

Air Sentry® Desiccant Air Breathers

Contamination Control Breathers

OVERVIEW

- **Bi-directional Air Flow** - Air entering is cleaned and dried. Expelled air partially regenerates the silica gel and "back-flushes" the particulate filter to prolong the life of the breather.
- **Durable Construction** - Air Sentry is manufactured from rugged ABS plastic and impact-modified Plexiglas.
- **Water Vapor Adsorbent** - The silica gel used in Air Sentry breathers is chemically inert, non-corrosive, and conforms to all regulated toxicity standards in the U.S. and other countries. Microscopic pores allow the silica gel to adsorb up to 40% of its own weight.
- **Color Indicator** - When maximum adsorption is reached, the silica gel turns from gold to dark green to indicate that replacement of the breather is required.
- **Activated Carbon** - As air is expelled from the tank, it passes through activated carbon which remove oil vapors, fumes, and odors.



- **Safety Sealed** - Seals keep moisture from entering the units until they are placed in service. They are easily removed without tools or sharp instruments.

BENEFITS

Reduce Contamination

In any reservoir containing fluids or semi-solids, air is breathed in and out as the fluid level changes or as thermal expansion and contraction occurs. Fluid contamination is the primary cause of component wear and lubricant failure in industrial equipment.

Easy to Install

Air Sentry breathers replace the standard breather cap or vent tube on a tank of reservoir. They are easy to install using one of several adapters designed for different applications.

Air Filtration

When the fluid in the system is lowered, or pressure changes occur, air is drawn in through openings under the breather cap. First, air passes through a fine, 2 micron solid particle filter. The air then passes through a diffuser to ensure maximum effectiveness within the silica gel chamber.

Water Removal

Next, water vapor is removed as the air travels through a bed of silica gel - the highest capacity adsorbent available. After being dried, the air passes through a second 2 micron solid particle filter and enters the reservoir clean and dry.

High Efficiency

Air Sentry breathers use a three-stage filtration design to ensure optimum protection by removing water vapor and solid contaminants before they enter the fluid system.

Air Sentry Applications [Oil Storage]



Oil totes and barrels

Oil drums and lube storage systems



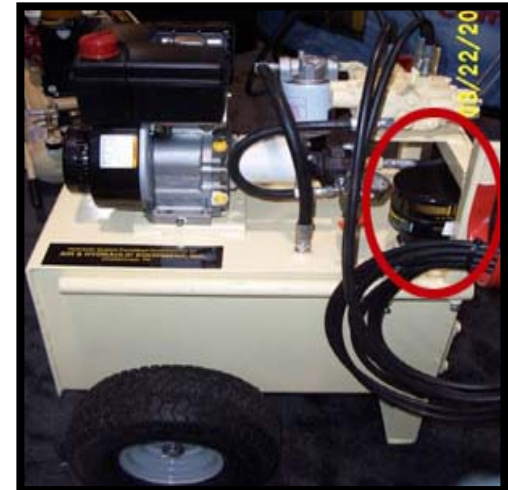
Air Sentry Applications [Compressors]



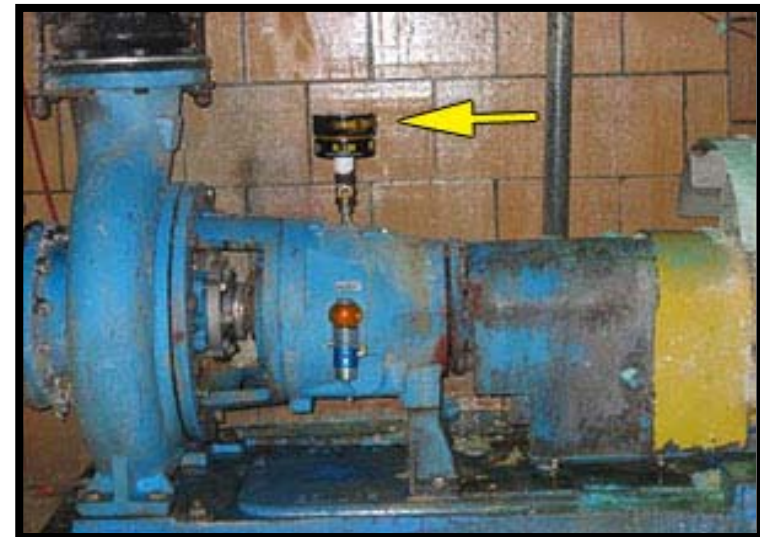
Compressors – Large and Small



Air Sentry Applications [Hydraulic Systems]



Air Sentry Applications [Gearboxes]



Air Sentry Applications [Other Uses...]



How do Air Sentry Breathers Work?

Four Layers of Protection

1. Upper 2 micron air filter
2. High capacity water vapour adsorption media
3. Lower 2 micron air filter
4. Activated carbon filter

Removes Incoming Dirt and Moisture

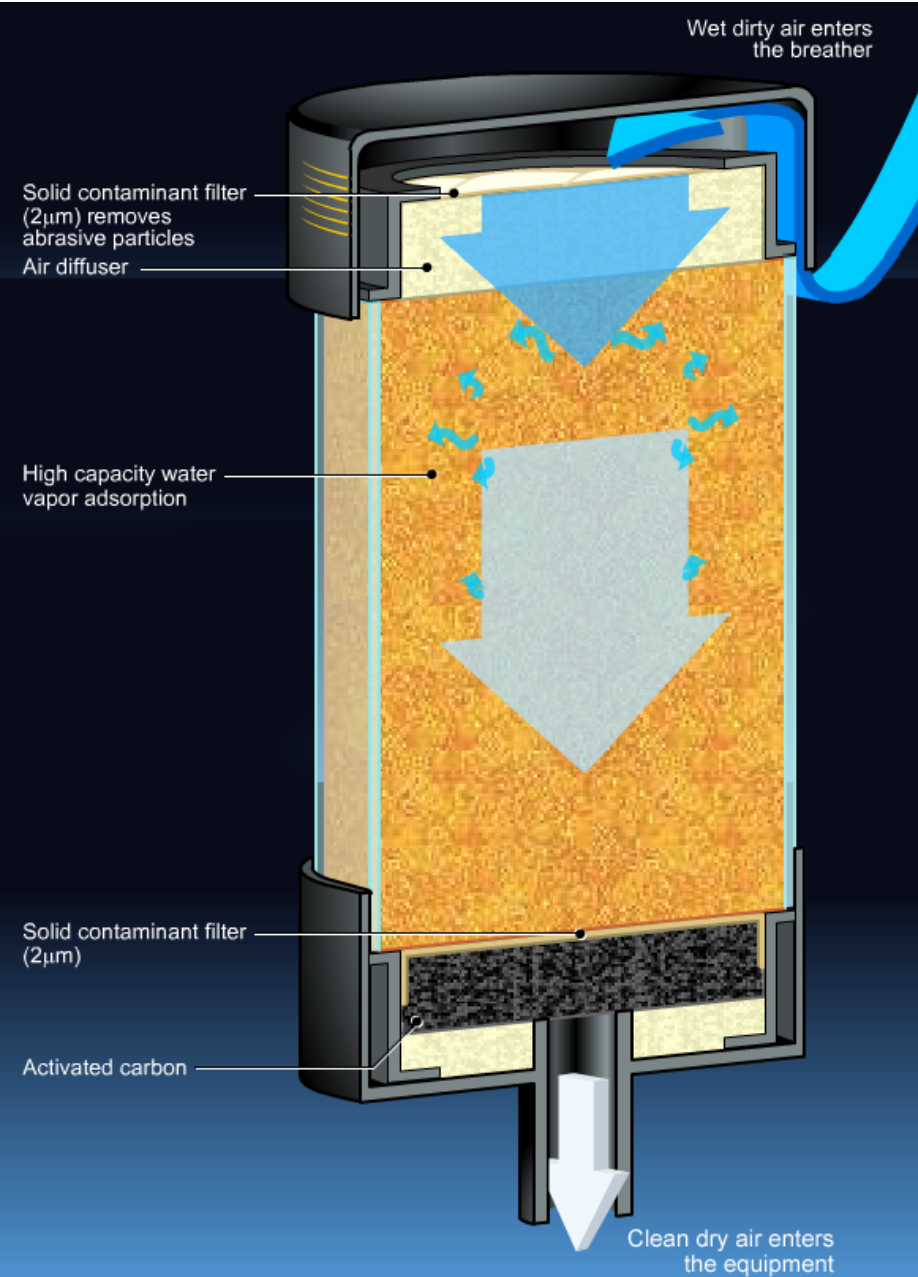
- Solid Particulate > 2 microns removed
- 90% of water vapour removed
- Prevents oil vapours, fumes and odour

A 2-Way System

- Expelled air partially regenerates silica gel
- Expelled air back-flushes to extend breather life
- Removes expelled oil vapours, fumes and odours

Delivers cost savings and environmental benefits

- By reducing the chain reaction of wear
- By extending oil service life
- By reducing repairs due to abrasion and fatigue
- By eliminating oil vapours and fumes



Air Sentry D-Series Breathers

The five models in this group satisfy most applications involving hydraulic reservoirs, lubrication and fuel storage tanks, transformers, pumps and gearboxes. Models D-100, D-101 and D-102 are rated for airflow of 35 cfm (260 gpm). They are connected to the tank or reservoir using any of several available adapters. Model D-108 is rated for 100 cfm (750 gpm) and is connected to the tank by a 2" M-NPT. Model D-109 is rated for 250 cfm (1875 gpm) and is connected to the tank by a 3" M-NPT. The D-Series Models are 5" in diameter and range from 3-1/2" to 12" tall.

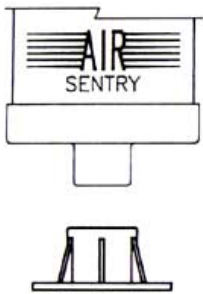


Model	Height (in/cm)	Diameter (in/cm)	Water Capacity oz (ml)	Weight lbs (kg)	Rating CFM (GPM)	Thread Size
D-100	3.5 (8.9)	5 (12.7)	3.1 (92)	1.5 (0.7)	35 (262)	1" Slip
D-101	5 (12.7)	5 (12.7)	6.2 (184)	2.2 (1.0)	35 (262)	1" Slip
D-102	8 (20.3)	5 (12.7)	13.9 (411)	3.6 (1.6)	35 (262)	1" Slip
D-108	10 (25.4)	5 (12.7)	18.5 (547)	4.8 (2.2)	100 (750)	2" M-NPT
D-109	14 (35.6)	6 (15.2)	18.5 (547)	6.1 (2.8)	250 (1875)	3" M-NPT

Air Sentry D-Series Breather Adaptors

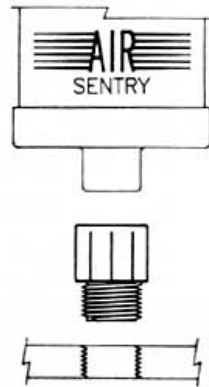
D-101, D-102 and D-103 breathers have a slip fitting when combined with the available adapters can provide a connection to nearly all existing reservoir fittings. The D-108 and D-109 breathers have built-in M-NPT adapters.

**Flange Adapters
(A-114, A-101)**



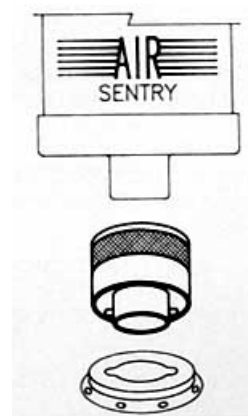
Two Flange Adapters are available for tanks where the tank wall is not thick enough for tapping threads. They are made of rugged ABS molded plastic. Model A-114 has a standard ANSI 6-hole mounting pattern, 3/16" diameter holes in a 2-7/8" diameter bolt circle. Model A-101, without mounting holes, can be drilled to match any required pattern.

**Threaded Adapters
(A-102, A-103)**



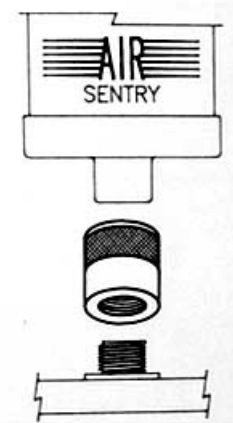
Two Threaded Adapters are intended for tanks or gearboxes with a wall thickness sufficient for a tapped hole. The thread size on the Model A-102 is 1" NPT (male) and on the Model A-103 is 3/4" NPT (male).

**Bayonet Adapter
(A-104)**



The Bayonet Adapter, Model A-104, is used to replace a standard breather cap on a hydraulic reservoir. The breather cap is removed from the breather flange on the reservoir and discarded. The adapter mounts to the flange on the tank by means of a quarter turn bayonet lug. No modification to the tank or existing breather cap flange is required.

**Spin-On Adapters
(A-105, A106)**



Two Spin-On Adapters are designed to replace the standard spin-on particle filters made by many manufacturers. These particle filters do not remove water vapor, and therefore do not protect the tank or reservoir from the worst contaminant. The adapters mount onto a male threaded pipe welded to the tank or reservoir. The Model A-105 has a 1"- 12 UNF straight thread, and the Model A-106 has a 1-1/2"- 16 UNF straight thread. These are the two most common threads used in these particle filters. No modification to the tank or reservoir is required.

Air Sentry Z-Series Breathers

There are four models of these “Mini Breathers”. They are designed for applications where space is limited. They are often used for gearboxes and small reservoirs. The Z-131 is used as the breather of choice for the IFH lube storage rack system. The airflow rating of these models is 10 cfm (75 gpm). The connection on all of these units is a ½” F-NPT thread which mates with several available fittings.

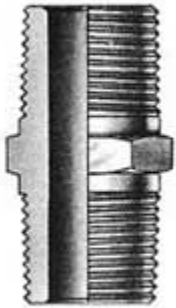


Model	Height (in/cm)	Diameter (in/cm)	Water Capacity oz (ml)	Weight lbs (kg)	Rating CFM (GPM)	Thread Size
Z-131	2 (5.1)	2 (5.1)	0.5 (15)	0.15 (0.07)	10 (75)	½” F-NPT
Z-132	3.25 (8.3)	2 (5.1)	0.9 (27)	0.2 (0.09)	10 (75)	½” F-NPT
Z-133	2 (5.1)	3.25 (8.3)	1.6 (47)	0.5 (0.23)	10 (75)	½” F-NPT
Z-134	3.25 (8.3)	3.25 (8.3)	2.8 (83)	0.8 (0.36)	10 (75)	½” F-NPT

Air Sentry Z-Series Breather Adaptors

All Z-Series breathers have a 1/2" F-NPT fitting so the following adapters convert from 1/2" F-NPT to various thread sizes (male and female).

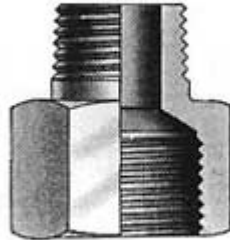
Male – Male Adapters (A-401, A-403, A-405, A-406)



Four male-male adapters are available for Z-series breathers and convert the breathers 1/2" F-NPT thread size to;

- A-401 : 1/4" M-NPT
- A-403 : 3/8" M-NPT
- A-405 : 1/2" M-NPT
- A-406 : 3/4" M-NPT

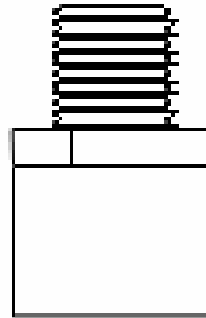
Male – Female Adapters (A-402, A-404, A-407)



Three male-female adapters are available for Z-series breathers and convert the breathers 1/2" F-NPT thread size to;

- A-402 : 1/4" F-NPT
- A-404 : 3/8" F-NPT
- A-407 : 3/4" F-NPT

Mini Breather Adapter (A-409)



The Model A-409 adapter has a 1/2" male NPT thread on one end and a slip fit design on the other end. This adapter is designed to allow an Air Sentry® Mini Breather to be used with any of the other adapters described above.

Air Sentry M-Series Breathers

The five models in this group of “Steel Breathers” were designed for applications in very severe environments such as high temperatures, situations where a breather can be hit or stepped on, or where there is a corrosive atmosphere. The units are constructed of powder coated heavy gauge steel. They incorporate an easily replaceable bag of desiccant and a reusable 20micron pleated filter. Airflow ratings are up to 300 cfm (2250 gpm).

All M-Series breathers have built-in M-NPT adapters.



Model	Height (in/cm)	Diameter (in/cm)	Water Capacity oz (ml)	Weight lbs (kg)	Rating CFM (GPM)	Thread Size
M-103	6.6 (16.8)	10 (25.4)	12 (354)	8.4 (3.8)	35 (262)	1" M-NPT
M-104	6.6 (16.8)	10 (25.4)	12 (354)	9 (4.1)	120 (900)	2" M-NPT
M-105	12 (30.5)	10 (25.4)	26 (769)	14 (6.4)	35 (262)	1" M-NPT
M-106	12 (30.5)	10 (25.4)	26 (769)	16 (7.3)	120 (900)	2" M-NPT
M-107	13.5 (34.3)	16 (40.6)	128 (3785)	41.5 (18.8)	300 (2250)	3" M-NPT

Air Sentry X-Series Breathers

In certain extreme operating environments such as a paper mill, a steam cleaning room, etc. the humidity level far exceeds that which is experienced in normal industrial applications. In this type environment the very humid air is drawn into a standard breather when small temperature changes occur in the system even though air is not required to protect the integrity of the tank or reservoir. The X-Series models incorporate check valves that allow air to enter through the breather only when required, thereby extending the life of the desiccant and the useful life of the breather.

The X-100 breather uses the same adapters as the Z-Series breathers. The X-101 and X-102 breathers use the same adapters as the D-Series breathers. The X-121 and X-122 breathers have built-in M-NPT adapters.



Model	Height (in/cm)	Diameter (in/cm)	Water Capacity oz (ml)	Weight lbs (kg)	Rating CFM (GPM)	Thread size
X-100	6 (15.2)	3 (7.6)	2.0 (59)	1.5 (0.7)	10 (75)	½" F-NPT
X-101	5 (12.8)	5 (12.7)	6.2 (183)	3.3 (1.5)	35 (262)	1" Slip
X-102	8 (20.5)	5 (12.7)	13.9 (411)	4.8 (2.2)	35 (262)	1" Slip
X-121	5 (12.8)	5 (12.7)	6.2 (183)	3.3 (1.5)	35 (262)	2" M-NPT
X-122	8 (20.5)	5 (12.7)	13.9 (411)	5.0 (2.3)	35 (262)	2" M-NPT