



**MOIST-PROCESSOR**  
*hyper air quality & energy saving*

# Moist-Processor

Hyper air quality & energy saving



Increase comfort and save energy through effective management of humidity.

5 health benefits and 4 energy saving benefits.

A proposal for the liquid based humidity control ventilation system.

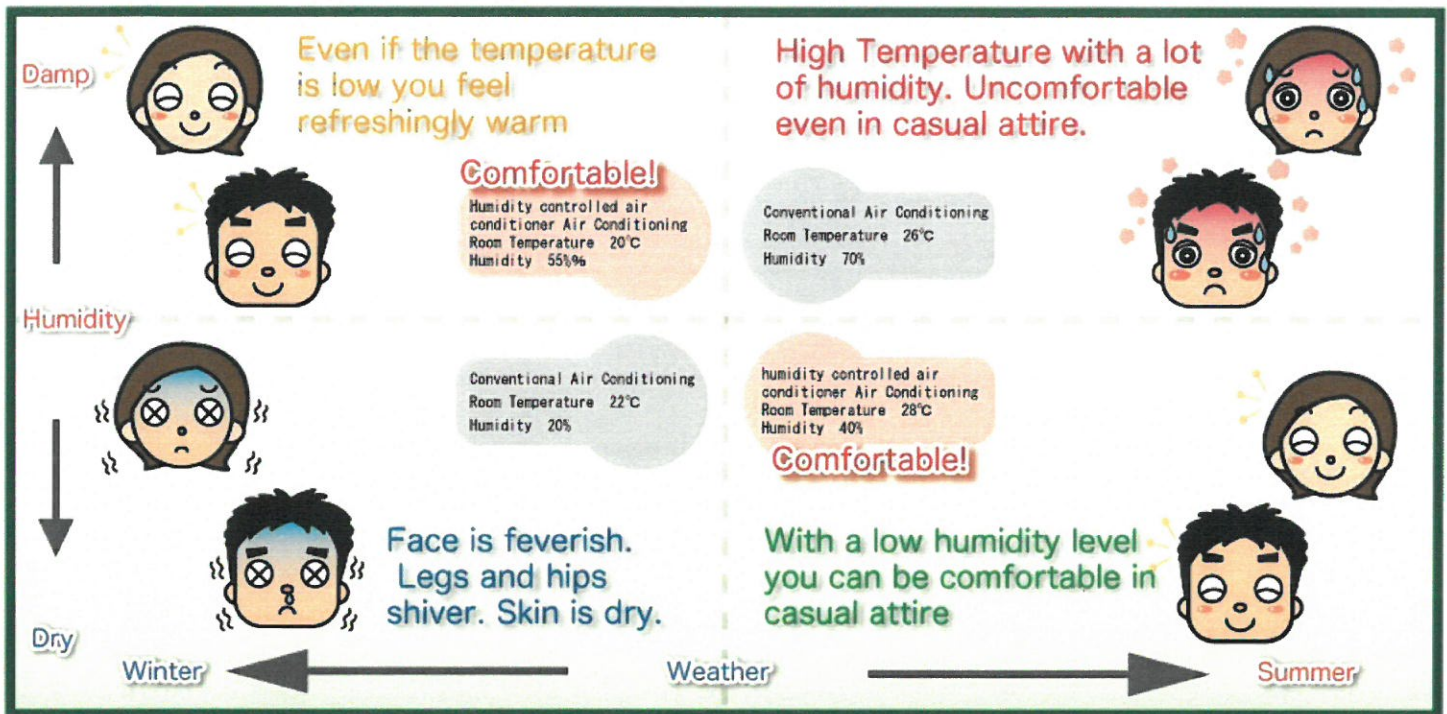
## What is the humidity control ventilation system?

It is a system that washes away dirt and various germs from the air, and then ventilates with humidity controlled air. Conventional air conditioning systems control temperature alone however, this system by controlling humidity realizes an air conditioning method which is kind to the environment and saves energy while maintaining comfort.

## Why is humidity significant?

Explaining the relationship between humidity and temperature in simple terms...

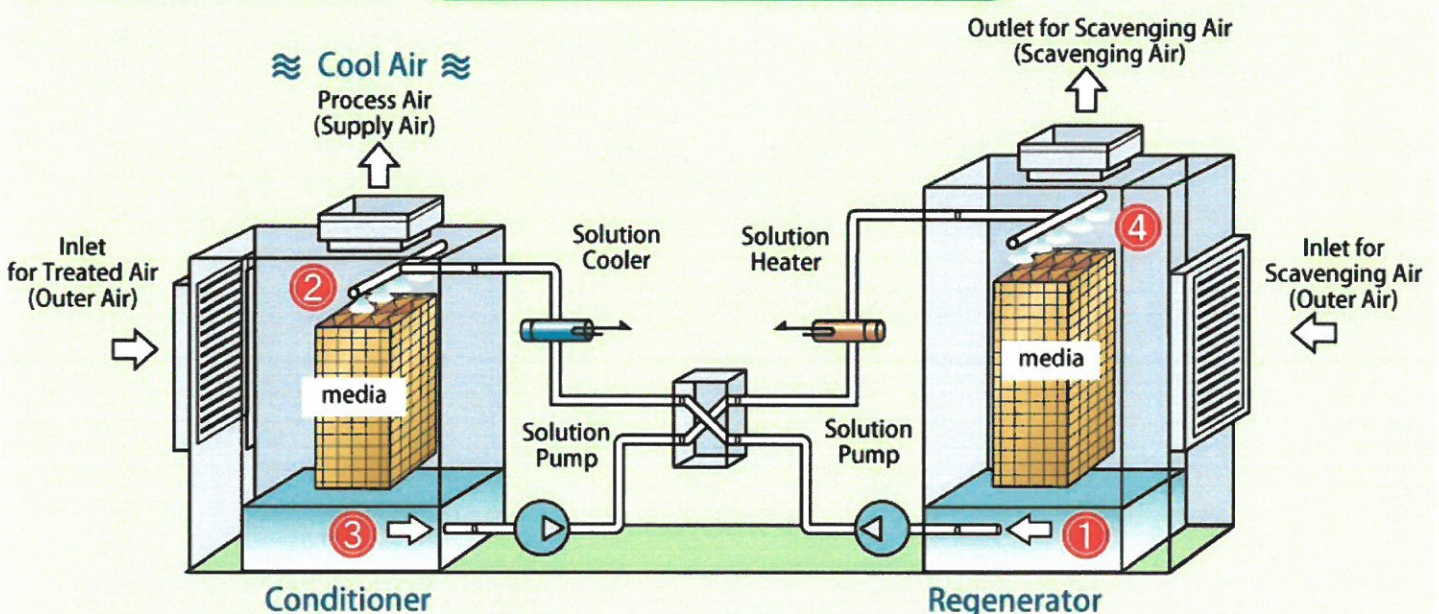
Even when the temperature is the same, in cases of high humidity a higher temperature may be perceived. Also, in case of high humidity, a higher, if the humidity is also high it will feel uncomfortable. The sticky feeling we experience on our skin during the rainy season is a result of the humidity being high, and the dryness and cracking of our skin that we experience during winter is a result of the humidity being low. In summary, a situation where the humidity is too high as well as one in which it is too low, both of them result in discomfort for us as humans.



## Dehumidification Process

## Illustration of the Moist-Processor

The Moist-Processor is a ventilation system that conditions air for a comfortable environment.



- 1 Strong solution is sent out and cooled part way through before being dispersed.
- 2 Air is purified as it passes through the media and is dehumidified before exiting to the room.

- 3 The dirtied and weak solution is cleaned at the filter and is heated before being dispersed.
- 4 The solution is concentrated again as the media is fanned by the fan.

# Characteristics of Moist-Processor and Advantages to its Introduction



## 5 Health Benefits.

### Dehumidification.

Through powerful dehumidification alone without lowering the temperature, it doesn't feel overly cold. Individuals who perspire will feel cool.

### Humidification.

Raising the temperature slightly, the room can be powerfully humidified to an RH of over 40%.

### Dust and Germ Removal

Prevents dust, dirt, fungus, pollen, mosquitoes, and other bugs from entering the room. Also disinfects the room of viruses and bacteria in addition to preventing the breeding of various fungi.

### Smells and Odors

Expels various VOC gases that cause formaldehyde, ammonia, rotting smells, body odor, and odors caused by nonenal.

### Air Conditioning

Dew will be reduced in the drains of accompanying air conditioners and mold propagation is also prevented.



## 4 Energy and Economy Saving Benefits. Cuts down on CO2!

### Less Air Conditioning

If you replace your regular ventilation system with Moist-Processor it may also reduce the amount of air conditioning necessary.

### Increase air conditioning efficiency.

Since the air conditioning unit manages dormant heat only COP is greatly increased. The air conditioning system's total efficiency is raised by over 25%.

### Less hours of operation

Comfort is maintained by adjusting the perceived temperature. By slightly raising the cooling temperature and slightly lowering the heating temperature the air conditioner's hours of operation is decreased by more than 10%.

### Effective utilization of low temperature retained heat

Because the temperature for the triggering heat source is low, a larger amount of energy is saved through the utilization of various retained heats.

## <Nursing Care – Hospitals, Medical Facilities, etc.> Air conditioning for health – smell and odor reduction

- Air conditioning for health...Take care of the health of tenants and patients by hygienically conditioning the air.
- Smell and odor reduction...If the ventilation system is set for the purpose of deodorizing, other deodorants are unnecessary.
- Economic saving...Since it would be no longer necessary to use floor heating, humidifiers, and deodorizing equipment running expenses will be lessened.

## <Super Market, Shops, etc.> Defrost – Save energy by using retained heat freezing

Defrost...Through the use of dehumidification accumulated frost in the refrigerated showcase can be reduced.

Cold Aisle Provisions...Prevent freezers and refrigerators from over freezing, control the temperature and humidity within the store and provide customers with comfortably conditioned air.

Use of Retained Heat Freezing...The Moist-Processor is able to utilize the freezer's retained heat in the triggering heat source for even more energy saving.

Construction labor reduction...Installation is accomplished with a minimum amount of ducts greatly reducing set up work.

## <Food factories, refrigerated warehouses, industrial facilities, etc.> Frost prevention – hygienic air conditioning

Frost Prevention...Prevents frost from occurring in low temperature areas of a facility. Prevents slabs of ice or puddles from forming in the refrigeration systems. Prevents rust caused by frosting water.

Hygienic Air Conditioning...Prevents dust, dirt, bugs, and fine particles carrying various germs from the outside from entering the facility.

Stable Temperatures...Necessary temperature conditions for food processing (dry and fermented) can be maintained.

## <All other large space facilities> energy saving – air conditioning for comfort

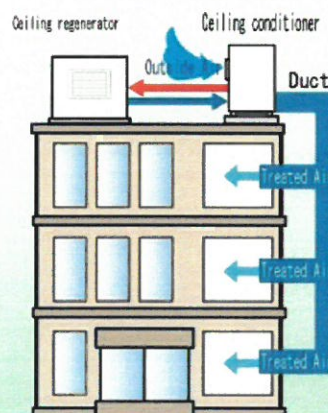
Introduction of the air humidity managing system will be effective for schools, libraries, museums, theatres, arenas, halls, sports gymnasiums, and all other such large space facilities where people gather.

## Simple Installation

There is very little need for large scale duct installation or laying of pipes.

Applying the principal of diffusing pressure produced by water vapor the air conditioning and humidity control can fill the length and breadth of a space without depending on ducts. This means that the arrangement of ducts can be greatly reduced and an air conditioned environment can be achieved without a great amount of ventilating air.

Concentrated Set Up Example



Separated Set Up Example

