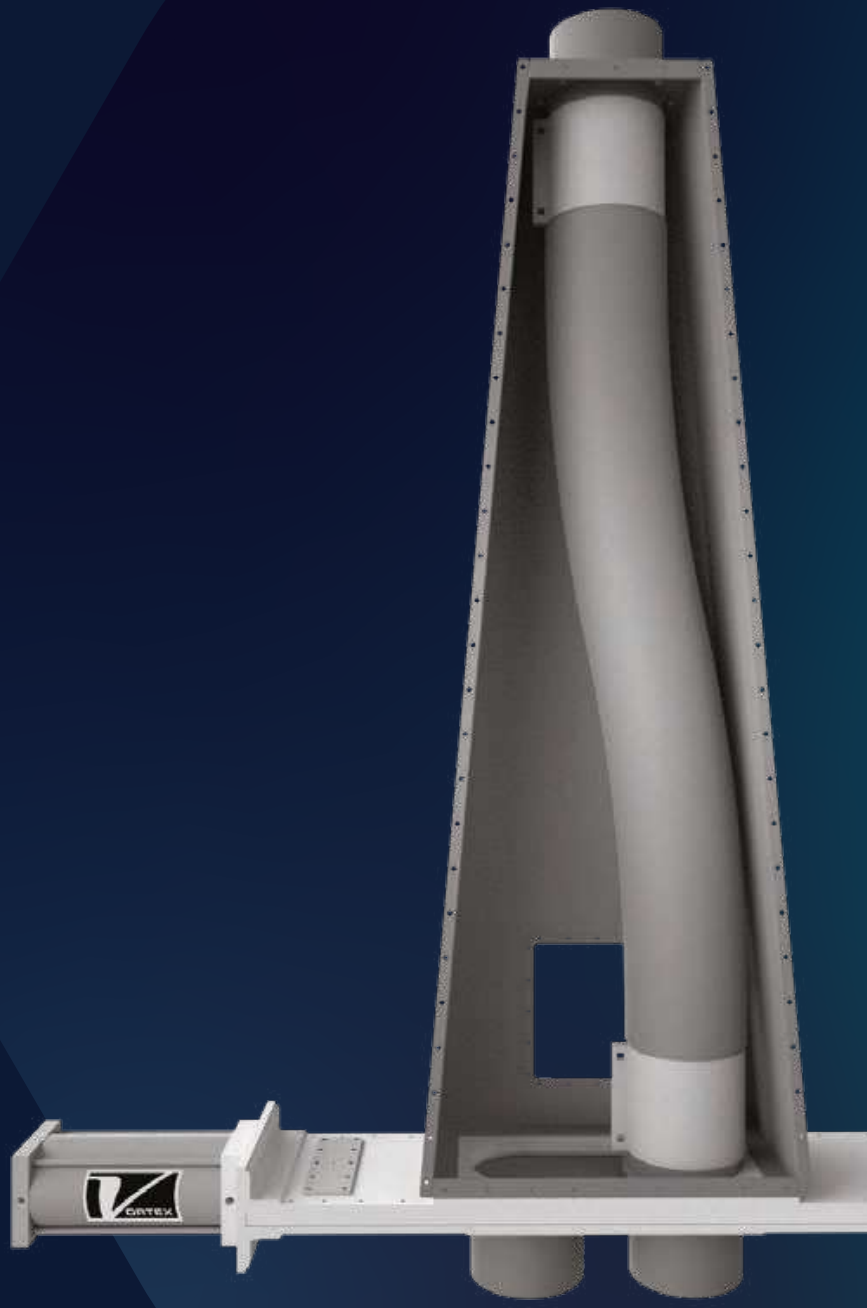
SYCSA®

Flex Tube Diverter

Quantum Series

Model No. TXX



VORTEX

PARTNER **SYCSA®**

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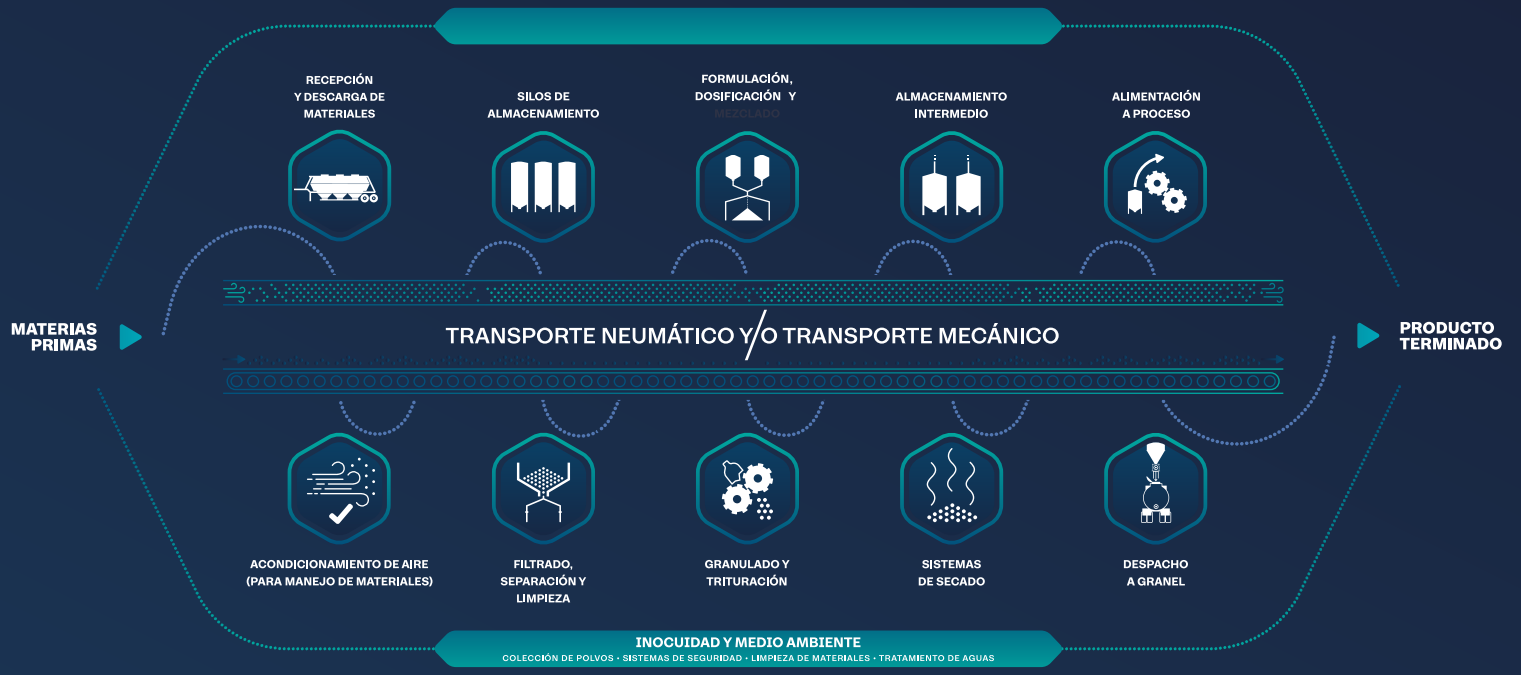
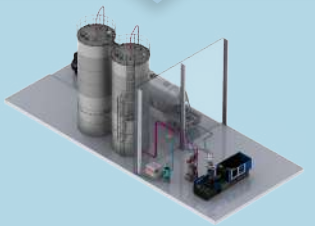
Nuestras soluciones



No sólo te vendemos un producto

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



DISEÑAMOS

INSTALAMOS

AUTOMATIZAMOS

BRINDAMOS SERVICIO POSTVENTA

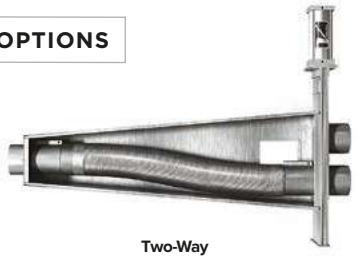
Model No. TXX

FLEX TUBE DIVERTER

Ideal application: Diverting or converging in applications where material cross-contamination is a concern.

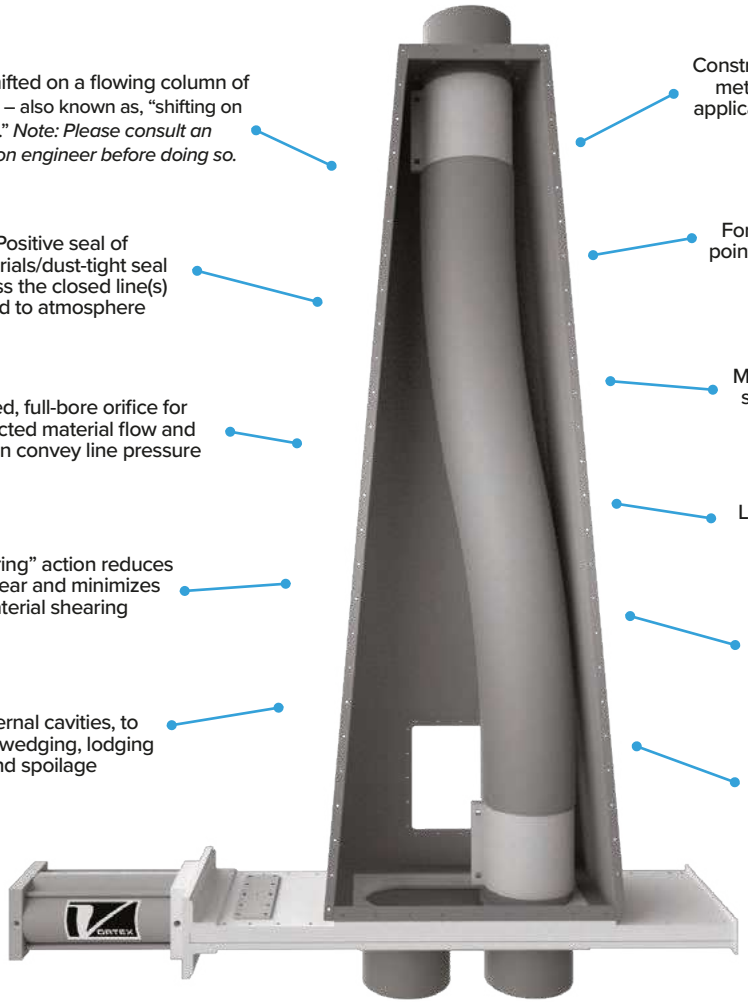
Purpose: The Vortex® Flex Tube Diverter™ is specifically designed to eliminate material cross-contamination. It also offers the convenience of continuous conveying.

OPTIONS



Two-Way

Three-Way



Can be shifted on a flowing column of materials – also known as, "shifting on the fly." *Note: Please consult an application engineer before doing so.*

Positive seal of materials/dust-tight seal across the closed line(s) and to atmosphere

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

"Scissoring" action reduces seal wear and minimizes material shearing

No internal cavities, to prevent wedging, lodging and spoilage

Constructed from specialized metals and polymers for application-specific durability

For operator safety, no pinch points or exposed moving parts

Mechanically self-cleans its seals with each actuation

Lightweight construction for easy installation

No metal-on-metal contact

Horizontal or vertical orientation

KEY FEATURES

Can be shifted on a flowing column of materials – also known as, "shifting on the fly." *Note: Please consult an application engineer before doing so.*

No material cross-contamination into the opposite line(s)

Live loaded, wear compensating hard polymer pressure plate seals

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 – 8 in | 50 – 205 mm ID & OD diameters are available. Schedule pipe sizes are also available.
Inlet & Outlets	Available in round sizes
Overall Height	35 – 100 in | 875 – 2,545 mm
Weight	100 – 500 lb | 45 – 225 kg
Connection Options	Compression couplings, ANSI #125/150 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 Construction	Aluminum
Housing Construction	304 stainless steel w/ clear polycarbonate viewport
Weldment Options	Aluminum, 304 or 316L stainless steel, carbon steel
Hose Options	Natural rubber w/ steel wire helix, 304 stainless steel
Material Contact Options	304 or 316L stainless steel
Pressure Plate Options	Nylon, PET
Load Seal Options	Natural rubber and/or silicone rubber
Drive/Actuation	Double-acting air cylinder, hand wheel, electric actuator (see pages 61 & 62)
Position Confirmation	Magnetic reed or proximity switches, and/or clear access panel for visual indication (see page 63)
Other Options	Sealed body air purge (see page 64)
Compliance	ATEX Zone 20 (internal), ATEX Zone 21 (external), FDA

THE POWER OF COMPARISON

Vortex Flex Tube 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® Flex Tube 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 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.

- Many alternative pneumatic diverters 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 valve to seize and bind. Wedged materials also create risk for cross-contamination and spoilage. To prevent wedging, the Flex Tube Diverter's sliding blade is designed to mechanically clear materials away from the sealing surfaces with each actuation. 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.

- Many valves with sliding blades allow metal-on-metal sliding, which creates galling. This causes a valve to seize and bind, and can create foreign metal fragment contamination. The Flex Tube Diverter's hard polymer seals eliminate metal-on-metal contact to resolve each of these concerns.

- Alternative pneumatic diverters can pack and grind materials against the seals. This causes seal wear, material degradation and damaged product quality. To address these issues, the Flex Tube 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.

- Many alternative pneumatic diverters have blade(s) and seals which are directly exposed to the material flow steam. 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 Flex Tube Diverter's sliding blade is machined with an unobstructed, full-bore orifice that maintains convey line pressure and allows unrestricted material movement.

- Many alternative flexible hose diverters feature an exposed flexible hose. When installed outdoors, this subjects the flexible hose to its surrounding environment. Regarding operator safety, an exposed flexible hose also creates hazardous pinch points. To address these issues, the Flex Tube Diverter is designed with a housing that protects the flexible hose and encloses all moving parts.

CASE STUDY

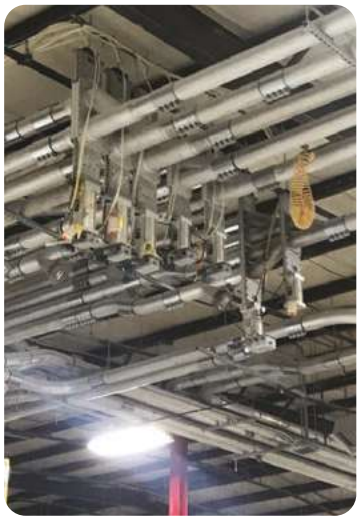
Multi-Port Diverter Handling Flour

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

Conoce toda nuestra oferta

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