Pneumatic Products™

Breathing Air Purifiers

BAP Series

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BAP Breathing Air Purifiers...

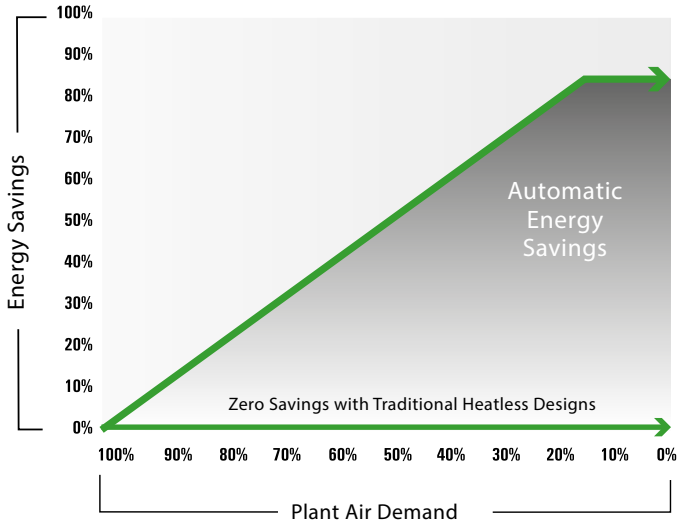
Time-Proven Reliability

In 1966, Pneumatic Products introduced the industry's first engineered, contaminant removing system to convert compressed air to safe breathing air. Over time, the designs have advanced employing the latest in filtration and dehydration technology. Today, Pneumatic Products is the most respected brand name in breathing air purification around the world.

Safety In The Work Place

Maintain Health and Safety Requirements
The BAP Series delivers breathing air quality in accordance to international standards.
OSHA: CFR1910.134 (Occupational Safety & Health Assoc)
CSA: Z180.1-13 (Canadian Standards Association)
CGA: G-7 (Compressed Gas Association)
ANSI: Z88.2-1080 (American National Standards Institute)

Environmental safety standards mandate the need for a suitable air supply to ensure worker safety. BAP Breathing Air Purifiers enable industries to meet required standards.



Optional Energy Management System

The optional energy management system automatically matches purge air requirements to real time load on the dryer. When operating at reduced capacity, the on-line drying tower remains active until the full drying capacity of the desiccant material is utilized. Each tower is precisely controlled to manage drying times to reduce purge air consumption.

Since 1946, the world has turned to the Pneumatic Products brand for the quality and service demanded by the most critical of applications. Global leaders of industry require durable components that deliver unquestionable reliability. Our precision engineered components and designs deliver outstanding service life and operational longevity. Invest in our experience and gain annuities that will grow for years.

Applications

Petrochemical

The oil and gas industries select BAP Series breathing air purifiers to protect workers from the inhalation of hazardous fumes, gases, and vapors inherent in the manufacturing process.

Asbestos Abatement

Asbestos was a commonly used insulation material for old dwellings. BAP Breathing Air Purifiers provide suitable breathing air to workers in asbestos abatement applications.

Paint Spray

Automotive body shops utilize atomized paint to spray vehicles. Workers exposed to airborne paint emissions benefit from BAP Breathing Air Purifiers.

Protective Coatings

Manufacturers utilize compressed air to apply protective coatings. Airborne compounds will not adversely affect workers when respiratory air is supplied with BAP Breathing Air Purifiers.

Confined Spaces

The quality of breathing is critical in confined space industries. Mining, vats, tanks, boilers, ships' hulls, and grain storage facilities are environments with stale, contaminated air that is unsuitable for breathing.

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Optimal Performance and Operation...

Six Stage Filtration

Stage 1 General purpose filter removes solid and liquid contaminants down to 1.0 micron

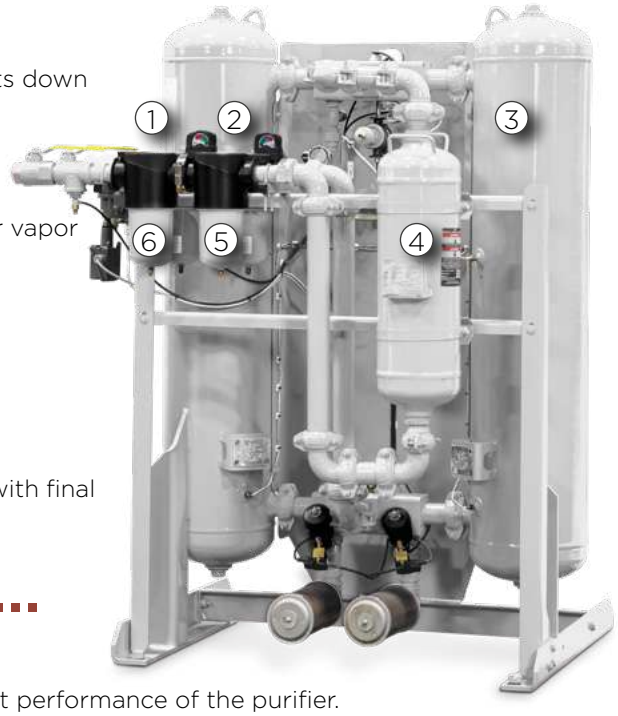
Stage 2 High efficiency oil removal filter captures liquid aerosols and sub-micronic particles down to 0.01 micron

Stage 3 Pressure-swing regenerative desiccant dryer removes water vapor to ensure the effectiveness of the catalyst bed

Stage 4 Dried air travels through a catalytic converter reducing CO concentrations by converting CO to CO_2

Stage 5 Particulate removal filter collects contaminants 1.0 micron and larger from the purified air stream

Stage 6 Activated carbon filter removes oil vapor, trace odors and other gases normally absorbable by activated carbon with final particulate removal to 0.01 micron



For Quality Breathing Air...

Purification Capabilities

Excessive contamination of compressor intake air will adversely affect performance of the purifier.

BAP Breathing Air Purifiers remove moisture, solid particles, oil aerosols and mists, carbon monoxide, and hydrocarbon vapors commonly present in compressed air. The resulting air can be safely used by supplied-air breathing devices such as masks, hoods and helmets.

CONTAMINANTS	MAXIMUM ALLOWABLE CONCENTRATION [1]		PURIFIER OUTLET RATED CONDITIONS
	OSHA [1]	CSA	
Carbon Monoxide (CO)	10	5	95% Conversion [5]
Carbon Dioxide (CO_2)	1000	600	[2]
Oil (Condensed Hydrocarbons)	5	1	0
Oil Vapor (Gaseous Hydrocarbons)	—	—	<.02 [3]
Odor	Lack of noticeable odor		— [4]

[1] OSHA Standard references CGA (Compressed Gas Association) pamphlet G-7.1, Grade D and is generally consistent with those published by ANSI
[2] CO is converted to CO_2 by the purifier and added to the concentration of CO_2 already present (normal atmospheric air contains 314 PPM of CO_2) Although some CO_2 is absorbed in the desiccant beds, high concentrations of CO in the system and/or high concentrations of CO_2 at the compressor intake could result in exceeding allowable CO_2 limits
[3] Will remove only those gaseous hydrocarbons normally adsorbed by activated carbon. Outlet concentration is expressed as methane equivalent, activated carbon will not remove methane
[4] Will remove only those odors normally adsorbed by activated carbon
[5] 95% Conversion example (200 PPM @ inlet = 10 PPM @ outlet)

Features and Options

Filtration & Monitoring

- Pre-filtration removes solids and oils
- After-filters collect remaining particles and adsorb vapor
- CO catalyst converter

Moisture Indicator

- Visual color change

Pressure Gauges

- Left / right tower
- Inlet / outlet purifier
- Purge pressure

Standard Controller

- NEMA 4/4X with critical LED indicators
- Soft on / off switch with two power recovery modes
- Switching failure alarms
- Adjustable service indications
- Tower / valve status LEDs
- Voltage free common alarm contacts
- RS-232 communications port

Ease Of Service & Sample Testing

- Inlet & outlet valves allows isolation for maintenance
- Sample ports at both the inlet & outlet

Options

- Nema 7 electrical rating
- Copper, brass or stainless steel instrument tubing and fittings
- Breathing air analyzers
- Advanced Level -2 Controls:
  - Vacuum fluorescent text display
  - Automatic energy savings
  - Calibration-free temperature sensors
  - High inlet temperature & low inlet pressure alarms
  - Cycle counter & hours of service

Breathing Air Analyzers

OSHA maximum concentrations for breathing air:

- 10 PPM of Carbon Monoxide (CO)
- 1,000 PPM of Carbon Dioxide (CO2)
- 5 mg/m^3 Oil (Condensed Hydrocarbons)

Breathing air system performance is subject to excessive intake of air contaminants. It is important that breathing air systems are routinely monitored for proper operation. The DM Series Breathing Air Purifier can be monitored using several air analyzing options.

Carbon Monoxide (CO) Monitor

Recommended

- Digital readout of CO concentration
- Visual and audible alarm
- Contacts for remote alarm
- Adjustable high & low alarms with indication
- Visual Fault Indicator
- Simple Push Button Operation
- Easy Field Calibration & Sensor Replacement

Analyzer Choices:

Additional Option

- Multiple alarm capabilities
  - CO & oxygen
  - CO & dew point
  - CO, oxygen & dew point

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DM Series Specifications...

Optimizing Capacity

Breathing air produced by a Breathing Air Purifier system can supply various levels of use. To select a BAP Series purifier, first determine the air pressure at the purifier inlet and the maximum breathing air flow required at a given time. The chart below illustrates an example of BAP Series estimated capacities based on 6-15 scfm (10-25 m^3/h) per hood, helmet or suits as calculated in the sizing table.

MODELS	BAP 15	BAP 25	BAP 35	BAP 50	BAP 75	BAP 95	BAP 135	BAP 205	BAP 305	BAP 375	BAP 625	BAP 775	BAP 940
Minimum Capacity	1	2	2	3	5	6	9	14	20	25	42	52	63
Maximum Capacity	2	4	6	8	13	16	23	34	51	63	104	129	157

** Contact hood manufacturer for actual capacity before sizing purifier.*

Model Specifications

MODEL	INLET FLOW[1]		OUTLET FLOW[1]		VOLTAGES	IN/OUT CONNECTIONS	DIMENSIONS						WEIGHT	
							H		W		D			
	SCFM	NM^3/H	SCFM	NM^3/H	V/PH/HZ	IN	IN	MM	IN	MM	IN	MM	LBS	KG
BAP 15	18	31	15	26	85-264/1/47-63 AC 11.5-28 V DC	1 NPT	49	1244	42	1067	35	889	440	200
BAP 25	30	51	25	42		1 NPT	49	1244	42	1067	35	889	450	204
BAP 35	42	71	35	59		1 NPT	49	1244	42	1067	35	889	455	206
BAP 50	60	102	50	85		1 NPT	64	1615	43	1097	38	962	560	254
BAP 75	90	153	75	127		1 NPT	79	2006	43	1097	35	889	700	318
BAP 95	114	194	95	161		1 NPT	56	1443	50	1270	45	1137	820	372
BAP 135	162	275	135	229		1 NPT	56	1443	53	1356	43	1092	820	372
BAP 205	246	418	205	348		1.5 NPT	75	1905	62	1575	45	1143	1190	540
BAP 305	366	622	305	518		2 NPT	65	1651	66	1674	52	1327	1405	637
BAP 375	450	765	375	637		2 NPT	74	1871	67	1702	52	1330	1560	708
BAP 490	590	1002	490	833		2 NPT	103	2616	55	1397	69	1753	1650	748
BAP 625	750	1274	625	1062		2 NPT	107	2718	62	1575	75	1905	2800	1270
BAP 775	930	1580	775	1317		3 FLG	112	2845	62	1575	83	2108	3275	1486
BAP 940	1130	1920	940	1597		3 FLG	115	2921	66	1676	82	2083	3750	1701

[1] Flow capacity rated at CAGI conditions: 100 psig (7.0 bar) and 100°F (38°C) saturated inlet

Replacement Filter Elements

	PREFILTERS		CATALYST	AFTERFILTERS	
MODEL	PR	UC	CARTRIDGE	PF	CF
BAP 15	PR-02	UC-02	CC0	PR-02	CB-02
BAP 25	PR-03	UC-03	CC0	PR-03	CB-03
BAP 35	PR-04	UC-04	CC0	PR-04	CB-04
BAP 50	PR-06	UC-06	CC1	PR-06	CB-06
BAP 75	PR-07	UC-07	CC1	PR-07	CB-07
BAP 95	PR-08	UC-08	CC2	PR-08	CB-08
BAP 135	PR-10	UC-10	CC2	PR-10	CB-10
BAP 205	PR-11	UC-11	CC3	PR-11	CB-11
BAP 305	PR-12	UC-12	CC4	PR-12	CB-12
BAP 375	PR-13	UC-13	CC5	PR-13	CB-13
BAP 490	PR-14	UC-14	CC6	PR-14	CB-14
BAP 625	PR-14	UC-14	CC7	PR-14	CB-14
BAP 775	PR-15	UC-15	CC8	PR-15	CB-15
BAP 940	PR-16	UC-16	CC9	PR-16	CB-16

Capacity Correction Factors

Inlet Pressure

PSIG	BAR	100°F 38°C	105°F 40°C	110°F 43°C	115°F 46°C	120°F 49°C
60	4.2	0.65	0.64	0.62	0.6	0.58
70	4.9	0.74	0.73	0.71	0.69	0.66
80	5.6	0.83	0.81	0.8	0.77	0.74
90	6.3	0.91	0.89	0.87	0.85	0.81
100	7	1	0.98	0.96	0.93	0.89
110	7.7	1.04	1.02	1	0.97	0.93
120	8.4	1.08	1.06	1.04	1	0.96
130	9.1	1.12	1.1	1.08	1.04	1
140	9.8	1.16	1.14	1.11	1.08	1.03
150	10.5	1.2	1.18	1.15	1.12	1.07

Capacity Correction Factors

To adjust capacity for conditions other than rated, use the correction factors (multipliers) for inlet air temperature and pressure shown below.

Example: What is the capacity of a 205 scfm (348 nm^3/h) model when the compressed air at the inlet is 130 psig (9 bar) and 110°F (43°C)?

Answer: 205 scfm (348 nm^3/h) (rated flow from Product Specifications Table) x 1.08 (correction factor for inlet air temperature and pressure) = 221 scfm (375 nm^3/h)

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BAP Series

Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region.

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