

# dry facts

...from BRY-AIR

## Bry-Air's Engineering Expertise gains Recognition in India . . . . . and abroad !!

Bry-Air and it's group companies have established it's lead in the field of developing, designing and engineering desiccant based systems for dehumidification, drying, energy recovery, and solvent recovery.

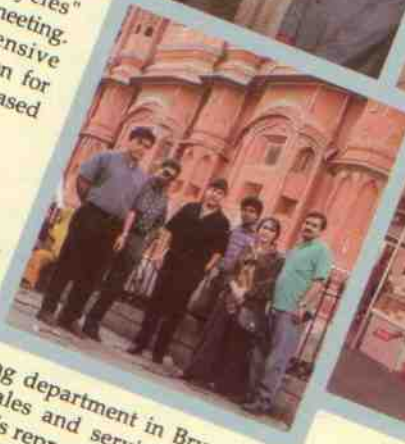
Bry-Air India has been in the forefront of pioneering environment control in the Indian subcontinent, West Asia and South East Asia, and most currently in China.

### G L I M P S E S of Bry-Air's lead

Across the world in Chicago, USA, Bry-Air presented a technical paper on "Thermodynamic Analysis of Desiccant-Augmented Evaporative cooling cycles" at the ASHRAE winter meeting. Bry-Air has done extensive studies on tropical condition for application of desiccant based cooling.



Developing engineering capabilities is not limited to the engineering department in Bry-Air but extends to it's sales and service force also. Seen here, Bry-Air's representatives from West Asia during an orientation programme.



Seen in the picture, a delegation from Bry-Air at the shop floor in India to discuss a possible technology transfer through a joint venture.



At home, Bry-Air and Arctic India Sales, took lead in promoting the concept of 'Indoor Air Quality'. A view of Bry-Air's presence at ACREX '95.. ..International exposition on air conditioning refrigeration and building services.



Seen above, Mr. Billy Manning, President-Ashrae understanding about desiccants

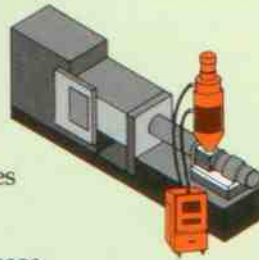
and last but not the least, Bry-Air Wood Dryer gets the stamp of approval from FRI



## PRD SERIES. . . An ideal dryer . . . for an ideal packaging material

PET is a great favourite with the packaging industry because of its, special properties like crystal clarity, lightweight, environment friendly, breakage resistance, good barrier to oxygen, etc. For PET to have all these qualities, it has to be absolutely moisture free before processing. Being highly hygroscopic, PET is one of the most difficult resins to dry. It requires stringent control over dewpoint, drying temperature, residence time and airflows. Keeping this in mind, Bry-Air has designed a complete package for drying PET . . . the PRD series.

The PRD series ensures delivery of PET resins to the moulding machine at a moisture level less than 100 PPM. Engineered to handle 15kg. to 90kg. (33lbs to 199 lbs) of resins. The PRD series matches perfectly with NISSEI ASB, AOKI and SIPA stretch blow moulding machines of similar capacities.



*The PRD series enjoys a wide usage among PET manufacturers including Pearl Polymers, Sripet polymers, Jyoti transpet, JIL plastics, Plastosen and General Plastics, Kenya.*

## SWEAT CREATES 'FINISH' PROBLEMS FOR GOLF BALLS



Professional Golf Co. Sdn. Bhd., a DMIB/Sime Tyres Group Company, manufactures high quality golf balls. The manufacturing process involves injection moulding of outer shell of the balls.

The multi-cavity moulds are cooled using chilled water (7° C). Due to year - round high ambient humidity in Malaysia, condensation occurs on moulds, spoiling surface quality and finish. To combat condensation, the chilled water temperature is raised to 15° C which lengthens the cycle times, resulting in lower productivity.

To solve the problem of sweating, Bry-Air installed 3 dehumidifiers model 3A to maintain a condition of 72°F DB at 35% RH (7°C dewpoint) i.e. the temperature of surrounding air maintained is lower than the water temperature. This eliminates 'sweating' totally. The result, higher productivity, better product, and of course, great putting !!

## Did you know ?

Kenya exports 3 plane loads of flowers everyday.



India exports Rs. 75 crores worth of dry flowers .



Many other countries like Srilanka also does a booming business in dry flower exports. Used only for decorative purpose, dry flowers are a favourite with beauty shops, private residences, hotels and public institutions. After processing and arranging them

in imaginative forms, floral wastes acquire a unique mystique and aesthetic appeal. Also, they are ecofriendly and non-perishable.

Conventionally, the flowers are first baked in sunlight then fumigated, bleached, dipped in lime water and salt, dried, cut and finally shaped and coloured for marketing.

To match its fast growth, the industry is seeking methods to quicken the process of drying.

Called upon to provide a solution, Bry-Air's R&D department has been experimenting with different types of flowers in Bry-Air's environmental controlled lab to find the ideal condition for flower drying.

*Look ahead for more details in the forthcoming issues.*

# 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.*

## Moisture! A Threat to Production and Processings.

Continuing with our series, we cover some interesting and diverse production processes where presence of moisture is a torture.

In a **STEEL BELTED RADIAL TYRE**, steel cords are radially placed, perpendicular to the central line of the tyre. To make the tyre rust free during usage, a nylon casing is bonded over the steel cord. The room, where steel wires are covered with the fabric, converting it into a single bonded ribbon, which is then braided, is known as the "creel room". In the creel room, various wires of fabric and steel pass to the winding machine from large spools. Presence of high humidity in this room leads to rusting of steel wires, leading to a large rejection rate. Rusting, also prevents proper bonding between the steel and rubber. Dehumidification or humidity control, is a must in the creel room.

**AUTOMOTIVE WIND SCREENS** are made of very special glass called the safety glass. The safety element is ensured by a special bonding of the two pieces of glass with a special film inside, which holds the shattered glass together in the event of breakage. The thin transparent plastic film used as an adhesive between the layers of glass is hygroscopic. If the film is allowed to absorb moisture either during storage or during the bonding process, then the absorbed moisture vaporises during the auto claving process and gets trapped between layers of glass as bubbles of moisture. The trapped moisture reduces the visibility of the glass and the effectiveness of the bond, rendering the product unsafe.

The solution lies in dehumidifying the glass laminating area.

**CANDIES, BISCUITS, FRUIT POWDER, INSTANT COFFEE POWDER, TEA, SUGAR, MILK POWDER**, etc all have 'hygroscopicity' as a common factor. Presence of high humidity in processing, packaging, and storage areas, lead to moisture regain, resulting in soggy, rubbery, unappetizing product. In processing and packaging machinery,

sticky powders interferes with smooth machine operation. Maintaining controlled humidity conditions is the only solution to the problem.

**SEMICONDUCTORS PCB. . . .**

In many such electronic component manufacturing, moisture is a constant problem. Excess moisture causes adhesion failures, stress fractures, surface effects in both semiconductor and PCB assembly. In the manufacture of **FLUORESCENT LIGHTING TUBES AND PICTURE TUBES**, moisture causes imperfections in coatings resulting in quality problems. Again, humidity control is the only solution.

**IN PHARMACEUTICAL**, whether it is powder milling, compounding of tablets, tablet compression, tablet coating, effervescent tablet manufacture, injection manufacture, or soft gelatin capsule manufacturing, almost all areas of pharma processing and production requires humidity control. *The list of production processes requiring humidity control is endless . . . .* **CHEMICALS, ARMAMENTS, SHAVING BLADES . . .** all require humidity control. Bry-Air has provided solutions to humidity control problems in numerous manufacturing areas. *Write to us for more details on any of the areas listed above or any other processing area which is facing a moisture problem!*



**Bry-Air**

# W O O D D R Y E R



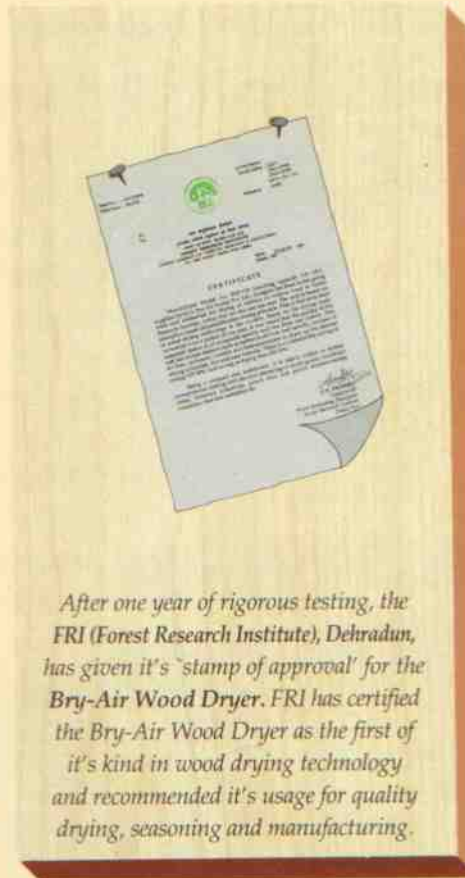
Bry-Air Wood Dryer is designed and manufactured to season and dry all types of wood at an accelerated rate and without causing damage to the wood. The Bry-Air Wood Dryer is ideal for manufacturers and exporters of quality wood products.

### Season in all seasons.

The Bry-Air Wood Dryer allows seasoning/drying all types of wood, at site, irrespective of the weather. Compact, mobile, self-contained and modular, the dryer is designed to handle large as well as small quantities of wood. It is eco-friendly, user friendly, easy to install, operate and maintain, and ensures fastest drying without product spoilage.

In fact, the drying time can be optimised at site for any type of wood by dialing (regulating) the drying intensity and temperature.

Seasoning wood in the Bry-Air Wood Dryer enhances quality of wood tremendously and... 'you can't put value on quality'.



*After one year of rigorous testing, the FRI (Forest Research Institute), Dehradun, has given it's 'stamp of approval' for the Bry-Air Wood Dryer. FRI has certified the Bry-Air Wood Dryer as the first of it's kind in wood drying technology and recommended it's usage for quality drying, seasoning and manufacturing.*



### Advantage of timber dried by Bry-Air Wood Dryer

Wood dried seasoned in the Bry-Air Wood Dryer has some extra 'advantages'

- Increased wood / timber strength.
- Increased resistance to fungal and insect growth.
- Easier to machine and glue.
- Remains dimensionally stable during assembly and finishing.
- Better durability in service.
- Enhances finish of varnishing, paint and treatment.

*The Bry-Air Wood Dryer is ideal for timber entrepreneurs dealing with the manufacturing of sports goods, furniture, handicraft items, pencil slats, shoe last etc.*

For furniture manufacturing, the Bry-Air Wood Dryer ensures dimensional stability, better durability in service, quality finish and resistance to fungal and insect attack.

Similarly, for musical instruments seasoning time is considerably reduced by Bry-Air Wood Dryer.

For exporters of high quality wooden handicrafts and toys, wood seasoned by the Bry-Air Wood Dryer provides quality finish.

*Samling Industries, Malaysia, uses 3 nos. MVB type Bry-Air dehumidifiers to maintain humidity levels at 40 to 50% RH at ambient temperature ( $\pm 5^\circ F$ ) in their storage and conditioning rooms to avoid moisture regain in dried wood.*

**Bry-Air**

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