

(2) Air-conditioning equipment

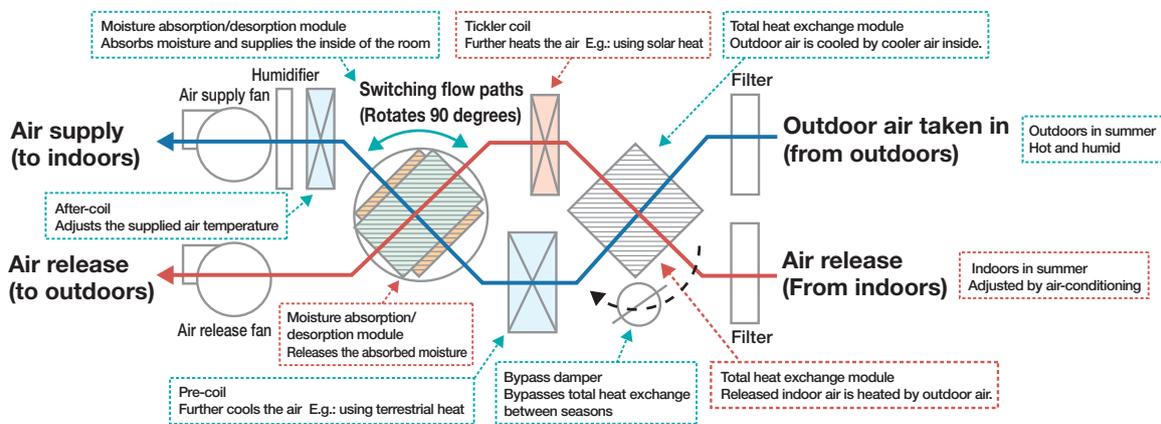
The Kubota Group develops various types of air-conditioning equipment suited for various buildings, such as offices and hospitals. Many of the current air-conditioning systems employ a system whereby air is cooled, condensed and dehumidified. In recent years, ZEBs (net-zero energy buildings) have been promoted, through the introduction of energy-saving office equipment/lighting equipment, heat insulation of buildings, and shielding of sunlight. As a result, the heating of rooms has been reduced, and therefore sufficient air cooling for dehumidification is no longer necessary.

This has led to the development of a desiccant air-conditioner, which is able to separately control temperature and humidity. It is, however, equipped with a large desiccant rotor, requiring a dedicated machine room for installing the air-conditioner.

The Kubota Group has developed a humidity control outdoor-air processing unit equipped with an apparatus to switch flow paths by changing the direction of the moisture absorption/desorption block, thereby realizing the substantial downsizing of and energy saving in desiccant air-conditioners.



Appearance of the humidity control outdoor-air processing unit



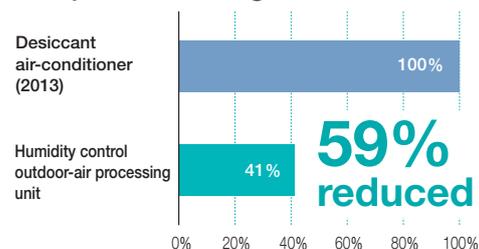
Structure of the humidity control outdoor-air processing unit and the air flows (in summer)

■ Reduced size and weight

The Kubota Group has integrated the air flow-path switching equipment and the moisture absorption/desorption equipment in the humidity control outdoor-air processing unit, achieving a small size installable in the ceiling. By eliminating the need for a machine room for air-conditioning, it can be introduced for the renovation of small or medium-sized buildings with improved workability. The weight has been reduced by 59% from a conventional desiccant air-conditioner.

*1 Comparison of the weight of a unit of Kubota's desiccant air-conditioner for 2013 and the weight of five humidity control outdoor-air processing units, under the premise of air-conditioning for the same space

Comparison of Weight*1



■ Energy-saving performance

The humidity control outdoor-air processing unit performs dehumidification with the moisture absorption/desorption block, which requires less energy for cooling, so as to realize energy-saving operation. The power consumption has been reduced by 22% from the conventional desiccant air-conditioner.

It can also use renewable energy, such as terrestrial heat and solar heat, for the heating or cooling of air.

*2 Energy-saving effect of the entire air-conditioning system. According to a simulation of annual power consumption by Kubota Comparison of the same air volume with a 2013 desiccant air-conditioner

Comparison of Annual Power Consumption*2

