



# QUANTUM

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## S E R I E S

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VALVES FOR DRY BULK PROCESSING & CONVEYING




# 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). Traditional slide gates and butterfly valves commonly allow packing of material which prevents positive air and material shutoff.

- GRAVITY FLOW**
- DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)
- DENSE PHASE PNEUMATIC CONVEYING**

## FEATURES

-  Handles 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
-  Seals protected from blast abrasion
-  Serviceable while in-line
-  Material construction options available
-  Standard sizes: 2" - 16"  
Contact us for custom sizes

OPTIONS



STUDDED



ANSI / DIN



-P

DETAILS



Shim removal for seal adjustment while valve is in-line



Blade adjustment through front access panel



Mechanically self cleans on opening stroke

APPLICATIONS



10" (254mm) Quantum Orifice Gate handling cement powder



Hand crank Quantum Orifice Gate with ANSI flange



12" (305mm) Quantum Orifice Gate handling polyethylene resin powder

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










# ROLLERGATE



The Vortex Roller Gate is the best choice for handling dry material in gravity flow 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 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.

- GRAVITY FLOW**
- DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)
- DENSE PHASE PNEUMATIC CONVEYING**

## FEATURES

-  Handles powders, granules and pellets
-  Positive seal of dust and fine powders
-  Wear compensating hard polymer seals
-  Serviceable while in-line
-  Seal access ports for seal replacement while valve is in-line
-  Accurate metering of material with optional controls
-  No pinch points or exposed moving parts for safe operation
-  Material construction options available
-  Standard sizes: 4" - 30"  
Contact us for custom sizes

OPTIONS



SINGLE CYLINDER



DUAL CYLINDER

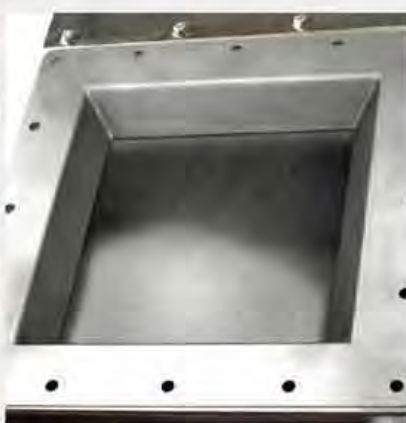


RECTANGULAR

DETAILS



The bonnet seals can be replaced while in-line to decrease downtime



A special service inlet can be added to deflect material away from seals and rollers to reduce wear



Top blade seal & cam adjustable rollers supply smooth linear actuation and in-line adjustments

APPLICATIONS



13" (330mm) Roller Gate below a screw conveyor



6" (152mm) Roller Gate below hopper handling flour



26" (660mm) Dual Cylinder Roller Gate

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

# HDPV2



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 or material causing abrasion to the end seal.

- ✓ **GRAVITY FLOW**
- ✓ **DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)
- ✓ **DENSE PHASE PNEUMATIC CONVEYING**

## FEATURES

-  Designed to handle abrasive and sticky materials
-  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 up closure
-  Material construction options available
-  Standard sizes: 4" - 16"  
Contact us for custom sizes

OPTIONS



STANDARD



SSI

DETAILS



The silicone blade seal is recessed to protect it from material flow and to reduce wear



The air purge is used to pressurize the bonnet and keep material in the flow stream



Lifting lugs and inserts provide a positive seal and prevent metal-on-metal contact

APPLICATIONS



16" (406mm) HDP above airlock handling calcium oxide



10" (254mm) HDP in-line handling fly ash



12" (305mm) HDP above and below a pressure pot handling PRB coal and wood chips

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



# 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.

- GRAVITY FLOW**
- DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)
- DENSE PHASE PNEUMATIC CONVEYING**

## FEATURES

-  Handles powders, granules and pellets
-  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 build up
-  No pinch points of exposed moving parts for safe operation
-  Material construction options available
-  Standard sizes: 6" - 16"  
Contact us for custom sizes



OPTIONS

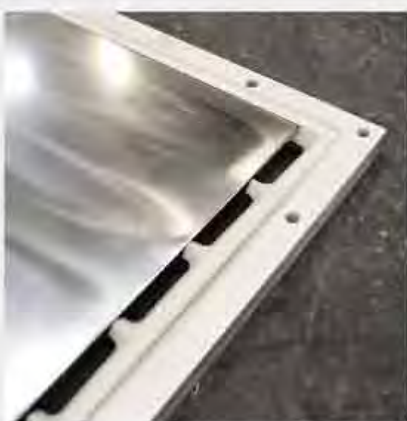


INLET



OUTLET

DETAILS



Slotted end seal to eliminate material packing upon closing stroke



Replaceable bonnet seals allow for in-line maintenance



Air purge ports are used to reduce material migration between replaceable seals

APPLICATIONS



10" (254mm) Clear Action Gate below hopper handling animal feed additives



12" (305mm) Clear Action Gate above a rotary valve handling calcium carbonate with optional pre-wired terminal box

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









# 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.

- GRAVITY FLOW**
- DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)
- DENSE PHASE PNEUMATIC CONVEYING**

## FEATURES

-  Handles powders, granules and pellets
-  Self-cleaning action on closure eliminates material build-up
-  Unobstructed opening
-  Seals protected from blast abrasion
-  Serviceable while in-line
-  Narrow profile
-  Material construction options available
-  Standard sizes: 6" - 18"  
Contact us for custom sizes

OPTIONS



SQUARE



ROUND

DETAILS



Braided Teflon packing seal gives positive material & air seal up to 15 PSIG to atmosphere in the open position



Ratio of 5:1 ACME threaded rod provides the ability to cut through a column of material in an upset condition

APPLICATIONS



8" (203mm) Maintenance Gate utilized as overflow shutoff on silo



12" (305mm) Maintenance Gate above a rotary airlock handling soda ash



10" (254mm) Maintenance Gate handling PVC resin

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









# HANDSLIDE ORIFICE GATE



The Vortex Hand Slide Orifice Gate is designed specifically to handle dry bulk solids in gravity flow conveying. A full flow orifice provide 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.

- GRAVITY FLOW**
- DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)
- DENSE PHASE PNEUMATIC CONVEYING**

## FEATURES

-  Handles powders, granules and pellets
-  Mechanically self cleans on opening stroke
-  Wear compensating hard polymer seals
-  Unobstructed opening
-  Seals protected from blast abrasion
-  Narrow profile
-  Material construction options available
-  Standard sizes: 2" - 16"  
Contact us for custom sizes

OPTIONS



DOUBLE HANDLE



SINGLE HANDLE

DETAILS



Optional locking pin secures the blade in either the open or closed position



Shim removal for seal adjustment while valve is in-line

APPLICATIONS

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



6" (152mm) Hand Slide Orifice Gate as isolation valve above a flexible screw conveyor