Clean Resources
Engineered for Life

CHD Series

HEATLESS REGENERATIVE DRYERS

40 – 5,000 CFM

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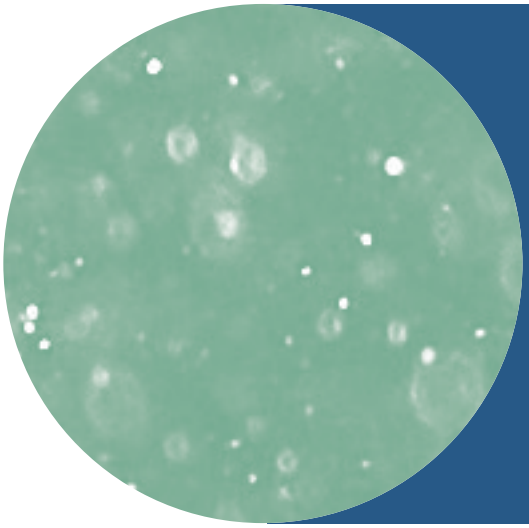
Invest in Productivity and Peace of Mind

In today's demanding industrial environments, where moisture in compressed air can wreak havoc on equipment and processes, it is crucial to invest in cutting-edge technology that safeguards your operations. **That's where Next Air's CHD Series Heatless dryers come in.**

Next Air & Gas regenerative dryers are the ultimate solution for moisture control in compressed air systems. Whether you operate in manufacturing, food processing, pharmaceuticals, or any other industry relying on compressed air, our dryers provide a vital shield against the damaging effects of moisture.

Our dryer series uses fully pneumatic stainless steel actuator valves rather than dated shuttle valves, allowing for flow and pressure independence. With some dryers being only region-specific, we ensured that all dryers produced by Next Air were certified with ASME, CRN, UL, and CUL certification. With industry standards of design pressure being up to 150 psig, we thought it best to invest in the technical advantages and manufacture our pressure vessels to run at 200 psig (80–1,600 CFM) as standard.

Investing in our desiccant regenerative dryers means investing in reliability, productivity, and peace of mind. With our expertise and commitment to excellence, we provide you with the tools to achieve superior air quality and protect your valuable equipment and processes.



Why Dry Air?

To be used in industrial processes, compressed air must be clean and dry. Atmospheric air contains many contaminants such as dust particles, water vapor, oil, and other impurities. As air is compressed, these contaminants become more concentrated, causing a variety of problems, including equipment wear, increased maintenance, lower production efficiency, pipe and line corrosion, and other expensive headaches.

In some industries, even the smallest contaminants in compressed air can cause production problems or errors that cost thousands of dollars to correct. So dry air is absolutely critical in a modern factory.

Next Air & Gas is dedicated to creating the systems needed to dry air so that your production is maximized and your costs are dramatically reduced.

Principle of Desiccant Operation

The Next Air & Gas twin tower design allows for continuous adsorption of water vapor from compressed air by using our high-quality, domestically made desiccant with high crush strength and a high surface/volume ratio.

Drying is accomplished by passing compressed air through one desiccant bed adsorbing moisture while the other is being simultaneously regenerated with the expanded purge air.

Regeneration of desiccant is accomplished without the use of heat. The wet bed is dried by diverting a small portion of the dry air from the outlet at near atmospheric pressure. The purge flow rate is adjustable to suit the specific outlet conditions (desired dewpoint). The dry air flows in a counter direction through the wet bed, sweeping all the water vapor previously adsorbed by the desiccant. The digital controller monitors the automatic operation of the dryer and provides options for load management, fixed cycle and dewpoint-based control.

Next Air & Gas ensures pressure equalization in the twin towers prior to switching. This prevents line surge and minimizes desiccant attrition. The tower being reactivated will be gradually re-pressurized at the end of its reactivation cycle before switchover takes place. Purge flow and de-pressurization are in downward direction, counter flow to the drying air flow.

Standard Features

- UL and CUL electrical certifications
- ASME, CRN code welded pressure vessel certification
- Stainless steel angle body valves/butterfly valves
- Optimal tower size for low velocities, high contact time and minimal desiccant fluidization
- Tower pressure relief valves
- Purge adjustment valve to control purge flow
- Purge flow indicator indicates rate
- Purge exhaust mufflers with built-in safety valve
- Tower pressure gauges
- Stainless steel desiccant strainers, supports air diffusers to prevent channeling
- Counter-current repressurization
- Nema 12 electrical enclosure
- Separate drain and fill port
- Separate safety pressure relief valve for each tank
- Fail-safe design in case of power failure
- Common alarm contact

Optional Features

- Filtration Package
  - Mounted Pre & After Filter
  - Mounted Pre & After Filter with 3-valve Bypass
  - Mounted Dual Pre & After Filters with 9-valve Bypass
- Touchscreen HMI 4" Controller
- High Pressure (200 – 300 PSI)
- NEMA 4, 4X, or 7
- Failure to Switch Alarm
- Stainless Steel Tubing
- Demand Cycle Control with Dewpoint Display
- Low Ambient Package

Consult factory for additional options

Product Specifications

Technical Overview

Standard outlet dewpoint:	**–40° F**
Standard operating voltage:	**120V/1PH/60Hz**
Pre-filtration grade:	**0.01µm**
Post-filtration grade:	**1µm**
Nema 12:	**Standard**
ASME certified vessels:	**Standard**
CRN Certified Vessels (80–3000cfm):	**Standard**
CRN Certified Vessels (>3000cfm)*:	**Optional**
cUL & UL control panel:	**Standard**
CSA control panel:	**Optional**
Min/max inlet air temperature:	**40° F/120° F**
Min/max operating pressure:	**80 psig/150 psig**
Average purge air:	**15%**

* Selected provinces only

How to Find Air Flow Capacity

Air flow capacity =
Nominal capacity of dryer x Factor F1 x Factor F2

Example: A CHD-500 has a nominal capacity of 500 SCFM. What is the maximum allowable flow through the dryer at following operating conditions?

Air Inlet Pressure: 110 PSIG (7.6 BARG) **F1 = 1.04**
Air Inlet Temperature: 105° F (40.50° C) **F2 = 0.93**

Air flow capacity = **500 x F1 x F2**
Air flow capacity = **500 x 1.04 x 0.93 = 483.6 SCFM**

This is the maximum air flow rate that dryer can accept under those operating conditions.

How to Select a Suitable Dryer for a Given Capacity

Minimum Std. Air Flow =
Design Air Flow / Factor F1 / Factor F2

Example: Given the operating parameters below, find a suitable dryer.

Design Flow Rate: 950 SCFM
Inlet Air Pressure: 110 PSIG **F1 = 1.04**
Inlet Air Temperature:105° F **F2 = 0.93**

Minimum Std. Air Flow = **950/1.04/0.93 = 982.22**

Therefore the model suitable for the conditions above is CHD-1000.

CHD Series Specifications

Model	Inlet Flow Capacity (cfm @100 psig)	Port Size	Weight (lbs)	Dimensions (in) (W x D x H)
CHD-40	40	.75" NPT	300	30x26x63
CHD-60	60	.75" NPT	360	30x26x67
CHD-80	80	.75" NPT	450	30x26x84
CHD-100	100	1" NPT	450	30x26x84
CHD-125	125	1" NPT	450	30x26x84
CHD-150	150	1" NPT	650	34x26x85
CHD-200	200	1" NPT	650	34x26x85
CHD-250	250	1.5" NPT	675	39x26x86
CHD-300	300	1.5" NPT	1,250	39x26x86
CHD-400	400	2" NPT	1,250	44x26x87
CHD-500	500	2" NPT	1,250	47x26x88
CHD-600	600	2" NPT	2,900	47x26x88
CHD-800	800	3" FLG	2,900	66x40x97
CHD-1000	1,000	3" FLG	3,900	66x40x97
CHD-1250	1,250	3" FLG	3,900	66x40x97
CHD-1500	1,500	3" FLG	4,985	66x40x97
CHD-2000	2,000	4" FLG	4,985	84x59x115
CHD-2500	2,500	4" FLG	7,900	84x59x115
CHD-3000	3,000	6" FLG	7,900	103x70x137
CHD-3500	3,500	6" FLG	9,500	Contact Factory
CHD-4000	4,000	6" FLG	9,500	Contact Factory
CHD-4500	4,500	6" FLG	12,500	Contact Factory
CHD-5000	5,000	6" FLG	12,500	Contact Factory

Capacity Correction Factors for Differing Operating Pressure

Operating Pressure	PSIG	50	60	70	80	90	100	110	120	130	140	150	175	200	225	250
Factor		0.56	0.65	0.74	0.83	0.91	1.00	1.04	1.08	1.12	1.16	1.20	1.29	1.37	1.45	1.52

Capacity Correction Factors for Differing Inlet Air Temperatures

°F	70	80	90	100	105	110	115	120
Factor	1.12	1.10	1.06	1.00	0.93	0.86	0.80	0.75