PERMA PURE
PROTECT LIFE

HD Series Heatless Dryer

Continuous Supply of Dry Compressed Instrument Air

Perma Pure HD Series heatless dryers are ideal for low-flow, compressed air drying applications. Dryer operation is fully automatic, with outlet dew points as low as -50°C.

Key Features

- Supplies continuous dry air
- -50°C dew point
- Easy installation
- Molecular sieve desiccant
- Self-regenerating
- No maintenance
- Solid-state controls
- Compact and portable

Principle of Operation

HD Series dryers consist of two chambers filled with highly adsorbent desiccant, molecular sieve 4A. One chamber dries the air stream while the other chamber regenerates. A small portion (about 10%) of the dried air from the drying chamber is allowed to expand through an orifice to atmospheric pressure, then serves as purge air to regenerate the second chamber. Wet purge air is released from an exhaust port in the vapor state so that no drain is required. Purge air may be vented directly into the surrounding atmosphere or piped to a remote location. Electrical power and air pressure are all that is required for use.

A solid-state controller governs the chamber switching. The controller contains no relays, for high reliability and durability. A coalescing oil/water prefilter is recommended for installations with oil or water mist present. Desiccant dryers only remove vapor-phase water, not liquid water. Liquid water or oil droplets can contaminate the desiccant and reduce efficiency.

A spring compresses the desiccant bed inside the chambers so that the desiccant does not move as the heatless dryer cycles. This prevents progressive fracture of the desiccant into dust, and eliminates periodic replacement of the desiccant, a maintenance headache with most heatless dryers.

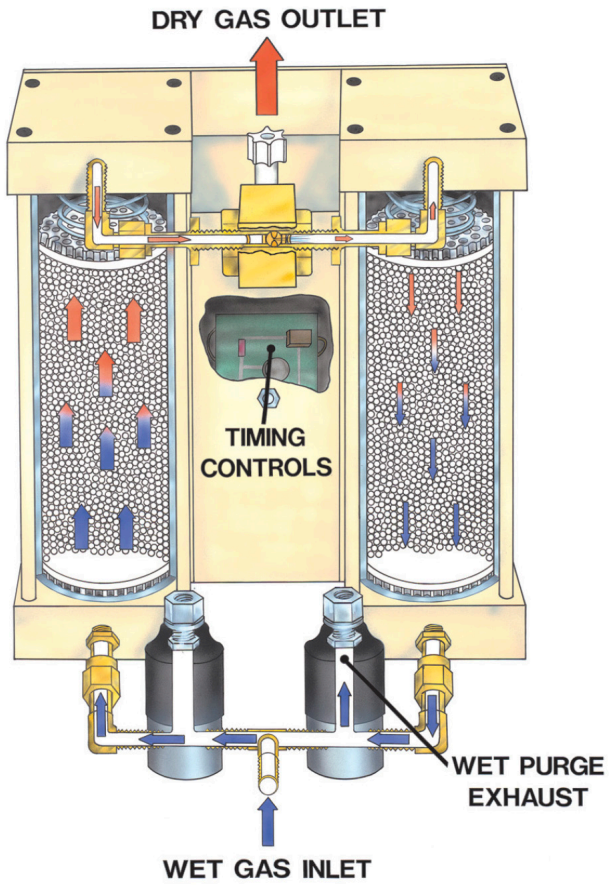
Model	HD-2000-06	HD-2000-12
Flow Rate	0-60 lpm	0-90 lpm
Air Requirement	Oil-free, non-condensing compressed air	
Outlet Dew Point	-40°C	-50°C
Dimensions	7" x 7" x 5.625"	12" x 12" x 5.625"
Weight	8 lbs.	12 lbs.

Electrical Connection

The HD Series heatless dryer requires 110 VAC/60Hz or 220 VAC/50Hz, depending upon model.

Piping Connections

A compressed air line supplying between 60 psig and 100 psig should be connected to the 1/4" wet air inlet port located between the two solenoid valves. The 1/4" polypropylene compression fitting is the dry air outlet port. This should be connected via 1/4" tubing. If the length of the tube exceeds 15 meters, 3/8" tubing should be used. The purge air exhaust ports located at the center of the solenoid valve coil can be left open to the atmosphere to provide venting for the wet air exhaust or they can be piped to a remote location if desired. An inexpensive particulate after-filter may be used on the purge air exhaust as a muffler to reduce noise.



Operation

Once electrical power and air pressure are supplied to the dryer, it is ready for use. The dryer will operate indefinitely assuming a few precautions are taken. The number one cause of failure is compressor oil contamination of the drying media. A coalescing oil/water pre-filter is recommended for installations where oil or water mist is present.

Specifications	
Inlet Pressure	60-100 psig
Inlet Temperature	43°C (110°F) maximum
Construction	Aluminum body, brass fittings, stainless steel valves
Inlet/Outlet Fittings	1/4" compression
Purge Usage	Approximately 10% of the flow

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Lit. No.: HD-Series-Flyer-1802 Supersedes: New