

# 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.

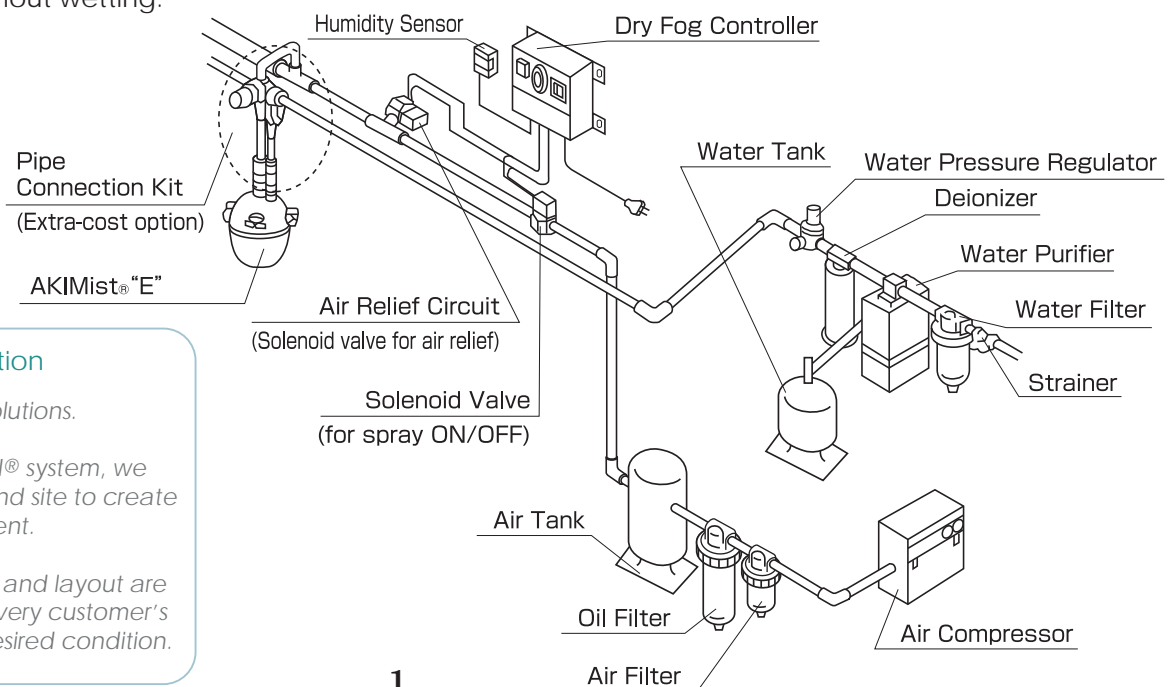


### Standard installation

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

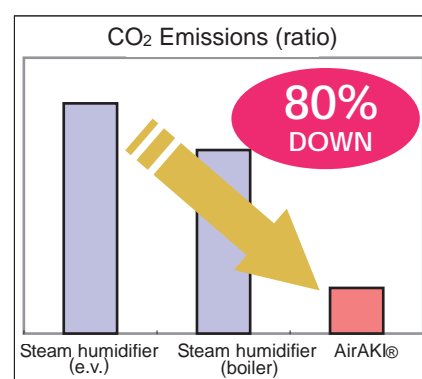
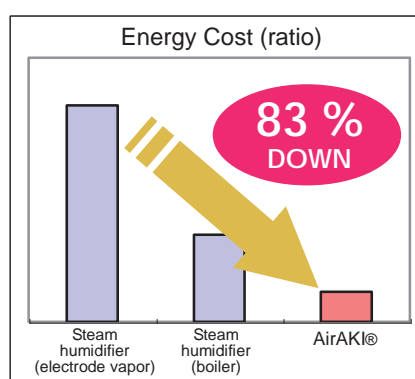
**Devil’s cut:** the type and quality of the wooden barrel will influence on how much beverage it will absorb.

- 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”



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