



Contamination Control Products

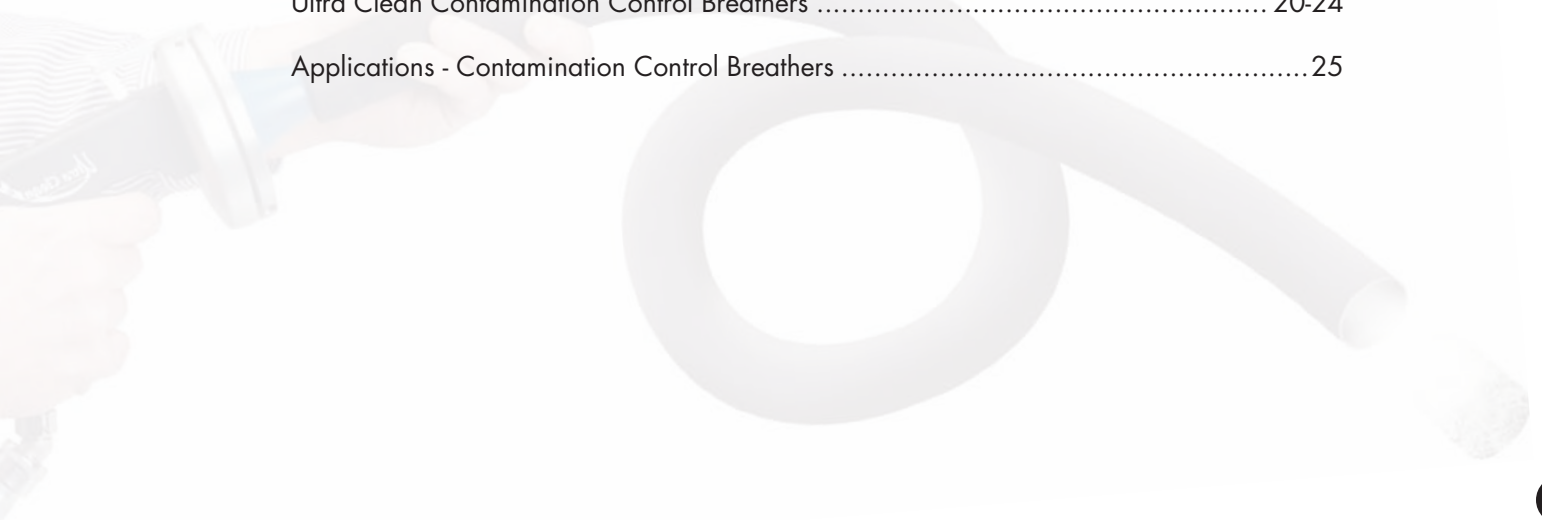


PRODUCT MANUAL

Hose, Tube & Pipe Cleaning Systems
Contamination Control Breathers

Table of Contents

UC-EL1.25 1 ¼" Economy Launcher & Kits	1
UC-HL2 2" Hand Held Launcher & Kits.....	2
UC-HL3.5 3 ½" Hand Held Launcher & Kits	3
UC-HL4.5 4 ½" Hand Held Launcher	4
UC-BM1.25 1 ¼" Bench Mount Launcher	5
UC-PVS II Projectile Verification System.....	6-7
Nozzles & Adapter Rings for Launchers	8
Projectile Types and Application Information	9
Applications - Hose, Tube & Pipe Cleaning.....	10
Recommended Cleaning Procedures.....	11
ISO 4406 Independent Test Reports	12-13
Sizing Charts for Ultra Clean Projectiles & Nozzles (Hose, Tube, & Pipe)	14-17
Accessories - Launcher Stand & Nozzle Holder	18
Accessories - Projectile Catcher & Ultra Clean Tape.....	19
Ultra Clean Contamination Control Breathers	20-24
Applications - Contamination Control Breathers	25



UC-EL1.25

1 1/4" Economy Launcher & Kits



Features & Benefits

- Capable of cleaning 1/8" through 1-1/4" hose, tube or pipe.
- Has a quarter turn locking ring for easy nozzle change and projectile loading.
- The UC-EL1.25 is constructed of durable brass and aluminum internals, strong plastic handle and anodized aluminum firing head and locking ring.
- Effortless to operate because of its simplistic design.
- Ideal for mobile and job site applications because of its size and portability.

Air Requirements

- 80 PSI minimum to 110 PSI maximum.
- 1/2" ID air hose to ensure correct SCFM requirements.
- 5 micron filter and regulator with gauge are strongly suggested!

Available Kits

- UC-EL7 Kit Launcher, 7 Hose Nozzles, Case.
- UC-EL7-DP Kit (shown) Launcher, 7 Hose Nozzles, Case, Catcher Bucket, Projectiles 7mm thru 40mm.
- Additional nozzles for JIC and tube applications are also available if required.

UC-HL2 2" Launcher & Kits



Features & Benefits

- UC-HL2 Launcher is supplied with a Full Flow Quick Release Coupling and unique 360 degree Rotary Plug for proper air flow and non-fatigue operator use.
- Unique Safety Release Bar that locks the faceplate into a closed position for firing Ultra Clean Projectiles.
- Manufactured from precision machined aluminum and fully anodized for harsh environments and heavy use.
- Ideal for production hose and tube shops, mobile hose fabricators and job site applications because of its simplistic design, size and portability.

Air Requirements

- 80 PSI (5.5 Bar) minimum to 110 PSI (7.5 Bar) maximum.
- 1/2" ID air hose to ensure correct SCFM requirements.
- 5 micron filter and regulator with gauge are strongly suggested!

Available Kits

- UC-CAP Kit (shown) Launcher, Adapter Ring, 19 Nozzles, Case, Tape, Catcher Bucket, Projectiles 7mm thru 60mm.
- UC-HL-9-2 Kit Launcher, Adapter Ring, Case, 9 Hose Nozzles 1/4" thru 2".
- UC-HL-25-2 Kit Launcher, Adapter Ring, Case, 25 Hose, Tube, JIC, FFORX Nozzles 1/4" thru 2".

UC-HL3.5 3½" Launcher & Kits



Features & Benefits

- UC-HL3.5 Launcher is supplied with a Full Flow Quick Release Coupling and unique 360 degree Rotary Plug for proper air flow and non-fatigue operator use.
- UC-HL3.5 Launcher requires a UC-AR2 adapter ring for nozzles 1/8" through 1-1/4" and a UC-AR3 for nozzles 1-1/2" and 2". The unique UC-U55/90 Universal Nozzle (2-1/8" through 3-1/2") does not require an adapter ring.
- Manufactured from precision machined aluminum and fully anodized for harsh environments and heavy use.
- Ideal for production hose and tube shops, mobile hose fabricators and job site applications because of its simplistic design, size and portability.

Air Requirements

- 80 PSI (5.5Bar) minimum to 110 PSI (7.5 Bar) maximum.
- 1/2" ID air hose to ensure correct SCFM requirements.
- 5 micron filter and regulator with gauge are strongly suggested!

Available Kits

- UC-HL-1-3.5 (shown) Launcher, UC-AR2 & AR-3 Adapter Ring, UC-U55/90 Nozzle, Case.

UC-HL4.5 4½" Launcher & Kits



Features & Benefits

- UC-HL4.5 Launcher comes complete with the UC-4.5LN aluminum locking nozzle.
- UC-HL4.5 Launcher is supplied with a -8 SAE male flare and female swivel with 1/2" hose barb for correct SCFM air flow requirements.
- Capable of passing 50% more SCFM than our other launchers. This is extremely important when doing applications above 2" and long lengths of hose, tube or pipe.
- Manufactured from precision machined aluminum and fully anodized for harsh environments and heavy use.
- Ideal for job site applications because of its simplistic design, size and portability.
- The UC-HL4.5 is capable of cleaning 1/8" thru 3-1/2" when combined with our Adapter Rings and Nozzles using the UC-LR locking ring in place of the UC-4.5LN locking nozzle.

Air Requirements

- 80 PSI (5.5 Bar) minimum to 110 PSI (7.5 Bar) maximum.
- 1/2" ID air hose to ensure correct SCFM requirements.
- 5 micron filter and regulator with gauge are strongly suggested!

UC-BM1.25 1 ¼" Bench Mount Launcher



Features & Benefits

- The Bench Mount Launcher is supplied with a 5 micron air filter, pneumatic foot switch and twin line air hose and your choice of 7 nozzles 1/4" thru 1-1/4".
- Effortless to operate with a cycle time of 1.2 seconds.
- Ideal for production type environments because of its speed and simplicity.
- Stainless steel housing with anodized aluminum internal componentry.

Air Requirements

- 80 PSI minimum to 110 PSI maximum.
- 1/2" ID air hose to ensure correct SCFM requirements.
- Large industrial compressor strongly recommended.

UC-PVS-II Projectile Verification System



The main purpose of the UC-PVS-II is to guarantee that a projectile is never left inside of a hose or tube that is being cleaned. From Projectile Launch to Verification, the Ultra Clean PVS-II is the ultimate answer, ensuring a clean sweep for your hose and tube assemblies.

The UC-PVS-II Control Station employs an electronic foot switch to activate the firing sequence of the UC-BM1.25 (1/8" – 1 1/4") Bench Mount Launcher. The UC-HL-PVS (1/8" – 2") Electronic Hand Held Launcher can be fired by either the electronic foot switch or built in electronic trigger. The Ultra Clean Projectile that carries out the cleaning process is verified after it has exited the hose or tube and enters the Containment System. Upon verification the blow air shuts off automatically, the verification lights on both the Control Station and Containment System turn green. The Ultra Clean Projectile is then counted by the built in Projectile Counter.



5 micron filter, Regulator & Gauge

The Ultra Clean UC-QRC-C quick disconnect coupling and a ½" I.D. (13mm) air hose are required to ensure the correct SCFM air requirements for the Control Station. Incoming air is filtered to 5 micron, the regulator and gauge adjustment is between 80 and 110 PSI max.

Barrel Selector Switch, Projectile Counter, Barrel Indicator lights

The Barrel Selector Switch is for using either one or two Containment Barrels to catch and verify the projectile. The Barrel Indicator lights serve a dual purpose. First, to let the operator know where the system is in the launch or fire cycle and second, which Containment Barrel has caught and Verified the projectile. The green light means the Control Station is ready to launch a projectile and/or has successfully verified a caught projectile. The blinking yellow light means the projectile has been fired and is on its way through a hose or tube. A red light means that the projectile was never verified by the Containment System and may still be in the hose or launcher. The Projectile Counter keeps track of the number of projectiles that are caught and verified in the Containment System. It also counts the number of times that there is a misfire and the system needed to be reset.



Keyed reset for misfires

A keyed reset is built into the Control Station. If a misfire should occur, the red Indicator light will illuminate. A ¼ turn of the key resets the Indicator light to Green and the system is again ready to fire.

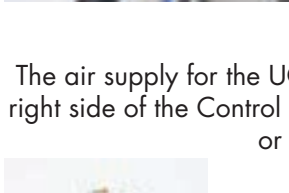
24 volt DC power Supply & Dual Barrel Hookups

The Power Supply converts 220 V AC (Europe) or 120 V AC to 24 V DC. The Control Station can accommodate up to two Containment Barrels for production cleaning requirements.



UC-BM1.25 air supply

The air supply for the UC-BM1.25 is located on the left side of the Control Station.



UC-HL-PVS air supply

The air supply for the UC-HL-PVS electronic hand held launcher is located on the right side of the Control Station. The electronic trigger on the hand held launcher or a footswitch can be used to activate the firing sequence.



Containment System

The Containment System catches and verifies the projectile and expelled contamination. It has indicator lights and a wheeled dolly for ease of use. A large filter allows the compressed air to escape while keeping the contamination from the cleaning process inside. A built in sight gauge indicates when the system needs to be emptied.

100% **Verification** that the **Ultra Clean Projectile** is out of your now clean hose or tube.

Nozzles & Adapter Rings



A range of nozzles are available, allowing the Ultra Clean System to be used on different sizes and types of hose, tube and pipe, as well as coupling configurations. Special nozzles can be made to suit specific applications. Aluminum, hard coat anodized nozzles are available in Hose style from -4, 1/4" thru -32, 2".

The Available Nozzle types are:

- **Hose:** The hose nozzle is inserted into the ID of the hose. Hose nozzles also work on pipe, heavy walled tubing and many coupling configurations. It is our most popular nozzle.
- **JIC:** The JIC nozzle has a male flare at the top that will mate against the female JIC on hose and tube assemblies.
- **Tube:** The tube nozzle has a stop on the inside of the tube nozzle that will form an airtight seal when the tube is fully inserted into the nozzle.
- **FFORX:** Special nozzle designed to accommodate -4 Flat Face O-Ring Style Fittings. These fittings may be referred to as Face Seal, Seal Lok or FFORX.
- **Large Universal Nozzle:** This nozzle is similar to our hose style nozzle. It enlarges 55mm (2-1/8") to 90mm (3-1/2") in 10mm increments. The 10mm increments can be easily cut off to suit your application. The Universal Nozzle can be ordered as P/N UC-U55/90.
- **UC-4.5LN:** This nozzle is supplied with the UC-HL4.5 Launcher for 3.8" to 4.5" applications and can be purchased for use with the new style UC-HL3.5 launcher.

Adapter & Locking Rings

- **UC-AR1** fits the UC-HL2 Launcher and all nozzle types from 1/8" thru 1-1/4".
- **UC-AR2** fits the UC-HL3.5 Launcher and all nozzle types from 1/8" thru 1-1/4".
- **UC-AR3** fits the UC-HL3.5 Launcher and all Nozzle types from 1-1/2" thru 2".
- **UC-LR** fits the UC-HL3.5 & UC-HL4.5 Launchers and the **AR2, AR3 & UC-U55/90 Nozzle**.

Projectile Types & Applications

The projectile cleans by being pressed against the internal surface of the hose, tube or pipe. This pressure is achieved as the projectile is approximately 20% to 30% larger than the internal diameter of the hose, tube or pipe. For instance, a 50mm (2") projectile is recommended for a 38mm (1-1/2") hose.

There are four types of projectiles currently available:

TYPE	APPLICATION
Ultra Clean (UC)*	Hose, tube, pipe and assemblies. Removes fine particles of loose contamination and can also be used for product purging.
Tube	Tubing applications to remove mandrel lubricants, grease & oil after the bending process.
Abrasive (A)**	Tubes or pipes with build up of contamination, surface rust or scale.
Grinding (GR)**	Straight lengths of tube or pipe with greater build up of contamination, surface rust or scale.

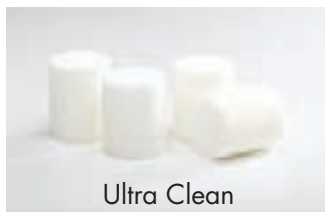
*Ultra Clean Projectiles 100mm and larger are provided with a laminated backer to prevent air permeation. The Laminated backer should be loaded into the nozzle last so that the air is pushing against it.

**An Ultra Clean projectile should always be used after abrasive and grinding projectiles to verify cleanliness.

Individual circumstances may require a smaller or larger projectile. If the projectile is too large it will not leave the nozzle and if it is too small it will not clean effectively. The enormous variety in the types of couplings available today could also mean in some circumstances that the recommended size is inappropriate. When cleaning assemblies, a reduction in projectile size may be appropriate, as all the recommendations are based on the most commonly used coupling sizes.

Bulk Projectiles

Ultra Clean Technologies also offers Ultra Clean & Tube style projectiles packaged in bulk quantities. The bulk projectile program complements the Bench Mount Launchers for use in a production type atmosphere. Contact your local distributor or our sales office for pricing and package quantities.



Applications for Hose, Tube & Pipe Cleaning Systems

Hydraulics	Removes rubber dust and metal particles from the cutting process on hydraulic hose. Removes metal flash from the crimping process on hose and tubes. Removal of contaminated oil from hoses, tubes and pipes in hydraulic systems. (Use the Ultra Clean System to reduce downtime, extend filter life and reduce the risk of failure and premature wear due to CONTAMINATION!)
Pneumatics	Eliminates rubber contamination, metal particles, contaminated oil and moisture that causes breakdowns and inefficiency.
Heat Exchangers & Condensers	Eliminates contamination that reduces heat transfer resulting in low level performance.
Steam Boilers	Removes most scaling in steam pipes for maintenance servicing.
Air Conditioning & Refrigeration	Eliminates minute particles in copper tubes and coolant lines that affect system performance.
Oxygen & Gas	Eliminates oil, grease and other contaminants from copper or S/S tubing.
Oil, Gas & Chemical Processing	Efficient cleaning of product pipes as part of service maintenance.
Earthmoving Equipment Maintenance	Reduction in flushing time and filter usage.
Automotive & Servicing	Cleaning of fuel lines and brake lines prior to assembly and servicing of components.
Food & Beverage Product Recovery	Retrieval of product from lines. Reducing or eliminating solvents or detergents.
Gun Barrels	To remove rust, scale or powder residue much faster than brushing or swabbing.

*Specific information regarding the above applications
is available upon request.*

Recommended Cleaning Procedures

HOSE

When hydraulic hose is cut with saws that use metal blades or abrasive wheels a tremendous amount of heat is generated. The heat from the cutting process will cause the rubber dust and metal particle contaminants to stick to the hose tube as they cool. It is vitally important to clean the hose immediately after the cutting process before the contaminants cool and stick to achieve the best results. An Ultra Clean projectile should be fired through the hose prior to the installation of end connections. Fire one projectile in each direction through the length of the hose. This will allow cleaning in the areas occupied by the insertion of the hose nozzle at either end during the cleaning process. After the crimping or swaging of fittings, an Ultra Clean projectile should be fired through the entire hose assembly. This projectile will remove the metal flash from the crimping or swaging process. It is also vitally important to tape or cap the end fittings immediately following the last projectile. Taping the hose ends will keep airborne contaminants from entering the hose.

USED HOSE & TUBE ASSEMBLIES

Hydraulic hose and tube assemblies from systems that have experienced a failure need to have all of the contaminated oil removed. Disconnect each end of the assembly and secure one end into the Projectile Catcher (UC-PC). Fire air into the assembly without a projectile for several seconds to remove the excess contaminated hydraulic fluid. Fire 3 to 4 Ultra Clean Projectiles through assembly to remove contamination. Visibly check the last projectile for contamination. Repeat process until projectile has no signs of rubber or metallic particles on it. If the projectiles continue to show rubber particles the hose may need to be replaced. This is usually a sign of a rubber tube that is failing.

TUBE

When tubing requires cutting, the ends should be thoroughly deburred prior to the use of the cleaning system. A tube nozzle and two Ultra Clean projectiles may then be implemented to clean the tube. If the tube appears to contain rust, weld slag or other corrosion on the inside surface, then an abrasive projectile should be used first, as many times as is necessary to remove the corrosion. Follow by using an Ultra Clean projectile to insure proper cleanliness. If flaring is required, this should also be done prior to cleaning. In this case, the use of a JIC nozzle will be necessary to mate properly with the flared end of the tubing. If special fittings are used that require crimping, then the use of an Ultra Clean projectile, in addition to the procedure described above, is also recommended after the assembly is completed. The Ultra Clean (Tube) Projectile should be used to remove mandrel lubricants, grease or oil if encountered.

PIPE

We recommend the use of a grinding projectile when rust is present or an abrasive projectile for cleaning the inside of all types of carbon steel piping products. These projectiles may be used more than once, if necessary, or until they wear out. After several passes with the grinding or abrasive projectiles, an Ultra Clean projectile should be fired through the pipe, removing any debris left behind by the previous projectiles. This can only be accomplished if the pipe has a relatively smooth surface. Our Grinding projectiles will negotiate sweep elbows only. The Ultra Clean projectile can also be soaked in corrosion inhibiting chemicals that will in effect be applied to the entire 360 degree inside surface as it passes from one end to the other.

OilPure Technologies, Inc.

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E-mail: oilpure@earthlink.net

January 13, 2001

Bruce Riley

ULTRA CLEAN TECHNOLOGIES CORP.

746 Shiloh Pike

Bridgeton, NJ 08302

Dear Bruce:

We evaluated a hydraulic hose provided by your firm. The hydraulic hose is 1" dia. x 24" wire hydraulic hose with the use of Ultra Clean Technologies Ultra Clean Projectiles. According to the particle count testing from OilPure laboratory, we found that the Ultra Clean hose cleaning device and their Ultra Clean Projectiles are capable of providing ISO code 13/10 oil cleanliness.

Test Procedure

1. The hose was rinsed with new hydraulic oil several times, 150 cc oil quantity in each rinse.
2. The hose is washed with the same oil quantity of new oil each time
3. New hydraulic oil is AW46 viscosity grade and filtered to ISO code 13/10 cleanliness before testing.
4. Laser light particle count is used as particle count analysis. Particle counter is made by HIAC/ROYCO and uses the ISO:4406 standard for particle count method. Special quality control for particle count testing is made to make sure that the particle count shows accurate reading.
5. All oil samples were tested twice to make sure that particle count reading confirms accuracy.

Test Result Findings

Particle Count (in one cc)	New Oil	Ultra Clean Projectiles / Marker Saw			
		<u>1st Rinse</u>		<u>2nd Rinse</u>	
ISO Code:	13/10	13/11	13/10	13/10	13/10
>5 microns	49	53	49	63	49
>10 microns	15	26	15	12	11
>15 microns	8	16	8	7	6
>25 microns	3	8	3	3	1
>50 microns	1	2	1	1	0
>75 microns	0	0	0	0	0

The ISO code 13/10 oil cleanliness can be expected after hose is cleaned by Ultra Clean Projectiles by ULTRA CLEAN TECHNOLOGIES. We hope that this test data will provide sufficient information for ULTRA CLEAN TECHNOLOGIES' customer regarding oil cleanliness after ULTRA CLEAN hose cleaning.

Yours sincerely,

Vichai Srimongkolkul
Technical Director

Hose Cleanliness Evaluation Report



Company: **Ultra Clean Technologies Corp.**
 Address: **746 Shiloh Pike**
 City: **Bridgeton** State: **NJ** Zip: **08302**
 Telephone: **1-800-791-9111** Fax: **856-453-4975**
 Contact: **Bruce Riley**
 Title: **President**
 E-mail: **briley@ultracleanotech.com**

Test Date: **September 5, 2006**
 New Oil for Evaluation: **AW46 Hydraulic Oil**
 Hose Type: **-16 1" x 28" oal, 4 spiral hyd hose assembly w 1" Male NPT EE**
 Note:

Dear Bruce

Test Procedure

1. The hose was rinsed with new hydraulic oil several times with non-contact flow technique.
2. The hose is washed with the same oil quantity of new oil each time
3. New hydraulic oil is AW46 viscosity grade and filtered to a low ISO code cleanliness before testing.
4. Laser light particle count is used as particle count analysis. Particle counter is made by HIAC/ROYCO and uses the ISO:4406-99 standard for particle count method. Special quality control for particle count testing is made to make sure that the particle count shows accurate reading.
5. All oil samples were tested twice to make sure that particle count reading confirms accuracy.

We hope that this test data will provide sufficient information regarding hose cleanliness evaluation.

Yours sincerely,

Vichai Srimongkolkul
 Technical Director

Item No.	Hose I.D.	Hose Descriptions	Solid Contamination Particle Count in 1 cc						ISO Code
			4µ	6µ	14µ	20µ	30µ	40µ	
1	NEW	New AW 46 Hydraulic Oil as base line comparison	214	64	23	9	1	0	15 / 13 / 12
2	A1	Chop saw with abrasive wheel - no cleaning	99,999	99,999	92,618	67,576	29K	15K	24 / 24 / 24
3	A2	Chop saw with abrasive wheel - 10 second air blow	96,508	52,827	4,546	1,013	53	13	24 / 23 / 19
4	A3	Chop saw with abrasive wheel - Ultra Clean	1,824	511	54	20	2	0	18 / 16 / 13
5	A4	Chop saw with metal scalloped blade - no cleaning	99,999	99,999	54,879	29,617	6.4K	2.5K	24 / 24 / 23
6	A5	Chop saw with metal scalloped blade - 10 second air blow	99,999	84,470	18,639	5,725	752	247	24 / 24 / 21
7	A6	Chop saw with metal scalloped blade - Ultra Clean	2,354	638	73	22	5	1	18 / 16 / 13

Recommended Sizing Chart Hose and Hose Assemblies

HOSE**			
HOSE ID		NOZZLE	ULTRA CLEAN PROJECTILE
NOM. IN.	MM		
3/16"	4.8	UC-H06	UC06
1/4"	6.4	UC-H06	UC10 OR UC12
5/16"	7.9	UC-H08	UC12 OR UC14
3/8"	9.5	UC-H10	UC14 OR UC16
1/2"	12.7	UC-H13	UC18 OR UC20
5/8"	15.9	UC-H16	UC22
3/4"	19.1	UC-H19	UC26
1"	25.4	UC-H25	UC33 OR UC36
1-1/4"	31.8	UC-H32	UC40 OR UC45
1-1/2"	38.1	UC-H38	UC50 OR UC55
2"	50.8	UC-H50	UC60 OR UC65
2-1/2"	63.5	UC-U55/90	UC75
3"	76.2	UC-U55/90	UC85
3-1/2"	88.9	UC-U55/90	UC100
4"	101.6	UC-4.5LN	UC120
4-1/2"	114.3	UC-4.5LN	UC130

ASSY W/FFORX		
FFORX SIZE	NOZZLE	ULTRA CLEAN PROJECTILE
DASH		
-4	UC-4FFORX	UC06 OR UC07
-6	UC-H06	UC12
-8	UC-H10	UC16
-10	UC-H13	UC22
-12	UC-H16	UC26
-16	UC-H19	UC33
-20	UC-H25	UC40

ASSY W/FJIC		
FJIC SIZE	NOZZLE	ULTRA CLEAN PROJECTILE
DASH		
-4	UC-J06	UC06 OR UC07
-6	UC-J10	UC12
-8	UC-J13/T13	UC16
-10	UC-J16/T16	UC22
-12	UC-J19/T19	UC26
-16	UC-J25/T22	UC33
-20	UC-J32/T25	UC40
-24	UC-J38/T38	UC50
-32	UC-J50/T50	UC60

ASSY W/CODE 61 & 62 FLANGES		
FLANGE SIZE	NOZZLE	ULTRA CLEAN PROJECTILE
DASH		
-8	UC-H10	UC16
-12	UC-H16	UC26
-16	UC-H19	UC33
-20	UC-H25	UC40
-24	UC-H32	UC50
-32	UC-H38	UC60

**Use larger recommended Ultra Clean Projectiles when cutting hose with an abrasive wheel.
The above sizes are recommendations. Due to different manufacturers, types of fittings,
and the amount of contamination in the line, the size projectile may need to be adjusted.

Tube Sizing Chart - Nominal Inch

OD X WALL	NOZZLE	ULTRA CLEAN PROJ.	ABRASIVE PROJ.	TUBE PROJ.
1/8" X .030"	UC-T03	UC04		
1/4" X .035"	UC-T06	UC10	UC-A07	UC06-TUBE
1/4" X .049"	UC-T06	UC08	UC-A07	UC06-TUBE
1/4" X .065"	UC-T06	UC07		UC06-TUBE
5/16" X .035"	UC-T08	UC12	UC-A10	UC07-TUBE
3/8" X .035"-.049"	UC-T10	UC14	UC-A12	UC10-TUBE
3/8" X .065"	UC-T10	UC12	UC-A10	UC08-TUBE
1/2" X .035"	UC-J13/T13	UC16	UC-A16	UC14-TUBE
1/2" X .049"	UC-J13/T13	UC16	UC-A16	UC12-TUBE
1/2" X .065"	UC-J13/T13	UC16	UC-A14	UC12-TUBE
1/2" X .083"	UC-J13/T13	UC14	UC-A12	UC12-TUBE
5/8" X .049"	UC-J16/T16	UC22	UC-A20	UC16-TUBE
5/8" X .065"	UC-J16/T16	UC20	UC-A18	UC16-TUBE
5/8" X .083"	UC-J16/T16	UC20	UC-A18	UC14-TUBE
3/4" X .049"-.065"	UC-J19/T19	UC26	UC-A24	UC20-TUBE
3/4" X .095"	UC-J19/T19	UC22	UC-A20	UC18-TUBE
7/8" X .049"	UC-J25/T22	UC33	UC-A30	UC26-TUBE
7/8" X .065"	UC-J25/T22	UC30	UC-A28	UC22-TUBE
7/8" X .095"	UC-H16	UC28	UC-A26	UC22-TUBE
1" X .065"	UC-J32/T25	UC33	UC-A30	UC28-TUBE
1" X .083"-.095"	UC-J32/T25	UC33	UC-A30	UC26-TUBE
1" X .120"	UC-J32/T25	UC30	UC-A28	UC26-TUBE
1-1/4" X .065"	UC-T32	UC40	UC-A40	UC33-TUBE
1-1/4" X .083"	UC-T32	UC40	UC-A36	UC33-TUBE
1-1/4" X .095"	UC-T32	UC40	UC-A36	UC33-TUBE
1-1/4" X .109"	UC-T32	UC36	UC-A36	UC33-TUBE
1-1/4" X .120"	UC-T32	UC36	UC-A33	UC33-TUBE
1-1/2" X .065"-.120"	UC-J38/T38	UC50	UC-A45	UC40-TUBE
1-1/2" X .134"-.148"	UC-J38/T38	UC45	UC-A40	UC40-TUBE
2" X .065"-.120"	UC-J50/T50	UC60	UC-A55	UC50-TUBE
2" X .134"-.188"	UC-J50/T50	UC55	UC-A50	UC50-TUBE

Tubing must be deburred prior to firing projectiles. Depending on the type of contamination present in the tube, abrasive projectiles may be used to remove rust and scale. Always use an Ultra Clean projectile after the use of an abrasive projectile. Tube projectiles should be used to remove mandrel lubricants, grease and oil. If the operator is unsure which type or size projectile to use, please call us for technical assistance.

Recommended Sizing Chart Metric Tubing

OD X WALL	NOZZLE		PROJ.		OD X WALL	NOZZLE		PROJ.	
		UC	ABR.	TUBE			UC	ABR.	TUBE
3 X .5	UC-T03	UC04			20 X 2.5	UC-H13	UC24	UC-A22	UC20-TUBE
3 X .7	UC-T03	UC03			20 X 3.0	UC-H13	UC22	UC-A20	UC18-TUBE
6 X 1.0	UC-T06	UC08	UC-A07	UC06-TUBE	22 X 1.0	UC-J25/T22	UC30	UC-A28	UC26-TUBE
6 X 1.5	UC-T06	UC07	UC-A06		22 X 1.5	UC-J25/T22	UC28	UC-A26	UC24-TUBE
8 X 1.0	UC-T08	UC10	UC-A07	UC07-TUBE	22 X 2.0	UC-J25/T22	UC28	UC-A26	UC24-TUBE
8 X 1.5	UC-T08	UC08	UC-A07	UC06-TUBE	25 X 2.0	UC-J32/T25	UC33	UC-A30	UC28-TUBE
10 X 1.0	UC-H06	UC14	UC-A12	UC10-TUBE	25 X 2.5	UC-J32/T25	UC30	UC-A28	UC26-TUBE
10 X 1.5	UC-H06	UC12	UC-A10	UC08-TUBE	25 X 3.0	UC-H19	UC28	UC-A26	UC24-TUBE
12 X 1.0	UC-J13/T13	UC16	UC-A14	UC12-TUBE	28 X 2.0	UC-H19	UC33	UC-A30	UC30-TUBE
12 X 1.5	UC-J13/T13	UC14	UC-A14	UC12-TUBE	28 X 2.5	UC-H19	UC33	UC-A30	UC28-TUBE
12 X 2.0	UC-H06	UC12	UC-A12	UC10-TUBE	30 X 2.0	UC-H25	UC36	UC-A33	UC33-TUBE
14 X 1.0	UC-H10	UC18	UC-A16	UC14-TUBE	30 X 2.5	UC-H25	UC36	UC-A33	UC30-TUBE
14 X 1.5	UC-H10	UC16	UC-A16	UC14-TUBE	30 X 3.0	UC-H25	UC33	UC-A30	UC30-TUBE
14 X 2.0	UC-H10	UC16	UC-A14	UC12-TUBE	30 X 4.0	UC-H19	UC33	UC-A30	UC28-TUBE
15 X 1.0	UC-H13	UC20	UC-A18	UC16-TUBE	35 X 2.0	UC-H32	UC45	UC-A40	UC36-TUBE
15 X 1.5	UC-H10	UC18	UC-A16	UC14-TUBE	35 X 3.0	UC-H25	UC40	UC-A40	UC36-TUBE
15 X 2.0	UC-H10	UC16	UC-A16	UC14-TUBE	35 X 4.0	UC-H25	UC36	UC-A36	UC33-TUBE
16 X 1.0	UC-J16/T16	UC22	UC-A20	UC18-TUBE	35 X 5.0	UC-H25	UC36	UC-A33	UC30-TUBE
16 X 1.5	UC-J16/T16	UC20	UC-A18	UC16-TUBE	38 X 2.5	UC-J38/T38	UC50	UC-A45	UC40-TUBE
16 X 2.0	UC-J16/T16	UC18	UC-A16	UC14-TUBE	38 X 3.0	UC-J38/T38	UC50	UC-A45	UC40-TUBE
16 X 2.5	UC-J16/T16	UC16	UC-A16	UC14-TUBE	38 X 4.0	UC-J38/T38	UC45	UC-A40	UC40-TUBE
18 X 1.0	UC-J19/T19	UC26	UC-A24	UC22-TUBE	38 X 5.0	UC-H25	UC40	UC-A40	UC36-TUBE
18 X 1.5	UC-J19/T19	UC24	UC-A22	UC20-TUBE	42 X 3.0	UC-H32	UC45	UC-A45	UC45-TUBE
18 X 2.0	UC-J19/T19	UC22	UC-A20	UC18-TUBE	42 X 4.0	UC-H32	UC45	UC-A40	UC40-TUBE
18 X 2.5	UC-J19/T19	UC20	UC-A18	UC16-TUBE	50 X 3.0	UC-H38	UC55	UC-A55	UC50-TUBE
20 X 1.5	UC-H16	UC28	UC-A26	UC24-TUBE	50 X 5.0	UC-J50/T50	UC55	UC-A50	UC50-TUBE
20 X 2.0	UC-H16	UC26	UC-A24	UC22-TUBE					

Tubing must be deburred prior to firing projectiles. Depending on the type of contamination present in the tube, abrasive projectiles may be used to remove rust and scale. Always use an Ultra Clean projectile after the use of an abrasive projectile. If the operator is unsure which type or size projectile to use, please call us for technical assistance.

Pipe Sizing Chart

SCH 40	NOZZLE	ULTRA CLEAN PROJ.	ABRASIVE PROJ.	GRINDING PROJ.
1/4"	UC-H08	UC14	UC-A12	UC-GR10
3/8"	UC-H13	UC18	UC-A16	UC-GR14 or UC-GR16
1/2"	UC-H16	UC20	UC-A18	UC-GR16 or UC-GR18
3/4"	UC-H19	UC30	UC-A26	UC-GR22 or UC-GR26
1"	UC-H25	UC36	UC-A33	UC-GR26 or UC-GR33
1-1/4"	UC-H32	UC45	UC-A40	UC-GR40
1-1/2"	UC-H38	UC55	UC-A50	UC-GR50
2"	UC-H50	UC65	UC-A55 or UC-A60	UC-GR55
2-1/2"	UC-U55/90	UC75	UC-A70	UC-GR65
3"	UC-U55/90	UC85	UC-A80	UC-GR80
3-1/2"	UC-U55/90	UC100	UC-A95	
4"	UC-4.5LN	UC120	UC-A115	
SCH 80	NOZZLE	ULTRA CLEAN PROJ.	ABRASIVE PROJ.	GRINDING PROJ.
1/4"	UC-H06	UC12	UC-A10	UC-GR07
3/8"	UC-H10	UC16	UC-A14	UC-GR10 or UC-GR12
1/2"	UC-H13	UC20	UC-A16 or UC-A18	UC-GR16
3/4"	UC-H19	UC26	UC-A22	UC-GR20
1"	UC-H25	UC36	UC-A30	UC-GR26
1-1/4"	UC-H32	UC45	UC-A40	UC-GR33
1-1/2"	UC-H38	UC50	UC-A45	UC-GR40
2"	UC-H38	UC60	UC-A55	UC-GR50
2-1/2"	UC-H50	UC70	UC-A65	UC-GR60
3"	UC-U55/90	UC85	UC-A80	UC-GR75
3-1/2"	UC-U55/90	UC110	UC-A110	
4"	UC-4.5LN	UC115	UC-A110	
SCH 160	NOZZLE	ULTRA CLEAN PROJ.	ABRASIVE PROJ.	GRINDING PROJ.
1/2"	UC-H10	UC16	UC-A14	UC-GR12
3/4"	UC-H16	UC20	UC-A18	UC-GR16 or UC-GR18
1"	UC-H19	UC30	UC-A26	UC-GR22
1-1/4"	UC-H25	UC36	UC-A33	UC-GR30
1-1/2"	UC-H32	UC45	UC-A40	UC-GR33 or UC-GR40
2"	UC-H38	UC55	UC-A45 or UC-A50	UC-GR40 or UC-GR45
2-1/2"	UC-H50	UC65	UC-A60	UC-GR55 or UC-GR60
3"	UC-U55/90	UC75	UC-A70	GR70
4"	UC-U55/90	UC100	UC-A100	

Abrasive projectiles may be used when there is a build up of contamination, surface rust or scale. For pipe applications where there is a greater build up of contamination, surface rust or scale, use a grinding projectile. Pipe must be straight for this projectile. NOTE: To ensure cleanliness, an Ultra Clean projectile must be used after abrasive and grinding projectiles. Please call if you need help in sizing your application for the correct nozzles and projectiles.

Launcher Stand & Nozzle Holder



The Launcher Stand is an essential piece of equipment. It offers the following advantages to the operator:

- Offers an anchor in a situation where the operator needs both hands to lift the hose to the nozzle.
- Prevents damage to the launcher or nozzles, either by being dropped or receiving rough handling during routine work processes. (NOTE: Rough handling or abuse of equipment voids all warranties).
- Offers a permanent storage facility.
- The launcher is always ready for your hose, tube and pipe cleaning requirements.

The Launcher stand should be located in a convenient location that provides easy access in situations where the operator needs two hands to lift the work and where he can easily pick it up and put it back down again. Many operators use the launcher stand as a permanent storage place for the launcher, rather than continually removing the launcher from the carrying case.

Ultra Clean Technologies offers a **Nozzle Holder** that can be attached to a work bench. The advantages of using a nozzle holder over leaving your nozzles in the carry case are as follows:

- Easy access during operation.
- Keeps the nozzles and the system in front of the workers eyes and makes them conscious of their obligations to follow set cleaning procedures.
- Becomes a promotional feature for customers.
- Accommodates 1/4" through 2" nozzles.



Ultra Clean Tape & Projectile Catcher

Ultra Clean Tape

We support the policy of labeling all hose, tube or pipe with the "Internally Cleaned by Ultra Clean" tape, as a matter of course in your hose & tube fabrication business. The Ultra Clean Tape explains the fact that contamination free hoses and tubes are important. If the tape is applied over an open end after cleaning, it will insure that the hose, tube or pipe stays clean. Ultra Clean tape can be easily removed before installation of the hose, tube or pipe.



The Projectile Catcher is an integral part of the Ultra Clean System, as it can:

- Prevent injury to yourself, the customer or an innocent bystander should contamination (such as steel slivers, or fragments of wire) be forcefully propelled, along with the projectile from the inside of the hose, tube or pipe.
- Allow you to catch and visually ascertain the contamination itself, expelled by the projectile from the hose, tube or pipe.
- Use it as an "indicator" to determine the internal condition of the hose, tube or pipe.
- Maintain a clean and professional work space.
- Saves time, motion and cleaning costs, by not having to constantly pick up after yourself.

The projectile catcher, as with all tools, should be located in a convenient and practical position. It is an essential part of the Ultra Clean System and should be planned into the workshop.

Ultra Clean Contamination Control Breathers

Features & Benefits

Ultra Clean Contamination Control 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 Contamination Control 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.



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

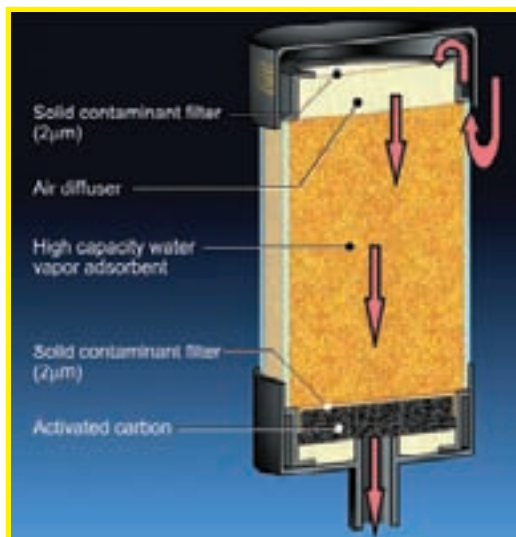
Why Do You Need An Ultra Clean Breather?

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 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.



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 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.



Ultra Clean Contamination Control Breathers



D-SERIES BREATHERS

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. D-Series models provide application flexibility by using 100% silica gel for moisture adsorption 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.

M-SERIES BREATHERS

M-Series breathers are designed from heavy duty materials capable of handling the requirements of the most severe environments. They replace 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.



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.

R-SERIES BREATHERS

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. 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 (right) 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.



X-SERIES BREATHERS

X-Series breathers are the perfect solution for high humidity and high dust environments. To extend the desiccant's life in these environments, the X-Series 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, while 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 the life of the desiccant by allowing the air flow through the breather only when needed to protect the integrity of the tank. In addition to having a rugged design, X-Series breathers include a top cap that can be reused when the desiccant is spent. When the color of the silica gel has turned dark green, remove the reusable top cap from the bottom desiccant cartridge, then use the same top cap with a replacement cartridge. The X-Series rebuildable design allow for economical replacement of the 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.



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-D100	3.5 (8.9)	5 (12.7)	1" slip fit	1.5 (0.7)	3.1 (92)	35	262	100% Silica Gel
UC-D101	5 (12.7)	5 (12.7)	1" slip fit	2.2 (1.0)	6.2 (183)	35	262	100% Silica Gel
UC-D102	8 (20.3)	5 (12.7)	1" slip fit	3.6 (1.6)	13.9 (411)	35	262	100% Silica Gel
UC-D103	8 (20.3)	5 (12.7)	1" male NPT	3.6 (1.6)	13.9 (411)	35	262	100% Silica Gel
UC-D104	8 (20.3)	5 (12.7)	2" male NPT	3.6 (1.6)	13.9 (411)	35	262	100% Silica Gel
UC-D108	10 (25.4)	5 (12.7)	2" male NPT	4.8 (2.2)	18.5 (547)	100	750	100% Silica Gel
UC-D109	14 (35.6)	6 (15.2)	3" male NPT	6.1 (2.8)	18.5 (547)	250	1875	100% Silica Gel
Z-SERIES MINI DESICCANT								
UC-Z131	2 (.51)	2 (.51)	½" female NPT	0.15 (68)	0.5 (15)	10	75	100% Silica Gel
UC-Z132	3.25 (8.3)	2 (.51)	½" female NPT	0.2 (91)	0.9 (27)	10	75	100% Silica Gel
UC-Z133	2 (.51)	3.25 (8.3)	½" female NPT	0.5 (227)	1.6 (47)	10	75	100% Silica Gel
UC-Z134	3.25 (8.3)	3.25 (8.3)	½" female NPT	0.8 (363)	2.8 (83)	10	75	100% Silica Gel
UC-Z135	5.5 (14.0)	3.25 (8.3)	½" female NPT	1.2 (544)	2.0 (59)	10	75	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)	35	262	100% Silica Gel
UC-R101	6.5 (16.5)	5.2 (13.2)	1" male NPT	3.2 (1.5)	6.2 (183)	35	262	100% Silica Gel
UC-R102	9.5 (24.1)	5.2 (13.2)	1" male NPT	4.5 (2.0)	13.9 (411)	35	262	100% Silica Gel
UC-R111*	6 (15.2)	5.2 (13.2)	1.125" female thread	2.8 (1.3)	6.2 (183)	35	262	100% Silica Gel
UC-R123	12 (30.5)	5.2 (13.2)	2" male NPT	5.5 (2.5)	18.5 (547)	100	750	100% Silica Gel
X-SERIES EXREME HUMIDITY								
UC-X100	6.25 (15.9)	3.25 (8.3)	½" 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)	35	262	100% Silica Gel
UC-X102	10 (25.4)	5 (12.7)	1" slip fit	4.8 (2.2)	13.9 (411)	35	262	100% Silica Gel
UC-X121	7 (17.8)	5 (12.7)	2" male NPT	3.3 (1.5)	6.2 (183)	35	262	100% Silica Gel
UC-X122	10 (25.4)	5 (12.7)	2" male NPT	5 (2.3)	13.9 (411)	35	262	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)	35	262	100% Silica Gel
UC-XR102	11.5 (29.2)	5.2 (13.2)	1" male NPT	10.5 (10.5)	13.9 (411)	35	262	100% Silica Gel
UC-XR108	14 (35.6)	5.2 (13.2)	2" male NPT	12.5 (5.7)	18.5 (547)	35	262	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)	35	262	Silica Gel
UC-C301	5 (12.7)	5 (12.7)	R-101 or R-111	2 (0.9)	6.2 (183)	35	262	Silica Gel
UC-C302	8 (20.3)	5 (12.7)	R-102	3.3 (1.5)	13.9 (411)	35	262	Silica Gel
UC-C323	10 (25.4)	5 (12.7)	R-123	4.6 (2.1)	18.5 (547)	100	750	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)	½" 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)	35	262	UC-X101	100% Silica Gel
UC-C342	5 (12.7)	5 (12.7)	1" slip fit	3.6 (1.6)	13.9 (411)	35	262	UC-X102	100% Silica Gel
UC-C343	5 (12.7)	5 (12.7)	2" male NPT	2.4 (1.1)	6.2 (183)	35	262	UC-X121	100% Silica Gel
UC-C344	5 (12.7)	5 (12.7)	2" male NPT	3.7 (1.7)	13.9 (411)	35	262	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)	35	262	100% Silica Gel
UC-C352	8 (20.3)	5 (12.7)	3.6 (1.6)	13.9 (411)	35	262	100% Silica Gel
UC-C358	10 (25.4)	5 (12.7)	4.8 (2.2)	18.5 (547)	35	262	100% Silica Gel

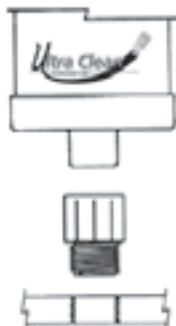
Applications for Contamination Control Breathers



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 (¾" MNPT)



Bayonet Adapter
Model UC-AD104



Spin-on Adapter
Model UC-AD105 (1" - 12 UNF)
Model UC-AD106 (1½" - 16 UN)



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