



dry facts

...from Arctic India Sales

April - May - June 1983

Vol. 3 No. 2

OPPORTUNITY !!!!!

In the rapidly changing world, economic order presented new opportunities to Arctic India Sales for growth in new dimensions by promoting Investment and Export Trading Company, India, in short IETC (India). IETC (India) is a part of worldwide rapidly expanding IETC network with IETC Columbus, OHIO, U.S.A. as coordinating IETC nucleus. IETC (India) capabilities include:

- *Technology search and transfer services from industrially developed nations.
- *Contract negotiations for technology trade representations etc.
- *International strategic planning for Indian and foreign manufacturing and service industries.

*Export/Import Management Services.

*Investment Management of foreign funds in India emphasising availability of high technology capital.

*Trading Company Management of Finance, Marketing, and R & D functions for IETC team of selected export oriented Indian companies.

*International Indian Government Liaison.

IETC has a worldwide net work already in place. We can respond now, write to us today:

Investment & Export Trading Company (India)

20 Rajpur Road, Civil Lines,
Delhi-110054.

BRY AIR EXPORT DIVISION

Arun Bhatnagar

Manager-INTERNATIONAL SALES

In our endeavour to promote sales of Bry Air high technology desiccant type dehumidifiers we have evolved an extensive export marketing strategy. We have already penetrated the industries of Thailand, Bangladesh and Sri Lanka. On my visit to these countries we have been able to finalize distributors who would be handling sales and service of Bry Air equipment, which will be supplied by our plant in India. We have received good response from the various industries including Pharmaceuticals for applications of Bry Air dehumidifier.

On my visit in June, I intend covering other South East Asian countries where various companies are in close touch with us for our equipment as also for handling sales and servicing of Bry Air dehumidifiers. In our first phase of export marketing we intend covering South East Asia and as per present indications we intend shipping out our first export unit within next 3 months. It would not only help Bry Air to establish a net work in South East Asia but also help us to earn foreign exchange in the field of high technology engineering equipment.

Distributor Network in South East Asia
For Sales & Service of Bry-Air
Equipment

THAILAND

M/s BBC Brown Boveri (Thailand) Ltd.

SRILANKA

M/s W D Carolis Limited

INDONESIA

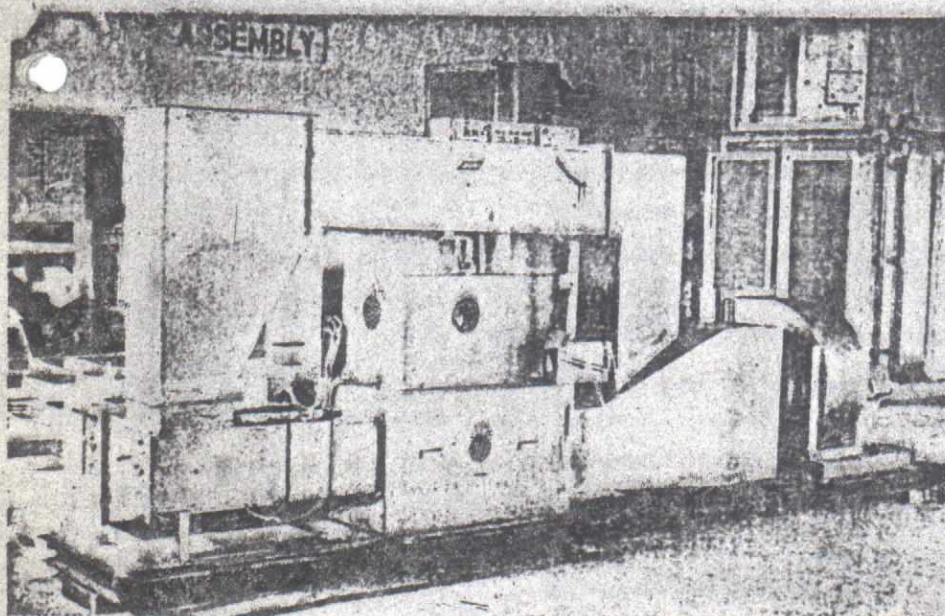
M/s P T Elawa Jaya

PHILIPPINES

M/s Ameresco Comm'l & Ind'l Co. Inc.

MALAYSIA & SINGAPORE

M/s Circular Air Conditioning (S) Pte.
Ltd.



Picture above shows one of the two 600 cfm. units shipped out to E. Merck India Ltd. for their tablet coating & filling section.

O.P. CHUGH
New Director Production



AIS Service from Baroda



KRISHNAKUMARSINGH J. JHALA

Mr. Krishnakumarsingh J. Jhala is our enthusiastic new resident sales engineer in Baroda. A Chemical engineer from Baroda university, he is giving wonderful support to our Bombay office. For any assistance in this region kindly contact him at :—

9, Bhaktinagar
Old Padra Road
Baroda 390 015

Mr. O.P. Chugh, new Director Production who has joined us at Bry-Air (India) on 3rd June 1983 opens his balance with 24 years' experience in production and instrumentation to his credit.

He will be overall incharge of production, material handling, Planning & seeking innovations in production and most of all quality control.

Some Recent Application

2 nos. of 300 cfm units integrated with ordinary water fed after cooler are being used by Usha Martin Black Ltd—Ranchi for the storage and packing of high quality steel wires manufactured by them. Two nos. of 150 cfm are also being used by Metroark Pvt Ltd—Calcutta for the packaging area.

Punjab Display Devices Ltd—Chandigarh maintains low RH with our compact model in their television tubes manufacturing area.

One 300 cfm unit has recently been exported to Kathmandu (Nepal) for the storage of Ammonium Nitrate which is very hygroscopic in nature, causing particles to stick to each other if stored under normal atmospheric conditions.

One 1500 cfm unit integrated with a precooling coil is being used by Universal Carborandum Ltd. for the drying of vitrified grinding wheels.

300 cfm unit is being used by BEL—Ghaziabad in the computer room alongwith airconditioning. Tata Memorial Hospital, Bombay, Suburban Electric Supply Co. Bombay are also using similar models for the same application.

Very shortly, we shall arrange commissioning of 1200 cfm unit supplied to Associated Bearing Co.—Pune for the storage of balls and rolls/sophisticated bearings manufactured by them.

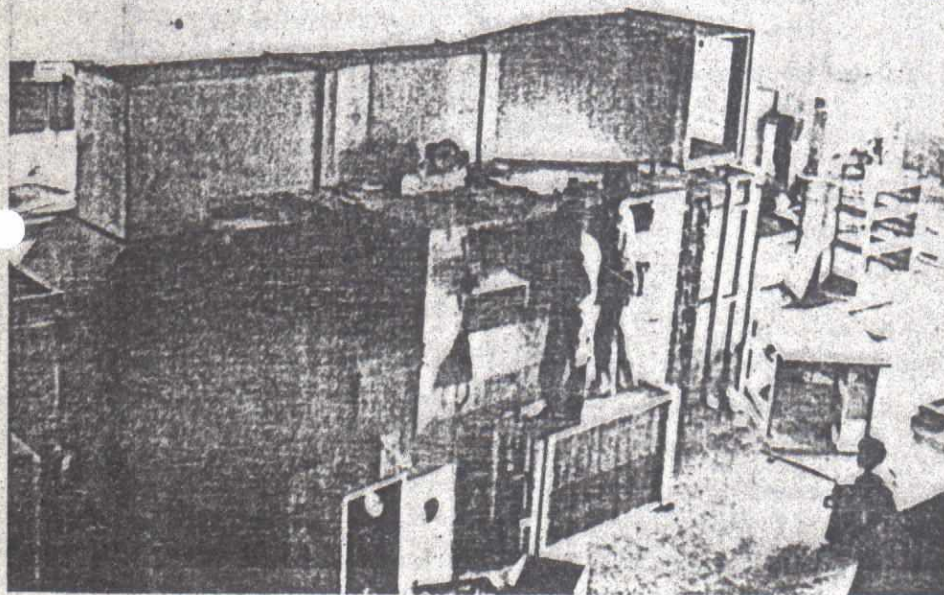
Larsen & Toubro Ltd—Bombay has placed order for the supply of 4 nos. Table Top models to be installed in their Electrode storage area/computer room.

One refrigeration—cum—dehumidification system has been specially engineered and shipped out for Da' Pvt. Ltd—Sahibabad. This consists of 600 cfm unit and 15TR capacity condensing unit.

Delhi University in their instruments lab maintains low RH with a compact table top. Tamil Nadu Agril. University Coimbatore, Bharathiar University—Coimbatore and ISI Ghaziabad are also using table top models in their research labs.

Followed by two 150 cfm units, Lyka Lab—Bombay has now decided to go in for 1200 cfm unit for the sterile room.

Especially designed & engineered dehumidifier coupled with chilled water pre and after cooling coil has been shipped out to Brooke Bond India Ltd., Hosur for their coffee processing area. Two 1200 cfm similarly designed units have already been installed at their Bangalore and Secunderabad plants.



The picture above shows the work being done on the gigantic 9000 cfm unit. Two such units have been specially designed and engineered by us, to maintain controlled conditions in terms of temperature and relative humidity, in the Jaguar paint shop of HAL Bangalore. The condensing unit

to maintain the temperature is however not visible in the picture above. The above application i.e. paint spraying calls for 100% fresh air. Low first cost and subsequent operating cost were the major plus points of our system vis a vis other system, which made HAL finalize the order on us.

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.

Marine Industry

Control of moisture is a perennial problem in Marine Industry. New construction of ships, faster drying and curing of marine coatings usually requires dehumidified air. Dry air is also necessary for tanks/hold drying of new construction or in regular operation of ships. Bry-Air dehumidifiers find vast application for marine humidity problems arising from the following:—

1. New construction of ships and Cargo tank drying.
- Renovation & repair of ships.
- During ship operation at sea and in port.

New Construction

Due to high humidity levels at ports tank interiors are subject to corrosion resulting in regular refinishing. The problem originates due to the difference between inhold and outside humidities and air temperatures. The air within the tanks is usually cooler than the outside air. This causes condensation on the interior walls of the holds resulting in rust formation.

All sand blasting and coating operations can be done successfully and economically by installing Bry-Air dehumidification unit on the deck and regulating the moisture and the temperature of the air within the tanks.

The quality of the Cargo being loaded is improving and more and more emphasis is being laid on high quality shipping facilities for various products being shipped. This implies that all ships must be designed to guarantee quick loading and short time as a standard feature on board.

The drying of cargo tanks of chemical products has always been very difficult. Weather conditions are never favourable for efficient drying of the tanks resulting in extended harbour time and extra cost incurred by the owner for every man day lost.

Hence in the past few years chemical carriers are being built with a drying installation for the cargo tanks. The dry air is provided by the Bry-Air dehumidifiers. The installation is built in the forecandle.

Drying Time

The drying time of the tanks depends on several factors:

1. The temperatures of the steel tank wall.
2. The size of the tank.
3. The dewpoint of the air used for drying.

The first two factors are hard to fight if the sea water is low in temperature, the temperature of the tank will be low too. But when the temperature of the steel is lower than the condensation point or dewpoint of the air, one will not dry the tank. On the contrary the tank will grow wetter and wetter.

The size of the tanks is, of course, a fact that cannot be changed. The bigger the tank, the more time or dry air will be needed to dry it properly.

The third factor can be changed by treating the air to any condition wanted. The air should be as dry as possible, because the dryer the air, the quicker the water will evaporate from the steel and leave the tank in the air-stream.

The dewpoint of the dried air is much lower than the steel temperature. This means that the waste water from the wall will evaporate. Per m³ of dry air 6.2 grams of water will be removed from the tank.

It is obvious that the drying capacity is very much dependent on the dewpoint that can be reached with the dryer.

To shorten the drying time of the hold the bottom of the tanks should be washed and puddles should be removed.

The Drying Unit

The drying unit contains a number of horizontal desiccant beds. The beds are rotated by a vertical shaft. During one rotation the bed passes through two sealed compartments. In one compartment the air to be dried passes through the desiccant, where the moisture from the air is adsorbed. After that the dry air goes into the system. In the other compartment the atmospheric air is heated by having it passed over heat exchanger. The heating medium can be either steam or electric. The ambient air is heated to a temperature of about 280°F. This hot air is then made to pass through the desiccant bed, in doing so it picks up the moisture from the desiccant and the same is rejected into the atmosphere in the form of water vapour.

Tank Drying

The drying unit as described above is mounted in the forecandle and takes its fresh air in from the forecandle deck. Regeneration air is brought to the unit by the same duct. Air filters remove the dust from the air-stream and the dehumidifier removes the moisture from the air. The dry air is then forced by high pressure blower, into the main air duct under the ship's catwalk.

The drying line into the main duct is led into the manifold for the loading lines. The reason for using the existing lines is to get an easily workable and low cost system. An added advantage is that the piping on the deck is dried at the same time as the tanks. Though the loading line is normally used to bring the dry air into tanks, part of the air can be led through the unloading pump to take away moisture from this line too.

In Repair & Renovation

Bry-Air dehumidifiers are useful in mothballing procedures, general control of humidity while in dry dock and demisting specific high humidity area.

During Ships at Sea and in Port

When Ships are in use at sea or in port Bry-Air dehumidifiers are used for maintaining/controlling humidity. As the humidity levels in Sea are very high and as the cargo carried by the ship consist of hygroscopic material or other such chemical, electronic or corrosive material, therefore it is necessary to ensure that the cargo reaches its destination without getting damaged/spoiled on the way due to high humidities. As such most ships are using Bry-Air dehumidifiers to overcome this problems.

Conclusion

Bry-Air dehumidification equipment is the ideal solution to control marine humidity problems, the investment is low compared to the cost that can be avoided. The installation is easy to handle and maintenance is kept to a minimum.

In the last few years a number of Shipyards and newly built ships have been using Bry-Air dehumidifiers. The Ships using our equipment have been built out from shipyards in Holland, Germany, Norway and India.

Production of Hard Candies

In the production of hard candies and cough drops, the material is in a plastic state during the manufacturing process. It must flow and be shaped by stamping machines. The presence of excess moisture will cause the ingredients to become sticky, thus inhibiting their flow through the stamping machine.

The proper Bry-Air system will prevent this from happening, insure waste free production, and prevent costly downtime.

Stand-By Warehouses

Bry-Air dehumidifiers are used in stand-by or storage warehouse buildings to guard against the damages from mold, agglomeration, rust, and deterioration caused by excess humidity.

Product drying

Where products such as cattle feed mixes, raw plastics, granular chemicals, hygroscopic foods, and raw paper stock must be dried prior to processing, a Bry-Air dehumidifier is needed in the drying room.

Production of Dry, Process Air

Wind tunnels, drying bins, and ovens are examples of applications where a space is not conditioned, yet a need for dry process air exists.

In the electronic industry the inner surface of open-ended glass television and fluorescent lighting tubes is coated by allowing slurry to wash down the inside of the tube. The tubes are then transferred to drying ovens where the coating is allowed to bake and harden. The tubes are next removed and allowed to cool. During cooling, moisture causes imperfections to develop in the coating, and quality deteriorates.

By incorporating a Bry-Air system and forcing cool, dry air through the tubes after being removed from the oven, the quality problem can be solved.

Areas of Controlled Humidity and Temperature

Many air-conditioned manufacturing areas have a specified air flow. This air requirement is usually higher than the air quantity necessary to handle the air dryer for the space. Bry-Air can design a system for the sensible load and provide an air dryer to handle the moisture load.

Low humidity has become an essential factor for quality in light of modern manufacturing processes and products.

Water Treatment Plants

In most water pumping stations, filtration plants, and waste water control plants, control of humidity is of prime importance. By using a Bry-Air system and reducing the humidity below the temperature of the piping and walls, sweating and condensation can be eliminated. By circulating warm, dry air through the areas the accumulation of moisture is eliminated. The result is low maintenance of electrical controls, motors, and instruments as well as increased life of paints on piping, valves, and flanges.

Other humidity related problems solved by Bry-Air dehumidification systems include:

Breweries—Mold formation on tanks, grains, and hops.

Confectionary—Agglomeration of sugar based foodstuffs.

Fertilizer—Quality deterioration and waste caused by agglomeration.

Food Industry—The hygroscopic nature of dry foods.

The list is endless and humidity is as much a part of man's environment as man is himself. And although the problem of humidity is often overlooked or taken lightly its effects are devastating and cannot be ignored.

Bry-Air: Designers and manufacturers of complete environmental control systems.

It is important to remember that Bry-Air is not a mere dehumidifier supplier. Bry-Air's world-wide recognition is a product of their ability to design and provide complete environmental control systems thoroughly inspected and shipped ready for installation.

The Bry-Air tradition of service

Bry-Air believes your specific humidity problems to be worthy of expert analysis and that customers are entitled to professional counseling when searching for the most practical solutions available.

Bry-Air's primary objective is to enhance both the production efficiency and product quality of your business.

Understanding Dehumidification Better

Adsorb

The fundamental process of all Bry-Air dehumidifiers. The attraction of water vapour to a solid and retained there without physical or chemical changing of the solid. The principle of adsorption is responsible for Bry-Air's continuous drying capabilities such that the solid to which humidity is drawn may be used indefinitely.

CFM

Cubic feet/minute—Arctic India manufactures complete environmental control systems in a variety of CFM ranges.

Desiccant

A substance used for drying. First introduced by Davidson Chemical in 1921. Considered today as the leading adsorbent in the field of dehydration.

The desiccant to be used is determined by the drying demand placed on the unit and the characteristics of the controlled space. The three desiccant types are: Silica Gel (SiO_2), Molecular Sieve, and Activated Alumina.

Condensation

The change of vapour to a liquid.

Infiltration

The passing of water through walls, floors, and ceilings arising from differences in partial pressure. Infiltration factors are accounted for by the Bry-Air consultant when designing a complete environmental control system for a given area.

R.H.

Relative Humidity—The amount of water that can be contained in a pound of air is dependent upon the temperature and pressure of the air. The amount of water present, or the degree of saturation is evaluated in terms of Relative Humidity.

Vapour Barrier

Necessary for impeding the infiltration of moisture through structures such as walls. Common types are plastics, metals, and coatings.

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