Dyna-Air Co., Ltd.

Press Release

April 1，2020
Chubu Electric Power Co.，Inc.
Dyna-Air Co.，Ltd.

The world's first, Development and sales of the Liquid Based Humidity Controlling Air Conditioning Unit for adopted Ionic Liquid in the Humidity Control Agent

～Achieve energy savings air conditioning for hospitals and factories～

Chubu Electric Power Co., Inc. (Headquarters: Higashi-ku, Nagoya-shi; President & Director: Satoru Katsuno) and Dyna-Air Co., Ltd.(Headquarters: Chiyoda-ku, Tokyo; Representative Director & President: Hikoo Miyauchi; hereafter, "Dyna-Air") have developed the liquid type humidity controlling air conditioning unit "Moist Processor" (hereafter, "developed product") adopted ionic liquid for the humidity control agent for the first time in the world. Our company and Chubu Electric Power Co., Inc. will start selling.

Both companies have already developed a new technology that utilizes ionic liquid as the humidity control agent in the liquid type humidity controlling air conditioning unit realizing high energy savings at low cost for the first time in the world, in September 2018.

The newly developed product has reduced the manufacturing cost by about 20% and the installation area by about 25% compared to the conventional model. We have also succeeded in significantly reducing the amount of humidity control agent used, and the power consumption of the humidity control agent circulation pump has been reduced by about 90%.Furthermore, we have confirmed the same sterilization performance as the conventional machine.

The liquid type humidity controlling air conditioning unit can not only either dehumidify and cool or humidify and warm at the same time but also can purify outside air so it has been introduced primarily in hospitals and in food factories. The agent is circulated between the outside air processing unit and the regeneration unit where the temperature and concentration is adjusted so that air with the appropriate temperature and humidity can be supplied to buildings.

In the future, we will help reducing the cost of introducing air conditioning equipment, solving hygiene issues, and saving space and energy mainly in hospitals and food factories by proposing developed products.

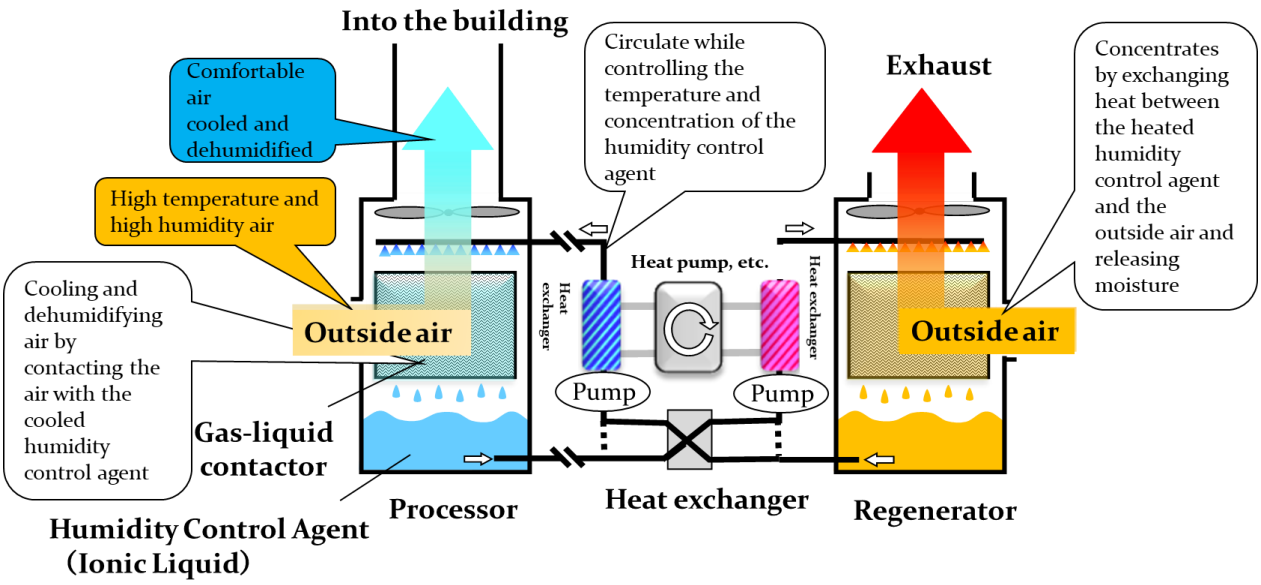

Figure 1　Overview of the liquid type humidity controlling air conditioning unit

【Features of the developed product】

1　Adopting ionic liquid for the humidity control agent (The world's first)

By using a liquid that does not easily dissolve metals for the humidity control agent, the manufacturing cost can be reduced approximately 20% compare to conventional products because general purpose metal (iron, stainless steel, aluminum, etc.) can be used.

In addition, installation area is reduced by approximately 25% by adopting a newly developed heat exchanger.

2　High energy efficiency

Power consumption of humidity control agent circulation pump has reduced approximately 90% compared to conventional products by reducing the amount of humidity control agent.

3　Integration of developed liquid desiccant module into AHU

By modularizing the humidity control unit of the developed product and incorporating it inside air handling units (AHU) used for general building air conditioning, it is possible to respond to a wide range of air conditioning conditions (air volume, capacity, etc.) according to customer needs. (Refer to figure3)

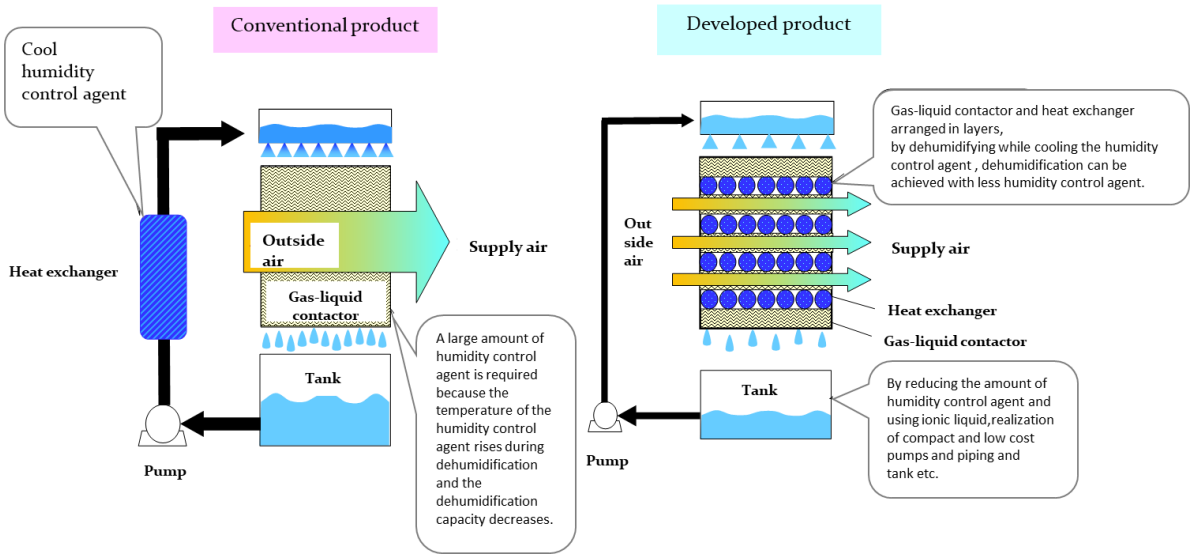

Figure 2　Comparison of Gas-liquid contactor and Heat exchanger structures

【Appearance and specifications of developed product（Dedicated housing）】

Processor ・ Regenerator size	H: 2,000mm×W:1,600mm×D:1,830mm
weight	1,620kg
Pump power consumption	200 W
Dehumidification amount	67.5kg/h
Humidification amount	68.6kg/h
Air flow	4,500 m^3/h

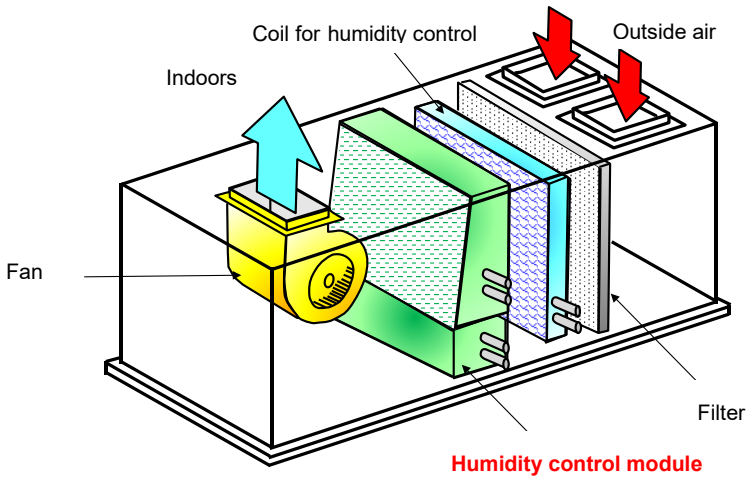

Figure 3　Integration of liquid desiccant module into air handling unit（AHU）

【Sales Inquiries】

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