AHLD SERIES

Heatless Regenerative Desiccant Air Dryer

AHLD-2000

Regenerative compressed air dryers use desiccant to adsorb water vapor from the compressed airstream. In the twin tower design one tower dries the air from the compressor while the desiccant in the other tower is being regenerated to provide continuous operation. These dryers are typically referred to as “heatless” or “heated”. Heatless dryers do not use any source of heat for regeneration other than the heat given off during the drying phase. This is known as the “Heat of Adsorption”.

The **Aircel AHLD Series Dryers (80 - 5,000 scfm)** are based on the traditional twin tower concept. Regeneration is achieved by using a partial stream of the dried air, expanded to atmosphere, and directed through the off-line desiccant bed. In addition to standard designs Aircel has the experience, engineering and manufacturing capabilities to design dryer systems of any size including pressures up to 10,000 PSIG and volume flows up to 20,000 SCFM. Designs that meet NEMA ratings of all types or other specialty industry codes such as “pharmaceutical” or “offshore” are easily accommodated.

AHLD Series Features

(standard all models)

- The auxiliary-piloted, two-way, angle-body piston valve on’ ≥ 600 scfm models carry a 10-year warranty.
- Tower pressure relief valves.
- Purge exhaust mufflers for quiet operation.
- Tower pressure gauges.
- Stainless steel desiccant supports and air diffusers to prevent channeling.
- Adjustable (5 & 10 min.) microprocessor sequence module.
- Controlled repressurization.
- Fail-safe design: failure of power and/or pilot air causes the purge exhaust valves to close.
- Desiccant towers are designed and fabricated according to ‘ ASME code (6” vessels and larger).
- Desiccant fill and drain ports for ease of desiccant replacement.
- Tower operating status lights.
- ON/OFF switch and power ON light.
- Standard designs deliver -40°F Pressure Dew point.
- -100°F Pressure Dew Point option available

AHLD Series Features

(included on ≥750 scfm models)

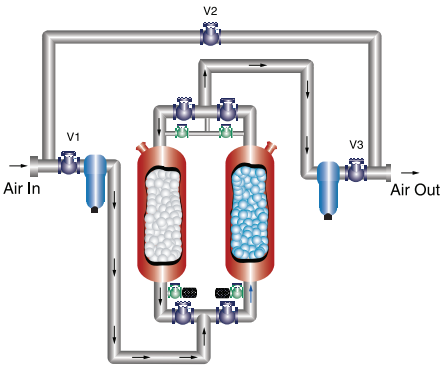
- Purge flow indicator.
- Reliable non-lubricated high-performance butterfly valve.
- Control pilot air filter.
- High quality, soft seat, check valves.
- Purge adjustment valve to control purge flow.

AHLD SERIES

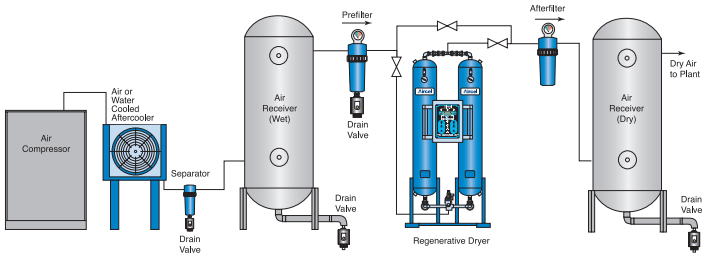
How it Works

Saturated compressed is filtered by the high efficiency coalescing prefilter (recommended option) before entering the dryer. Our up flow drying design with counter-current regeneration provides peak performance with the lowest possible energy consumption. The air is dried as it passes up through the desiccant bed of one tower. Clean dry air is available at the outlet after passing through the outlet filter (recommended option).

Regeneration of the saturated desiccant (off-line bed) is accomplished using a small portion of the dried air. The dry air is passed through the wet desiccant bed at near atmospheric pressure (purge air) which removes moisture vapor from the desiccant surface. The tower being regenerated will be repressurized at the end of the regeneration cycle prior to switchover.



Recommended Installation



AHLD SERIES
TECHNICAL SPECIFICATIONS

AHLD Model Comparison

Model	Capacity[1] (scfm)	Connection (in. FPT/ANSI)	Voltage (Standard)	Dimensions (inches) H	W	D	Weight (lbs)
AHLD-80	80	3/4	110V/60 HZ	77	30	24	384
AHLD-100	100	1	110V/60 HZ	77	30	24	550
AHLD-150	150	1	110V/60 HZ	85	34	24	600
AHLD-200	200	1-1/2	110V/60 HZ	86	34	24	850
AHLD-250	250	1-1/2	110V/60 HZ	87	46	30	975
AHLD-300	300	1-1/2	110V/60 HZ	87	46	30	1050
AHLD-350	350	2	110V/60 HZ	89	46	30	1100
AHLD-450	450	2	110V/60 HZ	91	50	30	1200
AHLD-500	500	2	110V/60 HZ	91	50	30	1250
AHLD-600	600	2	110V/60 HZ	91	50	30	2000
AHLD-750	750	3 FLG	110V/60 HZ	93	66	40	2700
AHLD-1000	1000	3 FLG	110V/60 HZ	98	70	40	3900
AHLD-1250	1250	3 FLG	110V/60 HZ	98	70	40	4090
AHLD-1500	1500	4 FLG	110V/60 HZ	109	93	50	5500
AHLD-2000	2000	4 FLG	110V/60 HZ	109	93	50	6000
AHLD-2500	2500	4 FLG	110V/60 HZ	115	112	60	6800
AHLD-3000	3000	6 FLG	110V/60 HZ	120	120	70	9000
AHLD-3500	3500	6 FLG	110V/60 HZ	125	120	70	9600
AHLD-4000	4000	6 FLG	110V/60 HZ	128	120	75	10500
AHLD-4500	4500	6 FLG	110V/60 HZ	130	130	80	11000
AHLD-5000	5000	6 FLG	110V/60 HZ	135	130	80	12300

AHLD Optional Features

- NEMA 12 is standard construction
- NEMA 4, 7 or any other NEMA is optional
- All-pneumatic control package (no electricity required).
- -100°F pressure dew point.
- Failure to shift alarm.
- High inlet temperature alarm.
- Dew point* monitor.
- Demand cycle control with dew point monitor.
- Pre-piped filters and by-pass valve packages.
- Visual moisture indicator.
- High inlet pressure up to 10,000 psig.
- Programmable logic controller (PLC).
- Custom designs and electrical configurations.

[1]Capacity rated in accordance with CAGI ADF 200 @ 100 psig, 100°F inlet, 100° ambient, and a PDP of -40°F.

Ambient air temperature: 38°-125°F

inlet air temperature: 40-125°F, operating pressure: 60-225 psig.

Standard power supply: 110V/60 Hz, other options available.

Due to a continuous program of product improvement, specification and dimensions are subject to change without notice.

AHLD Series
Capacity Correction Factors

The Compressed Air and Gas Institute (CAGI) has developed standards to protect users of compressed air & gas equipment. ADF200 the current standard for desiccant compressed air dryers, specifies the dryers performance to be rated at 100°F inlet temperature, 100°F ambient temperature, and 100 psig system pressure. To adjust the dryer capacity from these "CAGI conditions" to your specific application, please use the correction factors below for differing inlet air temperatures (C1) and system pressures (C2).

To Size the Dryer Capacity for Actual Conditions

Adjusted Capacity = scfm x C1 x C2

To calculate the capacity of a given dryer based on non-standard operating conditions, multiply the standard capacity by the appropriate correction factor(s).

EXAMPLE: Dryer Model: AHLD-100
Standard Capacity: 100 scfm
Actual Operating Conditions: 120 psig working pressure: C1 = 1.18
100°F inlet temperature: C2 = 1.0
Adjusted Capacity = 100 scfm x 1.18 x 1.0 = **118 scfm**

To Select the Dryer Model for Actual Conditions

Adjusted Capacity = scfm/C1/C2

To choose a dryer based on a given flow at non-standard operating conditions, divide the given flow by the appropriate correction factor(s).

EXAMPLE: Given Flow: 350 scfm
Actual Operating Conditions: 120 psig working pressure: C1 = 1.18
100°F inlet temperature: C2 = 1.0
Adjusted Capacity = 350 scfm/ 1.18 / 1.0 = **296.6 scfm**
Selected Dryer Model: **AHLD-300**

Capacity correction factors for system air pressure (C1)

System Pressure (psig)	60	70	80	90	**100**	110	120	130	140	150
Correction Factor	0.65	0.73	0.82	0.91	**1**	1.09	1.18	1.27	1.35	1.44

Capacity correction factors for inlet air temperature (C2)

Inlet Temperature (°F)	70	80	90	**100**	105*	110*	115*	120*
Correction Factor	1.2	1.15	1.10	**1**	0.9	0.8	0.7	0.6

*For inlet temperature above 100°F, molecular sieve desiccant is required

www.AircelDryers.com

AIRCEL
323 Crisp Circle
Maryville, Tennessee
37801

PHONE
(800) 767-4599
Local: (865) 681-7066
Fax: (865) 681-7069

SALES INFORMATION
sales@airceldryers.com
REQUEST LITERATURE
litrequest@airceldryers.com