

# Pressure Vacuum Relief Valve

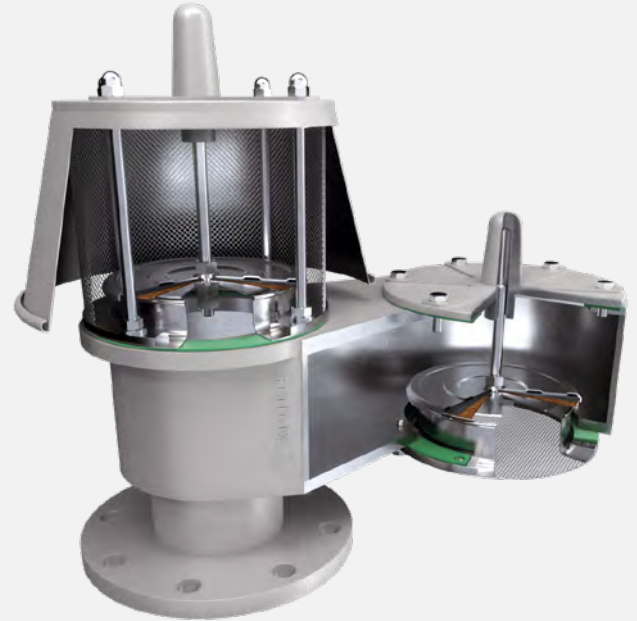
Top mounted, end of line, weight loaded  
**Model 100**



## Product Description

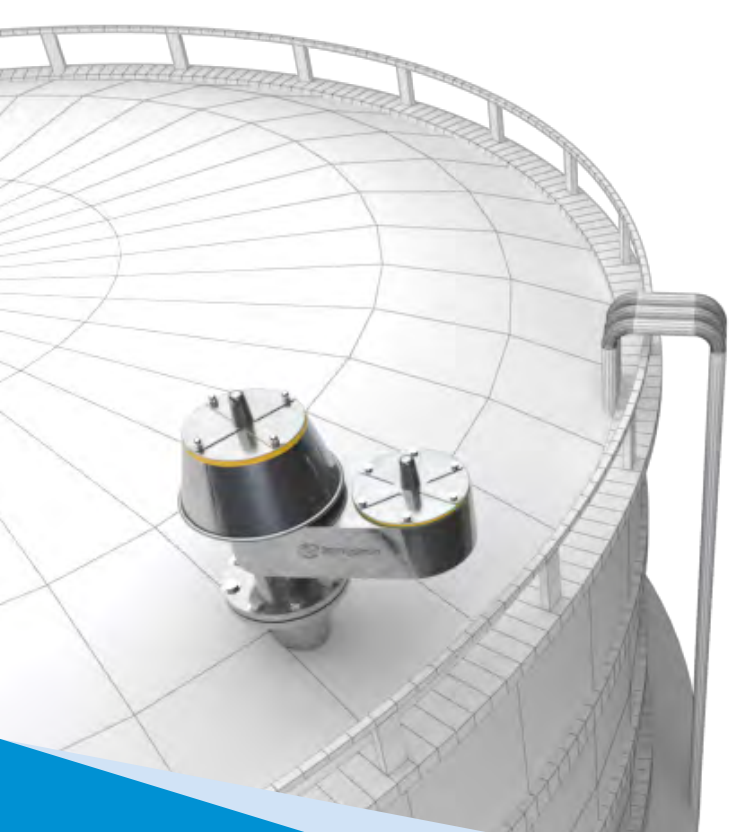
Storagetech™ 's Model 100 Top Mounted, End of Line, Weight Loaded Pressure Vacuum Relief Valve is designed to protect the tank from excessive internal pressure during operation. The weighted-loaded pallet and diaphragm assembly is held tightly against a seal to prevent the loss of vapour to atmosphere in the closed position. As the internal pressure in the tank increases, due to product filling or vapour development, the set pressure is reached, accordingly, the diaphragm shall be opened and discharge the gas to atmosphere. Model 100 set pressure can be arranged as per storage tank requirements and the valve will reseal when internal pressure returns to below set pressure. The vacuum pallet and diaphragm assembly is similarly maintained in the closed position.

As the internal pressure in the tank reduces, due to emptying vacuum conditions occurs, the balance between the tank pressure and the external atmospheric pressure changes. Accordingly when the set pressure of the unit is reached, the diaphragm opens to vacuum air content and rebalance the internal pressure. Storagetech Valves Activated as close as to set pressures, less than 10% of set pressures, ensuring accurate pressure management and isolate emission losses perfectly.



With 40 years of experience, Storagetech™ PVV systems offer effective solutions against unwanted evaporation and vacuums that may occur in tanks.

Thanks to PVV solutions produced completely in accordance with international norms, Storagetech™ is a reliable, sustainable and effective solution partner for your investments.



## Construction

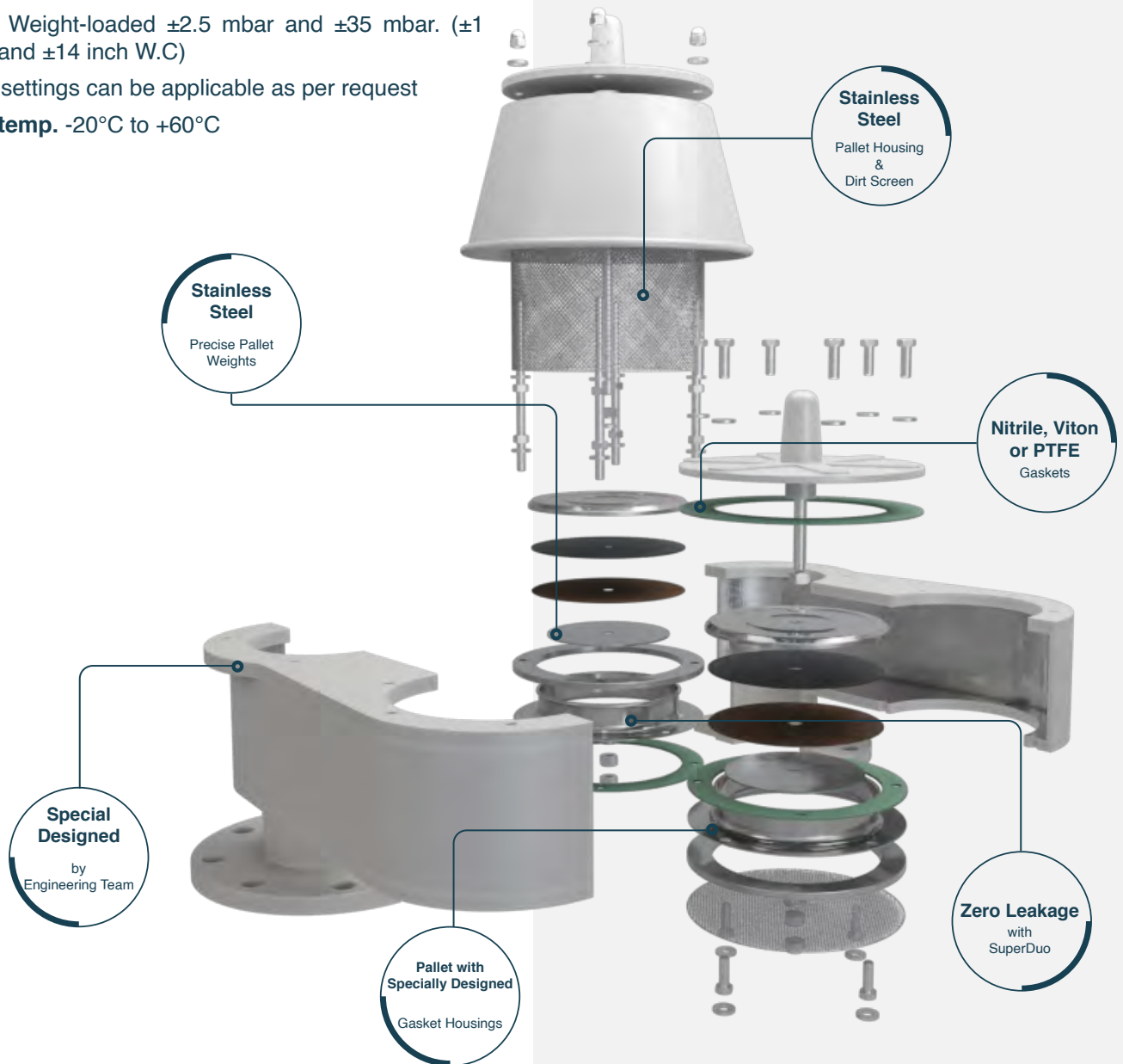
|                       |   |
|-----------------------|---|
| <b>Standard Sizes</b> | 2" to 12" (DN50 to DN300)<br>Further sizes are applicable upon request.   |
| <b>Flanges</b>        | ANSI, DIN, JIS, BSP   |
| <b>Body</b>           | Carbon Steel, Stainless Steel or Aluminium  |
| <b>Seals</b>          | Klingrit, Nitrile, Viton, PTFE  |
| <b>Pallet</b>         | Stainless Steel AISI 304/316  |
| <b>Springs</b>        | Stainless Steel   |
| <b>Paint Finish</b>   | 1. Customer Specification<br>2. Powder Coating, Colour RAL 9006<br>3. Epoxy Paint, Colour RAL 9006<br>4. PTFE Coating |
| <b>ATEX Cert</b>      | Ex II 1/2 G Ex h IIB Ga/Gb  |

## Setting Range

**Pressure** Weight-loaded  $\pm 2.5$  mbar and  $\pm 35$  mbar. ( $\pm 1$  inch W.C and  $\pm 14$  inch W.C)

\*Different settings can be applicable as per request

**Ambient temp.** -20°C to +60°C

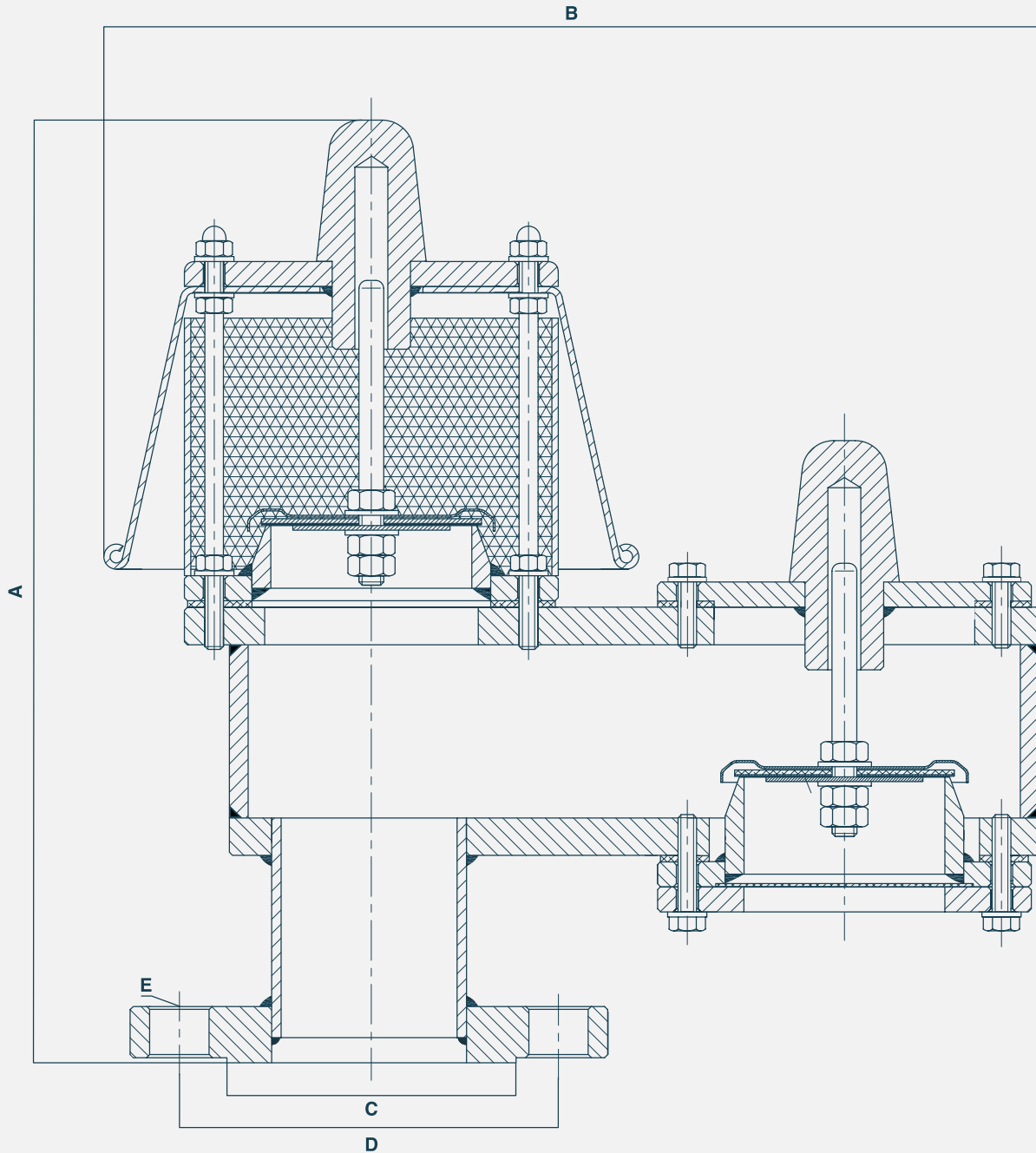


## Key Features

- Easy to install. Do not need a special tool or experience.
- Light weight construction.
- Quick and easy to install, inspect and clean.
- Any grade materials are available.
- Has stainless steel pallets.
- Large weatherhood provides maximum airflow.
- Internal materials are resistant to winter conditions.
- Special designs can be achievable upon request to meet individual specifications.
- Vacuum and relief cases can be managed effectively as per the set requirements of bulk storage tank.

- Super Duo technology provides extra curves and perfect seating with zero leakage.
- Set values can be arranged as per the site conditions, no need supervising.
- Diaphragm is manufactured from PTFE material to prevent possibility of ice formation and sticky residues hindering the valve from opening, while the pallet assembly moves freely on guide posts.
- Design, manufacturing and test according to EN ISO 80079-36.
- Breathing requirements are fulfilled according to API 2000 7th Edition.
- PTFE, XYLAN, Rubber lining, etc. coating options are available.

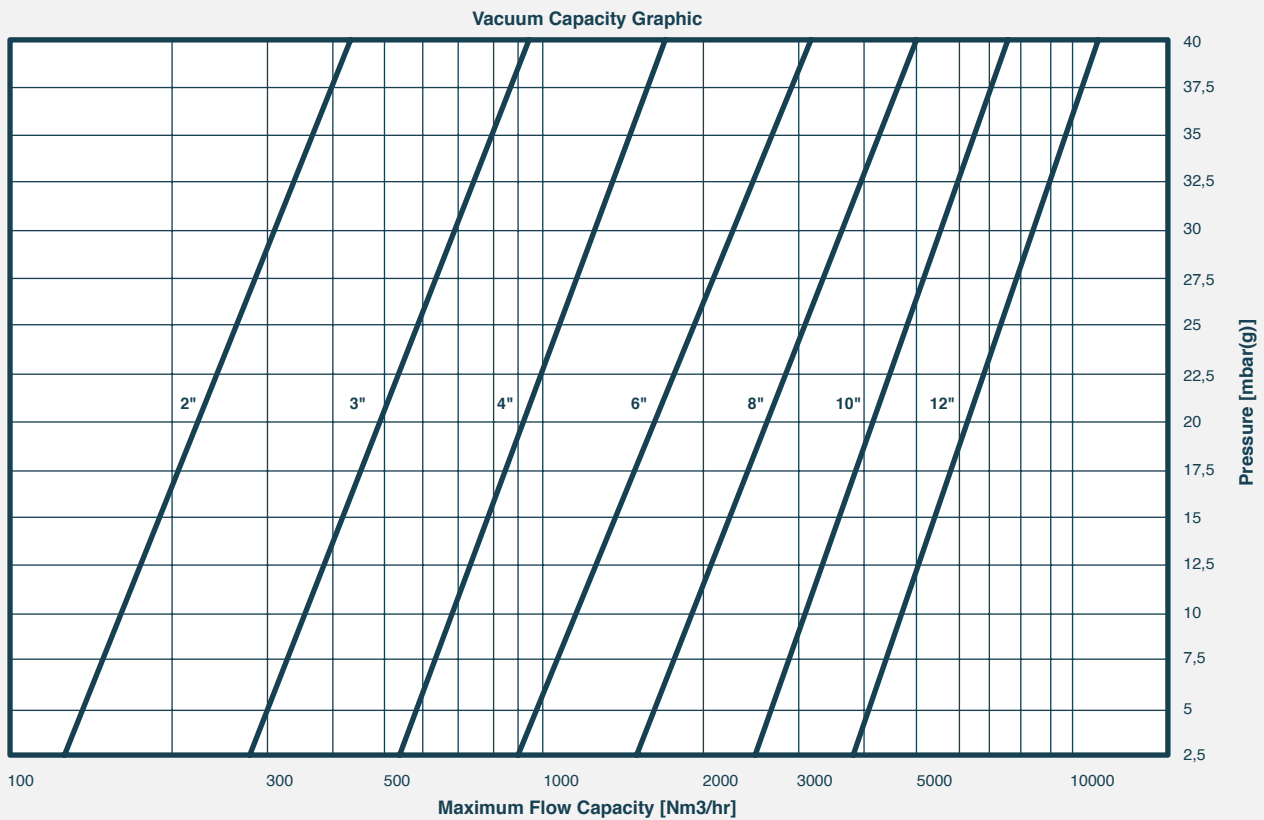
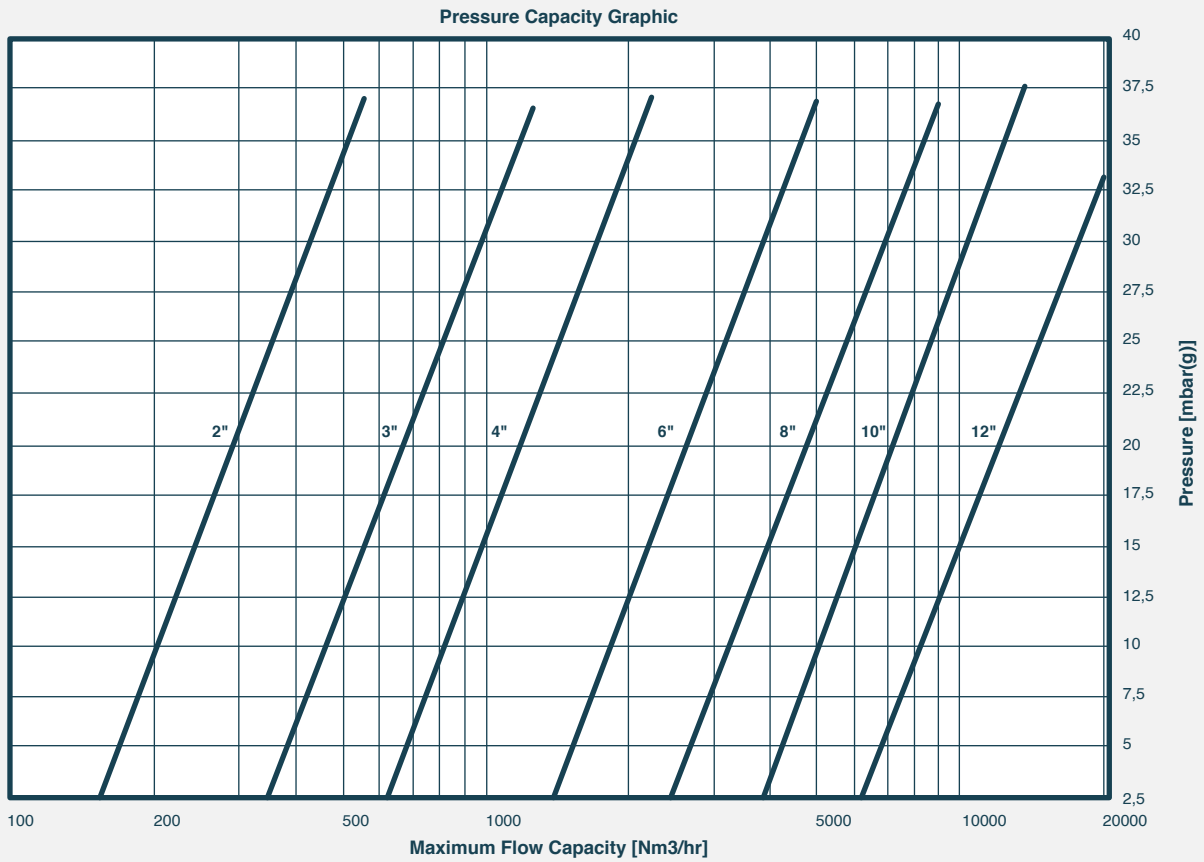
## Technical Drawing



## Weight & Dimensions

| SIZE |     | A   | B    | C            |      | D            |      | E            |        | TOTAL WEIGHT (kg) |         |         |         |         |
|------|-----|-----|------|--------------|------|--------------|------|--------------|--------|-------------------|---------|---------|---------|---------|
| NPS  | DN  |     |      | ANSI 150# RF | DN   | ANSI 150# RF | DN   | ANSI 150# RF | DN     | WELDED            |         | CASTING |         |         |
|      |     |     |      |              |      |              |      |              |        | CS                | SS      | AL      | CS      | SS      |
| 2"   | 50  | 317 | 270  | Ø92.1        | Ø102 | Ø120.6       | Ø125 | Ø19x4        | Ø18x4  | 10-15             | 10-15   | 4-6     | 14-19   | 15-19   |
| 3"   | 80  | 334 | 350  | Ø127         | Ø138 | Ø152.4       | Ø160 | Ø19x4        | Ø18x8  | 15-20             | 15-20   | 9-12    | 22-28   | 23-29   |
| 4"   | 100 | 418 | 475  | Ø157.2       | Ø158 | Ø190.5       | Ø180 | Ø19x8        | Ø18x8  | 23-28             | 23-28   | 13-18   | 35-43   | 35-43   |
| 6"   | 150 | 449 | 615  | Ø215.9       | Ø212 | Ø241.3       | Ø240 | Ø22.2x8      | Ø22x8  | 42-50             | 42-50   | 20-27   | 49-60   | 49-60   |
| 8"   | 200 | 494 | 807  | Ø269.9       | Ø268 | Ø298.4       | Ø295 | Ø22.2x8      | Ø22x12 | 70-80             | 70-85   | 36-45   | 90-110  | 90-110  |
| 10"  | 250 | 592 | 908  | Ø323.8       | Ø320 | Ø362         | Ø355 | Ø25.4x12     | Ø26x12 | 90-110            | 90-115  | 60-85   | 120-145 | 120-145 |
| 12"  | 300 | 630 | 1020 | Ø381         | Ø378 | Ø431.8       | Ø410 | Ø25.4x12     | Ø26x12 | 150-175           | 150-185 | 95-120  | 190-230 | 190-230 |

## Flow Capacity Tables



## Flow Capacity Tables

| PRESSURE RELIEF CAPACITIES [Nm <sup>3</sup> /hr] - OVERPRESSURE WEIGHTED |     |     |      |      |      |      |      |      |      |      |       |       |       |       |
|--|-----|-----|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| mbar (g)   | 2"  |     | 3"   |      | 4"   |      | 6"   |      | 8"   |      | 10"   |       | 12"   |       |
|  | 20% | 40% | 20%  | 40%  | 20%  | 40%  | 20%  | 40%  | 20%  | 40%  | 20%   | 40%   | 20%   | 40%   |
| 2,5  | 150 | 163 | 339  | 367  | 603  | 653  | 1356 | 1468 | 2413 | 2613 | 3777  | 4089  | 5439  | 5888  |
| 5  | 213 | 230 | 480  | 519  | 853  | 924  | 1917 | 2076 | 3414 | 3696 | 5342  | 5783  | 7691  | 8326  |
| 7,5  | 275 | 297 | 620  | 671  | 1104 | 1195 | 2479 | 2683 | 4415 | 4779 | 6907  | 7478  | 9943  | 10764 |
| 10   | 302 | 327 | 679  | 735  | 1207 | 1306 | 2711 | 2935 | 4827 | 5225 | 7554  | 8177  | 10876 | 11774 |
| 12,5   | 329 | 356 | 738  | 799  | 1309 | 1417 | 2943 | 3186 | 5239 | 5671 | 8200  | 8877  | 11809 | 12784 |
| 15   | 356 | 386 | 797  | 863  | 1412 | 1528 | 3175 | 3437 | 5651 | 6117 | 8846  | 9577  | 13309 | 14408 |
| 17,5   | 384 | 415 | 856  | 926  | 1514 | 1639 | 3407 | 3689 | 6063 | 6563 | 9493  | 10277 | 14502 | 15700 |
| 20   | 426 | 461 | 960  | 1040 | 1706 | 1847 | 3812 | 4126 | 6823 | 7387 | 10678 | 11559 | 15374 | 16644 |
| 22,5   | 469 | 507 | 1065 | 1153 | 1898 | 2054 | 4216 | 4564 | 7584 | 8210 | 11862 | 12842 | 15940 | 17256 |
| 25   | 476 | 516 | 1070 | 1159 | 1906 | 2064 | 4285 | 4639 | 7628 | 8258 | 11936 | 12921 | 17178 | 18597 |
| 27,5   | 484 | 524 | 1076 | 1165 | 1915 | 2073 | 4353 | 4713 | 7671 | 8305 | 12009 | 13000 | 18417 | 19937 |
| 30   | 522 | 565 | 1176 | 1273 | 2088 | 2261 | 4692 | 5080 | 8355 | 9045 | 12201 | 13209 | 18824 | 20379 |

| VACUUM RELIEF CAPACITIES [Nm <sup>3</sup> /hr] - UNDERPRESSURE WEIGHTED |     |     |     |     |      |      |      |      |      |      |      |      |       |       |
|---|-----|-----|-----|-----|------|------|------|------|------|------|------|------|-------|-------|
| mbar  | 2"  |     | 3"  |     | 4"   |      | 6"   |      | 8"   |      | 10"  |      | 12"   |       |
|   | 20% | 40% | 20% | 40% | 20%  | 40%  | 20%  | 40%  | 20%  | 40%  | 20%  | 40%  | 20%   | 40%   |
| 2,5   | 119 | 127 | 268 | 285 | 567  | 604  | 963  | 1026 | 1549 | 1651 | 2739 | 2918 | 3906  | 4161  |
| 5   | 182 | 194 | 347 | 369 | 653  | 695  | 1363 | 1452 | 2145 | 2286 | 3324 | 3542 | 4780  | 5092  |
| 7,5   | 245 | 261 | 426 | 454 | 706  | 752  | 1772 | 1888 | 2628 | 2800 | 3561 | 3794 | 5313  | 5660  |
| 10  | 254 | 270 | 505 | 538 | 777  | 828  | 2127 | 2266 | 3042 | 3241 | 3888 | 4143 | 5284  | 6024  |
| 12,5  | 262 | 279 | 550 | 586 | 936  | 998  | 2339 | 2492 | 3301 | 3517 | 4216 | 4492 | 5995  | 6387  |
| 15  | 286 | 304 | 593 | 632 | 1017 | 1083 | 2526 | 2692 | 3638 | 3876 | 4452 | 4744 | 6101  | 6955  |
| 17,5  | 309 | 329 | 658 | 701 | 1140 | 1214 | 2678 | 2853 | 4004 | 4266 | 4888 | 5208 | 7061  | 7523  |
| 20  | 361 | 384 | 708 | 755 | 1279 | 1363 | 2785 | 2967 | 4296 | 4577 | 5580 | 5945 | 7735  | 8818  |
| 22,5  | 412 | 439 | 768 | 819 | 1317 | 1403 | 2869 | 3056 | 4588 | 4888 | 6272 | 6683 | 9492  | 10113 |
| 25  | 398 | 424 | 817 | 871 | 1344 | 1431 | 2926 | 3117 | 4811 | 5125 | 6708 | 7147 | 9369  | 10681 |
| 27,5  | 384 | 409 | 861 | 918 | 1396 | 1488 | 2984 | 3180 | 5042 | 5372 | 7143 | 7611 | 10558 | 11248 |
| 30  | 439 | 467 | 910 | 969 | 1772 | 1888 | 3044 | 3243 | 5312 | 5659 | 7703 | 8207 | 11338 | 12080 |

# Product Recommendations

Storagetech™ manufactures storage tank equipment, such as flame arresters, breather valves, gauge hatches, floating roofs, and floating suction pipe.

## Pressure Vacuum Relief Valve

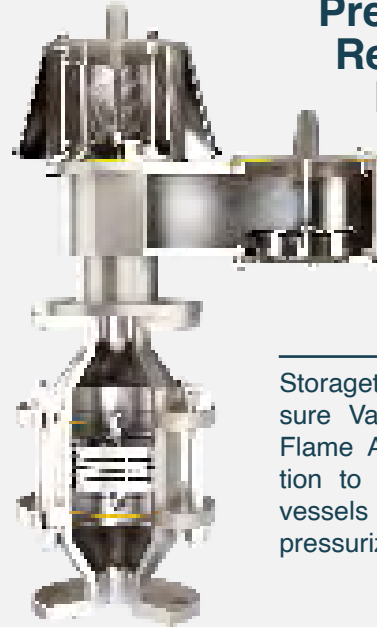


Top Mounted,  
End-Of-Line,  
Spring-Loaded

### Model: 101

Storagetech™'s Model 101 Pressure Vacuum Relief Valve provides protection to bulk storage tanks and vessels from over and under pressurisation. The valves are mounted on the tank roof flange or a vent pipe from the vapour space. In the closed position the pressure relief pallet and diaphragm assembly is held tightly against a seal to prevent the loss of vapour to atmosphere.

## Pressure Vacuum Relief Valve With Flame Arrestor

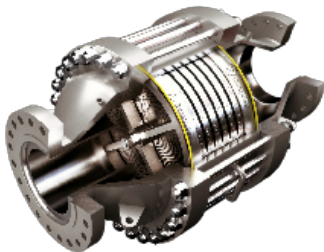


End-Of-Line,  
Weight Loaded,  
Combination,  
Atmospheric Deflagration  
Proof

### Model: 330

Storagetech™'s Model 330 Pressure Vacuum Relief Valve with Flame Arrestor provides protection to bulk storage tanks and vessels from over and under pressurization.

## Flame Arrestor

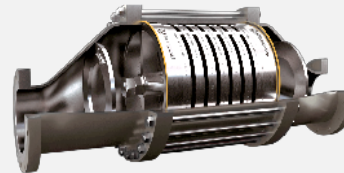


Vertical,  
In-Line,  
Detonation

### Model: 320

Storagetech™'s Model 320 In-line Detonation Flame Arrestor (also called flame arrestor or fire arrestor) is designed for installation in gas pipelines. Detonation occurs when a flame travelling through the pipeline reaches supersonic velocities, usually as a result of the pipeline configuration or pipeline surface roughness. Changes in gas density and pressure causes the flame velocity to metamorphose from subsonic to supersonic.

## Flame Arrestor



Horizontal,  
In-Line,  
Detonation

### Model: 321

Storagetech™'s Model 321 In-line Detonation Flame Arrestor (also called flame arrestor or fire arrestor) is designed for installation in gas pipelines. Detonation occurs when a flame travelling through the pipeline reaches supersonic velocities, usually as a result of the pipeline configuration or pipeline surface roughness. Changes in gas density and pressure causes the flame velocity to metamorphose from subsonic to supersonic.

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### data sheet series

PVRV-Top mounted, end of line,  
weight loaded

Revision No: 03  
ST-DS-PVRV.W-02.21/V3  
storagetech.de

February 2021

Storagetech™ Website  
QR Code

