

ERV

Hinged Emergency Pressure Manhole Cover Vent



- Sizes 8" (DN 200) 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
- A PTFE insert is provided to achieve leak tight sealing
- Conforms to the latest ATEX Directive
- Low-leak pallet design
- Available in Carbon Steel and Stainless Steel
- Alternative models available, with spring-loaded vacuum



Objective

Protectoseal's ERV 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 ERV design allows for higher pressure relief settings than are available on our Series 53300 Emergency Pressure Manhole Cover Vent.

A PTFE insert is provided to achieve leak tight sealing between the pallet and seat under normal operating conditions. An alternative model is available, fitted with an additional spring-loaded vacuum vent that will open under negative pressure to protect the tank from any damage that may occur under vacuum conditions.

Technique

When positioned on the flanged seat, the ERV 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.

Lightweight design of unit permits 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 ERV 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 PTFE 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.

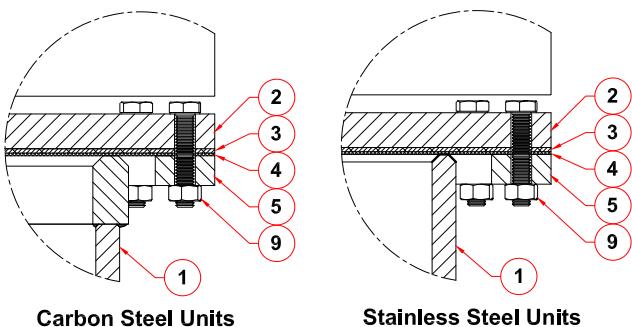
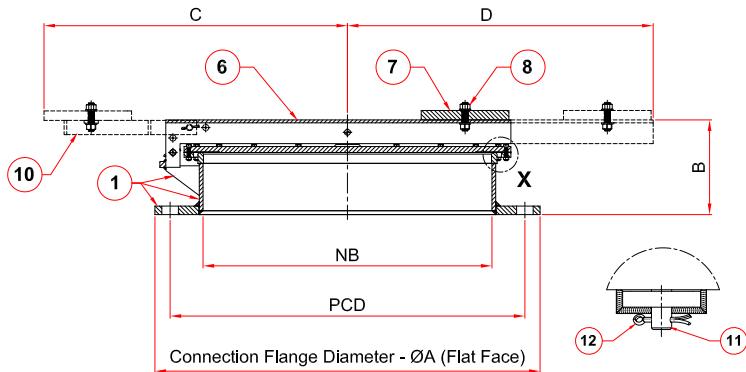
Leakage on vent covers is no more than 1 SCFH at 90% of the set pressure. For above standard settings leakage rate will be higher, consult factory.

Sizes Available.

Available in 8" (DN 200) 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.

Specifications**Materials and Options**

Model	Emergency Relief Vent
Sizes (Nominal Bore)	8", 10", 12", 16", 18", 20" & 24"
Process Connection	API650 (20" & 24") ANSI 150# Special (on request)
Materials	Carbon Steel Stainless Steel Special (on request)
Diaphragm and Insert	PTFE
Weight	Lead Plate (Standard) Stainless Plate
Standard Settings	0.1 psi (7.5 mbar) – 0.2 psi (16 mbar)
Counter Weight Settings	0.2 psi (16 mbar) – 0.6 psi (40 mbar)
Extended Settings	0.6 psi (40 mbar) – 1 psi (70 mbar)



1: Main Body Assembly (flange, neck, seat, etc.) 2: Cover Assembly 3: Backing Disc 4: Diaphragm 5: Drip Ring 6: Cover Arm (standard and extended)
7: Weight Disc 8: Fasteners for Weight Discs 9: Fasteners for Cover 10: Counter Weight Balance Assembly 11: Hinge Pin 12: Split Pin

Dimensions and Ordering Information

Model Ref.	Nominal Size	ASME B16.5 CL.150 Connection Flange Dimensions			ERV Height B (±0.4", 10.0mm)	Counter Weight Unit C (max)	Extended Arm D (max)	Approx. Weight
		ØA	PCD	ØHole (Qty)				
ERV1G-200a#	8", DN200	14", 343mm	12", 298.4mm	0.8", 22.3mm (x8)	7", 188mm	13", 320mm	24", 615mm	37lbs, 17kg
ERV1G-250a#	10", DN250	16", 406mm	14", 362mm	1", 25.4mm (x12)	7", 185mm	18", 466mm	25", 625mm	55lbs, 25kg
ERV1G-300a#	12", DN300	19", 483mm	17", 431.8mm	1", 25.4mm (x12)	7", 185mm	19", 493mm	26", 650mm	77lbs, 35kg
ERV1G-350a#	14", DN350	21", 533mm	19", 476.2mm	1.1", 28.5mm (x12)	8", 192mm	20", 505mm	27", 675mm	99lbs, 45kg
ERV1G-400a#	16", DN400	24", 597mm	21", 539.8mm	1.1", 28.5mm (x16)	8", 193mm	21", 539mm	30", 750mm	128lbs, 58kg
ERV1G-450a#	18", DN450	25", 635mm	23", 577.8mm	1.3", 31.8mm (x20)	8", 192mm	22", 566mm	31", 800mm	146lbs, 66kg
ERV1G-500a#	20", DN500	27", 698mm	5", 635mm	1.3", 31.8mm (x20)	8", 192mm	23", 592mm	33", 850mm	173lbs, 78.5kg
ERV1G-600a#	24", DN600	32", 813mm	30", 749.3mm	1.4", 35mm (x20)	8", 193mm	26", 655mm	35", 900mm	227lbs, 103kg

Model Ref.	Nominal Size	BS EN1092-1 PN16 Connection Flange Dimensions			ERV Height B (± 0.4", 10.0mm)	Counter Weight C (max)	Extended Arm D (max)	Approx. Weight
		ØA	PCD	ØHole (Qty)				
ERVIG-200s#	8", DN200	13", 340mm	12", 295mm	0.8", 22mm (x12)	7", 188mm	13", 320mm	24", 615mm	37lbs, 17kg
ERVIG-250s#	10", DN250	16", 405mm	14", 355mm	1", 26mm (x12)	7", 185mm	18", 466mm	25", 625mm	55lbs, 25kg
ERVIG-300s#	12", DN300	18", 460mm	16", 410mm	1", 26mm (x12)	7", 185mm	19", 493mm	26", 650mm	77lbs, 35kg
ERVIG-350s#	14", DN350	20", 520mm	19", 470mm	1", 26mm (x16)	8", 192mm	20", 505mm	27", 675mm	99lbs, 45kg
ERVIG-400s#	16", DN400	23", 580mm	21", 525mm	1.2", 30mm (x16)	8", 193mm	21", 539mm	30", 750mm	128lbs, 58kg
ERVIG-450s#	18", DN450	25", 640mm	23", 585mm	1.2", 30mm (x20)	8", 192mm	22", 566mm	31", 800mm	146lbs, 66kg
ERVIG-500s#	20", DN500	28", 715mm	26", 650mm	1.3", 33mm (x20)	8", 192mm	23", 592mm	33", 850mm	173lbs, 78.5kg
ERVIG-600s#	24", DN600	33", 840mm	30", 770mm	1.4", 36mm (x20)	8", 193mm	26", 655mm	35", 900mm	227lbs, 103kg

Additional Products From Protectoseal



Series 8540H

End-of-Line Pressure / Vacuum Conservation Vent is intended for use where both pressure and vacuum relief are required. The pallets in the vent housing allow intake of air and escape of vapors as the tank normally breathes in and out.



Series UCA

In-line Unstable Detonation Flame Arresters are designed to prevent the propagation of gas or vapor explosions in pipelines under the most severe condition of unstable detonation. Suitable for NEC Group D (IEC Group IIA and IIA1) vapors.



Series 830

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



Series AVC

End-of-Line Flame Arresters are designed to be installed at the end of a pipeline or exit vent from a vessel to provide protection against atmospheric deflagrations. Suitable for NEC Groups B, C, and D (IEC Groups IIB and IIC) vapors.

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