

# **USER MANUAL**

## **cFlamer Boom**

V1.0

2025/05/27

**SHOWVEN®**



**SHOWVEN Technologies Co., Ltd.**



Thanks for choosing SHOWVEN cFlamer Boom, we wish it will bring you lots of exciting moments. Please read the following user's manual and related product installation guide carefully before operating this device.

## **△ Safety Instructions**

### **1. Safety icons explanation**

Safety instructions warn of hazards when handling equipment and provide information on how to avoid those hazards. They are classified according to the severity of the hazard and are divided into the following groups. Please do follow all safety instructions in this document!

**DANGER:** Indicates a hazardous situation that, if not avoided, will result in death or serious injury. (This signal word is limited to the most extreme situations)

**WARNING:** Indicates a hazardous situation that, if not avoided, could result in serious injury

**CAUTION:** Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**NOTICE:** Provide additional or supplementary information.

### **2. General Safety Instructions**

- ✖ Unauthorized repair are prohibited, it may cause serious incident.
- ✖ Make sure power supply is consistent with the rated voltage of the equipment, and the socket must be well grounded. Unplug and turn off the machine when not use.
- ✖ Please connect DMX cable before power on cFlamer, and ensure that the communication command is disarmed, and the safety switch of device is under test mode.
- ✖ After turning on the device, no person allows to stay in the safety isolation zone. Ensure all persons that are part of the show be informed about the safety distance, risks and functions of the device.
- ✖ Always have a CO<sub>2</sub> fire extinguisher and an extinguishing blanket in case of needed.
- ✖ If there be any doubt as to the safety operation of the device in any circumstances, the device should be taken out of service immediately. Be sure the device is in good operating condition before use. If fail to fire correctly, immediately shut down and check it accordingly. Any questions please always contact SHOWVEN (info@showven.cn) for help.
- ✖ Be sure to use high quality fuels, otherwise, it easily leads to failure or danger. Please keep fuels away from heat source, sparks, fire or other possibility of ignition. Do not smoke!
- ✖ The operator responsible for the control of flame system must always have a clear view of the device, so that he/she can stop the show immediately when there is danger. The main AC power switch should be near operator. So that operator can turn off the power of all devices in case of abnormal.
- ✖ Please connect device with SHOWVEN E-STOPPER so that operator can stop the device immediately if there is any emergency case.
- ✖ The device shall not be altered and applied to other use purpose.

### **3. Disclaimers:**

SHOWVEN technologies Co., Ltd excludes liability for unsafe situations, accidents and damages resulting from:

1. Ignoring warnings or regulations as shown on product manual or this manual.
2. Use for other applications or circumstances other than those indicated herein.
3. Changes to the device, including use of non-original spare parts, lack of maintenance etc.
4. Dismantling device without authorization from SHOWVEN.
5. Use this machine by unqualified or untrained personnel.
6. Improper use of machine.

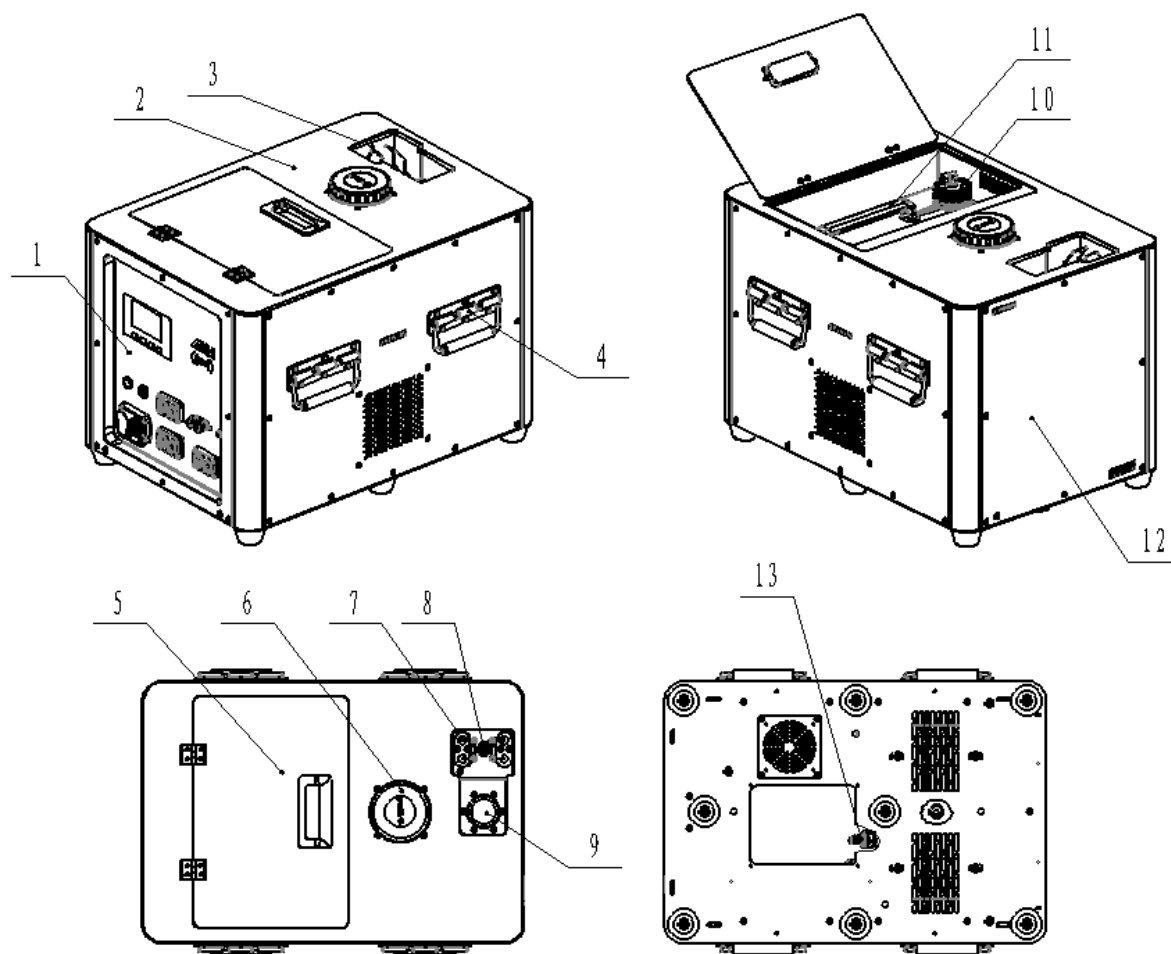
## **WARNING:**

A dry powder fire extinguisher, a carbon dioxide fire extinguisher and a fire blanket must be equipped next to the equipment. Someone must be on duty during operation. In case of fire accident, dry powder fire extinguisher can be used when the fire is large, and a carbon dioxide fire extinguisher can be used when the fire is small.

## **▲ Technical Specifications**

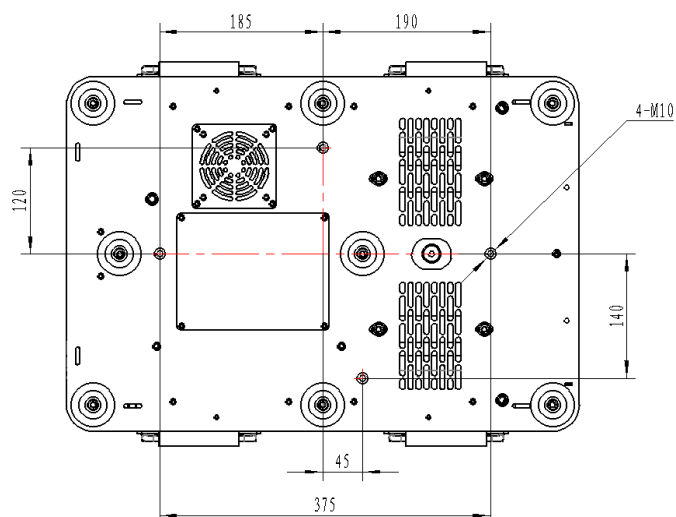
- \\ **Model:** cFlamer Boom(FA06)
- \\ **Housing Material:** Stainless steel + Aluminum
- \\ **Dimension:** 580×400×428mm
- \\ **Weight:** 54kg
- \\ **Input:** AC100-120V / AC 200-240V, 50/60Hz
- \\ **Work Power:** 600W
- \\ **Ignition:** Dual, high voltage electron ignition
- \\ **Ignition nozzle type:** cM
- \\ **Control:** DMX , 9-60V pyro signal, Wireless with Wireless DMX Receiver (5-PIN DMX IN with DC5V power supply)
- \\ **DMX:** 3-pin and 5-pin DMX IN / OUT
- \\ **E-Stop Interface:** Yes, can be connected in series
- \\ **Effect Direction:** Vertical
- \\ **Effect Height:(sparks):** 12m (no wind)
- \\ **Effect Height:(flame ball):** 10m (no wind)
- \\ **Fuel:** SHOWVEN color fluid, ISOPAR L, ISOPROPANOL
- \\ **Color Optional:** Red, Green, Blue, Yellow, Purple (only compatible with SHOWVEN original color fluid)
- \\ **Fuel Tank Capacity:** 5.3L
- \\ **Fuel Consumption Rate:** 200ml / shot
- \\ **Sparks Consumable:** SHOWVEN HC8200 LARGE
- \\ **MAX. Sparks Consumable Hopper capacity:** 800g
- \\ **HC8200 Consumption Rate:** 25g / sparks shot
- \\ **Air Tank Volume:** 8L
- \\ **Air Tank Pressure Rebuilt Time:** 3min
- \\ **Fuel Tube Filter:** Yes
- \\ **Tip Sensor:** Yes
- \\ **Usage in Rain:** Yes
- \\ **ARM Light:** Yes

## ▲ Structure

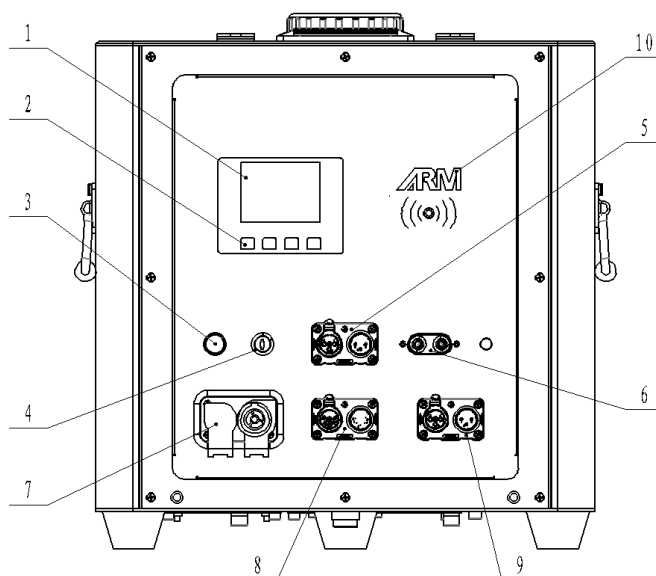


1. Rear panel
2. Top panel
3. Fire box
4. Handle
5. Fuel tank cover (fuel)
6. Consumable hopper lid (sparks consumable)
7. Igniter
8. Nozzle
9. Output tube
10. Fuel tank cap
11. Fuel tank
12. Front panel
13. External air compressor port (on bottom panel)

Diagram of bottom panel



## ▲ Rear Panel



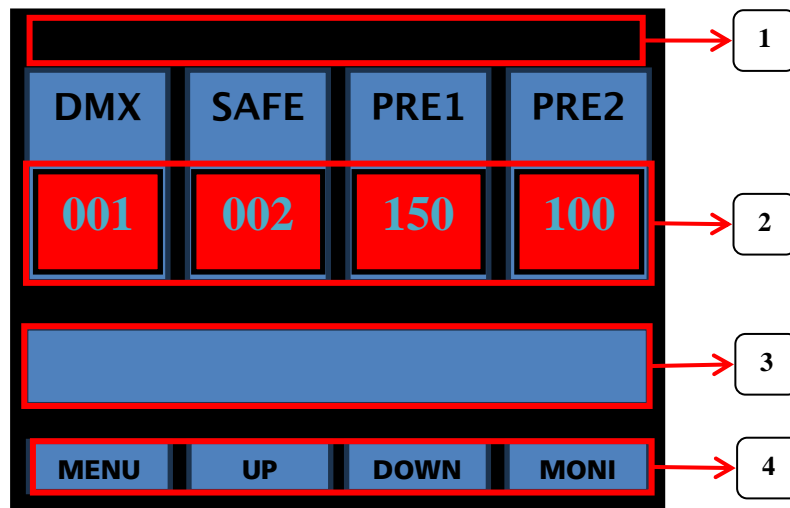
1. LCD screen
2. Touch button
3. Power Switch
4. Safety switch
5. 3-pin XLR IN/OUT
6. 9-60V pyro signal port
7. Power IN / OUT
8. 5-pin XLR IN/OUT (5-PIN XLR IN can charge for wireless DMX pen through pin1 and 4, pin4 with DC5V power supply)
9. E-stop interface
10. ARM indicator light and RFID card area

## ▲ Display and setting

### 1. Welcome interface


Version	FA06-250109
Serial Number	*****
Pump Run Time	00:00:00
Ignition Times	xx
Remaining Sparks Shots	xx

## 2. Main interface



### 1.) Status Bar

 : appears when "External Trigger" is "ON"

 : appears when "safety switch" stay at "USER MODE"

**6N:** DMX channel mode

### 2.) Data Bar

**DMX:** DMX address, Background turns from BLACK to RED when DMX cable was connected.

**SAFE:** Safety address, Background turns from BLACK to RED when DMX cable was connected and safety channel activated.

**PRES1:** Pressure value. Background turns from BLACK to RED when pressure reached / exceed 90% of "set pressure" value.

**PRES2:** Pressure of air tank. Background turns from BLACK to RED when pressure reached / exceed 90% of "Compression pressure" value.

### 3.) Message Bar

USER MODE / error or alert information display, Background color turns to RED when under "USER MODE".

### 4.) Touch Button function display:

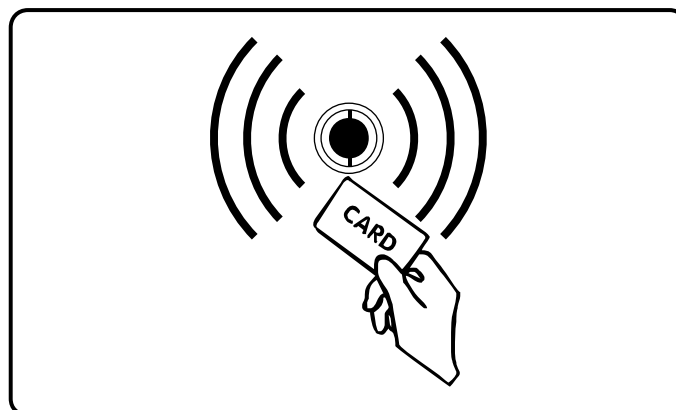
**First Button:** MENU / BACK

**Second Button:** UP / LEFT

**Third Button:** DOWN / RIGHT

**Fourth Button:** MONI / EDIT / SAVE

## 3. RFID area



RFID card come with consumable HC8200 bags, swiping card to identify parameters and types of granules. The RFID card is disposable, one card can only use one time. Each card of 200g Sparks Consumable can increase single machine 20 sparks shots, the maximum recharge sparks shots for the machine is 80.

#### 4. ARM indicator light



Operators can enable/disable the arm indicator light by set the "ARM STATE" in ADVANCED menu. If "ARM STATE" is ON, there will be three status:

**OFF:** DMX signal input

**BLINK:** DMX armed or Ext Ignite in advanced menu is ON

**ON:** no DMX signal and Ext Ignite in advanced menu is OFF

#### 5. Alert Message

Alert Message	Why it appears	How to remove
E0 Test Mode	Safety Key Switch at TEST MODE	Switch Key to USER MODE
E0 Factory Mode	Factory mode	Switch to Normal mode
E0 ExtIgnite ON	"External Trigger" is "ON"	Set "External Trigger" to "OFF" in Advanced menu
E0 Ignition Disenable	"Ignition" is "Disenable"	Set "Ignition" to "Enable" in Factory menu
E0 Key Lock	Touch button no operation in 30s	Restart machine
E0 Remain Sparks Shots X	Remaining sparks shots is less than 20. X is the remaining sparks shots times.	Please swipe RFID card;
E0 Flamer Test Mode	"Flamer Test Mode" is ON, This function is only for engineering testing.	"Flamer Test Mode" is OFF.

#### 6. Error Message

Error Message	Why it appears	How to remove
E1.1 Fuel Pressure Err	Consecutive pressurize failure times exceed "Pressure Fail Cnt" setting value in factory menu. Possible reasons: 1. Fuel tank empty 2. Pump failure 3. Fuel leakage 4. Pressure sensor damage 5. Pressure relief valve malfunction 6. Pipe system cannot maintain pressure.	Restart machine and check below items accordingly 1. Fill tank 2. Check pump 3. Check whether there is leakage inside machine 4. Check pressure sensor 5. Check relief valve 6. Check relief valve and check valve, or whether there is leakage inside machine.
E1.2 Air Pressure Err	Pressurize time exceed internal setting time Possible reasons: 1. Air compressor malfunction 2. Air tank leakage 3. Air pressure sensor damage	Restart machine and check below items accordingly 1. Check air compressor 2. Check whether there is air leakage inside machine 3. Check air pressure sensor
E2 P Relief Err	Pressure high after depressurize. Possible reasons: 1. Pressure relief valve malfunction 2. Fuel pipe block	Restart machine and check below items accordingly 1. Pressure relief valve 2. Check fuel pipe
E3.1 Fuel P Sensor	Fuel pressure sensor disconnect / damage	please check fuel pressure sensor.
E3.2 Air P Sensor	Air pressure sensor disconnect / damage	please check air pressure sensor.
E5 DC Err	1. Switching power supply damage 2. Main board malfunction or mainboard voltage detection error	1. Replace switching power supply. 2. Check or replace main board
E6 Tip Err	1. Machine slant over 45°, it stops running. 2. Main board malfunction	1. Tip setting set to OFF, or horizontal install machine. 2. Replace main board

## 7. Monitoring Interface

Press "MONI" enter below interface

Menu	Explanation
Fuel Pressure	Current fuel pressure value. -62 means pressure sensor disconnected
Air Pressure	Current air tank pressure value. -62 means pressure sensor disconnected
DC voltage	DC power supply voltage
User Mode	<15V is under test mode
Pump Run Time	Accumulative pump working time
Ignition Times	Accumulative ignition times
Remain Sparks Shots	Remaining sparks shots times

## 8. Menu Interface

Press "MENU" enter below interface

Menu	Explanation
MAIN	Main menu
ADVANCED	Advanced menu
TEST	Test menu
FACTORY	Factory menu (factory use only)

## 9. Main menu

Select "MAIN" in menu interface, press "EDIT" enter main menu. Use UP / DOWN / SAVE to change the parameters.

Menu	Range	Default	Explanation
Set DMX Address	1-507	1	DMX address setup

## 10. Advanced menu

Select "ADVANCED" in menu interface, press "EDIT" enter advanced menu. Use UP / DOWN / SAVE to change the parameters.

Items	Contents	Default	Description
External Trigger	OFF / Flame Ball / Sparks and Flame Ball	OFF	Trigger through 9-60V pyro ignition signal.
Tip Setting	ON/OFF	ON	Turn ON/OFF tip over function
Automatic Air Pressure	ON/OFF	OFF	ON: The air pump will automatically pressurize when the machine is powered on.
Key Sound	ON/OFF	ON	Touch button sound ON / OFF
ARM State	ON/OFF	ON	ARM indicator light ON/OFF setting
LCD Backlight	ON/OFF	ON	LCD backlight ON/OFF. When ON, screen will flash when firing; OFF: LCD screen will turn off when no operation.
Key Lock	ON/OFF	OFF	ON: Touch button will disable if there is no operation in 30s. restart machine to active touch button.
Default Parameter	ON/OFF	OFF	Reset default parameter settings

## 11. Test menu

Please disconnect DMX connection before enter test menu.

Select "TEST" in menu interface, press "EDIT" enter test menu. Use UP / DOWN / SAVE to change the parameters.

"External Trigger" will disable after enter TEST menu, Pressure relief valve will open, below related items will shows "Running" when testing, shows "Finish" after test finished.

Items	Description
ARM Test	Test ARM indicator light, blink once/s, blink 3 times
PY 1 Test	Jet valve 1 ON/OFF 3 times, 1s per time. Operation: choose "PY 1 Test", turn safety switch to "User Mode", press "ENTER"
PY 2 Test	Jet valve 2 ON/OFF 3 times, 1s per time. Operation: choose "PY 2 Test", turn safety switch to "User Mode", press "ENTER"
PY Oil Test	Fuel feeding valve ON/OFF 3 times, 1s per time.
Relief Test	Relief valve ON/OFF 3 times, 1s per time
Igniter 1 Test	Igniter 1 ON/OFF 3 times, 1s per time
Igniter 2 Test	Igniter 2 ON/OFF 3 times, 1s per time
Feeding Test	Sparks consumable feeding motor testing for 3 times, 1s per time
Fuel Pump Test	Pump will pressurize to "Set Pressure" value and keep 0.2s. "R" means machine is pressurizing. "F" means pump test succeed; "E" means pump test fail.
Air Pump Test	Air pump will pressurize to 10 value and keep 0.2s. "R" means machine is pressurizing. "F" means pump test succeed; "E" means pump test fail.

## ▲ DMX CONTROL

cFlamer Boom occupy 6 channels, channel information as below.

Channel	Function	Value
CH1	-	-
CH2	-	-
CH3	Firing ON/OFF	0~253: Firing OFF 254~255: Firing ON
CH4	-	-
CH5	Effect setup	0-201: flame ball mode 202-209: <b>pump and pipeline cleaning</b> mode 210-255: sparks and flame ball mode
CH6	Firing Enable / Disable	0~49 and 201~255: Firing and pressurizing disable 50~200: Firing and pressurizing enable (pressurizing both the air cylinder and fuel system )

### **WARNING:**

The right sequence of channel settings is as follows: CH5, CH6, and CH3;

When CH5 is set 210-255, the machine will execute the sparks consumable feeding program, so the sparks effect can not be canceled;

### **NOTICE:**

The time of pressurizing the air cylinder:

- (1) flame ball mode: 3min;
- (2) **pump and pipeline cleaning** mode: 1min;
- (3) sparks and flame ball mode: 3min;

**NOTICE:**

When using the SHOWVEN host controller or the FXcommander to control the machine, the controller can display the pressure value. Specifically, when CH6 is disable, it will show the air pressure. Conversely, when CH6 is enable, it will display the fuel pressure.

**▲ Operation****1. Safety distance explanation**

Safety distance for cFlamer Boom divided into two parts safety radius around machine (a) and safety distance at firing direction (b). No person and flammable materials are allowed to stay inside the safety isolation zone when flamer was armed.

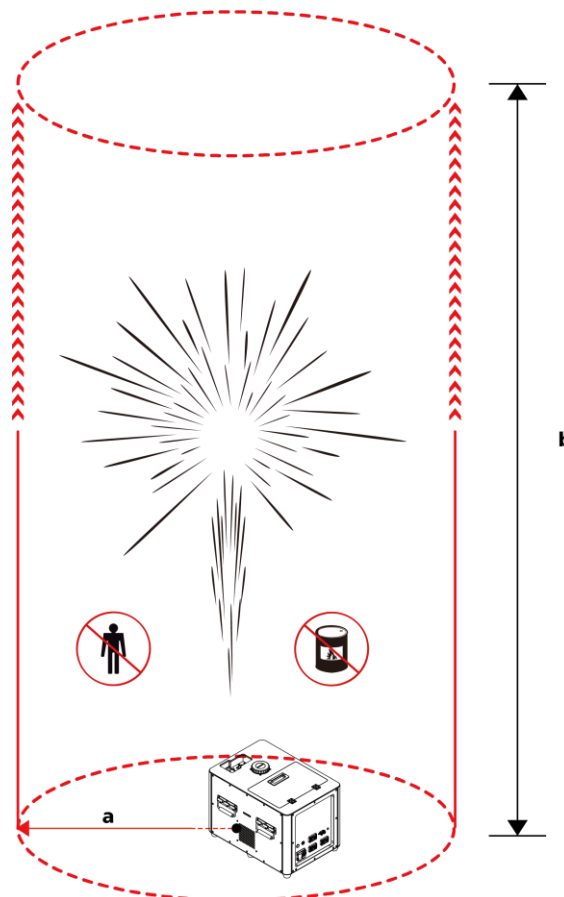
The safety radius around machine with a radius of 3m.

For safety distance at firing direction equals to maximum firing height \* 1.5.

Max. Effect Height	Safety Radius (a)	Safety Distance at Firing Direction (b)
Flame ball: 10m, Sparks: 12m	6m	15m

The cFlamer Boom safety isolation zone (show as below) is a cylindrical three-dimensional space with Safety radius around machine (a) and Height of b. Unauthorized persons and objects are strictly prohibited from entering.

For angled installation, the safety distance both around machine and firing direction should shift accordingly.

**Safety distance in windy environment**

The safety isolation zone radius (a) increase with wind direction and wind speed (v, m/s). The safety distance in windy conditions can be calculated as below:  $a = 6 + v$ ;

For example when the wind speed is 3m/s, then the safety isolation zone radius should be 9m, When the wind speed  $\geq 8\text{m/s}$  (wind force  $\geq 5$ ), please use it with caution. When wind speed  $\geq 17\text{m/s}$  (wind force  $\geq 8$ ) , please stop use the machine.

## 2. Install cFlamer

- a) Horizontal installation is preferred for the machine.
- b) For truss installations always connect with safety rope to ensure extra safety. If there is any other national or regional guidelines please follow it accordingly.
- c) Double confirm the machine was firmly installed.

### **WARNING:**

Ensure the installation position of cFlamer Boom meet above safe distance requirements. cFlamer Boom supplied with a nozzle cM which generate up to 10m flame ball and 12m sparks.

## 3. Color fluid preparation

- a) Ensure all containers, fuel tanks etc are clean and free of impurities. Highly recommended to use container/fuel tank with a fixed color, not mix with different colors. If you have no extra tanks, please wash container / fuel tank with clean water thoroughly before use another color fluid.
- b) When wash the fuel tank, add half of the fuel tank capacity of clean water, shake it repeatedly for 30 seconds, pour out the water, and repeat the cleaning process twice.
- c) Perform the mixing operation according to the instructions on the color additive label. For blue, pay special attention to the proportion and addition order. Add 2 bottles (125ml\*2) of BLUE A liquid to 5L diluent liquid and shake well, and then add 15ml BLUE B liquid. For other colors, just add 125ml color additive to 5L diluent liquid and shake well.
- d) There will be solid precipitate at the bottom of color additive bottle when environment temperature is low, please shake repeatedly to dissolve the solid precipitate before add it to the methanol.
- e) Please shake and mix the color fluid well before use.
- f) The prepared color fluid needs to be stored with a cap and implemented in accordance with the requirements of the diluent liquid MSDS or local regulations.

### **NOTICE:**

Ensure that the purity of diluent liquid.

### **WARNING:**

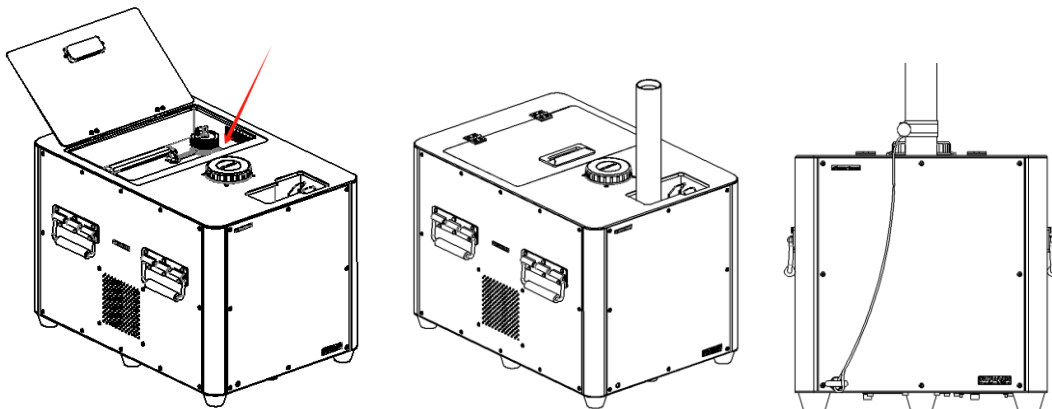
The preparation operation should be carried out in a well-ventilated place, away from fire, sparks and heat sources. Dry powder or carbon dioxide fire extinguishers should be prepared for use in the operation site.

### **WARNING:**

cFlamer series product compatible with color fluid only prepared with SHOWVEN original color additives, other colored fuels are forbidden to use on the product, It will sure damage the machine.

## 4. Install the output tube

- a) Open the fuel tank cover and take out output tube of cFlamer Boom, screw it tight to the machine.
- b) Install a safety rope to the output tube as below.



## 5. Fill the cFlamer Boom

- c) Switch safety lock to TEST MODE.
- d) Fill the fuel tank with qualified color fluid we prepared.
- e) To avoid color mix, it is highly recommended to fix the color used on each unit of cFlamer Boom. In case need to change to another color fluid please execute pipeline clean process (refer to 13. Pump and pipeline cleaning of this manual).

**WARNING:**

The warranty is void if any other type of color liquid or additive is used.

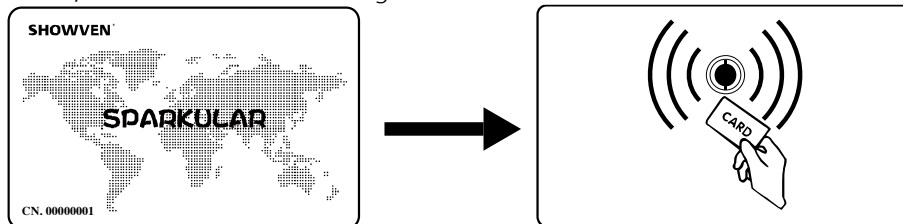
**NOTICE:**

SHOWVEN excludes liability for the losses, damages and accidents caused by not using qualified fuels in accordance with this requirement.

## 6. Fill the sparks powder HC8200 and swipe RFID card

Please refill the powder hopper with SHOWVEN original HC8200 LARGE.

- Swipe an RFID card. Read the card as show below. The screen of the machine flash once if read successfully. The machine only compatible with V2.0 RFID card from SHOWVEN.
- The machine will report E0 when Remaining sparks shots is less than 20.
- Please note each RFID card come with 200g package HC8200 can increase single machine 20 sparks shots, and the maximum recharge shots each time for the machine is 80.

**NOTICE:**

Make sure to fill the HC8200 LARGE to the consumable hopper, not to the output tube.

**WARNING:**

The max. sparks consumable hopper capacity is 800g, please do not add excessive consumables.

**WARNING:**

For safety use only SHOWVEN original HC8200 LARGE, the warranty is void if any other type of consumable is used.

## E-Stopper / E-stop terminator Connection

E-stop interface is a power cut-off interface, the machine can be powered on normally only when E-STOP in is connected. For safer use of cFlamer Boomwe suggest to connect it with E-stopper. For operators who don't want to use E-stopper can plug a E-stop terminator in E-STOP IN to enable the device.

E-Stopper (optional) connect with single unit of cFlamer Boom.

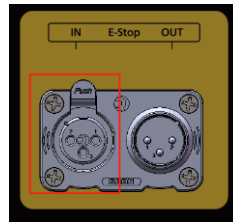


E-Stopper (optional) connect with multi units of cFlamer Boomin daisy chain.

**NOTICE:**

A unit of E-Stopper can control maximum 24 units of device.

Use E-stop terminator (standard configuration): if without E-Stopper. Plug the E-stop terminator to the E-STOP IN port to enable the cFlamer.



## 7. Connecting cFlamer

Make sure the DMX or pyro controller is disarmed or powered off during cable connection.

### If control by DMX controller, follow below steps:

- Connect a DMX cable to the DMX IN socket of first unit of cFlamer Boom, another head of this DMX cable connect to DMX console (such as FXcommander). Make sure the DMX console is powered off.
- Connect a DMX cable to the DMX OUT socket of previous cFlamer, and the other end to the DMX IN of next machine. Connect all devices in series in this way.
- Suggest to plug in a DMX terminator into the DMX OUT in last unit of machine to improve signal reliability. For distance >200m please use SHOWVEN DMX splitter 8 to amplify the signal.
- Connect a power cable to the POWER IN socket of cFlamer. Make sure power supply is consistent with the rated voltage of the equipment, and the socket must be well grounded.
- Power on all cFlamer. Check the safety lock, double confirm it stays at "TEST MODE".



- Assign DMX address for each unit of cFlamer Boom. If use SHOWVEN host controller or FXcommander to control the machine please allocate a unique DMX address for each unit of machine.

### If control by 9-60V pyro signal, follow below steps:

- Connect a power cable to the POWER IN socket of cFlamer. Connect the other end of power cable to the power source. Make sure power supply is consistent with the rated voltage of the equipment, and the socket must be well grounded.
- Connect the power control cables to the 9-60V pyro signal connector on cFlamer Boom.
- Connect the other end of power control cables to the pyro controller (9-60V external trigger source), such as SHOWVEN PyroSlave series module. Before connect please make sure there is no pyro signal input.
- Power on all cFlamer
- Set the Ext Ignite to ON status in advanced interface, set the firing effect.

#### NOTICE:

The ventilation fan will on after cFlamer Boom connect with power cable, no matter machine was power on or not.

## 8. Power ON the DMX console / Pyro controller and programming

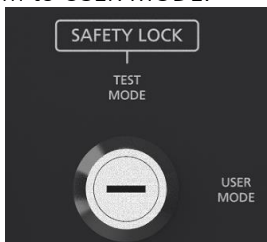
Power on DMX console and program the cFlamer Boomeffect on DMX console or Pyro controller.

## 9. Test the ignition function of cFlamer Boom

Test the ignition function of cFlamer Boom, we can check whether the igniters of each unit of cFlamer Boom is working fine. Due to the safety switch is stay at TEST MODE there will be only ignition while jet solenoid valve is not open, so no flames generated.

## 10.Firing

- Double confirm the prescribed safety isolation zone is clear, no person, animal or other property within this region.
- Switch the safety lock of cFlamer Boom to USER MODE.



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

### **NOTICE:**

Due to the pump and pipeline cleaning procedure after each show, there will be some water remains in the pipeline, so the first several shots may spray water and fail ignition. Even though please make sure no person, animals or other flammable articles stays in the safety isolation area when firing.

## 11.Depressurize and Power OFF

- Depressurize the unit after show or not use the machine for a period of time
- Power OFF DMX console
- Press E-Stopper to power OFF all machine (if connect with E-stopper)
- Switch safety lock of cFlamer Boom to TEST MODE
- Power OFF each unit of machine
- Unplug power cable, DMX cable, E-Stopper connection cable etc.

## 12.Pump and pipeline cleaning

- Collect all cFlamer Boom, take the color fluid tank out and replace with water tank with no less than 3L purified water inside.
- Connect with power and DMX cables, power on machine.
- Pressurize and depressurize cFlamer Boom 3 times.
- Pressurize machine and firing 3 times of the pump and pipeline cleaning mode.
- Pressurize and depressurize cFlamer Boom 3 times again.
- Empty the remaining water in fuel tank

### **DANGER:**

Make sure there is no fuel inside fuel tank when make cleaning procedure, otherwise it may cause fire.

### **WARNING:**

Pump and pipeline cleaning procedure is a mandatory operation after the machine is used, Not to do so will shorten the service life of machine due to the corrosive of color fluid and the accumulation of the sparks consumable.

### **WARNING:**

Before clean test, make sure there are sufficient purified water in the fuel tank. During the cleaning process, the flamethrower will spray a large amount of water, please ensure there is no non-waterproof objects or equipment around.

### **NOTICE:**

Pump and pipeline cleaning procedure is also a necessary operation when use a different color on cFlamer series product, Not to do so will cause abnormal flame color due to the remaining fluid from previous firing.

## 13.Clean and package machine

- Clean the water on machine, wait until it dry
- Package the machine after it is cool down

## ▲ Nozzle Replacement and Igniter Position Adjustment

### 1. Nozzle Replacement

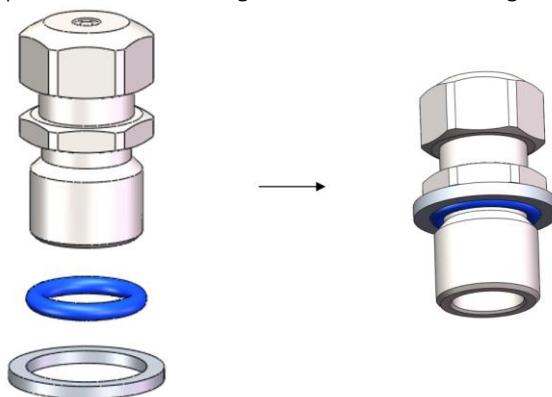
Use 14mm outer hexagon socket wrench (SFMET944) to disassemble the nozzle, clean the nozzle and nozzle socket with air gun (air compressor), change a new nozzle and install it.



### 2. Nozzle structure and assemble

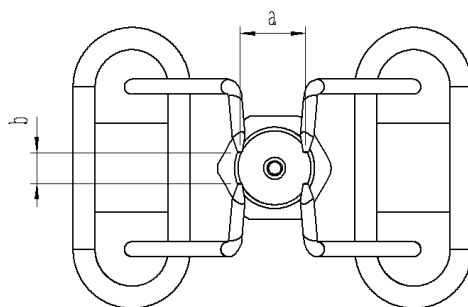
Please assemble the stainless steel gasket, O-ring and nozzle as shown below. The O-ring should be inside the stainless steel gasket, otherwise it may cause fuel leakage from the nozzle.

Please use the nozzle replacement tool hexagon socket wrench to tighten the nozzle.



### 3. Igniter Position Adjustment

Whenever changed the nozzle or ignition is not good, please check igniter pole position according to below parameters. The right position for each pair of pole should have a gap from tip to tip of 2.5-3mm (b) and a gap between two igniter of 18 (a). Check the ignition success rate after adjustment by firing.



**WARNING:** Do unplug the power cable and power off the machine when service flamer.

## **▲ Maintenance**

1. Execute pump and pipeline cleaning procedure every time after use the machine to clean the pump and pipeline of machine.
2. To maintain the machine in good performance and running status, it is recommended to running the device at least once per month.
3. Check the ignition probes both before and after each show, if there is any foreign objects on it please clean it up.
4. Maintenance of the nozzle: Nozzle needs to be cleaned from time to time, and it is recommended that once every six months (depending on the environment and frequency of use). In the process of using the equipment, if the flame shape is seriously deformed or the fuel injection line is significantly deformed or coarsened, the nozzle should be removed immediately for cleaning. If after clean, there are still problems please replace new nozzle.
5. Maintenance of the O-ring: If it is found that the O-ring of the nozzle is damaged or ageing when cleaning the nozzle, the Fluorine rubber O-ring should be replaced in time.

## **▲ Optional Parts for cFlamer**

Part. No.	Description
* SFSMA032	NOZZLE cM for Ignition
* RMSMA530	Stainless steel gasket
* RMWAS112	O ring, outer $\phi 14$ , wire diameter is 2 mm
* SFMET1107	G1-E-Stop connector
FPEST001	E-STOPPER
* FPFLI074	High Quality Flightcase 750* 490* 508mm
* RMPCK345	Flightcase carton box
* SFMET1835	Safety rope for output tube
RMBOT036	Safety loop M8
SFMET944	Nozzle disassemble tool
RMEMD062	5-pin wireless DMX receiver (compatible with FXcommander 2.4GHz wireless DMX)

### **NOTICE:**

The standard accessories are marked with “\*”

## **▲ 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 unqualified fuels;
- \\ 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<sup>®</sup>



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