



Desiccant Air Dryers

BHD Series

Breathing Air Desiccant Dryer

50 - 1,000 scfm



BHD Series Breathing Air Heatless Desiccant Dryer 50 - 1,000 scfm

Since 1994, Aircel has been delivering quality, industry leading compressed air dryers and accessories for production lines and facilities all over the world.

Our precise engineering and designs provide reliable products that will protect your operations for years to come.

Based in Maryville, Tennessee, Aircel is a multi-industry manufacturing leader. Aircel's highly-specialized, engineered products and technologies are powering facilities all over the world. Our products serve industries such as textile, food and beverage, automotive, production, PET market, breathing air, pneumatic instrumentation, and more.



The Aircel BHD Series is a fully automatic breathing air system that utilizes a unique dual tower regeneration process. The BHD Series purifies compressed air to breathable air by removing a variety of contaminants including dust, dirt, water, oil, hydrocarbon vapor, and dangerous levels of carbon monoxide.

The Aircel Programmable Controller (APC) provides complete control of the system with text description of each step in the sequence of operation. A high quality carbon monoxide (CO) monitor is standard, providing constant sensing of CO concentrations to ensure the safety of all users. The BHD Series has robust valving and includes high quality coalescing pre-filter, activated carbon after-filter, and a particulate final-filter mounted as a standard feature.

The BHD Series achieves a unique seven stage purification process without the addition of a 3rd purification vessel that is required and utilized by many competitive designs.

Standard Features

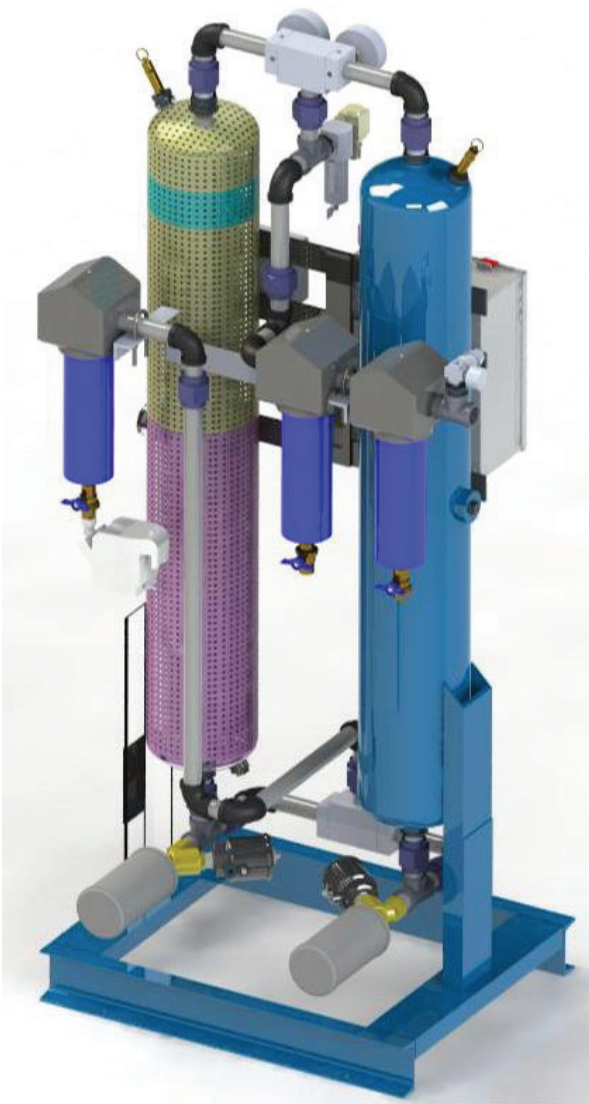
- Compact digital carbon monoxide (CO) monitor/alarm
- Mounted filtration: pre-filter, carbon after-filter, and final filter
- Aircel Programmable Controller (APC) protected with NEMA 4 electrical steel enclosure
- LED tower operation display indicating sequence of operation
- Automatic piston valve (inlet/outlet) with 10 year longevity
- Tower pressure gauges with large, easy-to-read 3.5" display
- Easy access to fill and drain ports for media replacement
- Unique purification media

- Red alarm strobe light
- Tower failure to switch alarm
- Downflow regeneration, upflow drying, and downflow depressurization

Optional Equipment

- Outlet dew point sensor and readout
- Visual moisture indicator
- VOC Monitor (stand-alone system)
- Oxygen monitor (stand-alone system)
- VOC/Oxygen combo system monitor
- Optional communications: Profibus-DP, AS-I, CANopen, DeviceNet, and Ethernet

How It Works



- **Stage 1: Inlet Particulate & Coalescing Pre-Filter** The pre-filter removes particulates, water aerosols, and oil mist content efficiently. The pre-filter is equipped with a differential pressure indicator and a zero-loss automatic condensate drain valve.

- **Stage 2: 13X Molecular Sieve** The inlet portion first layer of the adsorbent media filled in the towers is 13X molecular sieve to remove contaminants such as volatile organic compounds, acid forming gases, base gases and moisture.

- **Stage 3: Activated Alumina** This layer of activated alumina removes moisture to a dewpoint of -40°F and below at line pressure.

- **Stage 4: Carulite Catalyst** The catalyst layer is used to convert carbon monoxide to carbon dioxide and to oxidize residual hydrocarbon vapors.

- **Stage 5: Activated Alumina** This final layer of activated alumina is installed at the top of the towers to remove residual contaminants.

- **Steps 2-5:** The towers adsorb and regenerate alternatively. The regeneration of this unique multi-layer adsorbent media and catalyst arrangement typically

extends its life under normal conditions to three years. The control system sequence is monitored by a standard fail to switch system using pressure transducers and alarms when the system does not function properly.

- **Stage 6: Activated Carbon After-Filter** The activated carbon contained in the filter element assures a residual oil vapor content below 0.003 ppm. The filter is equipped with a manual ball valve.

- **Stage 7: Sub-Micron Final-Filter** The final-filter efficiently removes fine aerosols and particulates generated in the system. The filter is equipped with a differential pressure indicator and manual ball valve.

- The outlet air is monitored by a high quality Carbon Monoxide (CO) analyzer and triggers an alarm when a preset level is reached.

Dimensions (in.)

Model Number	Capacity	Voltage	Connection	Weight (lbs)	Height	Width	Depth
BHD-50	50	115-1-60	1/2" NPT	475	72	26	22
BHD-80	80		3/4" NPT	550	76	30	24
BHD-100	100		1" NPT	675	76	30	24
BHD-150	150		1" NPT	850	84	34	24
BHD-200	200		1-1/2" NPT	975	85	34	24
BHD-250	250		1-1/2" NPT	1,150	86	46	30
BHD-300	300		1-1/2" NPT	1,250	86	46	30
BHD-350	350		2" NPT	1,350	87	46	30
BHD-450	450		2" NPT	1,550	89	50	30
BHD-500	500		2" NPT	1,750	89	50	30
BHD-600	600		2" NPT	2,050	89	50	30
BHD-750	750		3" FLG	3,100	93	71	40
BHD-1000	1,000		3" FLG	4,400	98	72	40

Capacity rated in accordance with CAGI ADF 200 @ 100 psig, 100°F inlet, 100°F ambient and a PDP of -40°F
 Max Design Pressure: 200 psig (models 50 to 750); 150 psig (model 1,000)

For larger capacities and custom dryer options, please contact an Aircel factory representative

BHD Series Outlet Air Quality

The BHD Series meets or exceeds the breathing air standards below

Contaminant	USA (OSHA) ¹
Carbon Monoxide (CO)	10 ppm or less
Carbon Dioxide (CO ₂)	1,000 ppm or less
Hydrocarbon (condensed) ²	5 mg/m ³
Oxygen content	19.5 - 23.5%
Odor ³	Lack of noticeable odor

1. OSHA Regulations (Standard -29CFR), 1910.134 Respiratory Protection
2. Removes only hydrocarbons adsorbed by activated carbon (does not remove methane)
3. Removes only odors adsorbed by activated carbon



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