Desiccant Dryers...

When we designed the Ingersoll Rand heatless, heated and heated blower desiccant dryers we set our sights on creating the most reliable desiccant dryers you can operate. And our success was extraordinary. We set a new standard, and, in fact, rewrote the book.

Desiccant

Our reliable high strength, non-acidic desiccant provides maximum performance and is easily stored and handled. Environmentally friendly, it eliminates worries associated with other types of dryers, such as refrigerant leaks, spills and disposal.
One look tells you that these dryers are like no others... extremely low silhouette... manifolds and valves within an arm’s reach of the operator... readily accessible fill and drain ports... just a few of the differences apparent on the outside. Both externally and internally, each model combines innovative engineering and technically advanced, highly durable components to provide easy installation, operation, maintenance, and simply the most reliable desiccant dryers available.

**Easy to Maintain High-Performance Valves**
With manifolds angled toward the center at the operator level, the valves are easily accessed for maintenance. A typical diaphragm valve in a heatless dryer can be rebuilt in less than ten minutes, without removing the valve from the manifold.

**Low Profile Design**
Our easy access design places key maintenance points at operator level for faster servicing and less downtime. The lower silhouette also allows upright shipment and facilitates installation.

**State of the Art Controller**
The advanced microprocessor controller maintains dryer performance at optimum levels. It constantly monitors dryer functions and provides an alert when maintenance is required so downtime is minimal.
Each Ingersoll Rand desiccant dryer incorporates high-strength desiccant and durable, easily maintained valves for **unsurpassed reliability, performance and customer value.**

All three technologies — heatless, heated and heated blower — use twin desiccant towers and strategically positioned valves to dry the compressed air.

Whether using a heatless, heated or heated blower dryer, the compressed air produced is thoroughly dried as it is directed through the on-line desiccant-filled tower of the dryer. As the desiccant in this tower adsorbs moisture from the air, the desiccant in the dryer’s off-line tower is purged of moisture and readied for use. The basic difference in the three technologies is the manner in which moisture is desorbed from the desiccant, also known as regeneration.

**Heatless Dryers**

Simplest of the three technologies, the heatless dryer diverts a portion of the dried compressed air to the off-line tower. This dry air then flows through and regenerates the desiccant. The purge air, now moisture laden, is harmlessly exhausted through a muffler to the atmosphere. Lowest in capital investment, this technology may be more expensive to operate because it requires a portion of the dried compressed air to be diverted from the air system for desiccant regeneration.
Heated
These dryers operate similarly to heatless dryers, with a big exception. Dried air diverted from the air system is first passed through a high-efficiency external heater before entering the off-line tower to regenerate the desiccant. Since this heated air can hold considerably more moisture than unheated air, only about half the amount of dried compressed air is needed for regeneration. Although the addition of the heater and associated components raises the initial capital investment for a heated dryer, less diverted compressed air means lower operating costs.

Heated Blower
This type of dryer does not divert dried compressed air from the air system to remove moisture from the desiccant in the off-line tower. Rather, it employs its own high performance centrifugal blower to direct ambient air through a heater and then through the off-line tower. There, the stream of heated air regenerates the desiccant. Heated blower technology requires the highest initial capital investment, but with no or little diversion of compressed air from the system for regeneration, it offers significantly lower operating costs than the other two desiccant dryer technologies.

So, how do you select the right desiccant dryer technology? That depends on the variables, such as system demand, compressed air capacity, air quality requirements and applicable life cycle costs that are unique to your compressed air system.
Ingersoll Rand HL Heatless Desiccant Dryer

Available in flows ranging from 2.5 nm³/min. (90 scfm) to 141.6 nm³/min. (5,000 scfm), Ingersoll Rand HL heatless desiccant dryers are designed to ensure a constant -40°C (-40°F) or optionally -70°C (-100°F) pressure dew point, virtually eliminating costly interruption of production due to moisture. Clean air is further assured by use of strategically placed filters: a pre-filter to remove oil and contaminants in air entering the dryer, and an after-filter to make sure that only clean dried air exits the dryer. As an additional design precaution, the dryer’s switching valves are normally open and purge valves normally closed to allow air flow through the dryer in case of power loss.

A standard feature of every Ingersoll Rand heatless desiccant dryer is its NEMA 4 package, providing increased protection of electrical components, as well as advanced digital dryer controls and displays. It includes a NEMA 4 electrical enclosure to protect against water and condensation, a UL/ULC panel and an advanced digital electronic controller. In addition, every HL comes standard with a compressor interlock feature. This substantially prolongs compressor life and improves reliability.

While reliability has been a key focus of its design, the Ingersoll Rand HL heatless desiccant dryer is also a leader in its class for energy efficiency and the health and safety of operating personnel and the environment.
Ingersoll Rand EH heated desiccant dryers incorporate an external heater to heat dry purge air. This allows EH dryers to divert significantly less dry air from the air system for regenerating desiccant than is required by heatless dryers.

Available in sizes ranging from 4.2 nm³/min. (150 scfm) to 226.5 nm³/min. (8,000 scfm), Ingersoll Rand EH dryers deliver -40°C (-40°F) pressure dew point air for critical applications.

Ingersoll Rand HB heated blower desiccant dryers are equipped with dedicated durable centrifugal blowers to provide purge air for regeneration, eliminating the need to divert dry compressed air from the air system. Instead, the blower directs ambient air through an external heater and then through the off-line tower to regenerate the desiccant. This means more compressed air is available for critical downstream applications. Available in sizes from 4.2 nm³/min. (150 scfm) to 226.5 nm³/min. (8,000 scfm), Ingersoll Rand HB dryers deliver -40°C (-40°F) pressure dew point air.

Ingersoll Rand EH heated desiccant dryers use high-performance ball or butterfly valves for switching and purge operations. These non-lubricated valves are designed specifically for high temperature applications and feature stainless steel internals as well as filled PTFE seats and include double-acting pneumatic actuators.

The EH and HB dryers use high-performance ball or butterfly valves for switching and purge operations. These non-lubricated valves are designed specifically for high temperature applications and feature stainless steel internals as well as filled PTFE seats and include double-acting pneumatic actuators.

Both EH heated and HB heated blower models provide the reliability and safety features of heatless dryers, with increased energy efficiency. These features include heatless back-up mode in the event of a heater or blower malfunction and an innovative solid-state relay heater control to extend valve and heater life. NEMA 4 electrical enclosures are standard and include an advanced multi-function digital controller.
Benefits Of Desiccant Dryers

All of our desiccant dryers are designed with **energy efficiency, reliability, productivity and safety** in mind:

- Engineered for low pressure drop through valve selection, tower size and filter design.
- Optional Energy Management System (EMS) reduces purge consumption while maintaining a constant dew point, monitors the dew point and extends the dryer cycle to greatly reduce energy costs.
- Large sound attenuating purge mufflers minimize noise and include built-in relief valves to enhance safety.
- Low profile places valves at operator’s level and provides ready access to fill and drain ports, increasing operator safety and ease of maintenance.
- Pre-filter and after-filter protect desiccant and downstream air from oil contamination and particulates to help improve air quality, increasing productivity.
- Easy to replace stainless steel desiccant screen keeps downtime to a minimum.
- Heater and/or blower controlled by outlet regeneration temperature that shuts off to save electrical power once desiccant has been thoroughly regenerated (available with EMS on heated dryers).
All Ingersoll Rand desiccant dryers, models HL, EH and HB, are supplied with a digital electronic multi-function controller as standard equipment. This is the dryer’s command center.

The advanced digital controller is programmed to execute all valve switching functions, as well as to completely monitor dryer operations. Further, it is MODBUS compatible permitting connection to MODBUS-capable networks and making some remarkable enhanced dryer operating functions. The controller’s full-featured panel includes:

- Backlit LCD display for viewing critical dryer parameters in all lighting conditions
- Integrated keypad, providing user with access to all internal functions and selectable displays
- Schematic depiction of dryer offering visual indication of current operating status
- Remote alarm contact
- Failure code storage
- Multiple displays, from “Dryer On/Off Control” to “Regeneration Sequence Status”
Ingersoll Rand...At Your Service

No matter where your facility is located, Ingersoll Rand is committed to serving you 24 hours a day, seven days a week. We’re available to support you with innovative and cost-effective service solutions that will keep you running at peak performance.

Count on Ingersoll Rand for All Your Air System Requirements

- **Air Quality**
  - Filtration
  - Point-of-use air treatment
  - Dryers
  - Air sampling test kits
  - Dew point meters

- **Environmental**
  - Condensate management
  - Lubricants
  - Water filtration

- **Installation**
  - SimplAir piping
  - Intelliflow system pressure control
  - Drains
  - Fusible disconnects

- **Maintenance**
  - Hard parts
  - Consumables
  - Service contracts

- **Power Management**
  - Variable speed drives
  - System controllers
  - Line reactors
  - Safety switches

- **Energy Efficiency**
  - System air pressure controllers
  - Automated air system controls
  - No-loss drains
  - System audits

Let Ingersoll Rand handle the pressures of owning a compressed air system with our signature service contract.

With PackageCare, you can...

- Control costs and keep your equipment running at peak efficiency.
- Maintain or improve the operational efficiency of any compressor, regardless of age, make or model.
- Protect yourself from all repair and replacement expenses over the life of the agreement.
- Ensure long-term value and satisfaction from your system.
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<th>Blower hp</th>
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Desiccant Dryer Performance

- Dryer weight shown does not include desiccant. Desiccant shipped separately.
- Maximum working pressure is 10.3 bar (150 psig)
- Desiccant is factory installed on all models except: HL3300-HL5000; EH3000-EH8000; HB3000-H8B8000
- Dimensions and weights are approximate

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Ingersoll Rand Industrial Technologies provides products, services and solutions that enhance our customers’ energy efficiency, productivity and operations. Our diverse and innovative products range from complete compressed air systems, tools and pumps to material and fluid handling systems and environmentally friendly microturbines. We also enhance productivity through solutions created by Club Car®, the global leader in golf and utility vehicles for businesses and individuals.

Ingersoll Rand compressors are not designed, intended or approved for breathing air applications. Ingersoll Rand does not approve specialized equipment for breathing air applications and assumes no responsibility or liability for compressors used for breathing air service.

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