ZOOK®

Rupture Disk Selection Guide

Safety through **knowledge** and **performance**.

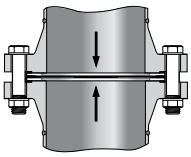
Reverse Acting (Compression-Loaded) Metal Rupture Disks

Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Standard Mating Holder	Service
RA4	Flat Seat	in. 1 – 12 mm 25 – 300	psig 2 – 40 barg 0.14 – 2.76	95%	NO	ASME UD PED TÜV	**RAH**	Liquid & Gas
Solid metal, non-fragmenting design disk								
RA6	Flat Seat	in. 1 – 12 mm 25 – 300	psig 12 – 200 barg 0.83 – 13.79	95%	NO	ASME UD PED TÜV	**RAH**	Liquid & Gas
Solid metal, non-fragmenting design disk								
RA8	Flat Seat	in. 1 – 12 mm 25 – 300	psig 26 –1,000 barg 1.79 – 68.97	95%	NO	ASME UD PED TÜV	**RAH**	Liquid & Gas
Solid metal, non-fragmenting design disk								
RAX	Flat Seat	in. 1 – 12 mm 25 – 300	psig 27 –1,480 barg 1.86 – 102	95%	NO	ASME UD PED TÜV	**RAH**	Gas
Solid scored metal, non-fragmenting design disk								
RLP	Flat Seat	in. 1 – 12 mm 25 – 300	psig 2 – 40 barg 0.14 – 2.76	95%	NO	ASME UD PED TÜV	**RLP-I**	Liquid & Gas
Solid metal, non-fragmenting design disk								
SRA	Flat Seat	in. 1 – 12 mm 25 – 300	psig 20 – 1,480 barg 1.38 – 102	95%	NO	ASME UD PED TÜV	**SR7A**	Gas
Solid scored metal, non-fragmenting design disk								
URA	Flat Seat	in. 1 – 30 mm 25 – 750	psig 12 – 1,000 barg 0.83 – 68.9	95%	NO	ASME UD PED TÜV	**URA-I**	Liquid & Gas
Solid metal, non-fragmenting design disk								

Note: Standard operating ratio is stated as a % of minimum burst pressure (including burst tolerance)

Forward Acting (Tension-Loaded) Metal Rupture Disks

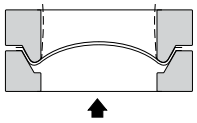
Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Standard Mating Holder	Service
ARD	Flange Mounted	in. 1 to 44 mm 25 – 1117	psig 1 – 60 barg 0.07 – 4	50%[1]	YES	PED TÜV	Mounts between ANSI & DIN flanges *no holder required*	Liquid & Gas



Composite metal, fragment resistant design disk

ARD	Bi-Directional, Bursts at the specified pressure in both directions
ARD-L	Uni-Directional, Bursts at the specified pressure in one direction
ARD-S	Bi-Directional, Bursts at two different set pressures as specified
ARD-V	Uni-Directional, Bursts at the specified pressure in one direction, withstands full vacuum

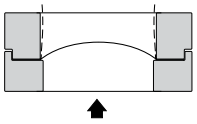
Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Standard Mating Holder	Service
D	30° Angle Seat	in. 1/2 – 24 mm 13 – 600	psig 3 –2,500 barg 0.21–172	85%	YES	ASME UD PED TÜV	**7A** / **Screw Type** / **Union Type**	Liquid & Gas



Composite metal, fragment resistant design disk (when supplied with non metallic seal)

D	Slotted metal top section and a Teflon or metal seal
D-R	D Disk with a protective bottom ring
R-D-R	D Disk with a top and bottom protective ring
D-V	D Disk with a bottom vacuum support
L-D	D Disk with a Teflon seal and top liner
TLDV	D Disk designed to withstand full vacuum and top liner (Non-ASME UD)

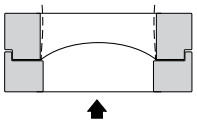
Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Standard Mating Holder	Service
FAC	Flat Seat	in. 1 – 12 mm 25 – 300	psig 3 – 2,500 barg 0.21 –172	85%	YES	PED TÜV	**FAH**	Liquid & Gas



Composite metal, fragment resistant design disk (when supplied with non metallic seal)

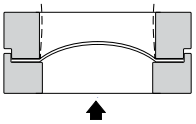
FAC	Slotted metal top section and a Teflon or metal seal
FAC-R	FAC Disk with a protective bottom ring
FAC-V	FAC Disk with a bottom vacuum support

Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Standard Mating Holder	Service
FAX	Flat Seat	in. 1 – 12 mm 25 – 300	psig 45 – 1,500 barg 3.10 – 103	90%	Contact ZOOK	ASME PED TÜV	**FAH**	Liquid & Gas



Solid metal scored, non-fragmenting design disk

Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Standard Mating Holder	Service
FDZ	Flat Seat	in. 1/2 – 36 mm 13 – 914	psig 3 – 2,500 barg 0.21 – 172	85%	YES	PED TÜV	**UHZ**	Liquid & Gas



Composite metal, fragment resistant design disk (when supplied with non metallic seal)

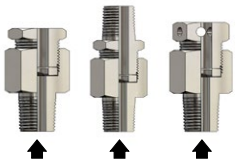
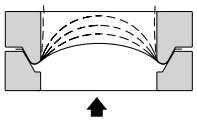
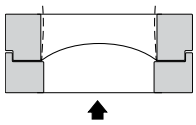
FDZ	Slotted metal top section and a Teflon or metal seal
FDZ-R	FDZ Disk with a protective bottom ring
R-FDZ-R	FDZ Disk with a top and bottom protective ring
FDZ-V	FDZ Disk with a bottom vacuum support
FDZ-H	FDZ Disk with a bottom handling support

Note:

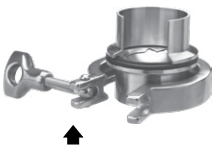
- Standard operating ratio is stated as a % of minimum burst pressure (including burst tolerance)

[1] ARD operating ratio is applied to the marked rating on the disk tag.

Forward Acting (Tension-Loaded) Metal Rupture Disks

Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Standard Mating Holder	Service
FPB 	Screw Type 	in. 3/16 - 11/16 mm 4.8 - 17.5	psig 60 - 60,000 barg 4.14 - 4137	75%	YES	PED TÜV	**Screw Type** 	Liquid & Gas
Solid metal, fragmenting design disk								
PB 	30° Angle Seat 	in. 1/4 – 24 mm 6 – 600	psig 3 – 60,000 barg 0.21 – 4138	75%	YES	ASME UD PED TÜV	**7A**  **Screw Type**  **Union Type** 	Liquid & Gas
Solid metal, fragmenting design disk								
SFAZ 	Flat Seat 	in. 1/2 – 24 mm 13 – 600	psig 15 – 6,000 barg 1.03– 413	90%	Contact ZOOK	ASME UD PED TÜV	**UHZ** 	Liquid & Gas
Solid metal scored, non-fragmenting design disk								

Sanitary Rupture Disks

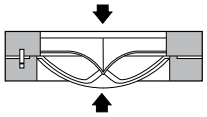
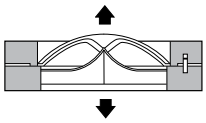
Disk Series	Sizes in./mm	Pressures psig/barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Features	Disk Mounting Flow Direction	Service
RAUS 	in. 1 – 4 mm 25 – 100	psig 18 – 300 barg 1.24 – 20.69	95%	NO	ASME UD PED KOSHA	Standard black Buna-N, EPDM, Viton gasket supplied with disk. PTFE optional. Other materials on request.		Liquid & Gas
Solid metal, non-fragmenting design disk, unscored								
RLPS 	in. 1 – 4 mm 25 – 100	psig 4 – 83 barg 0.27 – 5.72	95%	Consult ZOOK	PED KOSHA	Standard black Buna-N, EPDM, Viton gasket supplied with disk. PTFE optional. Other materials on request.		Liquid & Gas
Solid metal, non-fragmenting design disk, unscored								
SD 	in. 1 – 4 mm 25 – 100	psig 1.5 – 50 barg 0.10 – 3.45	90%	Contact ZOOK for pressures less than 25 psig	ASME UD PED TÜV	FEP liner on process side. Mounts using standard sanitary style process side gasket and vent side O-ring.		Liquid & Gas
Graphite rupture disk								

Note: Standard operating ratio is stated as a % of minimum burst pressure (including burst tolerance)

Ultra-Low Pressure Sanitary Fitting Rupture Disks

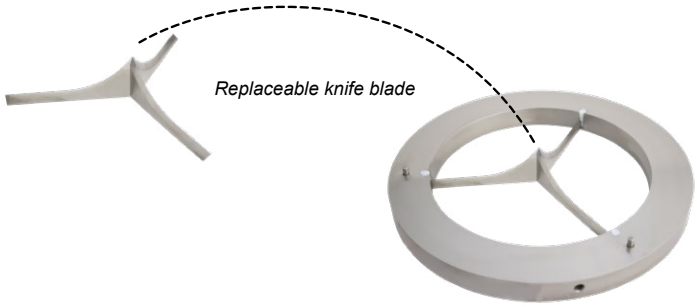
Disk Series	Disk Size in./mm	Pressures	Standard Operating Ratio	Vacuum Support Required	Certifications	Features	Standard Mating Holder	Service
ProVAC-S / ProPOS-S 	in. 2 - 4 mm 50 - 100	Ultra low rating 1" of water column to 109" Burst Cap 7 to 150 psig	60% w/316 girdle 85%	Non opening support is included as standard	PED TÜV	Dual-acting sanitary fitting design with laser cut metal top section and girdle		Liquid & Gas

Ultra-Low Pressure Rupture Disks

Disk Series	Seat Configuration Flow Direction	Sizes in./mm	Pressures pos/neg	Standard Operating Ratio pos/neg	Certifications	Standard Mating Holder	Service
Z-POS (ProPos) 	Flat Seat 	in. 2 – 12 mm 50 – 300	positive 1" of water column to 109" negative 2 psig to 150 psig	60% w/316 girdle 85%	PED TÜV		Liquid & Gas
Z-VAC (ProVac) 	Flat Seat 	in. 2 – 12 mm 50 – 300	positive 2 psig to 150 psig negative 1" of water column to 109"	85% 60% w/316 girdle	PED TÜV		Liquid & Gas

Z-VAC/Z-POS Unique Replaceable Knife Blade Design

- Dull blades can result in collapsed tanks
- Allows higher level of safety maintenance
- Availability of spare blades on site leads to quick changeovers and greater operational safety
- Provides lower cost inventory compared to other designs
- Lower costs, less downtime, enhanced safety
- Replacement blades - easy to change

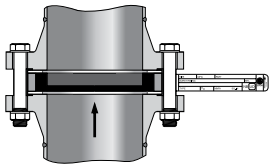
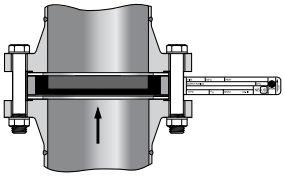
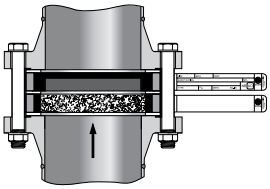
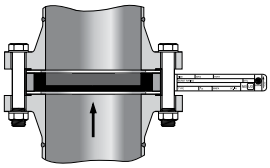
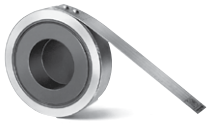
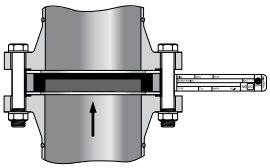
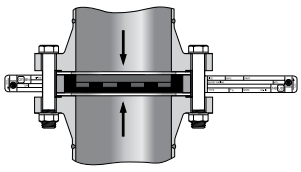
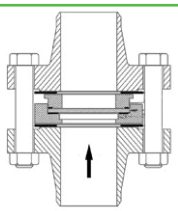


How Does Z-VAC/Z-POS Work?

Ultra-Low pressure relief is controlled by a laser cut collapsible girdle. For Ultra-Low vacuum protection (Z-VAC) vacuum pressure pulls the Teflon seal against the girdle. For Ultra-Low over pressure protection (Z-POS) positive pressure pushes the Teflon seal against the girdle deflecting it towards the razor sharp knife-blades built into the holder. As pressure approaches the relief setting, the girdle collapses allowing the seal to be cut by the knife-blades. Laser cut holes in the mid pressure burst cap or non-opening support provide optimum flow when the rupture disk relieves in the Ultra-Low pressure direction.

Note: Standard operating ratio is stated as a % of minimum burst pressure (including burst tolerance)

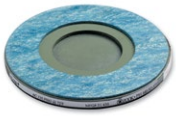
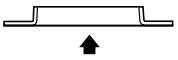
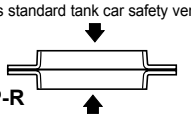
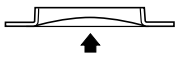
Graphite Rupture Disks

Disk Series	Mounts directly between standard ASME B16.5 Class, DIN, or JIS flanges	Sizes in./mm	Pressures psig/barg	Maximum Operating Ratio	Vacuum Support Required	Certifications	Service
FS INVERTED 		in. 1/2 – 24 mm 13 – 600	psig 1.00 – 1,000 barg 0.07 – 69	90%	Consult ZOOK	ASME UD PED	Liquid & Gas
Best choice for highly corrosive and broad temperature range applications							
FS-V INVERTED	FS Inverted Disk with internal vacuum support						
DUPLEX 		in. 1/2 – 24 mm 13 – 600	psig 0.25 – 1,000 barg 0.02 – 69	90%	Contact ZOOK on pressures less than 25 psig	ASME UD PED	Liquid & Gas
Highly corrosive applications							
INSULATED UNIT 		in. 1 – 24 mm 25 – 600	psig 0.25 – 150 barg 0.02 – 10.34	90%	Contact ZOOK on pressures less than 25 psig		Gas
For temperatures exceeding 430°F (221°C) to 700°F (371°C)							
INVERTED 		in. 1/2 – 24 mm 13 – 600	psig 0.25 – 1,000 barg 0.02 – 69	90%	Contact ZOOK on pressures less than 25 psig	ASME UD PED	Liquid & Gas
Best choice for higher burst ratings							
MONO 		in. 1/2 – 24 mm 13 – 600	psig 0.25 – 150 barg 0.02 – 10.34	90%	Yes on pressures less than 25 psig	ASME UD PED	Liquid & Gas
Best choice for low and intermediate burst ratings							
TWO-WAY 		in. 1/2 – 24 mm 40 – 600	psig 0.25 – 150 barg 0.02 – 10.34	90%		PED	Liquid & Gas
Dual rated to protect against two different pressures in opposite directions							
RT2 **RT2T** 		in. 1 - 10 mm 25 - 250	psig 1 – 250 barg 1.07 – 17.25	90%	Contact ZOOK on pressures less than 25 psig	PED	Liquid & Gas
Replaceable element for use in graphite or stainless steel holder							

Note: Standard operating ratio applies to the marked rating on the disk tag on disks marked above 40 psig. Contact ZOOK for operating ratio on disks marked below 40 psig.

ZOOK®

Transportation Rupture Disks

Disk Series	Disk Mounting Flow Direction	Sizes in./mm	Standard Pressures psig / barg	Standard Operating Ratio	Vacuum Support Required	Certifications	Features	Service
AC (Acid Car)  Graphite rupture disk	2" AAR rubber covered safety vents 	in. 2 mm 50	psig 60, 100, 165 barg 4.14, 6.89, 11.38	90%	NO	PED	• PTFE & Viton liner on process side • Carbon Steel Armor • TFE coated green • Non-Asbestos gasket on vent side	Liquid & Gas
RC (Rail Car)  Graphite rupture disk	2" AAR metal seated safety vents 	in. 2 mm 50	psig 60, 100, 165 barg 4.14, 6.89, 11.38	90%	NO	PED	• PTFE & Viton liner on process side • Carbon Steel Armor • TFE coated green • Non-Asbestos gasket on vent side	Liquid & Gas
TD  Graphite rupture disk	Standard ASME B16.5 Class 150 flanges 	in. 2, 3, 4 mm 50, 80, 100	psig 30, 35, 40, 45, 50 barg 2.07, 2.41, 2.76, 3.10, 3.45	90%	NO	ASME UD PED	• PTFE liner on process side • Carbon Steel Armor • TFE gasket on pressure side • Non-Asbestos gasket on vent side • TFE coated green	Liquid & Gas
ICP  Solid metal scored, non-fragmenting design disk	Standard ASME B16.5 Class 150 & ISO flanges 	in. 2 1/2 & 3 mm 65, 80	psig 54.4, 63.8 barg 3.75, 4.40	90%	Consult ZOOK	PED TÜV	• Nickel disk construction • PTFE gasket & PFA liner on process side • 316 locating ring and PTFE gasket on vent side • Custom pressures also available	Liquid & Gas
TCP-NR / TCP-R  Composite metal, fragment resistant design disk	Fits standard tank car safetv vents  **TCP-NR** Fits standard tank car safety vents  **TCP-R**	in. 2 mm 50	psig 75, 100, 165 barg 5.17, 6.90, 11.38	55%	NO	PED TÜV	• 316 construction w/PFA seal • 316 locating ring on vent side • Supplied with PTFE inlet gasket • Custom pressures also available	Liquid & Gas
TCP-S  Solid metal scored, non-fragmenting design disk	Fits standard tank car safety vents 	in. 2 mm 50	psig 75, 100, 165 barg 5.17, 6.90, 11.38	90%	NO	PED TÜV	• Nickel disk construction • PTFE gasket & PFA liner on process side • 316 locating ring and PTFE gasket on vent side • Custom pressures also available	Liquid & Gas

Note: Standard operating ratio is stated as a % of minimum burst pressure (including burst tolerance)

Custom Welded Assemblies (CWA)

Custom welded assemblies are ideal for customers that have special requirements in the manufacturing, production and testing of rupture disks that can not be met using standard rupture disk products.

The advanced welding technology of CWA provides additional precision resulting in the ability to relieve excessive pressure conditions from enclosed pressure circuits in just milliseconds. They are manufactured to exacting specifications to meet very low leakage levels, close pressure tolerances, weight restrictions and can also incorporate various material selection. CWA products can also be used as pressure activation devices in control sequences.

CWA are manufactured with the highest quality control:

- 100% leak testing
- Burst testing in accordance to specified standards
- Weld & body pressure testing
- Digital inspection of threads & body dimensions
- Ultra sonically cleaned
- 100% Material Traceability

Extrusion Burst Plugs

Extrusion Burst Plugs are pressure relief devices designed for over-pressure protection of plastic and rubber extrusion processes

- Each EBP assembly consists of a threaded tubular body with a rupture disk welded onto the process end
- ZOOK has the ability to supply any specific combinations of dimensions, threading, and body configuration
- Stocked burst ratings 1,000 psig to 15,000 psig in 500 psig increments (for higher pressures contact ZOOK)
- 0% manufacturing range
- Burst tolerance ± 10% with typical standard deviation of ±1% throughout the temp range of 300°F to 750°F (149°C to 399°C)
- Many standard EBPs in stock

Explosion Vents

CV-F Series
Flat composite design with single hinge bursting pattern

CV-P Series
Domed composite design with single hinge bursting pattern

CV-II-F Series
Flat composite design with segmented bursting pattern

CV-II-P Series
Domed composite design with segmented bursting pattern

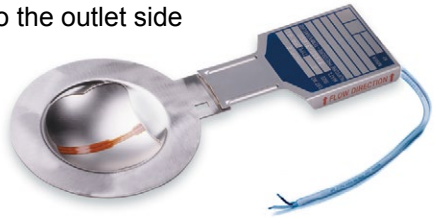
Burst Sensors / Indicators

BA Burst Indicator

The BA Rupture Disk Burst Sensor alerts personnel to take immediate action to protect system components from further damage upon an overpressure event.
The BA installs on vent side of the disk holder or alone and requires minimal flange face-to-face clearance.

BI Integral Burst Indicator

The BI Series integral burst indication offers a simple and effective means of indication over-pressure or discharge indication for metal rupture disk applications. Affixed to the outlet side of the rupture disk isolating the indicator from process media.

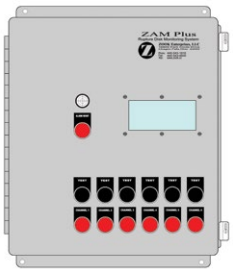


RDI Burst Indicator

Over pressure or discharge indication for rupture disk and relief valve applications. The RDI installs onto the vent side of a rupture disk assembly or onto the discharge side of a relief valve.
One time use, LOW COST.

ZAM Plus Monitor

The ZAM series Alarm Monitor is a surface mounted monitor designed to remotely detect the condition of a rupture disk in service. Used in conjunction with the ZOOK ZENSOR®, BA, RDI, BI or similar devices, it will immediately warn the operator of a ruptured disk.



ZENSOR®

Designed for use with ZOOK Impervious Graphite Rupture disks 1” and larger.
It can be used with ZOOK Two-Way Disks in systems with pressure and/or vacuum conditions and with ZOOK Bak-Pressure™ Disks in systems where extreme back pressures develop.

Z-Alert

The non-invasive detection device is situated remote of the disk allowing maintenance and inspection without interfering with the disk assembly.
This product meets global Exd certification requirements and its robust design makes it suitable for use in arduous and hazardous environments.

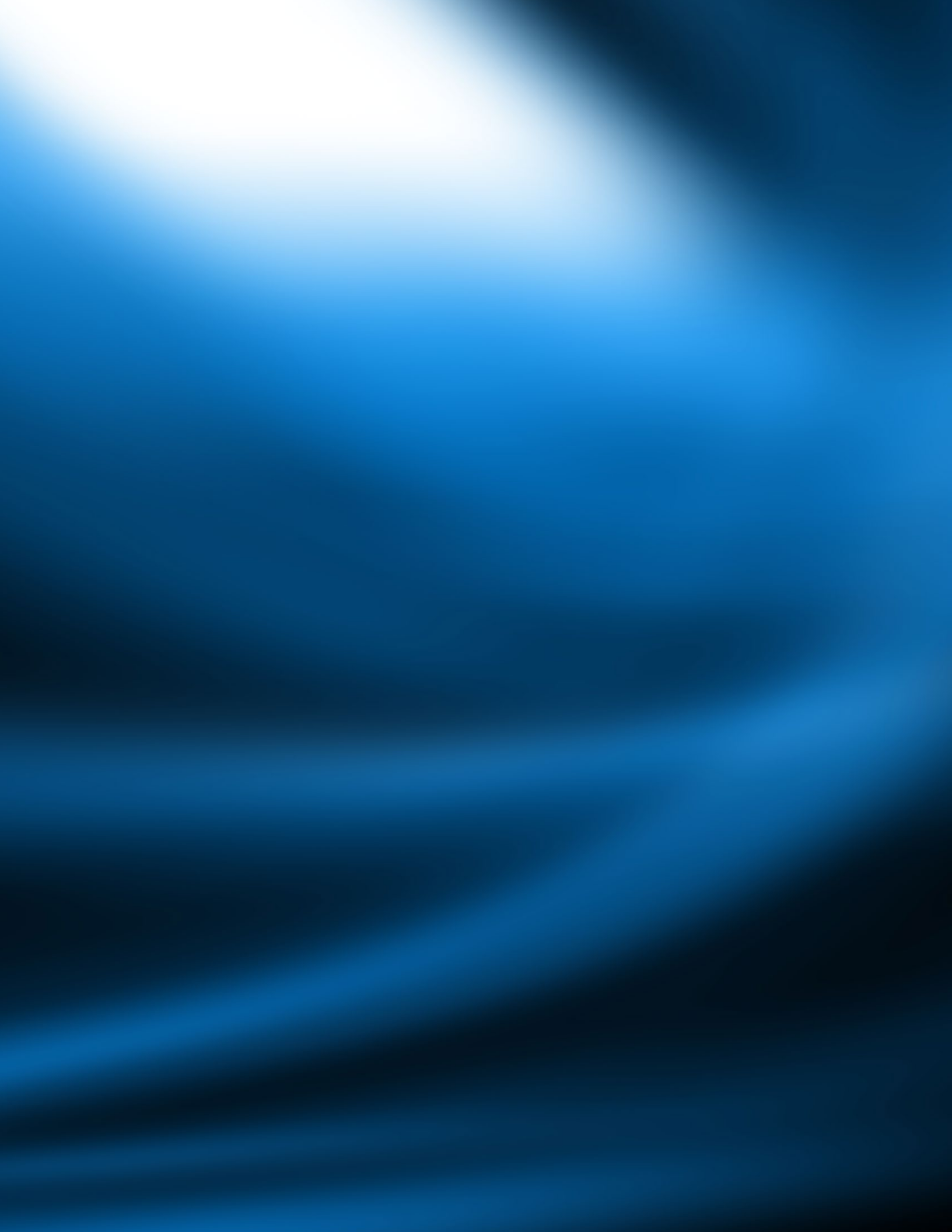
Accessories

Pipe End Covers

Applications include protection of safety relief valves, rupture disks, manifold piping systems, ductwork, common header systems, flame stacks, etc.

Accessory Kit

Used to monitor the air gap between a rupture disk and relief valve or the presence of back pressure in a header system.



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