

SERIES 51700

Hinged Emergency Pressure Manhole Cover Vent

SERIES 51700

- Sizes 16" (DN 400) through 24" (DN 600)
- Vents directly to atmosphere
- Pressure setting achieved by weight loading
- Hinged/counterweight design allows for higher settings
- Cover design allows for easy access to tank
- Patented, FEP film "Air-Cushioned Seating"
- Conforms to the latest ATEX Directive
- Low-leak pallet design - certified test reports
- Available in Carbon Steel, Aluminum & Stainless Steel



OBJECTIVE

Protectoseal Series 51700 Hinged Emergency Pressure Manhole Cover Vent provides emergency pressure relief for storage tanks that are exposed to an external fire. They are designed for installation on the manhole openings of tanks and provide a means of relieving large volumes of vapor, beyond the capacity of a normal operating vent. The Series 51700 design allows for higher pressure relief settings than are available on our Series 53300 Emergency Pressure Manhole Cover Vent. Series 51700 Manhole Cover Vents do not provide vacuum relief. Vacuum relief must be supplied by the operating vent with which the tank is equipped. See Protectoseal Series 830, 8540, 6240, 16240 and 18540. Series 52600 Manway Cover Vents include pressure and vacuum relief.

TECHNIQUE

When positioned on the flanged seat, the Series 51700 Hinged Emergency Pressure Manhole Cover Vent provides an effective vapor-tight seal. Under emergency fire conditions, the cover can pivot open on its hinge and provide required relief, preventing damage to the tank due to excessive internal pressure. When tank pressure is reduced, the cover automatically recloses. The hinged design allows the use of a lever principle counterweight so that pressure settings higher than those available on our Series 53300 Emergency Pressure Manhole Cover Vent may be achieved. The design allows convenient access through the manhole opening for tank inspection and maintenance.

SPECIAL FEATURES

Fast Inspection, Easy Maintenance. Design and light weight of unit permit easy, convenient handling for inspection and maintenance. Opening of hinged cover allows access into tank through the seat area.

Higher Pressure Settings. The hinged design and lever arm loading capabilities of the Series 51700 allows for higher pressure settings than are available on other dead weight loaded vents of similar size. Full open flow capacity and automatic reclosing of the vent as tank pressure decreases provide

efficient and dependable emergency venting capability while minimizing amount of vapor unnecessarily vented to the atmosphere.

Maintains Accurate Pressure Settings. Set points are accurate to within +/- 3% across the entire range of available pressure relief settings shown in the chart on the reverse. Set point accuracy is assured by stringent machining, assembly and test procedures.

Air-Cushioned Seating. A flat, smooth diaphragm of FEP film is supported on both sides of an annular channel to form a floating air seal with the seat. An outer support rim assures proper seating.

Low-Leak Covers. Leakage on vent covers is no more than 1 SCFH at 90% of the set pressure. For above standard settings leakage rate will be higher, consult factory.

Sizes Available. Available in 16" (DN 400) through 24" (DN 600) sizes. Flanged to mate with standard flanged 125# ANSI, API (20" or 24" only) or DIN PN 16 bolting specifications. Other drilling patterns are also available upon special request.

PRO-FLOW Sizing and Selection Software.

Use PRO-FLOW® to select the correct size unit for emergency pressure relief calculated in accordance with API 2000, ISO 28300, NFPA 30 and OSHA 1910.106.

CONSTRUCTION

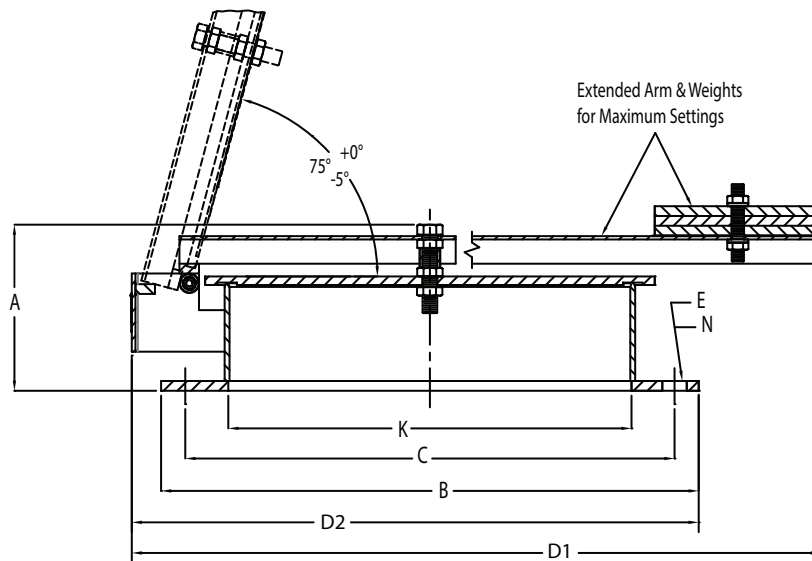
A comprehensive range of materials is offered as shown in the chart below.

Available Options.

- Alternate diaphragm materials
- Material certifications for flange and seat
- FEP coating
- Kynar® coating (*Kynar® is a Registered Trademark of Arkema, Inc.*)

| Series | Base Flange/Seat | Cover / Pallet | Diaphragm | Lever Arm* |
|-----------|---------------------|-------------------|-----------|---------------|
| AX51700 | Steel/316 S.S. | Aluminum | FEP Film | Steel |
| AXCS51700 | Steel/316 S.S. | Steel | FEP Film | Steel |
| AXF51700 | 316 S.S. | 316 S.S. | FEP Film | 316 S.S. |

* On specific models.



DIMENSIONS & ORDERING INFORMATION

| Cat. No. | Flange Size | I.D. K | Ht. A | Overall Length | | Dia. B | B.C. C | Dia. E | Holes N |
|----------|-------------|----------------------------------|---------------------------------|----------------------------------|-----------------------------------|----------------------------------|----------------------------------|---------------------------------|---------|
| | | | | D1 | D2 | | | | |
| 51716ASA | 16" | 15 ¹ / ₄ " | 8 ¹ / ₂ " | 29 ³ / ₄ " | 24 ¹ / ₄ " | 23 ¹ / ₂ " | 21 ¹ / ₄ " | 1 ¹ / ₈ " | 16 |
| 51716DN | DN 400 | 410mm | 216mm | 756mm | 608mm | 580mm | 525mm | 30mm | 16 |
| 51718ASA | 18" | 15 ¹ / ₄ " | 8 ¹ / ₂ " | 29 ³ / ₄ " | 25" | 25" | 22 ³ / ₄ " | 1 ¹ / ₄ " | 16 |
| 51718DN | DN 450 | 462mm | 216mm | 756mm | 640mm | 635mm | 578mm | 30mm | 16 |
| 51720ASA | 20" | 20 ¹ / ₂ " | 8 ¹ / ₂ " | 35 ¹ / ₄ " | 29" | 27 ¹ / ₂ " | 25" | 1 ¹ / ₄ " | 20 |
| 51720API | 20" | 20 ¹ / ₂ " | 8 ¹ / ₂ " | 35 ¹ / ₄ " | 28 ¹ / ₄ " | 26" | 23 ¹ / ₂ " | 3/4" | 16 |
| 51720DN | DN 500 | 513mm | 216mm | 895mm | 745mm | 715mm | 650mm | 33mm | 20 |
| 51724ASA | 24" | 24" | 8 ¹ / ₂ " | 39" | 33 ¹ / ₁₆ " | 32" | 29 ¹ / ₂ " | 1 ³ / ₈ " | 20 |
| 51724API | 24" | 24" | 8 ¹ / ₂ " | 39" | 32 ¹ / ₁₆ " | 30" | 27 ¹ / ₂ " | 3/4" | 20 |
| 51724DN | DN 600 | 616mm | 216mm | 991mm | 853mm | 840mm | 770mm | 36mm | 20 |

| Add Prefix | Base Flange/Seat | Cover / Pallet | Diaphragm | Lever Arm (on specific models) |
|------------|------------------|----------------|-----------|--------------------------------|
| AX | Steel/316 S.S. | Aluminum | FEP Film | Steel |
| AXCS | Steel/316 S.S. | Steel | FEP Film | Steel |
| AXF | 316 S.S. | 316 S.S. | FEP Film | 316 S.S. |

MINIMUM / MAXIMUM PRESSURE SETTINGS (Consult factory for settings outside of ranges shown below.)

| Series | Flange Size | No Lever Arm Models | | | | | | Lever Arm Model | | | |
|-----------------|-------------|----------------------|----------|----------------------|----------|----------------------|----------|----------------------|----------|----------------------|----------|
| | | 51700 / L* | | 51700 / C | | 51700 | | | | | |
| | | Minimum* | | Std. Minimum | | Std. Maximum | | Std. Minimum | | Std. Maximum | |
| 51700 | | oz./in. ² | in. W.C. | oz./in. ² | in. W.C. | oz./in. ² | in. W.C. | oz./in. ² | in. W.C. | oz./in. ² | in. W.C. |
| AX51716 | 16"/DN 400 | 0.73 | 1.26 | 1.25 | 2.16 | < 2.17 | < 3.75 | 2.17 | 3.75 | 20.0 | 34.6 |
| AXCS & AXF51716 | 16"/DN 400 | 0.79 | 1.37 | 2.80 | 4.84 | < 3.74 | < 6.47 | 3.74 | 6.47 | 20.0 | 34.6 |
| AX51718 | 18"/DN 450 | 0.73 | 1.26 | 1.25 | 2.16 | < 2.17 | < 3.75 | 2.17 | 3.75 | 20.0 | 34.6 |
| AXCS & AXF51718 | 18"/DN 450 | 0.79 | 1.37 | 2.80 | 4.84 | < 3.74 | < 6.47 | 3.74 | 6.47 | 20.0 | 34.6 |
| AX51720 | 20"/DN 500 | 0.61 | 1.06 | 1.14 | 1.97 | < 1.73 | < 2.99 | 1.73 | 2.99 | 16.0 | 27.7 |
| AXCS & AXF51720 | 20"/DN 500 | 0.69 | 1.19 | 2.67 | 4.62 | < 3.28 | < 5.67 | 3.28 | 5.67 | 16.0 | 27.7 |
| AX51724 | 24"/DN 600 | 0.57 | 0.99 | 1.11 | 1.92 | < 1.57 | < 2.72 | 1.57 | 2.72 | 16.0 | 27.7 |
| AXCS & AXF51724 | 24"/DN 600 | 0.75 | 1.30 | 2.73 | 4.72 | < 3.13 | < 5.41 | 3.13 | 5.41 | 16.0 | 27.7 |

* Modified Design - Consult Factory.



225 Foster Ave., Bensenville, IL 60106-1690
 P 630.595.0800 F 630.595.8059
 info@protectoseal.com www.protectoseal.com