



SPRAYMASTER®

Flame Projector

**Safety instructions and
operating manual**



Flame Projector Spraymaster®

Safety instructions



Caution! The directions in this manual must be followed strictly. It is necessary that the safety instructions and the manual are completely read and understood before start-up! The device may only be operated under the constant supervision of trained personnel. Maintenance of the device may only be carried out by the manufacturer. In occurrence of malfunctions or dangerous situations the device must immediately be shut down! The unit must not be used in heavy airflow or precipitation (e.g. rain or snowfall).



WARNING! Non-observance of the following safety instructions may lead to severe damage to persons and/or property, by fire, explosion or electric shock!

1. Transport and storage



Check the incoming goods for damage and completeness. Notify the shipper immediately of any transport damage.



The parts must be unpacked with great care and caution to prevent damage to sensitive components, such as controls.



The components of the device must not be stored unsheltered outdoors. Protect against moisture and precipitation. The permissible ambient temperatures are +5° to +45° C.

2. Installation



The device is suitable for indoor use. When installing it on outdoor stages, make sure the device is protected against wind or heavy airflow, precipitation or heavy moisture. Ensure good stability when setting up the device. Ensure that the device is installed in good stability and that third persons cannot change its position. The assembly of the device must be carried out de-energized. No impact or vibration may occur. Installation must only be carried out in a manner that the flame is projected vertically upwards. The device must be secured against unauthorized access. Any contact with the hot parts of the burner must be avoided.



Sufficient safety distance to the area involved in performance and to flammable materials must be considered when assembling the device. Performers and participants must be clear of the safety distances beforehand, and the operation must be rehearsed. In dangerous situations the device must immediately be shut down!

The sideways safety distance in still air is 2.5 m.

The safety distance above the burner is 7.5 m.

In draft or wind the emitted flame may drift. That means the safety distance must possibly be extended to a range where danger to persons and property is excluded.



Maintenance on the device may only be performed by the qualified personnel of the manufacturer. The casings of the burner or the control panel must not be opened. Risk of electric shock!

By opening the casings of the burner or the control panel any guarantee and/or warranty expires and we assume no liability for consequential accidents and damage to persons or property.



The disassembly of the burner must not be carried out until it has sufficiently cooled down.



For the assembly and operation of the device, only original parts from the manufacturer may be used. The usage of other parts can lead to severe damage to persons or property.

3. Start-up



The initial operation may only be carried out after complete assembly of all necessary components and safeguards by trained personnel, in consideration of all topics addressed in these safety instructions and the operating manual. We disclaim liability for faulty start-up carried out by an untrained third party, and the warranty expires.



Necessary extinguishing agents must comply with preventive fire protection regulations and must be kept ready.

4. Operation



The flame projector is used at events. Before start-up, the usage of the device must be clarified with preventive fire protection.



The operation of the unit is only allowed for the designated purpose, within the boundaries of design, by trained personnel. We assume no liability for inappropriate use, which can lead to severe damage to persons and/or property. Furthermore, warranty expires.



Safeguards must not be removed or disabled! Do not open components of the unit (e.g. casing covers or front panels), as that poses great risk of injury, like burns, electric shock etc.



In dangerous situations the device must immediately be shut down and disconnected from the power source.



Eliminate all sources of ignition, like open flame and spark-producing equipment, and never smoke when connecting the fuel cartridge.



The device may only be operated by trained personnel. Sufficient safety distances during operation, protection against accidental contact with hot burner parts and safe assembly must be ensured. Extended safety distances in draft or wind must be considered. The device must not be operated in strong winds or precipitation.



The device may only be fueled with original cartridges from the manufacturer. No liability is assumed for consequential damage caused by use of other cartridges. Moreover, any warranty from the manufacturer expires.



When changing cartridges, make sure the Spraymaster has completely cooled down. Changing cartridges on a hot device poses risk of explosion or fire!



The flame projector shall only be used for short bursts of fire (max. 7 seconds). The height of the flame must be adjusted to the local conditions.

5. Shut-down



During longer idle periods, the cartridge must be removed from the completely cooled down device. The cartridge may only be changed when the needle valve (turning knob) is closed.



At least once a year the device should undergo a safety inspection, maintenance and adjustment by the manufacturer. Either an appointment must be made with the manufacturer to have the unit inspected, or it must be sent in.

Flame Projector Spraymaster®

Operating manual

1. **Note:** please read and follow the safety instructions closely!

2. Preface

The Spraymaster® is a Flame Projector, capable of projecting effect flames with a height of more than 10ft. The Spraymaster® uses a cartridge with a specifically developed fuel. The rugged construction and the built-in safety features allow operating the device with the highest possible safety and reliability. The device is basically designed for in-door use; the use on outdoor stages is only possible if the unit is protected against precipitation, humidity, strong drafts and winds (also see safety instructions).

Assembly could not be simpler and quicker. The device can be triggered both manually and via DMX512 signal. At the same time it is possible to loop this signal through from burner to burner, e.g. to individually create fire shows synchronized to music.

3. Components of the unit

The unit consists of:

- Burner with cartridge acceptance and DMX Receiver
- Fuel cartridge
- Manual trigger (optional)

4. System functionality

The Spraymaster® works with cartridges containing a special fuel. By triggering the flame projector, the fuel flows into a custom-built combustion chamber where it is finely sputtered, thus producing an aerosol (spray). In the combustion chamber, the fuel aerosol is mixed with air and ignited by a high-voltage arc. The emerging flame is then emitted vertically upwards.

A tilt switch in the device provides additional safety. If the device accidentally tilts or if it is inclined at more than 4°0', it will automatically shut down.

5. Installation of the device

Ensure that there are no flammable materials in the safety area and make sure that nobody is in the safety area during operation (see safety instructions). The flame projectors shall be mounted on a horizontal, flat and fire-proof base. Flammable materials in the safety area must either be impregnated flame-retardant with appropriate agents or covered with fire-proof materials, so no ignition can occur. Dust accumulations above the flame, also outside the safety area, must be removed at all costs, as they could be stirred up by the flame and cause a dust explosion. Keep in mind that the flames drift in winds or draft, probably necessitating a considerable increase of the safety distance. The device may only be operated on outdoor stages if a sufficient protection from the effects of weather, as heavy draft or winds, and precipitation (rain, snowfall, etc), is ensured.

The flame projectors must be secured against dislocation or falling over. Perforated steel straps deliver a good performance in this task, they can be screwed easily and safely to the base. For the place of installation, select a site that is not exposed to impacts or strong vibrations.

Before connecting the system to the power source, the fuel cartridge must be screwed in. Before doing so, make sure that the control knob for the flame height is shut off (clockwise to the right). Never use force when turning the control knob, as the sensitive needle valve would be irreversibly damaged.

Any cartridge change may only be carried out when the device has completely cooled down and the control valve is shut off! Place the cartridge with the screw thread facing down and screw it finger tight into the cartridge acceptance of the Spraymaster®. Do not use force. A hissing noise should only be heard shortly. A continuing hissing noise can be the result of a damaged gasket or an insufficiently tightened cartridge. Should the noise remain even if the cartridge was screwed in tightly, the cartridge must be removed, as probably a gasket is damaged. In this case the device must be sent back to the manufacturer or dealer.

A leaky system must not be operated.

After inserting the cartridge the device is ready.

Before every dislocation of the device, disconnect from power source!

6. Start-up

Turn the control valve for the flame height on the burner carefully clockwise to the right, until the valve is shut off. By no means must the valve be shut too tightly by using force. Shutting it by force will inevitably destroy the needle valve. Now turn the knob approx. two turns counter-clockwise. For triggering by DMX, select the input channel. For manual triggering, plug the manual trigger into the designated input jack and secure it by gently turning it until it locks. Take position by keeping the safety distance and trigger by DMX or manually.

The Spraymaster® is equipped with a safety function. Triggering the burner is only possible if the burner is unlocked via DMX. The selected DMX channel, indicated on the 7-segment displays, is the channel for unlocking. If this channel is activated by a DMX console, a LED on the back of the burner flashes and signals readiness for ignition (LED "ready"). The ignition is triggered with the proximate DMX channel.

Example:

Channel 001 is selected in the segment display.

The clearance (unlocking) effects when the DMX console sends a signal on DMX channel 001. If the DMX console now sends a signal on channel 002, the burner will be ignited.

Thus two channels are necessary to trigger the burner.

If the height of the flame is not sufficient, it can be increased by opening the needle valve more. That way fire balls can be created by shortly pushing the trigger, and fire columns by pushing it longer. Because of a small reservoir of fuel inside the burner the flame will always burn higher than selected for an instant. Only after that the flame height is reduced to the selected level. Please keep this in mind, especially in regard of the safety distances above the burner!

ENSURE THAT NOBODY IS IN THE SAFETY AREA OF THE BURNER
WHEN TRIGGERING THE FLAME!!

DURING OPERATION, THE PERSON TRIGGERING THE BURNERS
MUST OBSERVE THEM AT ALL TIME!!

7. Changing the cartridge

To replace the cartridge, the device must be disconnected from the power supply and the adjustment valve for the flame height must be closed with the black knobs on the back of the device (turn off clockwise without excessive force!). Let the device cool down after the last ignition for five minutes, unscrew the empty fuel cartridge counter-clockwise from the device and insert the new cartridge clockwise by screwing it rapidly by hand into the device. Now open the adjustment valve for the flame height counter-clockwise. While changing cartridges smoking and open fire or sparks must be strictly avoided because leakage of a small amount of fuel in this process is unavoidable. After about three minutes, the leaked fuel has vaporized completely. Now the device can be operated again.

8. Decommissioning and cleaning

First turn off the adjustment valve for the flame height in a clockwise direction with the corresponding black knob on the back of the device. Do not use force! If coloured flames cartridges were used, they should be replaced by a "TBF rinse cartridge" or a cartridge with "normal coloured fire" for cleaning the device.

For this purpose rapidly unscrew the cartridge with "coloured fire" counter clockwise and remove from the cartridge slot. Insert a "TBF-rinse-cartridge" or a cartridge with "normal coloured fire" clockwise finger tight and open the adjustment valves for the flame height on all channels that the device is provided with fuel. **While changing cartridges smoking and open fire or sparks must be strictly avoided because leakage of a small amount of fuel in this process is unavoidable.** After about three minutes, the leaked fuel has vaporized completely. Now the device can be operated again.

Trigger and ignite now the channels in which "coloured fire" was used until the flame colour is changed to "normal colour". Thus the device is rinsed and the slightly aggressive fuels of the "colour" cartridges are removed from the fuel lines. This increases the lifetime of the device.

Now close the adjustment valves for the flame height and trigger and ignite all the channels, which are provided with fuel cartridges until the flame height is not higher than 10 cm. After a cooling period of about five minutes, the fuel cartridge can be unscrewed from the device. Now unplug the device and slide the plastic protective caps on the cartridge openings. The device can now be transported or stored.

Note: This product should not be screwed with cartridges and only in the emptied state transported or stored.

9. In case of emergency

If serious malfunctions occur that pose a threat to persons and property, the device must immediately be shut down. Unplug the power cable to do so. Extinguishing agents must be readily available, use them if necessary. CO₂ fire extinguishers, foam extinguishers and ABC dry chemicals are suitable.

10. Care, maintenance and storage

Dirt on the unit should be removed with a soft and moist cloth. Suck up sooting from the lattice of the burner head with a vacuum cleaner and wipe it clean with a cloth afterwards. Never try to clean the electrodes inside the burner head by inserting any objects! Do not use aggressive cleaning agents.

Maintenance of the device can only be carried out by the manufacturer. Maintenance should be carried out annually, please make an appointment with the manufacturer or the authorized dealer, or send the unit in. The unit should be stored and carried in the designated hard cases after usage.

During long idle periods, the cartridge should be removed from the unit. The cartridges must not be exposed to temperatures above 45° C.

11. Technical specifications

| | |
|--------------------|---|
| Dimensions: | approx. 7.6”(H) x 8.6”(W) x 13”(D) |
| Weight: | 13 lbs |
| Power input: | 120V AC, 50-60Hz |
| Power consumption: | 215W |
| DMX: | DMX512, channels freely selectable by pushbutton |
| DMX display: | 3 7-segment LED displays for channel LED to detect presence of DMX signal LED to indicate readiness |
| DMX connectors: | 5-pin DMX input (male) and output (female) |

Contact Details

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Warranty

The Spraymaster is sold with a one year's warranty, which includes parts and labour from the date of purchase. This warranty covers manufacturing defects, providing that the unit has been regularly serviced by an authorized agent and has only used genuine canisters.

Le Maitre Ltd considers all of its products to be safe for use in the application it was intended. Le Maitre Ltd takes no responsibility for misuse or incorrect use. Always refer to the equipment owner's manual for proper use, and be aware of local legislation governing the products use.

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