

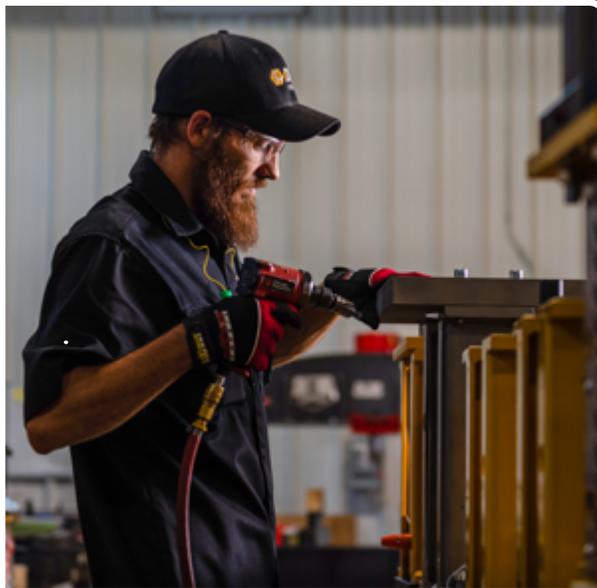


**DSS VALVES**

Designed for  
Severe Service

# DSS Valves

DSS Valves is a streamlined team of engineering and manufacturing professionals dedicated to creating premier Severe Service Knife Gate Valves (SSKGVs) for critical applications in Mining, Oil & Gas, Power, Chemical, Municipal, Pulp & Paper, Steel and Wastewater industries.



MINING



OIL & GAS



POWER



CHEMICAL



MUNICIPAL



PULP & PAPER



## North American Made

We've found a simple solution to make sure our valves exceed the highest global industry standards and it's pretty darn simple —we don't take chances and we don't cut corners. Our valves are made from start to finish entirely in North America and that's something we're very proud of.

## Designed for Severe Service

Our design excellence didn't happen overnight. Our team of engineers spent decades improving and perfecting the finest details of our product line. We cut our teeth creating valves able to withstand the harshest severe service applications where leakage is not an option and unexpected valve failure simply cannot happen.

## Bi-Directional Zero Leakage

Our Severe Service Knife Gate Valves come in a single or a double block and bleed configuration. Both models offer zero leakage, bi-directional isolation that reliably meets or exceeds API, ASME and MSS specifications. We produce valves that can isolate from full vacuum to ASME Class 1500/PN 250 pressures (3750 psig/250 barg). Don't let that stop you though—we're eager to shoot for even higher pressure—we just haven't met a customer who's needed it yet. If you have a special request please let us know.

## The Lowest Cost of Ownership

Shutting down operations to replace a faulty valve is expensive, time consuming and detrimental to your bottom line. While no valve lasts forever, we guarantee our revolutionary Guided Shear Gate design will outperform the competition while being easier and less costly to maintain.



STEEL



WASTE WATER



Severe Service  
Knife Gate Valve

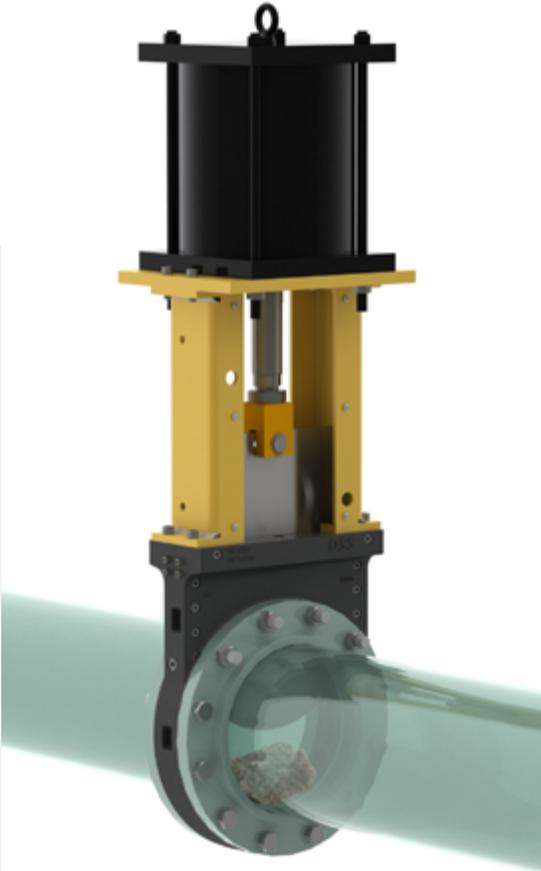


Double Block  
and Bleed

# What Makes a Severe Service Knife Gate Valve?

Severe service applications require valves that can handle any combination of pressure differentials, extreme temperature, frequent (or infrequent) cycling, corrosive materials and solids in the pipeline.

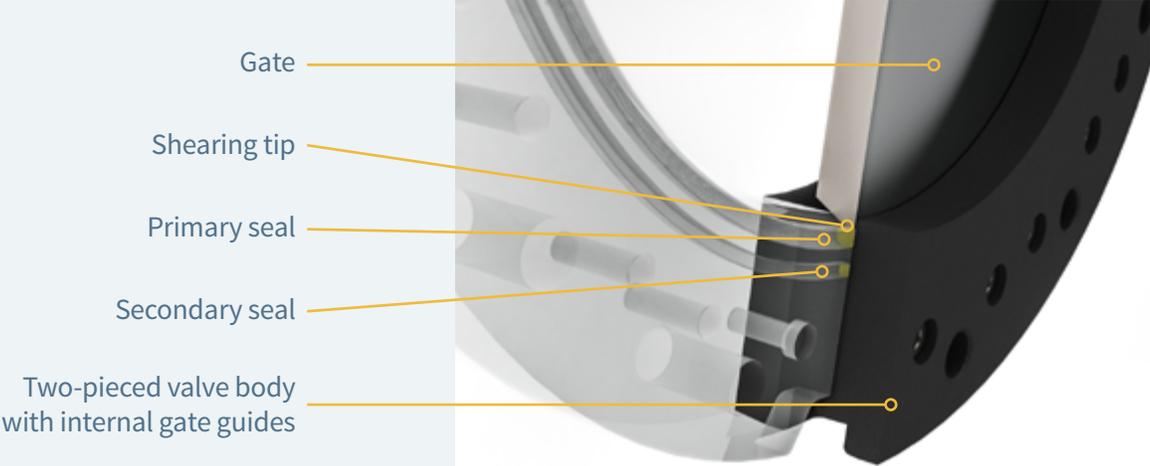
Our revolutionary Guided Shear Gate design achieves sustainable zero leakage in these conditions. This is the reason we're confident in calling our product a true Severe Service Knife Gate Valve (SSKGV).



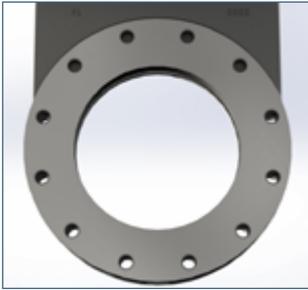
## A Knife Gate That Can Actually Cut

As odd as it sounds, traditional knife gate valves cannot actually cut through material on a repeatable basis. Solids in the pipeline cause traditional gates to deflect, warp and leak to atmosphere.

Our Guided Shear Gate design consists of two key elements: a shearing tip and internal gate guides. From open to close the gate is guided the entire way removing any option to deflect when solids are encountered. When the material is struck by the shearing tip it is fractured and angled away, enabling zero leakage where the gate meets the primary seal. A secondary seal further eliminates any possible leakage to atmosphere.



# Other Problems We Solve

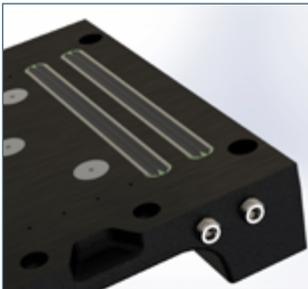


## PROBLEM: Pipe Turbulence and Erosion

### SOLUTION:

- Full round bore
- Wider gate and internal gate guides

A round port that matches the pipe ID minimizes turbulence and the resulting erosion. Using wider gates eliminates the flat sides on other designs and provides greater support to the gate.

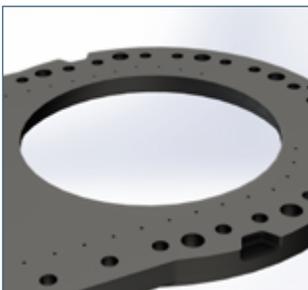


## PROBLEM: Leakage to Atmosphere

### SOLUTION:

- Dual transverse seals
- Primary and secondary body seals

Ensuring process is contained within the pipeline envelope is the target of operating sites. Using dual transverse seals with a larger packing well ensures zero leakage to atmosphere.

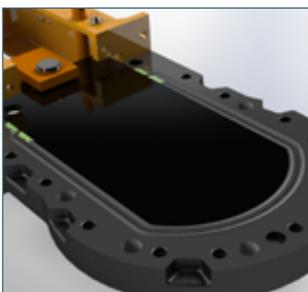


## PROBLEM: True Isolation During Cycling

### SOLUTION:

- Seal retention holes drilled in both body halves

Seal integrity is paramount in order to achieve isolation. Seal retention holes in both body halves eliminate stretching, tearing and deformation by mechanically retaining the seal. This ensures repeatable zero leakage.



## PROBLEM: Pipe Stress

### SOLUTION:

- Primary and secondary body seals
- Greater number of body bolts

Some degree of pipe stress is unavoidable in large diameter piping systems. Using a greater number of body bolts ensures the body halves maintain the valves integrity under stress, while the primary and secondary body seals combine to provide the highest level of assurance against leakage.



## PROBLEM: Topworks Structure Failures

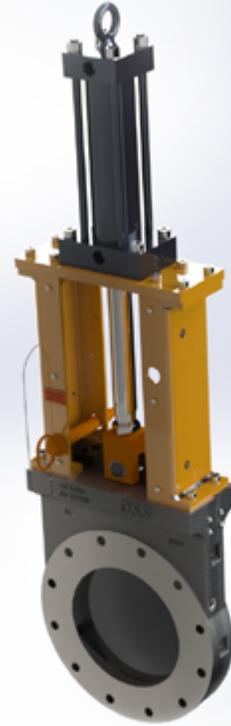
### SOLUTION:

- Heavy duty yokes

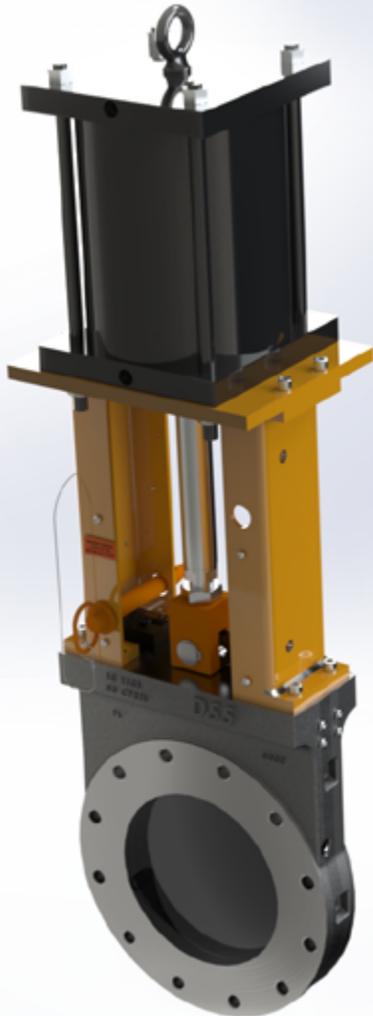
Other designs on the market often fail at the connection between the topworks structure and the valve. We've remedied this issue by performing FEA on these parts to ensure this critical, but often overlooked area is enforced with heavy duty components along with the right number and size of bolts that attach the topworks to the valve. This means greater safety for operators and a superior thrust platform for pneumatic, hydraulic, electric and electro-hydraulic actuators.

# Actuation Options

Our Severe Service Knife Gate Valves are compatible with a wide range of actuation options and accessories including low profile arrangements, stem extensions and gear operators. Whether you are working with pneumatic, hydraulic, electric or electro-hydraulic systems, we have a solution readily available to suit your needs. See a few of our designs below.



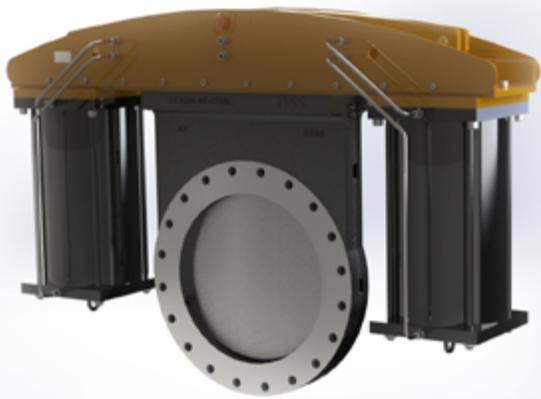
Hydraulic Cylinder



Pneumatic Cylinder



Pneumatic Cylinder—Rod Boot



Low Profile Design



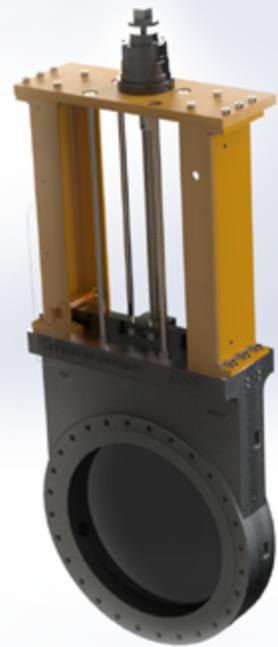
Electric Actuator



Hand Wheel



Bevel Gear



Planetary Gear Box  
with 2" Operator Nut



## Ready When You Are

Located in Niles, Michigan, our manufacturing facility is primed and ready to serve your severe service needs. With over 90,000 square feet of manufacturing space and a dedicated crew in operation around the clock, we take pride in our ability to deliver a *cutting edge valve* at an industry leading pace.

To learn more, contact us at [info@dssvalves.com](mailto:info@dssvalves.com) directly. We look forward to working with you.

## Contact Us

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