

BREATHE EASY

Air Purification Products



Ultra Clean Technologies offers a line of desiccant breathers designed to remove corrosive water vapor, dirt, grime, and other contaminants from the intake systems of virtually all industrial equipment, allowing in only clean, dry air. Desiccant breathers help keep both systems and fluids in peak condition.

Products in the ***"Breathe Easy"*** line includes:

Desiccant Breathers

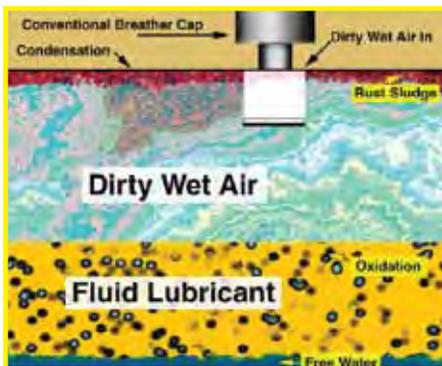
Breathe Easy with Ultra Clean!

For UC-D1 Super-Dry Compressed Air Dryer, see page 16.

Desiccant Breathers

Features & Benefits

- Ultra Clean Desiccant Breathers are a unique, patented air filter and vapor removal system. They replace the standard breather or vent cap on virtually all types of industrial equipment, storage tanks, and transformers.
- The Desiccant Breather removes corrosive water vapor and destructive contaminants from entering fluid reservoirs and tanks as air is breathed in and out due to thermal expansion or fluid level changes.
- Fluid contamination is one of the primary causes of component wear and lubricant failure in industrial equipment.
- Models are available to meet the requirements of most industrial applications.



Why Use Ultra Clean Breathers?

- 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 contaminants pollute the system, causing the machinery to slow down or fail altogether. The Ultra Clean breather is designed to capture and eliminate these contaminants, and allow only clean, dry air into your system.

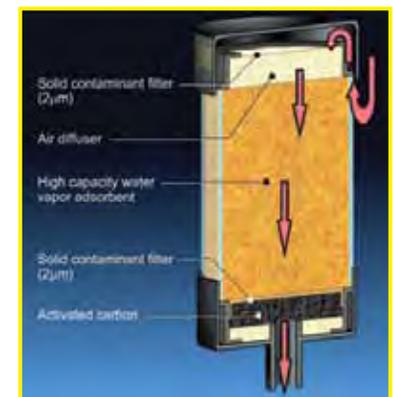
Illustration shows what a reservoir without an Ultra Clean Desiccant Breather looks like.

How it Works

- 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!

Color Indicator



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 removes oil vapors, fumes, and odors.
- **Durable Construction:** Our breathers are manufactured from rugged ABS plastic and impact-modified Plexiglass.
- **Safety Sealed:** Seals keep moisture from entering the units until they are placed in service. They are easily removed without tools or sharp instruments.

D-Series Breathers



- Feature seven different models.
- Designed to satisfy the requirements of most stationary applications involving hydraulic reservoirs, lubricant and fuel storage tanks, transformers, pumps and gearboxes.
- Provide application flexibility by using 100% silica gel for moisture absorption or 100% activated carbon for fume or odor control, or a mixture of both when necessary.
- All D-Series models feature 2 micron solid particle filtration and are available with airflow ratings of 35 cfm to 250 cfm.

R-Series Breathers



- R-Series breathers are suitable for high vibration applications including off-road vehicles, construction vehicles, haul trucks, and farm vehicles typically equipped with hydraulic fluid reservoirs.
- R-Series breathers are easily mounted in place of standard breather caps via rugged steel pipe threads, included with all models except the R-111.
- The metal reinforced base is reusable.
- When the silica gel cartridge turns color from gold to dark green, simply install a new replacement cartridge onto the reusable metal base.
- The R-Series rebuildable design allows for economical replacement of the desiccant cartridge.



Z-Series Breathers

- Z-Series breathers are designed for applications where space is limited or air flow requirements are below 10 cubic feet per minute (cfm).
- The Z-Series breather is typically used on gearbox applications and has been proven to work well on low fluid volume applications where mounting space is limited or where a larger breather won't fit without remote mounting.

Most mobile equipment, including maintenance of way equipment, farm implements, and off-road vehicles, are equipped with hydraulic fluid tanks or reservoirs which breathe outside air.

Controlling contamination is always less than the cost of repair!

X-Series Breathers



- Perfect for high humidity, high dust environments.
- Incorporates two check valves. The intake check valve allows airflow into the breather only when differential pressure between the atmosphere and reservoir exceeds a 0.3 PSI threshold.
- The exhaust check valve permits air to exit the reservoir when the differential pressure between the reservoir and atmosphere exceeds a 2.1 PSI threshold, providing a closed system until air flow is required.
- The check valves extend desiccant life by allowing the air flow through the breather only when needed to protect tank integrity.
- With a rugged design, X-Series breathers include a top cap to be reused when the desiccant is spent. When the silica gel turns dark green, remove the reusable top cap from the bottom desiccant cartridge, then use the same top cap with a replacement cartridge.
- Rebuildable design for economical replacement of desiccant cartridge.

XR-Series Breathers



- XR-Series breathers are designed for extreme environment applications where protection from dust, moisture and vibration are critical.
- XR-Series breathers include a metal reinforced base available with male NPT threads to adapt to your equipment.
- The base is designed to handle the rigors of high vibration applications.
- The top cap implements two check valves to prevent outside moisture and solid contaminants from entering the breather until there is a need for airflow.
- The XR-Series rebuildable design allows for economical replacement of the desiccant cartridge.

M-Series Breathers

- M-Series breathers are designed from heavy duty materials capable of handling the requirements of the most severe environments.
- Replaces the standard breather cap or vent tube on tanks and reservoirs. Pipe threads on the bottom standpipe make this unit easy to install.
- All M-Series designs have 2 micron pleated filters and silica gel bags that are easily replaced.
- The M-Series design features our proprietary Splash Guard. This device is included in all M-Series models and prevents foaming or splashing fluids from entering the breather during normal operating conditions.



Standard Breather Specifications

Model	Height in. (cm)	Diameter in. (cm)	Mounting Connection	Weight lbs. (kg)	Water Capacity fl.oz (mL)	Maximum Airflow cfm	Maximum Reservoir Fluid Flow gpm	Type of Medium
D-SERIES DESICCANT								
UC-D101	5 (12.7)	5 (12.7)	1" slip fit	2.2 (1.0)	6.2 (183)	20	150	100% Silica Gel
UC-D102	8 (20.3)	5 (12.7)	1" slip fit	3.6 (1.6)	13.9 (411)	20	150	100% Silica Gel
UC-D103	8 (20.3)	5 (12.7)	1" male NPT	3.6 (1.6)	13.9 (411)	20	150	100% Silica Gel
UC-D104	8 (20.3)	5 (12.7)	2" male NPT	3.6 (1.6)	13.9 (411)	20	150	100% Silica Gel
UC-D108	10 (25.4)	5 (12.7)	2" male NPT	4.8 (2.2)	18.5 (547)	20	150	100% Silica Gel
Z-SERIES MINI DESICCANT								
UC-Z131	2 (.51)	2 (.51)	1/2" female NPT	0.15 (68)	0.5 (15)	5	37	100% Silica Gel
UC-Z132	3.25 (8.3)	2 (.51)	1/2" female NPT	0.2 (91)	0.9 (27)	5	37	100% Silica Gel
UC-Z133	2 (.51)	3.25 (8.3)	1/2" female NPT	0.5 (227)	1.6 (47)	5	37	100% Silica Gel
UC-Z134	3.25 (8.3)	3.25 (8.3)	1/2" female NPT	0.8 (363)	2.8 (83)	5	37	100% Silica Gel
UC-Z135	5.5 (14.0)	3.25 (8.3)	1/2" female NPT	1.2 (544)	2.0 (59)	5	37	100% Silica Gel
M-SERIES STEEL DESICCANT								
UC-M103	6.6 (16.8)	10 (25.4)	1" male NPT	8.4 (3.8)	12 (355)	35	262	100% Silica Gel
UC-M104	6.6 (16.8)	10 (25.4)	2" male NPT	9 (4.1)	12 (355)	120	900	100% Silica Gel
UC-M105	12 (30.5)	10 (25.4)	1" male NPT	14 (6.4)	26 (770)	35	262	100% Silica Gel
UC-M106	12 (30.5)	10 (25.4)	2" male NPT	16 (7.3)	26 (770)	120	900	100% Silica Gel
UC-M107	13.5 (34.3)	16 (40.6)	3" male NPT	41.5 (18.9)	128 (3785)	300	2250	100% Silica Gel
R-SERIES REBUILDABLE DESICCANT								
UC-R100	5 (12.7)	5.2 (13.2)	1" male NPT	2.5 (1.1)	3.1 (91)	25	187	100% Silica Gel
UC-R101	6.5 (16.5)	5.2 (13.2)	1" male NPT	3.2 (1.5)	6.2 (183)	25	187	100% Silica Gel
UC-R102	9.5 (24.1)	5.2 (13.2)	1" male NPT	4.5 (2.0)	13.9 (411)	25	187	100% Silica Gel
UC-R111*	6 (15.2)	5.2 (13.2)	1.125" female thread	2.8 (1.3)	6.2 (183)	25	187	100% Silica Gel
UC-R123	12 (30.5)	5.2 (13.2)	2" male NPT	5.5 (2.5)	18.5 (547)	25	187	100% Silica Gel
X-SERIES EXREME HUMIDITY								
UC-X100	6.25 (15.9)	3.25 (8.3)	1/2" female NPT	2.5 (1.1)	2.0 (59)	10	75	100% Silica Gel
UC-X101	7 (17.8)	5 (12.7)	1" slip fit	3.3 (1.5)	6.2 (183)	20	150	100% Silica Gel
UC-X102	10 (25.4)	5 (12.7)	1" slip fit	4.8 (2.2)	13.9 (411)	20	150	100% Silica Gel
UC-X121	7 (17.8)	5 (12.7)	2" male NPT	3.3 (1.5)	6.2 (183)	20	150	100% Silica Gel
UC-X122	10 (25.4)	5 (12.7)	2" male NPT	5 (2.3)	13.9 (411)	20	150	100% Silica Gel
XR-SERIES								
UC-XR101	8.5 (21.6)	5.2 (13.2)	1" male NPT	9.00 (4.1)	6.2 (183)	25	187	100% Silica Gel
UC-XR102	11.5 (29.2)	5.2 (13.2)	1" male NPT	10.5 (10.5)	13.9 (411)	25	187	100% Silica Gel
UC-XR108	14 (35.6)	5.2 (13.2)	2" male NPT	12.5 (5.7)	18.5 (547)	25	187	100% Silica Gel

* The R-111 is used in conjunction with the A-306 pressure relief valve, which has a 1.125 inch male thread to mount to the fluid reservoir.

Standard Breather Replacements

Model Number	Replacement Silica Gel Bag #	Weight of Silica Gel Bag lbs. (kg)	Replacement Polyester Pleated Filter #	Filter Weight lbs. (kg)
M-SERIES REPLACEMENT FILTERS AND GEL				
UC-M103	095A201	3.1 (1.4)	095A204	2.0 (0.9)
UC-M104	095A201	3.1 (1.4)	095A204	2.0 (0.9)
UC-M105	095A202	4.0 (1.8)	095A205	3.0 (1.4)
UC-M106	095A202	4.0 (1.8)	095A205	3.0 (1.4)
UC-M107	095A203	18.0 (8.2)	095A206	5.0 (2.3)

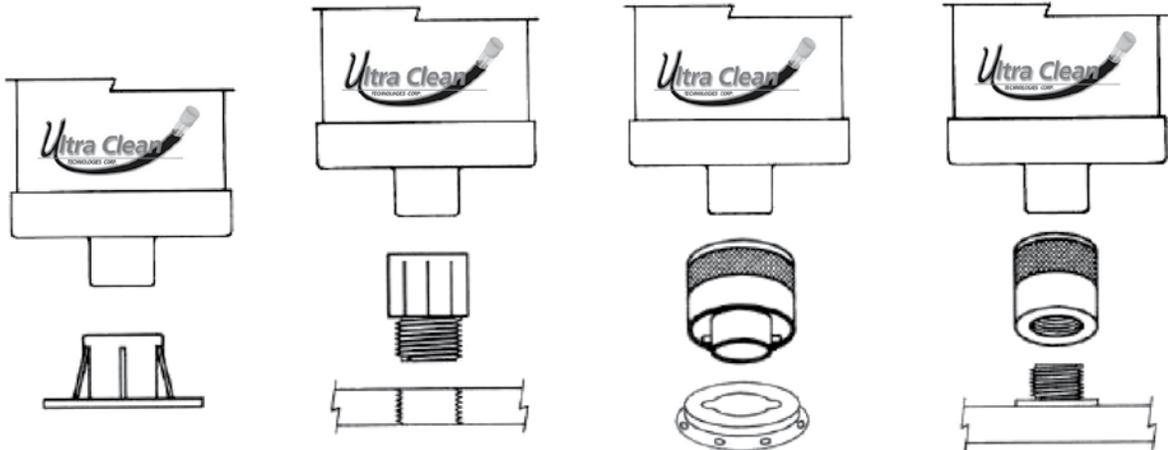
Model	Height in. (cm)	Diameter in. (cm)	Replacement Cartridge for Model	Weight lbs. (kg)	Water Capacity fl.oz (mL)	Maximum Airflow cfm	Maximum Reservoir Fluid Flow gpm	Type of Medium
R-SERIES REPLACEMENT CARTRIDGES								
UC-C300	3.75	5 (12.7)	R-100	1.8 (0.8)	3.1 (91)	25	187	Silica Gel
UC-C301	5 (12.7)	5 (12.7)	R-101 or R-111	2 (0.9)	6.2 (183)	25	187	Silica Gel
UC-C302	8 (20.3)	5 (12.7)	R-102	3.3 (1.5)	13.9 (411)	25	187	Silica Gel
UC-C323	10 (25.4)	5 (12.7)	R-123	4.6 (2.1)	18.5 (547)	25	187	Silica Gel

Model	Height in. (cm)	Diameter in. (cm)	Mounting Connection	Weight lbs. (kg)	Water Capacity fl.oz (mL)	Maximum Airflow cfm	Maximum Reservoir Fluid Flow gpm	Replacement for Model	Type of Medium
X-SERIES REPLACEMENT CARTRIDGES									
UC-C143	3.25	5 (12.7)	1/2" female NPT	1.2 (.5)	2.0 (59)	10	75	UC-X100	100% Silica Gel
UC-C341	5 (12.7)	5 (12.7)	1" slip fit	2.3 (1.0)	6.2 (183)	20	150	UC-X101	100% Silica Gel
UC-C342	5 (12.7)	5 (12.7)	1" slip fit	3.6 (1.6)	13.9 (411)	20	150	UC-X102	100% Silica Gel
UC-C343	5 (12.7)	5 (12.7)	2" male NPT	2.4 (1.1)	6.2 (183)	20	150	UC-X121	100% Silica Gel
UC-C344	5 (12.7)	5 (12.7)	2" male NPT	3.7 (1.7)	13.9 (411)	20	150	UC-X122	100% Silica Gel

Model	Height in. (cm)	Diameter in. (cm)	Weight lbs. (kg)	Water Capacity fl.oz (mL)	Maximum Airflow cfm	Maximum Reservoir Fluid Flow gpm	Type of Medium
XR-SERIES REPLACEMENT CARTRIDGES							
UC-C351	5 (12.7)	5 (12.7)	2.2 (1.0)	6.2 (183)	25	187	100% Silica Gel
UC-C352	8 (20.3)	5 (12.7)	3.6 (1.6)	13.9 (411)	25	187	100% Silica Gel
UC-C358	10 (25.4)	5 (12.7)	4.8 (2.2)	18.5 (547)	25	187	100% Silica Gel

Applications for Desiccant 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)

