



H1 SYSTEM

The custom-made system
for combating dust and odor





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from emissions and fire



GOOD TO KNOW:

- › The nozzles are completely cleanable thanks to their special qualities
- › The components of the H1 System are resistant to wear
- › No drafts or building permits are required for installation and the system can be installed during operation
- › On request, the system can also be installed by the customer himself

5 things to do in order to plan an H1 System

- 1.** Determine the amount and type of dust
- 2.** Determine quantity and type of nozzles to be installed
This choice will affect the water flow and pump units
- 3.** Choice of control panel
- 4.** Determine where pumps or pumping station can be placed
This choice will determine the length and the diameter of the connection pipes between the nozzles and the pumping station
- 5.** Determine where to place the feeding lines and nozzles
This decision will lead to the choice of the various fixing blocks

H1 System

The custom-made system for combating dust and odor

The H1 System is a versatile high-pressure misting system for controlling dust and odor. It consists of a modular design and can therefore be flexibly adapted to the needs of customers (degree of emission, place of use, amount and properties of dust/odor). In addition, installation requires little effort, is space-saving and can operate directly on the dust source.

The system was originally developed for dust binding, it then established itself over the years in the field of odor control. Since the H1 System can be flexibly adapted to all situations, many customers have also decided to mix the two functions; i.e. where necessary, the system binds dust, otherwise odor.

WHAT MAKES THE H1 SYSTEM UNIQUE ON THE MARKET:

- › The modular design of the H1 System enables flexible adaptation of the system to the respective situation
- › The simplicity and small size of the nozzles and leads allow for quick and cost-effective installation in the immediate vicinity of the dust source
- › The system works fully automatically and requires little maintenance depending on the design
- › Cost savings: if there is no dust, the system switches off automatically
- › High adaptability: the system can be used for both open storage and closed spaces
- › Thanks to the ingenious nebulization technology, dust is bound with a very small amount of water and with maximum result (advantage: no water puddles, energy efficiency)

TYPICAL APPLICATION AREAS

- › Handling of bulk material
- › Humidification of streets and squares
- › Harbors
- › Open bins
- › Closed spaces
- › Composting plants
- › Crushers
- › Transfer points on conveyor belts

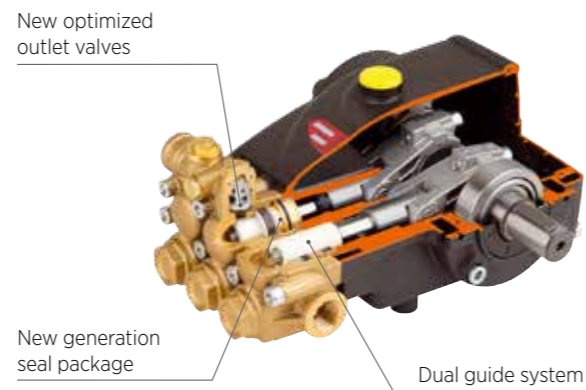
Pump

The heart of every H1 System

The pump is the base and therefore the heart of every H1 System. The robust piston pumps make it possible to dose the amount of water and thus to produce the optimum droplet size for dust binding. They have a flow rate of 1 - 21 l/min and generate a pressure of up to 100 bar. As a result, the right solution can be found for every application.

WHAT MAKES THE PUMP UNIQUE:

- › Pressure can be adjusted individually for each pump
- › The hot-forged brass head makes the pump resistant to high pressure and vibration
- › The installed ceramic pistons have a very fine surface structure, which protects against wear of the seal and resulting friction and overheating
- › Transmission from the motor to the pump shaft takes place via a four-way mounted flexible coupling



SOURCE: INTERPUMP GROUP SPA.

ELECTRICAL CHARACTERISTICS

Rated voltage	V	230/400
Frequency	Hz	50/60
Rated current	A	6.2 to 18.6
Pump motor power	kW	0.75 to 3

SIZE

Length	mm	variable
Width	mm	variable
Height	mm	variable

WEIGHT

Pump	kg	18 - 35
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MISCELLANEOUS

Operating temperature	°C	-5° to +45°
Storage temperature	°C	-20° to +60°

WATER

Water supply pressure	bar	1 - 8
Water flow	l/min	1 - 21
Operating pressure	bar	60 - 100

The pumps are ideal for intensive and long-lasting use. Many of our pumps have been working for years in steel mills, harbors or industrial companies under the most difficult conditions.

H1 BOX DUST

Ideal for use in small plants

The H1 Box was specially developed for use in smaller plants. Thanks to its low weight and size, it is very easy to transport and yet very efficient in binding dust. Depending on the pump size, the water flow of the H1 Box can be adapted to the respective situation and needs. Water flow is 1 - 10 l/min.

WHAT MAKES THE H1 BOX UNIQUE:

- › The pump can be controlled by remote control
- › Thanks to the filter stations (manual and automatic), the maintenance intervals at the pumps and nozzles are significantly reduced
- › The pump housing is made of aluminum
- › The Box is easy to transport and is shockproof thanks to its housing and protected from dirt

TYPICAL AREAS OF APPLICATION

The H1 Box is ideal for use in small or narrow installations with little space or for places where the pump often needs to be relocated.

ELECTRICAL CHARACTERISTICS

Rated voltage	V	230/400
Frequency	Hz	50/60
Rated current	A	6.2 to 14.8
Pump motor power	kW	0.75 to 1.5

SIZE

Length	mm	620 - 670
Width	mm	280
Height	mm	260

WEIGHT

Box with pump	kg	27 - 30
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MISCELLANEOUS

Operating temperature	°C	-5° to +45°
Storage temperature	°C	-20° to +60°

WATER

Water supply pressure (min.)	bar	2 - 8
Water filter		optional
Water flow	l/min	1 - 10
Operating pressure	bar	60 - 100



H1 STATION DUST

The uncomplicated all-in-one solution

If you are looking for a complete solution and need more than one pump for optimal dust binding, you have found a great solution in the H1 Station. It consists of 2 - 4 independent pumps, a control cabinet and self-cleaning filters. Only a power and water connection is needed for installation.

WHAT MAKES THE H1 STATION UNIQUE:

- › The H1 Station is a complete solution that makes on-site installation easy and cost-effective
- › The housing is made of powder-coated aluminum and is extremely environmentally friendly
- › The total water flow is 4 - 84 l/min (depending on the installed pumps)
- › It can also be connected to existing monitoring systems (network)
- › Can be controlled by remote control
- › Also available with heating for winter operation



TYPICAL AREAS OF APPLICATION

Companies with several problem areas, which have to be treated individually.

ELECTRICAL CHARACTERISTICS

Rated voltage	V	400 -3L+N+PE
Frequency	Hz	50
Rated current max.	A	26
Pump motor power	kW	3 to 12
Power connection plug	A	32- 3L+N+PE

HYDRAULIC CHARACTERISTICS

Water supply pressure	bar	2 - 8
Temperature of water supply	°C	4 - 50
Water filter	60µm, with electric self-cleaning system	
Water type		freshwater
Operating pressure max.	bar	100
Water flow	l/min	4 - 84

MISCELLANEOUS

Operating temperature	°C	-5° to +45°
Storage temperature	°C	-20° to + 60°

OPTIONAL

UV Filter	
Automatic heating module (box)	
Remote control	

H1 TRAILER DUST

The mobile all-in-one solution

The H1 Trailer is the mobile version of the H1 Station. It contains 2 pumps, an electrical circuit, a self-cleaning filter, 2 rolls of high-pressure hose (50m), a supply line (20m) and an electric cable (20m).

WHAT MAKES THE H1 TRAILER UNIQUE:

- › The H1 Trailer is a handy complete solution on under-carriages, which can be easily repositioned
- › The covering is made of powder-coated aluminum and is extremely environmentally friendly
- › The total water flow is 2 - 42 l/min (depending on the pumps installed)
- › The trailer has a support wheel, safety cable, reverse gear and independent torsion bar suspension per wheel
- › Can be controlled by remote control
- › Also available with heating for winter operation

TYPICAL AREAS OF APPLICATION

Ports, shipyards and construction sites where the fogging system must be flexible and easy to relocate.

ELECTRICAL CHARACTERISTICS

Rated voltage	V	400 -3L+N+PE
Frequency	Hz	50
Rated current	A	13
Max. pump motor power	kW	9
Power connection plug	A	16- 3L+N+PE

HYDRAULIC CHARACTERISTICS

Water supply pressure	bar	2 - 8
Temperature of water supply	°C	4 - 50
Water filter	60µm, with electric self-cleaning system	
Water type		freshwater
Operating pressure max.	bar	100
Water flow	l/min	2 - 42

MISCELLANEOUS

Operating temperature	°C	-5° to +45°
Storage temperature	°C	-20° to + 60°

MECHANICAL CHARACTERISTICS

Max. undercarriage load capacity	kg	150
Tires		400/10
Tire pressure	bar	2.3

OPTIONAL

UV Filter	
Automatic heating module	
Remote control	



H1 SWING / PROXY DUST

The most advanced spray head in the world

The H1 Swing is a spray head that has 1 nozzle and can rotate 360°. There are two variants: the fully automatic H1 Swing and the semi-automatic H1 Proxy. In contrast to the fully automatic H1 Swing, the H1 Proxy has to be set manually once, however then it works automatically. The H1 Proxy is very robust and was created especially for construction sites and industrial plants with harsh environmental conditions.



H1 SWING



H1 PROXY

The spray heads are mainly used where a large area of dust has to be removed. For example, they are positioned at various points along dusty roads, squares or processing facilities.

THIS MAKES THE SPRAY HEAD UNIQUE:

- › There are 2 variants: the fully automatic H1 Swing (for industry) and the semi-automatic H1 Proxy (for heavy industry)
- › The H1 Swing/Proxy covers a floor area of over 500m² (without wind)
- › The H1 Swing/Proxy is very versatile: Zones and speed can be programmed as required for each spray head and also be coordinated with each other
- › The spray head is made of sturdy stainless steel
- › Drives and function sensors are designed in low voltage
- › Installation and handling of the spray heads is very easy

TYPICAL APPLICATION AREAS

Dusty roads, construction sites, industrial facilities, composting facilities, storage areas, etc.

With the aid of Modbus technology, any number of spray heads can be controlled and the individual spray heads can communicate with each other. If there is no dust, the spray head will automatically switch off.

ELECTRICAL CHARACTERISTICS

Rated voltage	V	230/400
Frequency	Hz	50/60
Rated current	A	depending on pump
Pump motor power	kW	depending on pump

SIZE

Length	mm	300
Width	mm	110
Height	mm	270

WEIGHT

Swing and proxy	kg	3.5
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MISCELLANEOUS

Operating temperature	°C	-5° to +45°
Storage temperature	°C	-20° to +60°
Tilt angle Swing and Proxy	°	-15° to +45°
Swing: fully automatic tilting	°	360°
Proxy: semi-automatic tilting	°	360°
Range of throw	m	5 - 14
Rotation speed	rpm	3 - 6

WATER

Water supply pressure	bar	2 - 8
Water filter		optional
Water flow	l/min	1 - 15
Operating pressure	bar	100

Control system for H1 Swing and Proxy

Control of the oscillating heads takes place via an easy-to-use control system. The position for mounting the control system can be chosen freely, ideally it should be an easily accessible location.

For maximum security, the service interface is password protected.

THE CONTROL SYSTEM HAS TWO SURFACES:

- › All the parameters of each individual spray head can be changed using the **service interface**, such as the IP address of the individual components in the network or timer parameters. In contrast to the H1 Proxy, the H1 Swing can also be used to change the rotation speed, spray angle and zero position.
- › Using the **user interface**, data such as the position of the spray head, the active program, pump pressure, error messages etc. can be read off

Monitoring

The individual monitoring system of every H1 system

Monitoring helps to control the functions of the respective H1 system. Thanks to the many options available, monitoring can be optimally adapted to the needs of the respective system.



THE FOLLOWING OPTIONS ARE AVAILABLE FOR MONITORING:

- › **Electric switchboard** in AISI304 or in polycarbonate
- › **Software functions:** Timer, weekly program, visualization of data, complex calculations, working cycles, system monitoring (water pressure, temperature, clogged filters, faults), selection of lines, timing selection, pump maintenance, etc.
- › **Human-machine interface:** Pushbuttons, key-operated switch, emergency stop button, backlit display, IP67 industrial touchscreen, tablet/smartphone control via WiFi and LAN
- › **Interfaces to existing systems:** Modbus RTU, digital inputs (e.g., start/stop), digital outputs (e.g., activated cycle, alarm, etc.)
- › **Control systems:** Pushbuttons, wired remote control, wireless remote control
- › **Controllable devices:** Pumps, valves, blowers, lights, etc. are controllable in any combination of cycles
- › **Signaling devices:** Light, siren, buzzer, LED
- › **Sensors:** any analogue or digital sensor can be used - in particular: Pressure sensors, flow rate, humidity and temperature sensor

F.A.Q. Frequently Asked Questions

1. How many nozzles are needed for an H1 System?

The number of nozzles is calculated according to the coverage criterion: a distance of 75 cm in ventilated rooms, a distance of 100 cm in weak wind, a distance of 125 cm with still air.

2. What casting distance can the jet of a nozzle reach?

Depending on the conditions (wind and evaporation), the jet can vary – in the case of atomizer nozzles we are talking 1 to 2 m or 3 to 4 m. For operations with high dust loads, we use flat jet nozzles or hollow cone nozzles – the jet can vary from 7 to 8 m or 9 to 10 m.

3. How do you clean a nozzle?

All you need is to remove the dirt on the outside, dip the nozzle in diluted vinegar or degreaser, rinse and dry with compressed air.

4. How many square meters does a nozzle cover?

On average, the nozzles cover one square meter.

5. When do you choose flat jet nozzles or hollow cone nozzles?

These nozzles are preferred for heavy industry applications or for applications where a wide jet is needed.

6. Which are the best nozzles to choose?

The mean diameter of the droplets is chosen based on the desired result:

- › 15 μm (microns) to ensure fast evaporation and thus protect the material from moisture
- › 30 μm for slightly heavier and more wind-resistant droplets
- › 50 μm for compact and damp fog

7. When are connectors used in INOX?

For projects in the food industry, connectors and nozzles in Inox are needed as they comply with HACCP requirements (HACCP = Hazard Analysis and Critical Control in the Food Industry).

8. At what altitude will the controls be installed?

There is no general rule for this. Normally they are placed at a height of 3 to 4 meters. If desired, installations up to 6 m high pose no problem.

With the flat jet and hollow cone nozzles, a height of up to 15 m is possible.

EmiControls.

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from emissions and fire.

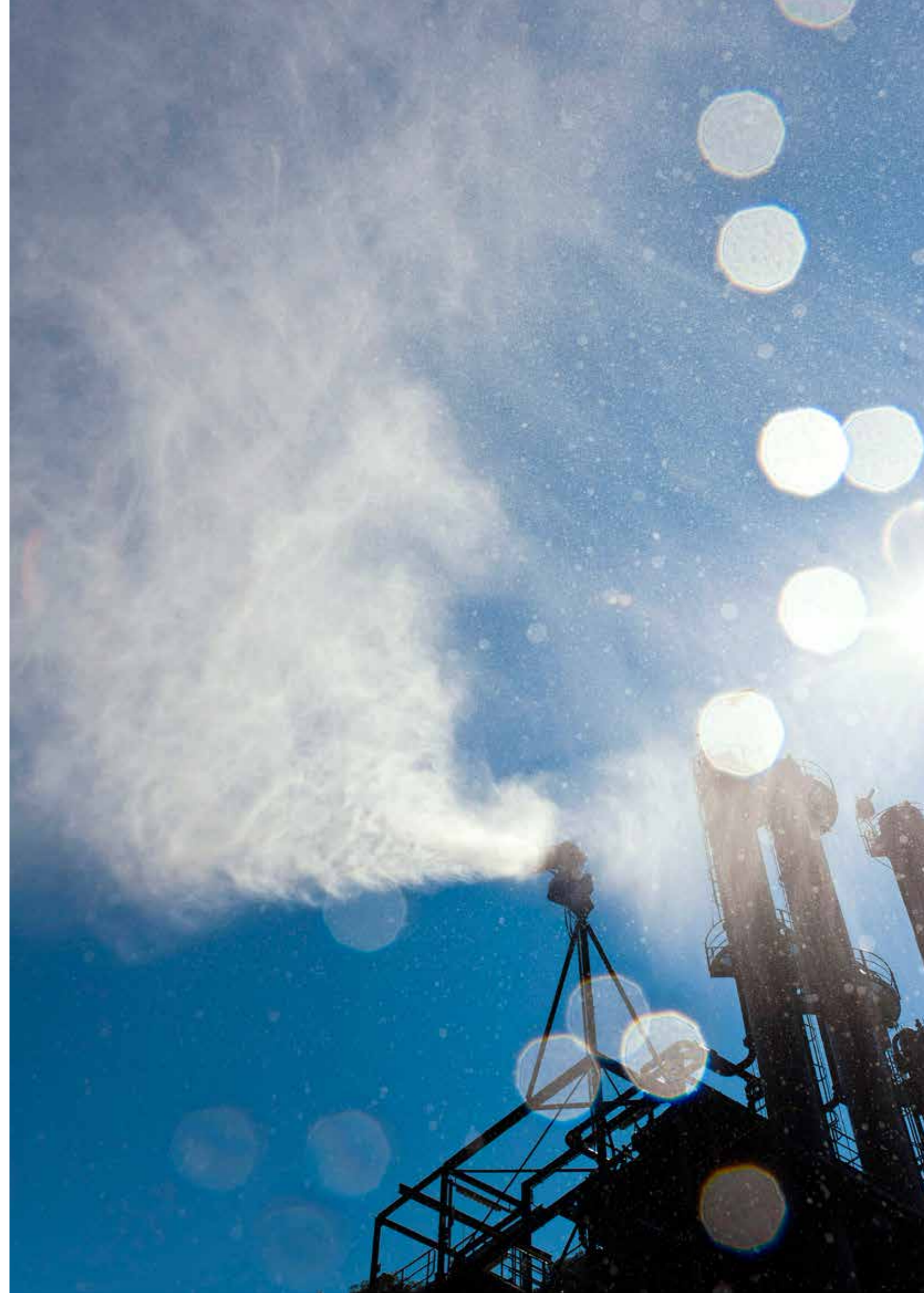
At EmiControls, we offer custom-made solutions to fight fires, dust and odors – with the help of water mist. Thanks to their larger water surface, small drops of water achieve a far better effect than conventional measures.

Our in-depth know-how in mechanical engineering and, above all, in water atomization, has enabled unprecedented results in a wide variety of areas.

Safety in **firefighting** – whether for emergency services or structure – can be greatly increased thanks to water mist. It quickly deprives fires of energy and substantially increases the cooling effect.

In **dust control**, the fine drops of water combine with the dust particles, thus bringing them to the ground. The proper distribution of the drops is essential for optimal dust retention – and this we have perfected at EmiControls.

Odor control is already successfully used in composting and recycling plants. Water mist is combined with a natural additive that neutralizes odors.





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