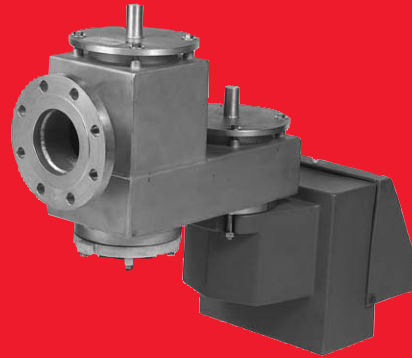


- Pressure / Vacuum Relief Vents
- Emergency Vents
- Tank Blanketing Valves
- Designed for high purity water / solvent storage
- Engineered to meet strict cleanliness protocols
- Multi-stage cleansing and / or passivation process
- Welded plate construction provides a smoother, cleaner interior surface
- Optional HEPA filter to limit contamination



**PURE  
TECH**

### WHAT IS PURE-TECH?

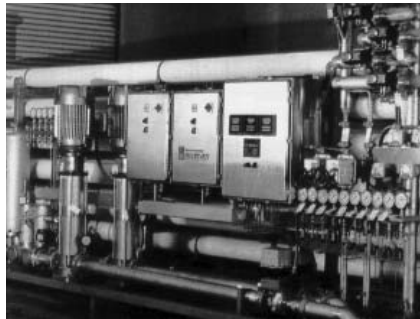
PURE-TECH is Protectoseal's exclusive line of storage tank fittings and accessories designed for clean liquid storage applications.

Industries that frequently utilize PURE-TECH include:

- Semiconductor manufacturing
- Pharmaceutical processing
- Ultrapure chemical manufacturing

Typical applications include:

- High purity water storage systems
- High purity solvent and chemical storage

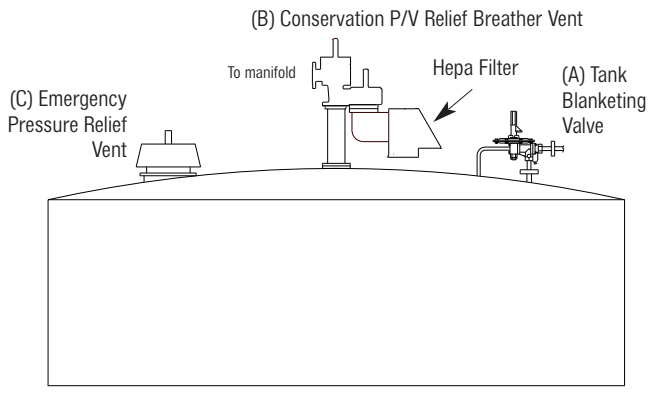


### HOW IS PURE-TECH UNIQUE?

PURE-TECH Pressure / Vacuum Relief Vents and Tank Blanketing Valves are engineered and manufactured to meet very strict cleanliness protocols required in pure water and pure chemical applications (not food grade):

- PURE-TECH vents are subjected to a multi-stage cleansing and/or passivation process.
- PURE-TECH stainless steel vents are manufactured in a "welded plate" construction, to provide a smoother, cleaner interior surface than possible in cast metal vents.
- PURE-TECH cleaned and passivated cast metal vents are available by special order, for appropriate applications.
- PURE-TECH cleaning process is also possible on Protectoseal flame/detonation arresters, tank blanketing valves, and other products. Consult the factory for availability.

**High Purity Storage Tank Utilizing PURE-TECH System Components**



### HOW DOES A PURE-TECH SYSTEM WORK?

In the storage of ultrapure liquids, it is vital that no outside air containing moisture and other contaminants be permitted to enter the tank and come in contact with the liquid. This can be accomplished by installing PURE-TECH components as shown in the illustration above.

PURE-TECH Tank Blanketing Valve (A) fills the tank's vapor space with an inert gas, usually Nitrogen, and maintains the gas within a preset pressure range, usually below 1 PSIG. The blanketing gas minimizes the evaporation of the stored product and controls the formation of explosive vapor-air mixture.

PURE-TECH Conservation Breather Vent (B) generally has a pressure setting higher than the set point of the blanketing valve but below the maximum pressure the tank will encounter in normal operation. The breather vent's vacuum side ensures that the vacuum design limits of the tank are not exceeded, in case the blanketing gas supply is interrupted. An optional HEPA (High Efficiency Particulate Air) filter traps 99.9% of particles, as small as 0.3 microns, at the vacuum relief inlet.

PURE-TECH Emergency Pressure Relief Vent (C) completes the system. These vents are sized and set to protect against over-pressurization during emergency situations, which can include fire involvement of the tank.

# Specifications

## WHAT MATERIAL CONSTRUCTIONS ARE AVAILABLE?

PURE-TECH products are available in a variety of materials. It is critical that the materials chosen are compatible with the service conditions.

- Welded stainless steel plate is generally the preferred construction of PURE-TECH vents that are installed in pure water and pure chemical applications and environments that are not highly corrosive.
- Polyvinyl Chloride (PVC) and Fiberglass Reinforced Plastic (FRP) vents are selected in corrosive environments that need non-metallic equipment

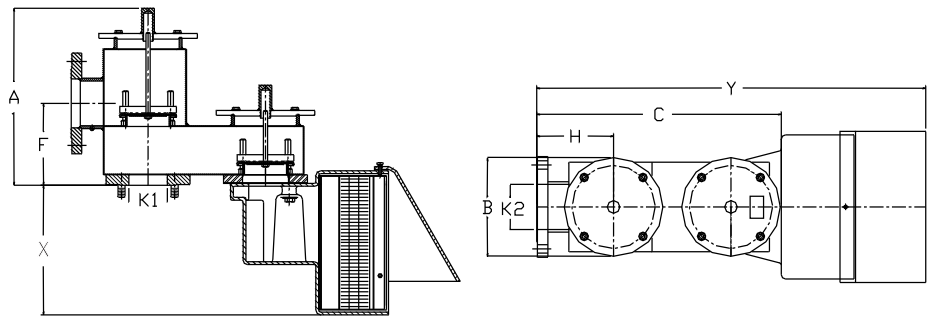


- Specially cleaned cast stainless steel and cast aluminum vents are available by special order for appropriate applications.
- The vent diaphragm material must also be chemically compatible with the stored liquid. Diaphragm material choices include FEP film, Buna-N, Neoprene, EPDM and Viton®.



## SERIES 18540 - PIPE-AWAY PRESSURE / VACUUM CONSERVATION VENT

Provides pressure and vacuum relief in applications that require vapors to be piped away in lieu of venting to the atmosphere. The pallets in the housing allow intake of air and release of vapors as the tank breathes normally. In the standard configuration, relieving vapors are piped away through a flanged connection one size larger than the inlet, providing greater flow capacities. Same size outlet flange also available.



### Welded 316 Stainless Steel

Model No.	K1 x K2 Flange Size	A Height	B Width	C Length	F	H	Flange/Filter Connection	X Clearance	Y Length
F18542W3K	2" x 3"	13 <sup>3</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>2</sub> "	19 <sup>1</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>8</sub> "	3"	12 <sup>1</sup> / <sub>2</sub> "	31 <sup>1</sup> / <sub>2</sub> "
F18543W4K	3" x 4"	15 <sup>5</sup> / <sub>8</sub> "	8"	21 <sup>3</sup> / <sub>4</sub> "	7 <sup>1</sup> / <sub>4</sub> "	6 <sup>7</sup> / <sub>8</sub> "	3"	12 <sup>1</sup> / <sub>2</sub> "	34 <sup>7</sup> / <sub>8</sub> "
F18544W6K	4" x 6"	17 <sup>3</sup> / <sub>4</sub> "	9 <sup>1</sup> / <sub>2</sub> "	24 <sup>1</sup> / <sub>2</sub> "	9 <sup>9</sup> / <sub>16</sub> "	8 <sup>3</sup> / <sub>8</sub> "	3"	12 <sup>1</sup> / <sub>2</sub> "	37 <sup>7</sup> / <sub>8</sub> "
F18546W8K	6" x 8"	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.

### Polyvinyl Chloride (PVC)

Model No.	K1 x K2 Flange Size	A Height	B Width	C Length	F	H	Flange/Filter Connection	X Clearance	Y Length
PV18542A3K	2" x 3"	14"	7 <sup>1</sup> / <sub>2</sub> "	17 <sup>7</sup> / <sub>8</sub> "	8"	6 <sup>7</sup> / <sub>8</sub> "	C.F.	C.F.	C.F.
PV18543A4K	3" x 4"	15 <sup>3</sup> / <sub>8</sub> "	7 <sup>1</sup> / <sub>2</sub> "	17 <sup>7</sup> / <sub>8</sub> "	8 <sup>3</sup> / <sub>4</sub> "	6 <sup>7</sup> / <sub>8</sub> "	C.F.	C.F.	C.F.
PV18544A6K	4" x 6"	16 <sup>3</sup> / <sub>4</sub> "	9 <sup>1</sup> / <sub>4</sub> "	22"	10 <sup>1</sup> / <sub>8</sub> "	7 <sup>3</sup> / <sub>4</sub> "	C.F.	C.F.	C.F.
PV18546A8K	6" x 8"	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.

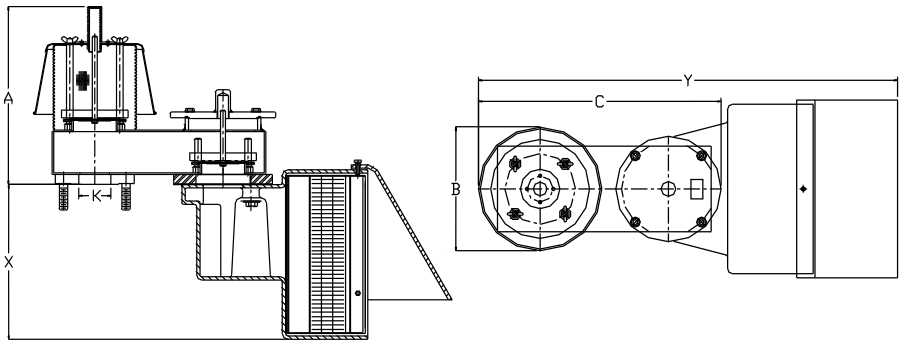
### Fiberglass Reinforced Plastic (FRP), Derakane® 470

Model No.	K1 x K2 Flange Size	A Height	B Width	C Length	F	H	Flange/Filter Connection	X Clearance	Y Length
P18542A3K	2" x 3"	21 <sup>1</sup> / <sub>8</sub> "	10 <sup>3</sup> / <sub>4</sub> "	23 <sup>7</sup> / <sub>8</sub> "	11"	8"	C.F.	C.F.	C.F.
P18543A4K	3" x 4"	23 <sup>3</sup> / <sub>4</sub> "	10 <sup>3</sup> / <sub>4</sub> "	23 <sup>7</sup> / <sub>8</sub> "	12 <sup>1</sup> / <sub>8</sub> "	8"	C.F.	C.F.	C.F.
P18544A6K	4" x 6"	29 <sup>1</sup> / <sub>2</sub> "	15"	33 <sup>3</sup> / <sub>8</sub> "	15 <sup>3</sup> / <sub>4</sub> "	11 <sup>1</sup> / <sub>4</sub> "	C.F.	C.F.	C.F.
P18546A8K	6" x 8"	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.

C.F. - Consult Factory

### SERIES 8540 - END-OF-LINE PRESSURE / VACUUM CONSERVATION BREATHER VENTS

Pallets in the vent housing allow intake of air and escape of vapors as the tank normally breathes in and out. Pallets open and close to permit only that intake or outlet relief necessary to remain within permissible working pressures and avoid damage to the tank.



#### Welded 316 Stainless Steel

Model No.	K Flange Size	A Height	B Width	C Length	Flange/Filter Connection	X Clearance	Y Length
F8542WK	2"	13 <sup>3</sup> / <sub>8</sub> "	9 <sup>3</sup> / <sub>8</sub> "	17 <sup>3</sup> / <sub>4</sub> "	3"	12 <sup>1</sup> / <sub>2</sub> "	31 <sup>1</sup> / <sub>8</sub> "
F8543WK	3"	16 <sup>1</sup> / <sub>2</sub> "	11 <sup>3</sup> / <sub>8</sub> "	20 <sup>5</sup> / <sub>8</sub> "	3"	12 <sup>1</sup> / <sub>2</sub> "	33 <sup>5</sup> / <sub>8</sub> "
F8544WK	4"	18"	13 <sup>3</sup> / <sub>8</sub> "	23 <sup>3</sup> / <sub>4</sub> "	3"	12 <sup>1</sup> / <sub>2</sub> "	36"
F8546WK	6"	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.

#### Polyvinyl Chloride (PVC)

Model No.	K Flange Size	A Height	B Width	C Length	Flange/Filter Connection	X Clearance	Y Length
PV8542AK	2"	15 <sup>1</sup> / <sub>4</sub> "	10 <sup>1</sup> / <sub>2</sub> "	16"	C.F.	C.F.	C.F.
PV8543AK	3"	15 <sup>1</sup> / <sub>4</sub> "	10 <sup>1</sup> / <sub>2</sub> "	16"	C.F.	C.F.	C.F.
PV8544AK	4"	16"	13"	19 <sup>1</sup> / <sub>8</sub> "	C.F.	C.F.	C.F.
PV8546AK	6"	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.

#### Fiberglass Reinforced Plastic (FRP), Derakane® 470

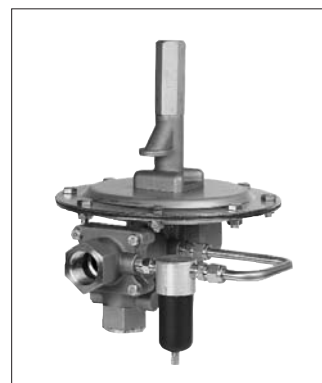
Model No.	K Flange Size	A Height	B Width	C Length	Flange/Filter Connection	X Clearance	Y Length
P8542AHK	2"	19 <sup>1</sup> / <sub>2</sub> "	12 <sup>3</sup> / <sub>8</sub> "	22"	C.F.	C.F.	C.F.
P8543AHK	3"	20 <sup>1</sup> / <sub>2</sub> "	14"	22 <sup>7</sup> / <sub>8</sub> "	C.F.	C.F.	C.F.
P8544AHK	4"	25 <sup>1</sup> / <sub>4</sub> "	16 <sup>1</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>8</sub> "	C.F.	C.F.	C.F.
P8546AHK	6"	C.F.	C.F.	C.F.	C.F.	C.F.	C.F.

C.F. - Consult Factory

### SERIES 20 & 30 TANK BLANKETING VALVES

An effective means of regulating a blanketing gas into the vapor space of liquid storage tanks. The valve controls flow of a pressurized inert gas (most often Nitrogen) into the tank's vapor space. When the tank pressure drops below a specified setting, the blanketing valve opens and allows flow of inert gas into the vapor space. It closes when pressure in the tank has returned to an acceptable level. Proper use of the valve can preclude the entrance of air through relief vents and reduce exposure of tank contents to oxygen and moisture. Flange Pattern: ANSI, DIN optional. Stainless steel construction.

- > Series 20 Pilot Operated Blanketing Valve has 1" NPT inlet/outlet and accommodates inlet gas pressures from 20 PSIG (1.38 barg) to 200 PSIG (13.8 barg).
- > Series 30 Spring Operated Blanketing Valve has 1/2" NPT inlet/outlet and accommodates inlet gas pressures from 10 PSIG (0.69 barg) to 200 PSIG (13.8 barg).



Series 20 Pilot Operated  
Blanketing Valve



Series 30 Spring Operated  
Blanketing Valve

## SERIES 17800 - PIPE-AWAY PRESSURE OR VACUUM RELIEF VENT

Provides pressure or vacuum relief in applications that require vapors to be piped away in lieu of venting into the atmosphere. Depending upon orientation of connection, the pallet in the housing allows intake of air release of vapors as the tank breathes normally. In the standard configuration, relieving vapors are piped away through a flanged connection one size larger than the inlet, providing greater flow capabilities. Same size outlet flange also available.

### Welded 316 Stainless Steel

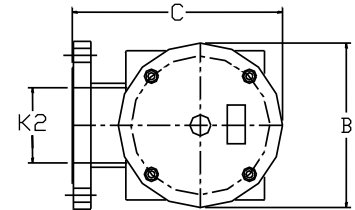
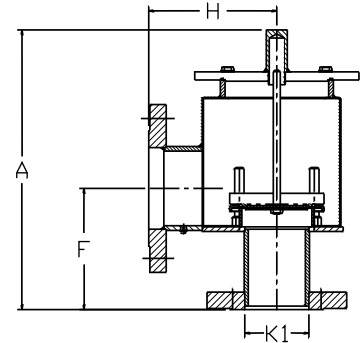
Model No.	K1 x K2 Flange Size	A Height	B Width	C Length	F	H
F17802W3K	2" x 3"	12"	6½"	11⅞"	5⅝"	6⅝"
F17803W4K	3" x 4"	15⅝"	8"	11⅝"	6½"	7⅞"
F17804W6K	4" x 6"	16⅜"	9½"	13⅜"	7⅞"	8¼"
F17806W8K	6" x 8"	22⅞"	11"	17⅞"	9"	9⅝"

### Polyvinyl Chloride (PVC)

Model No.	K1 x K2 Flange Size	A Height	B Width	C Length	F	H
PV18542A3K	2" x 3"	10¾"	7½"	10¼"	5¼"	6½"
PV18543A4K	3" x 4"	12"	7½"	10¼"	6"	6½"
PV18544A6K	4" x 6"	13⅜"	9¼"	22"	7"	7⅞"
PV18546A8K	6" x 8"	17¼"	11¼"	14⅞"	8"	8½"

### Fiberglass Reinforced Plastic (FRP), Derakane® 470

Model No.	K1 x K2 Flange Size	A Height	B Width	C Length	F	H
P18542A3K	2" x 3"	16¾"	10¾"	13⅜"	6⅞"	8"
P18543A4K	3" x 4"	18½"	10¾"	13⅜"	7¼"	11¼"
P18544A6K	4" x 6"	21¼"	15"	18⅞"	7⅞"	11¼"
P18546A8K	6" x 8"	21¼"	15"	18¾"	9¼"	11¼"



## ADDITIONAL PRODUCTS FROM PROTECTOSEAL

### Series 18540



Pipe-Away Pressure Vacuum Relief Vent for applications that require hazardous vapors be processed into manifolded piping and not released into the atmosphere.

### Series 7800



Emergency Vent protects tanks against rupture or explosion resulting from excessive internal pressure caused by exposure to fires.

### Series 4950



Vent Line / In-Line Parallel Plate Flame Arrester is designed for installation in open vent pipe or bleed lines from storage or processing tanks. Suitable for NEC Group D (IEC Group IIA) vapors.

### Series 830



Combination Pressure / Vacuum Relief Vent & Flame Arrester provides pressure and vacuum relief as well as protection from propagation of externally introduced flames. Suitable for NEC Group D (IEC Group IIA) vapors.