

Humidification: Controlling the Angels' share with Dry Fog



Regulating the ambient humidity to reduce the evaporation of wine and other liquors

Problems in wine cellars and other barrel aging liquors

Effect of an un-controlled humidity level

- X Product loss up to 5% / year**
Higher **Angels' share**: loss of wine and distilled spirit due to evaporation
Higher **Devil's cut**: un-controlled absorption of wine or other liquor's volume by the wooden barrel
- X Higher cost**
Reccurent topping procedure: more beverage needed, more labor (*man and time*)



Factors

Barrel's characteristics: size, type and thickness of the wood, its porosity, quality, reuse rate

Cellar's conditions: air flow, confined cellars, humidity level, temperature



IKEUCHI's solution: Dry Fog Humidification System AirAKI® with the humidifier AKIMist® "E"

- **AirAKI®** is a humidification system consisting of the Dry Fog humidifier AKIMist® "E", control equipment, and reverse osmosis equipment.
- **Non-wetting Dry Fog** sprayed from AKIMist® "E" produces and maintains a humidity-controlled environment without creating water puddles. Spraying droplets at an average size of 7.5 µm, the water droplets evaporate before reaching any surface, without wetting.

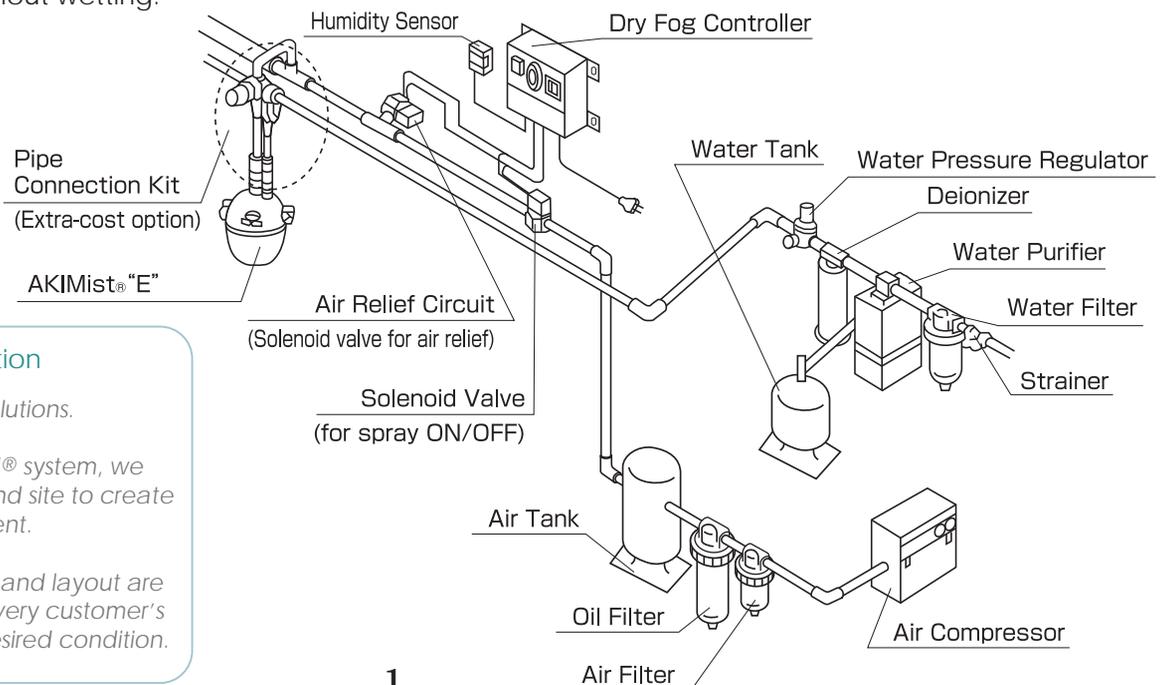


Standard installation

We offer tailor-made solutions.

Before installation of an AirAKI® system, we analyze the customer's needs and site to create the ideal environment.

Humidification system planning and layout are designed to meet each and every customer's requirements to achieve the desired condition.



○ AirAKI® system

Managed by a control unit with timer or humidity sensor, the AirAKI® system will keep a constant humidity level year-round in the cellar. Using **demineralized water**, its maintenance is easy and reduced to a bare minimum.



○ Flexible installation

Thanks to the small size of the Dry Fog humidifier AKIMist® “E” (~25 cm height), it is easy to install regardless of the existing air conditioning system. It is suitable for any type of configuration, even rooms with limited space, as **it humidifies without wetting surfaces**.

○ Ambient or spot humidification

AKIMist® “E” can cover big facilities as well as small cellars.

- ✓ Up to 4 nozzles mounted per body.
- ✓ Coverage of over **4 meters** horizontally per nozzle
- ✓ Relative humidity stabilized in a room of about 100m³ with only one nozzle

○ Controlling the Angels’ share and Devil’s cut with humidification

Angels’ share: in a more stable humidity condition and lower temperature, there is less evaporation (alcoholic and water). You can, thus, control if you want:

- More water evaporating = humidity
- The alcoholic strength reduced = humidity

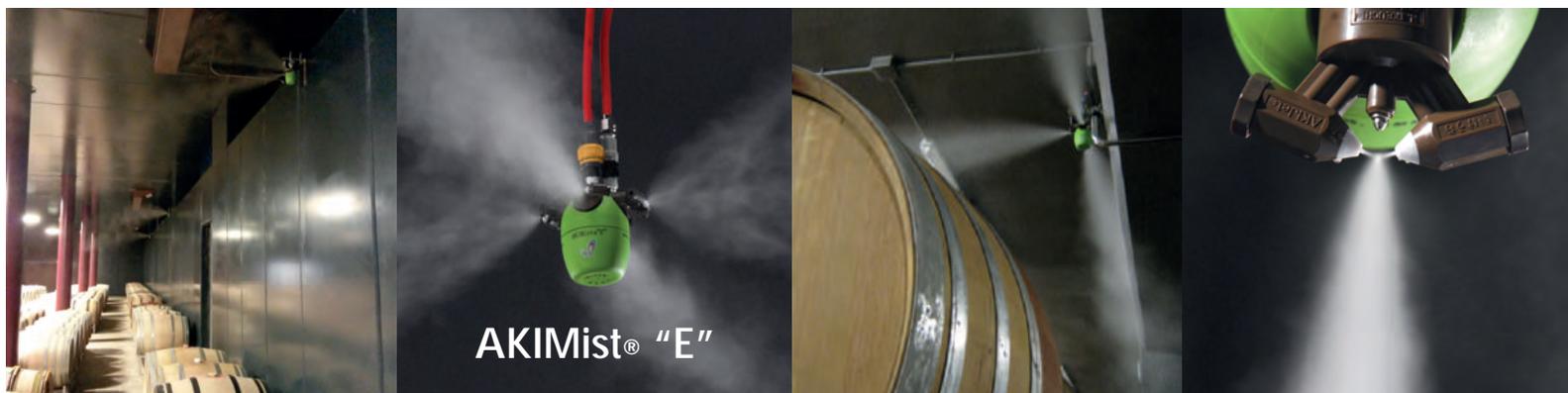
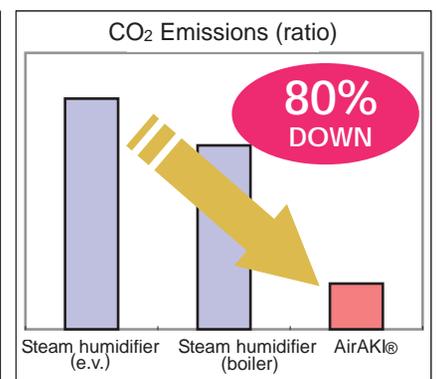
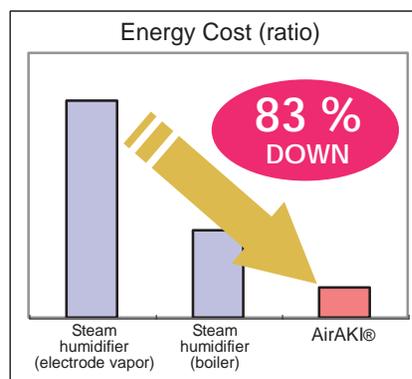
Devil’s cut: the type and quality of the wooden barrel will influence on how much beverage it will absorb.

- Higher humidity level = less product absorbed as the barrel will absorb the humidity



○ The pneumatic air-water spray method VS. Alternatives systems

- ✗ High pressure: Higher risk to create **water puddles** if it breaks
- ✗ Steam humidifiers: Tends to **heat the air** as a side effect
- ✓ AKIMist® “E”
 - Water pressure used = 2 bar (tap water)
 - **No leaking** = stops spraying as soon as the compressed air is turned off
 - **Saving costs** = reduces the cost of the air conditioning system as it cools down the temperature



Dry Fog Humidification System AirAKI® with the humidifier AKIMist® “E”

its advantages

- ✓ Double-edged sword: humidification and lowering the temperature (cooling) through atomization
- ✓ Easy installation by adding-on to existing HVAC
- ✓ High efficiency
- ✓ Low maintenance
- ✓ Easily adaptable to changes in floor layout



Dry Fog Humidification System AirAKI® with the humidifier AKIMist® “E”

its benefits

- ✓ Reducing product losses
 - Reduction of topping needed to compensate for the losses caused by evaporation and wood absorption
 - Increase product sales in volume
- ✓ Energy savings
 - Reduction in air conditioning costs as the temperature is cooled down
 - Less energy consumption
 - Less environmental impact
- ✓ Productivity increased
 - Less topping
 - Less labor
 - Saving on the loss of product due to the Angels' share and the Devil's cut
- ✓ Control of your product's flavor
 - Product quality increased
 - Taste enhanced and controlled
 - Control of the wooden barrel's permeability



For inquiries / information requests / quotations related this product, please contact us



“The Fog Engineers”

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“Taking the path less traveled”



「人の足跡を踏むな」