



Cauldron Flame System

User Guide

Product Choreography



Product Description

The Cauldron Flame is perfect substitute for Olympic flame demagnification. It can make propane flame from around 1 m high and can run for about 4 hours and more continuous. The Cauldron Flame is designed for use on outdoor events or well ventilated indoor events.

For safety, this system has a safeguard system which is composed of flame sensing rod and its flame sensing board. Without the solid pilot flame, the effect valve does not open and accordingly, it cannot make the flame burn. The pilot flame strike process repeats till the pilot flame becomes solid and even during the show, when the pilot flame is gone unexpectedly, the pilot re-strike resumes automatically and immediately within 0.3seconds. When the pilot flame becomes solid, the main valve turns to be open for standby state to shoot the flames. During the re-strike process, the main valve keeps closed so that no danger to shoot the flame accidentally.

This system is controlled with standard DMX 512 controller. It has 2 DMX channels. 1st CH is for main flame and CH100 is for pilot flame.

Specification

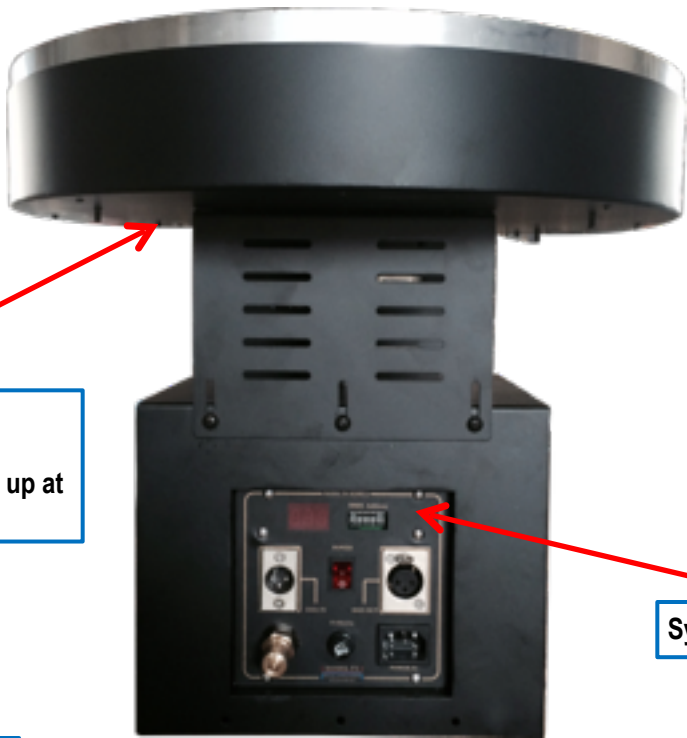
- Item : Cauldron Flame
- Power : 220VAC, 50~60Hz 70.8W
- Dimension : 41cm(W) x 41cm(L) x 37cm(H)
- Weight : 12.1kg
- Fuel : LP Gas or Propane gas
- LPG Consumption : 13.2kg / h at working pressure 0.5bar
- Continuous operation : 4hours
- Working Pressure : 0.3 ~ 0.5bar (Maximum 1bar)
- DMX CH : 2 channels: 1 = Pilot Flame, 2 = Main Flame
- Control : DMX 512
- Optional Accessories : Propane hose, propane gas regulator, DMX cable, Powercon mains power cable



Warnings

- ❖ This system is intended to provide a flame special effect. As with all potentially dangerous special effects, the operator should be in full view of the systems at all times during operation.
- ❖ The system's flame height is up to 1m high. Appropriate clearance for flame and its heat is required.
- ❖ Under the rainy or strong-windy weather, do not use the system.
- ❖ Don't shoot flames toward people or any flammable objects. Place the system on flame resistant surface and secure safe distance.
- ❖ Understand completely how to operate and control the system before using.
- ❖ Always keep the working pressure stipulated in this manual. Always abide by the working pressure.
- ❖ Always check any leakage of gas for the system, hoses and tanks before using.
- ❖ Also, check all the power and signal cables if there is any damage or trouble before using.
- ❖ During transportation and storage, remove all the gases and pressure from the system.
- ❖ Always place the fire extinguisher beside the operator or at the right place.
- ❖ For storage and transportation, please be sure that the gas is removed from the system.
- ❖ The modification or usage for other purposes of the system are prohibited.
- ❖ Abide by the law imposed by your authority about the usage and operation of the system.

System Overview



Ceramic board is built inside on the bottom of flame nozzles, so the body temperature will not go up at all

System control panel

Pilot Flame Igniter & Flame Sensor Rod



Flame bar

System Set-Up

This cauldron flame system is lit by pilot flame and pilot flame is monitored during whole show with flame sensor and flame sensor board. If pilot flame fails to be solid or is gone, the main solenoid valve becomes closed immediately and the system resumes to light the pilot flame with HV spark by igniter.

Only when the pilot flame is solid, then main valve opens and the system turn to be on standby to shoot the main flame. Without the solid pilot flame, the shooting is not possible and the main valve is closed automatically.

- Locate the system on the safe place tightly.
- Locate the LPG tank on the safe and isolated place and keep the security guard for the safety.
- Connect DMX signal cable and power code to the system.
- Connect LPG hose to the system first and then connect it to the gas tank.
- After the hose connection, slightly start to open the valve of gas tank.
- Be sure that you have to check if there is any leakage on the system, hose and gas distributor.
- If there is no problem in the system and other accessories, then turn on the power switch.
- Before shooting main flame, you have to test pilot flame first and check if the pilot gas pressure is proper. When you confirm that everything is fine and okay to go, then, you can shoot the flame.
- After the show, at first, close the main gas tank and then shoot 4~5 times for removing all the remaining gas inside the hoses, system and the inside-installed gas tank. Completely remove the gas from the system. Then close the manual ball valve.

CAUTION : Always keep the system and especially pilot parts dry without moisture. If the igniter and flame sensor rod is wet, the system can mal-function and cannot work properly.

DMX Control

This system is programmed and controlled with standard DMX 512 controller. Every system has 2 DMX channels. 1st CH is for main large flame, CH100 is for pilot flame.

DIP Switch for changing start address.

Every dip switch's value is as follows;

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
1	2	4	8	16	32	64	128

For example, if you want to set starting address as 13, Turn on SW1, SW3, and SW4. When you add all these turned-on dip switch's values ($1 + 4 + 8$), it will be 13 and it is starting address of that system. CH13 and CH14 are for main flame and CH15 is for pilot flame.



Handy DMX Controller

Handy DMX Controller (DMX 512 protocol) is for simple control of the system.

- Free voltage, 3 XLR pin, 6 Channels, Flash Mode and can set the starting address.
- Flash Button : While flash button is on-state, the controller works only while you touch the buttons.
- Pilot Button : Use only when pilot channel is allocated to CH 100.

How to set the starting address ;

- Push flash button for 3 seconds or longer, then you can see the flash button led is flickering.
 - Button No. 1 is hundred digit and Button No. 2 is ten digit and Button No. 3 is single digit.
- For example, to set the starting address 128, push Button No. 1 one time and push Button No. 2 two time and push Button No. 3 eight time. You can see 128 on DMX address monitor (FND).

This controller is separate sale. It is not included to the set of the system.



Maintenance

- After show, ensure that Gas remaining inside the system was removed from each system.
- Keep out of reach of children or don't allow unqualified people to touch the system.
- Always keep the system clean and safe.
- Store the system in clean, dry and cool area away from flammable or heat sources.
- Check periodically the tubing, hoses, cables and gas piping, if they are damaged.

Troubleshooting

➤ Pilot Flame Trouble

- In case of no spark, check the distance of igniter and pilot tube. If igniter is located far from its wall or too close to its wall, keep proper distance from its wall. Or if any membrane is formed, remove it.
Or check the transformer if it works properly. Or check if ignition cable and igniter's harness is connected correctly.
- In case of no pilot flame, check if the pilot flame sensor becomes loose. If it is loose, fix it tightly.
The pilot flame sensor cannot sense the pilot flame in the loose state.
- If the flame sensor cannot sense the pilot flame, firstly check if the flame sensing rod is contacting pilot tube or pilot cover. If it contacts some parts of pilot area, it cannot sense the pilot flame.
When pilot flame sensing rod senses solid pilot flame, the GREEN LED of the flame sensing board lights.
RED LED light is POWER LAMP.

➤ DMX Trouble

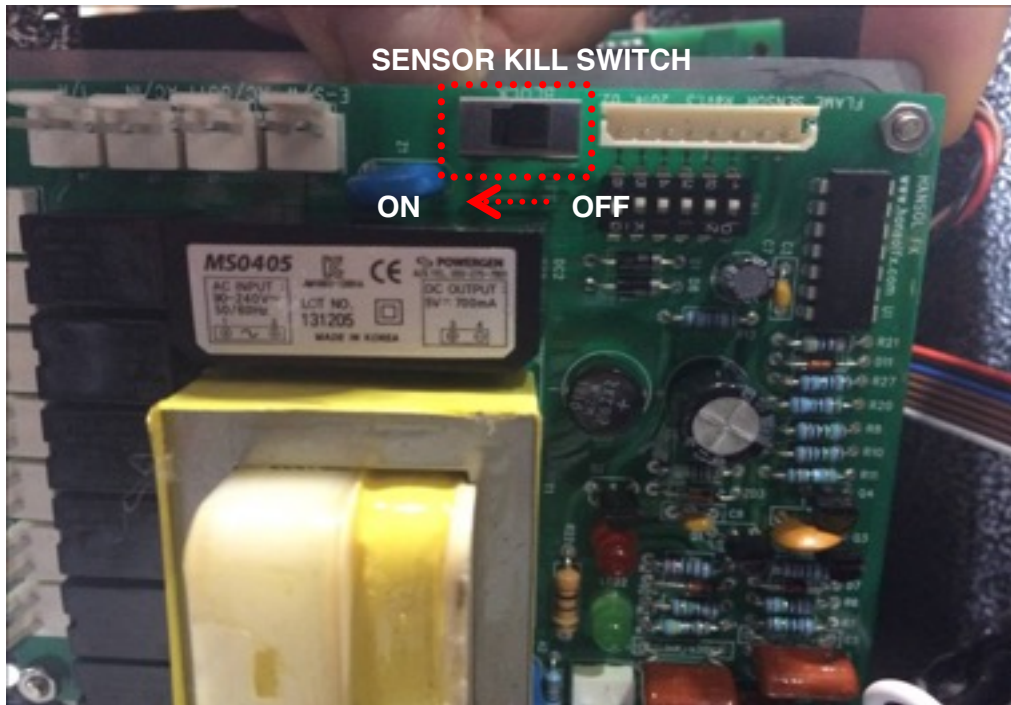
- When DMX signal works normally, the address number is displayed in address monitor firmly after 3 times flashing. When there is flickering address monitor or no address number on monitor, DMX signal is not transmitted to the system from the controller. Check signal cable and its input and output.

OR DMX Board might be broken. Also, when you use your own DMX cable, please check the pin numbers if they matches the pin numbers of the system.
- The original DMX Signal Cable should be used. Do not use other-purposed signal cable.

Flame Sensor Troubleshooting

When the flame sensor or power board does not work(power Board-relay board- fault), the middle pilot flame works but the other 4 pilot flames do not light so that you cannot shoot the flames. In order to shoot the flames under that circumstance, you need to kill flame sensing function.

There is flame sensor kill switch on power board as the following photo.



1. Turn on Flame Sensor Kill switch on power board.
2. Then turn on the pilot flames. You can see all 5 pilot flames light and then you can shoot the flames.

This is the temporal solution. Eventually, you need to replace the broken power board to new power board for safety. Without flame sensor function, you can shoot the liquid even though there are no pilot flames.