

## POLYKATH SYSTEM

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The Polykath dehumidification system is specially developed to serve the changing needs of industrial, institutional and commercial users.

The new designs incorporate advances in sizing, reliability, life, space and construction materials.

The Polykath dryer operates with a liquid hygroscopic salt and is, therefore, completely manufactured of corrosion-proof plastic.

Its simplicity and choice of materials of construction make the Polykath a reliable air dehumidifier with a long life span.



*The compact Polykath, built together on one frame*

Besides the drying of the air, the Polykath also functions as an air washer for dust and gases in addition to which almost all airborne bacteria are killed.

Air temperature and humidity are simultaneously controlled in the Polykath process. Pre-cooling, after cooling and after heating are usually not required.

The Polykath unit is available in three sizes: small, medium, big and XL.

The conditioner and regenerator are built on one sump and, together with the pumps, plate and frame heat exchangers and DrySol piping, built on one frame with fixed dimensions. This means that a Polykath system is easy to install.

Any manufacturing or processing operation which is humidity, temperature or micro-organism sensitive, is a natural application for the Polykath system.

Pharmaceutical, food, meat, gelatin, electronic, steel and film industry are among other things ideal application areas where the Polykath system can provide a precise humidity and temperature condition.

### *Principle:*

All the dehumidifying systems of Imtech DryGenic are based on the drying properties of a liquid hygroscopic solution called DrySol. The Polykath concept is the simplicity itself, 100% of the air to be dehumidified is exposed to highly stable, non-toxic, DrySol. The amount of moisture the DrySol will take out, is directly related to the concentration and temperature of the solution.

### *Operation:*

#### Conditioner

In the conditioner the packing absorbs the cool sprayed DrySol. The air to be conditioned passes through this packing where it comes in intimate contact with the hygroscopic DrySol. The moisture in the air is absorbed by the DrySol (the lower the temperature of the DrySol, the higher the water absorbing capacity).

#### The circulation system

The circulation system transfers a small amount of the DrySol (with moisture) to the regenerator.

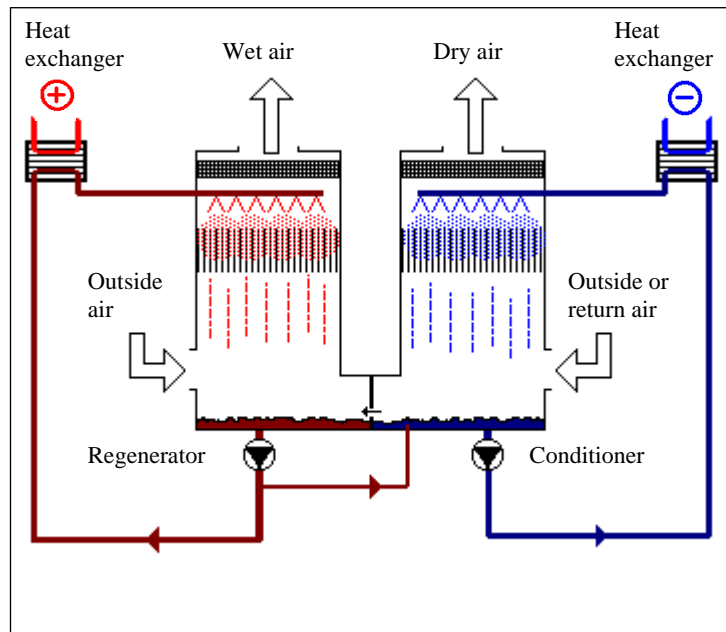
#### Regenerator

The regenerator also contains a packing over which the DrySol (with moisture) is sprayed. The heated DrySol comes in contact with a secondary outside air stream. This air is heated and the moisture in the DrySol will evaporate. The regenerator discharges this warm humid air to the atmosphere.

To maintain a constant DrySol concentration "dry" DrySol will be transferred back to the conditioner.

#### Benefits/figures:

- Cooling and heating takes place outside the unit;
- uses relatively cheap coolants, like well water, river and cooling tower water;
- corrosion-proof, units mainly made of polypropylene;
- microbiological decontamination;
- compactly built;
- fixed dimensions;
- competitive costs;
- easy to engineer;
- operates as a humidifier too;
- minimal maintenance;
- easy to relocate;
- very long life span;
- standard system, available in three sizes;
- low running costs;
- easy to integrate;
- **air volumes 4,650 - 18,000 m<sup>3</sup>/h;**
- **moisture removal 57 - 216 kg/h.**



*Working principle of the Polykath*

