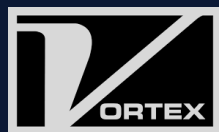


SYCSA[®]

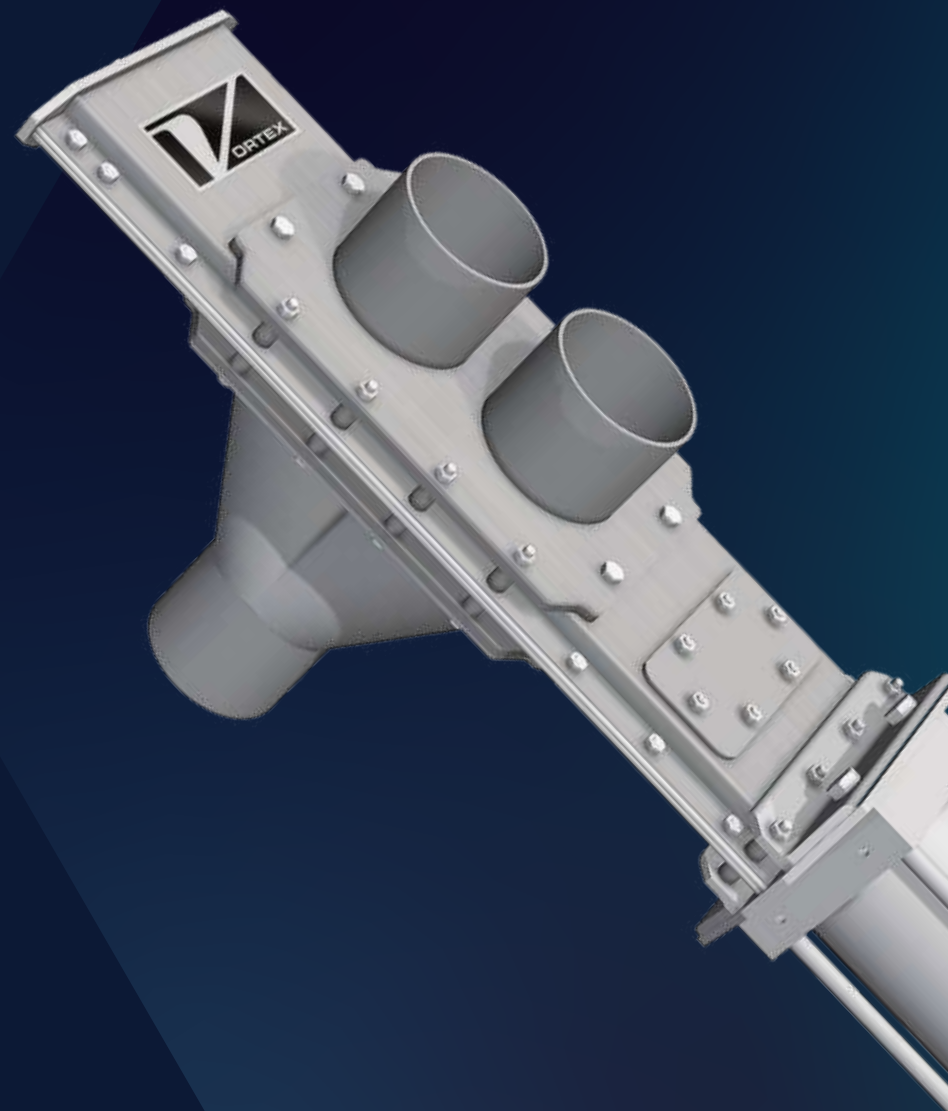
Wye Line Diverter

Quantum
Series

Model No. DRXX



PARTNER **SYCSA[®]**





Nuestras soluciones



No sólo te vendemos un producto

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



DISEÑAMOS



INSTALAMOS



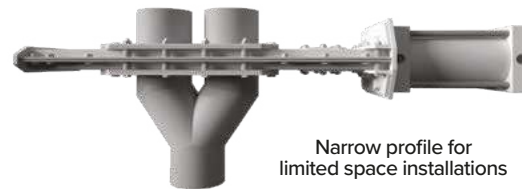
AUTOMATIZAMOS



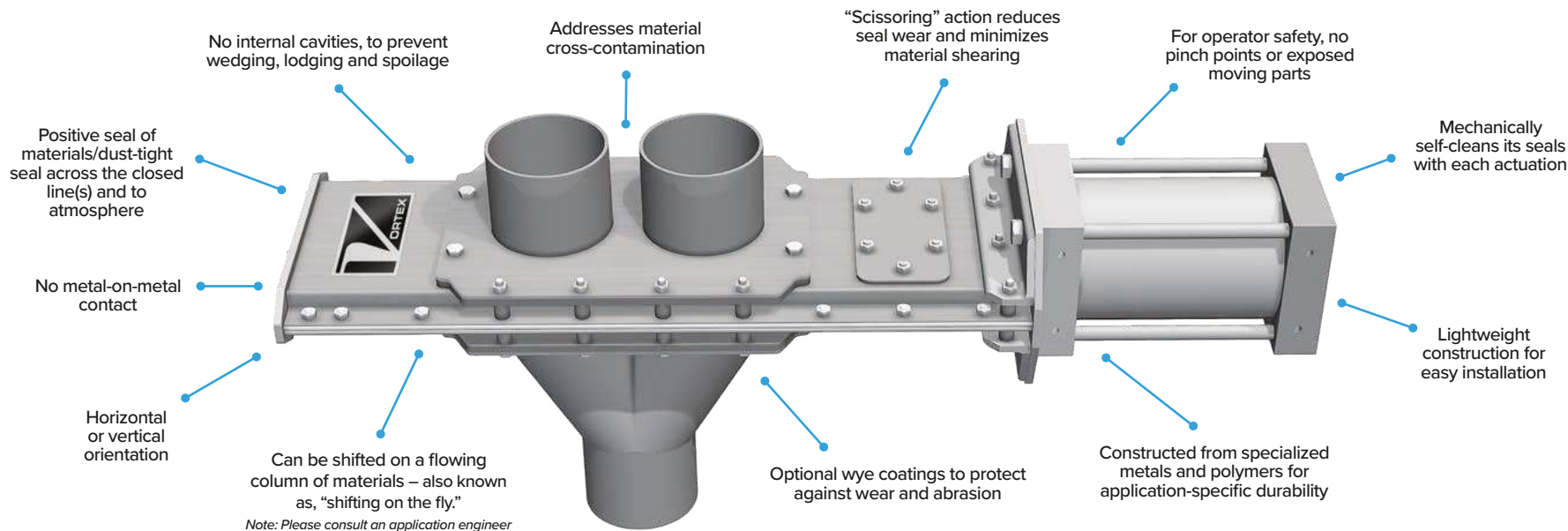
BRINDAMOS SERVICIO POSTVENTA

WYE LINE DIVERTER

Ideal application: Diverting or converging dry bulk solid materials in high cycle applications. The Vortex® Wye Line Diverter™ is commonly used in storage fill and/or storage transfer applications. When applied in non-abrasive applications or as an air directional valve, Wye Line Diverters often record more than 10 million cycles over the course of their service life.



Narrow profile for limited space installations



KEY FEATURES



Live loaded, wear compensating hard polymer pressure plate seals



Shimming system for in-line maintenance



Machined, full-bore orifice for unobstructed material flow and to maintain convey line pressures

TECHNICAL SPECIFICATIONS

Conveyance Type	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.
Materials Handled	Non-abrasive to moderately abrasive powders, pellets and granules. Modifications available for handling corrosive materials and/or for wash-down.
Standard Sizes	2 – 12 in 50 – 305 mm ID & OD diameters are available. Schedule pipe sizes are also available.
Inlet & Outlets	Available in round sizes.
Overall Height	11 – 43 in 280 – 1,085 mm
Weight	20 – 450 lb 10 – 205 kg
Outlet Angle Options	30° or 45° from center Contact us for custom angles
Connection Options	Compression couplings, ANSI #125/150
Material Temperatures	180° F 80° C for standard gate, with modifications that allow up to 400° F 205° C
Body/Frame Options	Aluminum, 304 or 316L stainless steel, carbon steel
Weldment Options	Aluminum, 304 or 316L stainless steel, carbon steel
Material Contact Options	Aluminum, 304 or 316L stainless steel, carbon steel
Pressure Plate Options	Nylon, PET, UHMW, 25% glass-filled PTFE
Load Seal Options	Natural rubber and/or silicone rubber
Drive/Actuation	Double-acting air cylinder, hand wheel/crank, chain wheel, electric actuator (see pages 61 & 62)
Position Confirmation	Magnetic reed, proximity or mechanical limit switches, and/or clear bonnet cover for visual indication (see page 63)
Other Options	Ceramic backing, ceramic/epoxy coating, or reinforced inlet weldment (see page 68) Sealed body air purge (see page 64)
Compliance	ATEX Zone 20 (internal), ATEX Zone 21 (external), FDA



THE POWER OF COMPARISON

Vortex Wye Line Diverter vs. Alternatives

- Many alternative pneumatic diverters rely on soft rubber seals which are directly exposed to the material flow stream. These seals rapidly erode or tear away in service, which allows materials and dusts to leak into the opposite line(s) and to atmosphere. Seal damage can also cause actuation issues and several other maintenance concerns. The Vortex® Wye Line Diverter™ 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 sliding blade. The seals are also shielded from the material flow stream, to protect them from abrasion. This design maintains the diverter's positive seal of materials/dust-tight seal with infrequent maintenance intervention.
- Plug diverters are prone to seizing and binding, as a result of material build-up in the clearance between the rotating plug and the diverter's housing. The Wye Line Diverter's sliding blade design mechanically self-cleans materials away from the sealing surfaces with each actuation. This prevents actuation issues from materials wedging in the seals, reduces seal wear, and ensures a positive seal of materials/dust-tight seal across the opposite line(s).
- Plug diverters are constructed primarily from bulky, heavy cast iron, making them costly to install or remove for maintenance. The Wye Line Diverter is lightweight and narrow profile, making it well-suited for difficult installations.
- In order to shift a plug diverter, the internal plug must be rotated approximately 150°. This is often a timely process. Before the internal plug can be rotated, the system's blower must be temporarily deactivated. Otherwise, the plug will create back pressure as it rotates. With an average shifting time of 2 – 6 seconds, the Wye Line Diverter can be shifted without shutting down the system's blower and without creating back pressure.
- Many alternative pneumatic diverters have blade(s) and seals which are directly exposed to the material flow stream. This disrupts convey line pressures and obstructs material flow as they pass through the valve, which can cause line plugs and other maintenance concerns. To resolve these issues, the Wye Line Diverter's sliding blade is machined with an unobstructed, full-bore orifice that maintains convey line pressure and allows unrestricted material movement.
- The Wye Line Diverter creates a naturally occurring high-pressure airfoil that deflects errant materials away from the closed line(s) and back into the material flow stream. Also, with each purge cycle, the Wye Line Diverter forces residual materials downstream. This design addresses material cross-contamination to the opposite line(s).
- Alternative pneumatic diverters can pack and grind materials against the seals. This causes seal wear, material degradation and damaged product quality. Materials may also wedge in the seals, causing the diverter to seize and bind. To address these issues, the Wye Line Diverter's "scissoring" action tapers off material flow as it shifts between lines. In keeping the pressure plate seals clear of materials, their service life is also extended.


CASE STUDY

Multi-Port Diverter Handling Flour

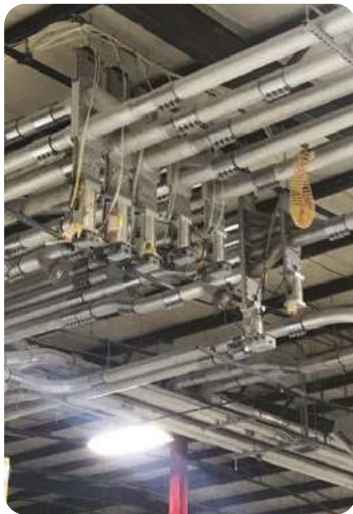
Client: Pasta producer

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.

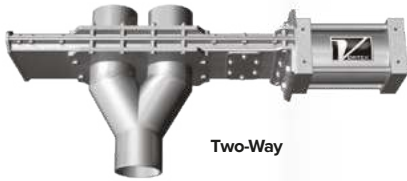

CASE STUDY

Iris Valve Handling Powdered Drink Mix

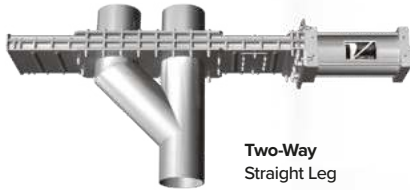
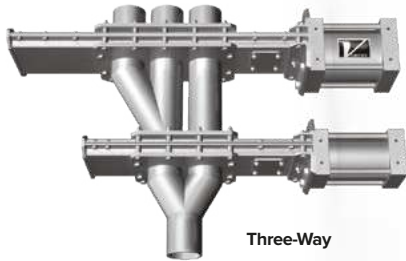
Quantity: 2

Application: Avoid contamination when handling food & beverage materials.

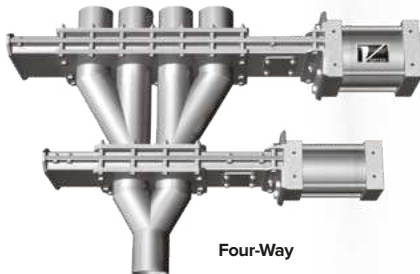
Special Features: A Teflon-coated body was specified because Teflon does not chemically react or corrode from material contact, which would otherwise compromise taste and create contamination. Teflon also assures food purity because it does not absorb preservatives. Because Teflon is non-stick, it also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

CONFIGURATION OPTIONS


Two-Way

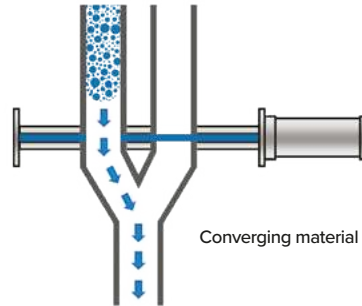

 Two-Way
Straight Leg


Three-Way

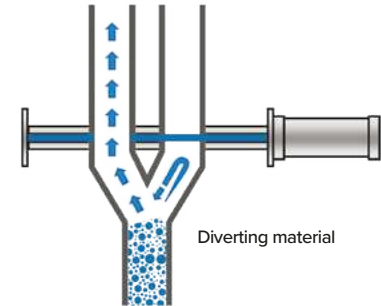


Four-Way

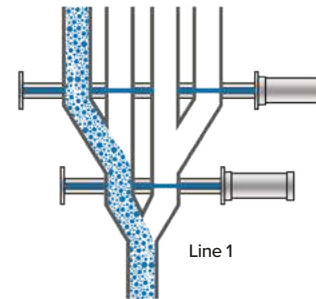
Please note: In Three- and Four-Way diverters, the addition of a second gate will add to overall height. Three- and Four-Way diverters are available in sizes up to 6 in | 150 mm

TWO-WAY MATERIAL FLOW


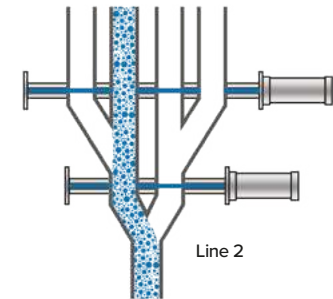
Converging material



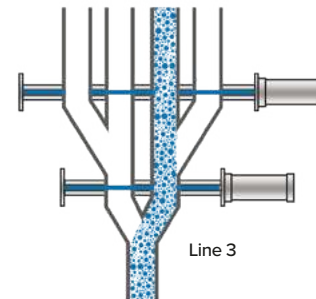
Diverting material

FOUR-WAY MATERIAL FLOW


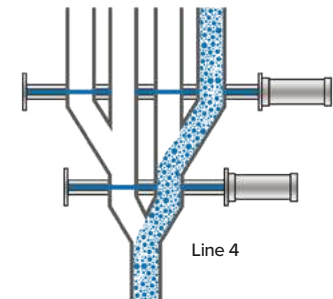
Line 1



Line 2



Line 3



Line 4



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
- Paneles 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

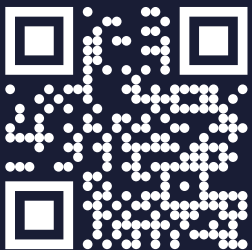
- **DOSIFICACIÓN Y ALIMENTACIÓN A MÁQUINAS**

- 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

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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 located under the letter "A". A registered trademark symbol (®) is placed to the upper right of the "A".

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