J&J Air Systems

aerospace
climate control
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process control
sealing & shielding

Breathable Compressed Air

Parker domnick hunter

ENGINEERINGYOURSUCCESS.

Typical Hazardous Substances

- **Biological agents** – bacteria and other micro-organisms
- **Dusts** – with high concentration levels (produced during grinding, sanding or milling)
- **Noble gases** – e.g. argon and helium (not directly hazardous but can cause oxygen deficiency)
- **Processed substances** – such as pesticides, medicines chemicals and cosmetics
- **Fumes** – often created during welding, smelting and pouring molten metals
- **Mists** – liquid droplets formed by atomisation and condensation processes. Mists can be created by plating, spraying, mixing and cleaning operations
- **Asbestos** – used extensively in buildings from the 1940's to 1960's. Exposure to asbestos fibres can cause asbestosis, lung cancer or mesothelioma
- **Lead poisoning** – lead poisoning is likely to build up slowly over time and can pose serious risks including, brain, nerve and kidney damage

The problem

In compressed air fed systems, ambient air is drawn into the compressor, therefore any contaminants present in the ambient air plus those introduced by the compressor itself will be present unless removed by a purification system. Contaminants present can include:

- **Carbon monoxide**
- **Carbon dioxide**
- **Water vapour**
- **Micro-organisms**
- **Atmospheric dirt**
- **Oil vapour**
- **Water aerosols**
- **Condensed liquid water**
- **Liquid oil**
- **Oil aerosols**
- **Rust**
- **Pipescale**

Health & Safety Legislation

Compressed air used for breathing must comply with local legislation. In Europe the maximum levels of contamination permissible are outlined in EN 12021 and recommendations for selection, care and maintenance can be found in EN 529. It is essential that all items of RPE are tested for compliance at suitable intervals not exceeding one month.

Only approved equipment should be used and employers must take advice from equipment suppliers on correct use to prevent respiratory health problems.

Applications and Industries

Hazardous vapours, gases and fumes can be released at various stages within manufacturing applications. Whether the risk is from noxious fumes, particulate or contamination from a compressed air system, effective respiratory protection for the user is essential.

Application

- **Tank cleaning**
- **Spray painting**
- **Asbestos removal**
- **Shotblasting**
- **Tunnelling**
- **Confined spaces**
- **Welding**
- **Demolition**

Industries

- **Agriculture**
- **Aviation**
- **Chemical**
- **Construction**
- **Electrical Utilities**
- **Fire Service**
- **Food & Beverage Production**
- **Gas Utilities**
- **Hazmat**
- **Iron / Steel Production**
- **Manufacturing**
- **Marine / Shipyard**
- **Mining**
- **Nuclear**
- **Oil & Gas Production**
- **Petrochemical**
- **Pulp & Paper**
- **Pharmaceutical & Labs**
- **Public Works**
- **Water Treatment**
- **Welding**

International breathing air standards

Contaminants	OSHA Grade D	CSA Z180.1	European Pharmacopoeia	Parker domnick hunter BA-DME/BAM range*
Water		Pressure dewpoint of 5°C below lowest system temperature	67 ppm (= -45°C atmospheric dewpoint)	14 ppm (= -58°C atmospheric dewpoint)
Oil / Lubricant	5 mg/m^3	< 1 mg/m^3	0.1 mg/m^3	0.003 mg/m^3
Carbon Dioxide (CO_2)	< 1000 ppm	< 500 ppm	< 500 ppm	< 500 ppm
Carbon Monoxide (CO)	< 10 ppm	< 5 ppm	< 5 ppm	< 5 ppm
Nitrogen Oxides ($N0 + NO_2$)			< 2 ppm	< 2 ppm
Sulphur Dioxide ($S0_2$)			< 1 ppm	< 1 ppm

Breathing Air Purifiers without CO / CO_2 reduction are supplied with 12 months guaranteed air quality

To reduce the following contaminants				
	Solid Particles	✓	Water Aerosols	✓
	Oil Aerosols	✓	Water Vapour	×
	Oil Vapour	✓	Carbon Monoxide	×
	Odours & Fumes	✓	Carbon Dioxide	×

BAS-3015

The Parker domnick hunter BAS-3015 is a portable breathing air purifier housed in a compact, weatherproof, impact resistant case. Consisting of a general purpose pre-filter, a high efficiency coalescing filter and an activated carbon filter to remove oil vapour and odours, this purifier includes a pressure regulator/ gauge and can facilitate up to five users simultaneously. The BAS-3015 is also available with an optional CO monitor.

Features

- 3 Purification stages
- Integral pressure regulator
- Portable
- Use with any compressed air supply
- Integrated CO Monitor (optional)
- Pressure gauge

BAF010 – BAF015

The Parker domnick hunter BAF010 and BAF015 two stage point of use breathing air filter sets combine high efficiency coalescing pre-filtration with activated carbon oil odour and vapour removal filtration. These filter sets include a pressure regulator/gauge to allow airline pressure adjustment to users' requirements and mounting brackets for ease of installation.

Features

- 2 Purification stages
- Portable
- Use with any compressed air supply
- Pressure gauge

BAP015

To facilitate breathing air applications for three personnel, the Parker domnick hunter BAP015 is a portable breathable air purification package consisting of a high efficiency coalescing filter and an activated carbon filter to remove oil vapour and odours. These sets include a pressure regulator/gauge, all mounted in a lightweight, stable framework.

Features

- 2 Purification stages
- Integral pressure regulator
- Portable
- Use with any compressed air supply
- Pressure gauge

BAS-2010

The Parker domnick hunter BAS-2010 is a very robust and weatherproof portable breathing air purifier. Consisting of a high efficiency coalescing filter and an activated carbon filter to remove oil vapour and odours, this purifier includes a pressure regulator / gauge and can facilitate up to four users simultaneously.

Features

- 2 Purification stages
- Integral pressure regulator
- Portable
- Use with any compressed air supply
- Pressure gauge

WARNING: THESE PRODUCTS WILL NOT REMOVE CARBON MONOXIDE OR CARBON DIOXIDE

Breathing Air Purifiers without CO /CO_2 reduction

Model shown BAS-3015

GRADE WS (OPTIONAL)
Water Separator

REDUCES:
Liquid water and oil in heavily contaminated compressed air systems

1
GRADE AO
General Purpose Coalescing Filter

REDUCES:
Particulate down to 1 micron, including water and oil aerosols

2
GRADE AA
Coalescing Filter

REDUCES:
Particulate down to 0.01 micron, including water and oil aerosols

3
GRADE ACS
Oil Vapour Removal Activated Carbon Filter

REDUCES:
Oil vapour and odours down to 0.003 mg/m³

Technical Specifications

		BAF010, BAF015, BAS3015, BAS2010, BAP015
Operation Pressure	Maximum	10 bar g (145 psi g)
	Minimum	4 bar g (58 psi g)
Recommended Operating Temperature	Maximum	30°C (86°F)
	Minimum	1.5°C (35°F)

For flow rates at other pressures, apply the factor shown

Line Pressure	bar g	4	5	6	7	8	9	10
	psi g	58	73	87	100	116	131	145
Correction Factor		1.60	1.33	1.14	1	0.89	0.80	0.73

Product code	Connections		Flowrate @ 7 bar g (100 psi g)		Dimensions						Weight (approx.)	
	Inlet	Outlet	Inlet		Height		Width		Depth			
			l/s	cfm	mm	ins	mm	ins	mm	ins	kg	lbs
BAF010	1/4	3/8	6	13	343	13.5	207	8.15	136	5.35	1.4	3.1
BAF015	3/8	3/8	13	27	436	17.2	224	8.82	144	5.67	1.9	4.2
BAS2010*	1/2" Hose safety coupler	4x G1/4	10	21	410	16.2	460	18.1	246	9.7	8	18
BAS3015*	1/2" Hose safety coupler	5x G1/4	20	42	470	18.5	600	11.8	300	23.6	10	22
BAP015*	1/2" Hose safety coupler	3x 3/8	20	42	380	15	380	15	272	10.7	5.45	12

Breathing Air Purifiers with CO / CO_2 reduction

To reduce the following contaminants				
	Solid Particles	✓	Water Aerosols	✓
	Oil Aerosols	✓	Water Vapour	✓
	Oil Vapour	✓	Carbon Monoxide	✓
	Odours & Fumes	✓	Carbon Dioxide	✓

BA-DME012-080E

The Parker domnick hunter BA-DME range of Breathing Air Purifiers is ideal for point of use multiple personnel protection at medium flow rates. At the inlet, a General Purpose Filter removes particles, dirt and aerosols, followed immediately by a second stage High Efficiency Coalescing Filter to reduce oil and water content and a third stage Activated Carbon Filter to remove oil vapour and odours.
The fourth stage adsorption dryer, reduces the water vapour content of the compressed air (to -40°C pdp) and CO_2, NO and NO_2 levels to below the legal permissible limits. Downstream of the adsorption dryer, a catalyst converts carbon monoxide to carbon dioxide, again, to below the legal limits. A final Dust Filter captures any particulates carried over from the adsorption materials.

Features

- **6 Purification stages**
- **Use with any compressed air supply**

BAC-4015

The Parker domnick hunter BAC-4015 is a fully pneumatic, portable Breathing Air Purifier designed to provide complete protection for up to four personnel. Five purification stages will ensure the highest quality air that is free from particulate dusts, vapours, odours, carbon dioxide (CO_2) and carbon monoxide (CO). The flow rate is easily adjustable from a pressure regulator and monitored by inlet/outlet pressure gauges on the front facia.
The BAC-4015 is housed in an extremely strong and robust lockable case for total security.

Features

- **5 Purification stages**
- **Integral pressure regulator**
- **Portable**
- **Hours run meter**
- **Pneumatic control**
- **Use with any compressed air supply**

Technical Specifications

Dryer Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp		Electrical supply (standard)	Thread Connections	Noise Level
	bar g	psi g	bar g	psi g	°C	°F	°C	°F			dB (A)
BAC 4015	4	58	10	145	5	41	30	86	Pneumatic	BSPP	<75
BA DME-012E - BA DME-040E	4	58	16	232	5	41	30	86	230v/1ph/50Hz	BSPP	<75
BA DME-050E - BA DME-080E	4	58	13	188	5	41	30	86	230v/1ph/50Hz	BSPP	<75

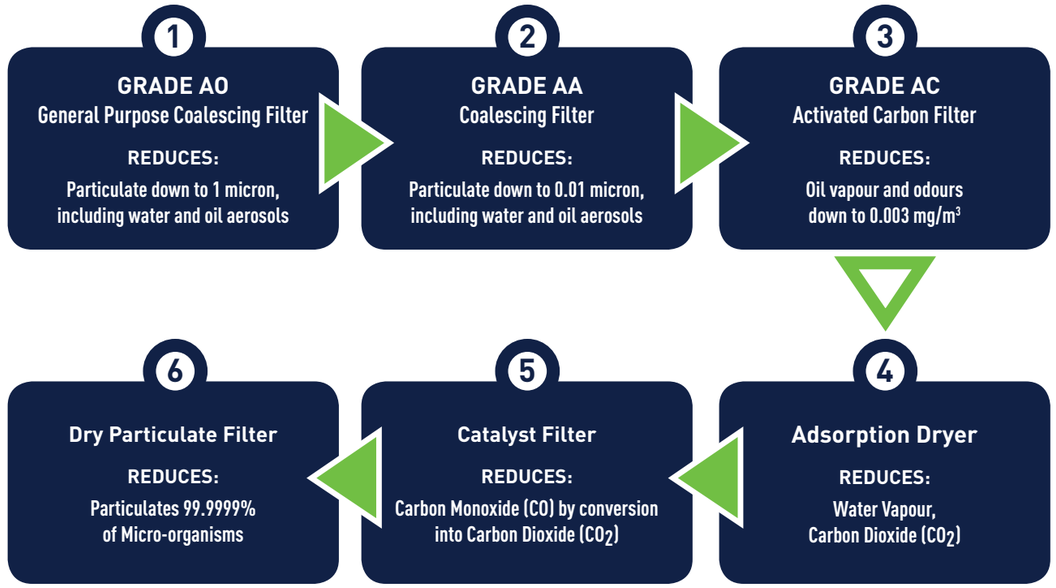
For flow rates at other pressures, apply the factor shown

												MODELS 012E - 040E only		
Line Pressure	bar g	4	5	6	7	8	9	10	11	12	13	14	15	16
	psi g	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor		1.60	1.33	1.14	1	0.89	0.80	0.73	0.67	0.62	0.57	0.54	0.5	0.47

Model	Connections		Flowrate @ 7 bar g (100 psi g)				Dimensions						Weight (approx.)	
	Inlet	Outlet	Inlet		Outlet		Height		Width		Depth			
			l/s	cfm	l/s	cfm	mm	ins	mm	ins	mm	ins	kg	lbs
BA-DME012E	G1/2	G3/8	11	24	9	19	1000	93.4	578	22.8	302	12	37	81.5
BA-DME015E	G1/2	G3/4	15	32	12	25	1197	47.1	480	18.9	302	12	42	93
BA-DME020E	G1/2	G3/4	20	42	15	33	1326	52.2	480	18.9	302	12	47	104
BA-DME025E	G1/2	G3/4	25	53	20	42	1527	60.1	480	18.9	302	12	52	115
BA-DME030E	G1/2	G3/4	31	65	24	52	1693	66.7	511	20.1	302	12	57	126
BA-DME040E	G3/4	G3/4	42	88	33	70	1941	76.4	545	21.5	302	12	74	163
BA-DME050E	G1	G1	50	106	40	84	1699	66.9	400	15.8	1200	47.2	210	463
BA-DME060E	G1	G1	61	130	49	104	1831	72.1	400	15.8	1200	47.2	222	490
BA-DME080E	G1	G1	83	176	66	140	2076	81.7	745	29.3	1200	47.2	279	615
BAC-4015	G1/2	G1/4	11	24	9	19	752	29.6	515	20.3	272	10.7	40	88.2

Breathing Air Purifiers with CO / CO_2 reduction

Model shown BA-DME015-E



BAM 10 - 70
How it works

The Parker domnick hunter BAM Breathing Air Purifiers consist of six purification stages mounted on a portable skid for high-capacity multiple personnel breathing air applications. At the inlet, a first stage water separator removes bulk water, followed immediately by a second stage high efficiency coalescing filter to reduce oil and water content and a third stage activated carbon filter to remove oil vapour and odours. The fourth stage adsorption dryer, reduces the water vapour content of the compressed air (to -40°C pdp) and CO_2, NO and NO_2 levels to below the legal permissible limits. Downstream of the adsorption dryer, a catalyst converts carbon monoxide to carbon dioxide, again, to below the legal limits. A final dust filter captures any particulates carried over from the adsorption materials.

1 **GRADE WS**
Water Separator
REDUCES:
Liquid water and oil in heavily contaminated compressed air systems

2 **GRADE AO**
General Purpose Coalescing Filter
REDUCES:
Particulate down to 1 micron, including water and oil aerosols

3 **GRADE AA**
Coalescing Filter
REDUCES:
Particulate down to 0.01 micron, including water and oil aerosols

4 Adsorption Dryer
REDUCES:
Water Vapour, Carbon Dioxide (CO_2)

5 Catalyst Filter
REDUCES:
Carbon Monoxide (CO) by conversion into Carbon Dioxide (CO_2)

6 Dry Particulate Filter
REDUCES:
Particulates 99.9999% of Micro-organisms

Special Features

Guaranteed reliability
Built to exaction standards, the BAM series is engineered to exceed breathing air certified standards. As standard the BAM series are fitted with a CO monitor meaning that there are no high - priced additional expenses or delays to arrange external monitor fitting.

Certified air quality
The air quality produced by BAM series has been certified by a 3rd party independent authority test house. The air quality delivered by the BAM series is better than the European Pharmacopoeia standard, assuring guaranteed performance and reliability at all times.

Compact operation
The BAM series has a modular space saving footprint making it one of the most compact product series on the market. The BAM series has an energy management system fitted as standard, offering additional savings for running costs.

Simple maintenance and servicing
The BAM series has been designed with cartridges for the catalyst separation. This will ensure longer maintenance intervals which ultimately save time and servicing costs.

Ease of installation
The BAM series can be used with a general compressed air supply, and with most suitably rated compressors.

Technical Specifications BAM

Flow Data

Model	Connections		Flowrate @ 7 bar g (100 psi g)				Dimensions						Weight (approx.)	
	Inlet	Outlet	Inlet		Outlet		Height		Width		Depth			
			l/s	cfm	l/s	cfm	mm	ins	mm	ins	mm	ins	kg	lbs
BAM10	G2”	G2”	113	240	90.4	192	1797	70.7	1260	49.6	1655	65.2	600	1322.8
BAM20	G2”	G2”	170	360	136	288	1797	70.7	1260	49.6	1655	65.2	700	1543.2
BAM30	G2”	G2”	213	450	170.4	360	2042	80.4	1260	49.6	1655	65.2	800	1763.7
BAM40	G2”	G2”	283	600	226.4	480	2042	80.4	1260	49.6	1655	65.2	900	1984.2
BAM50	G2½”	G2½”	354	750	283.2	600	2042	80.4	1260	49.6	1950	76.8	1100	2425.1
BAM70	G2½”	G2½”	496	1050	396.8	840	2042	80.4	1260	49.6	1950	76.8	1400	3086.5

Stated flows are for operation at 7 bar g (100 psi g / 0.7 MPa g) with reference to 20ºC, 1 bar a, 0% relative water vapour pressure.

Performance

Dryer Model	Pressure Dewpoint (Standard)		ISO 8573-1:2010 Water Classification
	°C	°F	(Standard)
All Models	-40	-40	Class 2

ISO 8573-1 classifications apply when the dryer is installed with the filtration supplied

Operating Data

Dryer Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp		Electrical supply (standard)	Thread Connections	Noise Level
	bar g	psi g	bar g	psi g	°C	°F	°C	°F			dB (A)
BAM	4	58	13	188	5	41	30	86	85 - 265 V 1ph 50/60Hz	BSPP	<75

Selecting the correct purifier

Parker 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 of the risk to the user is carried out. This should not only identify the risk of contamination to the breathing air supply, but also the level of contamination. In the event of being unable to either remove or control the contamination 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, the delivered air flow rate must be sufficient to meet the foreseeable needs of the total number of users at their maximum work rate consumption.

Peak Inhalation Rate

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 is provided to the user.

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

Source BS4275 : 1997.

Breathable Air Purity Test Kit

How clean is your breathing air?
Air quality testing for compressed air systems

The Parker domnick hunter Breathing Air Purity Test Kit (APTK1) allows for a convenient ‘on the spot’ indication of compressed air quality. This comprehensive test kit is compact and easy to use, to indicate the level of contamination, both upstream and downstream of purification equipment.

The APTK1 is supplied complete with oil aerosol, water vapour CO and CO_2 test tubes to allow immediate multiple testing.

In addition to the detection of compressed air contaminants listed below, the Parker domnick hunter APTK1 also features an oxygen analyser, allowing for constant real-time display of the oxygen content within the compressed air system.

The Parker domnick hunter APTK1 is not only suitable for industrial compressed air testing but also, the additional O_2 analysing feature enables compressed air lines that supply Breathing Air / Respiratory Protection Equipment (RPE) to be tested to the latest national and international standards.

Air Content Measurables

- **Oxygen**
- **CO**
- **CO_2**
- **Water Vapour**
- **Mineral Oil**

Features / Benefits

- **Lightweight and portable test kit in a robust carry case**
- **Digital oxygen content monitoring**
- **Allows simultaneous testing of upstream and downstream air purity**
- **Testing quality of breathing air to national and international standards**
- **Can be used at compressed air pressures up to 10 bar g (145psi g)**
- **Factory set for use with ‘Gastec Ltd’ detection tubes**

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Our fleet comprises of PHEV and Euro 6 compliant vehicles.

We design, build and supply Electronic, Pneumatic, Hydraulic, Filtration, Controls and Systems.

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