

oseco ***SAFETY CARTRIDGE***TM

An innovative rupture disc solution to eliminate leaks and installation errors, and increase safety.



A HALMA COMPANY

oseco pressure intelligence

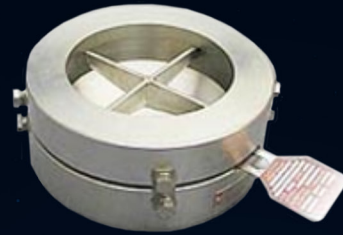
1930s Technology
Standard Rupture Disc



1940s Technology
Composite Rupture Disc



1960s Technology
Knife Blade Assembly



1980s Technology
Forward-Acting Scored Rupture Disc



2000s Technology
Precision Reverse-Buckling Rupture Disc



Opti-Gard® Reverse-Buckling with Integrated Sensor



Throughout the evolution of rupture disc technology for pressure relief systems, **Oseco** has been with you every step of the way. Oseco delivers reliable products on the leading edge of technology. Our tradition continues with the introduction of the most innovative rupture disc system to be created in the last twenty years, the **Oseco Safety Cartridge™**.

- **HERMETICALLY SEALED DESIGN** to eliminate leak paths
- **FULLY INTEGRATED HOLDER-DISC** to eliminate installation errors
- **ONE-PIECE ASSEMBLY** to eliminate torque issues
- **REDUCED** cost of ownership



THE FUTURE
Oseco Safety Cartridge™

OSECO ELIMINATES COMMON PAIN POINTS

After many years of research and industry experience, **Oseco** continues to address today's issues with rupture disc systems. Customers have asked for solutions to these common pain points *and the Oseco Safety Cartridge™ delivers.*

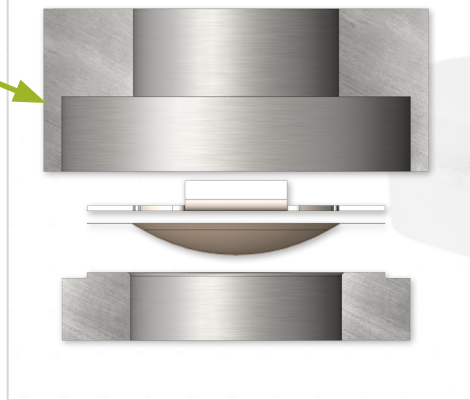
1 PAIN POINT: INSTALLATION

- Misalignment of piping
- Uneven torque
- Mishandling / damage
- Difficult applications

SOLUTION: FULLY INTEGRATED HOLDER-DISC

- Handling of the disc is eliminated
- Immune-force is transferred through the outlet, not to the disc
- Dome is always protected
- Reduces installation time

DETAIL: Oseco Safety Cartridge™ Assembly. Three pieces welded into **ONE.**



2 PAIN POINT: LABOR CONCERNS

- Inexperienced maintenance technicians
- Contract labor
- Lack of installation training
- Employee turnover

SOLUTION: INTUITIVE DESIGN

- Shortens learning curve and supports correct installation

3 PAIN POINT: LEAKING

- Between holder and flange
- Between rupture disc and holder
- Multiple leak paths

SOLUTION: ONE-PIECE ASSEMBLY

- Follows torque specs of gaskets—force placed on the outlet rather than the disc
- Patented electron beam weld design

4 PAIN POINT: FUGITIVE EMISSIONS

- EPA limits on chemical types
- Emissions of VOCs, HRVOCs, and VHAPs
- Location and repair of leaking components

SOLUTION: HERMETICALLY SEALED DESIGN

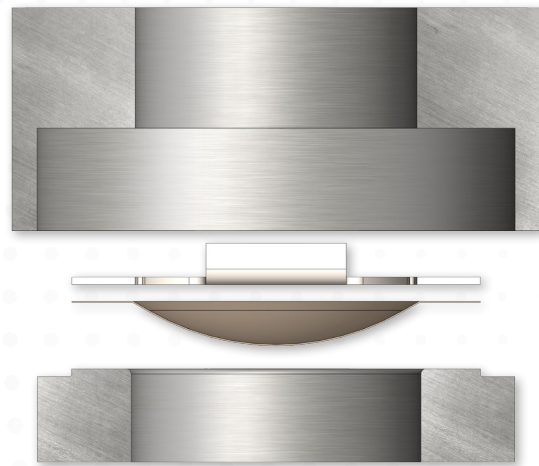
- Cannot leak outside of the piping
- Supports LDAR and EPA Guidelines (HRVOCs)



ONE PIECE... PEACE OF MIND

Oseco's patented design allows the traditional three components of a rupture disc system to be combined into **ONE HERMETICALLY SEALED COMPONENT.**

Cross-section



Three pieces welded into ONE.

Oseco's Integral Holder Solution for easy installation and critical applications.

- Sizes 1" – 12"
- Materials of construction: Hastelloy® C, 316 Series Stainless Steel, Inconel® 600, and Monel®
- Available for gas and liquid service
- Leak checked to 1x10⁻⁸ cc-atm/sec using helium
- Non-fragmenting design
- Fully isolated pressure relief device allows for torquing to any gasket specifications
- Withstands full vacuum



COMMON APPLICATIONS
Lethal Service, Difficult Installations, High Cycling

OPERATING RATIO
Up to 95%

BURST TOLERANCE
+/-5% of specified burst pressure

PRODUCT DIMENSIONS
Standard height matches industry standard insert-style holders

**Special height available to fit any flange type or configuration, consult factory for more information*

Technical Specifications

| SIZE inches | LOW PRESSURE (Circular Scored) | | | HIGH PRESSURE (Cross Scored) | |
|-------------|--|-----------------|--------------------------------|--------------------------------|-----------------|
| | MIN psig (barg) | MAX psig (barg) | MAX ⁽¹⁾ psig (barg) | MIN ⁽²⁾ psig (barg) | MAX psig (barg) |
| 1" DN 25 | 75 6.89 | 250 17.24 | 1160 79.98 | 200 13.79 | 1250 86.18 |
| 1.5" DN 40 | 50 1.03 | 250 17.24 | 1087 74.95 | 185 12.76 | 1000 68.95 |
| 2" DN 50 | 30 2.07 | 250 17.24 | 1015 69.98 | 170 11.72 | 1000 68.95 |
| 3" DN 80 | 15 1.03 | 250 17.24 | 507 34.96 | 155 10.69 | 1000 68.95 |
| 4" DN 100 | 10 0.69 | 175 12.07 | 363 25.03 | 135 9.31 | 800 55.16 |
| 6"- 12" | Consult factory for technical specifications | | | | |

| LOW PRESSURE (Circular Scored) | | HIGH PRESSURE (Cross Scored) |
|--------------------------------|-------------------------------|------------------------------|
| K _R | K _R ⁽¹⁾ | K _R |
| 0.78 | 1.5 | 2.17 |

(1) High pressure circular scored rupture disc with knuckle (results in higher K_R value)
(2) Low pressure rating with 316 Stainless Steel rupture disc—consult factory for other materials

Easy Installation

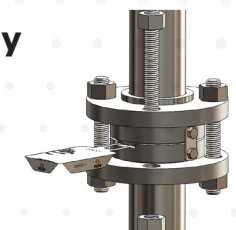
SAFETY EQUIPMENT

- Safety Goggles
- Gloves
- Other as required by facility

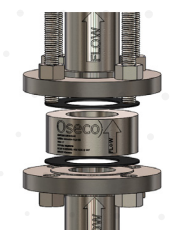
TOOLS & MATERIALS

- Cleaning Solvent compatible with service media
- Torquing Specifications
- Torque Wrench

1 Disassembly



2 Placement & Alignment



3 Torquing & Inspection



OSECO PRODUCTS AND SERVICES PROVIDE

COMPLETE PEACE OF MIND

oseco pressure intelligence

PRODUCT LINE



Oseco Safety Cartridge™

Single piece unit eliminates multiple leak paths



Ultra High Pressure Scored Reverse-Buckling Disc Assembly

HPSR: Single piece unit designed for a burst pressure over 6,000 psig



High Performance Reverse-Buckling Disc

Pro+ KRGL: Industry leading K_R value

Opti-Gard®: Innovative non-invasive burst detection system



High Performance Forward-Acting Scored Disc

FAS: Lowest K_R value available in the market



Composite Rupture Disc



Standard Rupture Disc



Explosion Protection



Burst Detection Systems

SERVICES

Engineering and Maintenance
Training Seminars

Safety Surveys

Custom Engineered Solutions

Expedited Shipments

Emergency Response Team

24/7/365
Customer Service

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Let us help you with all your pressure relief questions. Contact Oseco at **(800) 395-3475** or email us at **info@oseco.com**.

WWW.OSECO.COM