USER MANUAL
cFlamer Volcano

V1.0
2025/05/30

SHOWVEN Technologies Co., Ltd.

Thanks for choosing SHOWVEN cFlamer Volcano, 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 in consistent with the rated voltage of the equipment, and the socket must well grounded. Unplug and turn off the machine when not use.
- Please connect DMX cable before power on cFlamer Volcano, 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_2 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 is 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 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.

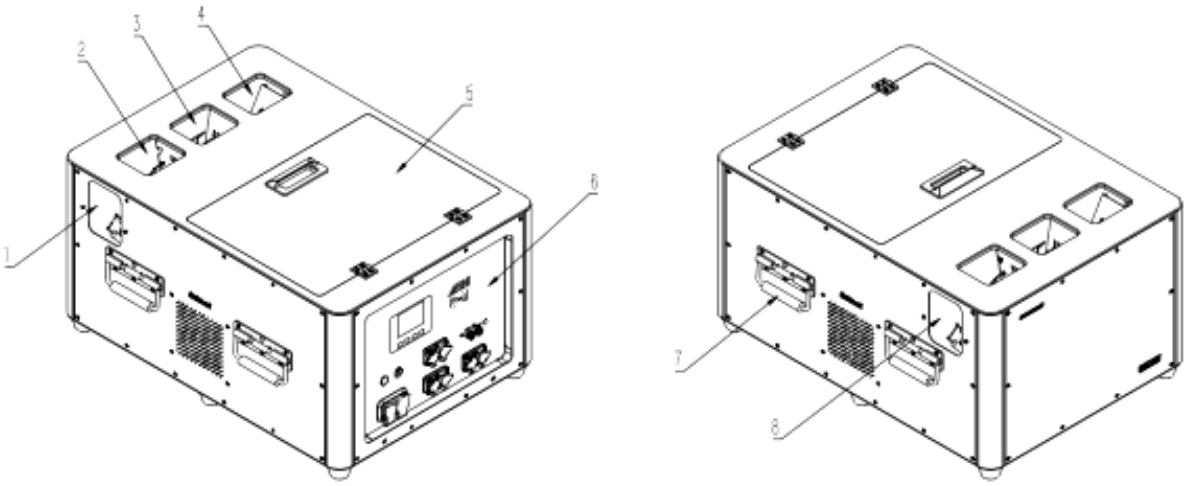
Warning:

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

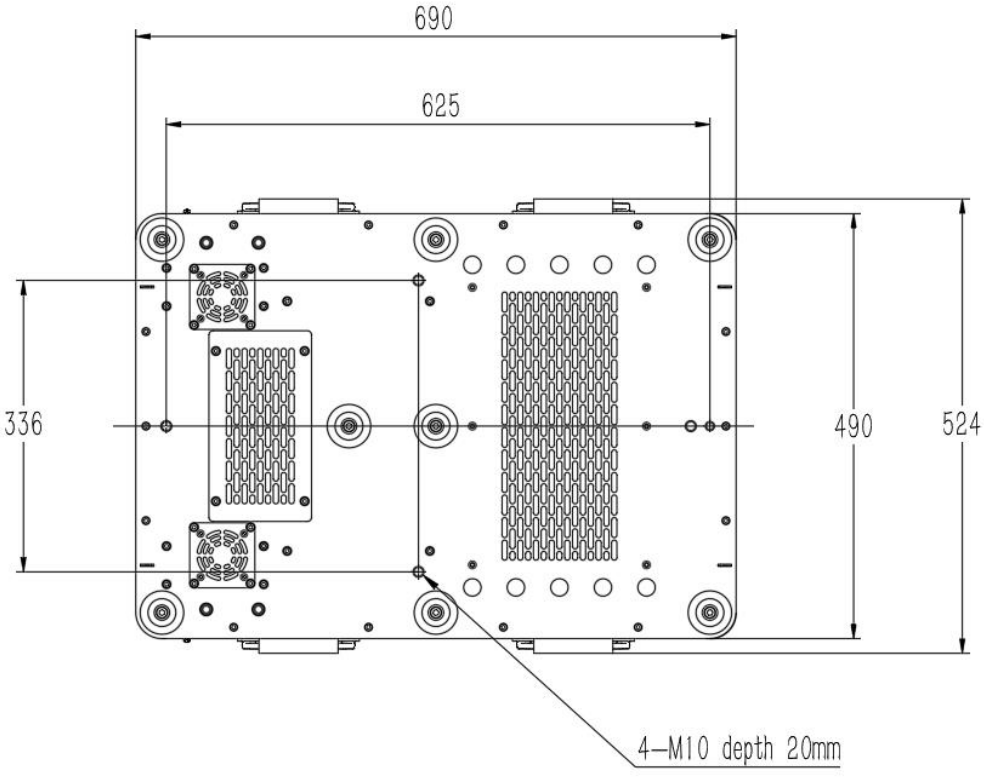
- **Model:** cFlamer Volcano
- **Housing Material:** Stainless steel + Aluminum
- **Dimension:** 690×525×375mm
- **Weight:** 76kg
- **Input:** AC100-120V / AC 200-240V, 50/60Hz
- **Work Power:** 2000W
- **Ignition:** Dual igniters * 5, high voltage electron ignition
- **Control:** DMX , 9-60V pyro signal, 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
- **Flame Height:** 8-10m (no wind, cH nozzle, SHOWVEN color fluid);
  5-6m (no wind, cL nozzle,SHOWVEN color fluid);
- **Tank Capacity:** 5L * 5
- **Fuel:** SHOWVEN color fluid, ISOPAR L, ISOPROPANOL
- **Color Optional:** Red, Gren, Blue, Yellow, Purple (only compatible with SHOWVEN original color fluid)
- **Fuel Tube Filter:** Yes
- **Tip sensor:** Yes
- **Usage in Rain:** Yes
- **ARM light:** Yes

Structure

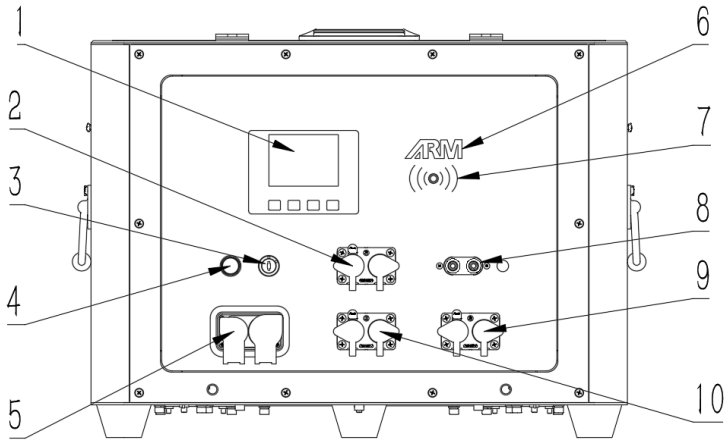


1/8: Side output nozzle hole
2/3/4: Top panel output nozzle hole
5: Fuel tank cover
6: Rear panel
7: Handle

Diagram of bottom panel



▵ Rear Panel



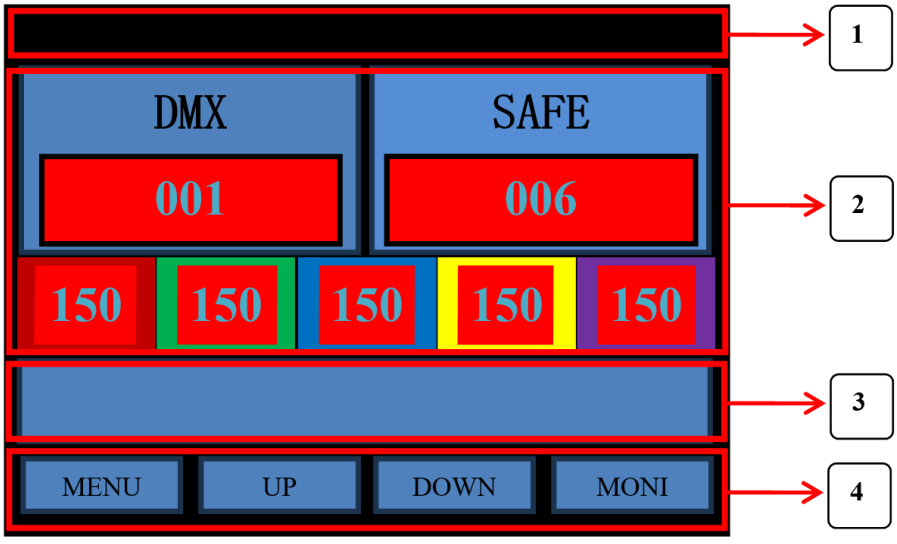
1. LCD screen
2. 3-pin XLR IN/OUT
3. Safety switch
4. Power Switch
5. Power IN / OUT
6. ARM indicator light
7. RFID card area (reserved)
8. 9-60V pyro signal port
9. E-stop interface
10. 5-pin XLR IN/OUT (5-PIN XLR IN can charge for wireless DMX pen through pin1 and 4, pin4 with DC5V power supply)

▵ Display and setting

1. Welcome interface

Version	FA05-241227
Serial Number	**********
Pump Run Time	00:00:00
Ignition Times	xx

2. Main interface



1.) Status Bar

: appears when "External Trigger" is "No.1-No.95"

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

6N/6M/6P: 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.
PRES: Value in below 5 blocks are pressure value of each pipeline. Background turns from BLACK to RED when pressure reached / exceed 90% of "set 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. 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

4. 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 set to No.1 to No.95	Set "External Trigger" to "OFF" in Advanced menu
E0 Ignition Disenable	Any one of"Ignition"of 1-5 is "Disenable"	"Enable"all 1-5"Ignition" in Factory menu
E0 Invert	"Invert" set to "ON"in advanced menu	"Invert" set to "OFF"
E0 Pump Disable	Any one of"Pump"of 1-5 is "Disable"	"Enable"all 1-5"Pump" in Advanced menu
E0 Key Lock	Touch button no operation in 30s	Restart machine

5. Error Message

Error Message	Why it appears	How to remove
E1.1/1.2/1.3/1.4/1.5 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.
E2.1/2.2/2.3/2.4/2.5 P Relief Err	Pressure high after depressurize. Possible reasons: 1. Related pressure relief valve malfunction 2. Related fuel pipe block	Restart machine and check below items accordingly 1. Related pressure relief valve 2. Check related fuel pipe

E3.1/3.2/3.3/3.4/3.5 Press Sensor	Related pressure sensor disconnect / damage	please check related pressure sensor.
E5 DC Err	1. Switching power supply damage 2. Main board malfunction	1. Replace switching power supply. 2. 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

6. Monitoring Interface

Press "MONI" enter below interface

Menu	Explanation
Pressure 1	Current pressure value of output 1 pipeline. -62 means pressure sensor disconnected
Pressure 2	Current pressure value of output 2 pipeline. -62 means pressure sensor disconnected
Pressure 3	Current pressure value of output 3 pipeline. -62 means pressure sensor disconnected
Pressure 4	Current pressure value of output 4 pipeline. -62 means pressure sensor disconnected
Pressure 5	Current pressure value of output 5 pipeline. -62 means pressure sensor disconnected
DC voltage	DC power supply voltage
User Mode	<10V is under test mode
Pump Run Time	Accumulative pump working time
Ignition Times	Accumulative ignition times

7. Menu Interface

Press "MENU" enter below interface

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

8. 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
DMX Mode Select	6CH-N/6CH-M/6CH-P	6CH-N	DMX mode setup
Set Safety Address	1-512	6	Safety address setting under 6CH-P mode

9. 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 / No.1-No.95	OFF	Trigger through 9-60V pyro ignition signal. OFF: Turn off external trigger No.1-No.95: related preset firing sequence trigger through External trigger
Tip Setting	OFF / ON	ON	Turn ON/OFF tip over function
Invert	ON/OFF	OFF	When turned on, all angles will be mirrored.
Pump 1	Enable / Disenable	Enable	Pump 1 Enable / Disenable setting
Pump 2	Enable / Disenable	Enable	Pump 2 Enable / Disenable setting
Pump 3	Enable / Disenable	Enable	Pump 3 Enable / Disenable setting
Pump 4	Enable / Disenable	Enable	Pump 4 Enable / Disenable setting
Pump 5	Enable / Disenable	Enable	Pump 5 Enable / Disenable setting
Stop Mode	All/Single	All	ALL: any of 1-5 pipeline pressure below "Ignit Press Value"in FACTORY mode, all 5 output stops working. Signle: machine stops only the related output which pipeline pressure below"Ignit Press Value".
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

10. 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
Jet 1 Valve Test	Jet valve of output 1 ON/OFF 3 times, 1s per time. Operation: choose related"Jet Valve X Test", turn safety switch to "User Mode", press "ENTER". Below Jet Valve test are the same.
Jet 2 Valve Test	Jet valve of output 2 ON/OFF 3 times, 1s per time.
Jet 3 Valve Test	Jet valve of output 3 ON/OFF 3 times, 1s per time.
Jet 4 Valve Test	Jet valve of output 4 ON/OFF 3 times, 1s per time.
Jet 5 Valve Test	Jet valve of output 5 ON/OFF 3 times, 1s per time.
Relief 1 Test	Relief valve of output 1 ON/OFF 3 times, 1s per time
Relief 2 Test	Relief valve of output 2 ON/OFF 3 times, 1s per time
Relief 3 Test	Relief valve of output 3 ON/OFF 3 times, 1s per time
Relief 4 Test	Relief valve of output 4 ON/OFF 3 times, 1s per time

Relief 5 Test	Relief valve of output 5 ON/OFF 3 times, 1s per time
Igniter Test	Igniter 1-5 ON/OFF 3 times, 1s per time.
Pump 1 Test	Pump of output 1 pressurize to "Set Pressure"and keep 0.2s. "R"means machine is pressurizing. "F"means pump test succeed; "E"means pump test fail.
Pump 2 Test	Pump of output 2 pressurize to "Set Pressure"and keep 0.2s. "R"means machine is pressurizing. "F"means pump test succeed; "E"means pump test fail.
Pump 3 Test	Pump of output 3 pressurize to "Set Pressure"and keep 0.2s. "R"means machine is pressurizing. "F"means pump test succeed; "E"means pump test fail.
Pump 4 Test	Pump of output 4 pressurize to "Set Pressure"and keep 0.2s. "R"means machine is pressurizing. "F"means pump test succeed; "E"means pump test fail.
Pump 5 Test	Pump of output 5 pressurize to "Set Pressure"and keep 0.2s. "R"means machine is pressurizing. "F"means pump test succeed; "E"means pump test fail.

▵ DMX CONTROL

cFlamer Volcano with 3 different channel mode: 6CH-N, 6CH-M and 6CH-P.

6CH-N(6N):

In 6CH-N channel mode cFlamer Volcano occupies 6 functional channels.

Channel	Function	Value
CH1	Manual head selection	**0:**All output **1~51:** output 1 **52~102:** output 2 **103~153:** output 3 **154~204:** output 4 **205~255:** output 5
CH2	-	reserved
CH3	Firing ON/OFF	**0~253:** Firing OFF **254~255:** Firing ON
CH4	Firing Duration setup	**0 and 255:** permanent fire (2s is limit duration time) **1~254:** 10~2540ms duration time (Manual firing duration = DMX Value * 10ms)
CH5	Preset sequence setup	**0-2:** no preset sequence **3-255:** preset sequence DMX value = 2 + Sequence No.*2.55 (ROUND OFF) Preset sequence will disable CH1 and CH4
CH6	Firing Enable / Disable	**0~49 and 201~255:** Firing Disable (Emergency STOP) **50~200:** Firing Enable

6CH-M(6M):

In 6CH-M channel mode cFlamer Volcano occupies 6 functional channels. Each output nozzle allocate a separate channel.

Channel	Function	Value
CH1	Output 1 Firing	**0~253:** Firing OFF **254~255:** Firing ON
CH2	Output 2 Firing	**0~253:** Firing OFF **254~255:** Firing ON
CH3	Output 3 Firing	**0~253:** Firing OFF **254~255:** Firing ON
CH4	Output 4 Firing	**0~253:** Firing OFF **254~255:** Firing ON
CH5	Output 5 Firing	**0~253:** Firing OFF **254~255:** Firing ON
CH6	Firing Enable / Disable	**0~49 and 201~255:** Firing Disable (Emergency STOP) **50~200:** Firing Enable

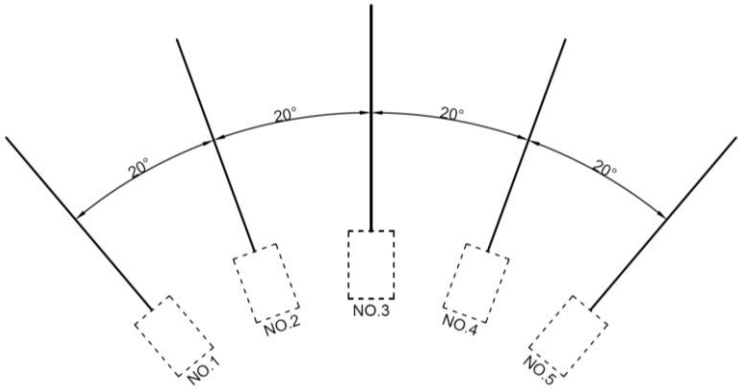
6CH-P(6P):

In 6CH-P channel mode cFlamer Volcano occupies 5 functional channels and a separate safety channel CH-S (this channel is independent from operational channel, can be shared with other machine).

Channel	Function	Value
CH1	Manual head selection	**0:**All output **1~51:** output 1 **52~102:** output 2 **103~153:** output 3 **154~204:** output 4 **205~255:** output 5
CH2	-	reserved
CH3	Firing ON/OFF	**0~253:** Firing OFF **254~255:** Firing ON
CH4	Firing Duration setup	**0 and 255:** permanent fire (2s is limit duration time) **1~254:** 10~2540ms duration time (Manual firing duration = DMX Value * 10ms)
CH5	Preset sequence setup	**0-2:** no preset sequence **3-255:** preset sequence DMX value = 2 + Sequence No.*2.55 (ROUND OFF) Preset sequence will disable CH1 and CH4
CH-S	Firing Enable / Disable	**0~49 and 201~255:** Firing Disable (Emergency STOP) **50~200:** Firing Enable

▵ Firing Nozzle Explanation

Below schematic shows 5 firing angles of cFlamer Volcano from Audience Side view.



▵ cFlamer Volcano Preset Firing Sequences

cFlamer Volcano has 94 preset sequences, operator use related channel DMX value or sequence No. to access certain sequence. Below, you can find sequence list and single ignitions.

Single Ignition Sequence List

No.	Ignition Nozzle	Description	Single Shot Duration (For reference)	Firing Duration (For reference)	CH5 DMX Value
1	1	Single Ignition	Firing duration controlled by CH3, max. 2s.		3-5
2	2	Single Ignition	Firing duration controlled by CH3, max. 2s.		6-7
3	3	Single Ignition	Firing duration controlled by CH3, max. 2s.		8-10
4	4	Single Ignition	Firing duration controlled by CH3, max. 2s.		11-12
5	5	Single Ignition	Firing duration controlled by CH3, max. 2s.		13-15
6	1	Single Ignition SHORT flame	0.06s	0.06s	16-17
7	2	Single Ignition SHORT flame	0.06s	0.06s	18-20
8	3	Single Ignition SHORT flame	0.06s	0.06s	21-22
9	4	Single Ignition SHORT flame	0.06s	0.06s	23-25
10	5	Single Ignition SHORT flame	0.06s	0.06s	26-28

Step Sequences List

No.	Ignition Nozzle	Description	Single Shot Duration (For reference)	Firing Duration (For reference)	CH5 DMX Value
11	Step 1-5	SHORT flame Step sequence	0.06s	0.50s	29-30
12	Step5-1	SHORT flame Step sequence	0.06s	0.50s	31-33
13	Step 1>3>5>2>4	SHORT flame Step sequence	0.06s	0.50s	34-35
14	Step 5>3>1>4>2	SHORT flame Step sequence	0.06s	0.50s	36-38
15	Step 1>5>2>3>4	SHORT flame Step sequence	0.06s	0.50s	39-40
16	Step 5>1>4>3>2	SHORT flame Step sequence	0.06s	0.50s	41-43
17	Step1>5>2>4>3	SHORT flame Step sequence	0.06s	0.50s	44-45
18	Step 5>1>4>2>3	SHORT flame Step sequence	0.06s	0.50s	46-48
19	Step 2>4>1>5>3	SHORT flame Step sequence	0.06s	0.50s	49-50
20	Step 4>2>5>1>3	SHORT flame Step sequence	0.06s	0.50s	51-53
21	Step 2>4>3>1>5	SHORT flame Step sequence	0.06s	0.50s	54-56
22	Step 4>2>3>5>1	SHORT flame Step sequence	0.06s	0.50s	57-58
23	Step 2>3>4>1>5	SHORT flame Step sequence	0.06s	0.50s	59-61
24	Step 4>3>2>5>1	SHORT flame Step sequence	0.06s	0.50s	62-63
25	Step 3>1>5>2>4	SHORT flame Step sequence	0.06s	0.50s	64-66
26	Step 3>5>1>4>2	SHORT flame Step sequence	0.06s	0.50s	67-68
27	Step 3>2>4>1>5	SHORT flame Step sequence	0.06s	0.50s	69-71
28	Step 3>4>2>5>1	SHORT flame Step sequence	0.06s	0.50s	72-73
29	Step 2>3>4	SHORT flame Step sequence	0.06s	0.28s	74-76
30	Step 4>3>2	SHORT flame Step sequence	0.06s	0.28s	77-79
31	Step 1>3>5	SHORT flame Step sequence	0.06s	0.28s	80-81
32	Step 5>3>1	SHORT flame Step sequence	0.06s	0.28s	82-84
33	Step 1>5	SHORT flame Step sequence	0.06s	0.17s	85-86
34	Step 5>1	SHORT flame Step sequence	0.06s	0.17s	87-89
35	Step 2>4	SHORT flame Step sequence	0.06s	0.17s	90-91
36	Step 4>2	SHORT flame Step sequence	0.06s	0.17s	92-94

37	Step 1-5	LONG flame Step sequence	0.30s	1.70s	95-96
38	Step5-1	LONG flame Step sequence	0.30s	1.70s	97-99
39	Step 1>3>5>2>4	LONG flame Step sequence	0.30s	1.70s	100-101
40	Step 5>3>1>4>2	LONG flame Step sequence	0.30s	1.70s	102-104
41	Step 1>5>2>3>4	LONG flame Step sequence	0.30s	1.70s	105-107
42	Step 5>1>4>3>2	LONG flame Step sequence	0.30s	1.70s	108-109
43	Step1>5>2>4>3	LONG flame Step sequence	0.30s	1.70s	110-112
44	Step 5>1>4>2>3	LONG flame Step sequence	0.30s	1.70s	113-114
45	Step 2>4>1>5>3	LONG flame Step sequence	0.30s	1.70s	115-117
46	Step 4>2>5>1>3	LONG flame Step sequence	0.30s	1.70s	118-119
47	Step 2>4>3>1>5	LONG flame Step sequence	0.30s	1.70s	120-122
48	Step 4>2>3>5>1	LONG flame Step sequence	0.30s	1.70s	123-124
49	Step 2>3>4>1>5	LONG flame Step sequence	0.30s	1.70s	125-127
50	Step 4>3>2>5>1	LONG flame Step sequence	0.30s	1.70s	128-130
51	Step 3>1>5>2>4	LONG flame Step sequence	0.30s	1.70s	131-132
52	Step 3>5>1>4>2	LONG flame Step sequence	0.30s	1.70s	133-135
53	Step 3>2>4>1>5	LONG flame Step sequence	0.30s	1.70s	136-137
54	Step 3>4>2>5>1	LONG flame Step sequence	0.30s	1.70s	138-140
55	Step 2>3>4	LONG flame Step sequence	0.30s	1.00s	141-142
56	Step 4>3>2	LONG flame Step sequence	0.30s	1.00s	143-145
57	Step 1>3>5	LONG flame Step sequence	0.30s	1.00s	146-147
58	Step 5>3>1	LONG flame Step sequence	0.30s	1.00s	148-150
59	Step 1>5	LONG flame Step sequence	0.30s	0.65s	151-152
60	Step 5>1	LONG flame Step sequence	0.30s	0.65s	153-155
61	Step 2>4	LONG flame Step sequence	0.30s	0.65s	156-158
62	Step 4>2	LONG flame Step sequence	0.30s	0.65s	159-160
63	Step 15>3>24	SHORT flame Step sequence	0.06s	0.28s	161-163
64	Step 24>3>15	SHORT flame Step sequence	0.06s	0.28s	164-165
65	Step 15>24>3	SHORT flame Step sequence	0.06s	0.28s	166-168
66	Step 3>24>15	SHORT flame Step sequence	0.06s	0.28s	169-170
67	Step 3>15>24	SHORT flame Step sequence	0.06s	0.28s	171-173
68	Step 24>15>3	SHORT flame Step sequence	0.06s	0.28s	174-175
69	Step 24>135	SHORT flame Step sequence	0.06s	0.17s	176-178
70	Step 135>24	SHORT flame Step sequence	0.06s	0.17s	179-181
71	Step 15>234	SHORT flame Step sequence	0.06s	0.17s	182-183
72	Step 234>15	SHORT flame Step sequence	0.06s	0.17s	184-186
73	Step 15>3>24	LONG flame Step sequence	0.30s	1.00s	187-188
74	Step 24>3>15	LONG flame Step sequence	0.30s	1.00s	189-191
75	Step 15>24>3	LONG flame Step sequence	0.30s	1.00s	192-193
76	Step 3>24>15	LONG flame Step sequence	0.30s	1.00s	194-196
77	Step 3>15>24	LONG flame Step sequence	0.30s	1.00s	197-198
78	Step 24>15>3	LONG flame Step sequence	0.30s	1.00s	199-201
79	Step 24>135	LONG flame Step sequence	0.30s	0.65s	202-203
80	Step 135>24	LONG flame Step sequence	0.30s	0.65s	204-206
81	Step 15>234	LONG flame Step sequence	0.30s	0.65s	207-209
82	Step 234>15	LONG flame Step sequence	0.30s	0.65s	210-211

Multi ignition firing sequence list

Sequence No.	Ignition head No.	Description	Flame Activity	Sequence Duration	CH5 DMX Reference Value
83	12345	Multi ignition SHORT flame	Static	0.06s	212-214
84	1245	Multi ignition SHORT flame	Static	0.06s	215-216
85	234	Multi ignition SHORT flame	Static	0.06s	217-219
86	135	Multi ignition SHORT flame	Static	0.06s	220-221
87	15	Multi ignition SHORT flame	Static	0.06s	222-224
88	24	Multi ignition SHORT flame	Static	0.06s	225-226
89	12345	Multi ignition LONG flame	Static	0.3s	227-229
90	1245	Multi ignition LONG flame	Static	0.3s	230-232
91	234	Multi ignition LONG flame	Static	0.3s	233-234
92	135	Multi ignition LONG flame	Static	0.3s	235-237
93	15	Multi ignition LONG flame	Static	0.3s	238-239
94	24	Multi ignition LONG flame	Static	0.3s	240-242
>94	12345	simultaneously	Static	User defined	243-255

Δ Operation

1. Safety distance explanation

Safety distance for cFlamer Volcano 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.

For cFlamer Volcano due to it with 5 output directions, firing angle from -40° to +40°, operators should pay special attention to the radius around machine (a) and safety distance at firing direction (b).

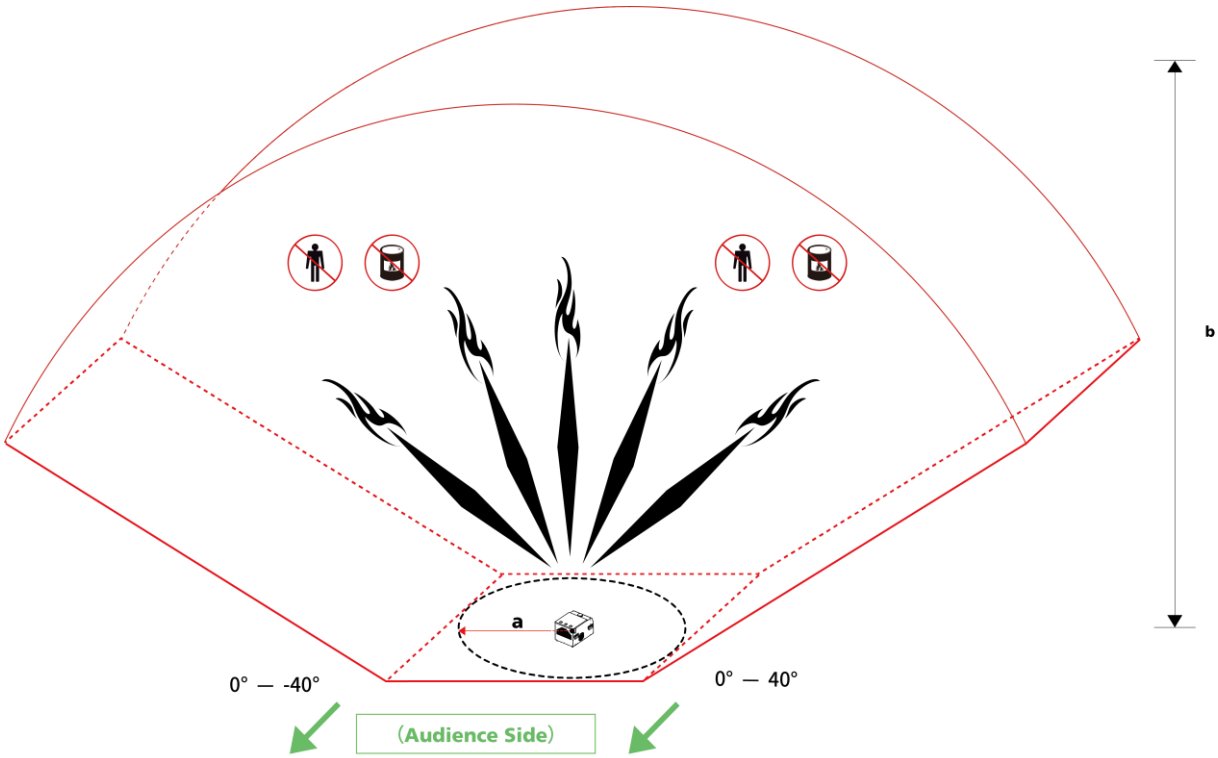
The safety radius around machine with a radius of 3m.

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

Nozzle Type	Max. Flame Height	Safety Radius (a)	Safety Distance at Firing Direction (b)
SFSMA033 Nozzle cH	8-10m	5m	15m
SFSMA037 Nozzle cL	5-6m	4m	9m

The cFlamer Volcano safety isolation zone (show as below) is a three-dimensional space with an 80° fan-shaped section enclosed by a and b (check below diagram). Unauthorized persons and objects are strictly prohibited from entering.

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



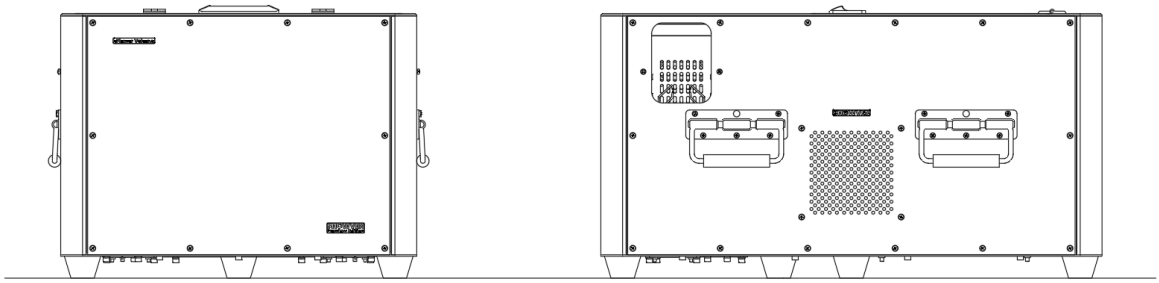
Safety distance in windy environment

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 ≥ 8m/s (wind force ≥ 5), please use it with caution. When wind speed ≥ 17m/s （wind force ≥ 8）, please stop use cFlamer Volcano.

2. Install cFlamer Volcano

a) Please install cFlamer Volcano on firm solid horizontal surface.



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:

Do NOT install cFlamer Volcano in tilt position.

WARNING:

Ensure the installation position of cFlamer Volcano meet above safe distance requirements. cFlamer Volcano supplied with a nozzle cH which generate up to 10m flame.

3. Color fluid preparation

a) Ensure all containers, fuel tanks etc are clean and free of impurities. Highly recommanded 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.

NOTICE:

The optimal viewing condition for the color flame effect is in a dark environment.

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:

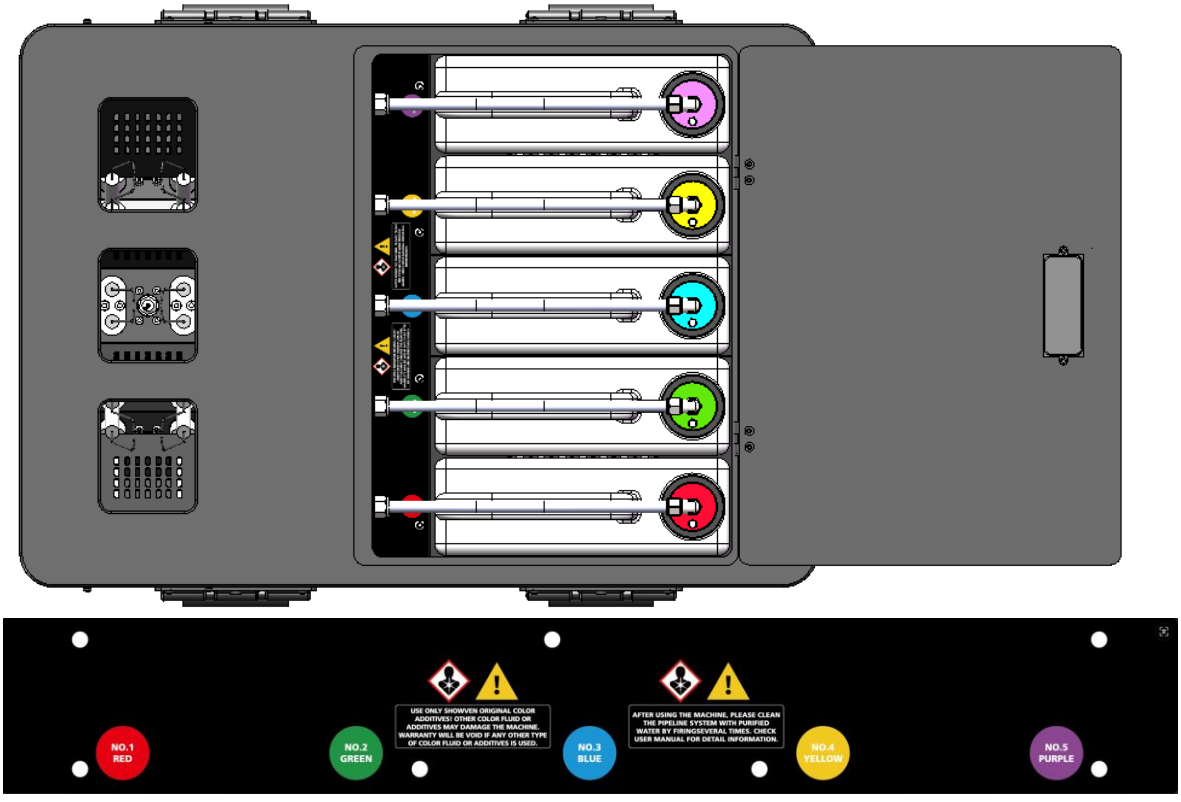
cFlamer series product compatible with color fluid only prepared with SHOWVEN original color additives, other colored fuels are forbidden to use on the product, It will sure damage the machine.

4. Fill the cFlamer Volcano

a) Switch safety lock to TEST MODE.

b) Fill the fuel tank with qualified color fluid we prepared accordingly, do not mix.

c) To avoid color mix, it is highly recommended to fix the color used on each pipeline of cFlamer Volcano as we suggest below. In case need to change to another color fluid please execute pipeline clean process (refer to *11. Pump and pipeline cleaning* of this manual).



NOTICE:

No.1 to No.5 of the color indicator corresponding to output nozzle No.1 to No.5.

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.

5. E-Stopper / E-stop terminator Connection

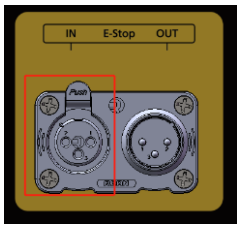
E-stop interface is a power cut-off interface, the machine can be powered on normally only when E-STOP in is connected. For safer use of cFlamer Volcano we suggest to connect it with E-stopper. For operators who don't want to use E-stopper can plug a E-stop terminator in E-STOP IN to enable the device.

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

E-Stopper (optional) connect with multi units of cFlamer Volcano in 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 Volcano.



6. Connecting cFlamer Volcano

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

If control by DMX controller, follow below steps:

a) Connect a DMX cable to the DMX IN socket of first unit of cFlamer Volcano, another head of this DMX cable connect to DMX console (such as FXcommander). Make sure the DMX console is powered off.
b) Connect a DMX cable to the DMX OUT socket of previous cFlamer Volcano, and the other end to the DMX IN of next machine. Connect all devices in series in this way.
c) 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.
d) Connect a power cable to the POWER IN socket of cFlamer Volcano. Make sure power supply in consistent with the rated voltage of the equipment, and the socket must well grounded.
e) Power on all cFlamer Volcano. Check the safety lock, double confirm it stays at "TEST MODE".

f) Assign DMX address for each unit of cFlamer Volcano. 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:

a) Connect a power cable to the POWER IN socket of cFlamer Volcano. 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) Connect the power control cables to the 9-60V pyro signal connector on cFlamer Volcano.
c) 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.
d) Power on all cFlamer Volcano
e) Set the Ext Ignite to ON status in advanced interface, set the firing duration.

NOTICE:

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

7. Power ON the DMX console / Pyro controller and programming

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

8. Test the ignition function of cFlamer Volcano

Test the ignition function of cFlamer Volcano, we can check whether the igniters of each unit of cFlamer Volcano 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.

9. Firing

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

c) 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.

10. Depressurize and Power OFF

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

11. Pump and pipeline cleaning

a) Collect all cFlamer Volcano, take the color fluid tanks out and replace with water tanks with no less than 2L purified water inside each tank.
b) Connect with power and DMX cables, power on machine.
c) Pressurize and depressurize cFlamer Volcano 3 times.
d) Pressurize machine and firing 3 times with firing duration of 1s, please remember all 5 output nozzle should do this step.
e) Pressurize and depressurize cFlamer Volcano 3 times again.
f) Emtpy 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 shelf life of cFlamer series product due to the corrosive of color fluid.

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.

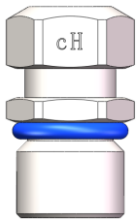
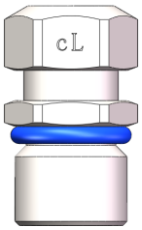
NOTICE:
Pump and pipeline cleaning procedure is also a necessory operation when use a different color on cFlamer series product, Not to do so will cause abnormal flame color due to the remaining fluid from previous firing.

12. Clean and package machine

a) Clean the water on machine, wait until it dry
b) Package the machine after it is cool down

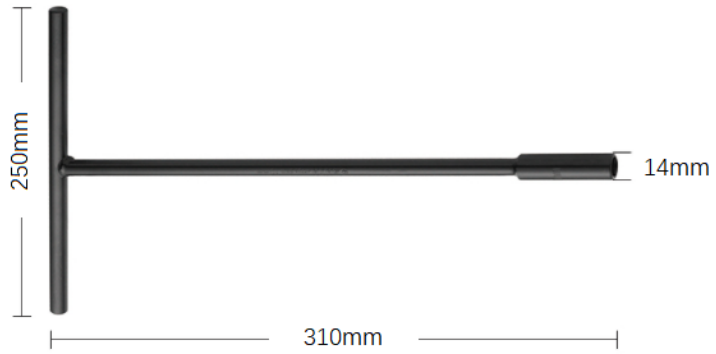
Δ Nozzle Replacement and Igniter Position Adjustment

1. Nozzle Types and Flame Height

Nozzle Type	Picture	Short Flamer Height (m)	Long Flame Height (m)
Nozzle cH SFSMA033		5-7m	8-10m
Nozzle cL SFSMA037		3-4m	5-6m

2. Nozzle Replacement

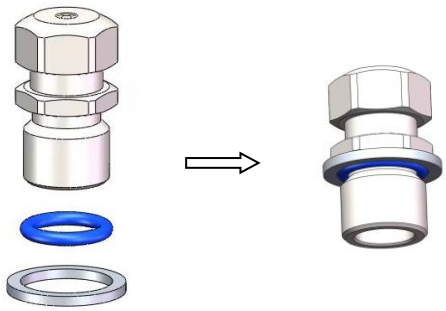
Use 14mm outer hexagon socket wrench (SFMET944) to disassemble the nozzle, clean the nozzle and nozzle socket with air gun (air compressor), change a new nozzle and install it.



3. Nozzle structure and assemble

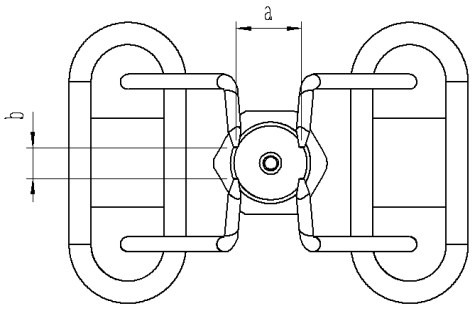
Please assemble the stainless steel gasket, O-ring(blue) and nozzle as shown below. The O-ring should be inside the stainless steel gasket, otherwise it may cause fuel leakage from the nozzle.

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



4. Igniter Position Adjustment

Whenever changed the nozzle or ignition is not good, please check igniter pole position according to below parameters. Check the ignition success rate after adjustment by firing.



nozzle	a (mm)	b (mm)
cH	18±1	2.5~3.0
cL	13±1	2.5~3.0

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 Volcano

Part. No.	Description
SFSMA033	NOZZLE cH
SFSMA037	NOZZLE cL
RMSMA530	Stainless steel gasket
RMWAS112	O ring (blue), outer ϕ14, wire diameter is 2 mm
SFMET1107	G1-E-Stop connector
FPEST001	E-STOPPER
FPFLI075	High Quality Flightcase
RMPCK341	Flightcase carton box
RMBOT036	Safety loop
SFMET944	Nozzle disassemble tool
RMEMD062	5-pin wireless DMX receiver (compatible with FXcommander 2.4GHz wireless DMX)

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

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