

# STD

## STANDARD RUPTURE DISC

*The OsecoElfab Standard Rupture disc is a forward acting disc commonly used in **high-pressure, small-diameter applications**.*



The STD rupture disc is a simple, forward acting pressure relief device that offers an economical solution for a wide range of applications. The solid metal crowned or pre-bulged disc excels in gas or liquid applications.

It is installed with a 30° angular seating area, and is used primarily to vent to controlled areas or direct to the atmosphere.

The STD is designed for operation in applications where normal system pressures do not exceed 70% of the stamped burst pressure. This will ensure excellent and long service life.

|                                              |                  |
|----------------------------------------------|------------------|
| <b>Size</b>                                  | 1/4" - 24"       |
| <b>Burst Pressure</b>                        | 3-30,000 psig    |
| <b>K<sub>R</sub> Value (K<sub>RGL</sub>)</b> | STD0.88 STDV1.98 |
| <b>Operating Ratio</b>                       | 70%              |
| <b>Performance Tolerance</b>                 | +/- 5%           |
| <b>Manufacturing Range</b>                   | 10%              |

**Let us help you with all  
your pressure relief questions.**

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THE STD** →



# TECHNICAL SPECIFICATIONS



|                           |                                                                               |
|---------------------------|-------------------------------------------------------------------------------|
| Size range                | 1/4"-24" (6-600mm)                                                            |
| Burst pressure range      | 3-30,000 psig (0.2-2,068.4 barg)                                              |
| Standard materials        | 316 Series Stainless Steel, Nickel, Inconel® 600, Monel®, Hastelloy® C        |
| K <sub>R</sub> Value      | STD K <sub>RGL</sub> : 0.88<br>STDV K <sub>RGL</sub> : 1.98                   |
| Max. Operating Ratio      | 70%                                                                           |
| Performance Tolerance     | +/-5%                                                                         |
| Manufacturing Range       | 10%                                                                           |
| Fragmentation             | May fragment                                                                  |
| Vacuum Service            | May require a vacuum support                                                  |
| Fluid compatibility       | Gas service and liquid service                                                |
| Torque requirements       | See installation guide                                                        |
| Cycling or static service | Static service                                                                |
| Protective linings        | PFA-grade Fluoropolymer liners available for atmospheric and/or process sides |
| Design Standards          | Designed to meet ASME Section XIII standards                                  |

## Certifications

ASME UD  
CRN  
PED 2014/68/EU  
China SELO

## Related Products

### Sensors

AMS  
SVT  
CMS

### Holders

RDI  
RDI - P  
RDH  
UNION

# Burst Pressure Ranges

STD Min/Max Burst Pressure @ 72° F (psig) / 22° C (barg)



| SIZE   |         | MATERIAL            | MIN<br>psig (barg) | MAX<br>psig (barg) | FLUOROPOLYMER LINER ON<br>ONE SIDE |                    | FLUOROPOLYMER LINER ON<br>TWO SIDES |                    |
|--------|---------|---------------------|--------------------|--------------------|------------------------------------|--------------------|-------------------------------------|--------------------|
| inches | DN (mm) |                     |                    |                    | MIN<br>psig (barg)                 | MAX<br>psig (barg) | MIN<br>psig (barg)                  | MAX<br>psig (barg) |
| 0.5    | 15      | 316 Stainless Steel | 43.1 (6.25)        | 30000 (2068.4)     | 820 (56.5)                         | 10000 (689.5)      | 910 (62.7)                          | 10000 (689.5)      |
|        |         | Nickel              | 19.3 (280)         | 20000 (1378.9)     | 500 (34.5)                         | 6000 (413.7)       | 600 (41.4)                          | 6000 (413.7)       |
|        |         | Inconel             | 30.3(440)          | 30000 (2068.4)     | 790 (54.5)                         | 10000 (689.5)      | 790 (54.4)                          | 10000 (689.5)      |
|        |         | Monel               | 23.4 (340)         | 25000 (1723.7)     | 500 (34.5)                         | 6000 (413.7)       | 600 (41.4)                          | 6000 (413.7)       |
|        |         | Aluminum            | 90 (6.2)           | 1500 (103.4)       | 235 (16.2)                         | 1500 (103.4)       | 380 (26.2)                          | 1500 (103.4)       |
|        |         | Hastelloy C         | 75.8 (1100)        | 30000 (2068.4)     | 1245 (85.9)                        | 30000 (2068.4)     | 1315 (90.7)                         | 30000 (2068.4)     |
| 0.75   | 20      | 316 Stainless Steel | 455 (31.4)         | 1000 (68.9)        | 650 (44.8)                         | 1000 (68.9)        | 740 (51.0)                          | 1000 (68.9)        |
|        |         | Nickel              | 200 (13.8)         | 1000 (68.9)        | 370 (25.5)                         | 1000 (68.9)        | 460 (31.7)                          | 1000 (68.9)        |
|        |         | Inconel             | 325 (22.4)         | 1000 (68.9)        | 500 (34.5)                         | 1000 (68.9)        | 590 (40.7)                          | 1000 (68.9)        |
|        |         | Monel               | 250 (17.2)         | 1000 (68.9)        | 420 (29.0)                         | 1000 (68.9)        | 510 (35.2)                          | 1000 (68.9)        |
|        |         | Aluminum            | 55 (3.8)           | 650 (44.8)         | 225 (15.5)                         | 650 (44.8)         | 315 (21.7)                          | 650 (44.8)         |
|        |         | Hastelloy C         | 750 (51.7)         | 30000 (2068.4)     | 844 (58.2)                         | 30000 (2068.4)     | 890 (61.4)                          | 30000 (2068.4)     |
| 1      | 25      | 316 Stainless Steel | 320 (22.1)         | 3700 (255.1)       | 370 (25.5)                         | 3700 (255.1)       | 420 (29.0)                          | 3700 (255.1)       |
|        |         | Nickel              | 145 (10.0)         | 3700 (255.1)       | 195 (13.4)                         | 3700 (255.1)       | 245 (16.9)                          | 3700 (255.1)       |
|        |         | Inconel             | 225 (15.5)         | 3700 (255.1)       | 275 (19.0)                         | 3700 (255.1)       | 325 (22.4)                          | 3700 (255.1)       |
|        |         | Monel               | 175 (12.1)         | 3700 (255.1)       | 225 (15.5)                         | 3700 (255.1)       | 275 (19.0)                          | 3700 (255.1)       |
|        |         | Aluminum            | 40 (2.8)           | 1000 (68.9)        | 90 (6.2)                           | 1000 (68.9)        | 140 (9.7)                           | 1000 (68.9)        |
|        |         | Hastelloy C         | 500 (34.5)         | 3700 (255.1)       | 592 (40.8)                         | 3700 (255.1)       | 627 (43.2)                          | 3700 (255.1)       |
| 1.5    | 40      | 316 Stainless Steel | 210 (14.5)         | 2200 (151.7)       | 245 (16.9)                         | 2200 (151.7)       | 280 (19.3)                          | 2200 (151.7)       |
|        |         | Nickel              | 95 (6.5)           | 2200 (151.7)       | 130 (9.0)                          | 2200 (151.7)       | 165 (11.4)                          | 2200 (151.7)       |
|        |         | Inconel             | 150 (10.3)         | 2200 (151.7)       | 185 (12.8)                         | 2200 (151.7)       | 220 (15.2)                          | 2200 (151.7)       |
|        |         | Monel               | 115 (7.9)          | 2200 (151.7)       | 150 (10.3)                         | 2200 (151.7)       | 185 (12.8)                          | 2200 (151.7)       |
|        |         | Aluminum            | 26 (1.8)           | 750 (51.7)         | 60 (4.1)                           | 700 (48.3)         | 95 (6.5)                            | 700 (48.3)         |
|        |         | Hastelloy C         | 375 (25.9)         | 2200 (151.7)       | 431 (29.7)                         | 2200 (151.7)       | 454 (31.3)                          | 2200 (151.7)       |
| 2      | 50      | 316 Stainless Steel | 120 (8.3)          | 2200 (151.7)       | 145 (10.0)                         | 2200 (151.7)       | 170 (11.7)                          | 2200 (151.7)       |
|        |         | Nickel              | 55 (3.8)           | 2200 (151.7)       | 79 (5.4)                           | 2200 (151.7)       | 105 (7.2)                           | 2200 (151.7)       |
|        |         | Inconel             | 87 (6.0)           | 2200 (151.7)       | 110 (7.6)                          | 2200 (151.7)       | 135 (9.3)                           | 2200 (151.7)       |
|        |         | Monel               | 67 (4.6)           | 2200 (151.7)       | 91 (6.3)                           | 2200 (151.7)       | 115 (7.9)                           | 2200 (151.7)       |
|        |         | Aluminum            | 16 (1.1)           | 570 (39.3)         | 40 (2.8)                           | 500 (34.5)         | 64 (4.4)                            | 500 (34.5)         |
|        |         | Hastelloy C         | 250 (17.2)         | 2200 (151.7)       | 289 (19.9)                         | 2200 (151.7)       | 306 (21.1)                          | 2200 (151.7)       |
| 3      | 80      | 316 Stainless Steel | 90 (6.2)           | 2200 (151.7)       | 105 (7.2)                          | 2200 (151.7)       | 120 (8.3)                           | 2200 (151.7)       |
|        |         | Nickel              | 41 (2.8)           | 2200 (151.7)       | 55 (3.8)                           | 2200 (151.7)       | 69 (4.8)                            | 2200 (151.7)       |
|        |         | Inconel             | 63 (4.3)           | 2200 (151.7)       | 77 (5.3)                           | 2200 (151.7)       | 91 (6.3)                            | 2200 (151.7)       |
|        |         | Monel               | 49 (3.4)           | 2200 (151.7)       | 63 (4.3)                           | 2200 (151.7)       | 77 (5.3)                            | 2200 (151.7)       |
|        |         | Aluminum            | 12 (0.8)           | 460 (31.7)         | 26 (1.8)                           | 400 (27.6)         | 40 (2.8)                            | 400 (27.6)         |
|        |         | Hastelloy C         | 175 (12.1)         | 2200 (151.7)       | 205 (14.1)                         | 2200 (151.7)       | 217 (15)                            | 2200 (151.7)       |
| 4      | 100     | 316 Stainless Steel | 68 (4.7)           | 2200 (151.7)       | 79 (5.4)                           | 2200 (151.7)       | 90 (6.2)                            | 2200 (151.7)       |
|        |         | Nickel              | 31 (2.1)           | 2200 (151.7)       | 42 (2.9)                           | 2200 (151.7)       | 53 (3.7)                            | 2200 (151.7)       |
|        |         | Inconel             | 48 (3.3)           | 2200 (151.7)       | 59 (4.1)                           | 2200 (151.7)       | 70 (4.8)                            | 2200 (151.7)       |
|        |         | Monel               | 37 (2.6)           | 2200 (151.7)       | 48 (3.3)                           | 2200 (151.7)       | 59 (4.1)                            | 2200 (151.7)       |
|        |         | Aluminum            | 9 (0.6)            | 360 (24.8)         | 20 (1.4)                           | 325 (22.4)         | 31 (2.1)                            | 325 (22.4)         |
|        |         | Hastelloy C         | 140 (9.7)          | 2200 (151.7)       | 161 (11.1)                         | 2200 (151.7)       | 170 (11.7)                          | 2200 (151.7)       |
| 6      | 150     | 316 Stainless Steel | 51 (3.5)           | 3600 (248.2)       | 59 (4.1)                           | 800 (55.2)         | 67 (4.6)                            | 800 (55.2)         |
|        |         | Nickel              | 23 (1.6)           | 1400 (96.5)        | 31 (2.1)                           | 500 (34.5)         | 39 (2.7)                            | 500 (34.5)         |
|        |         | Inconel             | 36 (2.5)           | 2200 (151.7)       | 44 (3.0)                           | 800 (55.2)         | 52 (3.6)                            | 800 (55.2)         |
|        |         | Monel               | 28 (1.9)           | 1800 (124.1)       | 36 (2.5)                           | 500 (34.5)         | 44 (3.0)                            | 500 (34.5)         |
|        |         | Aluminum            | 7 (0.5)            | 275 (19.0)         | 15 (1.0)                           | 240 (16.5)         | 23 (1.6)                            | 240 (16.5)         |
|        |         | Hastelloy C         | 95 (6.6)           | 3600 (248.3)       | 110 (7.6)                          | 3600 (248.3)       | 115 (7.9)                           | 3600 (248.3)       |

# Burst Pressure Ranges cont.

STD Min/Max Burst Pressure @ 72° F (psig) / 22° C (barg)



| SIZE   |         | MATERIAL            | MIN<br>psig (barg) | MAX<br>psig (barg) | FLUOROPOLYMER LINER ON ONE SIDE |                    | FLUOROPOLYMER LINER ON TWO SIDES |                    |
|--------|---------|---------------------|--------------------|--------------------|---------------------------------|--------------------|----------------------------------|--------------------|
| inches | DN (mm) |                     |                    |                    | MIN<br>psig (barg)              | MAX<br>psig (barg) | MIN<br>psig (barg)               | MAX<br>psig (barg) |
| 8      | 200     | 316 Stainless Steel | 40 (2.8)           | 2100 (144.8)       | 46 (3.2)                        | 600 (41.4)         | 52 (3.6)                         | 600 (41.4)         |
|        |         | Nickel              | 18 (1.2)           | 1100 (75.8)        | 24 (1.7)                        | 375 (25.9)         | 30 (2.1)                         | 375 (25.9)         |
|        |         | Inconel             | 28 (1.9)           | 1700 (117.2)       | 34 (2.3)                        | 600 (41.4)         | 40 (2.8)                         | 600 (41.4)         |
|        |         | Monel               | 22 (1.5)           | 1450 (100.0)       | 28 (1.9)                        | 375 (25.9)         | 34 (2.3)                         | 375 (25.9)         |
|        |         | Aluminum            | 5 (0.3)            | 205 (14.1)         | 11 (0.8)                        | 180 (12.4)         | 17 (1.2)                         | 180 (12.4)         |
|        |         | Hastelloy C         | 70 (4.8)           | 2100 (144.8)       | 79 (5.4)                        | 2100 (144.8)       | 84 (5.8)                         | 2100 (144.8)       |
| 10     | 250     | 316 Stainless Steel | 30 (2.1)           | 1400 (96.5)        | 35 (2.4)                        | 500 (34.5)         | 40 (2.8)                         | 500 (34.5)         |
|        |         | Nickel              | 14 (1.0)           | 800 (55.2)         | 19 (1.3)                        | 300 (20.7)         | 24 (1.7)                         | 300 (20.7)         |
|        |         | Inconel             | 22 (1.5)           | 1400 (96.5)        | 27 (1.9)                        | 500 (34.5)         | 32 (2.2)                         | 500 (34.5)         |
|        |         | Monel               | 17 (1.2)           | 1150 (79.3)        | 22 (1.5)                        | 300 (20.7)         | 27 (1.9)                         | 300 (20.7)         |
|        |         | Aluminum            | 4 (0.3)            | 165 (11.4)         | 9 (0.6)                         | 135 (9.3)          | 14 (1.0)                         | 135 (9.3)          |
|        |         | Hastelloy C         | 55 (3.8)           | 1400 (96.6)        | 63 (4.3)                        | 1400 (96.6)        | 66 (4.6)                         | 1400 (96.6)        |
| 12     | 300     | 316 Stainless Steel | 27 (1.9)           | 1000 (68.9)        | 31 (2.1)                        | 400 (27.6)         | 35 (2.4)                         | 400 (27.6)         |
|        |         | Nickel              | 12 (0.8)           | 670 (46.2)         | 16 (1.1)                        | 250 (17.2)         | 20 (1.4)                         | 250 (17.2)         |
|        |         | Inconel             | 19 (1.3)           | 1000 (68.9)        | 23 (1.6)                        | 400 (27.6)         | 27 (1.9)                         | 400 (27.6)         |
|        |         | Monel               | 15 (1.0)           | 960 (66.2)         | 19 (1.3)                        | 250 (17.2)         | 23 (1.6)                         | 250 (17.2)         |
|        |         | Aluminum            | 4 (0.3)            | 140 (9.7)          | 8 (0.6)                         | 110 (7.6)          | 12 (0.8)                         | 110 (7.6)          |
|        |         | Hastelloy C         | 45 (3.1)           | 1000 (69.0)        | 51 (3.5)                        | 1000 (69.0)        | 54 (3.7)                         | 1000 (69.0)        |
| 14     | 350     | 316 Stainless Steel | 23 (1.6)           | 750 (51.7)         | Consult Factory                 |                    |                                  |                    |
|        |         | Nickel              | 11 (0.8)           | 570 (39.3)         |                                 |                    |                                  |                    |
|        |         | Inconel             | 17 (1.2)           | 725 (50.0)         |                                 |                    |                                  |                    |
|        |         | Monel               | 13 (0.9)           | 750 (51.7)         |                                 |                    |                                  |                    |
|        |         | Aluminum            | 3 (0.2)            | 125 (8.6)          |                                 |                    |                                  |                    |
|        |         | Hastelloy C         | 40 (2.8)           | 750 (51.7)         |                                 |                    |                                  |                    |
| 16     | 400     | 316 Stainless Steel | 20 (1.4)           | 500 (34.5)         | Consult Factory                 |                    |                                  |                    |
|        |         | Nickel              | 9 (0.6)            | 410 (28.3)         |                                 |                    |                                  |                    |
|        |         | Inconel             | 15 (1.0)           | 500 (34.5)         |                                 |                    |                                  |                    |
|        |         | Monel               | 11 (0.8)           | 500 (34.5)         |                                 |                    |                                  |                    |
|        |         | Aluminum            | 3 (0.2)            | 105 (7.2)          |                                 |                    |                                  |                    |
|        |         | Hastelloy C         | 35 (2.4)           | 500 (34.5)         |                                 |                    |                                  |                    |
| 18     | 450     | 316 Stainless Steel | 18 (1.2)           | 475 (32.7)         | Consult Factory                 |                    |                                  |                    |
|        |         | Nickel              | 8 (0.60)           | 445 (30.7)         |                                 |                    |                                  |                    |
|        |         | Inconel             | 13 (0.9)           | 475 (32.7)         |                                 |                    |                                  |                    |
|        |         | Monel               | 10 (0.7)           | 475 (32.7)         |                                 |                    |                                  |                    |
|        |         | Aluminum            | 3 (0.2)            | 95 (6.5)           |                                 |                    |                                  |                    |
|        |         | Hastelloy C         | 30 (2.1)           | 475 (32.8)         |                                 |                    |                                  |                    |
| 20     | 500     | 316 Stainless Steel | 16 (1.1)           | 450 (31.0)         | Consult Factory                 |                    |                                  |                    |
|        |         | Nickel              | 8 (0.6)            | 400 (27.6)         |                                 |                    |                                  |                    |
|        |         | Inconel             | 12 (0.8)           | 450 (31.0)         |                                 |                    |                                  |                    |
|        |         | Monel               | 9 (0.6)            | 450 (31.0)         |                                 |                    |                                  |                    |
|        |         | Aluminum            | 2 (0.1)            | 85 (5.9)           |                                 |                    |                                  |                    |
|        |         | Hastelloy C         | 28 (1.9)           | 450 (31.0)         |                                 |                    |                                  |                    |
| 24     | 600     | 316 Stainless Steel | 44 (3.0)           | 230 (15.9)         | Consult Factory                 |                    |                                  |                    |
|        |         | Nickel              | 37 (2.6)           | 145 (10.0)         |                                 |                    |                                  |                    |
|        |         | Inconel             | 45 (3.1)           | 230 (15.9)         |                                 |                    |                                  |                    |
|        |         | Monel               | 55 (3.8)           | 450 (31.0)         |                                 |                    |                                  |                    |
|        |         | Aluminum            | 2 (0.1)            | 71 (4.9)           |                                 |                    |                                  |                    |
|        |         | Hastelloy C         | 50 (3.7)           | 450 (31.0)         |                                 |                    |                                  |                    |



## Free Flow Area / Minimum Net Flow Area (MNFA)

| NOMINAL BORE |         | MNFA     |                 |
|--------------|---------|----------|-----------------|
| inches       | DN (mm) | Sq. Inch | mm <sup>2</sup> |
| 0.25         | 6       | 0.049    | 31.61           |
| 0.5          | 15      | 0.19     | 122.58          |
| 0.75         | 20      | 0.44     | 283.87          |
| 1            | 25      | 0.6      | 387.09          |
| 1.5          | 40      | 1.48     | 954.83          |
| 2            | 50      | 2.85     | 1,838           |
| 3            | 80      | 5.41     | 3,490           |
| 4            | 100     | 10.3     | 6,645           |
| 6            | 150     | 22.3     | 14,387          |
| 8            | 200     | 45.6     | 29,419          |
| 10           | 250     | 72.7     | 46,903          |
| 12           | 300     | 101      | 65,161          |
| 14           | 350     | 135      | 87,096          |
| 16           | 400     | 176      | 113,548         |
| 18           | 450     | 230      | 148,387         |
| 20           | 500     | 279      | 180,000         |
| 24           | 600     | 415      | 267,741         |

## Angular Seat STD Vacuum Support Requirements

| MATERIAL            | FULL VACUUM<br>psig (barg) | 2/3 VACUUM<br>psig (barg) | 1/2 VACUUM<br>psig (barg) |
|---------------------|----------------------------|---------------------------|---------------------------|
| 316 Stainless Steel | 1200 (82.73)               | 975 (67.22)               | 725 (49.98)               |
| Nickel              | 1200 (82.73)               | 975 (67.22)               | 725 (49.98)               |
| Inconel 600         | 1200 (82.73)               | 975 (67.22)               | 725 (49.98)               |
| Monel               | 1200 (82.73)               | 975 (67.22)               | 725 (49.98)               |
| Aluminum            | 450 (31.02)                | 360 (24.82)               | 725 (49.98)               |
| Hastelloy C         | 1200 (82.73)               | 975 (67.22)               | 725 (49.98)               |

*If the burst pressure of a rupture disc at operating temperature is below these minimum pressures, a vacuum support is required.*

*For back pressures greater than 14.7 psig and other disc materials consult factory.*

## Burst Tolerance

|                                     |                                                |
|-------------------------------------|------------------------------------------------|
| +/-5% > 40 psig<br>+/-5% > 2.8 barg | +/-2 psig ≤ 40 psig<br>+/-0.14 barg ≤ 2.8 barg |
|-------------------------------------|------------------------------------------------|

## K<sub>R</sub> Value (Frictional Loss Factor)

| K <sub>R</sub>   | STD  | STDV |
|------------------|------|------|
| K <sub>RGL</sub> | 0.88 | 1.98 |