



# Respiratory Airline Safety Compliance

## The Breather Box® and Panel Grade-D Filtration

**Issues:** Compliance with breathing air quality standards for NIOSH Type C/CE airline respirators. Breathing air standards were developed by ANSI/Compressed Gas Association (CGA) G-7.1 - 1989 and adopted by OSHA under respiratory standard 29 CFR, 1910.134. The standard requires airline respirator wearers be supplied with Grade-D quality air.

**Compliance with Point-Of-Attachment (POA) requirement.** NIOSH Publication 87-116 states the POA is the location on a Grade-D air filtration system containing the air pressure regulator, the pressure gauge, safety relief valve and outlet manifold with compatible quick connect couplings.

**Solution:** Connected to a mobile or plant compressor, the Breather Box® or panel mounted unit filters compressed air to provide Grade-D breathing air while continuously monitoring for Carbon Monoxide (CO) to operate C/CE airline respirators. Sizing of the filtration system is based on the maximum flow (15 cfm) and the number of workers. Breather Boxes® are available up to 175 cfm to serve 1 to 8 workers. Panels are available up to 3000 cfm. Standard Breather Boxes® and panels are designed for use in non-hazardous locations and intrinsically safe certified units are available for hazardous locations and IDHL environments. CO/O<sub>2</sub> units are also available for non-hazardous & hazardous locations.

**Compliance:** 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.

**The Breather Box® and Panels work with ANY Airline Respirator Brand**



The Breather Box®  
Portable Grade-D Air Filtration



Panel Mounted Grade-D Air Filtration

### Point-of-Attachment (POA) NIOSH Publication 87-116

The POA is the location on a Grade-D  
air filtration system containing:

- 1) Air pressure regulator
- 2) Pressure gauge
- 3) Safety relief valve
- 4) Outlet manifold with quick connect couplings

## 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
- **Total Volatile Hydrocarbons (Canada):** 5 ppm maximum
- **Water Content:** Dew point 10° F (5.6° C) below working temperature.  
Canada: 5° C below lowest temperature, 27 ppm maximum water vapor



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## The Breather Box<sup>®</sup> and Panel Grade-D Filtration

### Product Features:

- **1<sup>ST</sup> Stage Filter removes liquids and particulate to 5.0 micron particle size**  
Filter change indicator and automatic drain
- **2<sup>ND</sup> Stage Filter provides oil coalescing and ultra-fine particulate filtration**  
(99.99% efficient at .01 micron particle size). Filter change indicator and automatic drain.
- **3<sup>RD</sup> Stage Charcoal Filter removes organic vapors and objectionable odors**  
Filter change indicator and manual drain
- In-Line Carbon Monoxide (CO) monitor standard
- Carbon Monoxide / Oxygen (CO/O<sub>2</sub>) monitor versions available
- Intrinsically safe CO and CO/O<sub>2</sub> monitor versions available
- 2 year warranty on CO sensor and monitor. 1 year warranty on O<sub>2</sub> sensor.
- Three standard power options: dual 9 VDC battery, 8-16 VDC, or 115 VAC, 60 Hz (230 VAC /50 Hz optional)
- AC output supplied standard on all panel mount units (intrinsically safe monitors supplied with 9 VDC power only)
- Safety visual flowmeter to verify air flow to monitor, adjustable flow rate: 50-100 cc
- Safety relief valve set at 125 psi for outlet pressure
- External mounted CO warning LED lights and audible alarm, 95 dBA
- Solid aluminum block manifold with manual drain



### Grade-D Air Filtration Models

Description	Breather Box <sup>®</sup> Item #	Fixed Panel Item #	Intrinsically Safe Item #
15 cfm (48 cfm flow capacity) CO monitor - 1 coupling	BB15-CO	BB15-COPM	BB15-COIS
30 cfm (48 cfm flow capacity) CO monitor - 2 couplings	BB30-CO	BB30-COPM	BB30-COIS
75 cfm (97 cfm flow capacity) CO monitor - 4 couplings	BB70-CO4	BB75-COPM	BB75-COIS
100 cfm (123 cfm flow capacity) CO monitor - 4 to 8 couplings	BB100-CO8	BB100-COPM	BB100-COIS



**CO/O<sub>2</sub> Monitors are available on all models.**

**See our full Grade-D air filtration product line in our Master Catalog or on the web at [www.airsystems.com](http://www.airsystems.com)**



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 Email: [sales@airsystems.com](mailto:sales@airsystems.com)  
 Catalog Request: [catalog@airsystems.com](mailto:catalog@airsystems.com)

**The Industry Leader in Breathing Air Filtration & Confined Space Ventilation**