



BHD-100

Standard Features & Benefits

- Compact digital Carbon Monoxide (CO) monitor/alarm.
- Efficient electronic purge reduction with EMS
- Mounted filtration: pre-filter, carbon after-filter and final-filter.
- APC protected with a NEMA 4 electrical steel enclosure
- LED tower operation display indicating sequence of operation.
- Automatic piston valve (inlet/outlet) with 10 year longevity.
- Purge exhaust mufflers for quiet operation.
- Angle-body purge exhaust valve with 10 year longevity.
- Tower pressure gauges with large easy-to-read 3.5" display.
- Counter-current regeneration, upflow drying, and downflow depressurization.
- Easy access to fill and drain ports for media replacement.
- ON/OFF switch and power ON light.
- Red alarm strobe light.
- Tower failure to switch alarm.

Aircel Programmable Controller



Carbon Monoxide Monitor



3-Stage Filtration



The **Aircel BHD** series is 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.

BHD SERIES

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 to five 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.

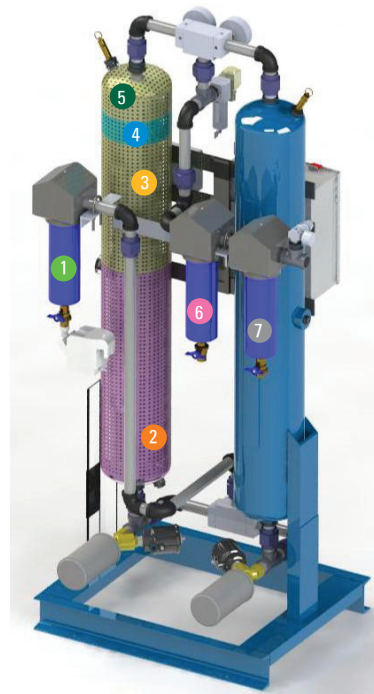
Stage 6: Activated Carbon After-Filter

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.



BHD SERIES

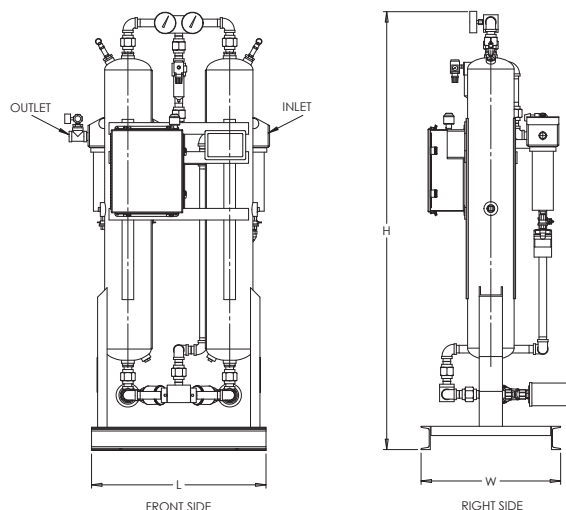
TECHNICAL SPECIFICATIONS



BHD Model Comparison

Model	Inlet Capacity ¹ (scfm)	Outlet Capacity ¹ (scfm)	Inlet/Outlet Connection (NPT)	Dimensions (inches)			Weight (lbs)	Voltage (Standard)
				H	L	W		
BHD-50	50	40	1/2" NPT	73	30	24	475	115V/60 HZ
BHD-80	80	64	3/4" NPT	76	36	26	550	115V/60 HZ
BHD-100	100	80	1" NPT	76	36	29	675	115V/60 HZ
BHD-150	150	120	1" NPT	84	39	29	850	115V/60 HZ
BHD-200	200	160	1-1/2" NPT	85	40	32	975	115V/60 HZ
BHD-250	250	200	1-1/2" NPT	86	51	36	1150	115V/60 HZ
BHD-300	300	240	1-1/2" NPT	86	51	36	1250	115V/60 HZ
BHD-350	350	280	2" NPT	88	51	36	1350	115V/60 HZ
BHD-450	450	360	2" NPT	90	55	43	1550	115V/60 HZ
BHD-500	500	400	2" NPT	90	55	43	1750	115V/60 HZ
BHD-600	600	480	2" NPT	92	55	43	2050	115V/60 HZ

¹Capacity rated in accordance with CAGI ADF 200 @ 100 psig, 100°F inlet, 100° ambient, and a PDP of -40°F.
Operating Pressure: 60-175 psig. Ambient Air Temperature: 38°-105°F. Inlet Air Temperature: 40°F-100°F.
Due to a continuous program of product improvement, specification and dimensions are subject to change without notice.



Standard Features

- Energy Management System (EMS)
- CO-Guard Carbon Monoxide (CO) monitor with range of 0-55 ppm
- Aircel Programmable Controller (APC)
- Unique Purification Media
- Tower Failure to Switch Alarm
- Coalescing Pre-filter, Activated Carbon After-filter, and a Particulate Final-filter

Available Options

- High inlet temperature alarm
- Dew point monitor
- Visual moisture indicator
- VOC monitor
- Oxygen monitor
- Optional communications: Profibus-DP, AS-I, CANopen, DeviceNet, and Ethernet

BHD Series

Outlet Air Quality

THE BHD SERIES MEETS OR EXCEEDS THE BREATHING AIR STANDARDS BELOW

Contaminant	USA (OSHA) ¹	Canadian (CSA)
Carbon Monoxide (CO)	10 ppm or less	5 ppm or less
Carbon Dioxide (CO ₂)	1,000 ppm or less	500 ppm or less
Hydrocarbon (condensed) ²	5 mg/m ³	1 mg/m ³
Oxygen Content ⁴	19.5-23.5%	20-22%
Odor ⁵	Lack of noticeable odor	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).
- 4 System does not add or reduce oxygen level. Inlet air must have adequate oxygen content.
- 5 Removes only odors adsorbed by activated carbon.



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