USER MANUAL
SPARKULAR® miniFALL

V3.2
2024/06/15

Showven Technologies Co., Ltd.

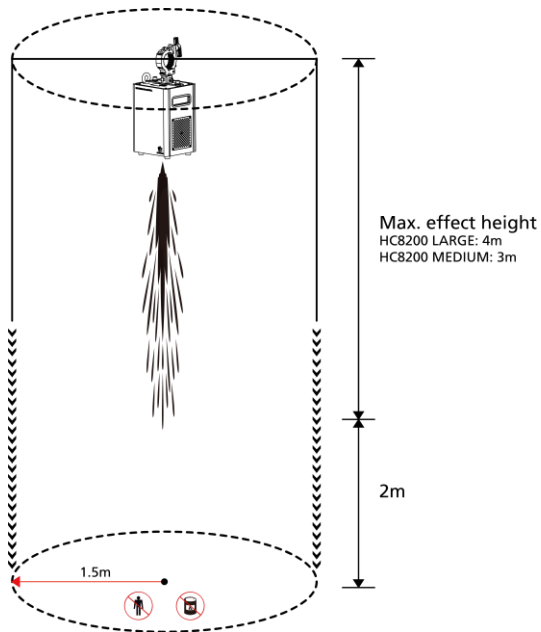Thanks for choosing SPARKULAR® miniFALL, we wish it will sparks up your show.
Please read the following manual carefully before operating this product.

△ **Safety Instructions**

\ Unauthorized repair are prohibited, it may cause serious incident.

\ Keep SPARKULAR® miniFALL dry and do NOT use in rain or snow.

\ Make sure lid of feeding hopper are well covered when use SPARKULAR® miniFALL.

\ Accidentally burning of consumable can only use sands to extinguish.

\ Consumable should keep away from moisture and stored in a dry sealed environment.

\ Check whether there is consumable aggregate in the output nozzle both before and after each show, if any, please clean it up, or it will affect the firing effect, damage machine, even cause serious incident.

\ The SPARKULAR® miniFALL power supply cable maximum allowed cascade of 12pcs, exceed connecting may result in damage or even cause fire.

\ For better heat dissipation, block the air intake and air outlet is prohibited.

\ Cover the output nozzle of SPARKULAR® miniFALL is forbidden, inspect the machine before each show, making sure no objects or material will block the output nozzle.

\ Never touch the nozzle of SPARKULAR® miniFALL, danger of getting burnt.

\ Never touch the sparks which shooting out from the nozzle.

\ Make sure no staff, audience and flammable materials stays under the SPARKULAR® miniFALL.
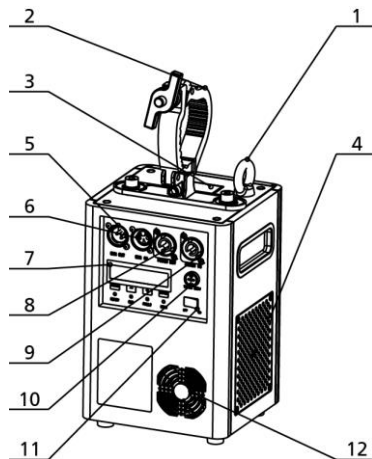
Safety Distance

\ Keep audience and flammable material at a minimum distance of 1.5m from SPARKULAR® miniFALL.

\ Make sure sparks shoot out from SPARKULAR® miniFALL can NOT touch any objects. And keep a clearance with minimum 2m from the setting maximum effect length.

\ Human, animal or flammable materials are not allowed to close to the underside area where hanging SPARKULAR® miniFALL.

\ In windy environment, increase the safety distance according to the wind direction and speed.

\ The safety zone area changes accordingly when machine installed in tilt position. Please increase the safety distance in the direction which machine tilt.

\ Sparks and consumables from the machine can lead to serious eye injury. Always wear safety goggles when enter the safety zone.

Max. effect height
HC8200 LARGE: 4m
HC8200 MEDIUM: 3m
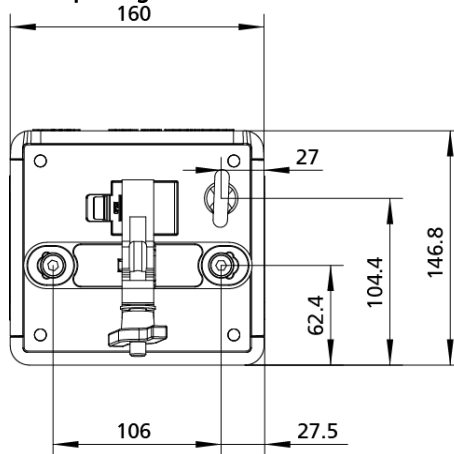
2m

1.5m

△ Description

SPARKULAR® miniFALL (NEW) is a new update based on previous version, it based on our new spark generation platform and adopts a new feeding structure which greatly prolongs the stability of machine. It is an ideal sparks waterfall effects solution for party, stage, clubs, studios etc.

△ Structure of SPARKULAR® miniFALL

1. Safety Loop;
2. Clamp
3. Feeding Hopper
4. Heat Dissipate Area
5. DMX OUT
6. DMX IN
7. LCD Screen
8. POWER OUT
9. POWER IN
10. Fuse
11. Power Switch
12. Cooling Fan

Schematic diagram of the top fixing hole

Δ Technical Specifications

MODEL: BT14
Dimension: 150×160×240mm
Hopper capacity: 300g
Material Consumption: 15g/min
Weight: 3.6kg
Input: 100-240V, 50/60Hz
Working Power: 250W
Working Temperature: -10℃~ 50 ℃
Casing: Anti-flame ABS
Fall Length: 3-4m(HC8200 LARGE)，2-3m(HC8200 MEDIUM)
Interface: 3-pin DMX IN/OUT, Neutrik PowerCON IN/OUT
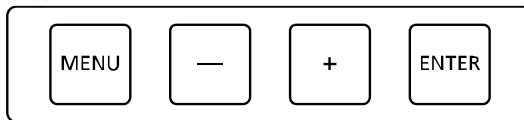
△ Operation Panel

1. LED display area

READY: Flash means machine is preparing, LED keeps on means ready to work

DMX: Flash means DMX signal is connected, light OFF means there is no DMX signal

FAULT: Light ON when error occurs

HEAT: Light ON when system is heating up

2. Control button area

MENU： Press to switch through menu, press and hold for 3s enter advanced menu

-: Parameters down

+: Parameters up

ENTER: Confirm and save parameters.

3. Bottom Indication Light

Off: Preheating not activated or machine is firing
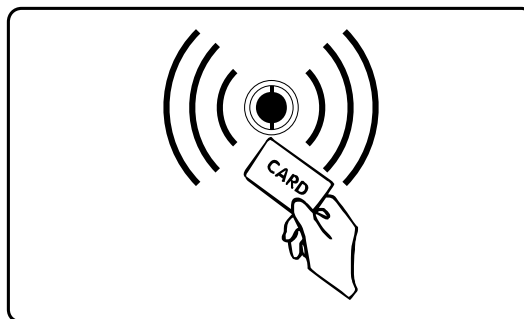
Quick Flashing: Preheating

Long on: Preheated

Slow Flashing: Error warning

The indication light can be turned off in menu.

3. RFID area

Composite Ti with RFID card, swiping cards used to identify parameters and types of granules.

The RFID card is disposable, one card can only use one time.

△ Interface

1. Main Interface

```
DMX  Address          1
210 ▊ ▊ ▊             07.24
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First line: Display DMX address is "1"

Second line: Display the present inner core temperature and the temperature progress bar; displays remaining time is 7 minutes and 24 seconds.

2. Error information

Error information	Explanation
E0 System IC	Systematic error
E2 Temp. Sensor	Temperature sensor was damaged
E3 P Temp. Over	Chassis temperature is too high to shut down
E4 Time Remain	Insufficient granules or remaining time, please swiping time card
E5 K Temp. Over	Inner core temperature is too high to shut down
E6 Heat Fail	Heating failed

3. Setting Menu

Press "MENU" to enter the Setting interface, press the "MENU" button to enter different options until you return to the main interface

Options	Range	Default	Explanation
Set DMX Address	1-512	1	Set the DMX address, machine become a wireless host and can send out DMX signal when its address is 1++"
Wireless Control	ON/OFF	ON R	Wireless function switch, you can match machine with remote controller when at "ON" status
Manual Fountain	ON/OFF	OFF	Manual fountain switch, for testing purposes only

4. Advanced Menu

Press and hold "MENU" for 3s to enter the advanced setup interface, press MENU key to enter different options, wait 3 seconds to return to the main interface

Options	Range	Default	Explanation
Set Temperature	470-530	500	Setup inner Core temperature. Please don't change default value without engineer's suggestion from SHOWVEN
Auto Heat	ON/OFF	ON	Auto preheat function switch after turn on machine
Density	80-100	100	Adjust the sparks density. Please don't change default value without engineer's suggestion from SHOWVEN.

Mode Selection	Factory Mode User Mode	User Mode	Factory Mode is factory debugging mode, User Mode is using mode
DMX Channel Mode	2 / 4 DMX Channel	2 DMX Channel	2 DMX Channel is standard mode, 4 DMX Channel is special mode
Default Parameter			Useless
Standby Switch	ON/OFF	OFF	When it's on, the machine can only generate spark when pre-heating finish

DMX mode

The First channel	Functions
0-15	Firing OFF
16-255	Fountain ON
The second channel	**Functions**
60-80	Clear Material
20-40	Emergency Stop
0-10	Pre-heat OFF (Disable in Auto-heat)
240-255	Pre-heat ON (Disable in Auto-heat)

⚠ Operation Guide

1. Check output nozzle of SPARKULAR® miniFALL

Check carefully the output nozzle of each machine, make sure the output nozzle is in good shape and there is no powder aggregate.

2. Fill SPARKULAR® miniFALL

a) Open powder bags and fill the feeding hopper. Hopper capacity of SPARKULAR® miniFALL is 300g.

b) Make sure the powder is originally from SHOWVEN, other types of powder may block even damage the machine.

c) Choose correct consumable according to the hanging height and safety distance.

d) Only use the consumable type suggested below.

e) Make sure the lid of hopper is locked tight after filling.

HC8200	Fall length
MEDIUM	3m
LARGE	4m

3. Install SPARKULAR® miniFALL
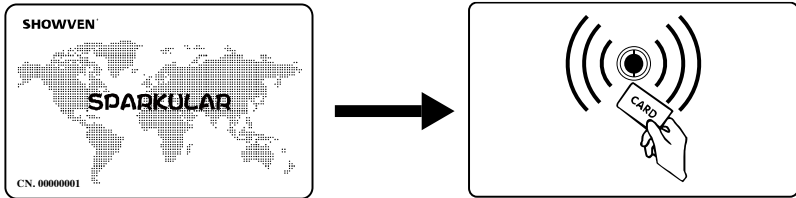
a) Clamp installation direction as below.

b) SPARKULAR miniFALL can only be hanging vertically.
c) Make sure the machine is securely hanging on truss to avoid falling. An extra safety rope is required for extra safety.

4. Connect Power / DMX cable

a) Connect a power cable to the POWER IN socket of SPARKULAR® miniFALL. Connect the other end of power cable to the power source. Make sure power supply in consistent with the rated voltage of the equipment, and the socket must well grounded.
b) If connect machine in sequence, please connect a power link cable to the POWER OUT of previous machine, connect the other end of the power link cable to POWER IN of the next machine.
c) The SPARKULAR® miniFALL power supply cable maximum allowed cascade is 12 units. Do not connect exceed units to a single electrical circuit.
d) Power ON all SPARKULAR® miniFALL.
e) Assign DMX address for each unit of SPARKULAR® miniFALL. If use SHOWVEN host controller or FXcommander to control the machine please allocate a unique DMX address for each unit of machine.
   If use remote controller to control SPARKULAR® miniFALL wirelessly, please set machine to wireless ON status and match machine with remote controller. For DMX cable control please execute below operations (f to h).
f) Connect a DMX cable to the DMX IN socket of first unit of SPARKULAR® miniFALL, connect the male connector end of DMX cable to your DMX controller (FXcommander, HOST CONTROLLER, light console etc).
g) Connect a DMX cable to the DMX OUT of previous machine, and the other end of to the DMX IN of next machine. Connect all devices in series in this way.
h) Suggest to plug in a DMX terminator into the DMX OUT in last unit of machine to improve signal reliability. Signal amplifier is required for long distance (>200m) DMX signal transmission.

5. Activate SPARKULAR® miniFALL by swipe RFID card

a) Swipe an RFID card. Read the card as show below. SPARKULAR® miniFALL shows time remain if read successfully.

b) SPARKULAR® miniFALL will report E4 when remaining time is less than 8 minutes.

c) Please note each RFID card come with 50g package HC8200 can increase single machine 4min working time, the maximum recharge time for SPARKULAR® miniFALL is 30min, when time remain reached 30min, it can't recharge anymore RFID card.

6. Programming and Firing

a) Programming SPARKULAR® miniFALL, set the firing height, firing sequences etc.

b) Heating up machine, it takes around 5min. it various according to the voltage and environment temperature.

c) Make sure the prescribed safety zone is clear.

d) Suggest to clear material before firing.

e) Firing. In order to prevent overheat in the heating chamber and protect machine, the maximum continuous firing time for SPARKULAR® miniFALL is 30s.

f) The operator should always have a clear view of the device, so that he/she can stop the show immediately when there is danger.

g) Clear material for SPARKULAR® miniFALL for 5s after show, clear material will remove the remaining particles from heating chamber.

7. Turn off and Clean up

a) Power off SPARKULAR® miniFALL, allow SPARKULAR® miniFALL to cool down.

b) Disconnect all POWER and DMX cables. Remove the machine from truss carefully.

c) Empty the remaining HC8200 in hopper, and store the remaining HC8200 in a dry sealed bottle for next time use. Never touch the output nozzle of SPARKULAR® miniFALL when empty the hopper. DANGER OF GET BURNT!

d) Clean the surroundings to remove powder residues.

⚠ Wireless Control Information

1. Wireless remote control mode

<div style="border:1px solid;">

Wireless Control
ON

</div>

When use wireless remote control, please unplug DMX cable connection on machine, set Wireless Control at ON status, match the remote controller with machine.

2. Remote controller
A: OFF / SET, All machine OFF, SET means match machine with remote controller.
B: ON.
C: ON.
D: Clear Material.

NOTE:
a) In order to prevent the same area from being serialized by other same remote controllers, the communication code can be set manually. This remote controller has 5 kinds of communication codes related to 5 different colors: red, green, blue, yellow, white. Press and hold the key A for 3s, LED flashes, release the key, and then press the A key to switch the flashing light color to adjust the communication code, and press the B key to confirm and save. After modifying the communication code, perform the code matching operation again.
b) When the indicator light becomes weak on the remote controller, please replace the battery.
c) When the machine is occasionally not working, may be caused by interference, please press the start button again.
d) Wireless control is easily influenced by interference, suggests to stay as close to machine as possible when use remote controller, and machines cannot use metal shielding

3. Wireless host SPARKULAR® miniFALL mode (requires communication cables)
a) In occasion of strong interference, using the wireless host can avoid interference, ensure stable control.
b) Set the first unit of SPARKULAR® miniFALL DMX address into "1++", this machine address is "1", but it can also output DMX signal and turns into wireless host SPARKULAR® miniFALL.
c) Use communication cables to connect all SPARKULAR® miniFALLs, the host SPARKULAR® miniFALL will receive the signal from remote controller and transfer to all other SPARKULAR® miniFALL via communication cable to realize stable signal transmission.

△ Maintenance

a) Empty the feeding hopper before shipment of machine.
b) Empty the feeding hopper if long time not use, for high humidity environment we suggest to empty feeding hopper after show.
c) Clear material both before and after the show.
d) Recommended to wash or replace the air intake filter every two months.

△ Warranty Instructions

\ Sincere thanks for your choosing our products, you will receive quality service from us
\ The product warranty period is one year. If there are any quality problems within 7 days after shipping out from our factory, we can exchange a brand new same model machine for you
\ We will offer free of charge maintenance service for machines which with hardware malfunction (except for the instrument damage caused by human factors) in warranty period. Please don't repair machine without factory permission

Below situations NOT included in warranty service:

\ Damage caused by use other type of consumable which is not originally from SHOWVEN$^{®}$.
\ Damage caused by improper transportation, usage, management, and maintenance, or damage caused by human factors;
\ Disassemble, modify or repair products without permission;
\ Damage caused by external reasons (lightning strike, power supply etc.)
\ Damage caused by improper installation or use;

For product damage not included in warranty range, we can provide paid service.
Invoice is necessary when applying for maintenance service from SHOWVEN$^{®}$.

SHOWVEN®