

**SYCSA<sup>®</sup>**

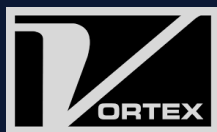
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# Clear Action Gate

Quantum  
Series

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Model No. JAXX



PARTNER SYCSA<sup>®</sup>



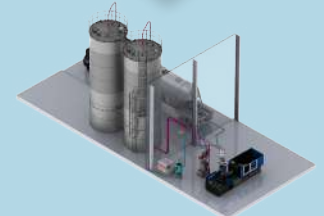


## Nuestras soluciones



No sólo te vendemos un producto

**SYCSA®** te acompaña en **todas las fases** de tu proyecto.



**DISEÑAMOS**



**INSTALAMOS**



**AUTOMATIZAMOS**



**BRINDAMOS SERVICIO POSTVENTA**

Model No. JAXX

# CLEAR ACTION GATE

**Ideal application:** Isolating a rotary airlock from a feeder above. Flange patterns are customizable to match up with any rotary airlock in the industry.

**Purpose:** Designed to seal against pressure from below. When a rotary airlock is idle, the Clear Action Gate is closed to prevent air loss into upstream equipment. This prevents line plugs and improves blower efficiency. A Clear Action Gate can also act as a maintenance device to isolate upstream equipment, if airlock maintenance is necessary.

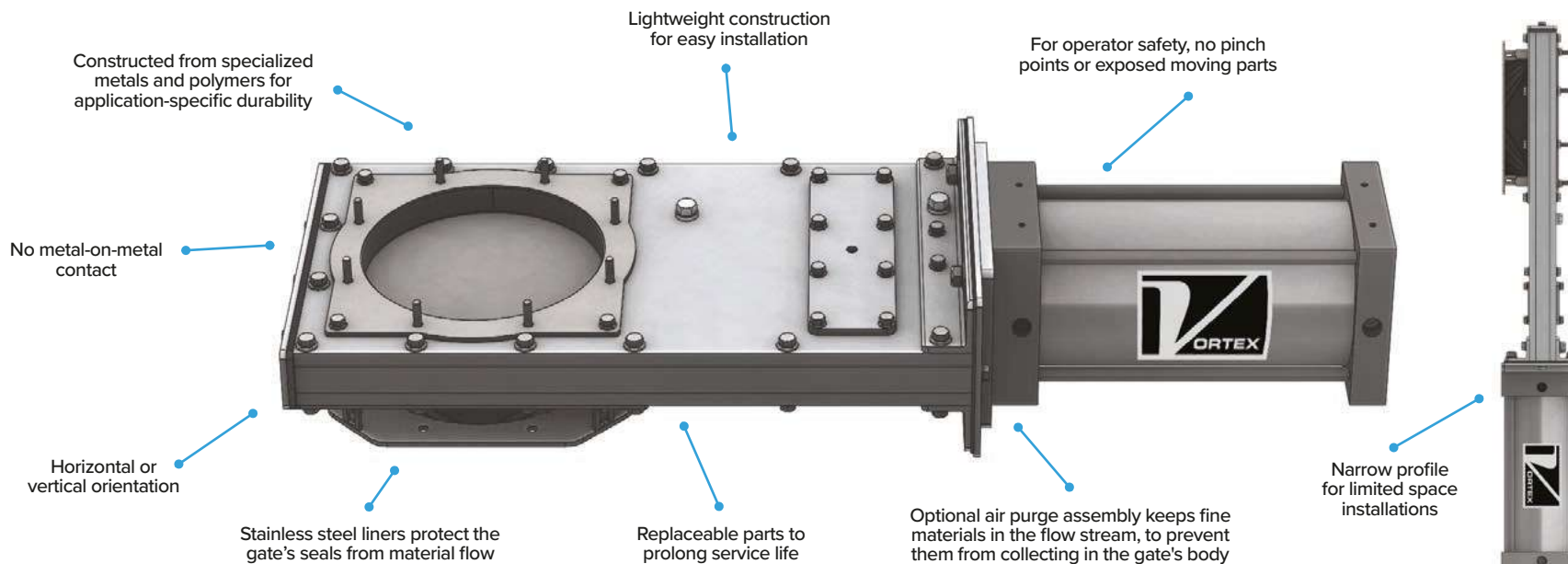


Standard



-P

## OPTIONS



## KEY FEATURES



Positive seal of materials/dust-tight seal across the blade and to atmosphere



Live loaded, wear compensating hard polymer pressure plate seals



Enhance conveying efficiency by preventing air loss

## TECHNICAL SPECIFICATIONS

<b>Conveyance Type</b>	Gravity flow and dilute phase pneumatic conveying applications. Can handle differential pressures up to 15 psig   1 barg   0.1 MPa, depending on gate size. Can be used in pressure or vacuum systems.
<b>Materials Handled</b>	Non-abrasive to moderately abrasive powders, pellets and granules. Modifications available for handling corrosive materials and/or for wash-down.
<b>Standard Sizes</b>	6 – 16 in   150 – 400 mm
<b>Opening</b>	Available in round sizes. Square, round or rectangular mating flanges are available.
<b>Overall Height</b>	4 – 8 in   95 – 200 mm
<b>Weight</b>	55 – 180 lb   25 – 80 kg
<b>Flange Options</b>	Standard stud bolt pattern, ANSI #125/150, DIN PN10, JIS 10 Custom flanges are available
<b>Material Temperatures</b>	250°F   120°C for standard gate, with modifications that allow up to 400°F   205°C
<b>Body/Frame Construction</b>	Aluminum
<b>Material Contact Options</b>	304 or 316L stainless steel
<b>Pressure Plate Options</b>	Nylon, PET
<b>Load Seal Construction</b>	Silicone rubber
<b>Drive/Actuation</b>	Double-acting air cylinder, hand wheel/crank, chain wheel, electric actuator (see pages 61 & 62)
<b>Position Confirmation</b>	Magnetic reed, proximity or mechanical limit switches, and/or clear bonnet cover for visual indication (see page 63)
<b>Material Flow Controls</b>	AVP, IVP, VPO, VPC (see pages 65 & 66)
<b>Other Options</b>	Sealed body air purge (see page 64) Special Service Inlet (see page 67)
<b>Compliance</b>	ATEX Zone 20 (internal), ATEX Zone 21 (external), FDA



## THE POWER OF COMPARISON

### Vortex Clear Action Gate vs. Alternatives

- Many alternative slide gates and butterfly valves rely on soft rubber seals which are directly exposed to the material flow stream. These seals rapidly erode or tear away in service. Others rely on bonnet packing, which can relax and allow material packing in the seals. These deficiencies promote leakage of materials and dusts past the gate and to atmosphere, in addition to actuation issues and several other maintenance concerns. The Vortex® Clear Action Gate™ addresses these issues by incorporating "live loaded" hard polymer pressure plate seals. Hard polymer provides greater wear resistance and longer service life than alternative sealing materials. The hard polymer seals are "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 seals against the blade. The seals are also shielded from the material flow stream, to protect them from abrasion. This design maintains the gate's positive seal of materials/dust-tight seal with infrequent maintenance intervention.
- Many alternative slide gates allow metal-on-metal sliding, which creates galling. This causes a gate to seize and bind, and can create foreign metal fragment contamination. The Clear Action Gate's hard polymer seals eliminate metal-on-metal contact to resolve each of these concerns.
- Many alternative slide gates and butterfly valves have open cavities where materials can wedge and prevent positive material shut-off. Wedging can also create seal wear and material degradation, and cause a gate to seize and bind. Wedged materials also create risk for cross-contamination and spoilage. To prevent wedging and ensure positive gate closure, the Clear Action Gate's machined, square-edged blade is designed to mechanically clear materials away from the sealing surfaces with each closing stroke. This ensures migrant materials are forced back out of the seals and are discharged into the process line, rather than packing in the seals and causing actuation issues.


**CASE STUDY**

## Multi-Port Diverter Handling Flour

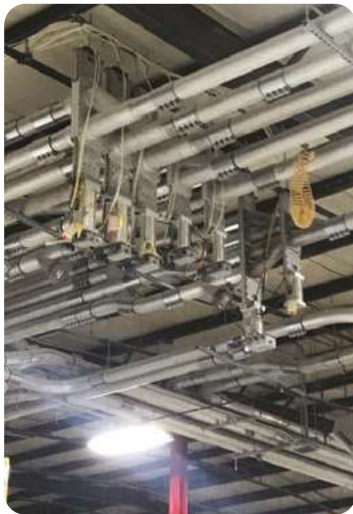
**Client:** Pasta producer

**Application:** Pneumatically convey/divert flour from a main supply line into 8 silos. Each 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 processing 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.

**○ 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 híbrido  
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  
Coples  
Mangueras PVC y metálicas  
Manifold para vacío  
Caja de vacío

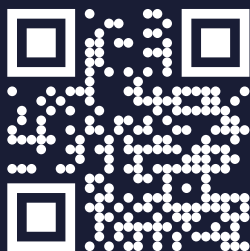
**○ DOSIFICACIÓN  
Y ALIMENTACIÓN A MÁQUINAS**

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

Conoce toda  
nuestra oferta



The SYCSA logo is positioned in the top left corner. It features the word "SYCSA" in a bold, white, sans-serif font. A red horizontal bar is integrated into the letter "A". A registered trademark symbol (®) is located at the top right of the "A".

# SYCSA®

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INGENIERÍA, CONSTRUCCIÓN,  
AUTOMATIZACIÓN Y MANTENIMIENTO DE  
**PLANTAS PRODUCTIVAS  
CON MANEJO A GRANULADO**