



QUANTUM

S E R I E S

VALVES FOR DRY BULK PROCESSING & CONVEYING












SEALTITE DIVERTER



The Vortex Seal Tite Diverter is designed for use in gravity flow applications where material can be diverted from one source to either two or three destinations. The Seal Tite Diverter offers a removable access door for interior inspection, cleaning and maintenance.

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

FEATURES

-  Handles powders, granules and pellets
-  Leading edge of blade protected from material flow
-  Wear compensating shaft seal prevents leakage
-  Removable access door for internal inspection, cleaning and maintenance
-  Positive seal of dust and fine powders
-  Available in 2 and 3-way configurations
-  Internal access without tools
-  Material construction options available
-  Standard sizes: 4" - 30"
Contact us for custom sizes

OPTIONS



2 - WAY



STRAIGHT



3 - WAY

DETAILS



The recessed blade protects the leading edge of seal from material flow and eliminates excess wear



A removable blade allows for seal replacement without extracting the valve from service



The shaft seal replaces the open area where migration of material to the off leg normally occurs

APPLICATIONS



24" (610mm) straight line Seal Tite Diverter handling DDG



6" (152mm) Seal Tite Diverter handling flour



10" (254mm) straight line Seal Tite Diverter handling kaolin clay

For a complete list of specifications, modifications, dimensional drawings and measurements, visit WWW.VORTEXVALVES.COM

WYELINE DIVERTER

The Vortex Quantum Series Wye Line Diverter is specifically engineered to handle dry bulk solids in vacuum or dilute phase pneumatic conveying systems with pressures up to 15 psig (1 barg) depending on size. A full flow orifice provides unrestricted conveying of material. The live-loaded seals are shielded from abrasion by a metal insert.

☐ **GRAVITY FLOW**

☒ **DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)

☐ **DENSE PHASE PNEUMATIC CONVEYING**

FEATURES



Handles powders, granules and pellets



Shifts "on the fly"



Wear compensating hard polymer seals



Unobstructed opening



Positive seal through closed port



Serviceable while in-line



Diverts or converges material flow



Available in 2, 3, or 4-way configurations



Material construction options available



Standard sizes: 2" - 12"
Contact us for custom sizes

OPTIONS

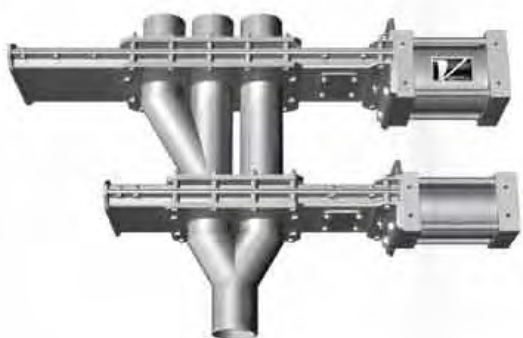


2 - WAY

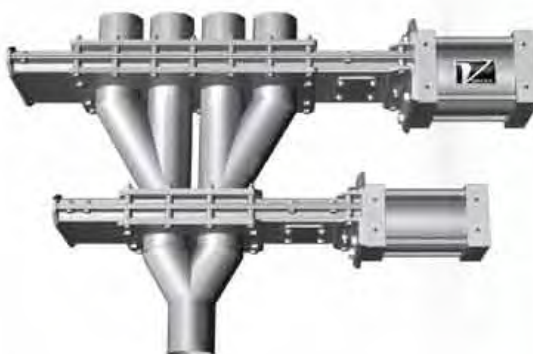


2 - WAY STRAIGHT

DETAILS

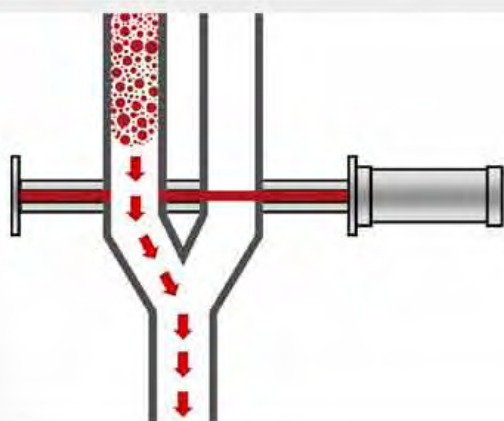


3 - WAY

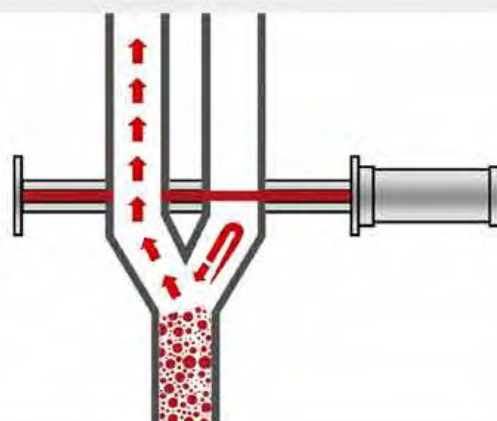


4 - WAY

APPLICATIONS



WYE LINE 2-WAY DIVERTER
converging material



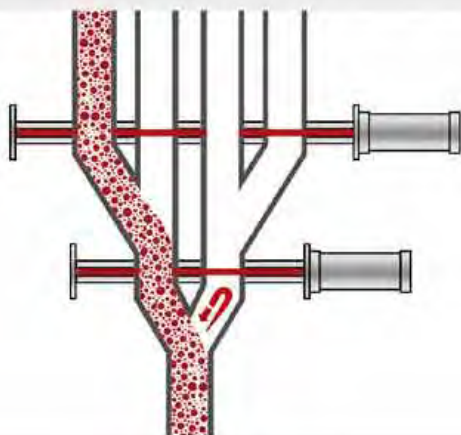
WYE LINE 2-WAY DIVERTER
diverting material

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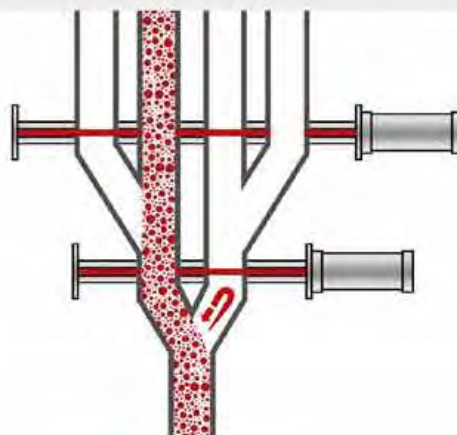
WYELINE DIVERTER

Unlike common in-line flap or plug-type diverters, Vortex's series of Wye Line Diverters offer a wider range of dilute phase and vacuum conveying options. The design features a stainless steel sliding blade with unrestricted flow ports, and is capable of shifting directions while the system's blower or vacuum pump continues to operate. If installed near a destination point, the diverter may also shear through material to facilitate continuous conveying.

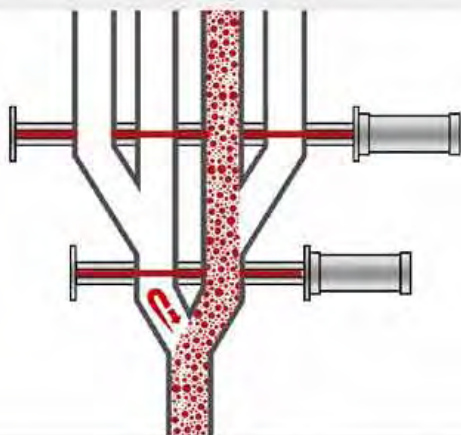
MATERIAL FLOW



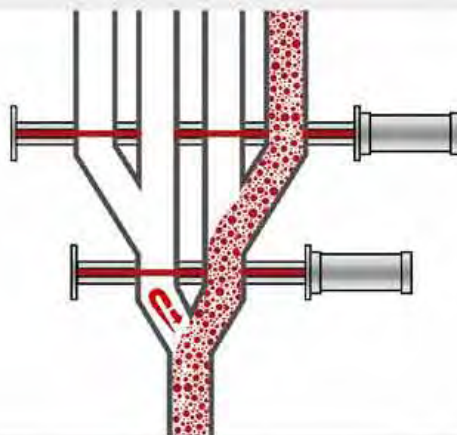
WYE LINE 4-WAY DIVERTER
PORT 1 OPEN



WYE LINE 4-WAY DIVERTER
PORT 2 OPEN



WYE LINE 4-WAY DIVERTER
PORT 3 OPEN



WYE LINE 4-WAY DIVERTER
PORT 4 OPEN



Shim removal for seal adjustment while valve is in-line



Full port opening eliminate internal ledges that can trap material



Compact lightweight design



Ability to shift "on the fly" without requiring blower shutdown



4" (101mm) Wye Line Diverter handling polypropylene pellets



2.5" (63mm) Wye Line Diverter handling dry leaf tea



6" (152mm) schedule 10 pipe Wye Line Diverter handling kaolin clay powder

For a complete list of specifications, modifications, dimensional drawings and measurements, visit WWW.VORTEXVALVES.COM

FLEXTUBE DIVERTER









The unique design of the Vortex Flex Tube Diverter eliminates material cross contamination through a positive seal across the closed port. Pockets where material can lodge and remain trapped have also been eliminated. A smooth unobstructed transition from inlet to outlet shields the wear compensating seals from abrasion.

☒ **GRAVITY FLOW**

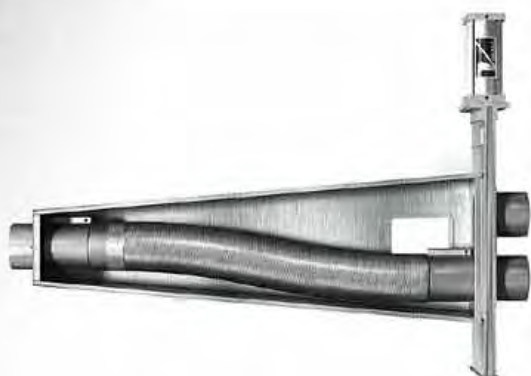
☐ **DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)

☐ **DENSE PHASE PNEUMATIC CONVEYING**

FEATURES

-  Handles powders, granules and pellets & is excellent for sugar-based solids
-  Eliminates cross contamination
-  Diverts or converges material flow
-  Unobstructed opening
-  Available in 2 or 3-way configurations
-  No pinch points or exposed moving parts for safe operation
-  Material construction options available
-  Standard sizes: 2" - 8"
Contact us for custom sizes

OPTIONS



2 - WAY



3 - WAY

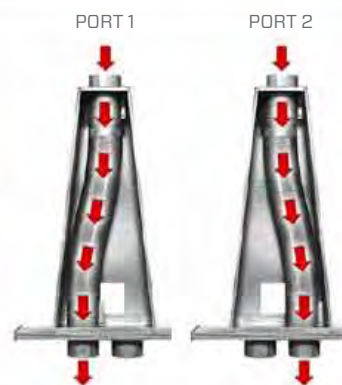
DETAILS



Housing encloses all moving parts to eliminate external pinch points and support the flex tube



Shim removal for seal adjustment while valve is in-line



This diagram shows the isolation of the off leg to eliminate material cross contamination

APPLICATIONS



8" (203mm) Flex Tube Diverter handling PVC compound



6" (152mm) Flex Tube Diverter handling coffee beans



For a complete list of specifications, modifications, dimensional drawings and measurements, visit WWW.VORTEXVALVES.COM









GRAVITYVEE DIVERTER

The Vortex Gravity Vee Diverter is designed to divert dry bulk solids in gravity flow conveying systems. The design allows for material flow through both outlets simultaneously, one outlet at a time, or a complete shut-off of flow. The Gravity Vee Diverter is also capable of metering flow through either outlet port.

- ☒ **GRAVITY FLOW**
- ☐ **DILUTE PHASE PNEUMATIC CONVEYING**
- ☐ **DENSE PHASE PNEUMATIC CONVEYING**



FEATURES

-  Handles powders, granules and pellets
-  Design allows for total material flow control
-  Wear compensating hard polymer seals
-  Seals protected from blast abrasion
-  Positive seal of dust and fine powders
-  Serviceable while in-line
-  Material construction options available
-  Standard sizes: 5" - 24"
Contact us for custom sizes

OPTIONS



SQUARE



ROUND

DETAILS



Multiple actuators allow for independent control of material flow through each outlet



The bonnet seals can be replaced while valve is in-line

APPLICATIONS



8" (203mm) Gravity Vee Diverter
below a rotary valve handling zinc oxide



24" (610mm) Dual Cylinder Gravity Vee
Diverter for handling flour

For a complete list of specifications, modifications, dimensional drawings and measurements, visit WWW.VORTEXVALVES.COM

FILLPASS DIVERTER

The Vortex Fill Pass Diverter is specifically engineered to handle dry bulk solids in vacuum or dilute phase pneumatic conveying systems with pressure up to 15 psig (1 barg) depending on size. It provides a versatile and reliable solution for filling one or more in-line weigh hoppers when material is conveyed pneumatically through a closed loop system. The design of the Fill Pass Diverter utilizes spread hopper inlet/outlet stacks for improved air and material separation reducing fill time and down line material carryover.

☐ **GRAVITY FLOW**

☒ **DILUTE PHASE PNEUMATIC CONVEYING** (Pressure or Vacuum)

☐ **DENSE PHASE PNEUMATIC CONVEYING**

FEATURES



Separates air and material before filling the hopper



Shifts "on the fly"



Weigh from up to 5 sources and/or materials



Positive seal through closed ports



Unobstructed opening



Serviceable while in-line



Material construction options available



Standard sizes: 2" - 6"
Contact us for custom sizes

OPTIONS



SINGLE



STACKED

DETAILS



Shim removal for seal adjustment while valve is in-line



The valve's spread stack offers better material/air separation



The material deflector directs material flow to minimize material carryover

APPLICATIONS



5" (127mm) Fill Pass Diverter above a scale hopper handling calcium carbonate

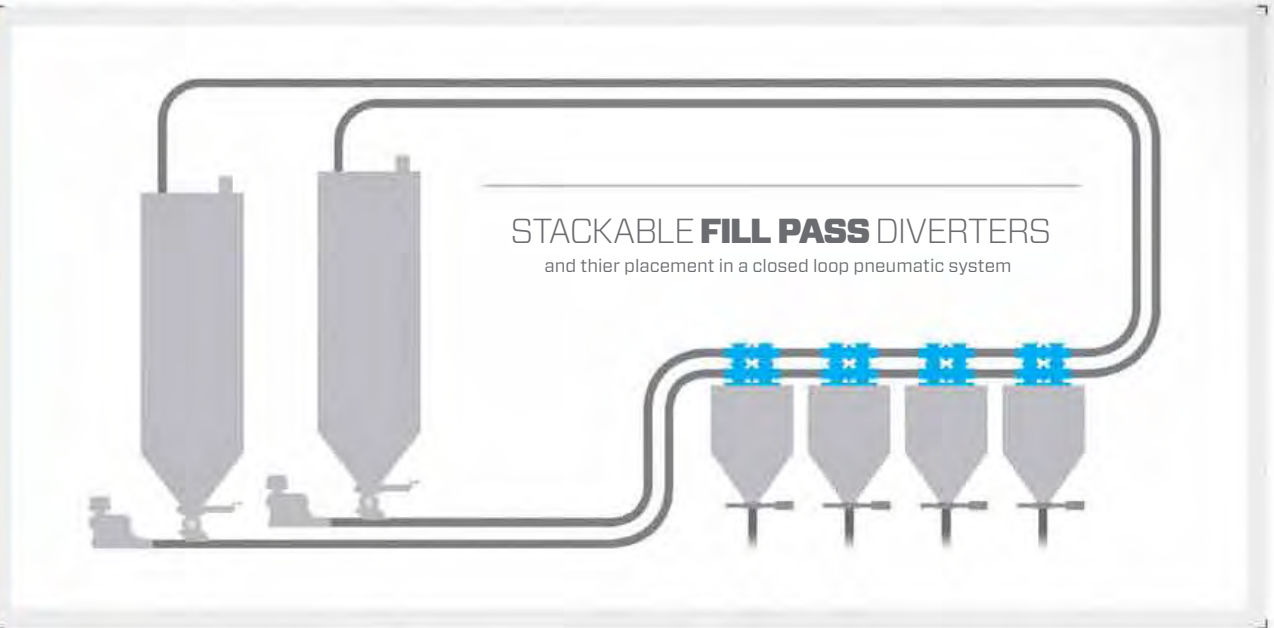


6" (152mm) Fill Pass Diverter above a scale hopper handling baking mixtures

For a complete list of specifications, modifications, dimensional drawings and measurements, visit WWW.VORTEXVALVES.COM

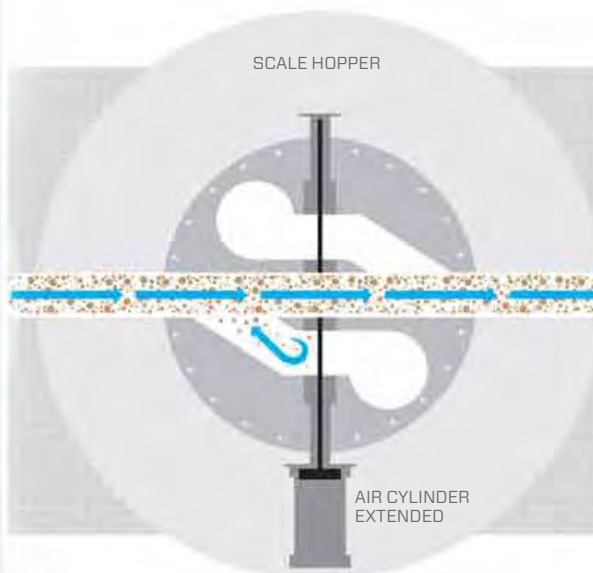
FILLPASS DIVERTER

VALVE PLACEMENT



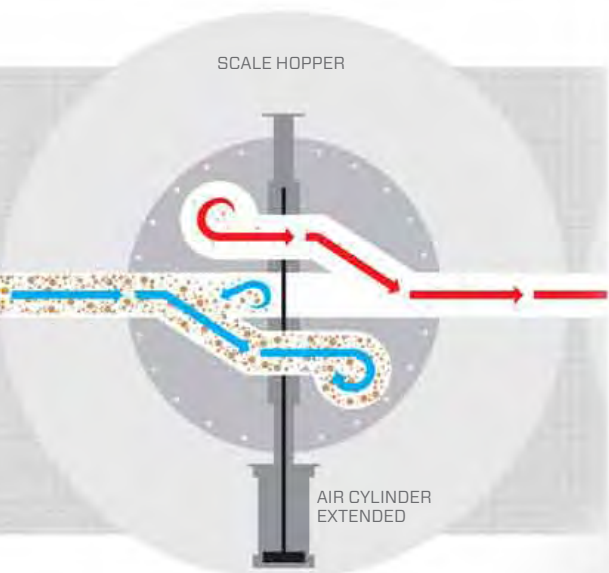
VALVE MODES - TOP VIEW

PASS MODE



Conveyed material and air passes hopper when weight or volume is attained

FILL MODE



Conveyed material and air into scale hopper and back to source

BLUE represents airflow toward hopper

RED represents airflow away from hopper

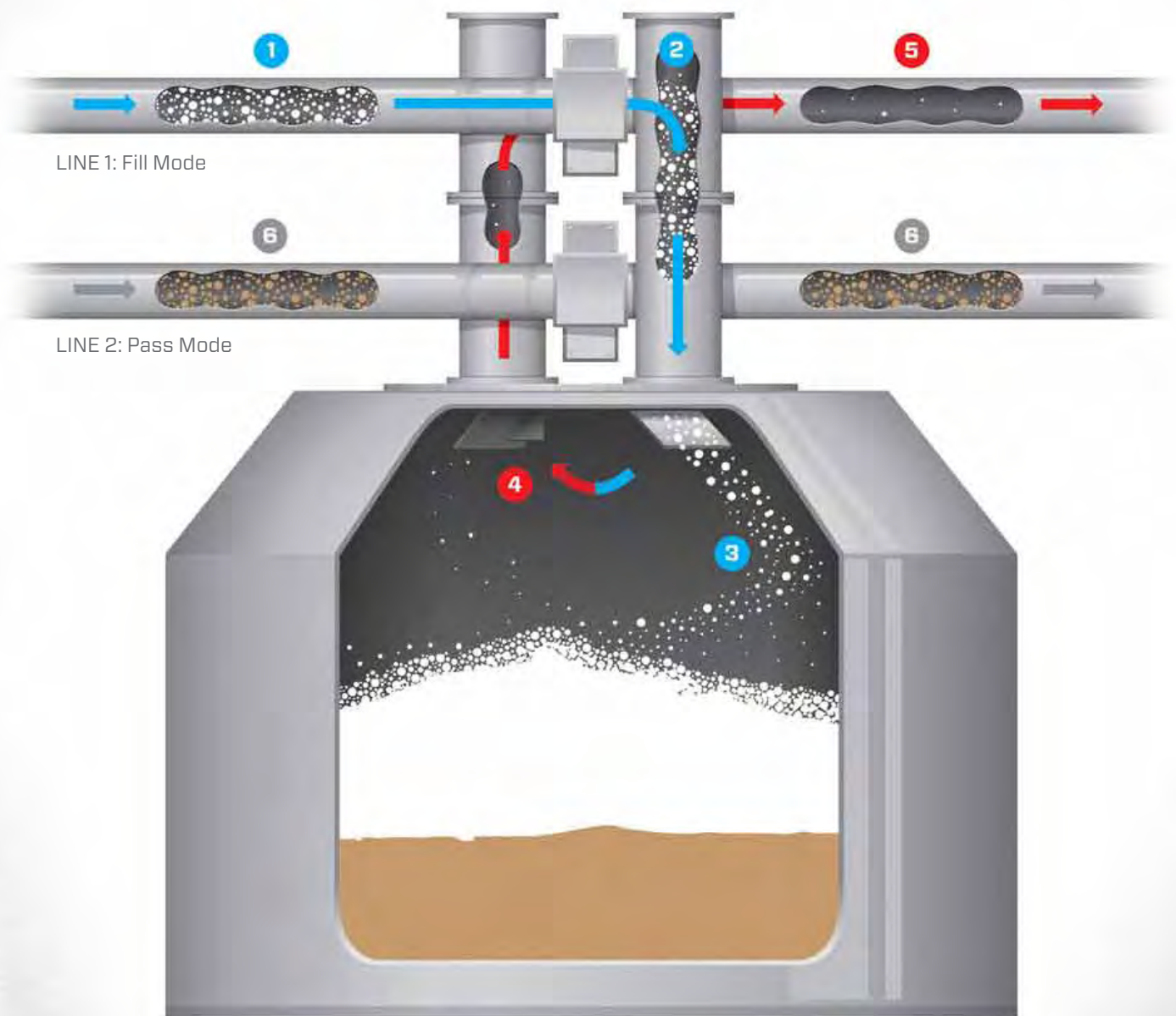
STACKABLE **FILL PASS** DIVERTERS

are used to batch different materials using two separate systems into multiple hoppers

PRODUCT BENEFITS

- Positive seal in pass mode reduces material carryover
- Material and air separation also reduces material carryover
- Less carryover means faster hopper fill times
- Positive seal also results in more accurate batching
- Hopper is vented as it fills eliminating the need for a bin vent
- Stacked Fill Pass Diverters reduce required footprint

- 1 Air and material X move toward hopper in line 1
- 2 Air and material X are diverted down into hopper
- 3 Material X is deflected away from vent as it fills the hopper
- 4 Air is vented back in-line with minimal material carryover
- 5 Air pressure continues in-line with minimal material carryover
- 6 Air and material Z in line 2 move pass hopper when in pass mode



BLUE represents airflow toward hopper

RED represents airflow away from hopper








For a complete list of specifications, modifications, dimensional drawings and measurements, visit WWW.VORTEXVALVES.COM

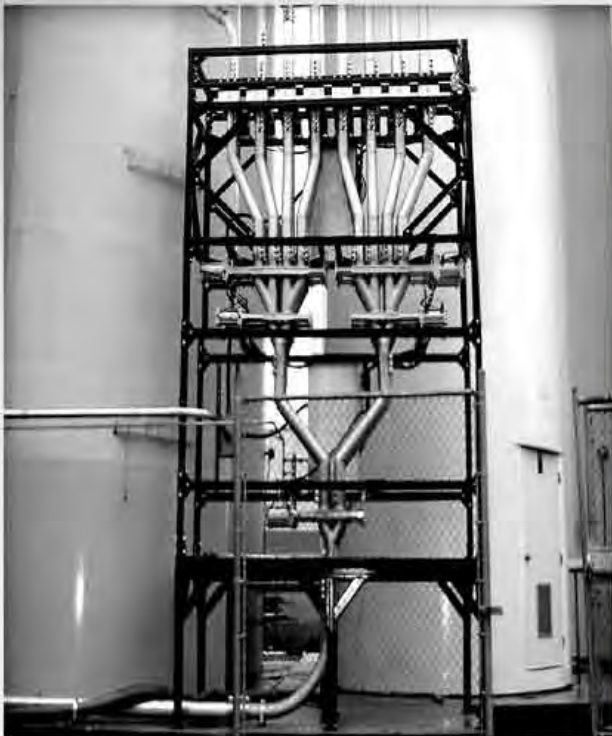
MULTI-PORT DIVERTER



The Vortex Multi-Port Wye Line Diverter is specifically engineered to handle dry bulk solids in vacuum or dilute phase pneumatic conveying systems with pressures up to 15 psig (1 barg) depending on size. The multi-port eliminates the need for complicated hose manifold stations. This helps address potential errors when manually switching hoses and greatly reduces safety hazards.

FEATURES

-  Handles powders, granules and pellets
-  Mechanically self cleans on opening stroke
-  Shifts "on the fly"
-  Wear compensating hard polymer seals
-  Unobstructed opening
-  Serviceable while in-line
-  Material construction options available



2 x 8 Multi-Port Diverter
handling PVC compounds



4" (102mm) Cross-Over Diverter
handling titanium dioxide



2 x 8 Multi-Port Diverter
handling plastic pellets



5 x 5 Multi-Port Diverter with all lines
running simultaneously handling plastic resin

For a complete list of specifications, modifications, dimensional drawings and measurements, visit WWW.VORTEXVALVES.COM