Ultra Clean
TECHNOLOGIES CORP.

Contamination Control Breathers

"The cost of controlling contamination is *always less* than the cost of repair!"

Contamination Control Breathers for Enclosed Fluid Systems

Any mechanic would agree that fluid contamination is the primary cause of component wear and lubricant failure in equipment. These failures are both unpredictable and costly, often consuming valuable man-power to repair damage, and causing considerable delay to schedules.

For years, Ultra Clean Technologies has been a leader in eliminating contaminates from machinery. With this goal in view, Ultra Clean proudly introduces contamination control breathers to our product line.

Ultra Clean breathers replace standard breather caps and vents on tanks and reservoirs. They are easy to install using one of several adaptors designed for specific applications.

Our breathers help guard against multiple contaminants to protect expensive equipment and reduce maintenance costs.

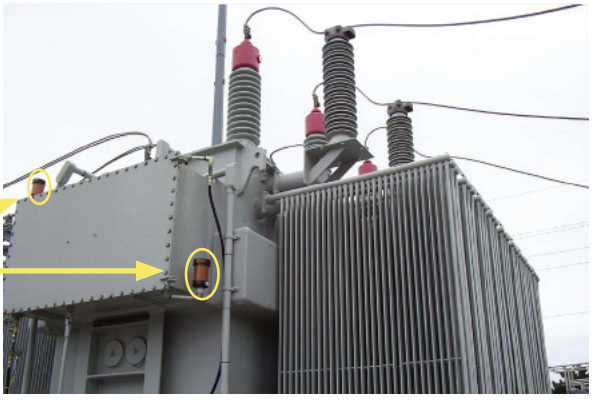
Steel construction models, like the one shown here, are available for very corrosive and high temperature applications with air flow rates up to 300 CFM.

Ultra Clean Breathers are manufactured under an ISO 9001 Certified Quality System.

In any reservoir containing fluids or semi-solids, air is breathed in and out as the fluid contraction occurs. The Ultra Clean Contamination Control Breather filters and cleans this air to prevent component wear and system failures in your equipment.

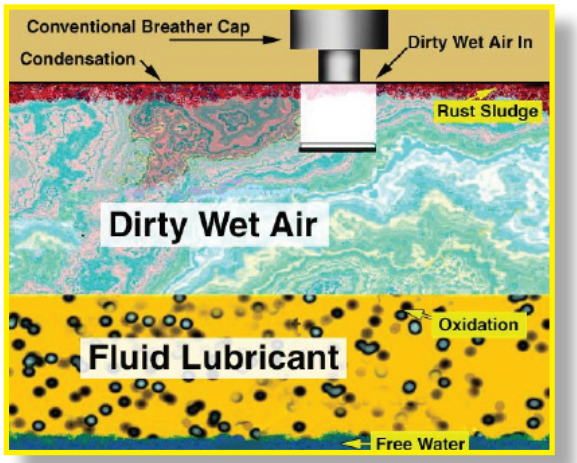
<u>You can use breathers on:</u>

- **Reservoirs**
- **Gearboxes**
- **Transformers**
- **Storage Tanks**

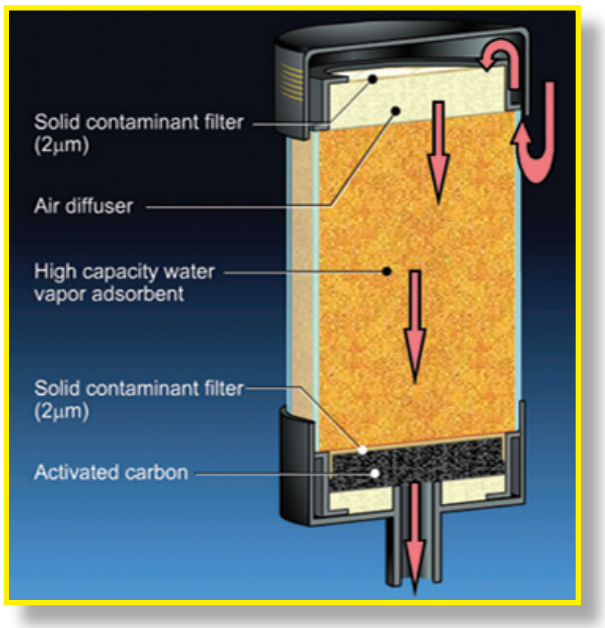


Why Do You Need An Ultra Clean Breather?

When the fluid in the system is lowered or pressure changes occur, air is drawn into the system through the openings under the breather cap. As the air is sucked in, a significant amount of water, dirt, and grime is introduced into your equipment. These contaminates pollute the system, causing the machinery to slow down or fail altogether. The Ultra Clean breather is designed to capture and eliminate these contaminates, and allow only clean, dry air into your system.



An illustration showing what a reservoir without an Ultra Clean Contamination Control Breather looks like.



How Does Ultra Clean's Breather Work?

As air enters the breather, it 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.

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!

As air is drawn into the system it is forced through a 2-micron filter, diffuser, water adsorbent silica gels, and another 2-micron filter! The result? CLEAN AIR!

Operational Features:

- **Bi-directional Air Flow:** Air entering is cleaned and dried. Expelled air partially regenerates the silica gel and "backflushes" the particulate filter to prolong the life of the breather.
- **Water Vapor Adsorbent:** The silica gel used is chemically inert, non-corrosive, and conforms to all regulated toxicity standards in the U.S. and other countries. Microscopic pores allow the silica to adsorb up to 40% its own weight.
- **Color Indicator:** When maximum adsorption is reached, the silica 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.
- **Durable Construction:** Our breathers are manufactured from rugged ABS plastic and impact-modified Plexigass.
- **Safety Sealed:** Seals keep moisture from entering the units until they are placed in service. They are easily removed without tools or sharp instruments.

Ultra Clean Contamination Control Breathers

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 g.p.m. of fluid level change). They are connected to the tank or reservoir using any of several available adapters. Model D-108 is rated for airflow of 100 cfm (750 g.p.m.) and is connected to the tank by a 2" male pipe thread. Model D-109 is rated for 250 cfm (1875 g.p.m.) and is connected to the tank by a 3" male pipe thread. The D-Series Models are 5" in diameter and range from 3-1/2" to 12" tall.

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 2-micron pleated filter. Airflow ratings are up to 300 cfm.

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 airflow rating of these models is 10 cfm (75 g.p.m.). The connection on all of these units is a 1/2" female thread which mates with several available fittings.

R-SERIES BREATHERS

This group of products was developed at the request of, and in cooperation with, a major U.S. railroad company. They are intended for applications where gearboxes and reservoirs are subjected to continuous vibration, such as railroad maintenance equipment, off-road vehicles, and mining equipment. They incorporate a metal reinforcing plate in the bottom cap and a threaded steel connector for mounting. A replacement desiccant cartridge easily screws into the reinforced bottom cap.

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 of 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.

Standard Breather Specifications

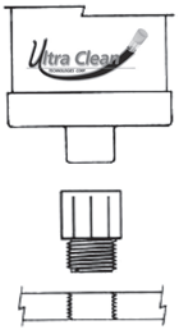
P/N	DESCRIPTION	CFM	GPM	WATER CAPACITY FL. OZ/CUPS
	D-SERIES DESICCANT			
UC-D100	5" DIA X 3.5" TALL	35	262	3.1 / 0.4
UC-D101	5" DIA X 5" TALL	35	262	6.2 / 0.8
UC-D102	5" DIA X 8" TALL	35	262	13.9 / 1.7
UC-D108	5" DIA X 10" TALL 2" MNPT	100	750	18.5 / 2.3
UC-D109	6" DIA X 14" TALL 3" MNPT	250	1875	18.5 / 2.3
	Z-SERIES MINI DESICCANT			
UC-Z131	2" DIA X 1.75" TALL	10	75	0.5 / 0.06
UC-Z132	2" DIA X 3" TALL	10	75	0.9 / 0.12
UC-Z133	3.25" DIA X 1.75" TALL	10	75	1.6 / 0.2
UC-Z134	3.25" DIA X 3.25" TALL	10	75	2.8 / 0.35
	M-SERIES STEEL DESICCANT			
UC-M103	10" DIA X 4" TALL 1" MNPT	35	262	12 / 1.5
UC-M104	10" DIA X 4" TALL 2" MNPT	120	900	12 / 1.5
UC-M105	10" DIA X 10" TALL 1" MNPT	35	2262	26 / 3.2
UC-M106	10" DIA X 10" TALL 2" MNPT	120	900	26 / 3.2
UC-M107	16" DIA X 11" TALL 3" MNPT	300	2250	128 / 1 gal.
	R-SERIES REBUILDABLE DESICCANT			
UC-R100	5.25" DIA X 5" TALL 1" MNPT	35	262	3.1 / 0.4
UC-R101	5.25" DIA X 6.5" TALL 1" MNPT	35	262	6.2 / 0.8
UC-R102	5.25" DIA X 9.5" TALL 1" MNPT	35	262	13.9 / 1.7
UC-R111	5.25" DIA X 6" TALL	35	262	6.2 / 0.8
UC-R123	5.25" DIA X 12" TALL 2" MNPT	100	750	18.5 / 2.3
	X-SERIES EXTREME HUMIDITY			
UC-X100	3.25" DIA X 6.25" TALL	10	75	2.0 / 0.25
UC-X101	5" DIA X 7" TALL 1" SLIP FIT	35	262	6.2 / 0.8
UC-X102	5" DIA X 10" TALL 1" SLIP FIT	35	262	13.9 / 1.7
UC-X121	5" DIA X 7" TALL 2" MINPT	35	262	6.2 / 0.8
UC-X122	5" DIA X 10" TALL 2" MNPT	35	262	13.9 / 1.7

Applications for Contamination Control Breathers

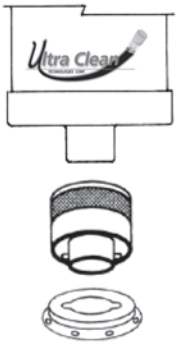
ADAPTER SELECTION GUIDE

Flange Adapter
Model UC-AD101
(without mounting holes)

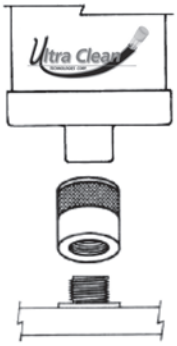
Model UC-AD114
(with 6 mounting holes)



Threaded Adapter
Model UC-AD102 (1" MNPT)
Model UC-AD103 ($^{3}/_{4}$" MNPT)



Bayonet Adapter
Model UC-AD104



Spin-on Adapter
Model UC-AD105 (1" - 12 UNF)
Model UC-AD106 (1 $^{1}/_{2}$" - 16 UN)

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