



domnick hunter



Breathing Air Purifiers

Comply with OSHA Grade D, NFPA-99, European Pharmacopoeia and other International Breathing Air Standards

domnick hunter Breathing Air Purifiers provide air 1,000,000 times cleaner than the air we breathe

The use of compressed air as a source of breathable air is well accepted throughout industry, being readily available and relatively inexpensive to produce.

Why purify compressed air?

In recent years, employers have become increasingly aware of their responsibility to comply with International Breathing Air Standards. The standards define the quality of breathing air that must be provided to operators working in contaminated environments.

Contaminants frequently present in compressed air that threaten the well being of breathing air users are;

- Fumes
- Oil
- Vapors
- Gases
- Solid particles
- Micro-organisms

For compressed air to be suitable for breathing air applications it must be properly purified to ensure that it meets the relevant Breathing Air Standard.

What type of purifier should be used?

With a wide variety of purification products available, ranging from a simple respirator offering basic protection against low levels of dust particles to self contained breathing apparatus it is essential that the inhalation risks be fully assessed and a suitable purification product selected.

domnick hunter breathing air purifiers are designed to offer the user protection against some or all of the contaminants that may be present in a compressed air fed breathing air system.

As the world leader in filtration and purification of compressed air, domnick hunter offers unrivalled experience in the design and manufacture of air treatment equipment.

With domnick hunter breathing air purifiers in constant use worldwide, protecting lives in virtually every type of industry and the commitment to continuous research and development, domnick hunter provides a complete range of breathing air purifiers designed to match the specific needs inherent when breathing from a compressed air supply.



How do you know the quality of breathing air required?

Whatever the application, the quality of the compressed air used for breathing air applications is detailed in International Breathing Air Standards.

The applicable standard for the country of use will not only detail the maximum allowable levels of contaminants but also give an indication of the selection criteria for protection devices.

If doubt exists about the potential of a possible contaminant then steps must be taken to either monitor the air quality or install a suitable purification device to ensure compliance with the standard.

Where would you use a domnick hunter breathing air purifier?

Many applications exist, ranging from the life threatening environments of fire fighting, hazardous shot blasting and paint spraying operations, to critical, medical and hospital air requirements.

Typical Applications

- High pressure cylinder filling
- Shotblasting
- Tank cleaning
- Tunnelling
- Pharmaceutical Manufacturing
- Spray painting
- Medical and hospital air
- Offshore / Marine
- Asbestos removal

Breathing Air Purifiers without CO or CO₂ reduction

To treat the following contaminants:

Solid Particles	✓	Water Mists	✓
Oil Mists	✓	Water Vapor	X
Oil Vapors	✓	Carbon Monoxide	X
Odors & Fumes	✓	Carbon Dioxide	X

BA-2006

The domnick hunter BA-2006 two stage point of use breathing air filter is supplied complete with mounting brackets. The unit combines a high efficiency coalescing pre-filtration element with an odor removal, activated carbon element in a two stage housing.

A pressure regulator allows adjustment of line air pressure to useable levels.



BA-4350 and BA-1400B

The domnick hunter BA-4350 and BA-1400B portable breathing air purifiers provide high quality breathable air from a normal compressed air supply.

Combining high efficiency and activated carbon filtration stages, both units are housed in compact, weather proof, impact resistant cases which can supply air for up to four users.

The BA-1400B also includes a water separator for the removal of bulk liquids and a CO monitor as standard.



BAFP-064B and BAFP-170B

For higher flow, stationary applications, domnick hunter offers two breathing air filtration panels, BAFP-064B and BAFP-170B. These wall mounted panels use the same type of purification stages as the portable BA-1400B and are supplied with a CO monitor.

Features	BA-2006	BA-4350	BA-1400B	BAFP
Purification Stages	2	2	3	3
Integral pressure regulator and gauge	✓	✓	✓	✓
Portable	-	✓	✓	-
Wall Mounted	✓	-	-	✓
Filter Change Indicator	-	✓	✓	✓
Use with any compressed air supply	✓	✓	✓	✓
Integrated CO Monitor	-	-	✓	✓
Electrical supply required	-	-	✓	†

o = optional † = if fitted with a CO monitor

Breathing Air Purifiers incorporating CO and CO₂ reduction

To treat the following contaminants:

Solid Particles ✓
 Oil Mists ✓
 Oil Vapors ✓
 Odors & Fumes ✓

Water Mists ✓
 Water Vapor ✓
 Carbon Monoxide ✓
 Carbon Dioxide ✓

These models are recommended for hazardous applications that require an uninterrupted breathing air supply where carbon monoxide may be present.

By means of catalytic conversion, carbon monoxide (CO) is converted, by oxidization into breathable levels of carbon dioxide (CO₂).

The catalyst is kept active by maintaining a low dewpoint prior to the catalytic bed using an integral desiccant dryer unit.

BA-2010 / BAP-2010

These models are used when the possibility of higher levels of CO are present, for example when the user must enter a confined space. This portable unit is designed for field service, being completely pneumatic in operation and incorporating five purification stages.



High Pressure Breathing Air Purifiers

The domnick hunter range of high pressure breathing air purifiers can be used with most high pressure compressed air systems up to 350 bar g (5075 psi g).

The HPBA units offer complete protection against carbon monoxide (CO) and carbon dioxide (CO₂). All purifiers in the range are designed for easy installation, operation and maintenance with simple in-line connections.

These purifiers utilize two main stages of air treatment each with specific functions: Stage 1 Grade AA - High efficiency coalescing filter; Stage 2 is a composite cartridge, which reduces water vapor, CO₂, oil vapor and odors. In addition, a catalyst bed for the oxidation of carbon monoxide (CO) to carbon dioxide (CO₂) by catalytic conversion completes the purification stages.

	BA-2010	BAP-2010	HPBA	BA-DME	BAM
Purification Stages	5	5	6	6	6
Integral pressure regulator and gauge	✓	✓	-	-	-
Portable	✓	✓	-	-	-
Hours run meter	✓	✓	-	-	-
Pneumatic Control	✓	✓	N/A	-	-
Use with any compressed air supply	✓	✓	✓	✓	✓
Integrated CO Monitor	-	-	-	✓	✓
Electrical supply required	-	-	-	✓	✓

Breathing Air Purifiers incorporating CO and CO₂ reduction

Hospital and Medical Air Quality

A medical air supply is regarded as a vital part of every hospital infrastructure and is one of the few gases that is manufactured on-site. Compressed air can be used for a wide variety of applications such as anaesthetics, lung ventilation, intensive therapy, pneumatic surgery tools, nebulizers and many more, where the quality of the air is vitally important.

domnick hunter BA-DME and BAM breathing air purifiers provide integrated filtration and adsorption stages to deliver the air quality required for medical applications.

domnick hunter purifiers have been independently tested to the European Pharmacopoeia Medical Air Standard.

OSHA Grade D & European Pharmacopoeia Standards

Contaminant	OSHA Grade D	European Pharmacopoeia	domnick hunter BA-DME/BAM range*
Water		67 ppm (= -49°F [-45°C] at atmospheric dewpoint)	14 ppm (= -72°F [-58°C] at atmospheric dewpoint)
Oil/lubricant	5 mg/m ³	0.1 mg/m ³	0.003 mg/m ³
Carbon Dioxide (CO ₂) *1	< 1000 ppm	< 500 ppm	< 500 ppm
Carbon Monoxide (CO) *2	< 10 ppm	< 5 ppm	< 5 ppm
Nitrogen Oxides (NO + NO ₂)		< 2 ppm	< 2 ppm
Sulphur Dioxide (SO ₂)		< 1 ppm	< 1 ppm

1. When challenged with 700 ppm at the inlet.
2. When challenged with 65 ppm at the inlet.

***Independently tested for domnick hunter by:-**

PATTINSON
SCIENTIFIC SERVICES

The domnick hunter BA-DME and BAM ranges comply with OSHA Grade D, NFPA-99 & European Pharmacopoeia medical air standards.



BA-DME / BAM

The BA-DME and BAM packages consist of several stages of contaminant removal. Inlet filtration combines to remove bulk water, particles and oil. The use of adsorption materials, namely activated desiccant and carbon removes water vapor and oil vapor/odors respectively. The desiccant material is contained in a pressure swing adsorption dryer that delivers a constant pressure dewpoint of -40°F (-40°C).

Downstream of the desiccant dryer, a catalyst converts carbon monoxide to carbon dioxide by catalytic conversion.

A final dust filter captures any particulates carried over from the adsorption materials.

Selecting the Correct Purifier

domnick hunter breathing air purifiers are designed to reduce the concentration of potential contaminants, identified as hazardous to the human respiratory system to acceptable levels detailed in published International Breathing Air Standards.

Where a potential inhalation hazard exists it is essential that a full assessment be made of the potential risk to the user. The assessment should not only identify the potential risk of contamination to the breathing air supply, but also the level of potential contamination. In the event of being unable to either remove the contamination risk or to control the risk, it is the employers responsibility to introduce measures to ensure that the breathing air supply complies with the required air quality standard. The air quality used in a breathing air system must be controlled under all operating conditions, including the possibility of a plant or process failure.

In addition to conforming with the required compressed air quality it must also be ensured that the delivered air flow rate is at least sufficient to meet the foreseeable needs of the total number of users at their maximum work rate consumption.



domnick hunter breathing air purifiers offer the following levels of protection when using a general compressed air line supply:

	Solid Particles	Oil Mist	Odors Oil	Pressure Dew-Point	CO	CO ₂	NO _x + NO ₂	SO ₂
Purifiers without CO & CO ₂ reduction	0.01mg/m ³	0.003mg/m ³	None	N/A	N/A	N/A	N/A	N/A
Purifiers with CO & CO ₂ reduction	0.01mg/m ³	0.003mg/m ³	None	-40°F [°C]	<5 ppm	<500 ppm	N/A	N/A

NOTE :

domnick hunter CO & CO₂ reduction purifiers offer breathable air that meets all International Breathing Air Standards, purifiers without CO & CO₂ reduction stages should not be used in an environment where CO or CO₂ have been identified as a potential inhalation risk.

Breathing Air Standards

Breathing air standards are published by a number of regional approval bodies. The domnick hunter breathing air purifiers are designed to comply with the following international standards;

- USA CGA G7.1-1997 OSHA Grade D
- UK BS4275 : 1997
- Europe EN12021
- Canada Z180.1-00
- Australia AS/NZS 1715 : 1994
- New Zealand AS/NZS 1715 : 1994

Typical peak inhalation rates for fit young persons for various work rates are shown below. Higher inhalation rates may be generated by less fit or heavier users or for wearers of heavy personal protective equipment.

Work Rate	Peak Inhalation Rate	
	cfm	l/min
Low	3.6	100
Medium	5.3	150
High	7.1	200
Very High	8.9	250

Source BS4275 : 1997.

All peak inhalation rates are given as a guide only, the actual breathing air requirement should be calculated, where possible from the total requirement of the personal protection equipment, ie. mask/hood/suit.

In order to ensure that a suitably selected breathing air purifier is reliably operated and maintained it is essential that correct training and supervision be given to the user.

Technical Specifications

Breathing Air Purifiers

		BA-2006, BA-2010, BAP-2010, BA-4350, BA-1400B, BAFP-064B / 170B	BA-DME012 - 040	BA-DME050 - 080	BAM102 - 110
Operating Pressure	Maximum	145 psi g (10 bar g)	232 psi g (16 bar g)	189 psi g (13 bar g)	152 psi g (10.5 bar g)
	Minimum	58 psi g (4 bar g)	58 psi g (4 bar g)	58 psi g (4 bar g)	58 psi g (4 bar g)
Recommended Operating Temperature	Maximum	86°F (30°C)			
	Minimum	35°F (1.5°C)			

For flowrates at other pressures, apply the factor shown

Line	psi g	58	73	87	102	116	131	145	160	174	189	203	218	232
Pressure	bar g	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction Factor		0.76	0.85	0.93	1	1.07	1.13	1.19	1.25	1.31	1.36	1.41	1.46	1.51

Product Code	Connections		Flow Rates @ 100 psi g (7.0 bar g)				Dimensions						Weight (approx.)	
	Inlet	Outlet	Inlet		Outlet		Width		Depth		Height		lbs	kg
			cfm	l/s	cfm	l/s	inches	mm	inches	mm	inches	mm		
BA-2006	1/2" NPT	3/4" NPT	13	6	13	6	7.9	200	4.3	110	10.9	276	2.6	1.2
BA-4350	1/2" NPT	4 x 1/2" NPT	50	23	50	23	18.1	460	9.7	246	16.1	410	18	8
BA-1400B	3/4" NPT	4 x 1/2" NPT	50	23	50	23	23.6	600	11.8	300	18.5	470	22	10
BAFP-064B	1/2" NPT	4 x 3/8" NPT	64	30	64	30	21.1	535	6.7	170	25.6	650	46	21
BAFP-170B	1/2" NPT	8 x 3/8" NPT	170	80	170	80	23.8	605	7.9	200	33.5	850	65	30

Product Code	Connections		Flow Rates @ 100 psi g (7.0 bar g)*				Dimensions						Weight (approx.)	
	Inlet	Outlet	Inlet		Outlet		Width		Depth		Height		lbs	kg
			cfm	l/s	cfm	l/s	inches	mm	inches	mm	inches	mm		
BA-2010	1/2" NPT	3 x 1/2" NPT	24	11	19	9	17.7	450	10.6	270	24.0	610	82	37
BAP-2010	1/2" NPT	3 x 1/2" NPT	24	11	19	9	16.4	416	18.1	460	37.3	947	110	50
BA-DME012	1/2" NPT	3/4" NPT	24	11	19	9	18.7	476	11.9	302	37.5	952	84	38
BA-DME015	1/2" NPT	3/4" NPT	32	15	25	12	19.3	490	11.9	302	47.7	1211	95	43
BA-DME020	1/2" NPT	3/4" NPT	42	19	33	15	19.3	490	11.9	302	54.2	1376	106	48
BA-DME025	1/2" NPT	3/4" NPT	53	25	42	20	19.3	490	11.9	302	60.7	1541	117	53
BA-DME030	1/2" NPT	3/4" NPT	65	31	52	24	20.5	521	11.0	302	67.2	1707	128	58
BA-DME040	3/4" NPT	3/4" NPT	88	40	70	33	28.8	732	17.6	447	77.2	1960	164	74
BA-DME050	1" NPT	1" NPT	106	50	84	40	15.8	400	47.2	1200	68.9	1750	466	211
BA-DME060	1" NPT	1" NPT	130	61	104	49	15.8	400	47.2	1200	75.4	1916	494	224
BA-DME080	1" NPT	1" NPT	176	80	140	66	29.3	745	47.2	1200	81.7	2076	615	279
BAM102	1 1/2" NPT	2" NPT	160	76	134	63	35.9	912	53.2	1352	70.1	1780	979	444
BAM103	1 1/2" NPT	2" NPT	240	113	202	95	35.9	912	53.2	1352	70.1	1780	1078	489
BAM104	2" NPT	2" NPT	320	151	269	127	35.9	912	57.6	1462	70.1	1780	1237	561
BAM105	2" NPT	2" NPT	400	189	337	159	35.9	912	61.5	1562	70.1	1780	1319	598
BAM106	2" NPT	2 1/2" NPT	480	227	404	190	35.9	912	70.0	1800	70.1	1780	1519	689
BAM107	2" NPT	2 1/2" NPT	560	264	471	222	35.9	912	74.8	1900	70.1	1780	1645	746
BAM108	2" NPT	2 1/2" NPT	640	302	539	254	35.9	912	78.7	2000	70.1	1780	1828	829
BAM110	2 1/2" NPT	2 1/2" NPT	800	378	674	318	35.9	912	86.6	2200	70.1	1780	2225	1009

* Referenced to 68°F (20°C) and 14 psi a (1 bar a).

Flow rates are based on an inlet air temperature of 95°F (35°C). For higher inlet air temperatures, please consult factory.

High Pressure Breathing Air Purifiers incorporating CO and CO₂ reduction

Maximum Operating Pressure	5075 psi g (350 bar g)	Maximum Recommended Operating Temperature	86°F (30°C)
Minimum Operating Pressure	1450 psi g (100 bar g)	Minimum Recommended Operating Temperature	40°F (5°C)

Product Code	Connections		Flow Rates @ 100 psi g (7.0 bar g)						Dimensions						Weight (approx.)	
	Inlet	Outlet	Inlet			Outlet			Width		Depth		Height		lbs	kg
			cfm	l/s	m ³ /hr	cfm	l/s	m ³ /hr	inches	mm	inches	mm	inches	mm		
HPBA-05	3/8" NPT	3/8" NPT	10	5	18	10	5	18	9.1	232	4.3	110	25.6	651	25	11
HPBA-10	3/8" NPT	3/8" NPT	20	10	36	20	10	36	9.1	232	4.3	110	34.8	883	29	13
HPBA-20	3/8" NPT	3/8" NPT	40	19	68	40	19	68	9.1	232	4.3	110	54.2	1377	36	16
HPBA-40	3/8" NPT	3/8" NPT	80	38	136	80	38	136	14.3	363	4.3	110	54.2	1377	62	28

For flowrates at other pressures, apply the factor shown

Line	psi g	1450	2175	2900	3625	4350	5075
Pressure	bar g	100	150	200	250	300	350
Correction Factor		0.29	0.43	0.57	0.71	0.86	1

breathing air purifiers options and accessories

CO Monitor

The Analox 3050 CO (carbon monoxide) monitor utilizes an electro-chemical cell, to continuously sample compressed air to detect CO. This wall or panel mountable instrument operates on 115/1/50-60 Vac as standard but is also available as 220/1/50-60 Vac.

- High intensity 95dB(A) alarm
- Simple calibration
- Remote alarm contacts
- Adjustable alarm settings (factory set at 10 ppm)
- Clear digital read out in ppm
- IP65/NEMA4 enclosure



Air Purity Test Kit

The domnick hunter air purity test kit is for convenient 'on the spot' indication of compressed air quality. This comprehensive test kit is compact, easy to operate and offers a very fast and effective method of assessing the performance of filtration and drying equipment. In addition, the test kit can be used to quantify the level of contamination upstream and downstream of purification equipment.

- Lightweight and portable kit in a robust carrying case
- Allows simultaneous testing of upstream and downstream air purity
- Testing quality of breathing air to National and International Standards
- Can be used with compressed air pressure up to 152 psi g (10.5 bar g)
- Factory set for use with 'Gastec Ltd' gas detection tubes

Supplied with oil and water test tubes; 1/4" & 1/2" connections; and flexible tube (suitable for Drager Ltd gas detection tubes only after factory re-calibration). CO/CO₂/O₂ test tubes are available on request.



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