

AREA DUST SUPPRESSION



**HUMIDIFICATION
&**

AREA DUST SUPPRESSION



WE BEAT THE DUST!



AREA DUST & ODOUR SUPPRESSION

MB Dustcontrol B.V. is a leader in the field of air humidification and dust control. Thanks to our extensive market knowledge and more than 10 years of practical experience, we can respond to your wishes like no other. At the same time, we realize that air humidification is more than designing and connecting equipment. That's why we go further: We are only satisfied when you are.

So when it proves impossible, or when there is simply too much dust in an area to fight it directly at the source, an excellent alternative is the hall "Area Dust Suppression".

A high-grade network of stainless steel pipelines will be installed at the top of your hall, which will be equipped with specially created high pressure nozzles. By increasing the water pressure up to 70 bars we will create an extremely delicate screen of fog. Any floating dust particles will clot to these droplets of water and will fall down to the ground.

An additional advantage of this is that any droplets of water that remain unaffected due to a lack of dust will quickly evaporate.

This will set a higher level of humidity, and will cause relatively less dust to be released from any source creating it.



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SUPPRESSION OF DUST WITH WATER

Water is the most obvious ways of binding dust. It is therefore very important to ensure a continuous and clean water supply to the installation. It is vital that the supply and pressure capacity of the water supply matches the requirements of the installation. Otherwise the optimal capacity of the installation cannot be utilized. The water is then filtered and distributed over the stainless steel water nozzles/atomizers via the stainless steel misting pipes. To optimally bind the emitted substance, you need a very fine water droplet.

The smaller the size of the droplet, the better it agglomerates/bonds with the dust particles.

To create this fine mist, the water pressure is increased after the water supply by means of a plunger pump and pressed through special water nozzles/atomizers under this increased pressure.



AREA DUST SUPPRESSION

The MB High-pressure Area Dust Suppression (Humidification) is currently considered the most energy efficient way to suppress (Fine) Dust. By using various high-pressure nozzles, very delicate droplets of water are sprayed into the air or onto the dust emission source. These droplets are so small that they evaporate before precipitating. This is made possible by increasing the water pressure to a minimum of at least 70 bars.

The MB Dustcontrol high-pressure fog/misting system characterizes itself by:

- Low energy costs
- Low maintenance costs
- Easy to install
- Small average droplet of 6 micron
- Very effective for medium to large areas.



INCREASING THE RELATIVE HUMIDITY

Our system will create a high(er) relative humidity. The big advantage of increased humidity is that the amount of dust released is considerably lower than at low relative humidity.



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HIGH PRESSURE MISTING

MB Dustcontrol's system for high-pressure misting mounted on a wall or ceiling works in two ways.

By throwing up very finely atomized water droplets, they are suitable for optimal agglomeration with the particulate matter (dust) particles in the air, which weighs down the particulate matter (dust) particles to such an extent that they descend more quickly and do not have a chance to remain floating. Because the water droplets are very small, they will evaporate quickly, so your machinery will not be affected by this.

In addition, a major advantage is that the static electricity in the hall will be reduced, with the result that the (fine) dust released will not be able to continue to "float/swirl around" in the hall.

Naturally, we realize that no customer has exactly the same needs regarding a suitable dust control solution, which is why we are happy to discuss with you at any time to provide you with the best possible, tailor-made solution.



HOW DOES THE SYSTEM WORKS?

A high-quality network of stainless steel pipes or hoses equipped with stainless steel nozzles/atomizers are attached to the wall/ ceiling or directly installed/mounted onto the machine, optionally equipped with Thermolint for frost protection.

By increasing the water pressure to 70 Bar, we can create a screen of very fine water droplets that ensures maximum control of (fine) dust

The water is pumped to the desired final pressure of 70 bar and then pushed through the hoses/pipes/nozzles by using a triplex plunger pump with a certain capacity, which is driven by an electric motor. The speed of the motor is regulated between 10 and 60 Hz by means of a Danfoss frequency controller. As a result, the pump never runs at more speed than is necessary for the current demand and the water overflow is considerably limited. An additional advantage is that the pump has a longer lifespan at low speeds and no water heating occurs as a result of circulation.

The water supply to the relevant section is opened by means of a 3/2 high-pressure solenoid valve placed separately for each section. When closed, the 3/2 solenoid valve ensures rapid relief of the pipe. A check valve placed in the discharge pipe ensures that a residual pressure remains in the pipework. This shortens the response time of the dust control installation when switched on.

The Control of the system will take place in the Technical Control Box.

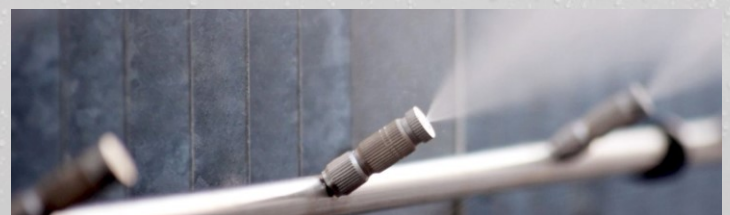
The following components are mounted in the Technical Control Box which are divided in 2 compartments:

Compartment 1 (electrical):

- Electrical Cabinet with all components (IP65)
- Control Panel

Compartment 2. (water)

- Pump,
- Filter system,
- UV installation,
- Water treatment installation





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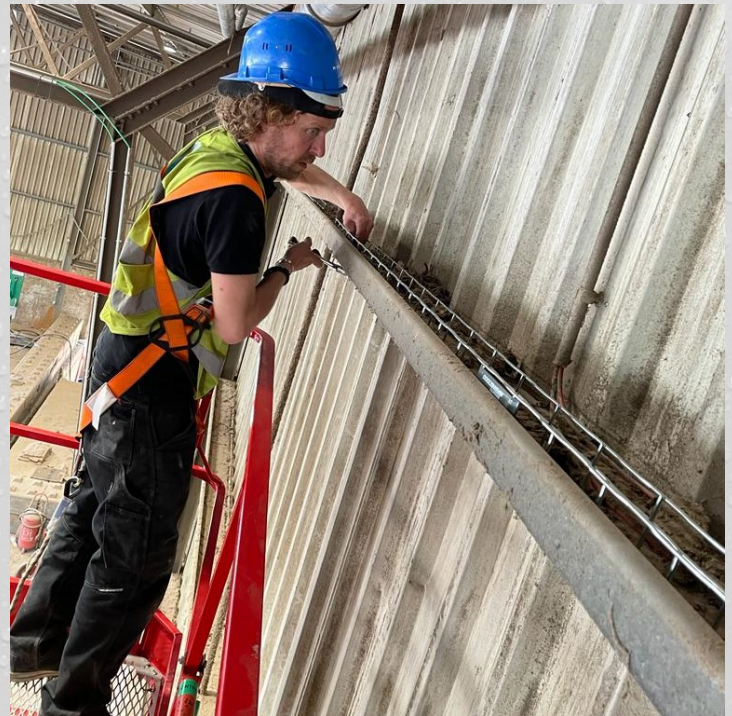
PIPING..

The system consists of stainless steel nozzle pipes, which will be installed directly onto the installation or on ceiling/wall.

Each pipe is equipped with a certain amount of flow drilled Stainless Steel High Pressure Nozzles with a standard capacity of 4,5l/h (this can vary).

The nozzles are mounted horizontally and are optionally equipped with a swivel that is adjustable to approx. 15°.

The nozzles will spray a fine haze of water with an average droplet size of approx. 6 microns.



WATER DISPLACEMENT

The water will be pumped from the high-pressure pump to the flow drilled Nozzle pipes by a 1/4" R7 high pressure hose. The hose will be installed at the pump and is connected to the front of each nozzle pipe.

At the start of each stainless-steel nozzle line, there will also be a 3/2" high-pressure valve mounted. This will allow each line to operate independently. After shutting off the 3/2" valve will release the system pressure to the drain.

Our Specialized HP Nozzles are always equipped with an internal anti-drip valve.

The stainless-steel pipes will be sealed together with clamp couplings. For the R7 high-pressure hose you need a pressing tool. The hoses are quite similar to hydraulic hoses so any local hydraulic engineer should manage to do this.



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PUMP SYSTEM

By the HDV-70 high-pressure pump system, the water will be pumped up to 70 Bars. With the use of Danfoss frequency charger combined with a pressure switch and a PID regulator, the speed of the engine will be controlled between 7,5 and 60 Hz. Hereby the pump capacity will always be at an optimal level and there will be no unnecessary waste of water. An additional advantage is that the pump has a much longer life expectancy on a lower speed.

The pump is equipped with:

- Pre-pressure safety
- Overpressure safety
- Forced cooling
- Frequency control, provided with PI regulation
- Gauge inlet pressure
- Gauge outlet pressure

When a section is switched off, the water pressure will be released immediately by the 3-way magnetic valve via the drain output of the valve to the drain.

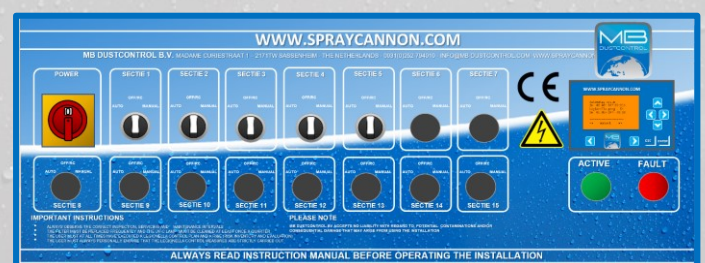


WATER TREATMENT

The HDV-70 high pressure pump is equipped with a 10"1-micron filter. The purpose of the 1-micron absolute filter is filtering amoebic bacteria out of the water, this ensures an optimal result for the UV-C germicidal lamp which is placed after the 10"1-micron the filter.

ELECTRICAL SYSTEM

This Dust Suppression/Humidification system operates by signals and contacts of the PLC in the electrical area of the Control Box. Each nozzle line or pre-set Section will be able to work independently. You can start the pump with a potential free contact. After that you can open the correct high-pressure valve with an 24Vdc signal (20Watt).



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OPTION: ANTI-BACTERIA SYSTEM

MB DUSTCONTROL optionally offers the “Van Remmen UV-Technics” Validated UV systems for killing as much LEGIONELLA bacteria in the water as possible. The UV systems are used for both mist systems and for the SprayCannon range.

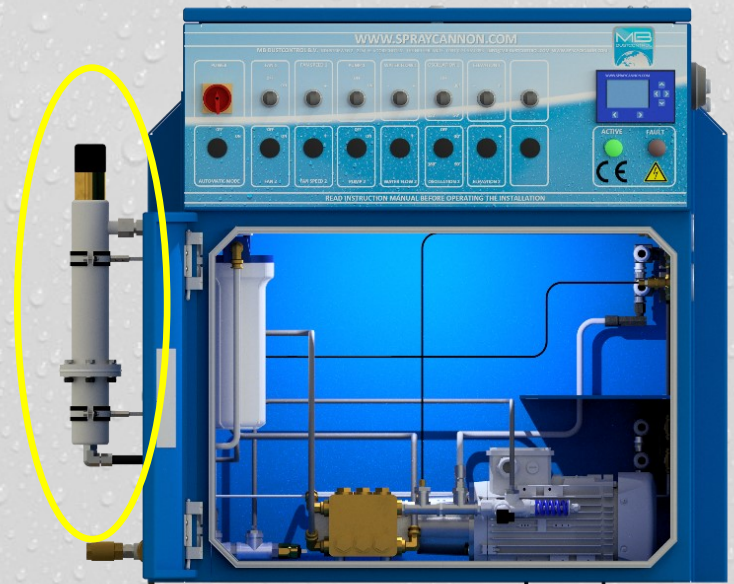
Validated *Drinking Water Range V-series* (1 m³/h at T10 95% 300/m²)

Features

- Validated UV system according to NEN-EN 14897
- Sustainable system (low operating costs)
- Unique flow management system
- User-friendly and low maintenance
- Constant monitoring of lamp status
- Supplied with Validation Certificate
- CE and EMC compliant

The Van Remmen UV Techniek Validated Range has been developed for the reliable disinfection of drinking water with a transmission (T10) of between 80 and 99%. The Validated UV disinfection systems are our most sustainable and energy-efficient systems ever developed. Continuous innovation and optimisation can be found in every component. The systems in the Validated Range are validated in accordance with the NEN-EN 14897 standard and are supplied with a Validation Certificate. With this certificate, Van Remmen guarantees performance.

DESPITE THE FACT THAT MB DUSTCONTROL BV INSTALLS THE UV SYSTEMS OPTIONALLY, MB DUSTCONTROL BV DOES NOT ACCEPT ANY LIABILITY WHATSOEVER REGARDING POSSIBLE INFECTIONS AND/OR CONSEQUENTIAL DAMAGES CAUSED BY WORKING WITH CONTAMINATED WATER OR FOR WORKING WITH A SPRAYCANNON WHETHER OR NOT FITTED WITH A UV SYSTEM.



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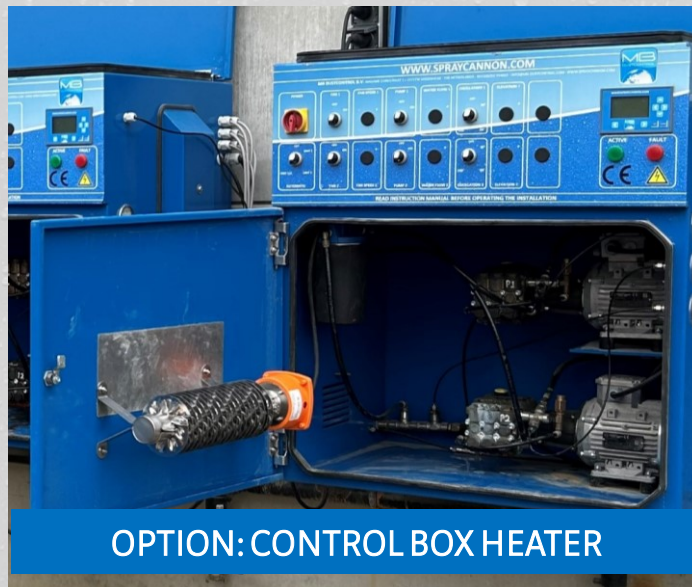


OPTION: WATER SOFTENER

Using the optional mono-core water softener, the calcium ions in the water are exchanged for sodium ions. The softener will regenerate itself every 4 days or the set number of liters. After the water softener, a 10" 5 micron pre-filter and a 10" 1 micron absolute fine filter are placed. The purpose of the 1 micron absolute fine filter is to filter amoebae that may harbor water bacteria. As a result, an optimal result is achieved by the UV-C lamp that is placed behind this filter. A rinse water restriction is placed behind the UV-C lamp. This restriction allows 2 liters of water to flow into the sewer every hour. This limits heating of the water as a result of radiant heat from the UV-C lamp and extends the lifespan of the quartz glass of the UV-C lamp.

OPTION: FROST PROTECTION

To better protect the pipework against frost and weather influences, we can optionally provide the pipework with armaflex insulation material and heating tape. As soon as the outside temperature drops below 5 °C, a thermostat will activate the switch on heating tapes. By using a self-limiting heating tape, the power will decrease when the pipe becomes warm.



OPTION: CONTROL BOX HEATER



OPTION: TECHNICAL AREA CONTAINER

ALWAYS MAKE SURE THAT YOU FOLLOW THE LOCAL REGULATIONS WHEN INSTALLING THIS HUMIDIFICATION SYSTEM.

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TECHNICAL SPECIFICATIONS

Usage	Indoor/Outdoor
Stainless Steel piping	Yes
Stainless Steel Nozzles	Yes
Working Pressure (Bar)	70
Supply Pressure (Bar)	3-4

AVAILABLE OPTIONS

- ✓ Heat tracing
- ✓ Water Flow regulation
- ✓ Remote Control
- ✓ UV installation
- ✓ More Sections

APPLICATION AREAS

DEMOLITION - CONCRETE PRODUCTION PLANTS - RECYCLING SITES & PLANTS - ENVIRONMENTAL SITES; SOIL REMEDIATION - STEEL/SLAG HANDLING SITES & PLANTS - WOOD/ALUMINUM PROCESSING PLANTS - FIREFIGHTING - THE SPRAYCANNONS ARE ALSO USED FOR COOLING DOWN BULK MATERIALS, MACHINES AND PERSONS.



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SPRAYCANNON, THE BEST DUST SUPPRESSION RESULT!



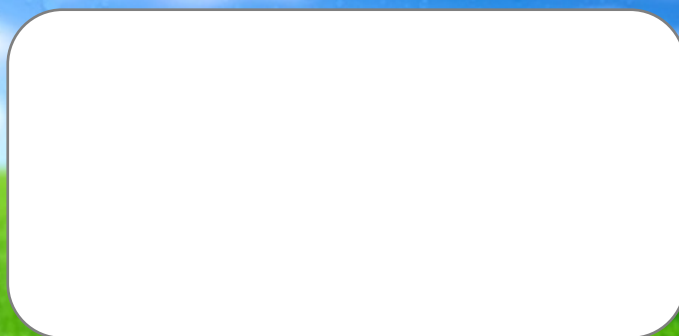
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