

# Description of **MOIST PROCESSOR®** ( Summary)

## 1 What **MOIST PROCESSOR®** is

It is a all-fresh type system to adjust outside air. It has a very high ability ( ability to process latent heat) humidity controlling. Besides big humidity control ability, it is utilizing the advantage of the liquid desiccant method which can adjust ability to control humidity by liquid solution density and temperature.

And it can stably supply the air with required humidity in a big amount.

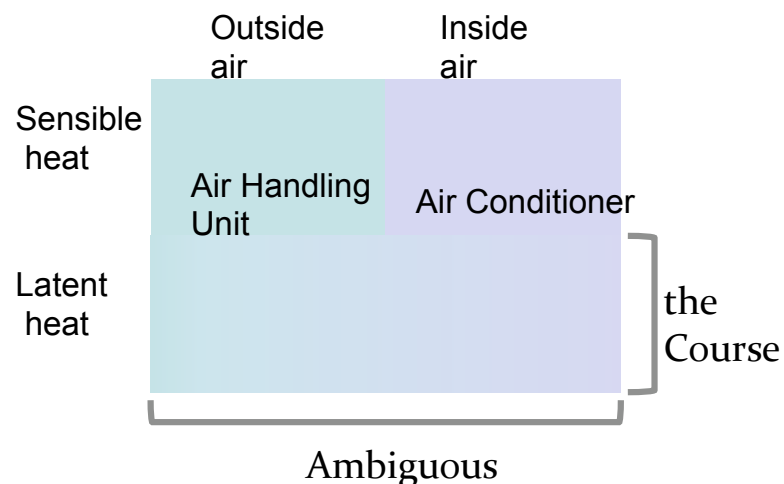
## 2 Realization of air conditioning which can divide latent heat and sensible heat by **MOIST PROCESSOR®**

The basic role of outside air adjusting system is processing sensible heat and latent heat of outside air by supplying air to indoor and it is reducing change of load fluctuation of indoor air adjusting system in accordance with the change of outside air conditions.

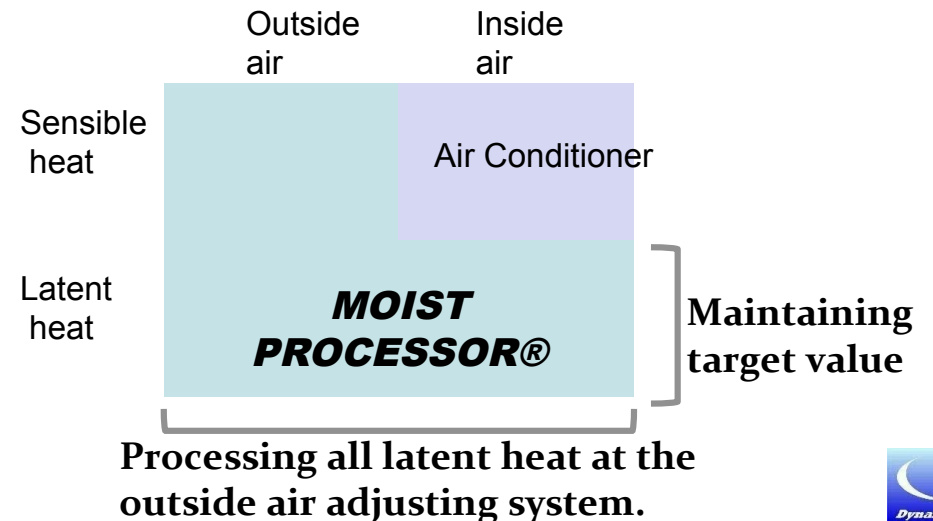
But idea of **MOIST PROCESSOR®** is a bit different.

Outside air adjusting system (Moist processor) makes air adjusting system which aims for indoor air free from processing latent heat and makes it focus mainly on processing latent heat by covering load not only of “all heat of outside air” but also of “latent heat of indoor air”. And its goal is to clarify role sharing of processing latent heat and sensible heat of indoor and outside air.

### Common model of indoor and outdoor air load dividing



### Model of dividing outside, inside air and latent, sensible heat by introducing **MOIST PROCESSOR®**



### 3 Humidity controlling ability of **MOIST PROCESSOR®**

It has humidity controlling ability, 15g/1m<sup>3</sup> and can cover not only latent heat of outside air but also load of latent heat which occurs indoor. In model 9000CMH, it has humidity controlling ability 135kg/h together with humidifying and dehumidifying ability.

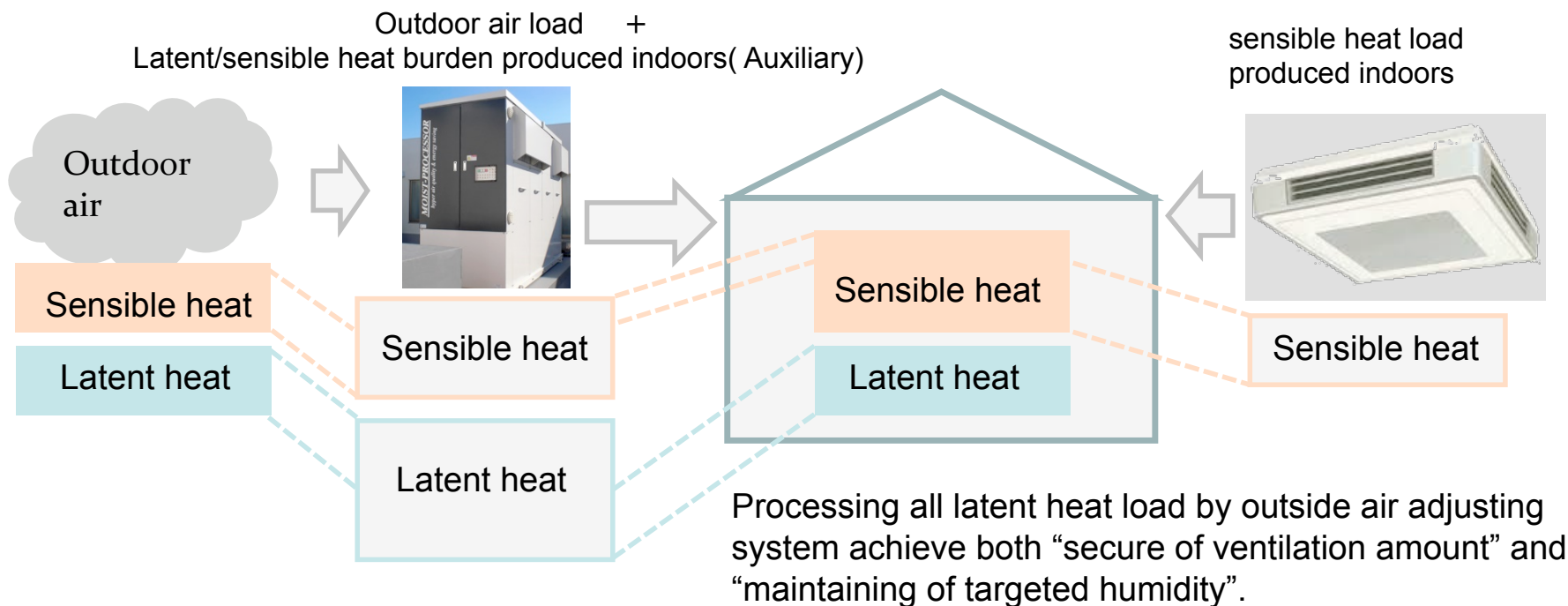
Also in regeneration process of desiccant it doesn't use indoor air. Because of that, odor or harmful material don't go back to indoor being absorbed in desiccant at the time of regeneration. This characteristic leads to getting support in the field of medical care where "humidity controlling ability", "cleanliness of supply air" and "big amount of ventilation" are required at the same time.

#### 【 Comparison of **MOIST PROCESSOR®** to other products 】

Product	Humidity controlling ability(g/m <sup>3</sup> )	Humidifying ability(g/m <sup>3</sup> )	Indoor air regeneration	Cleanliness of supply air	Remarks
<b>MOIST PROCESSOR®</b>	<b>15.0</b>	<b>15.0</b>	without	◎	Lineup ranges widely from 300CMH to 9000CHM and flexibility of organization is big. Making processed air contact with desiccant at time of humidity adjustment makes adsorption effect of floating material bigger and supply air cleaner.
<b>Desica®</b>	<b>13.3</b>	<b>7.5</b>	with	△	500 CMH is the biggest model and basically it needs to be installed in each room. Also desiccant deteriorates quickly and operation term with at the left side mentioned ability is short. It is hardly said humidifying ability is enough
<b>Rotor-type desiccant air conditioner</b>	<b>5.5</b>	-	with	△	It doesn't have humidifying ability and dehumidifying ability doesn't reach the level either that it can be used as outside air adjusting system.
<b>Air handling unit</b>	the course	<b>6.0</b>	without	○	Dehumidifying ability depends on processing amount of sensible heat and it cannot supply air under stable humidity. Also the humidifying amount as mentioned at the left side is estimated in case of using vaporizing humidifying unit, but we cannot say it is enough level of humidifying ability, we need to install separately steam type humidifying unit or humidifier in indoor space.

## 4 Image of introducing

【Image of sharing load of latent heat and sensible heat in indoor and outdoor air at the time of introduction of **MOIST PROCESSOR®**】



【Example of supply air by **MOIST PROCESSOR®** (sensible heat load auxiliary amount of inside air is relatively big)】

	Outside air condition (Tokyo standard)		Supplied air			Inside condition	
	Temperature	Absolute humidity	Temperature	Absolute humidity	Relative humidity	Temperature	Relative humidity
Summer season (air-conditioning)	34.3 °C	19.5g/kg'	20.0 °C	7.0g/kg'	48%	28°C	45%
Winter season (Humidifying)	-0.3 °C	1.3 g/kg'	28.0 °C	14.0 g/kg'	59%	22°C	45%

## 5 Energy-saving effect by introduction of **MOIST PROCESSOR®**

Following energy-saving effects are expected by processing latent heat of outside/inside air by **MOIST PROCESSOR®**

- Reducing temperature difference of inside/outside air results in decreasing amount of heat inflow from outside to inside, which leads to reducing load of sensible heat. Also it gets possible to drive indoor sensible heat processing system ( such as air conditioner) under energy- efficient condition.
- Reducing leakage of cooling coil of air conditioner improves energy efficiency of air conditioner.

## 6 Problem-solving and improving ability of other products/air conditioning method by **MOIST PROCESSOR®**

**MOIST PROCESSOR®** overcomes problems of other air conditioner and air conditioning method by processing latent heat of outside/inside air and can structure more useful and more attractive solution.

Products · air adjusting method	Problem-solving and improving ability by <b>MOIST PROCESSOR®</b>
High sensible heat type air conditioner	High sensible heat type air conditioner is superior in energy-saving efficiency, but on the other hand, the problem that ability of processing latent heat is not enough has to be solved in order to introduce them to field of common air conditioner. We can realize ideal latent/sensible heat dividing air-conditioning by using <b>MOIST PROCESSOR®</b> together with it.
Stratification air conditioning Blowout type air conditionin	From those mentioned air conditioning methods energy-saving effect is expected by minimizing air conditioning area at the time of cooling, but on the other hand, they tend to set up temperature of supply air relatively high to reduce discomfort that draft falls body. Because of that, there is a case that air with high humidity is supplied depending on conditions. There is a case that you cannot get good amount of heat radiation depending on your metabolic rate and heat-sensitivity so you cannot feel comfortable. They can show merits of at the left side mentioned air conditioning methods to the maximum by introducing <b>MOIST PROCESSOR®</b>
Radiation air conditioning	Radiation air conditioning is superior in comfort but location of radiation panel on floor and ceiling is very limited because of condensation problem at the time of cooling. By introducing Moist processer limitation problem is solved and it can attract merits of radiation air conditioning.