

**Bry-Air**

# dryfacts

...from BRY-AIR



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## Eventful !

The year was full of events, which kept us on our toes. Many new products as well as new updated models were launched to expand our support to the industry for its various airtreatment needs.

Interfaced with the product introduction, we were also increasing our reach with the opening of new offices and participations in many tradeshows across the world.

### ECO-FRESH™

Energy Recovery Ventilators (ERVs) for better Indoor Air Quality (IAQ)



### ARCTIC

Coolers for Cost Effective Cooling

### ECO-SCRUB

Air & Gas Purification System for Cleaner Air



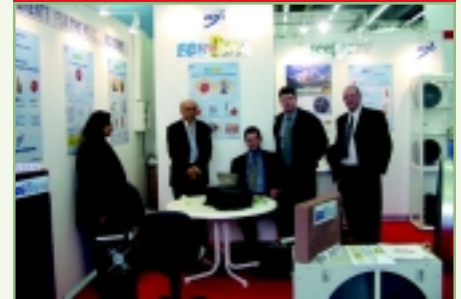
### Bry-Air®

Heat Pipe Heat Exchanger for Waste Heat Recovery

### IICDES (Defence Show), India



### Light & Building Show, Germany



### The Big 5 Show, Dubai



## Increasing Reach



Office and warehouse set up in USA to support DRI market in N. America



China opens its second office in Guong Zhou. Bry-Air already has an office in Shanghai.

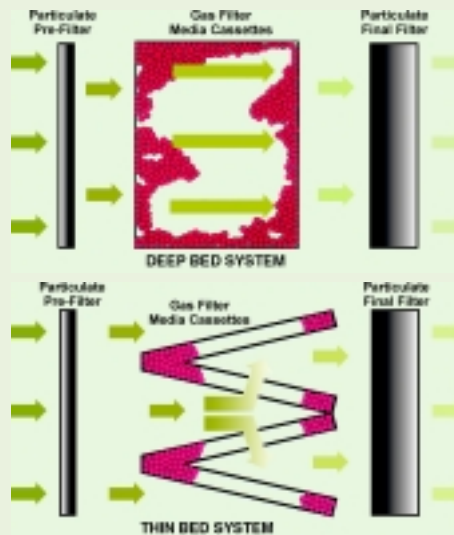
# Clean Air Solutions from Bry-Air

## Uses of "Clean(ed) Air" with Air and Gas Purification Units

Bry-Air Air and Gas purification systems are critical for :

- Prevention of air-based corrosion in electronic circuitry, computers and electrical process controls in industry.
- Removal of certain gases like ozone and chlorine, which not only attack metals but also pose equal danger to organic materials such as paper, textiles, paint, leather etc. causing them to discolor and become brittle.
- Eliminate odour problems in both commercial and industrial environments.
- Personnel protection in contaminated environments, due to prolonged inhalation of undesirable gases such as formaldehyde, ozone, sulphur dioxide etc., some of which have been proven as carcinogenic.

In **HEAVY INDUSTRY** like - Pulp & Paper Mills, Refineries & Petrochemicals, Steel & Aluminum Manufacturing Plants, Power Generation Plants, Mining & Metallurgy Industries etc., *it is important to protect electronic equipment, remove acid gases and control air pollution.*



In **LIGHT INDUSTRY AND MUNICIPAL FACILITIES** like - Sewage Treatment Plants, Laboratories & Pharmaceutical Plants, Commercial Printing Plants, Clean Rooms, Food Processing Plants, Textile Mills etc., *it is important to control odour, control air pollution, eliminate hydrocarbons and remove acid gases.*

In **COMMERCIAL AND INSTITUTIONAL** like - Office Buildings, Museums, Hospitals, Casinos, Cafeterias, Hotels, Schools, Speciality Storage Areas, Convention Facilities, Airport Terminals etc., *it is important to enhance indoor air quality, improve personnel comfort, reduce volatile organic compounds, control environmental tobacco smoke and reduce corrosion.*



## Our Representative in Egypt

### Computer and Control Systems Inc. (COMATROL) – Bry-Air's Representative in Egypt

Comatrol has been providing technical solutions and professional services to more than a thousand projects in Egypt including Design, Supply, Installation, Commissioning, Start-up and Maintenance in the fields of HVAC and Protection Systems for some very prestigious buildings and large complexes.

Founded way back in 1988, by Mr. Sherif Deya (Bsc-EE ) - CEO, and Mr. Mohamed Mansour (Bsc-EE) - Executive Vice-President, Comatrol today has more than 30 professional engineers and specialists on board. Comatrol Inc.

has effectively developed and supported the Egyptian market for Bry-Air Dehumidifiers.

Contact Comatrol team for all your requirements of Moisture/Humidity Control in Egypt @:

Telefax : 0020-2-4149481-3  
 Fax : 0020-2-2908911  
 Email : m.mansour@comatrol-systems.com  
 Web site : www.comatrol-systems.com



# WHEN MOISTURE IS TORTURE !

In this column we will share with you regularly our experience on major application areas where usage of dehumidification is both extensive and essential.

## Simple & Cost effective Product Drying using Dehumidification

The problems related to product drying are typically :

- a) the Quality of drying
- b) the Speed of drying



Conventionally, products are dried with hot air! However, most products which require drying are temperature sensitive.

### Moisture is present in the products as:

- Free moisture in form of surface moisture generated due to washing or mixing the product with water prior to drying.
- Hygroscopic moisture which is held within the product
- Combination of both types

**Drying operations** involve the removal of all moisture to the desired content.

Surface moisture (and it is often assumed that it is only type of moisture present) is conventionally removed by raising the product temperature by using hot air to vaporize the moisture. However, this can result in product spoilage as many products like cocoa, gelatine, coffee etc. are temperature sensitive and need to be dried at low temperatures.

Proper removal of the hygroscopic moisture depends on the difference between the relative humidity of the air surrounding the product and that of the products' equilibrium condition. If the relative humidity of surrounding air is lower, then the product will give up its hygroscopic moisture to the "drier air" to be in equilibrium with its surrounding. Velocity of the air over the product has little or no bearing on the drying speed.

Product drying applications are typically; Bulk (batch) drying; when the material is loaded into a compartment and the entire load is dried as a batch and continuous drying; when the wet material is continuously fed into a drying chamber and it leaves the chamber, dried to the desired moisture level.

As every material has different physical characteristics which determine how it holds or gives up moisture, and published data on their drying rates is generally unavailable, selecting appropriate air drying equipment must be done experimentally.

Usually, the sudden change in drying rate (at the critical point) denotes where the initial drying via removal of free moisture ends, and hygroscopic drying takes over. In other words, the product has lost its free moisture, but is still hygroscopically saturated. However, the net effective drying surface and the hygroscopic properties cannot be determined in any other way.

### Benefits of using Dehumidification for drying over other methods :

Desiccant Dehumidification is the simplest and most cost effective method to ensure drying without spoilage as the drying is based on the difference in vapour pressures of water in the product and the surrounding air. By physically removing moisture from air, through the process of physical adsorption, the evaporative potential of the air is maximized.

**Bry-Air Desiccant Dehumidifiers** have been used effectively by many manufacturers/processors of dried products and are ideal solution to dry products as they ensure:

- better quality drying with more uniform drying,
- faster drying rate without the risk of product spoilage
- reduction in space needs for drying,
- rationalized energy consumption versus higher throughput; and
- removal of the variable of weather as a factor in a drying operation.



### Desiccant Dehumidifiers can be effectively used to dry the following products :

#### Food Products :

- Honey ● Spices ● Herbs ● Onion ● Garlic ● Ginger ● Asafoetida ● Starch ● Dryfruits (Almond, Pista etc.) ● Coconut ● Grapes ● Katha ● P a p a d ● Vegetables ● Walnut Kernel ● Mushroom ● Beetlenut Leaves ● Chillies ● Noodles & Pasta ● Cookies ● Seeds

#### Other Products :

- Rubberised Coir ● Carton Boxes ● Soaps ● Tobacco ● Wood ● Investment moulds ● Flowers ● Ceramic tiles ● Concrete ● Carpet . . . and many more.



