



HUMIDIFICATION:

CONTROLLING THE ANGELS' SHARE WITH
DRY FOG

REGULATING THE AMBIANT 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

Product loss up to 5% / year

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

FACTORS

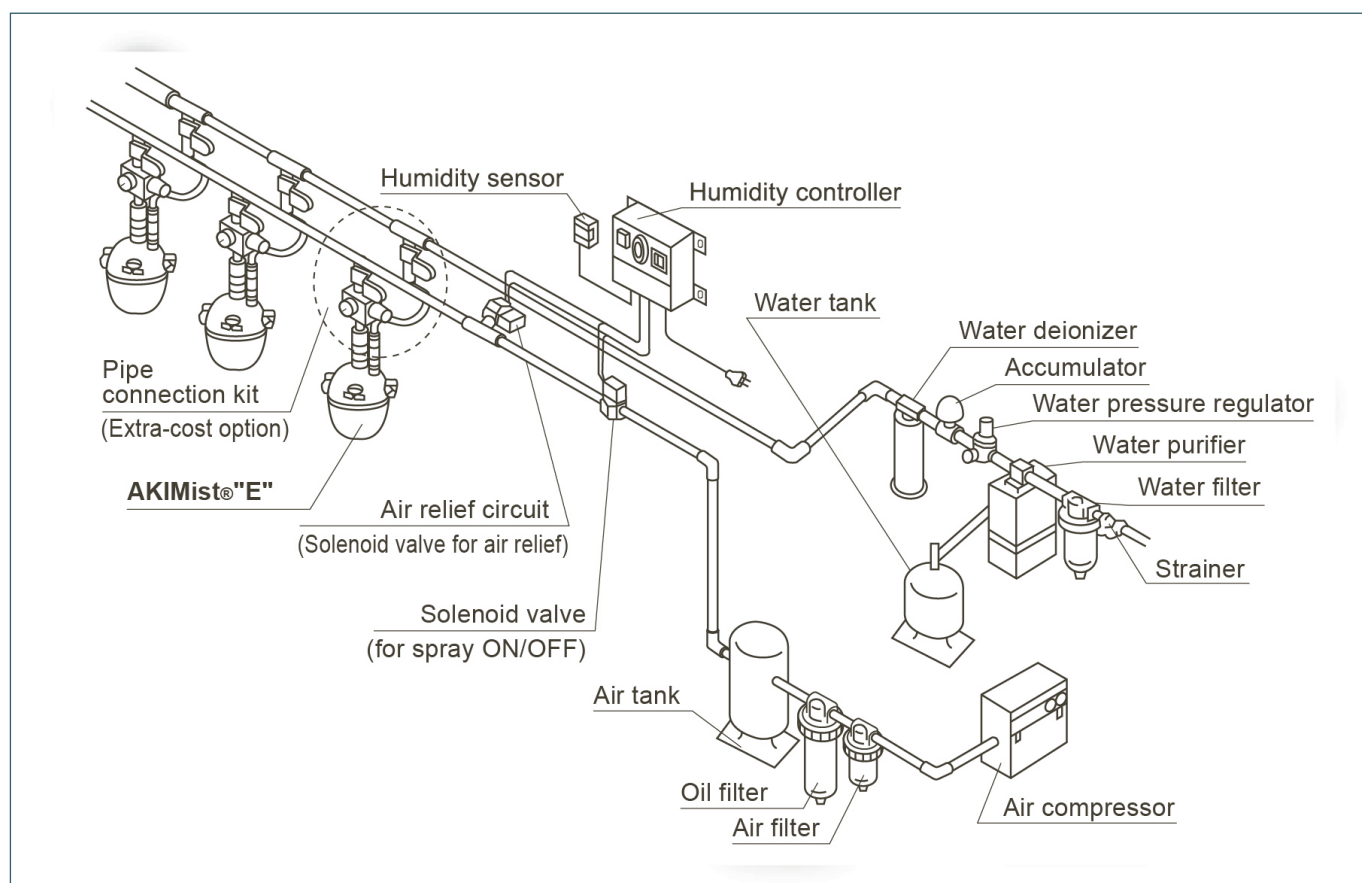
- 1** **Barrel's characteristics**: size, type and thickness of the wood, its porosity, quality, reuse rate
- 2** **Cellar's conditions**: air flow, confined cellars, humidity level, temperature



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.

DRY FOG HUMIDIFICATION SYSTEM AIRAKI® WITH THE HUMIDIFIER AKIMIST® “E” ITS APPLICATIONS

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



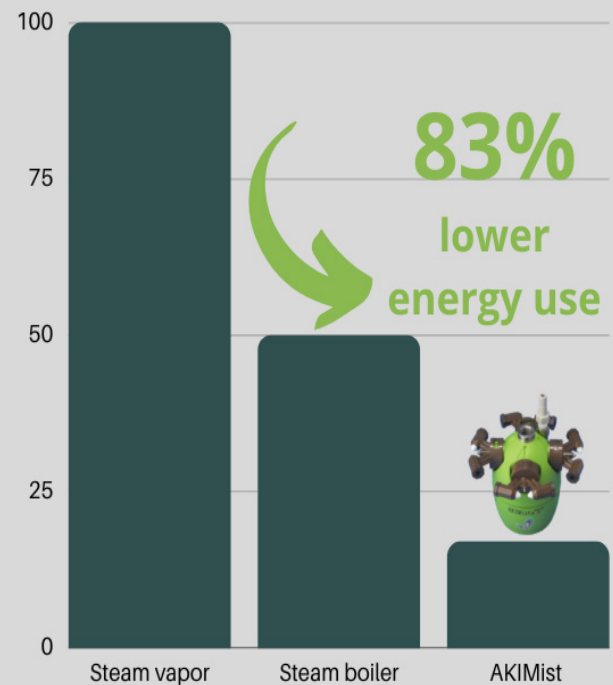
THE PNEUMATIC AIR-WATER SPRAY METHOD VS. ALTERNATIVES SYSTEMS

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



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
= turn humidity down
- The alcoholic strength reduced
= turn humidity up

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

CASE STUDY: DOMAINE ANNIE GAVIGNET

Annie Gavignet is a wine maker from the Burgundy region, in Comblanchien, in France. She followed the path of her grandfather, Honoré Gavignet, a legend in vinification during his time working in the DRC . She kept on the family tradition based on the same philosophy handed down from generation to generation: "to produce wine that we truly believe is delicious when tasting it ourselves". Thus, her production is adapted to her taste, producing a delicate and

PROBLEMS

- 1 *wine evaporation*
- 2 *Dry air*
- 3 *Less alcohol in the wine*
- 4 *Less taste*

WHY AKIMIST?

- *Effective solution*
- *Low maintenance*
- *Easy to use*
- *Non wetting*
- *Personalized advice*



RESULTS

- With the AKIMist®“E” system, the wine cellar has a stable humidity level maintained between 60 – 65% relative humidity. This greatly reduced the amount of wine evaporation.
- Before, Annie needed to top the barrels with wine every 2 days. Now, it is only once every 7 days. She saves 130 bottles per year and was able to refund this system in 1.5 years. She has also noticed that her wine was fruitier with less bitterness and roughness.

BENEFITS

- *Better wine quality*
- *Time saving*
- *Purified air*
- *Increased the wine sales*
- *Reduced the labor*

“

*She saves 130 bottles per year
and was able to refund the
system within 1.5 years*



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

 **Ikeuchi Europe**
いけうち The fog engineers

“Taking the path less traveled”

IKEUCHI EUROPE B.V.

-  Merwedeweg 6, 3621 LR Breukelen The Netherlands
-  Tel: 0031-20-820-2175
-  info@ikeuchi.eu
-  <https://www.ikeuchi.eu>