POLİMAK®

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About Us

Having 30 years of experience, Polimak A.Ş. serves industrial plants in the area of bulk solid handling systems. Transferring of bulk material between production processes, storing, loading, discharging, feeding dosing and weighing of bulk materials are some applications of equipments and systems in this area.

Polimak A.Ş. makes customer oriented special designs for industrial plants with strong engineering and the production background. Serves the industry with turnkey solutions including production, automation, installation and commissioning services.

Products and Services

- *Bulk solid handling, conveying, storage, batching, weighing and dosing systems*
- *Blower pumps*
- *Rotary valves*
- *Diverter valves*
- *Flow control valves*
- *Silo equipments*
- *Jet filters*
- *Dust collection systems*
- *Big bag discharge systems*
- *Big bag filling systems*
- *Bag dump stations*
- *Silo loading and unloading systems*
- *Vacuum conveying systems*
- *Process feeding and mixture preperation systems*
- *Computer and PLC controlled automation systems*
- *Software development facilities for industrial applications*

Bulk Material Filling and Loading Systems

- *Silo loading systems*
- *Mixer loading systems*
- *Tank filling systems*
- *Bigbag filling systems*
- *Octabin filling systems*
- *Package filling systems*
- *Bag filling systems*
- *Truck loading systems*
- *Silo truck loading systems*
- *Depot, hopper filling systems*

Bulk Material Discharging Systems

- *Silo discharging systems*
- *Mixer discharging systems*
- *Tank discharging systems*
- *Bigbag discharging systems*
- *Octabin discharging systems*
- *Package discharging systems*
- *Bag discharging systems*
- *Truck unloading systems*
- *Container unloading systems*
- *Liner bag discharging systems*
- *Depot unloading systems*

Bulk Material Conveying Systems

- *Conveying from truck to silo*
- *Discharging bags, Bigbags and filling silos*
- *Conveying from silo to production line*
- *Conveying form Bigbag discharging system to production line*
- *Filling silos from production processes*
- *Discharging silos and loading trucks*
- *Discharging silos and Bigbag filling*
- *Collecting dust from production line, dust collection systems*
- *Conveying collected dust from jet filters to silos*

Weighing, Batching and Dosing Systems

- *Weighing and batching of bulk solids from silos to production line*
- *Feeding of production lines*
- *Feeding of production lines with Bigbag discharging systems*
- *Reactor tank feeding systems*
- *Powder injection systems for liquid and gas processes*

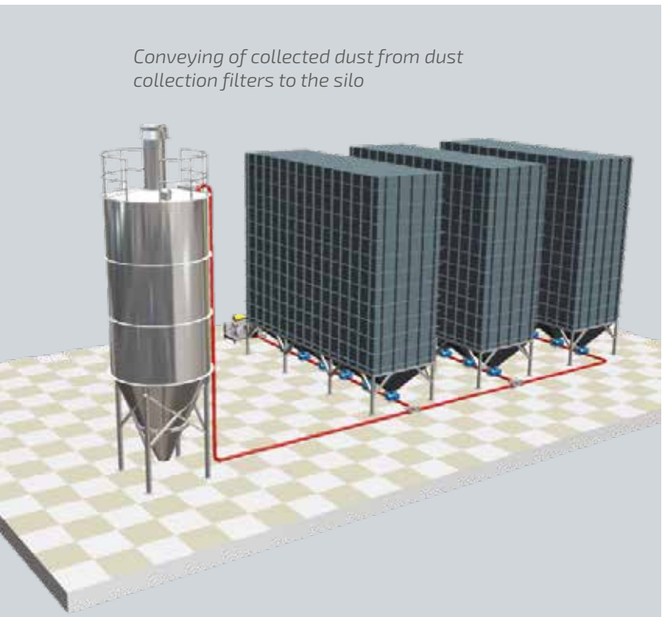
Turnkey automation systems for bulk solid handling

Automation systems used in production lines that contain weighing, batching, dosing, conveying, loading and discharging of bulk solids.

Bulk Solid Storage Systems

- *Silo, depot, hopper and tank applications.*

Conveying of bulk solids from hoppers to process tanks



Conveying of collected dust from dust collection filters to the silo

Dilute phase pneumatic conveying system

Dosing of different materials from silos to the mixer

Bag and Bigbag discharge stations

Raw material storage silos

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Product and Services
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Dense phase pneumatic conveying system

Conveying the bulk solid from the hopper to the silo

Feeding of bulk solids to production line

Vacuuming the material and filling the silo

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Product and Services
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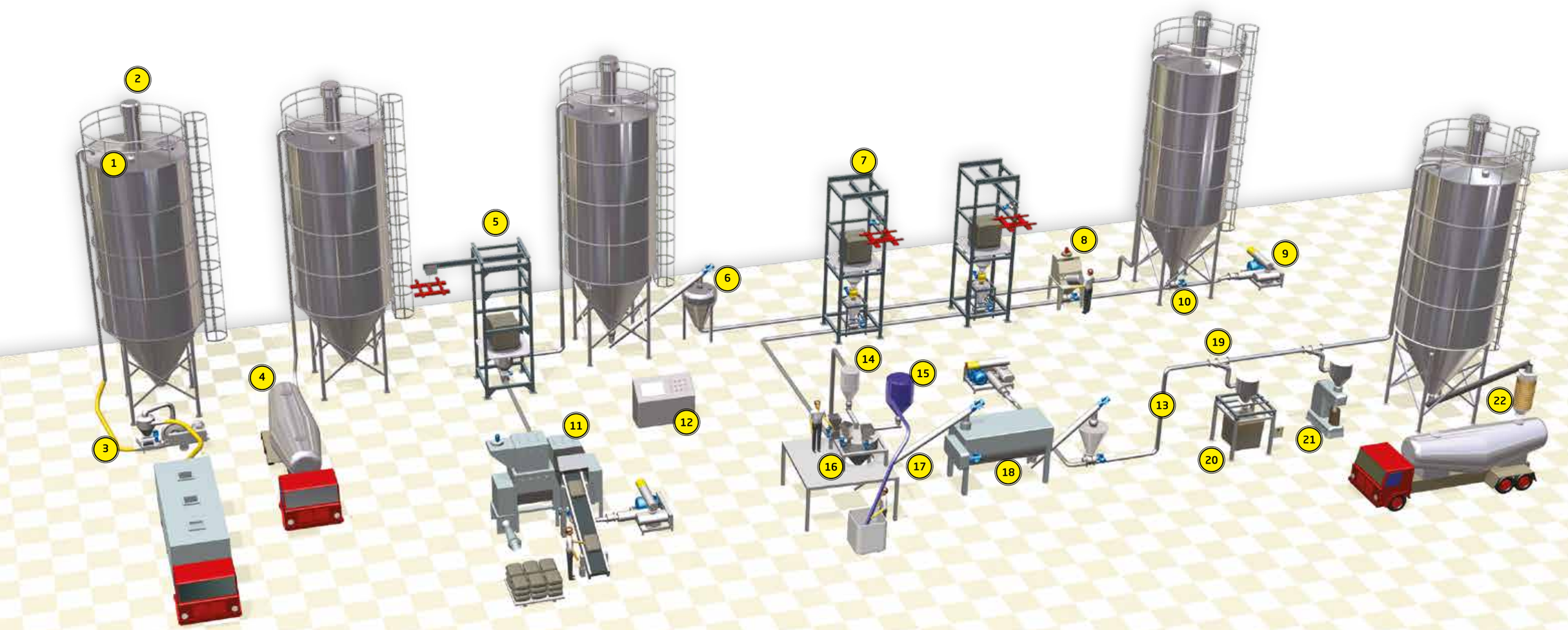
1. Silo
2. Jet Filter
3. Mobile Pneumatic Conveying System
4. Filling of Silo From Bulk Truck
5. Bigbag Discharge System
6. Dense Phase Pneumatic Conveying System
7. Bigbag Discharge, Bulk Material Dosing System
8. Bag Dump Station
9. Blower
10. Rotary Valve
11. Automatic Bag Discharge System
12. Automation Control Panel
13. Pneumatic Conveying Pipeline
14. Jet Cyclone
15. Vacuum Loading System
16. Batching Weighing And Dosing System
17. Screw Feeder
18. Mixer
19. Diverter Valve
20. Bigbag Filling System
21. Bag Filling System
22. Bulk Truck Loading Bellow



Bulk Material Handling Systems

Bulk solids like grain cereals, powder, food, plastic pellets can be conveyed with bulk solid handling systems Pneumatic conveying, screw conveyors, bucket elevators are generally used for bulk material conveying. Depending on type of the application, some of these systems can be combined together. Bulk solids can be brought from basement, silo, truck, Bigbag, mixer and transferred again to basement, silo, truck, Bigbag, mixers. Batching, dosing and weighing tasks can be done in these systems.

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Bulk Material Handling Systems
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Raw Material Handling and Dosing Systems Automation

Automation systems are widely used in conveying, storage and dosing of bulk solids. Equipments like pumps, diverters, valves, dosing equipments, feeders are controlled by PLC based automation systems. These systems can read the signals coming from level sensors, pressure sensors, flowmeters and loadcells. Depending on the sensor signals, bulk solids handling systems are automatically controlled. Conveying between desired locations, mixture preparation according to the recipes, dosing, weighing during packaging can be done without error. Detailed report scan be prepared to the user. Computers can also be connected to automation systems to control the all process.

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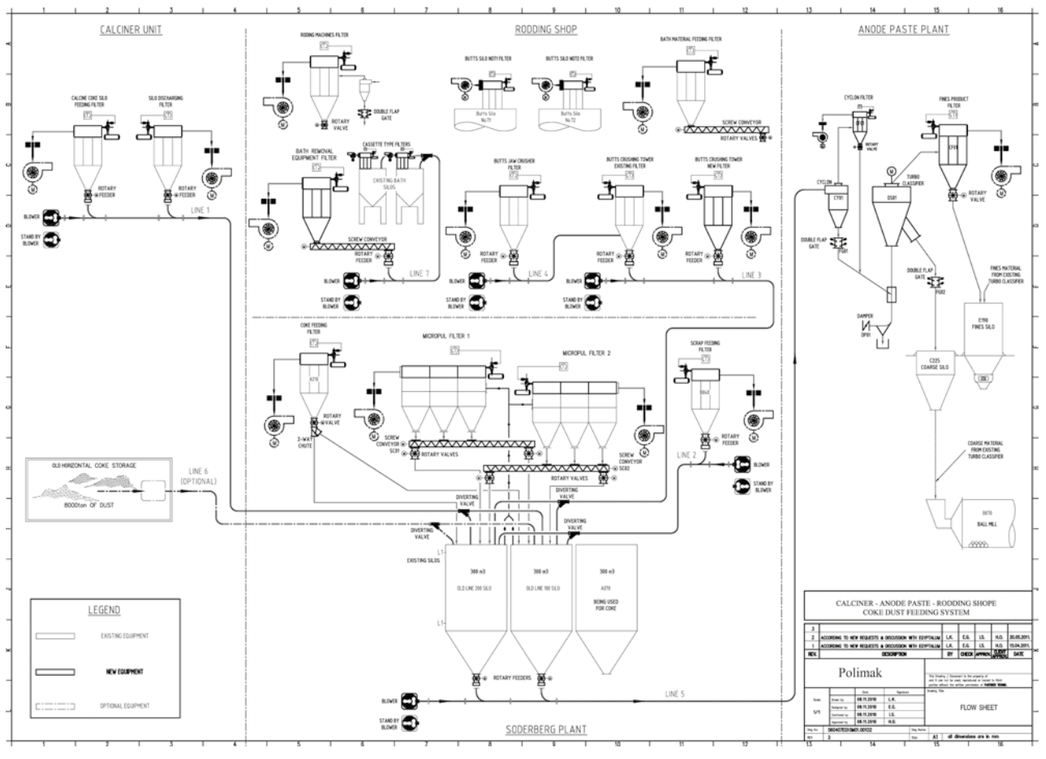
Raw Material Handling and Dosing Systems Automation
POLİMAK®

The fourth Industrial Revolution creates a benefit for our customers. It concerns the vertical and horizontal digital networking along the complete supply chain and within the production process. Collected data from the process contains valuable information for increasing efficiency and quality. With the help of long years of experience, Polimak supplies extensive range of automation systems that are capable of handling Industry 4.0 concept.



Batching, Weighing and Dosing Systems

Batching, weighing and dosing systems are used to mix different kind of bulk materials to form a new product after the production process. Bulk solids can be discharged from silo, Bigbag, hopper and can be dosed by weight or volume. PLC or computer controlled systems make the process easier to obtain different mixing ratios to produce different end products.

Applications

Construction chemicals •
Food, flour dosing systems •
Concrete plants •
Gypsum plants •
Plastic raw material production plants •

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Batching, Weighing and Dosing Systems
POLİMAK®

Loss in weight screw feeder and dosing equipment

Bigbag disharging and weighing system

Automatic powder weighing and filling system

Dosing of different materials form silos to the mixer

Pneumatic conveying systems

Bulk solids like grain cereals, powder, food, plastic pellets can be conveyed with pneumatic conveying systems. Both pressure and vacuum systems are used for conveying. Since the material is transported by air, product degradation is kept minimum with respect to mechanical conveyors like augers and elevators. The dust formation in the medium is also prevented because of the closed piping system. Wide range of pneumatic conveying systems are available for different kind of applications.

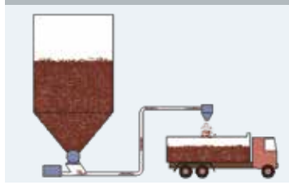
Applications

Packaging •
Truck / tractor loading and unloading •
In-plant transportation •
Distribution •
Bag Unloading •
Unloading Silo Filling •

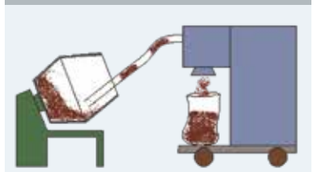
Truck unloading

Dosing different granular materials and filling a mixer or blender

Conveying from a silo to truck



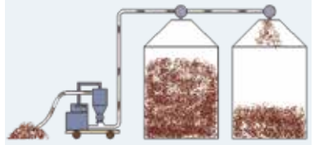
Unloading a mixer and loading a bag



Conveying from a machine to silo

Loading a bag with bulk solids on the basement

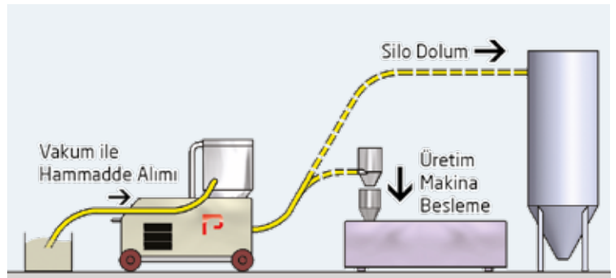
Silo loading



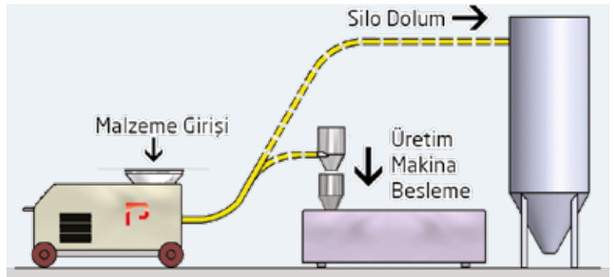
Emptying the bag and loading silo

Mobile Conveying Systems

Mobile conveying systems are used in production plants and open air applications to convey the bulk materials between different points. Wide range of mobile pneumatic conveying systems are available for different kind of applications.



Loading the materials by the help of vacuum system and transferring it to silo or production machinery



Loading the material to the hopper of the mobile conveyor and transferring it to silo or production machinery

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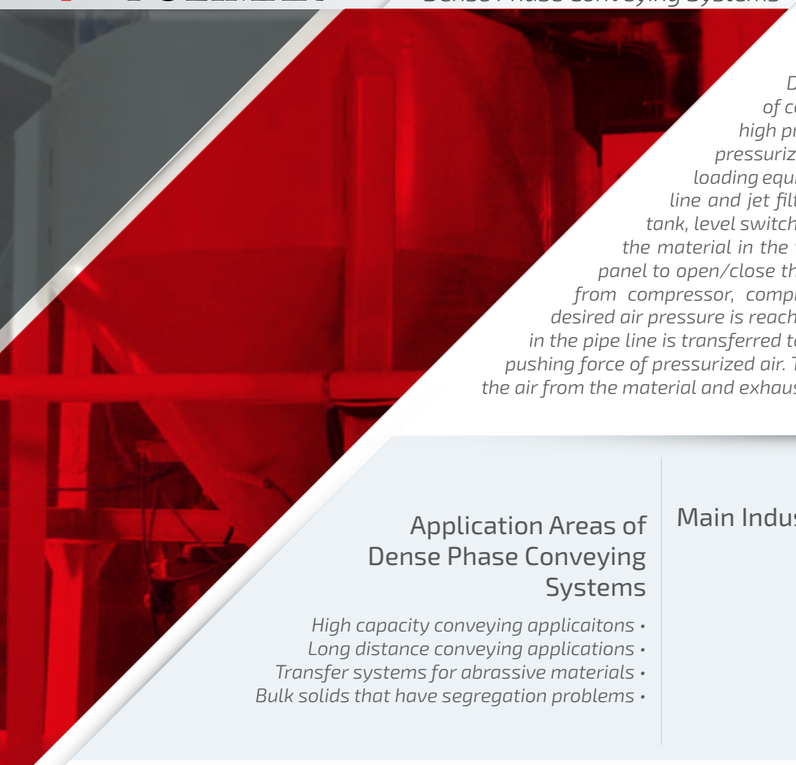
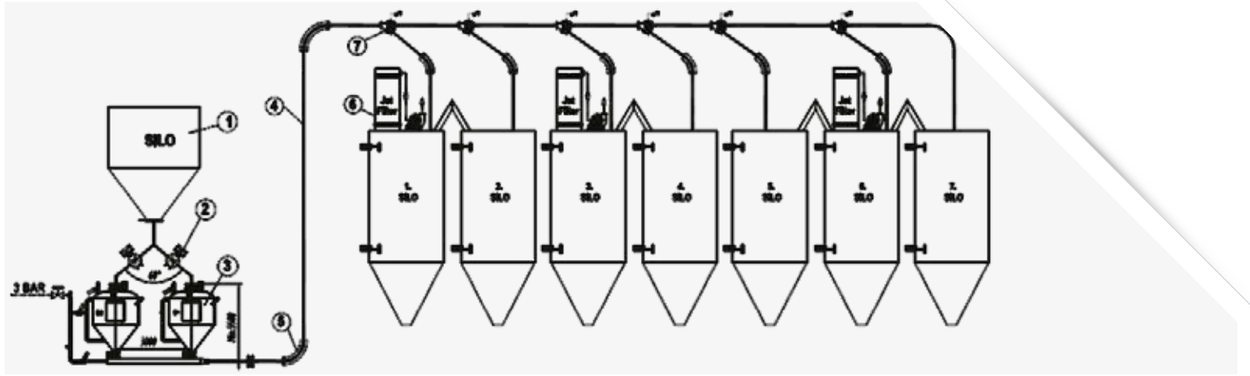
Dense Phase Conveying Systems
POLİMAK®



Dense Phase Conveying Systems

Dense phase conveying systems are the system of conveying of the materials in the pipe-line with high pressure and low flow-rate. System consists of pressurized air supply (compressor), pressurized tank, loading equipments, pressurized air, injection valves, pipe-line and jet filter. The material is filled into the pressurized tank, level switches on the tank continously control the level of the material in the tank and send the signal to the main control panel to open/close the loading valve. The pressurized air provided from compressor, compresses the material in the tank. When the desired air pressure is reached, the injection valve is opened. The material in the pipe line is transferred to the storage silo or storage location with the pushing force of pressurized air. The jet filter above the silo is used to seperate the air from the material and exhausts the air from the silo. System is continously controlled from the control panel.

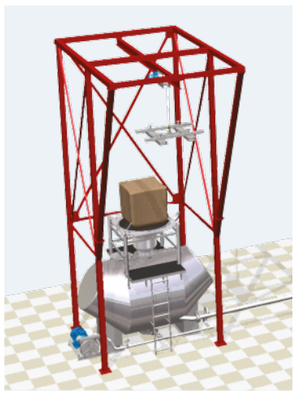


Application Areas of Dense Phase Conveying Systems

High capacity conveying applicaitons •
Long distance conveying applications •
Transfer systems for abrassive materials •
Bulk solids that have segregation problems •

Main Industrial sectors that use Dense Phase conveying systems

Construction Chemicals Industry •
Chemical Industry •
Iron and Steel Industry •
Detergent Industry •
Food Industry •
Rubber Industry etc •



Bigbag Discharge Station

Bigbag discharge stations are also known as Bigbag unloaders. Bigbag emptying stations let the user empty the material in any Bigbag or super sack and transfer it to another equipment like conveyor, mixer, silo etc. Bigbag unloading stations provide continuous and safe discharging of Bigbags. They also prevent any harmfull dust spread to the environment.

Operating Principle of Bigbag Unloading Station

Bigbag is brought to the carrier platform of the unit by the help of forklift or built in hoist. The access door below the bag is opened. The bag is untied or cut. Acess door is closed. The system is ran from the control panel. The product in the Bigbag is automatically discharged and transferred to the unit (conveyor, rotary valve etc) connected to the station.

Advantages

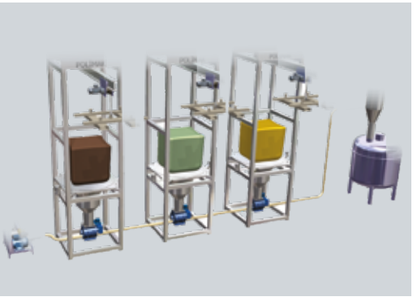
- *Safe and clean working environment*
- *Dust free environment air*
- *Simple handling of bigbags*
- *Applicable for different conveying and storage systems*
- *Wide range of models for different applications*
- *Easy to clean*
- *Maintenance free design*

Features

- *Rigid, steel construction*
- *Vibration motors and inclined hopper for better product flow*
- *Access door and locking system for easier opening of bags.*
- *Filter system for preventing dust.*
- *Hoist for better handling of bigbags*

Extra Options

- *Weighing and dosing system*
- *Food grade stainless steel construction*
- *Bigbag cutting kit used to cut the Bigbag as it is placed on the unit*
- *Pneumatic activators to increase product flow rate*



Loading a Bigbag to the system

Bigbag discharge, storage, weighing, dosing and conveying system

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Bigbag Discharge Station
POLİMAK®

ATEX Certified Bigbag discharge systems

Bigbag discharge, storage, weighing, dosing and conveying system

Bigbag discharging and silo filling

The compacting pistons are used to improve the product flow

Filling the reactor tank from Bigbag

Bag Dump Station

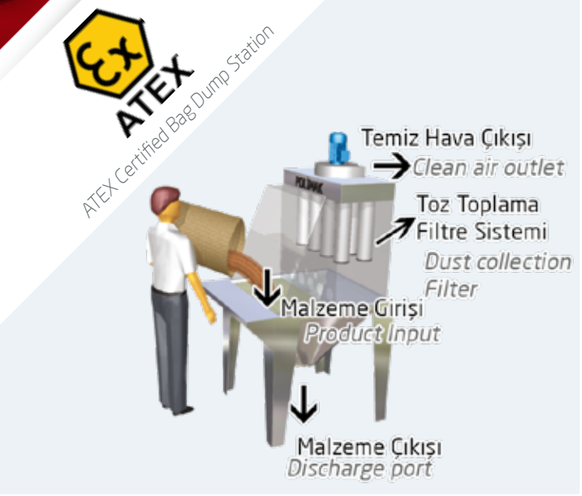
Bag dump stations are also known as bag unloaders. Bag dump stations let the user empty the material in any bag, drum or any similar container and transfer it to another equipment like conveyor, mixer, silo etc. While unloading the bag, the emmited dust is vacuumed by the system. The air is filtered and dust is sent back to the process. Bag dump stations prevent any harmfull dust spread to the environment.

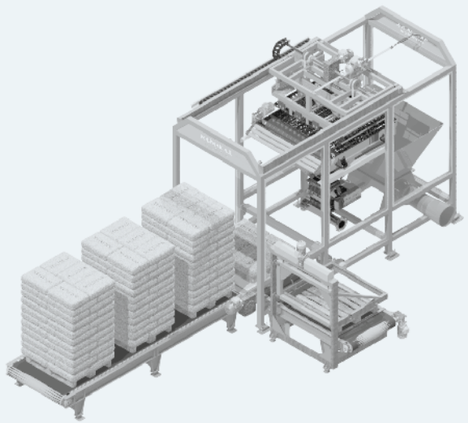
Advantages

- *Safe and clean working environment*
- *Dust free environment air*
- *Easier discharging of bags, sacks and drums*
- *Applicable for different conveying and storage systems*
- *Wide range of models for different applications*
- *Easy to clean*
- *Maintenance free design*

Features

- *Rigid, steel construction*
- *Vibration motors for better product flow*
- *Filtrering system*
- *Jet pulse system for automatic filter cleaning*
- *Cartridge type replacable filters*
- *Powerfull vacuum fan*





Automatic Bag Discharge System

Automatic bag discharge system is used to empty bags that contain products in powder or granular form, with high capacity and convey them to the desired location in a dust free environment.

- *The bags loaded on conveyor belt of the system are automatically cut.*
- *The contents of the bag are discharged from the machine with the help of a screw feeder or rotary valve.*
- *The waste bags are collected in other place*

Screw Conveyor

Screw conveyors are used to mechanically convey powdered and granular materials. Screw conveyors are also known as screw feeders or helical conveyors. Bulk material transportation can be done between two points by using screw conveyors. There exists wide range of screw conveyor types depending on the application. The physical properties of bulk solids and type of application effects the design of screw feeder. Conveying capacity, horizontal and vertical distances, type of bulk solid should be considered to select a proper screw conveyor model. Screw diameter, screw pitch, inlet and outlet dimensions, motor power and casing type are major properties of screw conveyors.

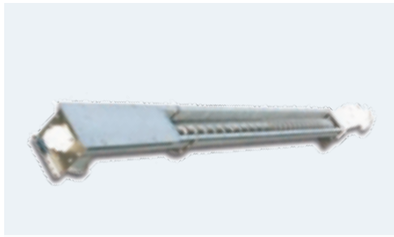
Types of Screw Conveyors

Tubular Screw Conveyor
O type screw conveyor
U Type Screw Conveyor
U type screw feeders are used in bulk solids which may stick on the helical screws and should be cleaned manually.
Stainless Steel Screw Conveyor
Used in production of foods, medicines and similar raw materials.
Hardox Screw Conveyors
Used in abbrassive products.

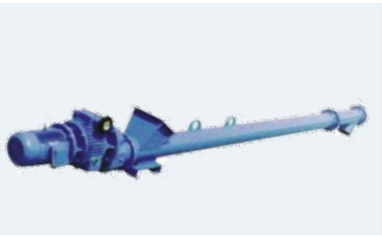
Stainless Steel Screw Conveyor

Dosing Screw Feeders

Hardox Screw Conveyors



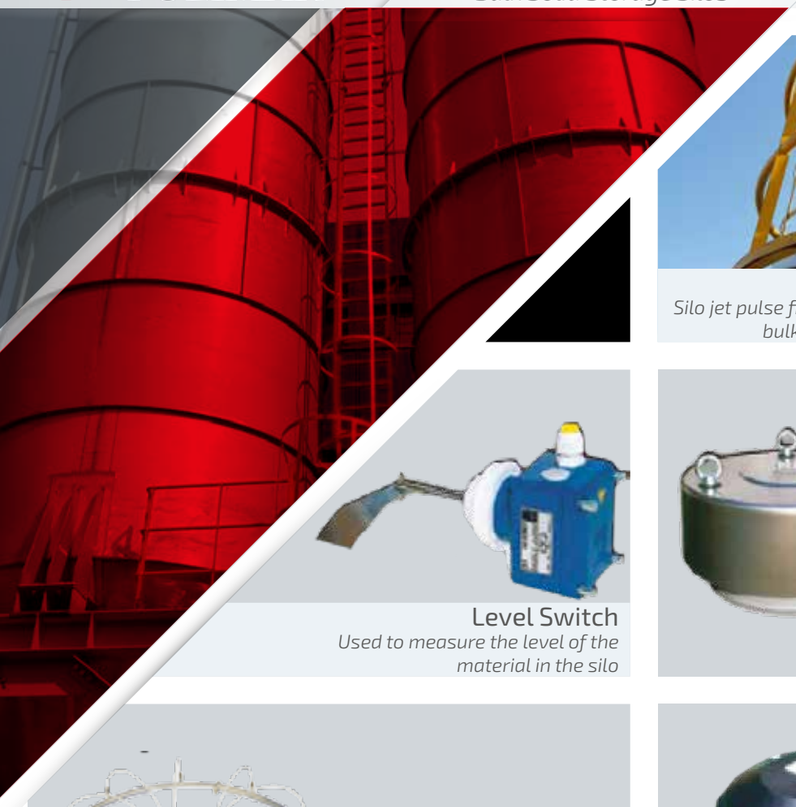
U Type Screw Conveyor



Tubular Screw Conveyor

Cement Screw Feeder

Mobile Screw Feeder With Hopper



Jet Filters

Silo jet pulse filters, filter the dust in the air while filling the silo by bulk trucks or pneumatic conveying systems.

Level Switch

Used to measure the level of the material in the silo

Silo Safety Valve

Discharges the high pressurized air from the silo to prevent any damage.

Silo Aeration System

Used to fluidize the contents of silo by appliying pressurized air.

Pressure Sensor

Measures the pressure of the air in the silo to prevent exccessive pressure rises.

Control Panel

Jet filter, level switch, pressure sensor, alarm and pinch valve are connected to the control panel. The system works automatically to control filling, measure levels and maintain safety of silo.

Pinch Valve

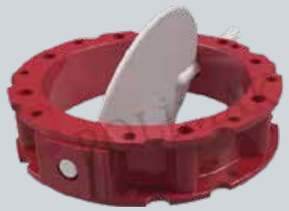
Being connected to the pipeline inlet of silo, pinch valves close the pipeline to protect the silos from overfilling.

Discharge Screw Conveyor

Used to discharge the material from the silo.

Pneumatic Conveying Elbow

Elbows are used in pneumatic conveying systems to prevent any abrassion on bending points. The special pocket design is used to accumulate the conveyed material. It prevents any direct hit of material to the elbow body.



Butterfly Valve

Used control the discharge of silo

Silo Top Jet Filter

Silo vent jet filter is a dust collector for venting of silos, containers, and mixing systems that are pneumatically filled with bulk goods.

While bulk trucks or pneumatic conveying systems filling silos which have just an air opening above, the conveying air goes out from the opening. Not only the air but also the dust comes out of the silo and the air is polluted. Silo top jet filters prevent the dust to come out of the silo and also prevents the product loss.

without filter

with filter

Dust Collection Systems

ATEX Certified Dust Collection Systems

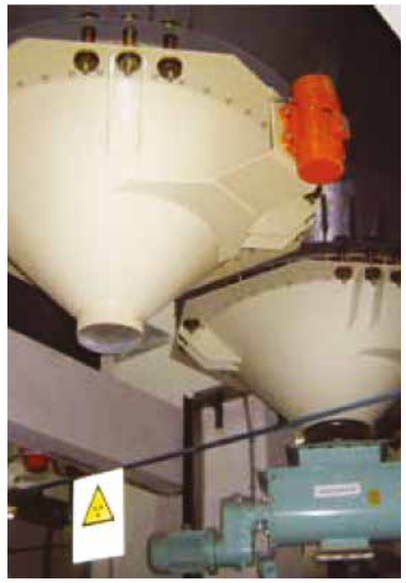
ATEX Certified Big Bin Activator

Bin Activator

Bin activators assist discharging of bulk solids in powder or granule form from the silo and hopper. Because of the environmental conditions and weight of the material within the silo, it is hard to have free flow of bulk solid through the outlet port of the silo. Bin activator vibrates the material with the help of built in vibration motor and fluidizes the material. The poliurethane bellow and vibration dampers protects the silo body from the vibration.

Features

- *Steel construction body with wide range of dimensions*
- *Wear-resistant polyurethane bellow between silo and chassis*
- *Single or double vibration motor*
- *Steel stubs to connect the chassis to the silo.*
- *Vibration dampers and springs to protect the silo boydy from vibration*
- *Suitable for connecting different types of feeding and dosing equipment.*
- *Carbon steel, stainless steel and teflon coated body options are available for wide range of applications*



Loading Bellow

Tanker and open truck loading bellows are used to fill tankers and trucks with bulk solids while preventing any dust. Bulk materials coming from silo or screw feeder pass through the loading bellow. The retractable loading bellows make the system flexible for different sizes of trucks.

Tanker Loading Bellow

Tanker loading bellows provide dust free loading of tankers and bulk trucks. Bellow head is placed on tanker inlet. Valve above the bellow is opened and powdered material begin to flow. The double walled bellow prevents any dust leakage. Optional dust collector system is used to collect any remaining dusts in the environnment.

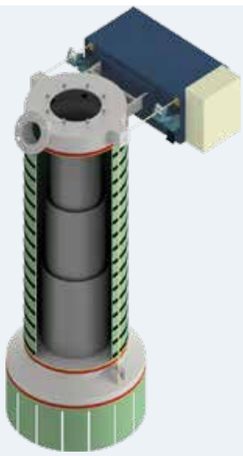
Open Truck Loading Bellow

Open truck loading bellows provide dust free loading of open trucks. Bellow is placed above the truck basement. Valve above the bellow is opened and powdered material begin to flow. The bellow automatically raises when the bottom side begin to raise. The double walled bellow prevents any dust leakage. Optional dust collector system is used to collect any remaining dusts in the environnment.

Ship Loading Bellow

Ship loading bellows provide dust free loading of ships. Bellow is placed above the ship basement. Valve above the bellow is opened and powdered material begin to flow. The bellow automatically raises when the bottom side begin to raise. The double walled bellow prevents any dust leakage. Optional dust collector system is used to collect any remaining dusts in the environnment.

ATEX Certified Loading Bellows



Clinker Loading Bellow

Blower

Polimak manufactures roots type positive displacement blowers for industrial applications such as pneumatic conveying of bulk materials (food, cement, chemical material etc.) waste water treatment and fish farming processes. Roots type blowers can provide high volumes of air up to 1200 mBar of pressure and 500 mBar of vacuum depending on operating conditions.

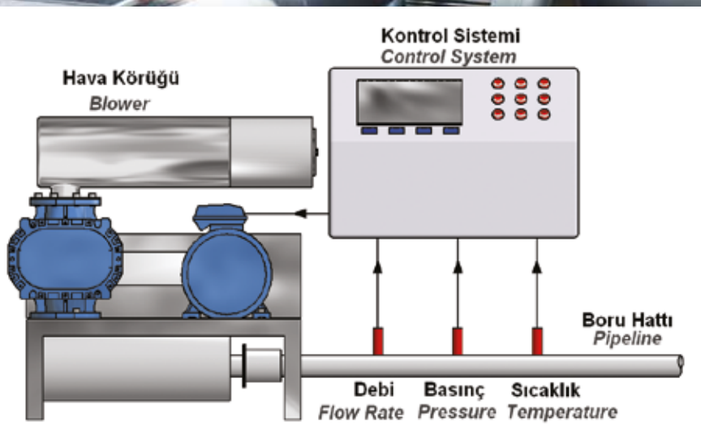
Root Blowers are used in the following applications

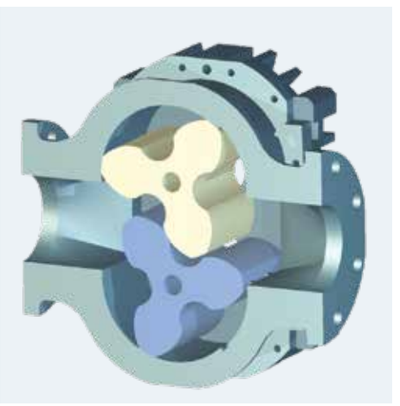
- *Pneumatik conveying (food, cement, mining, plastic granules, fly-ash)*
- *Waste water treatment*
- *Aquaculture aplications (water aeration in fish farms)*
- *Asphalt machines*
- *Air knives*
- *Drying applications*
- *Pulp and paper industry*
- *Miling*
- *ULV applications*
- *Vacuum applications*

ATEX Certified Loading Bellows

Automatic Blower Control System

- *System is used to control the air supplied from the blower units.*
- *Air flow rate and pressure in pipelines are continuously measured by sensors.*
- *Required air flow rate can be adjusted by the operator from the control panel.*
- *Air flow rate can be adjusted to fulfill the demands of process at any time*
- *The control system can be adjusted to supply constant air flow rate or constant air pressure to the process. The rest of the job is done by the control system automatically.*
- *If the process limits are exceeded, the system automatically changes to safe working mode and informs the user by alarm.*
- *The air flow control is handled continuously, which leads to supplement of demand accurately. This also leads to decrease of energy consumption by 20-40%. (depends on process conditions)*





FT Series

Flow through rotary airlocks are used in wide range of applications.

ATEX

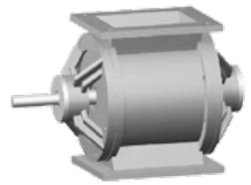
ATEX certified rotary valves for powdered bulk solids that have explosion risk.

BT Series

Blow through rotary valves are used in pneumatic transport systems. They are suitable for tranfering sticky powdered materials.

OS Series

The Off Set type rotary feeders are used for preventing crackage of delicate materials like sunflower seed and peanut. These models are also suitable for hard to shear pellets like nylon or plastic granules.

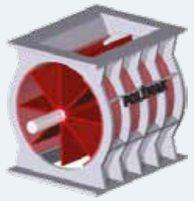


Option D

It is used in abbrasive materials and dusty environments

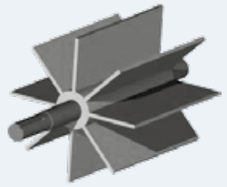
Option SS

Stainless steel material is used in food and chemical industry



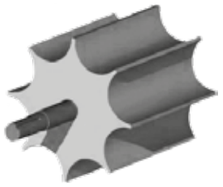
Option H

Hardox materials is used in highly abbrassive conditions.



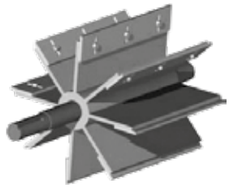
Open End Rotors

Open end rotors are generally used in blow through type rotary feeders.



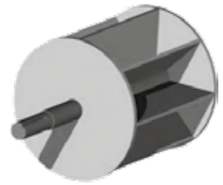
Scalloped Rotors

The scalloped rotor design is suitable for sticky materials.



Adjustable Bladed Rotors

Adjustable blades are used in handling abbrassive materials for longer operational



Closed End Rotors

Closed end rotors reduce air leakage. They prevent wear on side covers of airlock when handling abrasive materials.

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ATEX Certified Loading Bellows

Rotary Airlock

Rotary airlocks are important components of pneumatic conveying systems. Rotary airlock is also known as rotary valve, rotary feeder or airlock feeder. The main function of a rotary valve is to control flow of bulk solids from silo, mixer, cyclone or hopper under gravity, pressure and vacuum conditions.

Rotary Airlock Application Areas

Silo Discharge: *The rotary valve placed under the silo or dust collection system is used to control the bulk solid discharge.*

Dosage Control: *By controlling the rotation speed of the airlock feeder, volumetric metering and dosing of granular solids is achieved.*

Dust Collection: *The airlock mounted under a cyclone is used for discharging the cyclone.*

Pneumatic Transportation: *Rotary valves mounted under cyclones, silos or hoppers are used to feed the pneumatic conveying line.*

Diverter Valves

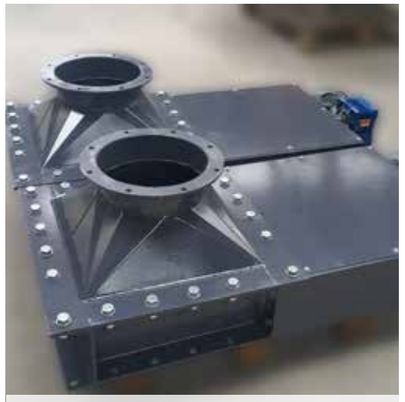
Diverter valves are used to route granules, powders or pellets in the pipeline with minimum degradation. There exists different models for wide range of applications. Diverters can be controlled manually, with pneumatic actuators or electrical motors.

Plug Type Diverter Valve

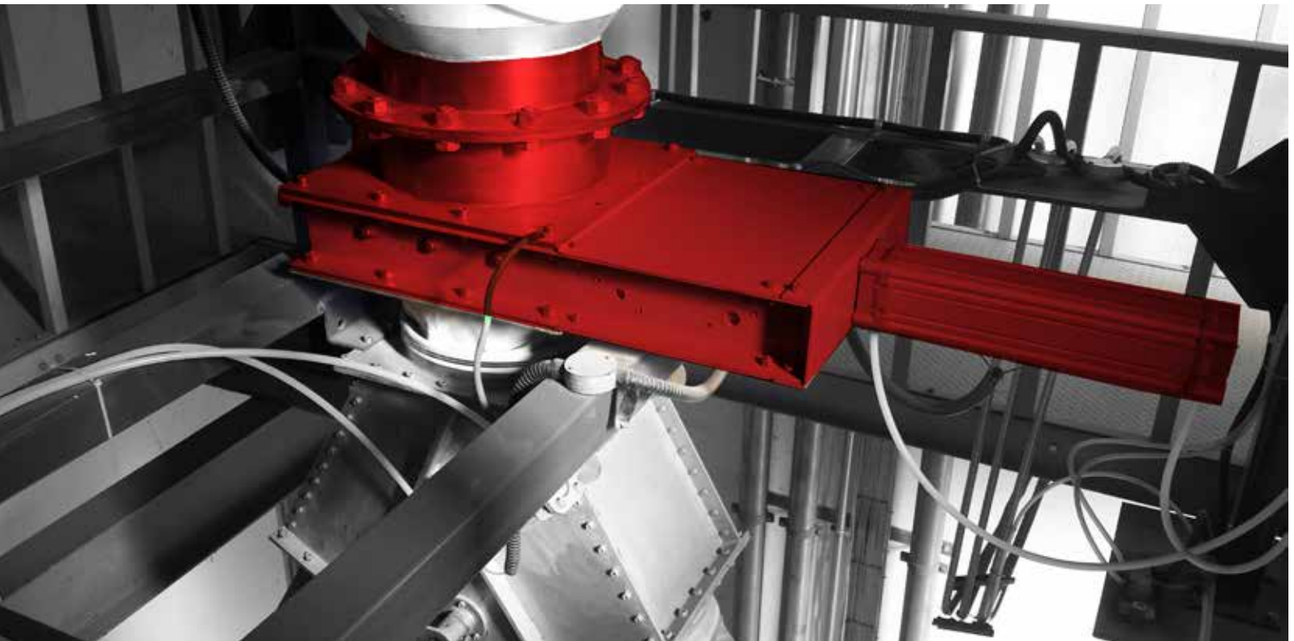
Plug type diverter valves are used in pneumatic conveying systems to route granules, powders or pellets in the pipeline with minimum degradation. The plug type diverter valves are both ideal for pressure and vaccum bulk solid handling systems. They offer a good sealing between pipings and external medium. The diverter valve consists of a rugged carbon steel cast body which houses a cast twin pipe plug between apair of end covers. Bulk solids handled pass from one line through a tunnel within the plug to either of the two outlet lines. The twin pipe plug combines the benefits of both a constant and a low rotational angle. The material stream is diverted to the selected outlet by rotating the plug through 43°. For abbrassive materials and food applications the valve parts are constructed from 304 -316 stainless steel which ensures maximum durability and safety. Pipe connections can be supplied as either plain pipe ends or flanged as required.

Custom designed diverter valve

Flap type gravity diverter valve



Slide gate valve



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Diverter Valves
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Flap Type Gravity Diverter Valve

They are used to route the material from one point to two locations. Can be controlled manually or pneumatically. Special seals are used to prevent contamination

Pneumatic Type Diverter Valve

Used in pneumatic conveying systems. Can be controlled manually or pneumatically. Special seals are used toprevent contamination

Multiport Diverter Valve

Used in applications that divert materials from one point to multiple points. Up to 12 ports with different pipe sizes are also available. Multiport diverter valves are PLC controlled and electrical motor driven.

Slide gate Valve

Slide gate valve for silo unloading controls the unloading of silos

Custom Design Diverter Valves

Diverter valves can be custom designed for special applications.

Pinch Valve

Pinch valves are used to control the flow of bulk solids in pneumatic conveying lines. Actuation of the valve, the pinching action is accomplished by air pressure placed on the sleeve. The flexible sleeve tightly closes the line. When the valve is open, there is no internal parts or geometries that can block or slow down the flow.

ATEX Certified Bin Activators

Pneumatic type diverter valve

Flap type gravity diverter valve

Pneumatic type diverter valve

Slide gate valve

Flextube diverter valve

Pinch valve

Pinch valve

Butterfly valve

Slide gate valve

Multiport diverter valve

Custom designed diverter valve

Custom designed diverter valve


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