zone is clear.
6. Activate the DMX safety address. Directly after activating the device will check automatically in a few seconds if the output and air inlet are blocked. The FX LED indicator on the machine lights up.
7. When it's time to spark, set the DMX value for **Effect trigger** between 128 and 255.
8. Vary the effect height during the effect duration, if desired.
9. Enjoy the view!
10. Set the DMX value for **Effect trigger** between 0 and 63 if you want to stop sparking.



NOTICE

During a short interval after the effect has stopped, you can create a flash effect by quickly activating and deactivating the **Effect trigger**.

NOTICE

The maximum continuous duration of the effect is 40 seconds. After this period the effect will stop automatically. To start the effect again you must disable and re-enable the **Effect trigger**.

3.7. CLEAN UP

1. When finished, set the DMX value for **Effect trigger** between 0 and 63 to turn off the effect.

NOTICE

During the particle removal by DMX, sparks could be visible that leave the machine.

NOTICE

When particle removal by DMX is not possible, the remaining particles can be removed by the feature **Purge powder** from the display menu, see Section 1.7.. This feature can only be activated when the machine is cooled down. Note that particles could leave the machine during purging.

NOTICE

Not removing the remaining particles after use can shorten the machine's lifetime.

2. Make sure the remaining particles will be removed from the heater by setting the DMX value for **Effect trigger** between 64 and 127. The heater purge will start after a delay of 10 seconds. The purge itself takes 10 seconds and will stop automatically.
3. When all particles are removed, set the DMX value for **Effect trigger** between 0 and 63 to stop.
4. Deactivate the safety address. The FX LED indicator on the machine dims.
5. Disconnect the machine from the power source. The machine stops heating.
6. Make sure that the machine has cooled down.
7. Disconnect all DMX and power cable(s).
8. Remove any powder residues from the machine and surroundings.

NOTICE

To prevent scratching, clean the machine in the following order:

- a. Slightly purging air
- b. Using a vacuum cleaner
- c. Using a towel

-
9. Unmount the machine if necessary.
 10. Open the lid of the hopper.
 11. Lift the machine to one side to empty the hopper.

⚠ WARNING

Always follow the safety instructions from the powder packaging when handling and working with the powder. Consult the MSDS from our website for detailed safety instructions.

NOTICE

Pay special attention to residues and dust inside the hopper. Clean the hopper interior and lid thoroughly (e.g. with a small brush).

NOTICE

Optionally use a Powder Removal Funnel for emptying of the hopper, see Section 1.5..

4. TROUBLESHOOTING

In case the display shows one of the following error/alarm or warning codes, act accordingly:

Code	Meaning	Solution
007	Fan is not running at the expected speed.	Fan or inlet possibly blocked. Inspect the output pipe and air inlet and remove any foreign objects and material that will block or obscure the output pipe during operation.
120	Temperature safety	Temperature reached its maximum allowed temperature. Let the effect inactive for a minute.
121	Orientation of device out of safe bounds.	Keep the device within previously described safe bounds.

Troubleshooting

Always contact MAGIC FX if any malfunctions or errors occur that cannot be solved with the instructions as described in this manual.

5. MAINTENANCE

To achieve the maximum service life of the SPARXTAR you must regularly clean the SPARXTAR and test if it is functioning correctly.

Contact MAGIC FX if the SPARXTAR is not functioning correctly.

 **DANGER**

Do not replace parts yourself; always consult MAGIC FX if necessary.

6. CORRECT DISPOSAL



This symbol on the product and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product to designated collection points where it will be accepted free of charge.

Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

7. EC DECLARATION OF CONFORMITY

According to Annex III A Machinery Directive 2006/42/EC

MAGIC FX B.V. declares as manufacturer and composer of the technical construction file that the product with the following specifications:

Name machine	: SPARXTAR®
Type	: MFX5001
Voltage	: 220-250 VAC 50/60 Hz
Serial number	: on product
Year of construction	: on product

Is in conformity with the minimal safety regulations as stated in the following directive(s):

- LVD (2014/35/EU) Low Voltage Directive
- EMC (2014/30/EC) ElectroMagnetic Compatibility
- RoHS (2011/65/EU) Restriction of the use of certain Hazardous Substances
- WEEE (2012/19/EU) Waste Electrical & Electronic Equipment

The following harmonized standards were applied:

- NEN-EN-ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction.
- NEN-EN-ISO 13732-1:2008 Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces.
- NEN-EN-IEC 60204-1:2006, Safety of machinery - Electrical equipment of machines - Part 1: General requirements.
- NEN-EN-IEC 61000-6-3:2007/A1:2011, Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments.

- Original declaration of conformity
- Translation of the original declaration of conformity

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