

ZOOK®

Pressure Relief Solutions and PAD's for the Oil and Gas Industry

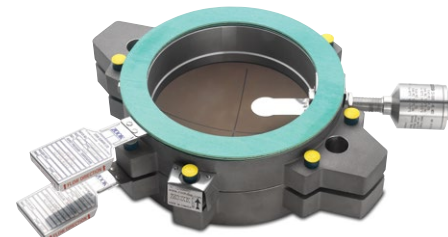


Safety through knowledge and performance.

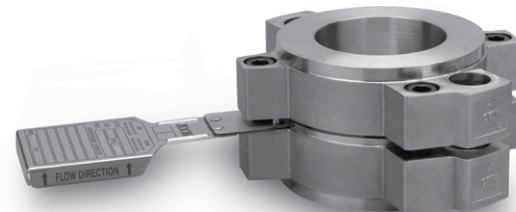


Oil and Gas Experts for Overpressure Relief and Pressure Activation Devices

ZOOK rupture disks are utilized throughout the entire exploration and production process of the oil and gas industry.



Skid-Safe (For Skid mounted separators)



FA/RA Series

Custom Welded Assemblies (CWA) are customized engineered rupture disks for unique applications that have specific requirements.

With both TIG and Laser Weld technology to choose from, we will provide the optimum manufacturing solution for your application.

There is total flexibility regarding materials, size, medium, flow type, connection type, pressure rating and international acceptance codes.

Some Applications where CWAs are recommended are:

- Drilling
- Downhole
- Fracking
- Perforating
- Cementing
- Tool Activation



UPSTREAM

The upstream sector of the oil and gas industry is the essential first step in the entire extraction and refining process.

ZOOK recognizes that upstream applications have a significant degree of complexity. Our engineering experts have solved many customer problems by finding and designing the optimum solution. In drilling applications, ZOOK offers rupture disk devices for both pressure activation and pressure relief.

Upstream processes such as drilling, fracking, perforating, case protectors, sulphur recovery units and many more applications present opportunities for rupture disks to be applied.

ZOOK's engineering experts offer solutions for pressure relief or pressure activation to the oil and gas industry. Some examples are:

- Overpressure protection within the casing, drill string or downhole tool
- Pressure activation of equipment or tools
- Hydraulic fracking
- Perforation guns
- Testing of the tubing string
- Pressure vessels ie. towers, knock out drums, heat exchangers, separators, accumulators, flare stacks, sulfur recovery units, etc.
- Downhole applications with customized backpressure support
- Wellhead protection
- Cementing
- Pipeline Pumps

MIDSTREAM

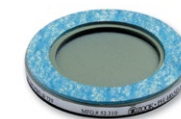
Midstream activities involve transporting and storing the oil/natural gas in preparation for the refining process.

The most common method of transportation are pipelines used to transport product. To move oil/natural gas by means of pipelines involves long distances which requires the use of high pressures and extreme amounts of compression.

Rupture disks such as PB, union type disk holders and D series can be used on separators, gas production skids, well head protection and heater treaters, these are just a few applications.

Rupture disks are also required near the compressor/pump stations to prevent an overpressure in the event of a blockage in the pipeline. They can also be utilized to drastically reduce fugitive emissions from the compressor/pump. Recommended ZOOK disks would include reverse acting, scored reverse acting and scored forward acting disks.

Other transportation methods might include barge or rail. For railcar applications ZOOK recommends the AC and RC graphite disks.



RC - Rail-Car Rupture Disk

When intermodal tanks are used ZOOK's ICP series rupture disks are the solution. Tank trailers can also be used to transport natural gases. For this application, ZOOK's TD rupture disk is recommended to protect the tank trailer.

DOWNSTREAM

In downstream, the oil and natural gas are processed to refine them into usable products. In refineries and petrochemical plants, a variety of pressure relief devices are required for separator towers, accumulators, flare stacks, sulphur recovery units, isolating SRV's, etc.

The products recommended for these applications are: reverse acting disks, scored reverse acting disks and scored forward acting disks.

Storage is another component of downstream operations. The ARD, Z-VAC/Z-POS rupture disks are the ideal solution for storage tanks.



Z-VAC - Ultra-Low Pressure Disk

SERVICE

Service companies provide infrastructure, equipment, and services required by the international oil and gas industry to search for, extract and transport crude oil and natural gas from the earth to the refinery.

A few examples of where rupture disks are required in these areas are:

- Seismic imaging at the beginning stages of exploration
- Deep water oil exploration
- Operations in the oilfield
- Building rigs



RAX - Reverse Acting Disk

ZOOK is a global market leader with over 90 years of manufacturing expertise of high quality metal & graphite rupture disks and other pressure relief products.



PB - Forward Acting Disk



DHT



Cementing Disk



Hammer Union Holder



Safety through knowledge and performance.



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