SYCSA®

Seal Tite Diverter

Quantum Series

Model No. ZXX

VORTEX

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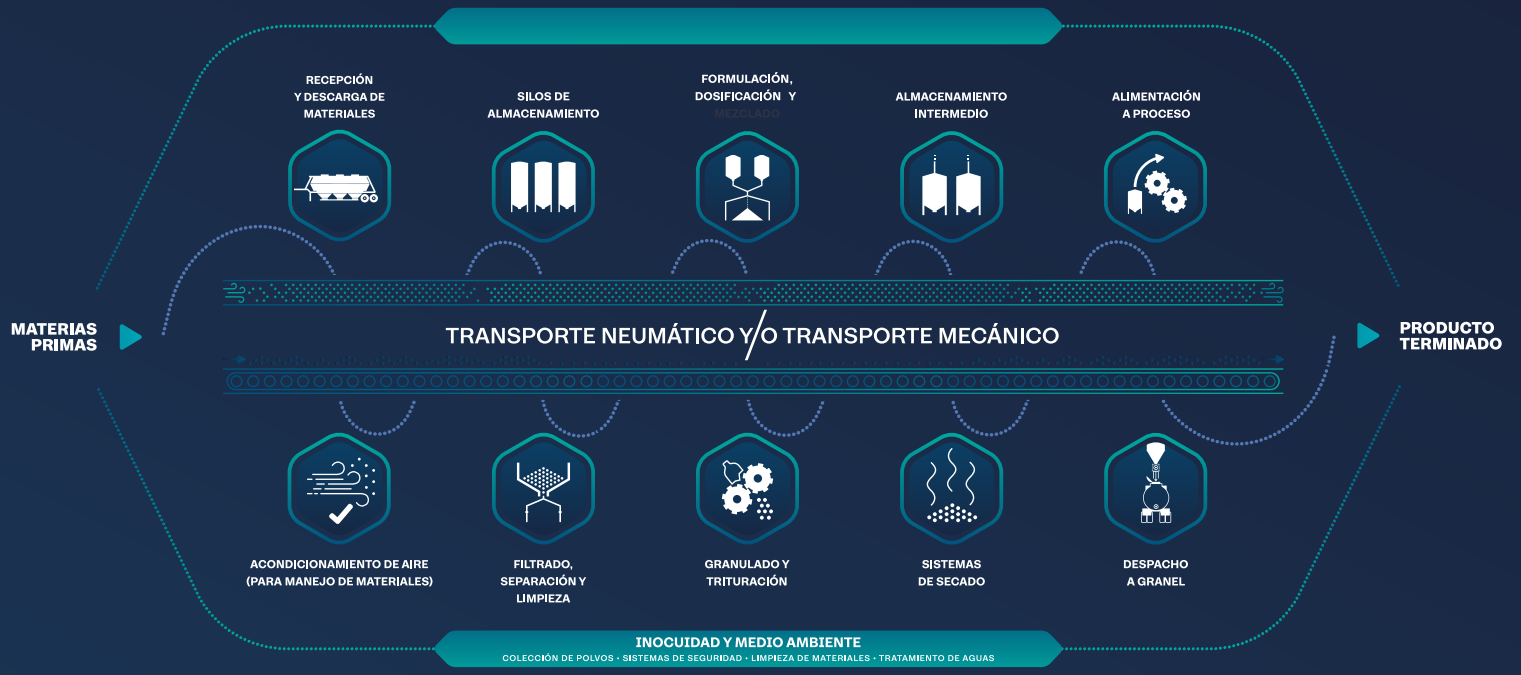
Nuestras soluciones



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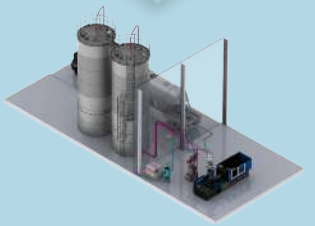


DISEÑAMOS

INSTALAMOS

AUTOMATIZAMOS

BRINDAMOS SERVICIO POSTVENTA

Model No. ZXX

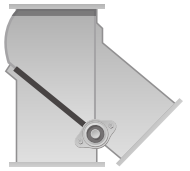
SEAL TITE DIVERTER

Ideal application: Gravity flow applications where dry bulk solid materials must be diverted from one source toward up to three destinations.

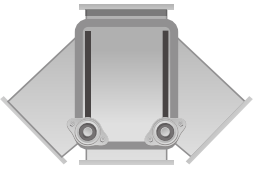
Purpose: The Vortex® Seal Tite Diverter™ offers many unique features and significant advantages over alternative flap diverters.

OPTIONS

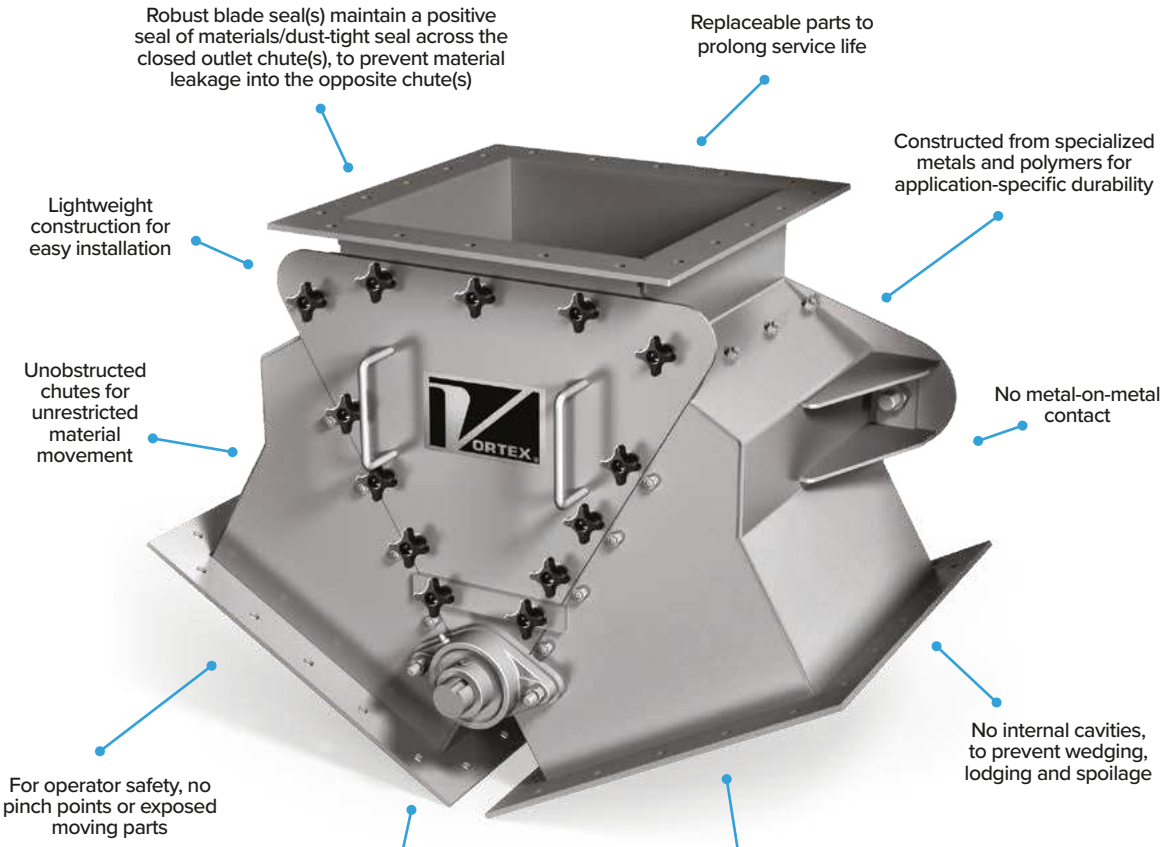
Two-Way



Straight Leg



Three-Way



KEY FEATURES

Recessed blade(s) to protect the blade(s) & seal(s) from abrasion

Removable access panel for in-line inspection and maintenance

Live loaded, wear compensating shaft seal(s) protect the blade shaft(s) from wear and prevent material leakage into the opposite chute(s)

TECHNICAL SPECIFICATIONS

Conveyance Type	Gravity flow only
Materials Handled	Non-abrasive to moderately abrasive powders, pellets and granules. Modifications available for handling corrosive materials and/or for wash-down.
Standard Sizes	4 – 30 in | 100 – 760 mm Contact us for custom sizes
Inlet & Outlets	Available in square or rectangular sizes. Round transition options are available (see page 67)
Overall Height	15x15 in – 65x55 in | 385x385 mm – 1,640x1,370 mm
Weight	40 – 1,265 lb | 20 – 575 kg
Outlet Chute Angle Options	30° or 45° from center Contact us for custom angles
Flange Options	Standard flange, ANSI #125/150, DIN PN10 Custom flanges are available
Material Temperatures	180° F | 80° C for standard gate, with modifications that allow up to 400° F | 205° C
Body/Frame Options	304 or 316L stainless steel, carbon steel
Material Contact Options	304 or 316L stainless steel, carbon steel
Blade Seal Options	Buna-N nitrile rubber, silicone rubber, polyurethane, EPDM rubber
Shaft Seal Options	PET, 25% glass-filled PTFE
Load Seal Construction	Silicone rubber
Drive/Actuation	Double-acting air cylinder, hand lever, chain wheel, electric actuator (see pages 61 & 62)
Position Confirmation	Magnetic reed, proximity or mechanical limit switches (see page 63)
Other Options	Spin knobs (see page 68)
Compliance	ATEX Zone 20 (internal), ATEX Zone 21 (external), FDA

THE POWER OF COMPARISON

Vortex Seal Tite Diverter vs. Alternatives

- Many alternative flap diverters have sealed bodies, which limits interior access. In order to perform inspection and/or maintenance, the diverter must be removed from the process line so that its internal mechanisms can be accessed. This can lead to expensive and extensive production downtime. To allow in-line inspection and/or maintenance, the Vortex® Seal Tite Diverter™ is designed with a removable access panel that can be removed using simple tools. This feature is especially beneficial in sanitary applications where frequent interior access is required for proper sanitation, or in abrasive applications where interior access is required for wear part maintenance. The removable access panel feature significantly reduces downtime by accelerating the maintenance process.

- Many alternative flap diverters are designed so that the leading edge of the blade(s) is constantly exposed to the material flow stream, creating wear and abrasion to the blade(s) and seal(s). If wear is significant, it can allow material leakage into the opposite chute(s), in addition to frequent wear part maintenance. To address these concerns, the Seal Tite Diverter is designed with recessed areas so that the leading edge of the blade(s) is shielded from the material flow stream.

- Many alternative flap diverters have thin elastomer seals adhered to the perimeter of the blade(s). Over time, the thin seals erode or tear away from the blade(s) and allow material leakage into the opposite chute(s). The Seal Tite Diverter addresses this concern by incorporating a blade seal constructed from a full sheet of durable rubber. Rather than adhering thin seal strips around the perimeter of the blade, the robust seal sheet is compressed between two metal plates which form the flapper blade. This design ensures the blade seals will not tear away in service, and will provide a positive seal of materials/dust-tight seal over time.

- Many alternative flap diverters do not have seals beneath the blade shaft(s). This creates a significant opening for material migration into the opposite chute(s). Especially in perishable applications, this can foster cross-contamination and spoilage beneath the blade shaft(s). Also, without blade shaft seals, the blade shaft(s) is subjected to material-assisted abrasion, resulting in frequent wear part maintenance. The Seal Tite Diverter addresses these issues by incorporating "live loaded" hard polymer blade shaft seal(s). Hard polymer provides greater wear resistance and longer service life than alternative sealing materials. The hard polymer seal(s) is "live loaded" with compressed rubber backing to ensure even as the polymer experiences frictional wear from many actuations over time, the rubber load seals continuously force the polymer seal(s) upward against the blade shaft(s). The seal(s) is also shielded from the material flow stream, to protect it from abrasion. This design maintains the diverter's positive seal of materials/dust-tight seal with infrequent maintenance intervention.

- Many alternative flap diverters are designed with irreplaceable wetted parts. Once a primary wetted part is worn significantly, the entire diverter must be replaced. To resolve this cost-effectiveness issue, the Seal Tite Diverter is designed with replaceable wetted parts that can be accessed in-line. This includes actuator(s), flapper blade(s) and blade seal(s), and the blade shaft seal(s), among others. If maintained and operated as recommended, these should be the diverter's only wear parts. In several cases, this has allowed a Seal Tite Diverter to remain in service for many years – and sometimes, even decades.

CASE STUDY

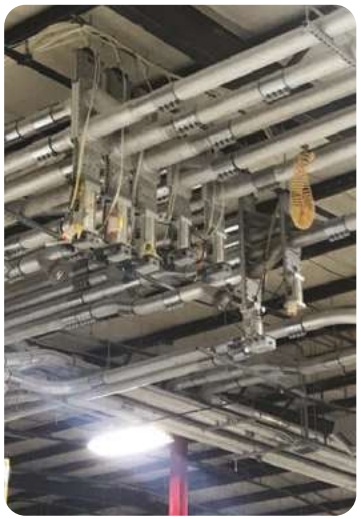
Multi-Port Diverter Handling Flour

Client: Pasta producer

Application: Pneumatically convey/divert flour from a main supply line into 8 silos. Eash silo feeds a separate production line. Each line produces a different pasta type.

Results:
The client previously used a manual hose switching station in this process. They were concerned about labor intensity, workplace safety, profitability, explosion potential, waste reduction and maintenance costs, among other things.

With the Vortex Multi-Port Diverter, the automated system ensures the different grades of flour are conveyed into their proper silo. The client has already saved dollars and labor hours, plus avoided potential porcessing errors and improved plant safety.



CASE STUDY

Gates & Diverters Handling Plastics

Client: Manufacturer of styrofoam cups, plates & bowls

Application:
• Reintroduce plastic scrap/regrind into the extrusion process.
• Convey resins/compounds into the extrusion process.
• Converge resins from various holding bins into a common convey line.

Valves:
• 7 Roller Gates
• 31 Wye Line Diverters
• 32 Orifice Gates

Results:
This client operates 5 shifts, 24 hours per day — and all but two days each year.

With the addition of Vortex gates and diverters, this client has a solution for automated material transport — and has reduced their manufacturing waste to less than 1%.

CASE STUDY

Seal Tite Diverter Handling Pet Food

Quantity: 4

Special Features: Spin knobs, for easy in-line access without using tools.

Application: Divert kibble into two disc conveyors, to be transported to a packaging line.

CASE STUDY

Iris Valve Handling Powdered Drink Mix

Quantity: 2

Application: Avoid contamination when handling food & beverage materials.

Special Features: A Teflon-coated body was specified because Teflon does not chemically react or corrode from material contact, which would otherwise compromise taste and create contamination. Teflon also assures food purity because it does not absorb preservatives. Because Teflon is non-stick, it also provides ease of maintenance.

TECHNICAL ARTICLE

How to Select a Valve for Solids & Bulk – Handling

Valve suppliers should have the application engineering knowledge and experience to know what valves and modifications should be applied for certain application parameters. Make sure your supplier is asking the right questions.

Many people think that selecting a slide gate or diverter valve for handling dry bulk solid materials is a relatively simple process. They typically assume the only information needed is:

- Opening shape & size
- Available stack-up height
- Matching connections or bolt hole patterns

But in reality, valve suppliers need much more information to be able to identify the right valve for the application. The more information a valve supplier has about the application parameters, costly mistakes are avoided. Misinformation can put you on either end of the spectrum — whether it be using an expensive valve for a simple application, or an inexpensive valve that is poorly designed for the application.

1. Valve Selection

The most critical questions are:

- What is the valve intended to do?
- Is a slide gate, diverter valve, iris valve or butterfly valve needed to best fulfill the application?

Follow-up questions include:

- What is the valve's opening size? Is the opening square, round or rectangular?
- What is the shape and size of the conveying line? Are the lines tube or pipe? If the lines are pipe, is it schedule 10 or 40?
- Will the valve be used in a pressure, vacuum or gravity flow application? If pressure or vacuum, how much? If pressure, will the system convey material in dilute or dense phase?
- Will the valve be installed indoors or outside?
- What is the temperature of the air and materials being conveyed?
- What should the valve be constructed from (aluminum, stainless steel, carbon steel, etc.)?
- Will the valve be subject to wash-downs? If so, will it be washed with hot water or a caustic liquid?
- If the valve is installed below a bin or silo — Will there be flow aides (aeration, vibration, etc.)? What is the sequence of operations for the system (e.g. When are the flow aides activated, in relation to the cycle of the gate valve)? How is material conveyed into the bin or silo?

Then, you must consider material characteristics:

- What is the material?
- Is it in powder, pellet or granular form?
- What is its particle size?
- What is its weight per cubic foot?
- Is it sticky? Abrasive? Corrosive?
- Is there sanitary or spoilage concerns?
- If multiple materials will pass through a common conveying line, is there cross-contamination concerns?

2. Actuator Selection

The most critical questions are:

- What is your power availability? Is compressed air available?
- What is the cycle frequency?
- Will the valve close on material? If yes, will the material be a standing or flowing column?
- Does actuation speed matter?
- If only intended for maintenance purposes, can I use manual actuation?
- If installed outside, will the valve be subject to cold temperatures?
- What are the cost variables for replacement and repair?
- Will the valve operate in a potentially explosive environment?

3. Standard Modifications

Your valve supplier should offer standard modifications to suit your application/material-specific requirements.

When selecting valve modifications, some application-specific factors that should be considered are:

- Is the application high-cycle?
- Is the material handled abrasive duty? Corrosive? Friable? Food-specific?
- Is chemical compatibility a concern?
- How often will the valve be serviced? Are in-line maintenance features desired?

4. Valve Location & Orientation

The most critical questions are:

- Where will the valve be installed (e.g. below a bin/silo, etc.)?
- Will it be installed in a vertical or horizontal orientation?

This helps determine which accessories may be required for your application. For example, if a slide gate is mounted below a surge hopper, a variable positioning assembly may be required to meter material into the weigh hopper.

5. Features Selection

Common modifications include:

- Abrasion-resistant blade & liners
- Adjustable blade rollers
- Custom valve sizes
- Sealed body with an air purge assembly
- Replaceable seals, liners & wetted parts
- Wear-compensating seals
- Wear-reducing material deflectors
- Wear-resistant blade, bucket blade or pivoting chute

...to name a few.

6. Accessory Selection

When specifying valve accessories, there are four distinct areas:

- Variable positioning assemblies — Vortex offers a VPO/VPC (relay control with manual adjustability); AVP (PLC control with manual adjustability); and an IVP (infinite positioning via a 4-20mA signal).
- Feedback — Vortex offers push-button control panels, and valve/sensor manifold technologies with a variety of PLC interfaces.
- Safety devices — A vented ball valve should always be installed in front of the air control valve, in order to bring the slide gate or diverter valve to a "zero mechanical" state before servicing.This type of ball valve bleeds off any residual downstream pressure contained in the air lines supplying the air cylinder. The ball valve should always be installed within arm's reach of the air control.
- Fabricated accessories — Fabricated transitions provide flexibility when mating up to existing equipment. This includes matching special bolt hole patterns, tube stubs, or blind flanges that allow in-the-field hole placement and installation.

SYCSA®

Otros productos

EQUIPOS PARA RECEPCIÓN, CARGA Y DESCARGA

- Descarga de sacos y supersacos
- Descarga de liners
- Descarga de ferrocarril
- Boquillas telescópicas
- Rompebóvedas
- Sistema de aireación
- Activadores de tolva

ALMACENAMIENTO

- Silo atornillado
- Silo soldado
- Silo hibrido
- Silo mezclador
- Silo pesador
- Tanque atornillado
- Tanque presurizable
- Tolva

VÁLVULAS

- Guillotinas
- Diversora
- Mariposa
- Rotatoria
- Iris

SISTEMAS DE SEGURIDAD

- Sistemas pararrayos
- Válvulas de alivio vacío/presión
- Páneles de explosión
- Sistemas de supresión
- Válvulas de aislamiento
- Arrestador de flama

MEZCLADO

- Mezcladora tipo listón
- Mezcladora de paletas
- Mezcladora para lodos
- Mezcladores para plásticos

TRANSPORTE MECÁNICO

- Elevadores de cangilones.
- Transportadores de banda sencillo o reversible
- Alimentadores vibratorios
- Transportadores de rastra
- Transportadores helicoidales
- Transportadores tubulares de discos

SISTEMAS DE MONITOREO Y TRAZABILIDAD

- Silos y tolvas pesadoras
- Sistemas de pesaje en línea
- Sistemas de trazabilidad
- Tableros de control
- Celdas de carga
- Básculas camioneras y ferrocarrileras
- Medición de nivel

TRANSPORTE NEUMÁTICO

- Transporte fase diluida
- Transporte fase densa
- Sopladores
- Motosopladores
- Bomba neumática

EQUIPO PERIFÉRICO

- Cargadores
- Enfriadores para aire de transporte
- Secadoras de aire caliente
- Cristalizado de PET
- Secadoras dehumificadoras

COMPONENTES PARA LÍNEA DE TRANSPORTE

- Lanzas y mirillas
- Empaques
- Tubos y curvas
- Copples
- Mangueras PVC y metálicas
- Manifold para vacío
- Caja de vacío

DOSIFICACIÓN Y ALIMENTACIÓN A MÁQUINAS

- Dosificadores volumétricos
- Dosificadores gravimétricos
- Adición de pigmentos o aditivos

FILTRADO Y LIMPIEZA DE MATERIAL

- Filtros para venteo
- Filtros recibidores
- Colectores de polvo
- Trampas magnéticas
- Cribas

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