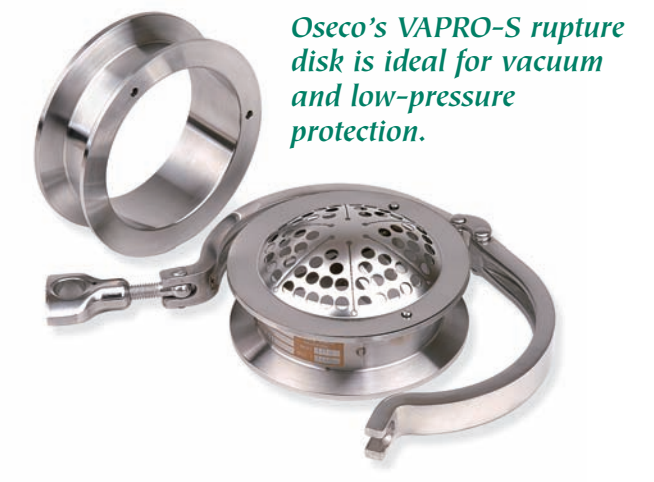
VAPRO-S RUPTURE DISK

Oseco's VAPRO-S Rupture Disk is an economical alternative for applications requiring extremely low vacuum pressure protection. The VAPRO-S rupture disk is designed to provide vacuum protection for pressures starting as low as 1" of water column. Its primary use is in storage tanks with very low vacuum resistance.



Oseco's VAPRO-S rupture disk is ideal for vacuum and low-pressure protection.

Oseco's VAPRO-S Rupture Disk

- The VAPRO-S rupture disk is a dual-acting disk that can protect from implosion at extremely low differential pressures and also provide protection from positive overpressure conditions.
- The VAPRO-S rupture disk consists of a perforated 316 Stainless Steel top section, a fluoropolymer seal, and a fluoropolymer or 316 Stainless Steel girdle.
- Operates to within 1" W.C. of minimum vacuum burst pressure (1"-10" W.C.) / Operates up to 90% of minimum vacuum burst pressure (10"-30" W.C.). Vacuum burst tolerance is 6" water column and is expressed as min/max on tag (i.e. 6" W.C. min/12" W.C. max). See "How the VAPRO-S Works" on the next page.
- Operates up to 80% of positive stamped burst pressure. Positive burst tolerance is ±5% above 40 psig and ±2 psig at or below 40 psig.
- If the VAPRO-S rupture disk is never subject to any positive pressure, a 316 Stainless Steel support ring can be provided in place of the perforated metal top section.
- VAPRO-S is available in standard sanitary fitting sizes of 4, 6, 8, 10 and 12 inches.

TABLE 1

VAPRO-S Temperature Limits

Girdle Material	Temperature Limit	
	Minimum	Maximum
Fluoropolymer	-25° F	150° F
316 SS	-25° F	400° F

TABLE 2

VAPRO-S Ranges of Vacuum and Positive Pressure Relief

VAPRO-S Standard Sanitary Fitting Size (Inches)	Vacuum Relief (Inches H_2O)		Positive Pressure Relief (PSIG@ 72° F)	
	FP* Girdle	316 Girdle	Minimum Burst Pressure	Maximum Burst Pressure (VRDS Holder)
	Range of Starting Relief Points Available	Range of Starting Relief Points Available		
4	1-30	6-30	11	100
6	1-30	6-30	8	75
8	1-30	6-30	6	50
10	1-20	6-30	5	40
12	-	6-30	4	30

Example: VAPRO-S Required Relief Spread

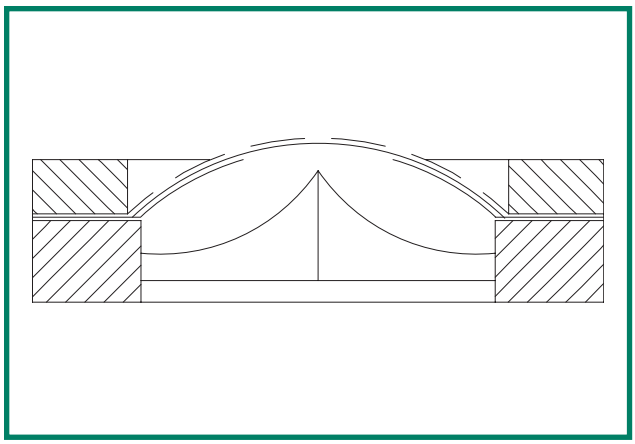
Operator requests 6" VAPRO-S rupture disk with fluoropolymer girdle to relieve at 30" H_20 vacuum. VAPRO-S will puncture at above 30" H_20 and achieve maximum flow at or below 36" H_20.

* FP indicates Virgin Fluoropolymer. PFA, FEP or PTFE may be product-specific and used at Oseco's discretion.

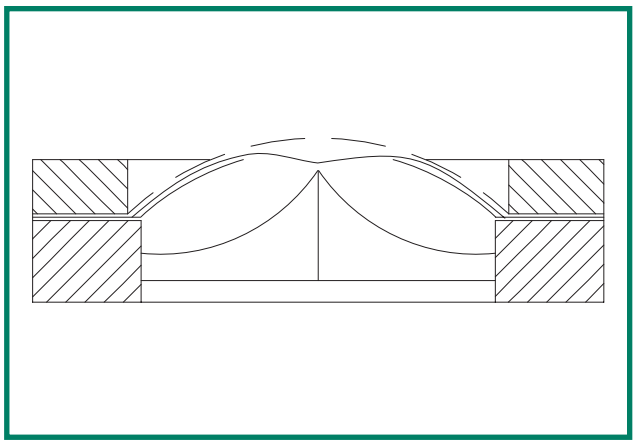
How the VAPRO-S Works

VAPRO-S vacuum burst pressures are stated as min/max pressures with six inches of water column between the minimum and the maximum burst pressure. The minimum is the lowest pressure differential at which the disk may begin to relieve. The maximum is the highest pressure differential required to achieve the full relief area.

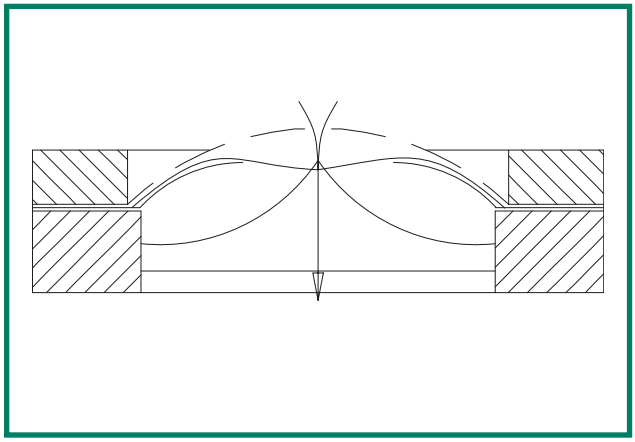
Assuming a VAPRO-S disk had a vacuum burst pressure of 6" W.C. min/12" W.C. max, the disk would work as shown below.



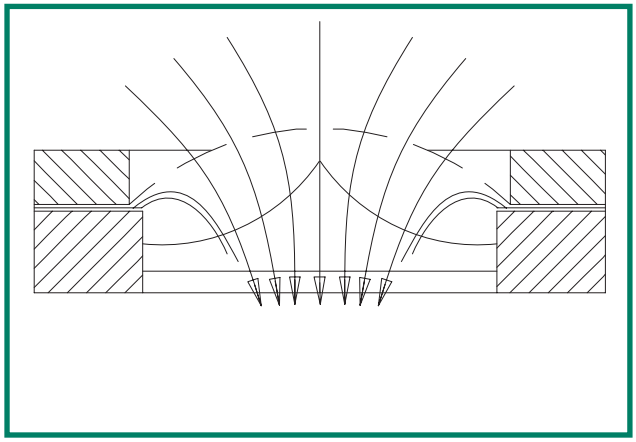
VAPRO-S disk assembly with no vacuum.



0" to 6" water column – The vacuum acting on the fluoropolymer seal loads the girdle and deflects the seal toward the knife blades.



6" to 12" water column – The seal begins to puncture on the knife blades and relieves vacuum through the perforated top section.



12" water column – The seal continues to be opened by the knife blades until it reaches a maximum flow area.

SENSORS

The Oseco OSS is used in sanitary applications to provide an immediate signal when a VAPRO-S rupture disk has burst to relieve a vacuum or overpressure condition.

HOLDERS

The VAPRO-S is used in the type VRDS sanitary rupture disk holder.