

# The Breather Box®

*The Industry Standard in Grade-D Air Filtration*

## What is Grade-D Air Quality?

Breathing air quality standards have been developed by ANSI / Compressed Gas Association (CGA) G-7.1 - 1989, and adopted by OSHA under their respiratory standard 29 CFR, 1910.134.

### Air Quality Must Meet or Exceed The Following Requirements:

- Oxygen: 19.5%-23.5% (20%-22% Canada)
- Hydrocarbon (condensed oil) 5 mg/m<sup>3</sup> maximum (<1Mg/m<sup>3</sup> in Canada)
- Carbon Monoxide (CO): 10 ppm maximum (5 ppm in Canada)
- Carbon Dioxide (CO<sub>2</sub>): 1000 ppm maximum (500 ppm in Canada)
- Odor: No noticeable tastes or smells
- Water Content:
  - High pressure cylinder air must have a dew point of at least -50° F (-45.6° C) at 1 atmosphere (14.7 psi).
  - Low pressure breathing air must have a dew point of at least 10° F (5.56° C) below the ambient temperature at 1 atmosphere (14.7 psi)
  - Canada: 5° C below lowest temperature, 27 ppm maximum water vapor
- Total Volatile Hydrocarbons (Canada): 5 ppm maximum



BB30-COPM - 2 Worker  
Grade-D Air Filtration Panel

### The Breather Box® - Portable Grade-D Air Filtration

Model No.	Description
BB15-CO	15 cfm Breather Box®, CO monitor (30 cfm flow capacity) - 1 coupling
BB30-CO	30 cfm Breather Box®, CO monitor (48 cfm flow capacity) - 2 couplings
BB50-CO	50 cfm Breather Box®, CO monitor (79 cfm flow capacity) - 4 couplings
BB100-CO	100 cfm Breather Box®, CO monitor (123 cfm flow capacity) - 4 couplings
BB100-CO8	100 cfm Breather Box®, CO monitor (123 cfm flow capacity) - 8 couplings

Please specify 1/4" Hansen style or Schrader style fittings when ordering.  
Other fittings available for an additional charge.

### Grade-D Air Filtration - Panel Mounted

Model No.	Description
BB15-COPM	15 cfm Grade-D breathing air panel with CO monitor (30 cfm flow capacity) - 1 coupling
BB30-COPM	30 cfm Grade-D breathing air panel with CO monitor (48 cfm flow capacity) - 2 couplings
BB50-COPM	50 cfm Grade-D breathing air panel with CO monitor (79 cfm flow capacity) - 4 couplings
BB100-COPM	100 cfm Grade-D breathing air panel with CO monitor (123 cfm flow capacity) - 4 couplings

Please specify 1/4" Hansen style or Schrader style fittings when ordering.  
Other fittings available for an additional charge.

### Airline Monitor Calibration Kits

Model No.	Description
BBK-20	Calibration kit for CO monitor - 20 ppm CO, zero air, regulator, tubing, and hard case - 17 liter size disposable cylinders
BBK-10	Calibration kit - same as above with 10 ppm CO gas for Canada

## Custom Filtration Models Up To 2,200 CFM

### Sizing a Type-C / CE Airline Filtration System

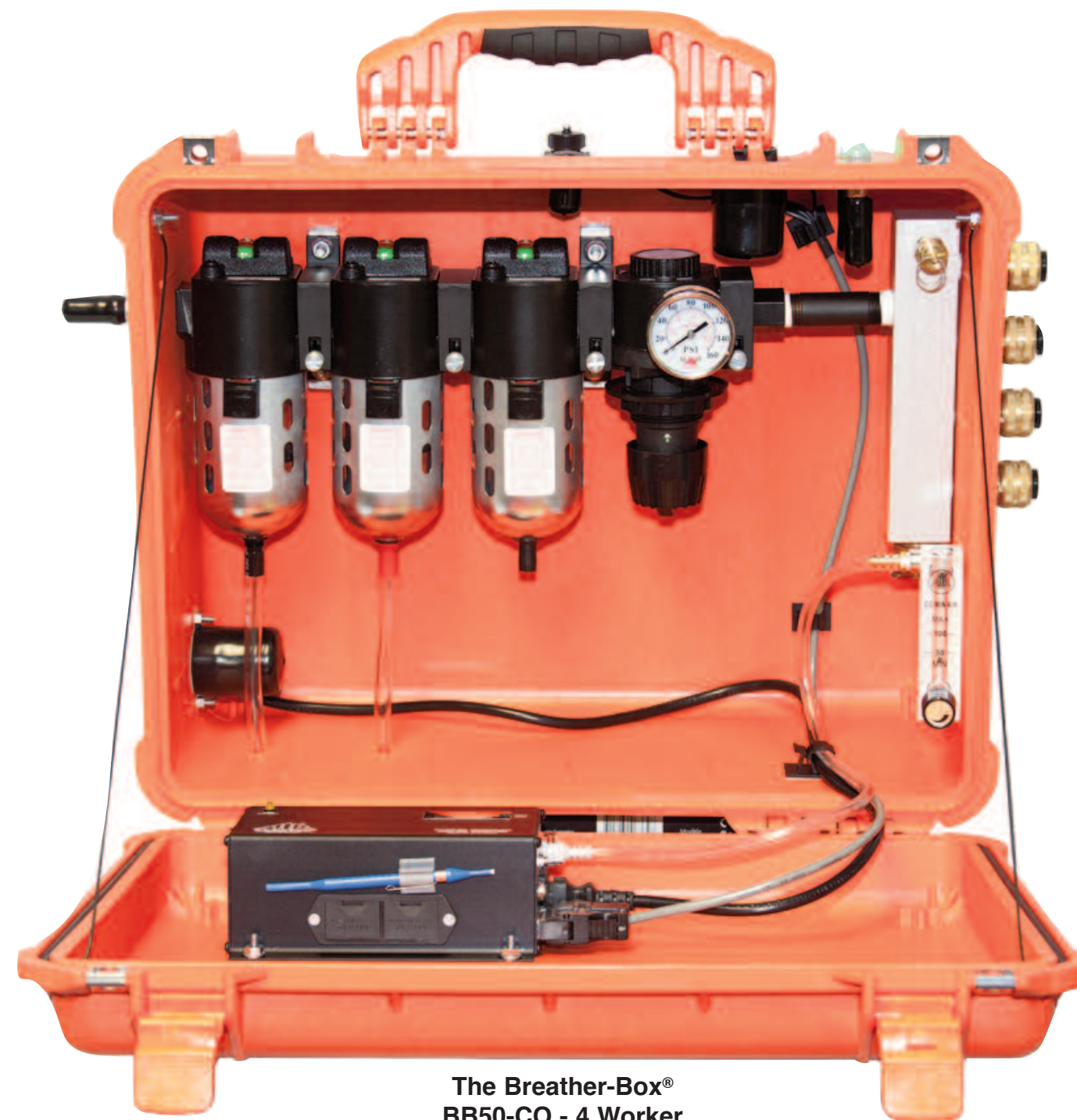
All of Air Systems' filtration products are designed to flow the NIOSH maximum amount of air a worker's respirator could demand. **NEVER** undersize a filtration system.

Air Consumption (CFM) and Pressure (PSI) ranges for representative types of respirators are listed below:

Pressure Demand	4 - 15 cfm @	60 - 120 psi
Constant Flow Half/Full Mask	4 - 15 cfm @	4 - 30 psi
Constant Flow Hood (Low Pressure)	6 - 15 cfm @	3 - 15 psi
Constant Flow Hood (High Pressure)	6 - 15 cfm @	25 - 110 psi
Vortex Cooling Tube (Option)*	15 - 25 cfm @	60 - 110 psi

\*If a vortex cooling or heating tube is used by the worker, the total air consumed is calculated by the air consumption of the vortex device.

# Grade-D Air Filtration Comparison Guide



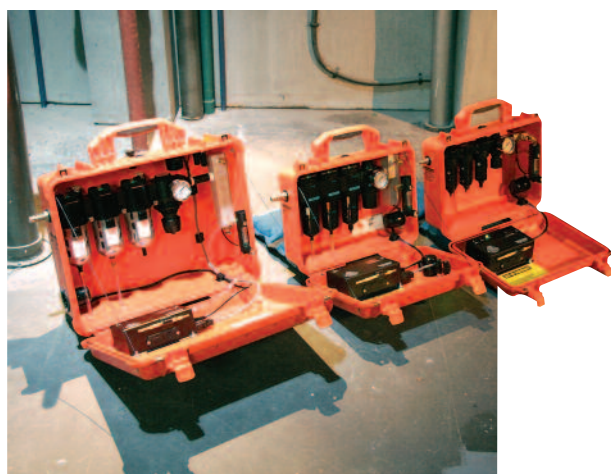
The Breather-Box®  
BB50-CO - 4 Worker



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*The Industry Leader in Breathing Air Filtration & Portable Ventilation*





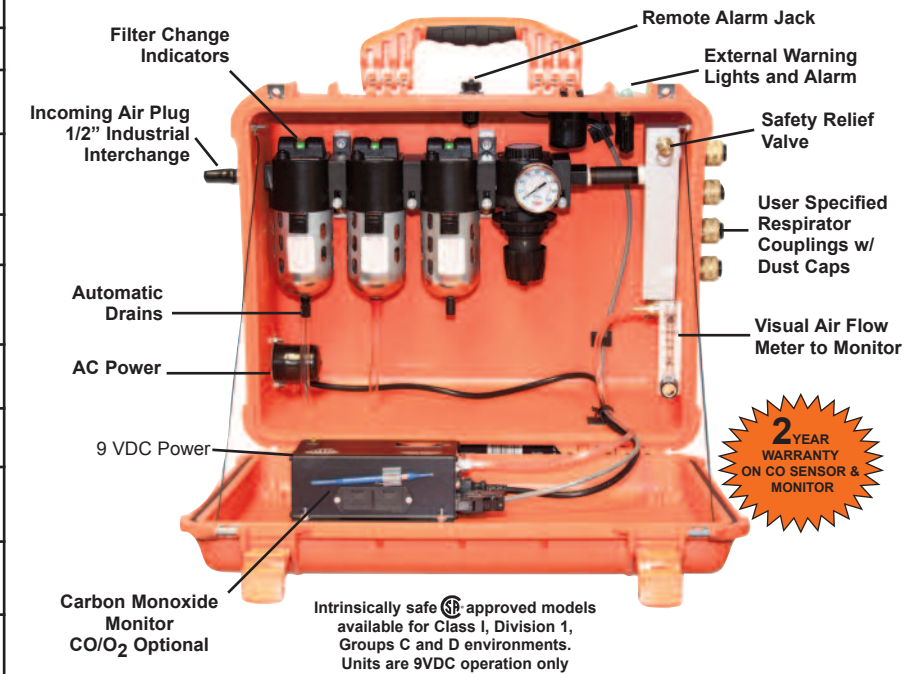
# Grade-D Air Filtration Systems Industry Comparison Chart



Manufacturer	Air Systems Breather Box®	3M/MST Respiratory Protector®	Allegro Carry Air™	North/Sperian/Honeywell Filtration Panel	Bullard Clean Air Box
Feature					
Calibration Time	1 minute calibration	3 minute calibration	2 minute calibration	2 minute calibration	3 minute calibration
Standard Models Offered (CFM)	15, 30, 50, 75, 100, 150	50, 100	15, 30, 60, 100	60, 100	15, 30, 50, 100
Custom Filtration Sizes and Options	Yes - Up to 3000 cfm	Yes - Up to 600 cfm	NO	NO	NO
Steel Panel Mount Version	Yes	Yes	No - Steel Bracket only	No - Steel Bracket only	Yes
Available with Independent Regulators	Yes - all models	NO	Yes - 60 cfm unit only	Yes - 60 cfm unit only	Yes - 30, 50, & 100 cfm models
Available with Automatic Back-up reserve air system	Yes - all models Either electric or pneumatic versions	NO	NO	NO	NO
CFM Filtration Claim in CFM	Claim 50 cfm	Claim 50 cfm	Claim 60 cfm	Claim 60 cfm	Claim 50 cfm
CFM Filtration Actual flow in CFM * (Pressure Drop @ 100 psi)	Actual 79 cfm 3 psi pressure drop	Actual 50 cfm 30 psi pressure drop	Actual 48 cfm 5-8 psi pressure drop	Actual 48 cfm 5-8 psi pressure drop	Actual 79 cfm 3 psi pressure drop
Automatic Drains	Yes - 1st and 2nd Stage	Yes - 1st Stage Only	Yes - 1st Stage Only	Yes - 1st Stage Only	Yes - 1st and 2nd Stage
Filter Change Indicators	Yes - all three filter stages	NO	Yes - 2nd and 3rd filter	Yes - 2nd and 3rd filter	Yes - all three stages
Power Options Supplied	9vdc, 12 vdc jack, 115/220 vac	9vdc, 115vac	9 vdc, 115 vac adapter not approved for outdoor use	9 vdc, 115 vac adapter not approved for outdoor use	8 AA batteries, 115 vac
Intrinsically Safe CO Monitor Option CSA certified	Yes - available on all models	Yes	NO	NO	NO
CO and Oxygen (O2) Monitor Option CSA Certified Intrinsically Safe	Yes - available on all models	Yes	NO	NO	NO
RF/EMI Shielding with aluminum case	Yes - all models	NO	NO	NO	NO
CO Monitor Warranty	2 years	1 Year	1 Year	1 Year	1 Year
CO Sensor Warranty	2 years	2 years	2 years	2 years	2 years
Monitor Operating Temperature Range	4° - 113°F (15° - 45°C)	68° - 150° F (20 - 65°C)	32° - 149°F (0° - 65°C)	32° - 149°F (0° - 65°C)	4° - 122°F (-20° - 50°C)
Aluminum Block Air Manifold with Manual Drain Valve	Yes - all models with fittings	No	No - 100 cfm model only	No - 100 cfm model only	Yes - all models with fittings
External Lights and Audible Alarm for High CO	Yes	Yes	Yes	Yes	Yes
Optional Built-in Low Pressure Alarm	Yes	Yes	NO	NO	Yes - supplied standard
Remote Alarm Jack	Yes	Yes	Yes	Yes	Yes
Certified Air Quality Test Provided with Each New Unit	Yes	NO	NO	NO	NO

**High Performance Grade-D Breathing Air Filtration Systems**  
Connected to a mobile or plant compressor, the Breather Box® provides Grade-D breathing air for 1 to 8 users (based on model) and continuously monitors for Carbon Monoxide (CO).

## The Breather-Box® BB50-CO



\*NIOSH requires that each respirator wearer be supplied with 15 cfm of Grade-D Air at the manufacturer's required pressure.

Air Systems' portable and fixed breathing air filtration systems meet or exceed OSHA 1910.134, Canadian Z180.1 Breathing Air Standards and British Standard BS-EN 12021:1999 "Respiratory Protective Devices" for Grade-D air.