

Vortex Valves

Slide Gates, Diverters and Loading Spouts

Ideal for handling dry bulk material in gravity flow, dilute phase or dense phase pneumatic conveying applications. Vortex slide gates and diverters are designed and engineered with two main principals in mind: 1. extend the service life of the valve and 2. perform maintenance without taking the valve out of line. Vortex valves serve many industries including chemical, cement, coal, food, frac sand, grain, minerals, petrochemical, pharmaceutical, plastics, polymer, rubber and mining.



Hand Slide Orifice Gate

The Vortex® Hand Slide Orifice Gate™ is designed specifically to handle dry bulk solids in gravity flow conveying. A full flow orifice provides unrestricted conveying of material with no disk or ledges to impede flow or cause material bridging. The gate seat and live-loaded seals are protected from material flow by a metal insert. By design, the valve “self cleans” material from the seat on each stroke of the valve blade improving overall seat life.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Mechanically self cleans on open stroke
- Wear compensating hard polymer seals
- Unobstructed opening
- Seals protected from material flow stream
- Narrow profile
- Food friendly options available
- Gravity flow
- Handles non abrasive powders, granulose and pellets
- Horizontal or vertical valve orientation
- Material construction options available
- Standard sizes: 2” – 14”

Maintenance Gate

The Vortex® Maintenance Gate is designed to shut off material from a hopper or silo when maintenance of downstream equipment is required. In the open position, it positively seals conveying air and material to atmosphere. The hand crank gearing is designed to close through material in case of an upset condition.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Self-cleaning action on closure eliminates material build-up
- Unobstructed opening
- Seals protected from blast abrasion
- Serviceable while in-line
- Narrow profile
- Food friendly options available
- Material construction options available
- Gravity flow or dilute phase pneumatic conveying (pressure or vacuum)
- Handles powder, granules and pellets
- Horizontal or vertical valve orientation
- Standard sizes: 6” – 18”
- Contact us for custom sizes





Multi-Port Diverter

The Vortex® Multi-Port Wye Line Diverter™ is specifically engineered to handle dry bulk solids in vacuum or dilute phase pneumatic conveying systems with pressures up to 15 psig (1 barg) depending on size. The multi-port eliminates the need for complicated hose manifold stations. This helps address potential errors when manually switching hoses and greatly reduces safety hazards.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Mechanically self cleans on opening stroke
- Shifts “on the fly”
- Wear compensating hard polymer seals
- Unobstructed opening
- Food friendly options available
- Dilute phase pneumatic conveying (pressure or vacuum)
- Handles non abrasive to moderately abrasive powders, granules and pellets
- Serviceable while in-line
- Material construction options available
- Horizontal or vertical valve orientation
- Standard sizes: 6” – 18”
- Contact us for custom sizes



Fill Pass Diverter

The Vortex® Fill Pass Diverter™ is specifically engineered to handle dry bulk solids in vacuum or dilute phase pneumatic conveying systems with pressures up to 15 psig (1 barg) depending on size. It provides a versatile and reliable solution for filling one or more in-line weigh hoppers when material is conveyed pneumatically through a closed loop system. The design of the Fill Pass Diverter utilizes spread hopper inlet/outlet stacks for improved air and material separation reducing fill time and down line material carryover.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Separates air and material before filling the hopper
- Shifts “on the fly”
- Weigh from up to 5 sources and/or materials
- Positive seal through closed ports
- Unobstructed opening
- Serviceable while in-line
- Food friendly options available
- Designed for vacuum or dilute phase pneumatic conveying
- Handles nonabrasive powders, granules and pellets
- Unique stackable valve design
- Material construction options available
- Standard sizes: 2” – 6”
- Contact us for custom sizes



Gravity Vee Diverter

The Vortex® Gravity Vee Diverter™ valve is designed to divert dry bulk solids in a gravity flow conveying system. The design allows for material flow through both outlets simultaneously, one outlet at a time, or a complete shut-off of flow. The Gravity Vee Diverter is also capable of metering flow through either outlet port.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Gravity flow
- Handles nonabrasive to abrasive powders, granular or pellets
- Design allows for total material flow control
- Wear compensating hard polymer seals
- Seals protected from material flow stream
- Food friendly options available
- Positive seal of dust and fine powders
- Serviceable while in-line
- Material construction options available
- Standard sizes: 5” – 24” | 125mm – 600mm | Contact us for custom sizes



Iris Valve

The patented Vortex® Iris Valve is designed specifically to handle dry bulk solids in gravity discharge of free-flowing material from bins, bulk bags, chutes, and hoppers. The Vortex Iris Valve is designed with stainless steel control rings, metal handle and trigger lock, and nylon shim for durability and smooth actuation. A form fitted fabric sleeve provides a dust tight seal and product barrier, which prevents material leakage into the atmosphere.



Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Gravity flow conveying
- Handles nonabrasive powders, granular or pellets
- Food friendly options available
- Ideal for bulk bag unloading
- Smooth actuation with no binding or galling
- Unrestricted flow of material
- Fabric sleeve prevents material degradation
- Stainless steel control ring
- Standard sizes: 4" – 18"
- Contact us for custom sizes

Flex Tube Diverter

The unique design of the Vortex® Flex Tube Diverter™ eliminates material cross contamination through a positive seal across the closed port. Pockets where material can lodge and remain trapped have also been eliminated. A smooth unobstructed transition from inlet to outlet shields the wear compensating seals from abrasion.



Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Eliminates cross contamination
- Diverts or converges material flow
- Unobstructed opening
- Available in 2 or 3-way configurations
- No pinch points or exposed moving parts for safe operation
- Food friendly options available
- Designed for vacuum or dilute phase pneumatic conveying
- Handles non-abrasive to mildly abrasive powders, granules and pellets
- Choice of flexible tube
- Material construction options available
- Standard sizes: 2" – 8"

Wye Line Diverter

The Vortex Quantum Series Wye Line Diverter is specifically engineered to handle dry bulk solids in vacuum or dilute phase pneumatic conveying systems with pressures up to 15 psig (1 barg) depending on size. A full flow orifice provides unrestricted conveying of material. The live-loaded seals are shielded from abrasion by a metal insert.



Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Handles powders, granules and pellets
- Shifts "on the fly"
- Wear compensating hard polymer seals
- Unobstructed opening
- Positive seal through closed port
- Serviceable while in-line
- Diverts or converges material flow
- Food friendly options available
- Gravity flow or dilute phase pneumatic conveying (pressure or vacuum)
- Handles non-abrasive to moderately abrasive powders, granules and pellets
- Horizontal or vertical valve orientation
- Open / closed or volume metering of material
- Available in 2, 3, or 4-way configurations
- Material construction options available
- Standard sizes: 2"-12"
- Standard sizes 3-Way & 4-Way: 2" – 6"
- Contact us for custom sizes



Clear Action Gate

The Vortex® Clear Action Gate™ is designed for use in gravity flow or pneumatic conveying systems up to 15 psig (1 barg) depending on size. Mounted horizontally, the machined square-edged blade of this gate mechanically clears the material from the sealing surfaces on each closing cycle allowing it to discharge beneath the valve. Open cavities where material collects in traditional gate valves have been eliminated with the square blade and seal design.

Traditional knife gates or butterfly valves are designed to handle gases and liquids, not dry materials. These valves rely on soft rubber seals, which erode or tear away during use, allowing leakage of air and material through the valve or into the plant's atmosphere. This causes the frequent need for valve maintenance, production inefficiencies, and unsanitary plant environments. The Clear Action Gate is designed to eliminate these problems, increasing production, while decreasing labor and equipment costs.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Self-cleaning action on closure minimizes material build-up
- Positive seal across the valve and to atmosphere
- Serviceable while in-line
- Accurate metering of materials with optional metering controls
- No internal cavities for material to build up
- No pinch points or exposed moving parts for safe operation
- Food friendly options available
- Gravity flow or dilute phase pneumatic conveying (pressure or vacuum)
- Handles powder, granules and pellets
- Horizontal or vertical valve orientation
- Open / closed or volume metering of material
- Material options available for wetted parts
- Standard sizes: 6" – 16"
- Contact us for custom sizes



Seal Tite Diverter

The Vortex Seal Tite Diverter is designed for use in gravity flow applications where material can be diverted from one source to either two or three destinations. The Seal Tite Diverter offers a removable access door for interior inspection, cleaning and maintenance.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Leading edge of blade protected from material flow
- Wear compensating shaft seal prevents leakage
- Removable access doors for internal inspection, cleaning and maintenance
- Positive seal of dust and fine powders
- Available in 2 and 3-way configurations
- Internal access without tools
- Food friendly options available
- Gravity flow
- Handles nonabrasive to abrasive powders, granular or pellets
- Carbon or stainless steel material of construction
- Material construction options available
- Standard sizes: 4" – 30"
- Contact us for custom sizes





HDPV2 Slide Gate

Designed to address higher-pressure applications up to 75 psig (5 barg) depending on size, the Vortex® HDPV2™ sets itself apart from traditional industry slide gates. The rising blade design provides positive material shut-off by means of an O-ring seal on the inlet of the valve. This design feature eliminates the issues related to packing of material causing abrasion to the end seal.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Seals fine material in higher aeration or pressure applications
- Patented rising blade action ensures optimal seal
- Seals protected from blast abrasion
- Serviceable while in-line
- Does not pack material upon closure
- Material construction options available
- Food friendly options available
- Gravity flow, dilute phase, or dense phase conveying
- Designed to handle abrasive or sticky materials
- Horizontal or vertical valve orientation
- Open / closed or volume metering of material
- Standard sizes: 4" – 16"
- Contact us for custom sizes



Roller Gate

The Vortex® Roller Gate™ is the best choice for handling dry material in gravity flow or low-pressure applications. This gate is available in a wide variety of configurations including rectangular sizes and customer specific hole patterns. It has live-loaded seals that extend the service life by compensating for wear. These seals provide an excellent material seal across the gate and to atmosphere. They can also be replaced while the valve is in-line. Similar slide gates have seals made of soft packing, rubber or felt, which rapidly erode away allowing product leakage.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Positive seal of dust and fine powders
- No pinch points or exposed moving parts for safe operation
- Wear compensating hard polymer seals
- Seal access ports for replacement while in-line
- Serviceable while in-line
- Material construction options available
- Food friendly options available
- Gravity flow
- Handles powder, granules and pellets
- Horizontal or vertical valve orientation
- Open / closed or volume metering of material
- Accurate metering of material with optional control
- Standard sizes: 4" - 30"
- Contact us for custom sizes



Orifice Gate

The Vortex® Quantum Orifice Gate™ is specifically engineered to handle dry bulk solids in gravity flow, dilute phase, or vacuum conveying systems with pressures up to 15 psig (1 barg) depending on size. Traditional slide gates and butterfly valves commonly allow packing of material, which prevents positive air and material shutoff.

Unlike common knife gates and butterfly valves, the Orifice Gate is specifically engineered to handle dry bulk powders, pellets, and granules. Knife gates rely on soft elastomeric seals which erode or tear away in service. Butterfly valves incorporate discs that cause significant flow restrictions, thus impacting system performance and throughput. Both designs promote wedging and packing of materials, preventing positive air and material shut off. The Orifice Gate eliminates design flaws associated with knife gates and butterfly valves.

Key Industries Served: Agriculture, Chemicals, Foods, Minerals, Petrochemicals, Plastics, Textiles

- Pneumatic (Dense & Dilute Phase) or Gravity Flow Conveying
- Handles non abrasive to moderately abrasive powders, granules, and pellets
- Mechanically self cleans on opening stroke
- No pinch points or exposed moving parts for safe operation
- Wear compensating hard polymer seals
- Unobstructed opening
- Food friendly options available
- Horizontal or vertical valve orientation
- Open / closed or volume metering of material
- Seals protected from material flow stream
- Serviceable while in-line
- Material construction options available
- Standard sizes: 2" – 16"
- Contact us for custom sizes



Sanitary Quick Clean Orifice Gate

The Vortex® Quick Clean Orifice Gate™ is a "clean out of place" gate valve designed for frequent cleaning. The valve features a full-port opening and self-cleaning design. It can be disassembled and assembled in minutes without tools. The valve carries a USDA Dairy Standard Accepted rating and is an excellent choice for sanitary applications.

Key Industries Served: Chemical, Dairy, Pharmaceuticals, Pigments

- FDA approved materials, USDA Dairy Standard Accepted
- Positive seal of dust and fine powders
- Internal access without tools
- Mechanically self cleans on open stroke
- Wear compensating hard polymer seals
- Gravity flow
- Handles non abrasive powders, granules and pellets
- Open / closed or volume metering of material
- Unrestricted flow of material
- Standard sizes: 2" – 10"
- Contact us for custom sizes





Titan Series Valves

Vortex Titan Series slide gates and diverters are engineered for HEAVY-DUTY material handling applications. These applications include materials that pose excessive abrasion or wear issues, situations that call for extremely large sized valves / diverters, and conditions that warrant additional considerations that will allow these valves to be as successful as possible in extremely harsh environments.

Some of the materials handled with Vortex Titan valves include but not limited to: Alumina, Bauxite, Cement, Clinker, Coal, Fly Ash, Frac Sand, Gravel, Glass Cullet, Lime/Limestone, Metal Powders, Potash, Rock and Sand.



TSG Gate

- Gravity flow
- Handles Aggregates, Coal, Minerals, Powder, Pellets, Granulars
- Dust tight design
- Open / closed or volume metering of material
- Standard sizes: 6" – 30"



Aggregate Gate

- Gravity flow
- Handles abrasive materials like Coal, Gravel, Sand, and Whole Grains
- Narrow profile
- Material displacement pocket minimizes wedging of material as blade closes
- Standard sizes: 6" – 24"



TPV Gate

- Dilute and Dense phase pneumatic conveying
- Gravity flow conveying
- Handles abrasive materials like minerals, frac sand, and fly ash
- Mounting boss for the addition of an optional proximity switch
- Standard sizes: 2"- 10"



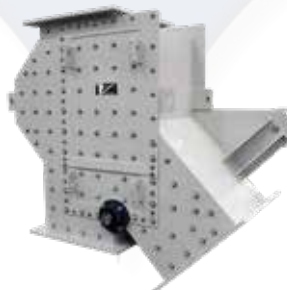
RBG Gate

- Gravity flow
- Handles materials like minerals, frac sand, fly ash and whole grains
- Dust tight design
- Open / closed or volume metering of material
- Standard sizes: 6"- 24"



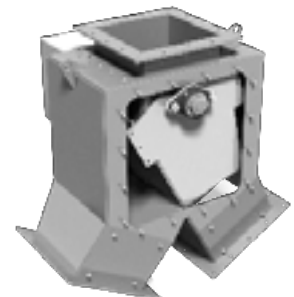
Aggregate Diverter

- Gravity flow
- Handles nonabrasive to abrasive materials like Coal, Gravel, Sand, and Whole Grains
- Carbon steel material of construction
- Optional interior dead-pockets allow material to impact on itself reducing wear
- Standard sizes: 6" – 24"



TLD Diverter

- Gravity flow
- Handles aggregates, rock, glass cullet, sand, refractory mix and clinker
- Leading edge of blade protected from material flow
- Wear compensating shaft seal preventing leakage
- Positive seal of dust and fine powders
- Standard sizes: 16" – 36"



Pivoting Chute Diverter

- Gravity flow
- Handles granules, pellets and larger abrasive materials
- Available in 2-way and 3-way configurations
- Dust tight to atmosphere
- Unobstructed opening
- Shift "on-the-fly"
- Standard sizes: 6' – 24"

Loading Solutions

Vortex® Loading Solutions provide fast and steady material flow during the loading of dry/bulk solid materials in open and/or enclosed vessels such as trucks, railcars, tank vehicles, ships, barges, and stockpiling. These loading spouts are designed to capture fugitive dust, prevent material waste, and ensure plant and environmental safety, with low maintenance and service expenses. From the retractable loading spout attached to the bottom of a silo/hopper or located at the end of an air conveying system, to the dust collecting filter system, to the loading spout positioner, Vortex Loading Solutions offer a complete line of versatile loading spout systems for your loading process.

Applications:

- Loading of dry/bulk solid materials: petrochemical powders, plastic granules, wood pellets, cement, grains, sand, gravel, or coal
- Loadout of open, semi-enclosed and closed vessels: trucks, railroad cars, tankers, ships, barges, stockpiling
- Filling of bags, drums and flexible bulk containers
- Normal, abrasive, corrosive, combustible and hazardous environments

Features:

- 4 cable lifting design with center mounted drive motor protected from elements.
- CNC Machined lifting pulleys reduces wear and increases lifespan of lifting cables
- Open and closed vehicle loading

