

HB HEATED BLOWER DESICCANT AIR DRYER

HB150 – HB8000

Industrial Technologies
Davidson, NC 28036

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GENERAL INFORMATION

Many compressed air applications can be served appropriately by desiccant dryers. Desiccant dryers are usually chosen, but not always, because of their low dewpoint capability.

There are two basic types of desiccant dryers:

- 1) Heatless
- 2) Heat Regenerated.

Both types require two ASME-certified pressure vessels filled with desiccant material. While one vessel is drying the air stream, the other is regenerating (drying) the desiccant. On basic systems, a timer mechanism is used to switch between the vessels. On other systems, an optional moisture sensor controls switching between vessels to optimize both power consumption and desiccant performance.

Regeneration is accomplished by drawing ambient air in through an external blower and then through an externally mounted heater. In the operating mode, water vapor is adsorbed on the desiccant. In the regeneration mode, ambient air is passed through an external heater then through the regenerating vessel. The heated air desorbs the moisture from the desiccant and then discharges to atmosphere.

Ingersoll Rand offers a full line of heatless desiccant dryers as well as heat regenerated dryers.

The Ingersoll Rand HB dryers are available from 150 to 8,000 SCFM.

Heat regenerated dryers are chosen over the heatless types for many reasons. Heat regenerated air dryers are often chosen due to the reduced compressed air loss through purge as well as for large and/or consistent air flows.

Heated blower desiccant dryers have several advantages over other methods of drying:

- 1) None or minimal purge air consumption
- 2) Quiet atmospheric blower provides air for purge purposes and does not require additional sound deadening for safe operation
- 3) Minimal purge air requirements allows most of the compressed air to be used for the process
- 4) External heater nearly eliminates internal fire risk and desiccant destruction
- 5) Pneumatically actuated valves ensure positive closure and reliable dryer operation.

Points to remember when choosing a heated blower desiccant dryer:

- 1) Vessels are heated during regeneration.
- 2) Dryers use 460 V, 3 phase power.
- 3) The heated blower desiccant air dryers will have temperature and dew point spikes at tower (i.e., vessel) changeover

- 4) HB heated blower dryers have the ability to operate with a cool sweep cooling cycle. This will reduce the temperature and dew point spikes.

Consider all of the above when selecting the type and style of dryer for your application.

The HB dryers are ideal for large flow and process applications. By design, they require minimal purge air, making these the dryers of choice for applications with little excess air capacity.

HB dryers are rated in accordance with CAGI standards for dual tower regenerative desiccant compressed air dryers. The conditions are as follows: 100F inlet air temperature (IAT), 100 psig inlet air pressure, inlet air is saturated, pressure drop (maximum) is 3.5 psi differential (dryer only – does not include filtration), and ambient temperature is 100 F. Operating parameters are as follows: (remember, the capacity of the dryer is affected by changes in operating conditions) Maximum 150 psig inlet air pressure. 80 psig minimum inlet air pressure. Maximum inlet air temperature 120 F, minimum inlet air temperature 40 F. Maximum ambient air temperature 120 F, minimum ambient air temperature 80F*.

*Consult factory for ambient temperatures less than 80F.