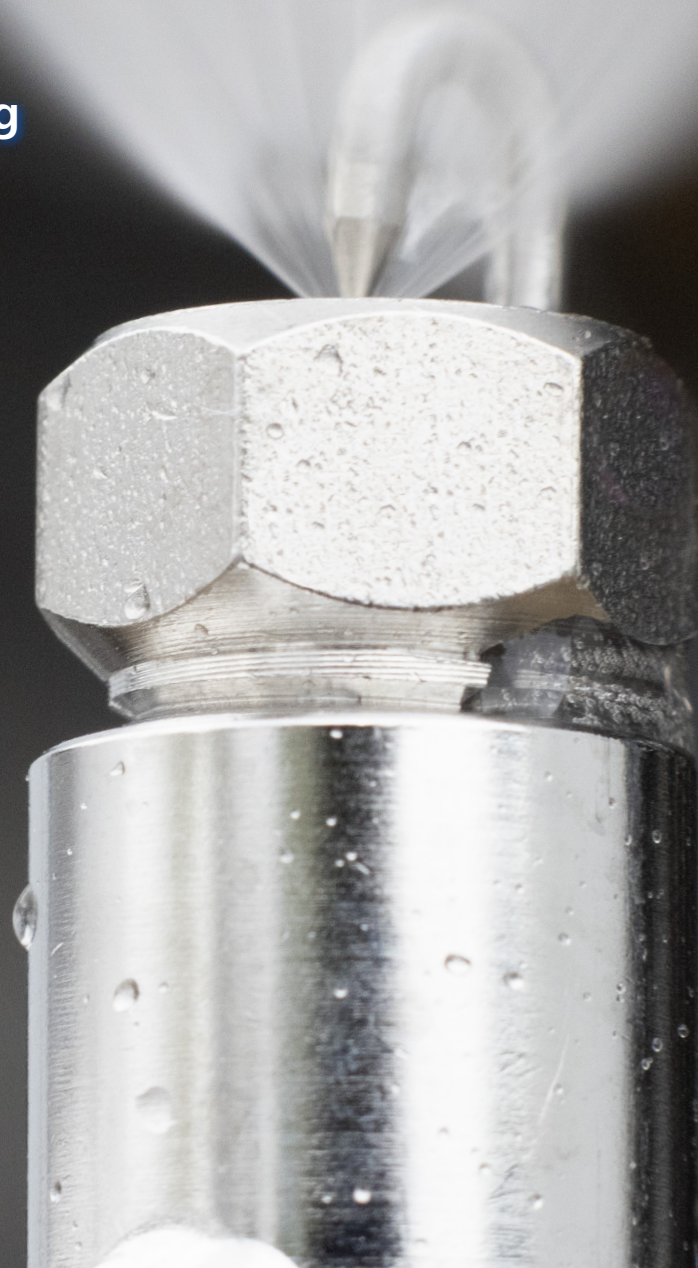


ADIABATIC HUMIDIFICATION SYSTEMS

MeeFog high pressure fogging
system



MeeFog humidification systems provide an effective way to improve indoor air quality

Mee Industries has designed and installed thousands of humidification systems for a wide variety of commercial and industrial applications. With more than 50 years of industry experience behind our technology, it is no wonder that Mee Industries is the leading manufacturer of high-pressure fogging systems today.

Mee provides humidification solutions for even the most demanding application or project. Our position as the global leader in high-pressure fog technology means we work closely with HVAC engineers and operators around the world to meet special project requirements, including accelerated delivery schedules, and to provide our customers with highly responsive after-sale support. We take great pride in meeting deadlines, our company-wide success metric is, “successful projects completed on time.”



Turn to Mee for Humidification Solutions

MeeFog Humidification Systems do not require compressed air or steam, which greatly simplifies the installation. All that is required is small diameter tubing carrying pressurized water. The use of direct pressure requires very few moving parts (with none in the air handler itself). One MeeFog pump unit can run multiple air handlers and can also be configured with system redundancy if needed.

“The MeeFog System is much lower on maintenance than our legacy steam humidifiers. We don’t have any calcification issues, no elements to burn out, no floats to get fouled or bubble indicators. We just have to change the oil, check the belts, change the filters and we are done.”

— Eric Patterson, Facilities Manager
Madison Data Center

MeeFog Systems can save as much as 95% in energy use compared to other humidification technologies.

Mee Industries helps its customers meet tougher indoor air quality (IAQ) standards more cost-effectively than other humidification methods on the market today.

Whatever your humidification challenge, Mee Industries will work with you to engineer an energy saving solution, and a successful outcome to your project.

Energy Cost Comparison Chart

Electric Steam	\$77,352
Steam Boiler	\$20,011
MeeFog (Includes RO System)	\$4,025

Compares annual energy costs assuming 100K cfm, 70F/40%RH space, 20% minimum OA, yearly operation (TMY3 data), \$0.0685 per kWh, \$.41 per therm.

“The numbers came back very attractive and we purchased it, we also received a \$16,000 energy savings rebate from Con Edison so the payback worked out to just under two years.”

— General Manager – Plant Operations, Energy and Engineering
Major NYC Cancer Research and Treatment Center

1. Purification

- Removes mineral content
- Removes microbes

2. Pressurization

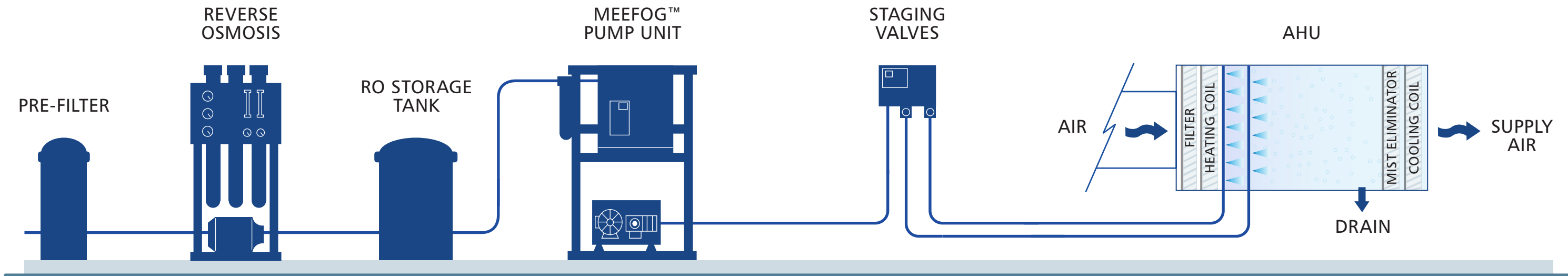
- Maintains pressure at 1000 psi
- Can serve multiple Air Handling Units (AHUs)

3. Staging

- Valves modulate the output of the MeeFog System
- Each valve controls a different number of fog nozzles
- PLC in valve panel receives variable humidification demand signal from BMS

4. Atomization

- MeeFog nozzles installed in AHU
- Absorption distance 3-6 feet
- Mist Eliminator pads prevent carryover
- Pads easily removed for cleaning



Stainless Steel Mee-3

MeeFog Pump Unit - a Standardized Component of a Customized System

- Control panel with user interface, alarms and shut-offs for high/low pressure.
- Direct drive pump with high efficiency motor and VFD. All wetted parts are stainless steel.
- All components are mounted on an aluminium frame.

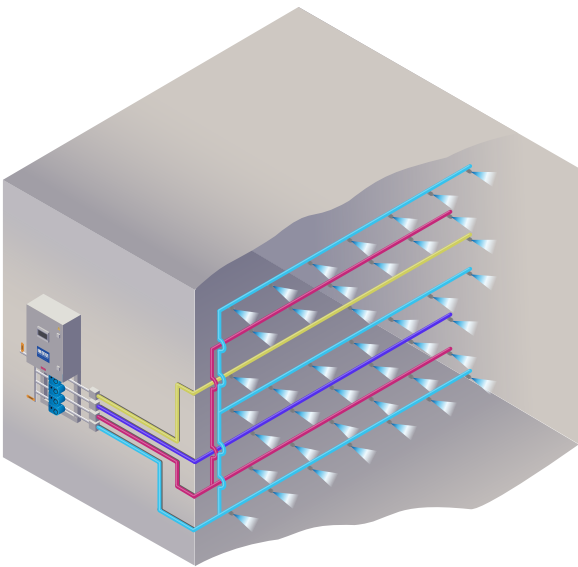
The MeeFog pump unit has been designed to perform in the most demanding situations. All components are industrial duty, and the system is designed for 24/7 operation. MeeFog Systems feature a Variable Frequency Drive (VFD) that enables a "soft start" of the pump motor and maintains the lowest pump speed possible for energy savings and long pump life.

Fog Staging Valves

Staging valves are used to modulate the amount of humidification output of the MeeFog system. Each valve is connected to a different number of fog nozzles. By controlling these valves, many stages of humidification can be achieved. A PLC in the Valve Control Panel receives a humidity demand signal, and stages the valves to achieve the correct output.



Staging Valve Panel



Cross Section of an Air Handling Unit (AHU)

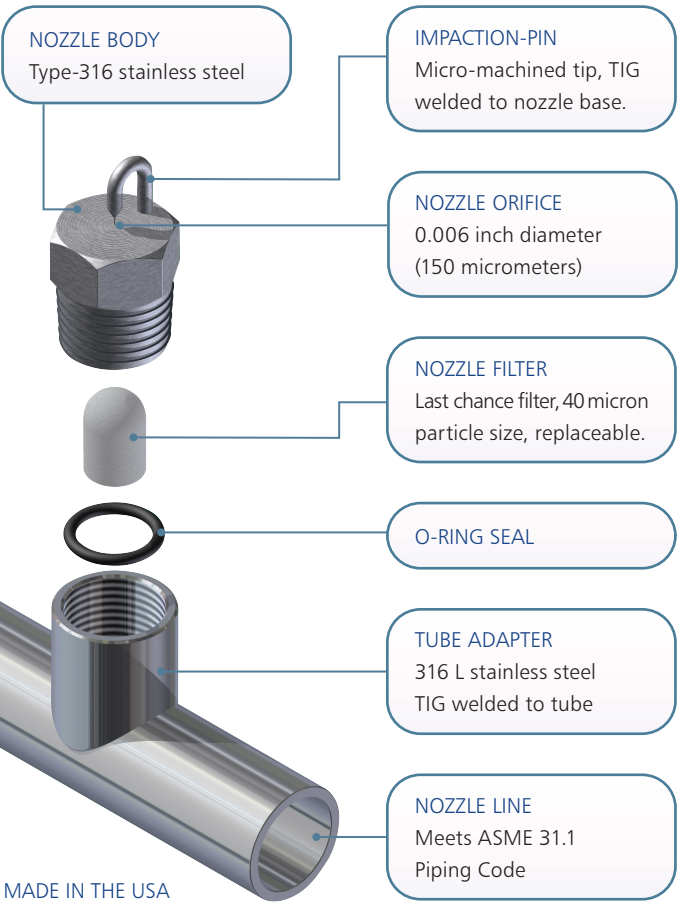
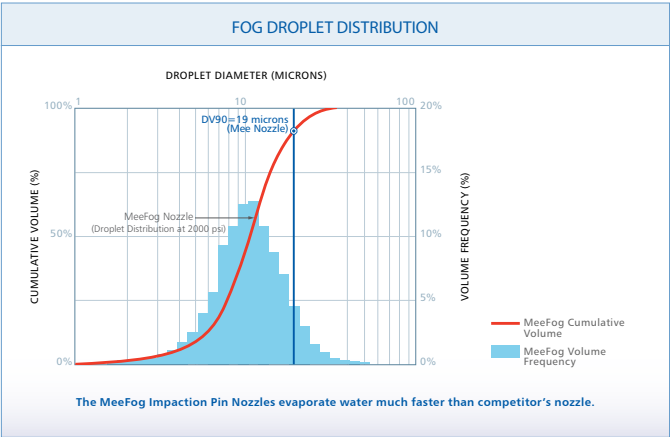
Precision nozzle helps maintain target RH

Each MeeFog impaction-pin nozzle is made from high-grade stainless steel. The standard nozzle features a 0.006 inch (150 micrometer) diameter orifice which produces billions of ultra-fine droplets per second. At an operating pressure of 2000 psi, the average droplet size is below 10 micrometers, or one tenth the diameter of a single strand of human hair. The fog quickly evaporates, allowing it to reach the set point efficiently.

Features:

- High-grade, precision-machined type 316 stainless steel construction.
- Super smooth orifice, low-pressure drop, 98% efficiency.
- Cylinder type filter with radius end for efficient nozzle operation.
- 1/8 NPT tapered fitting.
- O-Ring seal at the base of the nozzle.

Fog Droplet Distribution Chart



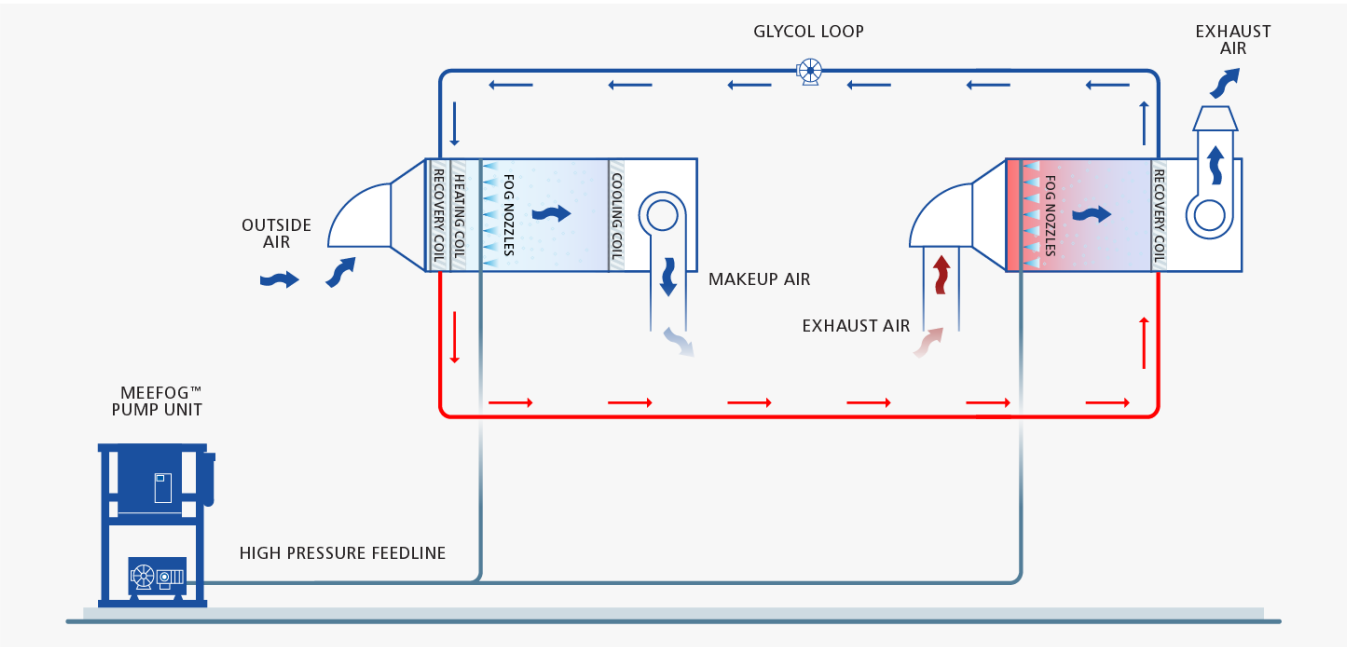
Micro in size. Macro in benefits.

The MeeFog nozzle atomizes water into billions of ultra-fine droplets. The nozzle is made using high grade stainless steel, and is the most efficient nozzle in the industry. The average droplet size is one-tenth the diameter of a single strand of human hair. The resulting fog evaporates more rapidly than other fogging systems.



Make the most out of your MeeFog System with Energy Recovery

The benefits of using Energy Recovery in HVAC systems are well documented and have been in practice for decades. However, there is much more energy savings to be found by using your MeeFog system as a pre-cooler to the exhaust side recovery coil. The same MeeFog system that provides humidity control in the supply air during the winter and transitional seasons can be used during the summer months to evaporatively cool the exhaust air. For every 1 lb of water evaporated, approximately 1,000 BTUs of cooling is provided, and the high pressure water pump uses very little energy to achieve this. A MeeFog system that is being used for humidification in the supply air sits dormant during the summer months when low humidity is not an issue. By simply placing an additional set of nozzle manifolds just upstream of the exhaust side recovery coil, you can provide as much as 10°F of additional precooling on a typical application by using the same pumping system. This can be used for hundreds, and sometimes thousands of hours depending on location, to provide low cost precooling to the supply air.



Evaporative Cooling Applications

MeeFog uses the proven technology of high-pressure fog to deliver the most cost-effective, stable and energy efficient way to cool large volumes of air. Applications range from data centers to air cooled condensers and almost any other environment where stable, precisely controlled temperatures and humidity are required. MeeFog provides significant air cooling with low energy input. A typical MeeFog system uses only one horsepower of energy for every 600 lbs. of water dispersed, which is only 3% of the energy usage of compressed air-type systems and about 1% of the energy required by steam systems.



The MeeFog Advantage: Experience Based in Science and Innovation

For over 50 years Mee Industries Inc. has been the leader of innovative water fog technology. MeeFog Systems are used to humidify and cool industrial, commercial, and agricultural processes and to create dynamic special effects.

Thomas Mee Jr. who founded Mee Industries in 1969 started his career as a Cornell University research scientist. The company originally manufactured high-tech, meteorological instruments. The first MeeFog Systems were used to study natural cloud phenomena. By the early 1980's, high-pressure water fogging had become the company's main focus. Active research & development efforts ensure MeeFog's continual technological improvement.

Today the company is owned and operated by Thomas Mee III and D'Arcy Mee Sloane, who continue their father's tradition of running an innovative and ethical company for the benefit of customers and team members.

The MeeFog team looks forward to discussing your project with you.



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