

# PCR

PRECISION CUT REVERSE

The PCR is designed for high-cycling or high-vacuum gas and vapor applications such as Gas-Insulated Switchgear equipment.

Available in the Oseco Safety Cartridge™



OsecoElfab's PCR is a cross-scored, reverse-buckling rupture disc. Reversal occurs when the disc reaches the rated pressure and it opens along the score lines.

The cross-scoring allows the disc to achieve higher burst pressures without fragmenting.

The PCR is excellent for relief valve isolation (gas and vapor service) and excels in extreme cycling or high vacuum/back pressure applications. The PCR is commonly used in SF6 switchgear units.

|   |                 |
|---|-----------------|
| <b>Size</b>   | 1" - 12"        |
| <b>Burst Pressure</b>                               | 30 - 1,250 psig |
| <b><math>K_R</math> Value (<math>K_{RC}</math>)</b> | 2.17            |
| <b>Operating Ratio</b>                              | 90%             |
| <b>Performance Tolerance</b>                        | +/-5%           |
| <b>Manufacturing Range</b>                          | 0%              |

Let us help you with all your pressure relief questions.

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# TECHNICAL SPECIFICATIONS



|                           |   |
|---------------------------|---|
| Size range                | 1"-12" (25-300mm)   |
| Burst pressure range      | 30-1250 psig (2.07-86.2 barg)                                     |
| Standard materials        | 316 Series Stainless Steel, Nickel, Inconel® 600, Monel®          |
| K <sub>R</sub> Value      | 2.17  |
| Max. Operating Ratio      | 90%   |
| Performance Tolerance     | +/-5%   |
| Manufacturing Range       | 0%  |
| Fragmentation             | Non-fragmenting design  |
| Vacuum Service            | Withstands full vacuum (14.7 psi) without separate vacuum support |
| Fluid compatibility       | Gas service, vapor service  |
| Torque requirements       | See installation guide  |
| Cycling or static service | Suitable for high-cycling applications                            |
| Protective linings        | Fluoropolymer liner available on process side                     |
| Relief Valve Isolation    | Suitable for safety relief valve isolation                        |
| Design Standards          | Designed to meet ASME Section XIII standards                      |

## Certifications

ASME UD  
CRN  
PED 2014/68/EU  
CU/TR 032

## Related Products

### One Piece Unit

Oseco Safety  
Cartridge

### HOLDERS

PRDI  
PRDI - P  
PRDH

### Sensors

SVT  
AMS

# Burst Pressure Ranges

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



| SIZE     |         | MATERIAL            | MIN<br>psig (barg) | MAX<br>psig (barg)                            |
|----------|---------|---------------------|--------------------|---|
| (inches) | DN (mm) |                     |                    |   |
| 1        | 25      | 316 Stainless Steel | 200 (13.8)         | 1250<br>(86.2)                                |
|          |         | Nickel              | 100 (6.9)          |   |
|          |         | Inconel             | 140 (9.7)          |   |
|          |         | Monel               | 150(10.3)          |   |
| 1.5      | 40      | 316 Stainless Steel | 185 (12.8)         | 1000<br>(68.9)                                |
|          |         | Nickel              | 85 (5.9)           |   |
|          |         | Inconel             | 95 (6.5)           |   |
|          |         | Monel               | 90 (6.2)           |   |
| 2        | 50      | 316 Stainless Steel | 170 (11.7)         | 1000<br>(68.9)                                |
|          |         | Nickel              | 65 (4.5)           |   |
|          |         | Inconel             | 80 (5.5)           |   |
|          |         | Monel               | 75 (5.2)           |   |
| 3        | 80      | 316 Stainless Steel | 155 (10.7)         | 1000<br>(68.9)                                |
|          |         | Nickel              | 55 (3.8)           |   |
|          |         | Inconel             | 70 (4.8)           |   |
|          |         | Monel               | 65 (4.5)           |   |
| 4        | 100     | 316 Stainless Steel | 135 (9.3)          | 800<br>(55.2)                                 |
|          |         | Nickel              | 45 (3.1)           |   |
|          |         | Inconel             | 60 (4.1)           |   |
|          |         | Monel               | 55 (3.8)           |   |
| 6        | 150     | 316 Stainless Steel | 95 (6.5)           | 800<br>(55.2)                                 |
|          |         | Nickel              | 35 (2.4)           |   |
|          |         | Inconel             | 50 (3.4)           |   |
|          |         | Monel               | 45 (3.1)           |   |
| 8        | 200     | 316 Stainless Steel | N/A                | N/A<br>700 (48.3)<br>700 (48.3)<br>700 (48.3) |
|          |         | Nickel              | 35 (2.4)           |   |
|          |         | Inconel             | 45 (3.1)           |   |
|          |         | Monel               | 40 (2.8)           |   |
| 10       | 250     | 316 Stainless Steel | N/A                | N/A<br>180 (12.41)<br>180 (12.41)<br>N/A      |
|          |         | Nickel              | 35 (2.4)           |   |
|          |         | Inconel             | 45 (3.1)           |   |
|          |         | Monel               | N/A                |   |
| 12       | 300     | 316 Stainless Steel | N/A                | N/A<br>120 (8.27)<br>120 (8.27)<br>N/A        |
|          |         | Nickel              | 30 (2.07)          |   |
|          |         | Inconel             | 40 (2.8)           |   |
|          |         | Monel               | N/A                |   |

\*Fluoropolymer liner (PFA)  
Max. temperature @500° F



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

| NOMINAL BORE |         | MNFA     |                 |
|--------------|---------|----------|-----------------|
| inches       | DN (mm) | Sq. Inch | mm <sup>2</sup> |
| 1            | 25      | 0.6      | 387.1           |
| 1.5          | 40      | 1.3      | 838.7           |
| 2            | 50      | 2.5      | 1,612.9         |
| 3            | 80      | 4.8      | 3,096.7         |
| 4            | 100     | 8        | 5,161.3         |
| 6            | 150     | 18       | 11,612          |
| 8            | 200     | 32       | 20,645          |
| 10           | 250     | 51.25    | 33,064          |
| 12           | 300     | 73.4     | 47,354          |

## Burst Tolerance

+/- 2 psig at or below 40 psig  
+/-5% above 40 psig

+/- 0.14 barg at or below 2.8 barg  
+/-5% above 2.8 barg

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

|                 |      |
|-----------------|------|
| K <sub>R</sub>  | PCR  |
| K <sub>RG</sub> | 2.17 |