

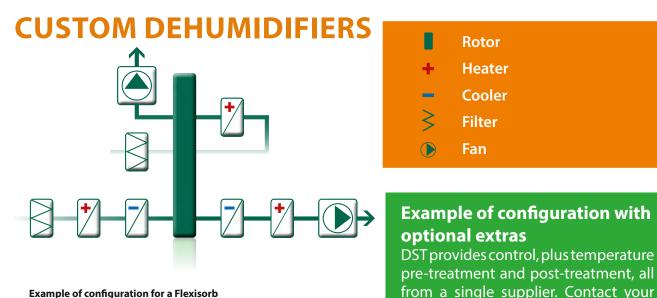
# FLEXISORB DEHUMIDIFIERS Recusorb/ Consorb/ Econosorb



# Compact and energy efficient dehumidifiers

The Flexisorb range is a series of compact dehumidifiers from Seibu Giken DST which have been developed to meet the varying needs of the process industry. For each project optimum principle is linked with pre- and post-treatment needed and all combined in a energy-saving control system.

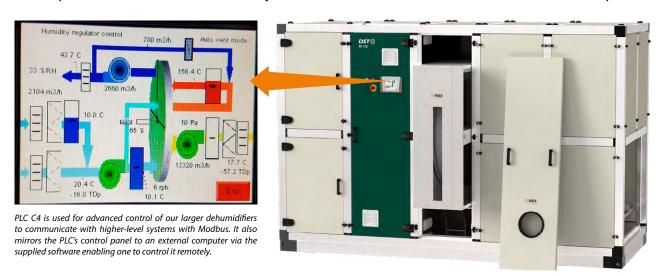
The Recusorb dehumidification principle involves integral heat recovery and hence low energy consumption. You can choose from electricity, steam or gas for rotor regeneration so that you can always make the most of all energy options open to you. With the Consorb principle low cost hot water can be used for regeneration heater, alone or in combination with electric or steam heaters. Econosorb offers a unique combination of heat pump and desiccant technology that consumes only a quarter of the energy consumption in comparison to traditional desiccant dehumidification. Energy saving systems combined with various options allow you to create a dehumidifier to suit the specific needs of each and every project.



Example of configuration for a Flexisorb

These units are constructed using an anodised aluminium frame. The smooth interior design, with no sills or pockets, and external locks on the hatches make the inside easy to wash so as to maintain good hygene levels. Stainless steel panels are available as an optional extra for dehumidification in demanding environments. Our RF dehumidifiers are tested at our factory so as to keep the start-up time to a minimum when they are installed. Outdoor installation is an available option.

representative for more information.



### SILICA GEL ROTOR THE HEART OF DST'S DEHUMIDIFIER

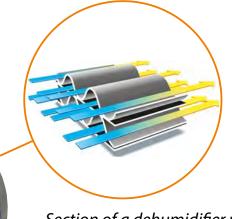
#### Washable, highly efficient rotor

All DST dehumidifiers are fitted as standard with D-MAX, a high quality sorption rotor from DST's parent company Seibu Giken. These rotors offer a high dehumidification capacity and a long service life thanks to its hard surface and chemically bonded silica gel. The D-MAX rotor is washable and also non-flammable. A further three unique rotors are available as an option. The Flexisorb unit has a removable rotor cassette to facilitate cleaning and servicing.









D-MAX H
BACTERIAL & HYGENIC

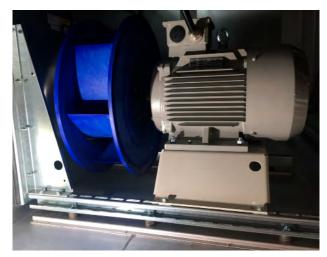
Section of a dehumidifier rotor from Seibu Giken. The high number of channels means that moisture is adsorbed with extra efficiency.

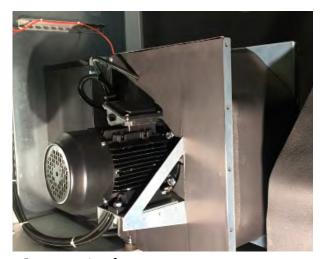




#### **Low-noise fans**

Integral plug fans and panels with insulation between the sheets that ensure low noise levels. Direct driven plug fans ensure low energy consumption with frequency inverters. Frequency inverters and integral measuring devices allow air flow to be altered and adjusted with ease. The frequency converters also save energy due to the fact that no dampers are required for adjustment.





Process fan

Regeneration fan

#### **Energy efficient controls**

There are several different energy saving systems to choose from, such as binary or linear dehumidification capacity control. A clear graphic display showing the dehumidification process, temperature and humidity is available as an optional extra. You also have the option of keeping track of the entire process online, thereby saving on travel and facilitating monitoring.

#### **Filters for all environments**

Integral bag filters, class F7, with centre latches fitted as standard. DST offers pre-filters for demanding environments and post-filters to HEPA class as optional extras.



# SORPTION DEHUMIDIFICATION

## -HOW DOES IT WORK?

In sorption dehumidification, the basic principle is that a rotating rotor in the dehumidifier continuously adsorbs moisture from the process air. Then through a regeneration cycle the moisture is driven out of the rotor and exhausted in different ways, the principle pictures are demonstrating how.



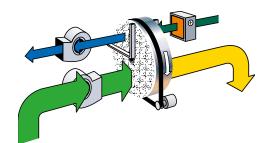
**Incoming moist air** 



**Outgoing dry air** 

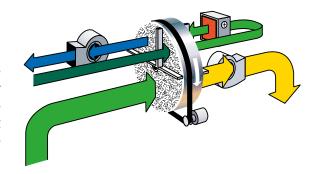


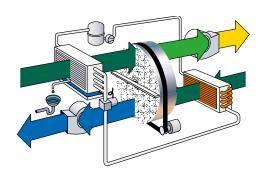
Outgoing wet air, either passed or condensed out



The **Consorb** principle is best used at lower regeneration temperatures, typically where waste heat is available or where the air inlet moisture content is very high. The Consorb principle is also used in balanced 'closed' type systems where the dry process air is recirculated.

**Recusorb** R has an internal heat recovery to improve operating efficiency. Heat transferred to the rotor during regeneration is effectively recovered by the incoming regeneration air, thus reducing the amount of energy required by the regeneration heater. The process air outlet is both cooler and drier when compared to other desiccant dryers.





**Econosorb** combines a heat pump with the sorption rotor in a unique way, providing very low energy consumption with a low dry air temperature. It's probably the most energy efficient dehumidifier on the market, with approximately 25% of the total energy consumption of regular sorption dehumidifiers. Econosorb has both condensation and wet air flow.

## **APPLICATIONS**

The Flexisorb units are suitable for applications requiring complete solutions for dehumidification, with moisture and temperature control.

Seibu Giken DST offers desiccant dehumidifiers for environments with special requirements such as pharmaceutical manufacturing, plastics industry, manufacture of food and confectionery, automotive industry and etc.













## REFERENCES

Volvo Cars (Sweden), Borealis AB (Sweden), Nestlé (Spain), CATL (China), Harbin Olympic Ice Rink (China), Hilart (Russia), Experic Pharmaceutical (USA), Christian Hansen (Denmark), Ingedia (France), Abdi Pharma (Turkey), Varta (Germany), NATO Storage (Poland), Coles (Australia), BASF (England), Al Hikma (Jordan), Riccola (Switzerland), Singapore City Hall (Singapore), Cern Tunnel (France), AstraZeneca (Sweden), Kaufland (Czech republic), Swedish Meats (Sweden), Nexans A/S (Norway), Exter (Thailand).



















coles















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Seibu Giken DST is certified according to ISO 9001

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