



# TITAN

SERIES

*Valves for  
Heavy-Duty  
Material Handling*



# Introduction

## Corporate Overview

For 35 years, Vortex has supplied dry material handling valves to a global network of Original Equipment Manufacturers, Fortune 500 companies, and process engineering firms. Throughout the world, over 15,000 factories have utilized Vortex's innovative slide gates, diverters, iris valves, and custom engineered products to improve process efficiency. With sales and service offices located in North America, Europe, Asia & Latin America, Vortex's success comes from a philosophy that focuses on quality, timely customer service and dedication to adding value to our clients' processes. Each Vortex valve

is appropriately selected to meet the demands in every application. With an in-house team of engineers, Vortex valves can be completely customized for individual applications or special installations. Vortex understands the value of your process. Our technical application and engineering team have more than 150 years of combined dry material handling experience. Vortex's knowledge of dry particle characteristics and material conveying systems is unsurpassed. Vortex delivers intelligent and cost effective valve solutions for all dry bulk materials. No application is too large, too small or too difficult to handle.

## Vortex Product Series

Quantum Series	Titan Series	Loading Solutions
Valves for dry bulk processing and conveying	Valves for heavy-duty material handling	Dust free loading spouts and equipment

## Titan Series: Materials Handled

The Vortex Titan Series valves are specifically designed to handle a variety of highly abrasive dry bulk materials and aggregates throughout numerous industries. Below is a brief sample of materials and industries that use Titan series valves but certainly are not limited to:



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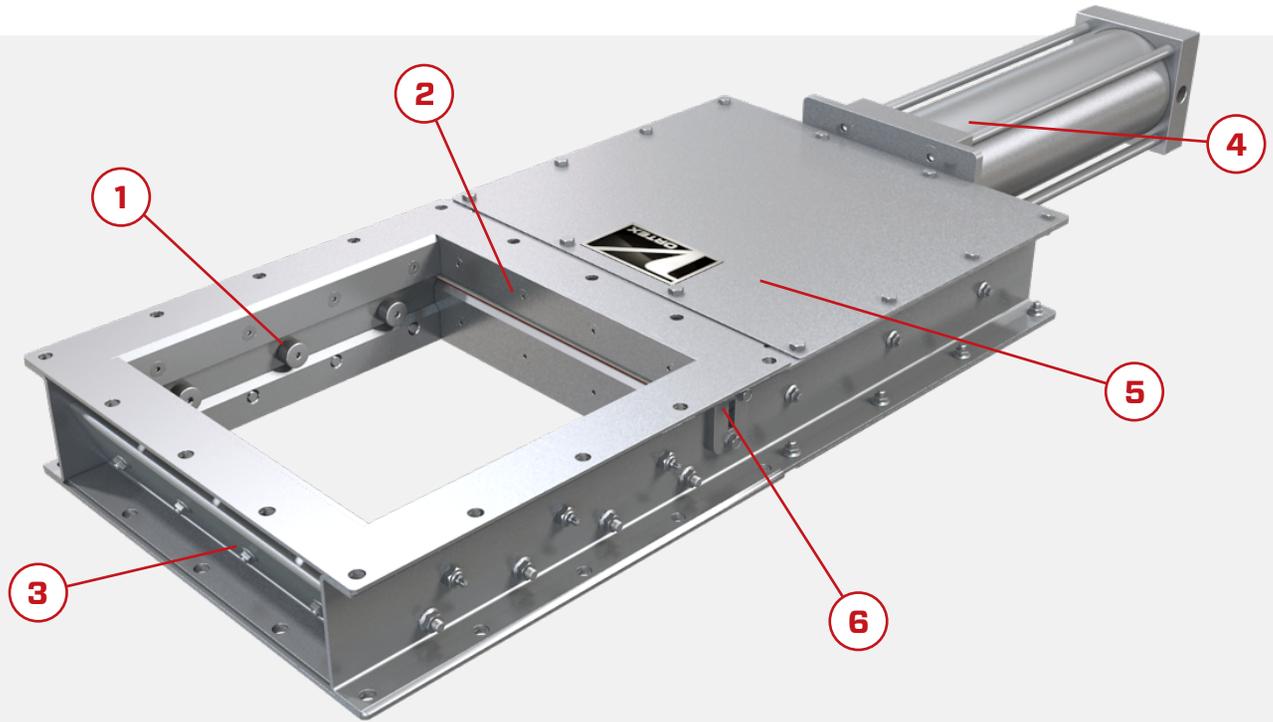
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# TSG Gate

The Vortex TSG Gate is designed to meet the most demanding applications when handling heavy-duty abrasive materials such as sand, gravel, coal, and whole grains. The TSG Gate handles dry material in gravity flow applications where positive material shut-off and dust-tight sealing are required. This slide gate is available in a wide variety of configurations with rectangular sizes and customer specific hole patterns.

**Conveying Types :**

- GRAVITY FLOW
- DILUTE PHASE PNEUMATIC CONVEYING
- DENSE PHASE PNEUMATIC CONVEYING

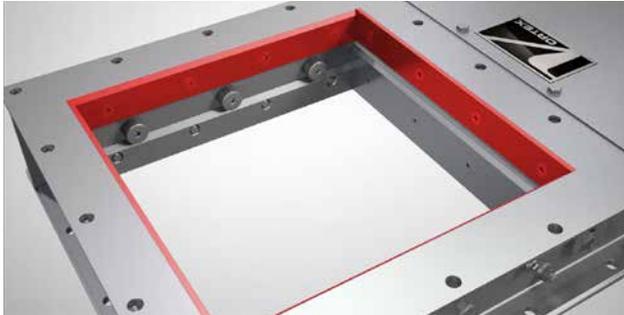


- 1 Adjustable Rollers**  
 Externally greased hardened steel adjustable rollers are used to keep the blade dust tight
- 2 Abrasion Resistance**  
 Replaceable abrasion resistant liners and blade extend the service life of the valve by reducing wear
- 3 Displacement Pocket**  
 The TSG is engineered with a displacement end pocket to help prevent material packing
- 4 Actuation Options**  
 The Vortex TSG can be actuated with the following options: Pneumatic, electric, hydraulic and manual configurations
- 5 Bonnet Purge**  
 The optional bonnet purge is utilized to keep material out of the body of the valve and in the material stream
- 6 Replaceable Seals**  
 Wear compensating hard polymer seals help prevent material leakage
- + Available Sizes**  
 Standard sizes range from: 6" - 36" (150mm - 600mm)  
 Contact us for custom sizes
- + Materials Handled**  
 Designed to handle highly abrasive materials: minerals, frac sand, fly ash and whole grains



For application photos or a complete list of specifications and dimensional drawings, visit

[WWW.VORTEXVALVES.COM](http://WWW.VORTEXVALVES.COM)



### ***Abrasion Resistant Liners & Blade***

Abrasion resistant liners positioned at the inlet of the gate address potential wear issues that may exist from either the volume or the abrasiveness of the material being handled. The liners are replaceable, when needed. The gate's blade is also manufactured of abrasion resistant steel. The combination of the abrasion resistant blade and liners are important in providing a gate that offers longevity and an exceptional life-cycle cost.



### ***Wear Compensating Seals***

Pressure loaded, polymer bonnet seals offer a dual purpose. They act as a wiper for material that may be on the blade as the blade retracts. They also seal material from entering the bonnet area of the gate. The "live load" on the back of the seal strip continues to apply pressure to the seal even as it wears. At a certain wear point, seals may be accessed and replaced from the outside of the gate, while the gate remains inline.



### ***Displacement End Pocket***

A displacement pocket accepts material that may exist at the leading edge of the blade as the blade closes. Rather than the blade jamming and packing this material into an end seal, the blade stops part way into the pocket. Material falls away from the blade and re-enters the material flow stream area. This feature can increase the valve's service-life and reduce downtime costs related to maintaining and replacing end seals.



Externally-greased cam adjustable rollers allow for easy blade adjustments



Replaceable abrasion resistant liners significantly increase valve life



The replacement seals are removable while in-line for easy seal replacement

DETAILS

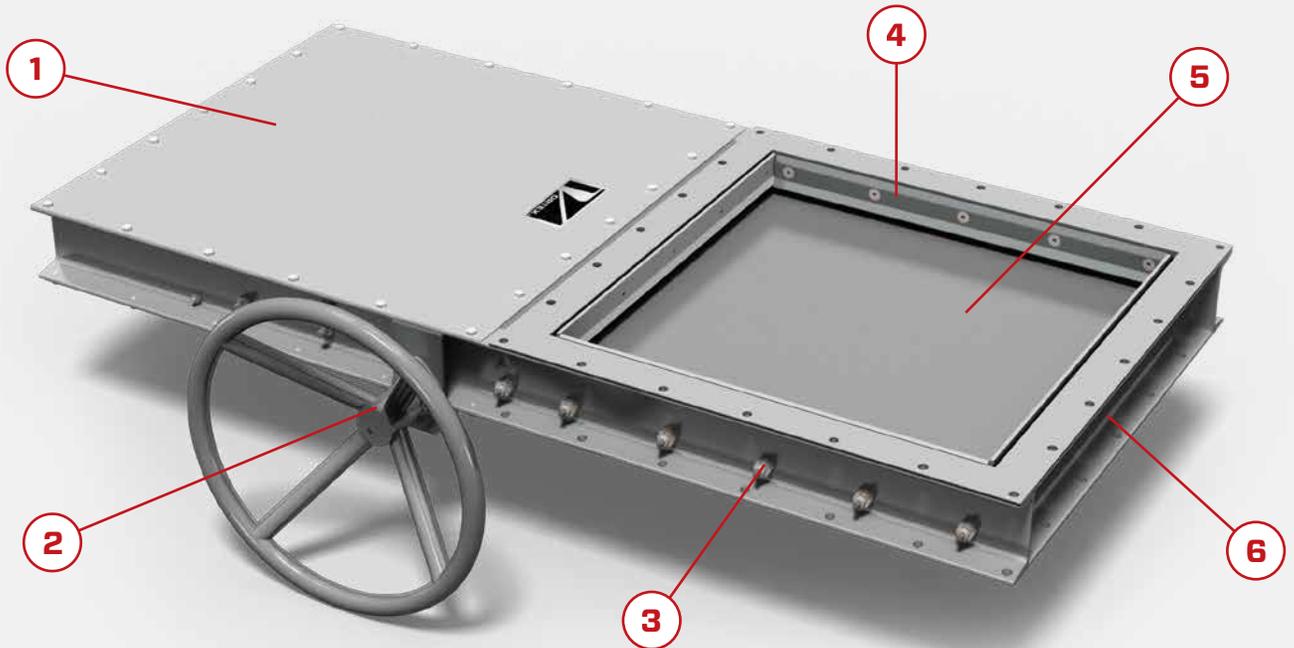
MAINTENANCE

# Aggregate Gate

The Vortex Aggregate Gate is a more economical solution to handling larger, abrasive aggregates where internal sealing of finer material is not an issue. The aggregate gate handles dry material in gravity flow applications and is available in a wide range of configurations with rectangular sizes, customer specific hole patterns and actuation options.

**Conveying Types :**

- GRAVITY FLOW
- DILUTE PHASE PNEUMATIC CONVEYING
- DENSE PHASE PNEUMATIC CONVEYING


**1 Safety Bonnet Cover**

Internal parts are protected by a removeable bonnet cover allowing for in-line maintenance

**2 Actuation Options**

The following actuation options are available: air, chain wheel, electric, hand crank, hand wheel, and hydraulic

**3 Hardened Steel Rollers**

Externally greased hardened steel adjustable rollers are used to keep the blade in contact with the seat

**4 Material Deflectors**

Deflectors placed around the inlet of the valve keep material away from the rollers and in the material flow stream

**5 Optional AR Blade**

The optional abrasion resistant blade reduces wear and significantly increases the life of the valve

**6 Displacement Pocket**

A displacement end pocket helps prevent material jamming or packing upon closure of the blade

**+ Higher Temperatures**

The Aggregate Gate is capable of being modified to handle higher temperature applications up to 600° F

**+ Available Sizes**

Standard sizes range from: 6" - 24" (150mm - 600mm)  
Contact us for custom sizes

**+ Materials Handled**

Designed to handle highly abrasive materials: minerals, frac sand, fly ash and whole grains



For application photos or a complete list of specifications and dimensional drawings, visit  
[WWW.VORTEXVALVES.COM](http://WWW.VORTEXVALVES.COM)



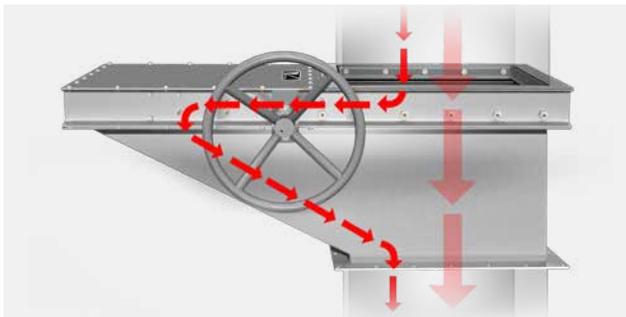
### ***Wear Reducing Material Deflectors***

The Aggregate Gate's material deflectors are placed around the inlet of the valve and protect it from the material flow stream. By deflecting material away from the hardened steel rollers and blade seals this feature significantly reduces wear and downtime keeping the valve in service longer.



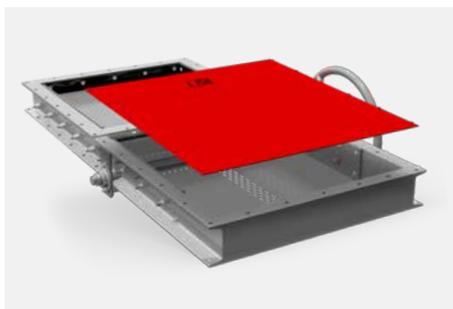
### ***Displacement End Pocket***

The Aggregate Gate utilizes a displacement end pocket that is similar to the TSG Gate but not as pronounced. Instead of packing or jamming material into an end seal, the blade stops part way into the pocket. Material falls away from the blade and re-enters the material flow stream area. This feature can reduce downtime costs related to maintaining and replacing end seals.



### ***Optional Return Pan***

Since the Aggregate Gate is not designed to seal fine material internally or to atmosphere, a material return pan can be added. With this feature, material that enters the bonnet of the valve is returned to the material flow stream, thus reducing material leakage to atmosphere.



Bonnet cover removal allows access to internal components



Exterior grease zerks for easy maintenance



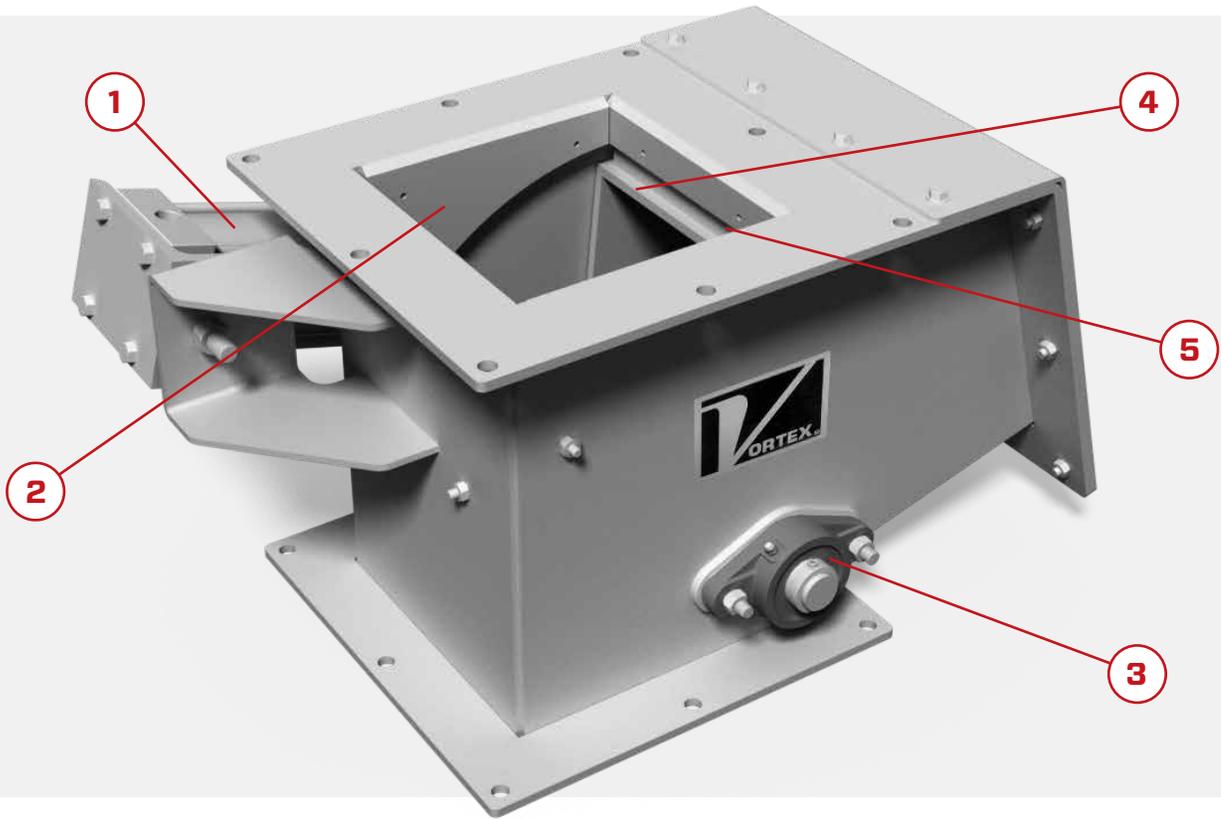
Material deflectors and blade seals can be replaced extending valve life

# RBG Gate

The Vortex RBG Gate is designed to meet the most demanding applications when handling heavy-duty abrasive materials. The RBG handles dry material in gravity flow applications where positive material shut-off and dust-tight sealing is required. The rounded blade is ideal for applications that require metering and is available in a wide variety of configurations with rectangular sizes and customer specific hole patterns.

**Conveying Types :**

- GRAVITY FLOW
- DILUTE PHASE PNEUMATIC CONVEYING
- DENSE PHASE PNEUMATIC CONVEYING


**1 Actuation Options**

The Vortex RBG can be actuated with the following options: pneumatic, electric and hydraulic

**2 Abrasion Resistance**

Replaceable abrasion resistant liners significantly extend the service life of the valve by reducing wear

**3 Rapid Actuation**

Quickly starts and stops material flow and is ideal for more accurate control of flow rates

**4 Unique Blade Design**

The abrasion resistant blade is designed to provide a consistent sealing surface that minimizes the trapping of material

**5 Replaceable Seals**

The bonnet seal has the ability to be replaced while in-line, reducing system downtime during maintenance

**+ Available Sizes**

Standard sizes range from: 6" - 24" (150mm - 600mm)  
Contact us for custom sizes

**+ Materials Handled**

Designed to handle highly abrasive materials: minerals, frac sand, fly ash and whole grains

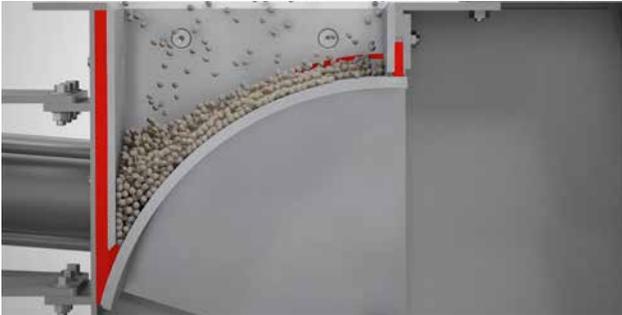
**+ Dust Tight Design**

The valve is engineered to be dust tight which reduces material leakage to atmosphere



For application photos or a complete list of specifications and dimensional drawings, visit

[WWW.VORTEXVALVES.COM](http://WWW.VORTEXVALVES.COM)



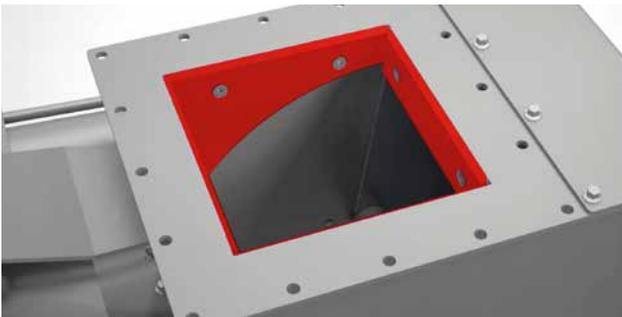
### ***Dust Tight Design***

The RBG's dust tight design does not allow leakage of material to atmosphere, which is becoming more important for all industries. Material leakage to atmosphere can create air emission problems, lead to potential fines, affect plant cleanliness, cause employee health issues, and decrease profits.



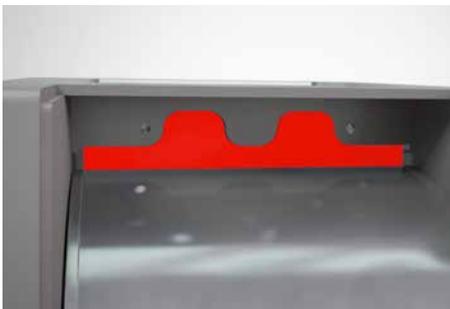
### ***Unique Curved Blade Design***

The curved blade moves through a true arc and not an elliptical arc as with traditional rounded blade gates. This feature allows for a more precise sealing surface between the blade edge and end seal. The rounded blade will open or close twice as fast as a similarly sized slide gate. The interior bonnet seal may be replaced without having to remove the gate for service.

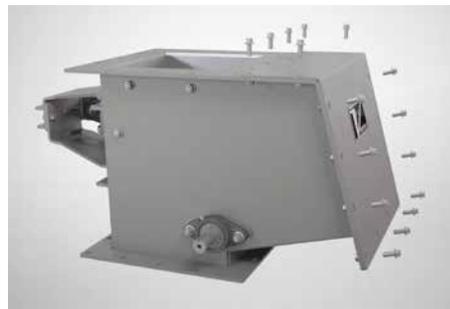


### ***Abrasion Resistance & Flow Control***

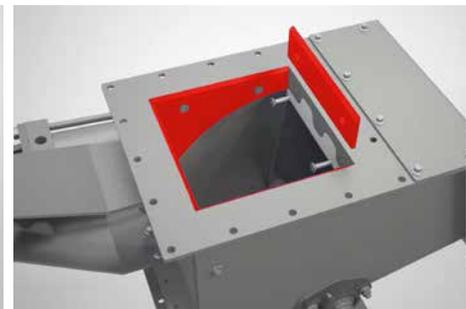
The blade is made of abrasive-resistant steel, as are the replaceable sidewall liners located through the material drop zone. This feature allows the gate to handle a wide variety of material with abrasive characteristics. Additionally, the blade may be set "partially open or closed", providing adjustable flow rates through the gate.



The bonnet seal is replaceable while in-line, reducing system downtime



The removeable access panel makes for easy in-line maintenance



The replaceable wear liners significantly increase valve life

# TPV Gate

OVERVIEW

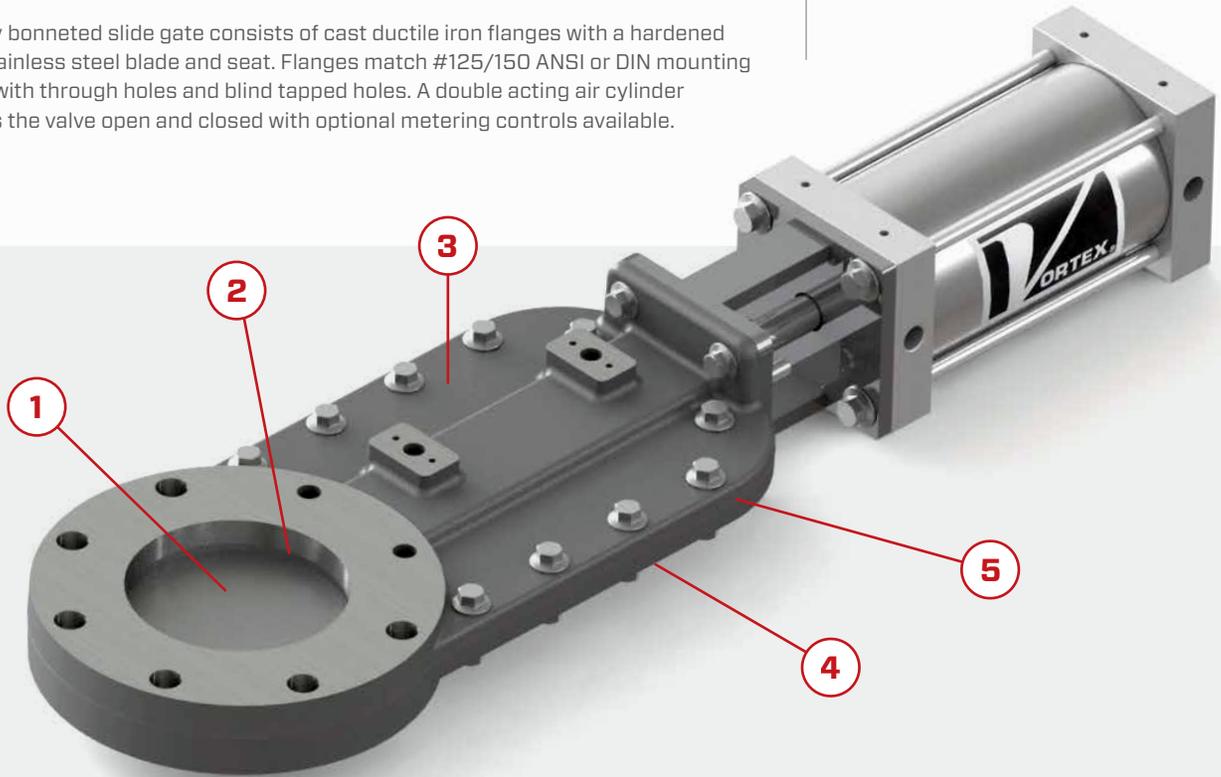
The TPV is designed to address higher-pressure applications up to 100 psig (6.8 barg) and higher temperatures up to 660° F (350° C). The TPV Gate is engineered for highly abrasive applications and requires minimal maintenance over the life of the valve. Vortex's patented rising-blade technology ensures an optimal seal and positive material shutoff with the use of lifting lugs. This prevents the blade from jamming or packing material upon closure which can cause serious downtime. Unlike most knife gates, the Vortex TPV contains a replaceable seat that can significantly increase the life of the valve.

This fully bonneted slide gate consists of cast ductile iron flanges with a hardened 440C stainless steel blade and seat. Flanges match #125/150 ANSI or DIN mounting pattern with through holes and blind tapped holes. A double acting air cylinder actuates the valve open and closed with optional metering controls available.

**Conveying Types :**

- GRAVITY FLOW
- DILUTE PHASE PNEUMATIC CONVEYING
- DENSE PHASE PNEUMATIC CONVEYING

DIAGRAM



FEATURES

**1 Rising Blade Design**

The rising blade and lifting lug design ensures optimal seal by keeping the blade in contact with the seat reducing packing

**2 Replaceable Parts**

The stainless steel seat in addition to the blade can be replaced increasing the service life of the valve

**3 Blade Guides**

Spring loaded blade guides keep the blade in contact with the seat creating a positive seal

**4 Air Purge Port**

Used to pressurize the bonnet and keep material in the flow stream, the air purge is essential for higher pressure applications

**5 High Temp Design**

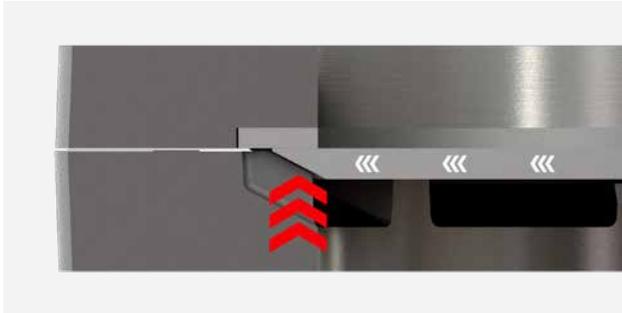
The construction materials allow for use in higher temperature applications - up to 660°F (350°C)

**+ Available Sizes**

Standard sizes range from: 2" - 10" (50mm - 250mm)

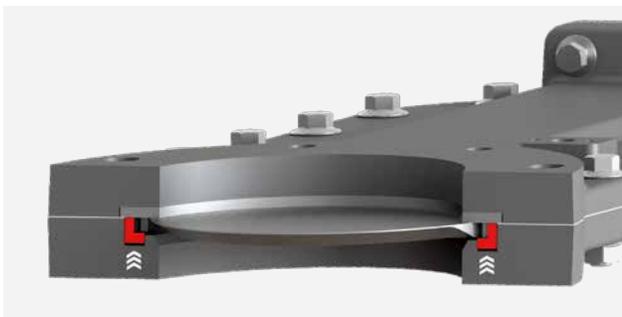
**+ Materials Handled**

Designed to handle highly abrasive materials: minerals, frac sand, fly ash



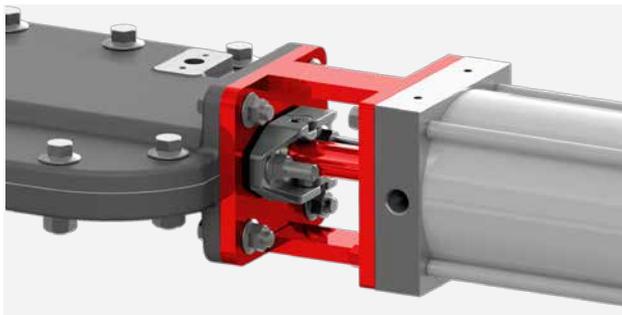
### ***Patented Rising Blade Design***

The beveled leading edge of the blade closes into a matching beveled lower flange to force the blade into the seat. A matching bevel on the clevis forces the blade into the seat on the opposite end of the blade. The bevel on the leading edge of the blade ends before it reaches the blade guide. This forces material forward and back into the convey line.



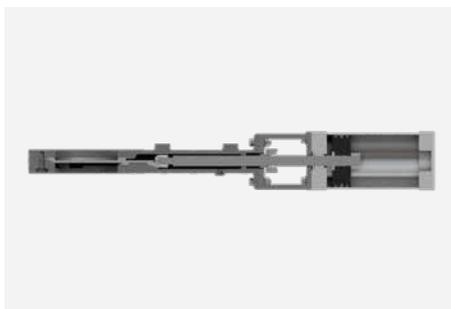
### ***Spring Loaded Blade Guides***

The blade is kept in contact with the seat throughout the stroke of the air cylinder with the aid of blade guides. These guides are supported by multiple wave springs on both sides of the blade that apply constant upward pressure helping to seal the valve. This feature extends the service life of the valve and makes it ideal for higher pressure applications.

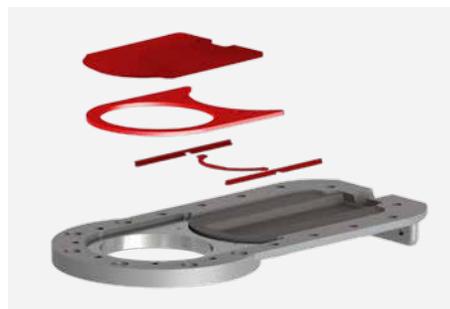


### ***High Temperature Design***

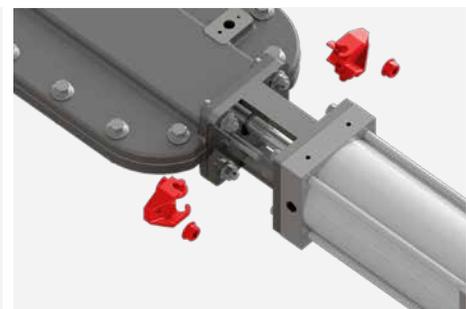
From the ductile iron housing to the precision metal-to-metal seal, the TPV contains no polymers or elastomers that can become problematic at high temperatures. The combination of a stainless steel piston rod and the air gap between the body and the air cylinder help reduce the transfer of heat to the air cylinder making it ideal for higher temperature applications.



The compact design makes removal easy if maintenance needs to be performed



The replaceable seat, blade and blade guides significantly increase valve life



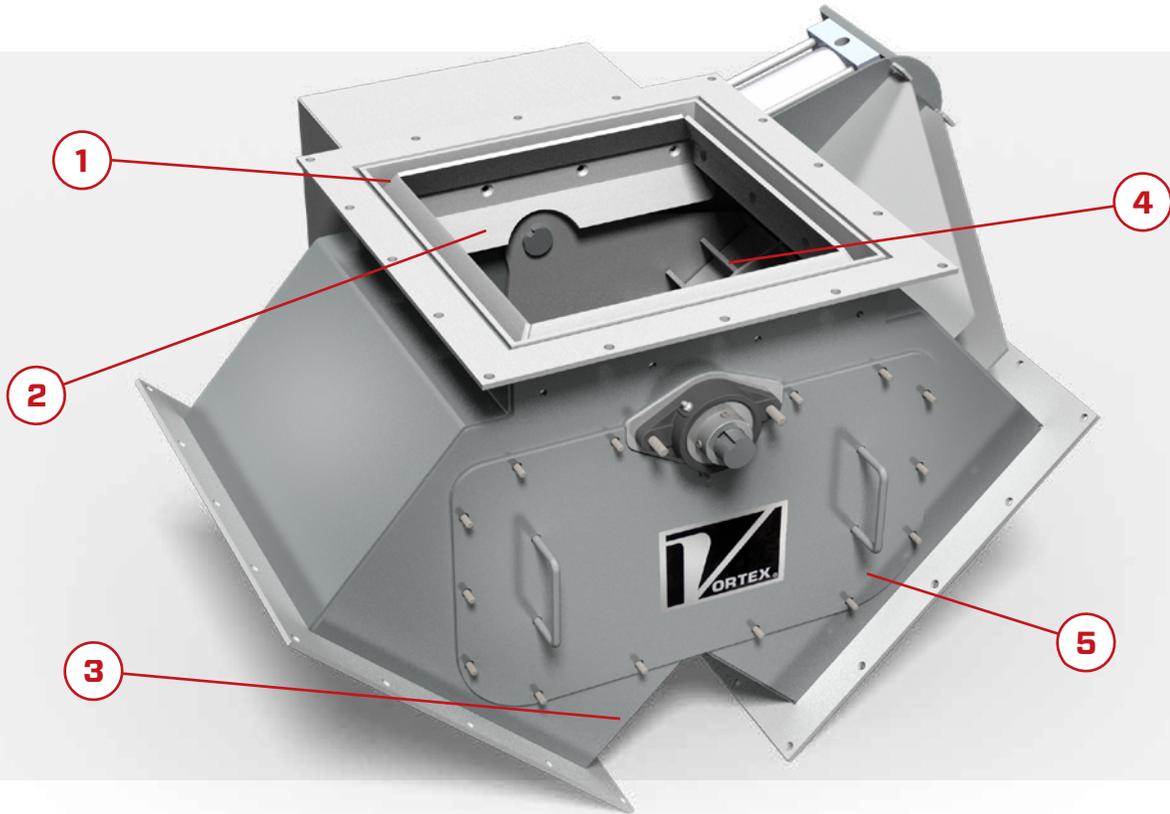
The packing gland is removeable while in-line for easy replacement

# Aggregate Diverter

The Vortex Aggregate Diverter is designed to meet demanding applications handling abrasive materials like sand, gravel, whole grains, and coal. The optional inlets, chute liners, and bucket liners significantly extend the valve's service life. The diverter's access panel allows for quick entry to the interior for inspecting and cleaning the valve. The heavy-duty abrasion resistant bucket and liners are all removable through the access panel for service.

**Conveying Types :**

- GRAVITY FLOW
- DILUTE PHASE PNEUMATIC CONVEYING
- DENSE PHASE PNEUMATIC CONVEYING


**1 Optional Dead Pocket**

The optional dead pocket inlet allows material to wear on itself increasing the life of the valve

**2 Abrasion Resistant**

Optional abrasion resistant liners reduce wear by deflecting material away from internal components

**3 Optional Chute Liners**

For additional abrasion resistance, optional chute liners can be added to the legs of the valve

**4 Unique Bucket Design**

An optional honeycomb liner can be added to the bucket that allows material to wear on itself increasing abrasion resistance

**5 Replaceable Seals**

Bucket seals reduce interior valve dusting and can be replaced while the valve is in-line

**+ Available Sizes**

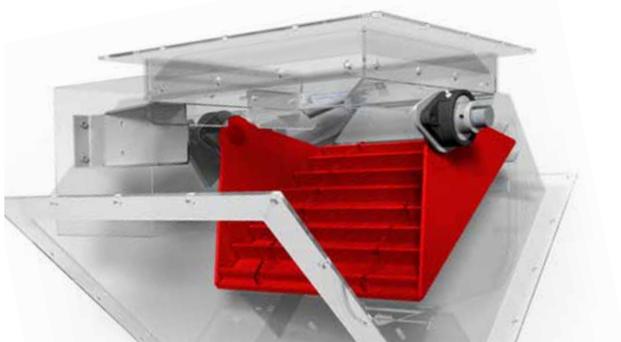
Standard sizes range from: 6" - 24" (150mm - 600mm)  
Contact us for custom sizes

**+ Materials Handled**

Designed to handle highly abrasive materials: minerals, frac sand, fly ash and whole grains

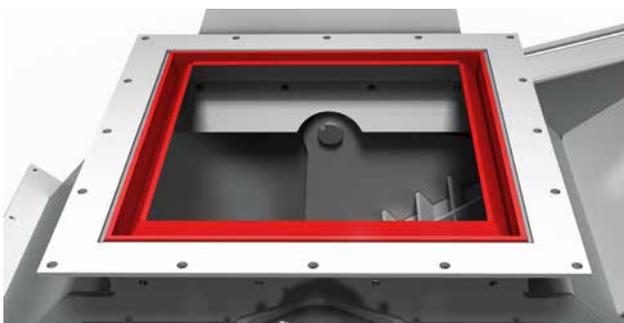
**+ Configuration Options**

The Aggregate Diverter is available in straight leg and wye line configurations



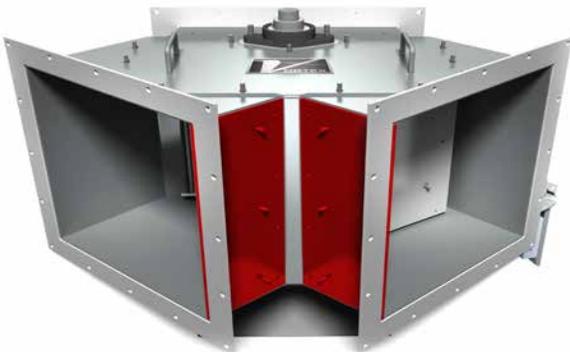
### ***Wear Resistant Bucket Design***

A wear resistant bucket constructed from durable AR steel and an optional ceramic liner can be added to reduce potential wear to the bucket. For even more durability, the addition of an optional honeycomb liner allows material to abrade on itself instead of the bucket.



### ***Optional Dead Pocket Inlet***

The optional dead pocket inlet uses the same principle as the wear resistant bucket by allowing material build up around the inlet. This again allows material to impact on itself instead of wearing on the valve's internal parts.



### ***Optional Chute Liners***

The addition of optional chute liners provides added protection against abrasion. Material construction options are available to meet your application specifications and needs. These liners significantly decrease wear to the body of the valve while increasing service life and reducing system downtime.



The removable panel allows easy access for in-line maintenance, inspection or cleaning



Replacement of internal parts extends the life of the valve



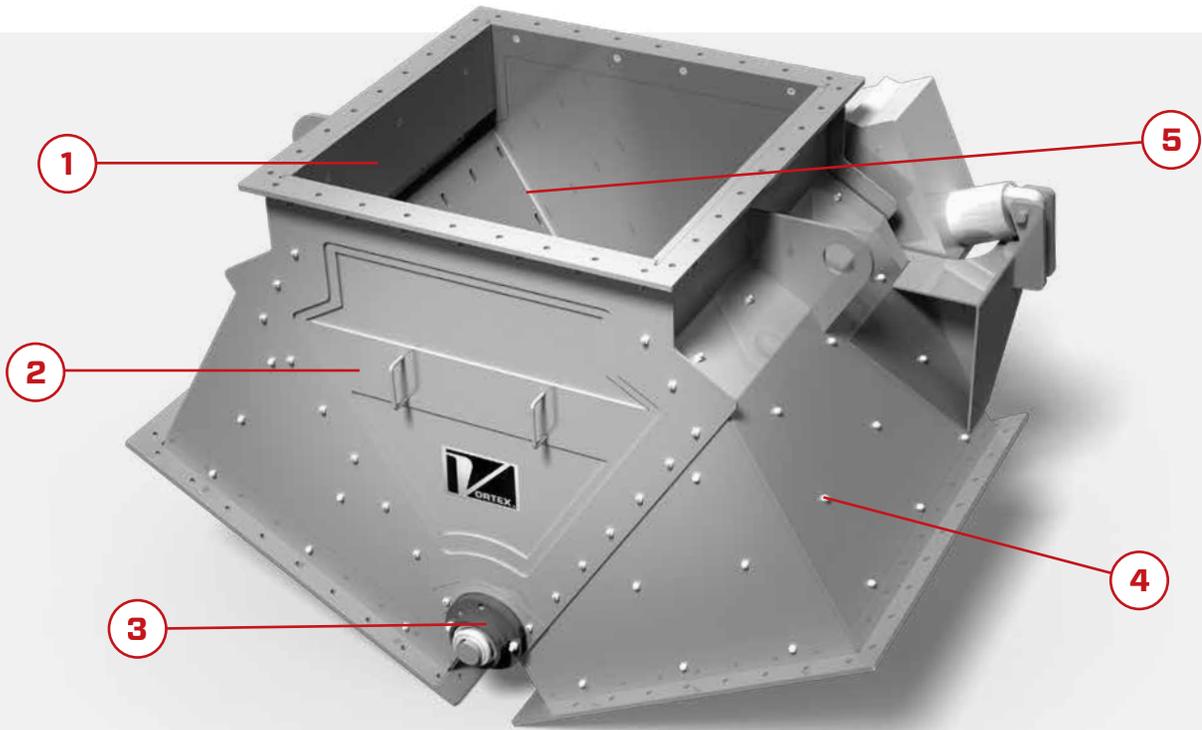
Replaceable chute liners provide added durability and increased valve life

# TLD Diverter

The Vortex TLD Diverter is designed for use in gravity flow applications handling abrasive materials such as coal and frac sand. Material from one source can be diverted to two destinations. The TLD Diverter offers replaceable wear liners for added abrasion resistance and a removable access panel for internal inspection, cleaning and maintenance.

**Conveying Types :**

- GRAVITY FLOW
- DILUTE PHASE PNEUMATIC CONVEYING
- DENSE PHASE PNEUMATIC CONVEYING



**1 Protected Blade**  
The leading edge of the blade is positioned into a recessed area to reduce wear from the material flow

**2 In-line Access Panel**  
Allows for inspection, cleaning, or maintenance of the diverter while keeping the valve in-line

**3 Loaded Shaft Seal**  
Prevents material from migrating to the off leg or packing into an internal cavity

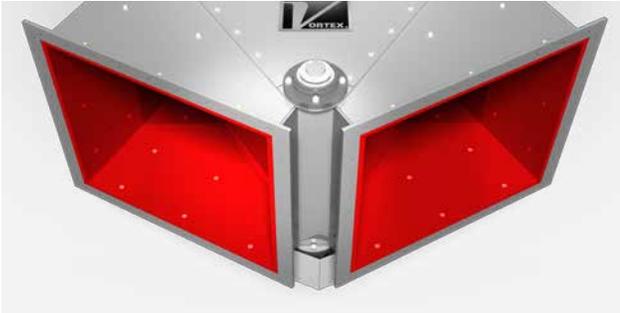
**4 Wear Resistant Liners**  
Replaceable abrasion resistant liners significantly reduce wear and increase the service life of the valve

**5 Tapered Blade Design**  
Reduces wear to the shaft and eliminates the “ski jump” effect as material passes through the diverter

**+ Positive Material Seal**  
The TLD offers a positive material seal which reduces material leakage to atmosphere

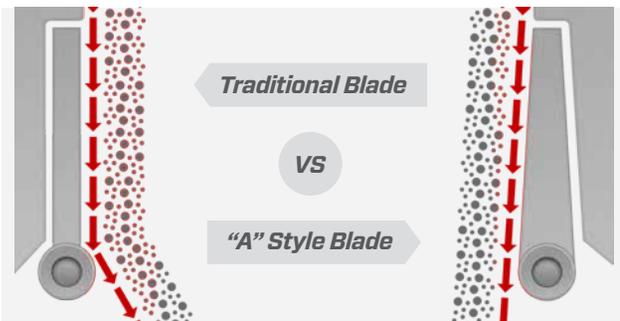
**+ Available Sizes**  
Standard sizes range from: 16" - 36" (400mm - 900mm)  
Contact us for custom sizes

**+ Materials Handled**  
Designed to handle highly abrasive materials: minerals, frac sand, fly ash and whole grains



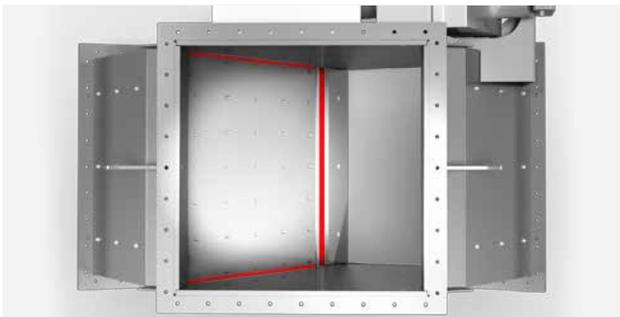
### ***Abrasion Resistant Liners***

The TLD features abrasion resistant liners that can be constructed out of a variety of material options including AR steel, chromium carbide and ceramic. The liners are replaceable and can significantly increase the life of the valve.



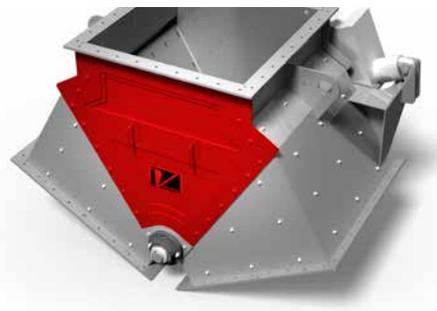
### ***Protected & Tapered Blade Design***

The leading edge of the blade is protected from the material flow stream by resting under a recessed ledge reducing wear. The TLD also features an “A” style blade that reduces wear on the shaft and eliminates the “ski jump” effect as material travels down the blade and through the diverter.



### ***Blade Side Seals & Shaft Seal***

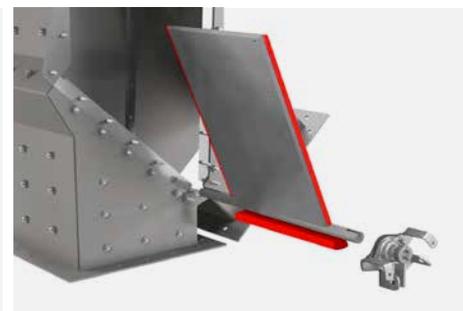
The TLD utilizes blade and shaft seals to keep material in the flow stream and from migrating to the off-leg of the valve. These seals are replaceable while the valve is in-line through the front access panel. This feature makes for easy maintenance and can help significantly reduce downtime, as well as, reduce leakage of material to atmosphere.



The front access panel gives easy access for in-line maintenance



Interior liners are replaceable while in-line and extend the life of the valve



Blade and shaft seal are replaceable while in-line

# Fabricated Transitions

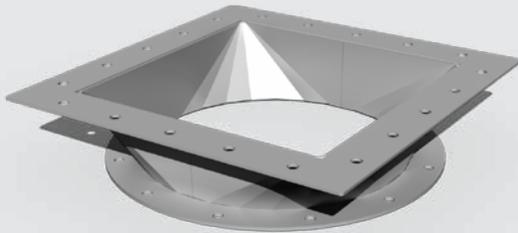


Vortex fabricated transitions are available in aluminium, carbon steel and stainless steel. Fabricated Transitions provide flexibility for customers when installing our valves with existing equipment. Transitions can address custom flange to flange dimensions. They may also be fabricated to contain flanges that match special bolt patterns, tube stubs with or without sock beads, or blind flanges that allow “in the field” hole placement and installation.



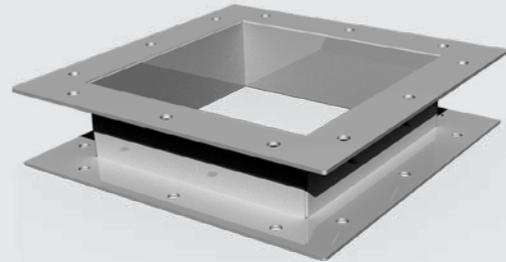
### ***Round to Square Transitions***

Allows the inlet of a square gate to match up with equipment containing a round discharge



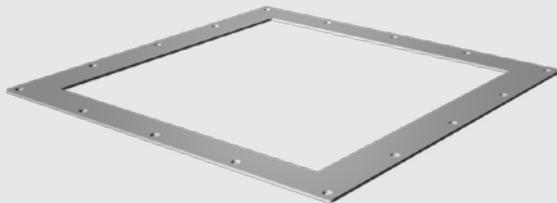
### ***Square to Round Transitions***

Allows the discharge of a square gate to match up with equipment containing a round inlet



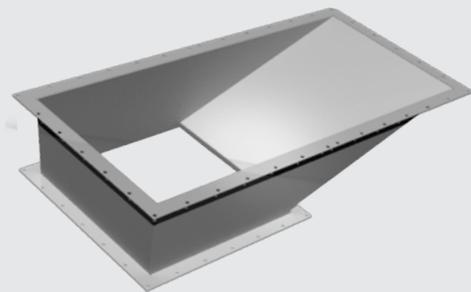
### ***Square to Square Spacers***

Utilized to take up extra space caused by previous equipment removal or to address different flange hole mounting patterns



### ***Flat (Companion) Flange***

Utilized to match a standard Vortex gate flange or bolt hole pattern to mount to existing equipment



### ***Material Return Pans***

Mounted underneath an Aggregate Gate for applications requiring zero external material leakage



# Controls & Accessories



## Infinite Variable Positioner

Positions	Infinite open or closed
Control Options	Double acting air cylinder with solenoid operated air control valve and fail safe close solenoid
Compliance & Approvals	NEMA 4 or NEMA 7/9 with control panel mounted in non-hazardous environment



## Adjustable Variable Positioner

Positions	Adjustable open or closed positions for each magnetic reed switch
Control Options	Double acting air cylinder with solenoid operated air control valve and fail safe close solenoid
Compliance & Approvals	NEMA 4 or NEMA 7/9



## Variable Open Position / Closed

Positions	Adjustable open or closed positions for each pneumatic trip switch
Control Options	Double acting air cylinder with solenoid operated air control valve
Compliance & Approvals	NEMA 4 or NEMA 7/9, Intrinsically safe



## Air Controls

Valve Configuration	2 Position 4-way-single / dual coil
Compliance & Approvals	NEMA 4, 4x, NEMA 7/9, Intrinsically safe ATEX approved- Consult factory for rating
Operating Characteristics	*24VDC, 24VAC, 110DVAC, 220DVAC 50/60Hz



## Magnetic Reed Position Switches

Valve Configuration	SPST - Normally open
Compliance & Approvals	NEMA 6, IP67, *CSA Class I Div 2 Gr. A, CE mark, ATEX approved- Consult factory for rating
Operating Characteristics	*24-240 VAC 4 Amps max, 5-240 Volts AC/DC 1 Amp max, 5 mA min, 0-120 Volts AC/DC 0.5 amps max



## Proximity Switches

Valve Configuration	*SPST- NO, SPOT- NO/NC
Compliance & Approvals	NEMA 3, 4X, 6P, IP68, UL Class I Div 1 Gr. A, UL, CSA, CE mark, ATEX approved- Consult factory for rating
Operating Characteristics	*24-240 VAC/DC 300 mA max 5 mA min, 5-240 Volts AC/DC 2 Amp max



## Pre-Wired Terminal Boxes

Valve Configuration	Can be applied to all valves. Pre-wired to all air controls and switches. Can be used with metering control assemblies.
Compliance & Approvals	NEMA 4, NEMA 7/9, ATEX approved - Consult factory for specific rating
Operating Characteristics	**Painted carbon steel, fiberglass or similar

\*Consult factory for specific information and configuration \*\*Custom configurations available

# Engineered Solutions



**Size:** 12" (300mm) - 520 lbs.

**Material Handled:** Portland Cement

**Location:** Cement Transload Facility - South America

**Features:** Internal pivoting chute is constructed of abrasion resistant material to address wear from the material handled

**Details:** The valve interior is accessible via a panel at the front of the diverter. A worn chute can be replaced without taking the valve out of place.



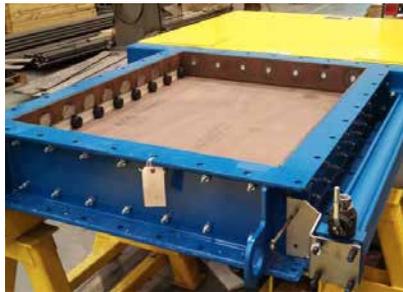
**Size:** 36" x 54" (900mm x 1350mm) - 7' Tall - 4,200 lbs.

**Material Handled:** 8" Minus Lignite Coal

**Location:** Coal Fired Energy Plant - North Dakota

**Features:** Contains replaceable, polymer liners. Access panel allows inspection or maintenance without having to remove the diverter from service. Interior flow design protects leading edge of blade from product abrasion.

**Details:** Diverter replaced existing diverter that had to be taken out of service with a crane to perform maintenance.



**Size:** 47" x 37" (1200mm x 950mm) - 1200 lbs.

**Material Handled:** Gold Ore

**Location:** Gold Mine - Canada

**Features:** To make it easier to install, gates were manufactured with dual hydraulic actuators to shorten the overall length. The gates were sized to match customer specified metric openings.

**Details:** Gate was painted to match customer specs. Equipment is painted blue, with access areas to equipment painted yellow.



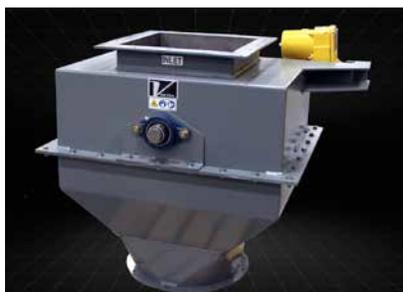
**Size:** 34" x 102" (850mm x 2550mm) - 4100 lbs.

**Material Handled:** 2" Bituminous Coal

**Location:** Coal Fired Energy Plant - Georgia

**Features:** Gate designed to be dust tight. Multiple air cylinders provide force needed to close the 1 1/4" thick blade through a standing column of material.

**Details:** Opening at the back of the gate allows installation around an existing support column within the facility.



**Size:** 12" (300mm) - 315 lbs.

**Material Handled:** Silica Sand

**Location:** Mineral Processing Facility - Minnesota

**Features:** This single blade clamshell features a chute and blade made of abrasion-resistant steel.

**Details:** Vortex single blade clamshells can be open to the environment, or placed inside a body or housing to keep dust from escaping to atmosphere.

SOLUTION 1

SOLUTION 2

SOLUTION 3

SOLUTION 4

SOLUTION 5



For application photos or a complete list of specifications and dimensional drawings, visit

[WWW.VORTEXVALVES.COM](http://WWW.VORTEXVALVES.COM)



**Size:** 48" (1200mm) - 8' Tall - 7100 lbs.

**Material Handled:** 2" PRB Coal

**Location:** Coal Fired Energy Plant - Nevada

**Features:** Diverter features a body that contains replaceable abrasive-resistant plate wear liners. The blade includes a dust tight seal to the "off" leg.

**Details:** A 36" diverter was also ordered as a replacement valve for this application. The engineering company designing the project liked the fact that interior liners could be replaced without removing the diverters from service.



**Size:** 54" x 66" (1350mm x 1650mm) - 4800 lbs.

**Material Handled:** 2" Bituminous Coal

**Location:** Coal Fired Energy Plant - Pennsylvania

**Features:** Gate and inlet transition manufactured with abrasion resistant steel "wetted parts". A shallow, internal return pan was added to contain moisture from the material handled.

**Details:** Design included a hydraulic actuator mounting frame capable of supporting 2500 lbs.



**Size:** 54" x 110" (1350mm x 2750mm) - 3000 lbs.

**Material Handled:** Bituminous Coal

**Location:** Coal Fired Energy Plant - Pennsylvania

**Features:** Gate contains two 54" x 55" blades with separate hand wheel actuators. Common side frame contains inverted "vee" (tent) to eliminate a ledge within the material flow.

**Details:** Gate is used as a maintenance gate and is open 99% of the time.



**Size:** 48" (1200mm) - 2250 lbs.

**Material Handled:** Bottom Ash

**Location:** Solid Waste Energy Plant - New York

**Features:** Gate body and blades constructed of abrasion resistant steel. Inlet flange matches customer bolt hole pattern. Paint color to meet customer specs.

**Details:** Dual hydraulic actuators operated through power pack unit, additionally supplied by Vortex.



**Size:** 26" (650mm)

**Material Handled:** Gold Ore

**Location:** Gold Mine - Africa

**Features:** Diverter was designed to include replaceable, abrasion resistant liners to reduce wear from the material handled.

**Details:** External access panels allow inspection, maintenance, or replacement of internal lines without having to take the valve out of place.

SOLUTION 6

SOLUTION 7

SOLUTION 8

SOLUTION 9

SOLUTION 10



## Global Offices

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### Titan Series

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Dust Free Loading Spouts & Equipment



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