



dry facts

...from Arctic India sales

October - November - December 1982

Vol. 2 No. 4

Season's Greetings

As we cheer in this New Year, a word of thanks to all our readers for the tremendous encouragement and support we have received all through. With best wishes for the whole Year!!!

Padmaja Prasad

Shashidhar

Sumit Nayyar

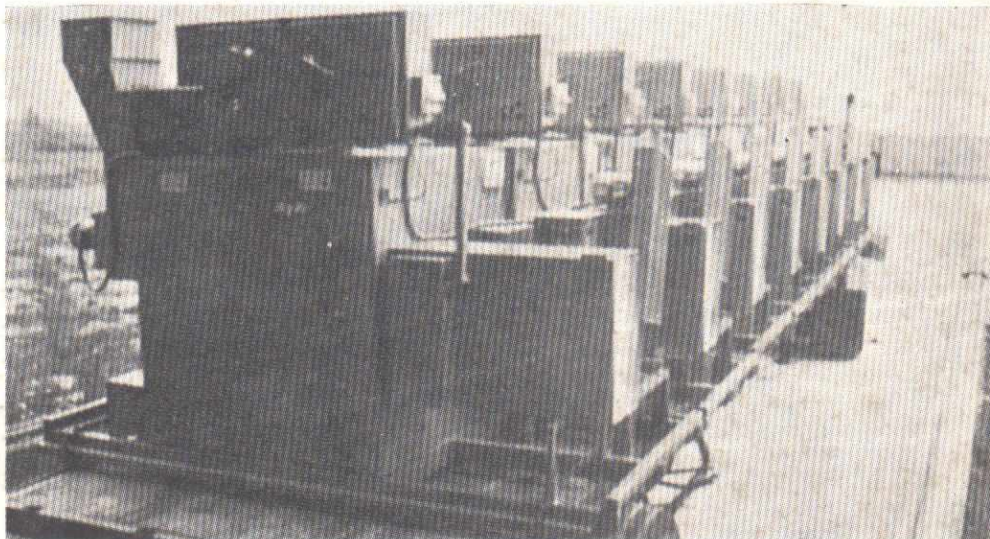
D. Z. Hamz

M. Shah

K. PETERS *Dupak Johnson* *Rajendra Joshi* *Ravi Budge*

A Break-through DEHUMIDIFIERS, NEW STYLE

BRY-AIR Inc. U. S. A. have accomplished a major break-through in the performance of desiccant type dehumidifiers, considerably widening the gap between them and the nearest rival. Two years ago BRY-AIR Inc. U. S. A. developed the first unit simulator of its type in the world where all the design variables of a rotary bed system could be accurately duplicated on static test equipment. The result: the vastly improved, patented new range of dehumidifiers having Modular Vertical Rotating Bed concept (MVRB). The MVRB bed package known as the carrousal offers many significant advantages compared to the traditional flat bed or concentric screen drum arrangement,



(Continued on page 2 col. 1)

Pictured above are a new lot of MVRB'S being shipped out from BRY-AIR

(Contd. from page 1 col. 1)

These are :

1. Almost half the power consumption as compared to the previous style units.
2. Independent air flows thereby eliminating the needs to pressure balance the reactivation and process air flows. Without need for pressure balancing, both the air flows can be independently adjusted to maximise the grain depression or to minimise energy consumption.
3. For recharge of desiccant, each bed section has a fill hole at the top and a drain at the bottom, thereby eliminating bed removal or disturbing of the seal.
4. Unit size is almost half as compared to older design system.

BRY-AIR (INDIA) brings to you this latest break-through in desiccant dehumidifiers technology, initially in the 2000 Cfm upward range dehumidifiers. We shall be pleased to furnish any additional information that you may require.

OUR NEW SALES ENGINEERS FROM MADRAS AND HYDERABAD

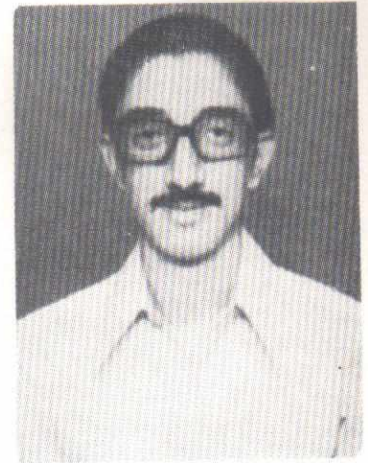


Mr. P. V. RAVI KUMAR is our enthusiastic new sales engineer from Hyderabad. For any sales queries you may contact him at this address :

H. No. 2-2-1130/8A
New Nallakunta
Hyderabad-44

For any sales and service assistance in Madras, Mr. Prem Kumar K. Joshi, (picture below) our new sales engineer can be contacted at :

6, Menad's Street
Madras-600 007
Phone : 661906



WHEN MOISTURE IS TORTURE !!!!!

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

Manufacture and Storage of Electronic Components - Capacitors

One of the main considerations for the manufacture of good capacitors is the control of environment in the storage and winding sections.

Paper capacitor is a very broad classification; generally split into (a) paper capacitor and (b) plastic film & metalized film capacitor. Plastic film capacitors may use either one of the following as a dielectric :

1. Polyesterfilm
2. Polypropylene
3. Polystyrene
4. Polycarbonate

The paper film thickness may vary from 3.5 micron to 15 micron & hence it is essential that during manufacture; the dust particle size in the area should not exceed 0.3 to 1 micron. Otherwise any dust particle which is of substantial size (nearing the thickness of the dielectric material) may get trapped between the layers of the dielectric while winding the capacitors, therefore damaging the property & capacity of the capacitor.

Normally the raw material which goes into the making of a capacitor is contained in sealed containers. It is essential that the material not be subject to undue thermal & humidity gradients; hence for different materials (dielectric) varying conditions of temperature & humidity are specified. It is therefore essential that identical conditions be maintained inside the storage as well as the winding room. Broadly classified, the conditions to be maintained are between 35 to 40% rh at around 22°C. In some cases even lower rh is acceptable. Due to above mentioned reasons the manufacturing process of capacitor is carried out in "White" room. "White" room is essentially an area where temperature, humidity and dust/particle size is controlled.

Another reason for manufacture of capacitors under controlled conditions of temperature and particularly humidity is that if slight moisture gets trapped between the layer during the winding, and when such capacitors are subject to voltage test then the phenomena called electrochemical corrosion takes place thereby mining

the complete batch of capacitors. This is particularly so in metalized film capacitors. Similarly for paper capacitors, if manufactured under controlled conditions; then drying/baking time required is less and as such de-gasing is less.

For achieving the controlled air requirement as indicated above, refrigeration equipment alone becomes uneconomical, impracticable and cumbersome to design, operate and maintain. On the other hand the desiccant type dehumidifiers in combination with refrigeration offer a direct, simple and economic solution to control both temperature and humidity to the specified level. Thus the dehumidification equipment for moisture removal and humidity control, and refrigeration equipment for sensible cooling and temperature control formed the first choice for the above application of the leading capacitor manufacturer in the country, M/s Uptron Electronic Devices Ltd.

A system was designed for them for controlling temperature and humidity for storage and winding of capacitors.

Some Recent Applications

H M M Ltd.—Calcutta & Bangalore are using our compact table top units for Horlicks packing area.

Punjab Agricultural University—Ludhiana are maintaining low RH by using our 150 cfm. compact model for Infra Red Spectrophotometer Room. Similarly Premier Automobiles Ltd., Bombay, and Echjay Industries Pvt. Ltd. at Bombay and Rajkot (Gujarat) are using these units for this application.

Two table top models are being used by Lakme Ltd., Bombay for their Research Lab.

Very soon, we will be supplying two units of 9000 cfm air handling capacity dehumidifier to Hindustan Aeronautics Ltd., Bangalore, for their paint hall where the Jaguars are to be painted.

Two units of 600 cfm capacity have been supplied to Indo Burma Petroleum, Nasik for their bonding room.

Delta Food Pvt. Ltd.—Delhi and Bakewell Food Products—Muradabad are using our 150 cfm dehumidifier for Biscuits & storage and packing potato chips.

Another table top model is being used by National Garlic Industries—Jaipur in the Garlic Powder manufacturing/packing area.

Some new customers amongst the Pharmaceuticals industry are Sandoz India Ltd.—Thane, Raptakos Brett & Co. Ltd., Bombay, Alembic Chemicals Ltd., Baroda, Pharmaceuticals and Chemical Industries Ltd.—Vapi, Carter Wallace Ltd.—Panjim (Goa), Duphar Interpharm Pvt. Ltd.—Thane, I.D.P.L. Gurgaon and Hyderabad, and May & Baker (I) Ltd.—Bombay.

THERE'S TROUBLE IN THE AIR

PART III :

FACTORS AFFECTING UNIT SELECTION

There are many variables that affect the dehumidification process. All, or as many of which must be accounted for if an efficient system is sought.

Infiltration

Along with the humidity that is derived from the outside air is the problem of humidity that exists by means of infiltration. Many air conditioning engineers completely disregard this load component, but it does exist wherever differences of moisture occur.

The force responsible for the flow of water vapor through walls, ceilings, and floors is the vapor pressure difference established when a lower specific humidity is held within a conditioned area as compared with adjacent areas. All common building materials are porous to some degree and moisture will actually pass through them to the area of lesser pressure.

Some of the so-called vapor barrier material offer good restriction to this flow, but the motivating force is of such great magnitude that it is all but impossible to restrict the flow completely. Concrete evidence of this moisture travel is the condensation found in the insulation of storage rooms, notwithstanding the high degree of vapor restriction employed.

People themselves contribute substantially to R.H. levels. Moisture is constantly added to the work environment as a result of breathing and the evaporation of perspiration. How much moisture does each person add to the atmosphere of the controlled space? Rather exact data is available which interprets the degree of activity of the people in relation to the ambient temperature, pressure, and humidity conditions of the work environment.

Product as Humidity Source

It is important to remember that any material entering the controlled area can bring moisture with it. In general, metals will bring little moisture whereas non-metals are capable of carrying surprisingly large amounts of water. Corrugated cardboard

containers, for example, can contain as much as 13% water by weight.

The Manufacturing Process

The manufacturing process itself may expel moisture into the atmosphere. Open liquid tanks, trays, etc. add their own moisture load as do open steam exhausts and unvented combustion cycles. Aging or curing cycles which can release moisture are yet another often overlooked source of humidity.

Although the variables affecting unit selection are many, the Bry-Air specialist is trained to identify and make provisions for them. The Bry-Air specialist is just one of the many reasons why Bry-Air has become one of the most respected names existing in the manufacture of complete environmental control systems.

The Bry-Air Range

The Small Bry-Air : Compact Efficiency

Small Bry-Air dehumidifiers are available in 50, 150 and 300 CFM Models. Their compact size and excellent dehumidification capabilities make them well suited to industrial applications of smaller areas. These units are ideal for testing laboratories, or other places where humidity control is essential and space is limited. These Bry-Air units are capable of removing up to 8 litres of moisture from the air every hour.

The Medium Size Bry-Air

Medium size Bry-Air dehumidifiers span from 600—3000 CFM. Capable of removing up to 80 litres of moisture from the air every hour, they are well suited for use in water treatment plants where high humidity is present.

The Large Bry-Air : No Job Too Big

In CFM ranges from 4,500—30,000 the larger Bry-Air is designed to maximize dehumidification of large areas. These units have a drying capacity of up to 800 litres per hour and are assembled, tested and shipped by Bry-Air ready for operation.

BRASCH

new ideas in
electric
heating
duct heaters
unit heaters
control panels
boilers
perimeter radiation
from
BRASCH
the leader

BRASCH
ELECTRODUCT®

BRASCH
MANUFACTURING COMPANY INC. U.S.A.

Write or call for catalogs.
Custom engineering is our business.
We welcome your inquiries.

EXCLUSIVELY SOLD AND SERVICED BY



ARCTIC INDIA SALES

20, RAJPUR ROAD, DELHI - 110 054 (India) PHONES: 222424, 225937

Storage Water Heaters



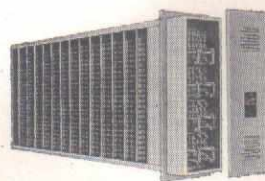
Provides domestic hot water. Capacities from 150 to 4000 gallons, phenolic or cement lined. Rated from 30 to 990 KW.

Electric Cabinet Unit Heaters



Floor, wall and ceiling models for entries, lobbies and stairwells. UL Listed to 22 KW and 1235 CFM.

Electric Duct Heaters



Slip-in and flanged models. Sizes to 480" long by 180" high. Wattages to 2000 KW with 0.1 KW increments. Any supply voltage from 110 to 600 volts.

Electric Unit Heaters



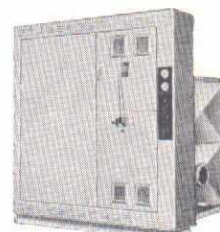
Complete or Supplementary heat, UL Listed, 11 kilowatt selections to 50 KW, interchangeable mounting for horizontal or vertical discharge.

Space Saver Hot Water Boilers



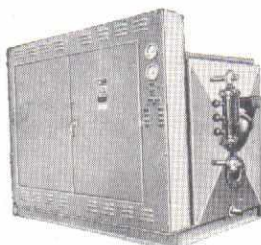
Compact (2 ft. x 2 ft. x 4 ft.) vertical cabinet saves floor space. Suitable for closet mounting. UL Listed from 5 to 120 KW.

Electric Hot Water Boilers



Up to 2520 KW for each module. Vessel meets ASME Code and certified by National Board of Boiler and Pressure Vessel Inspectors.

Electric Steam Boilers



High and low pressure. Up to 2520 KW for each module. Vessel meets ASME Code and certified by National Board of Boiler and Pressure Vessel Inspectors.

Custom-Designed Electric Duct Heaters



Slip-in and flanged models. Sizes to 480" long by 180" high. Wattages to 2000 KW with 0.1 KW increments. Any supply voltage from 110 to 600 volts.

Industrial Electric Products

- Heavy-Duty Industrial Heaters
- Process Air Heaters
- Oven Heaters and Panels
- Process Steam Boilers
- Finned Tubular Heaters
- Electric Steam boilers.