



Breathing Air Purifiers

Comply with European Pharmacopoeia
and International Breathing Air Standards

ENGINEERING YOUR SUCCESS.

Parker 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**
- **Vapours**
- **Solid particles**
- **Oil**
- **Gases**
- **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.

Parker 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, Parker domnick hunter offers unrivalled experience in the design and manufacture of air treatment equipment.

With Parker 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, Parker 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 Parker 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 Vapour | X |
| | Oil Vapour | ✓ | Carbon Monoxide | X |
| | Odours & Fumes | ✓ | Carbon Dioxide | X |



BA-PAC

The BA-PAC is a personal breathing air purifier which uses activated carbon to remove odours and tastes, when breathing from a compressed air system. Comprising of a lightweight activated carbon filter cartridge, housing and continuous flow adjustable regulator, the BA-PAC delivers controlled breathable air to the user's hood, visor or mask. OIL-X EVOLUTION Grade AA pre-filtration is also recommended.



BA-2006 and BA-2013

The Parker domnick hunter BA-2006 and BA-2013 two stage point of use breathing air filter sets are supplied complete with mounting brackets. These combine high efficiency coalescing pre-filtration elements with odour removal, activated carbon elements in two stage housings.

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



BA-4350 and BA-1400

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

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

The BA-1400 also includes a water separator for the removal of bulk liquids and is available with an optional CO monitor.



BAFP-064B and BAFP-170B

For higher flow, stationary applications, Parker 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-1400 and are supplied with a CO monitor.

| Features | BA-PAC | BA-2006/BA-2013 | BA-4350 | BA-1400/B | BAFP |
|---------------------------------------|--------|-----------------|---------|-----------|------|
| Purification Stages | 1 | 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 | - | - | - | † | † |

• = optional † = if fitted with a CO monitor

Breathing Air Purifiers incorporating CO or CO₂ reduction

| | | | | |
|--|---------------------------|---|------------------------|---|
| To treat the following contaminants | Solid Particles | ✓ | Water Mists | ✓ |
| | Oil Mists | ✓ | Water Vapour | ✓ |
| | Oil Vapour | ✓ | Carbon Monoxide | ✓ |
| | Odours & Fumes | ✓ | Carbon Dioxide | ✓ |

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

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

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



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 Parker 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 utilise 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 vapour, CO₂, oil vapour and odours. In addition, a catalyst bed for the oxidation of carbon monoxide (CO) to carbon dioxide (CO₂) by catalytic conversion completes the purification stages.

| Features | 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 | ✓ | ✓ | ✓ | ✓ | ✓ |
| Intraged CO Monitor | - | ✓ | - | ✓ | ✓ |
| Electrical supply required | - | † | - | ✓ | ✓ |

† = if fitted with a CO monitor

Breathing Air Purifiers incorporating CO or 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 medicines 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, nebulisers and many more, where the quality of the air is vitally important.

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

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

The European Pharmacopoeia Standard

| Features | European Pharmacopoeia | Parker Domnick Hunter BA DM/BAM range* |
|---|--|--|
| Water | 67 ppm (= -45°C atmospheric dewpoint) | 14 ppm (= -58°C atmospheric dewpoint) |
| Oil / Lubricant | 0.1 mg/m ³ | 0.003 mg/m ³ |
| Carbon Dioxide (CO ₂) *1 | < 500 ppm | < 500 ppm |
| Carbon Monoxide (CO) *2 | < 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 Parker domnick hunter by

PATTINSON
SCIENTIFIC SERVICES

The Parker domnick hunter BA-DME and BAM ranges comply with the European Pharmacopoeia medical air standard



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 vapour and oil vapour/odours respectively. The desiccant material is contained in a pressure swing adsorption dryer that delivers a constant pressure dewpoint of -40°C (-40°F).

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

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 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.

Breathing Air Standards

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

- | | | | |
|-----------------|-------------------------------|----------------------|--------------------|
| • Europe | EN12021 | • Canada | Z180.1-00 |
| • UK | BS4275 : 1997 | • Australia | AS/NZS 1715 : 1994 |
| • USA | CGA G7.1-1997 OSHA-Grade D | • 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 | |
|-----------|----------------------|-----|
| | l/min | cfm |
| Low | 100 | 3.6 |
| Medium | 150 | 5.3 |
| High | 200 | 7.1 |
| Very High | 250 | 8.9 |

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.

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

| | Solid Particles | Oil Mist | Odours Oil | Pressure Dew-Point | CO | CO ₂ | NO+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°C | <5ppm | <500ppm | N/A | N/A |

NOTE:

Parker 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.

Technical Specifications

| | | BA-PAC, BA-2006, BA-2013, BA-2010, BAP-2010, BA-1400, BAFP-064/170 | BA-DME012 - 40 | BA-DME050 - 080 | BAM102 - 110 |
|-----------------------------------|---------|--|----------------------|----------------------|------------------------|
| Operation Pressure | Maximum | 10 bar g (145 psi g) | 16 bar g (232 psi g) | 13 bar g (189 psi g) | 10.5 bar g (152 psi g) |
| | Minimum | 4 bar g (58 psi g) | 4 bar g (58 psi g) | 4 bar g (58 psi g) | 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 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------------|-------|------|------|------|-----|------|------|------|------|------|------|------|------|------|
| | psi g | 58 | 73 | 87 | 100 | 116 | 131 | 145 | 160 | 174 | 189 | 203 | 218 | 232 |
| 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 Rate @ 7 bar g (100 psi g) | | | | Dimensions | | | | | | Weight (approx.) | |
|--------------|-------------------------------|----------------------------------|---------------------------------|-----|--------|-----|------------|------|-------|------|-------|------|------------------|------|
| | Inlet | Outlet | Inlet | | Outlet | | Height | | Width | | Depth | | kg | lbs |
| | | | l/s | cfm | l/s | cfm | mm | ins | mm | ins | mm | ins | | |
| BA-PAC* | G ¹ / ₄ | G ¹ / ₄ | 5* | 10* | 5* | 10* | 201 | 7.9 | 95 | 3.8 | N/A | N/A | 0.17 | 0.37 |
| BA-2006 | G ¹ / ₄ | G ³ / ₈ | 6 | 13 | 6 | 13 | 276 | 10.9 | 200 | 7.9 | 110 | 4.3 | 1.2 | 2.6 |
| BA-2013 | G ³ / ₈ | G ³ / ₈ | 13 | 27 | 13 | 27 | 322 | 12.7 | 179 | 7.0 | 117 | 4.6 | 1.4 | 3.1 |
| BA-4350 | G ¹ / ₂ | 4x G ¹ / ₄ | 23 | 49 | 23 | 49 | 410 | 16.1 | 460 | 18.1 | 246 | 9.7 | 8 | 18 |
| BA-1400B | G ³ / ₈ | 4x G ¹ / ₄ | 23 | 49 | 23 | 49 | 470 | 18.5 | 600 | 23.6 | 300 | 11.8 | 10 | 22 |
| BAFP-064B | G ¹ / ₂ | 4x G ³ / ₈ | 30 | 64 | 30 | 64 | 650 | 25.6 | 535 | 21.1 | 170 | 6.7 | 21 | 46 |
| BAFP-170B | G ¹ / ₂ | 8x G ³ / ₈ | 80 | 170 | 80 | 170 | 850 | 33.5 | 605 | 23.8 | 200 | 7.9 | 30 | 65 |

*BA-PAC Flow is at 3.0 bar g(44 psi g)

| Product code | Connections | | Flow Rate @ 7 bar g (100 psi g) | | | | Dimensions | | | | | | Weight (approx.) | |
|--------------|--------------------------------|----------------------------------|---------------------------------|-----|--------|-----|------------|------|-------|------|-------|------|------------------|------|
| | Inlet | Outlet | Inlet | | Outlet | | Height | | Width | | Depth | | kg | lbs |
| | | | l/s | cfm | l/s | cfm | mm | ins | mm | ins | mm | ins | | |
| BA-2010 | G ¹ / ₂ | 3x G ¹ / ₄ | 11 | 24 | 9 | 19 | 610 | 24.0 | 450 | 17.7 | 270 | 10.6 | 37 | 82 |
| BAP-2010 | G ¹ / ₂ | 3x G ¹ / ₄ | 11 | 24 | 9 | 19 | 947 | 37.3 | 416 | 16.4 | 460 | 18.1 | 50 | 110 |
| BA-DME012 | G ¹ / ₂ | G ³ / ₈ | 11 | 24 | 9 | 19 | 952 | 37.5 | 476 | 18.7 | 302 | 11.9 | 38 | 84 |
| BA-DME015 | G ¹ / ₂ | G ³ / ₄ | 15 | 32 | 12 | 25 | 1211 | 47.7 | 490 | 19.3 | 302 | 11.9 | 43 | 95 |
| BA-DME020 | G ¹ / ₂ | G ³ / ₄ | 19 | 42 | 15 | 33 | 1376 | 54.2 | 490 | 19.3 | 302 | 11.9 | 48 | 106 |
| BA-DME025 | G ¹ / ₂ | G ³ / ₄ | 25 | 53 | 20 | 42 | 1541 | 60.7 | 490 | 19.3 | 302 | 11.9 | 53 | 117 |
| BA-DME030 | G ¹ / ₂ | G ³ / ₄ | 31 | 65 | 24 | 52 | 1707 | 67.2 | 521 | 20.5 | 302 | 11.9 | 58 | 128 |
| BA-DME040 | G ³ / ₄ | G ³ / ₄ | 40 | 88 | 33 | 70 | 1960 | 77.2 | 732 | 28.8 | 447 | 17.6 | 74 | 164 |
| BA-DME050 | G1 | G1 | 50 | 106 | 40 | 84 | 1750 | 68.9 | 400 | 15.8 | 1200 | 47.2 | 211 | 466 |
| BA-DME060 | G1 | G1 | 61 | 130 | 49 | 104 | 1916 | 75.4 | 400 | 15.8 | 1200 | 47.2 | 224 | 494 |
| BA-DME080 | G1 | G1 | 80 | 176 | 66 | 140 | 2076 | 81.7 | 745 | 29.3 | 1200 | 47.2 | 279 | 615 |
| BAM102 | G1 ¹ / ₂ | G2 | 76 | 160 | 63 | 134 | 1780 | 70.1 | 912 | 35.9 | 1352 | 53.2 | 444 | 979 |
| BAM103 | G1 ¹ / ₂ | G2 | 113 | 240 | 95 | 202 | 1780 | 70.1 | 912 | 35.9 | 1352 | 53.2 | 489 | 1078 |
| BAM104 | G2 | G2 | 151 | 320 | 127 | 269 | 1780 | 70.1 | 912 | 35.9 | 1462 | 57.6 | 561 | 1237 |
| BAM105 | G2 | G2 | 189 | 400 | 159 | 337 | 1780 | 70.1 | 912 | 35.9 | 1562 | 61.5 | 598 | 1319 |
| BAM106 | G2 | G2 ¹ / ₂ | 227 | 480 | 190 | 404 | 1780 | 70.1 | 912 | 35.9 | 1800 | 70.9 | 689 | 1519 |
| BAM107 | G2 | G2 ¹ / ₂ | 264 | 560 | 222 | 471 | 1780 | 70.1 | 912 | 35.9 | 1900 | 74.8 | 746 | 1645 |
| BAM108 | G2 | G2 ¹ / ₂ | 302 | 640 | 254 | 539 | 1780 | 70.1 | 912 | 35.9 | 2000 | 78.7 | 829 | 1828 |
| BAM110 | G2 ¹ / ₂ | G2 ¹ / ₂ | 378 | 800 | 318 | 674 | 1780 | 70.1 | 912 | 35.9 | 2200 | 86.6 | 1009 | 2225 |

High Pressure Breathing Air Purifiers incorporating CO and CO₂ reduction

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

| Product code | Connections | | Flow Rate @ 7 bar g (100 psi g) | | | | | | Dimensions | | | | | | Weight (approx.) | |
|--------------|-------------------------------|-------------------------------|---------------------------------|-----|--------------------|--------|-----|--------------------|------------|------|-------|------|-------|-----|------------------|-----|
| | Inlet | Outlet | Inlet | | | Outlet | | | Height | | Width | | Depth | | kg | lbs |
| | | | l/s | cfm | m ³ /hr | l/s | cfm | m ³ /hr | mm | ins | mm | ins | mm | ins | | |
| HPBA-05 | G ³ / ₈ | G ³ / ₈ | 5 | 10 | 18 | 5 | 10 | 18 | 651 | 25.6 | 232 | 9.1 | 110 | 4.3 | 11 | 25 |
| HPBA-10 | G ³ / ₈ | G ³ / ₈ | 10 | 20 | 36 | 10 | 20 | 36 | 883 | 34.8 | 232 | 9.1 | 110 | 4.3 | 13 | 29 |
| HPBA-20 | G ³ / ₈ | G ³ / ₈ | 19 | 40 | 68 | 19 | 40 | 68 | 1377 | 54.2 | 232 | 9.1 | 110 | 4.3 | 16 | 36 |
| HPBA-40 | G ³ / ₈ | G ³ / ₈ | 38 | 80 | 136 | 38 | 80 | 136 | 1377 | 54.2 | 363 | 14.3 | 110 | 4.3 | 28 | 62 |

For flow rates at other pressures, apply the factor shown

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

Breathing Air Purifiers options and accessories



CO Monitor

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

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



Air Purity Test Kit

The Parker 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 use 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 10.5 bar g (152 psi g)
- Factory set for use with 'Gastec Ltd' gas detection tubes

Supplied with oil and water test tubes; ¼" & ½" 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.

If you would like more information about Parker domnick hunter products please visit: www.domnickhunter.com, Email: dhindsales@parker.com or contact your local Parker domnick hunter representative.



Respiratory Protection
For Spray Painting
17 400 4820



Respiratory Protection
For Tank Cleaning
17 400 4821



Respiratory Protection
For Hazardous Environments
17 400 4822



Respiratory Protection
For Asbestos Environments
17 400 4823



Respiratory Protection
For Oil & Gas Industry
17 400 4824