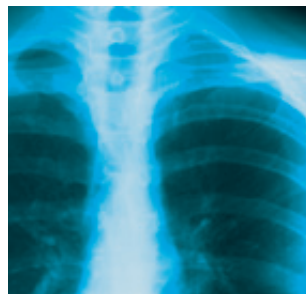




## Breathable Compressed Air BA-DME012E ~ BA-DME080E



ENGINEERING YOUR SUCCESS.



## 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**
- **Micro-organisms**
- **Atmospheric dirt**
- **Water vapour**
- **Condensed liquid water**
- **Water aerosols**
- **Oil vapour**
- **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
- Shot blasting
- 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	BA Purifier 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 <sup>3</sup>	< 1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>		0.003 mg/m <sup>3</sup>
Carbon Dioxide (CO <sub>2</sub> )	< 1000 ppm	< 500 ppm	< 500 ppm		< 500 ppm
Carbon Monoxide (CO)	< 10 ppm	< 5 ppm	< 5 ppm		< 5 ppm
Nitrogen Oxides (NO + NO <sub>2</sub> )			< 2 ppm		< 2 ppm
Sulphur Dioxide (SO <sub>2</sub> )			< 1 ppm		< 1 ppm

# BA-DME

## How it works

5

5

Parker BA-DME Breathing Air Purifiers consist of six purification stages

3

1

2



**1**  
General Purpose Coalescing Filter  
REDUCES:  
Particulate down to 1 micron / water & oil aerosols down to 0.5 mg/m<sup>3</sup>

**2**  
High Efficiency Coalescing Filter  
REDUCES:  
Particulate down to 1 micron / water & oil aerosols down to 0.5 mg/m<sup>3</sup>

**3**  
Activated Carbon Filter  
REDUCES:  
Oil vapours and odours down to 0.003 mg/m<sup>3</sup>



4

Adsorption Dryer  
REDUCES:  
Water Vapour and  
Carbon Dioxide (CO<sub>2</sub>)

5

Catalyst Filter  
REDUCES:  
Carbon Monoxide (CO)  
by conversion into  
Carbon Dioxide (CO<sub>2</sub>)

6

Dry Particulate Filter  
REDUCES:  
Particulates & Micro-  
organisms with an efficiency  
of 99.9999%

## BA-DME Performance

BA Purifier Models	Dewpoint (Standard)		ISO8573-1:2010 Classification (Standard)
	°C	°F	
BA-DME	-40	-40	Class 1.2.1

## Technical Data

BA Purifier Models	Minimum Operating Pressure		Maximum Operating Pressure		Minimum Operating Temperature		Maximum Operating Temperature		Maximum Ambient Temperature		Electrical Supply (Standard)	Thread Type	Noise Level dB(A)
	bar g	psi g	bar g	psi g	°C	°F	°C	°F	°C	°F			
BA-DME012E ~ BA-DME040E	4	58	16	232	5	41	30	86	55	131	230V / 1ph / 50~60Hz	BSPP	<75
BA-DME050E ~ BA-DME080E			13	189									

## Flow Rates

Model	Pipe Size		Inlet Flow Rate				Regeneration Air Requirement			
	Inlet	Outlet	L/s	m³/min	m³/hr	cfm	L/s	m³/min	m³/hr	cfm
BA-DME012E	G ½	G ¾	11	0.68	41	24	2	0.14	8	5
BA-DME015E	G ½	G ¾	15	0.92	55	32	3	0.18	11	6
BA-DME020E	G ½	G ¾	20	1.19	71	42	4	0.24	14	8
BA-DME025E	G ½	G ¾	25	1.50	90	53	5	0.30	18	11
BA-DME030E	G ½	G ¾	31	1.84	110	65	6	0.37	22	13
BA-DME040E	G ¾	G ¾	41	2.49	149	88	8	0.50	30	18
BA-DME050E	G1	G1	50	3.01	180	106	10	0.60	36	21
BA-DME060E	G1	G1	61	3.69	221	130	12	0.74	44	26
BA-DME080E	G1	G1	83	4.99	299	176	17	1.00	60	35

Stated flows are for operation at 7 bar (g) [102 psi g] with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other conditions, apply the correction factors shown below.

## Product Selection & Correction Factors

For correct operation, breathing air purifiers must be sized using for the maximum (summer) inlet temperature, minimum inlet pressure required and maximum flow rate of the installation.

To select a breathing air purifier, first calculate the MPC (Minimum Purification Capacity) using the formula below then select a breathing air purifier from the flow rate table above with a flow rate equal to or above the MPC.

**Minimum Drying Capacity = System Flow x CFMIT x CFMIP**

### CFMIT - Correction Factor Maximum Inlet Temperature

Maximum Inlet Temperature	°C	25	30
	°F	77	86
Correction Factor		1.00	1.20

### CFMIP - Correction Factor Minimum Inlet Pressure

Minimum Inlet Pressure	bar g	4	5	6	7	8	9	10	11	12	13	14	15	1613
	psi g	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor		1.60	1.33	1.14	1.00	0.89	0.80	0.73	0.67	0.62	0.57	0.54	0.50	0.47

## Controller Functions

BA Purifier	Controller Function							
	Power On Indication	Visual Fault Indication	Dewpoint Display	Energy Saving Technology	Filter Service Indicator	Dryer Service Indicator	Fault Relay: Power Loss Dewpoint Alarm Sensor Failure	4-20mA Dewpoint Re-transmission
BA-DME	•	•						

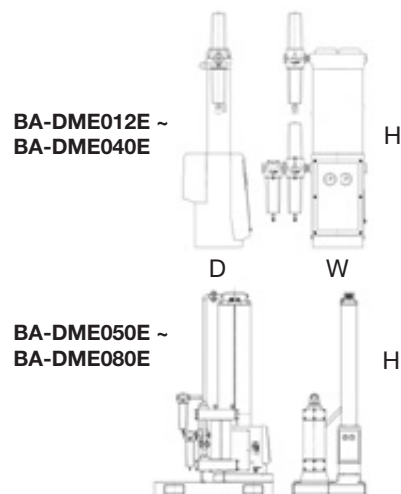
## Included Filtration

Model	Dryer Inlet			Dryer Outlet	
	General Purpose Pre-filter	High Efficiency Filter	Oil Vapour Reduction Filter	General Purpose Dry Particulate Filter	High Efficiency Dry Particulate Filter
BA-DME012E ~ BA-DME080E	•	•	•		•

Filtration Performance	General Purpose Pre-filter	High Efficiency Filter	Oil Vapour Reduction Filter	General Purpose Dry Particulate Filter	High Efficiency Dry Particulate Filter
Filtration Grade	Grade AO	Grade AA	AC	-	Grade AA
Filtration Type	Coalescing	Coalescing	Adsorption	-	Coalescing
Particle Reduction (inc water & oil aerosols)	Down to 1 micron	Down to 0.01 micron	N/A	-	Down to 0.01 micron
Maximum Remaining Oil Aerosol Content at 21°C	≤0.5 mg/m <sup>3</sup> (≤0.5 ppm(w))	≤0.01 mg/m <sup>3</sup> (≤0.01 ppm(w))	N/A	-	N/A
Maximum Remaining Oil Vapour Content at System Temperature	N/A	N/A	≤0.003 mg/m <sup>3</sup> (≤0.003 ppm(w))	-	N/A
Filtration Efficiency	99.925%	99.9999%	N/A	-	99.9999%

## Weights & Dimensions

Model	Pipe Size		Dimensions						Weight	
	Inlet	Outlet	Height (H)		Width (W)		Depth (D)		kg	lbs
			mm	ins	mm	ins	mm	ins		
BA-DME012E	G1/2	G 3/8	1000	93.4	578	22.8	302	12	37	81.5
BA-DME015E	G1/2	G3/4	1197	47.1	480	18.9	302	12	42	93
BA-DME020E	G1/2	G3/4	1326	52.2	480	18.9	302	12	47	104
BA-DME025E	G1/2	G3/4	1527	60.1	480	18.9	302	12	52	115
BA-DME030E	G1/2	G3/4	1693	66.7	511	20.1	302	12	57	126
BA-DME040E	G3/4	G3/4	1941	76.4	545	21.5	302	12	74	163
BA-DME050E	G1	G1	1699	66.9	400	15.8	1200	47.2	210	463
BA-DME060E	G1	G1	1831	72.1	400	15.8	1200	47.2	222	490
BA-DME080E	G1	G1	2076	81.7	745	29.3	1200	47.2	279	615



## Quality Assurance / IP Rating / Pressure Vessel Approvals

Development / Manufacture	ISO 9001 / ISO 14001
Ingress Protection Rating	IP55 Indoor Use Only
EU	Pressure vessel approved for fluid group 2 in accordance with the Pressure Equipment Directive 2014/68/EU
USA	Approval to ASME VIII Div. 1 not required
AUS	Approval to AS1210 not required
GUS	TR (formerly GOST-R)
For use with Compressed Air Only	

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