

THE YOUNG INDUSTRIES INC.

APPLICATION NEWS ~ AN-23

TRANSVAIR MECHANICAL CONVEYOR OVER-LOAD CONTROL PANEL

Young Industries has developed an *Over-Load Control Panel* that is specifically engineered to provide protection for the rope assemblies used in the TransVair Mechanical Conveyor Systems.

HOW IT WORKS!

The panel monitors the power usage when conveying and has a pre-set over-load and time duration setting. If the pre-set conditions are sensed by the panel, the conveyor will stop *before the rope assembly breaks*.

ADDITIONAL FEATURES:

The panel has its own motor starter.

The motor starter is a soft-start to gradually bring the conveyor up to operating speed, adding life to the rope assembly when frequent starting and stopping occurs.

The panel can operate in forward and reverse, which in some conditions is an advantage for clearing the conveyor of product.

The panel is available with many different options for adapting to existing control systems. The panel can be customized to meet the user's requirements.

ADVANTAGES:

If the conveyor discharge becomes plugged and the TMC re-circulates product, the conveyor will stop prior to breaking the rope assembly.

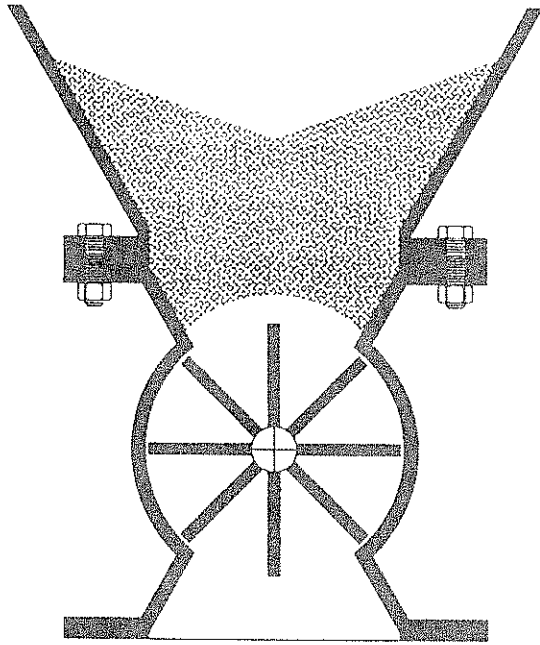
If product builds up in the conveyor causing additional drag on the discs, the conveyor will stop prior to breaking a rope assembly.

When taking into consideration the cost of a motor starter the addition of the control feature is minimal and normally can be less cost than a replacement rope assembly.

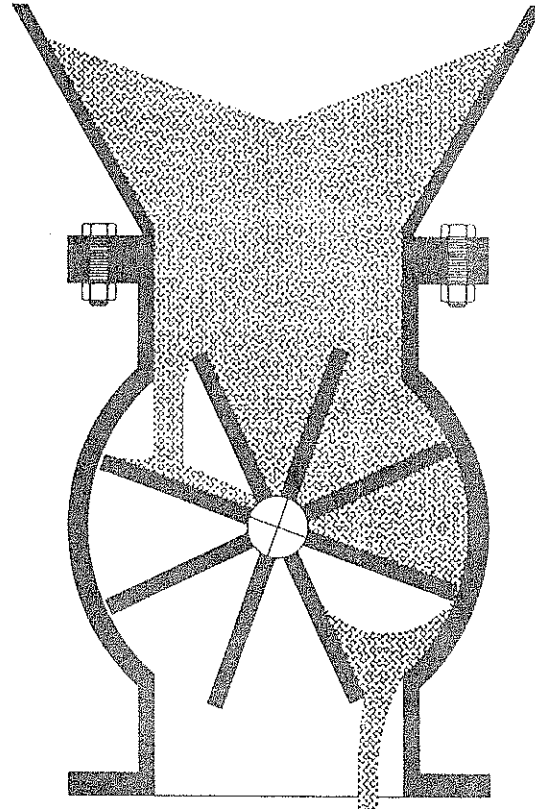
AVAILABILITY:

The motor-overload control panel is available for all new Conveying Systems and may also be retrofitted to existing TransVair or Aero Mechanical Convey Systems.

ROTARY VALVE FLOW-PROBLEMS?



TYPICAL DROP-THRU
ROTARY VALVE



YOUNG INDUSTRIES
MODEL "HC" ROTARY VALVE

The discharge connection of your hopper has probably been designed to have a large enough opening to optimize material flow. A typical Drop-Thru Rotary Valve as shown above has a tapered inlet throat, which reduces the flow area. In many cases when handling dry powders, this condition may create bridging of material, or erratic flow conditions.

Young Industries Model "HC" Drop-Thru Rotary Valve has a vertical inlet throat. This Valve lets material flow directly from the hopper discharge into the rotor pockets. As illustrated above the larger flow area will create superior flow conditions through the Valve. If you are currently having flow problems through a Rotary Valve, or are installing a new Valve in your process consider using *Young Industries Model "HC" Rotary Valve*.

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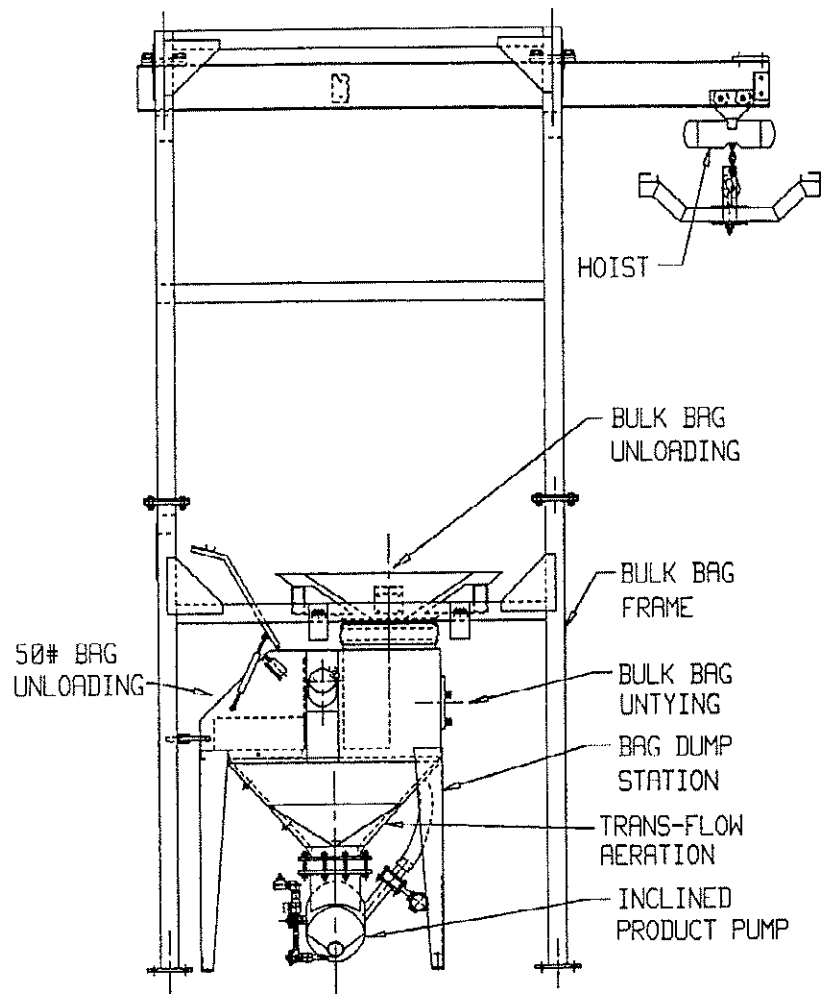
APPLICATION NEWS ~ AN-21

Requirement

The customer required a **Bulk Bag and 50# Bag Unloading and Convey System to handle TiO₂**. The TiO₂ was to be unloaded from bulk bags or 50# bags and conveyed to a mix tank. This system was to be designed to convey at a rate of 10,000 pounds per hr over a distance of 150 feet. Dust control and reliability were major factors in the system design.

Solution

Young Industries supplied a Bulk Bag and 50# Bag Unloading Station with an Inclined Product Pump Convey System to meet the requirements. Bulk bags are lifted by hoist, and positioned on a vibratory activator hopper to assure continuous material flow. 50# bags are dumped through a special additional door. Trans-Flow fluidization was installed on the hopper to eliminate bridging of material in the bag. A 1.25 cubic feet inclined product pump was specially designed utilizing Trans-Flow fluidization for conveying the TiO₂. Dusting was controlled by an existing dust collection system. Self-contained dust collection systems are available if required. The required system conveying capacity of 10,000 pounds per hour was exceeded and the dusting problem eliminated.

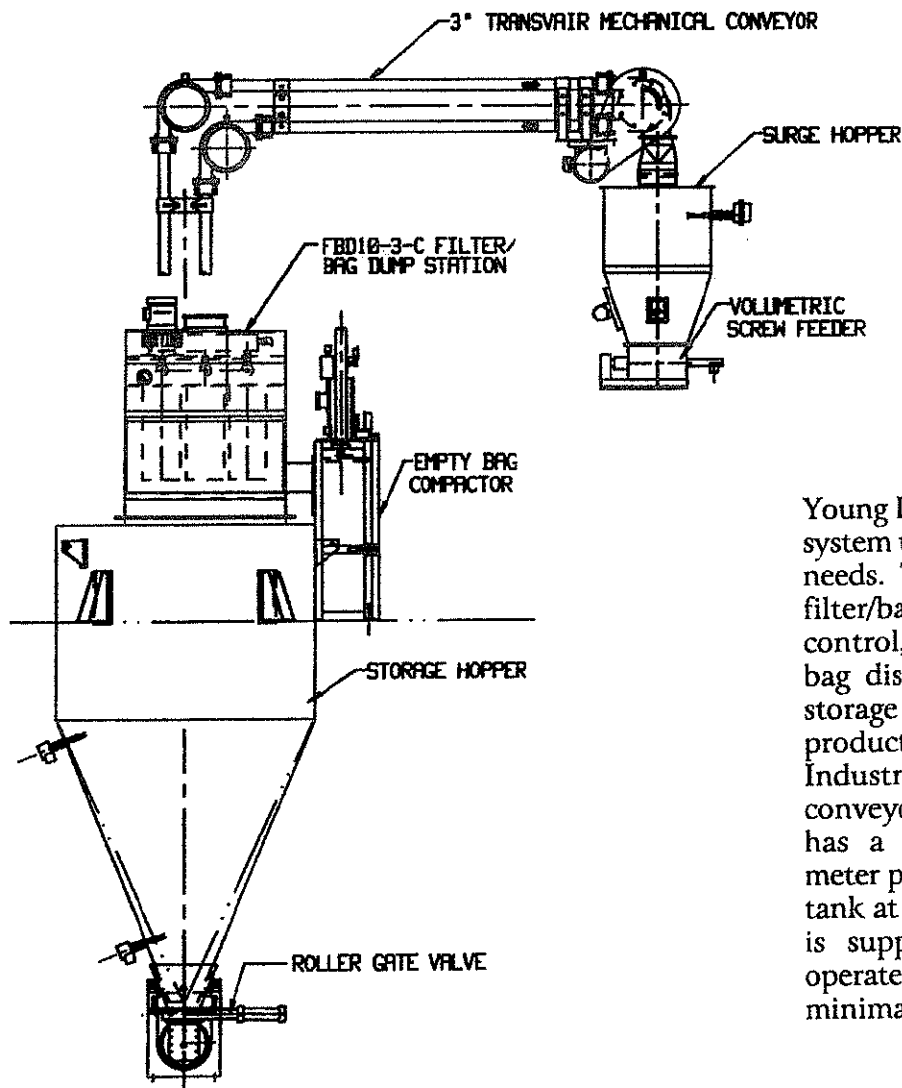


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APPLICATION NEWS ~ AN-20

Requirement

The customer wanted a system that would allow the plant operator to dump a large quantity of 50 pound bags of filter aid once per shift and continuously meter product into a mix tank at a controlled rate.



Solution

Young Industries supplied a complete system that took care of the customer needs. This included a self-contained filter/bag dump station for dust control, an empty bag compactor for bag disposal and a 150 cubic foot storage tank. From the storage tank, product is conveyed by a Young Industries TransVair mechanical conveyor into a surge hopper which has a volumetric screw feeder to meter product into the customers mix tank at a controlled rate. The system is supplied with control logic to operate the system continuously with minimal manpower requirements.

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APPLICATION NEWS ~ AN-19

ROTARY VALVES OF TITANIUM CONSTRUCTION

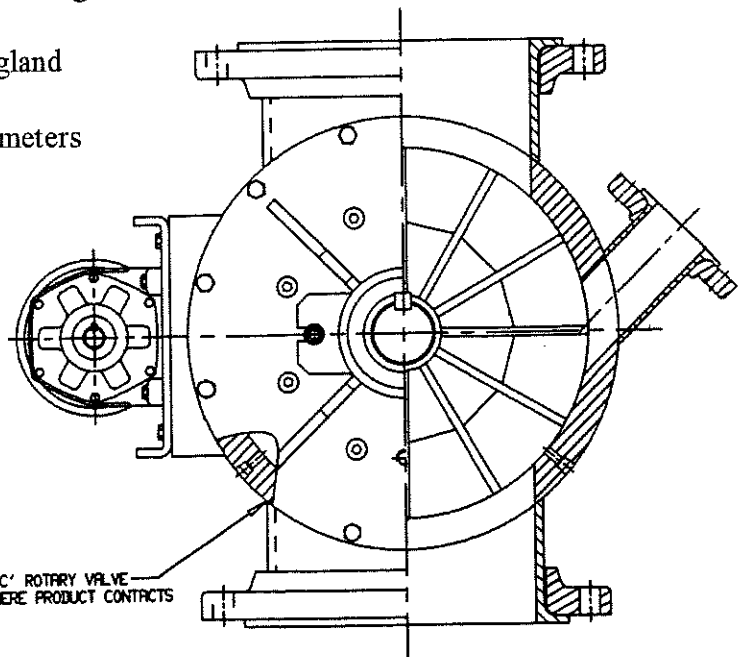
Requirement

The customer had a need for several Rotary Valves to handle an extremely corrosive material. The application dictated that the Rotary Valves be designed to operate at a pressure of 30 PSIG, and a temperature of 400 Deg. F. Due to the corrosive nature of the product being handled in the Rotary Valves, *Titanium* was selected as the material of construction.

Solution

Young Industries manufactured Size 12" Model HC Rotary Valves constructed of *Titanium*. The Valves were designed and manufactured to meet the exact requirements of the application. Additional features of the Rotary Valves are as listed below.

- * Replaceable *Titanium* wear sleeves on the rotor shaft
- * Vent connection in the Rotary Valve housing
- * Self-adjusting, spring loaded packing gland
- * Special gas purging system with flow meters



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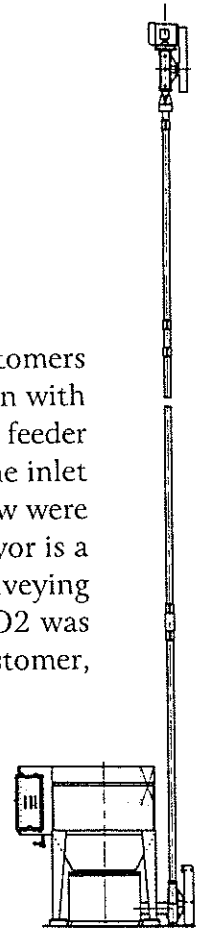
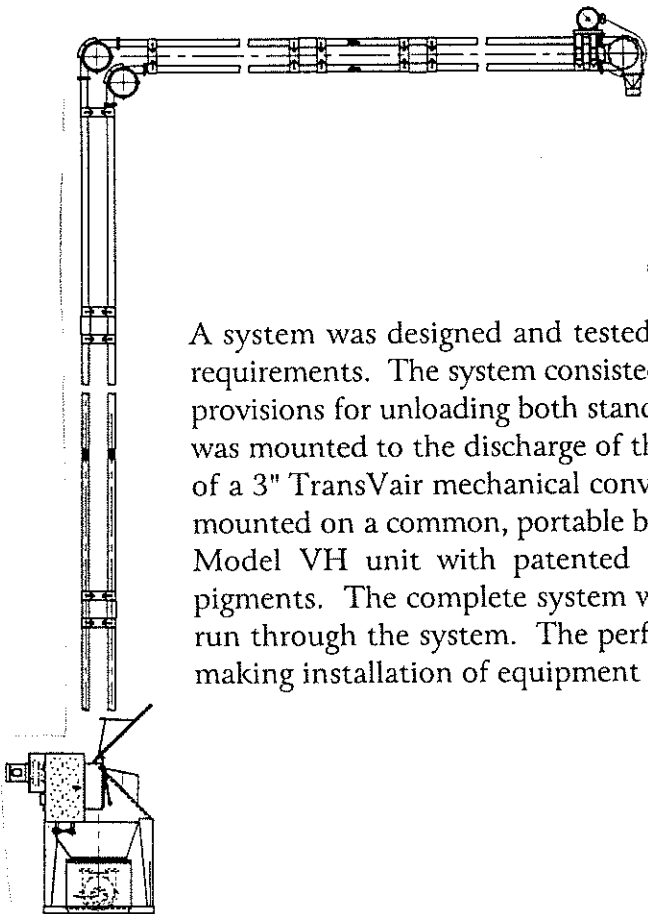
APPLICATION NEWS ~ AN-18

Requirement

Customer required a bag and bulk bag unloading system for titanium dioxide. The first concern was dust control at the dumping area. The system would be required to convey titanium dioxide at a controlled rate on a continuous basis. The system would be designed to be used in several potential applications. Due to the problems with handling TIO₂, the customer wanted the system to be tested before arriving at the plant site.

Solution

A system was designed and tested by Young Industries to meet the customers requirements. The system consisted of a FBD 42-8 filter/bag dump station with provisions for unloading both standard and bulk bags. A volumetric screw feeder was mounted to the discharge of the dump station to meter TIO₂ into the inlet of a 3" TransVair mechanical conveyor. The bag dump station and screw were mounted on a common, portable base. The TransVair mechanical conveyor is a Model VH unit with patented features specifically designed for conveying pigments. The complete system was set-up at Young Industries and TIO₂ was run through the system. The performance test was witnessed by the customer, making installation of equipment at the plant site easier.



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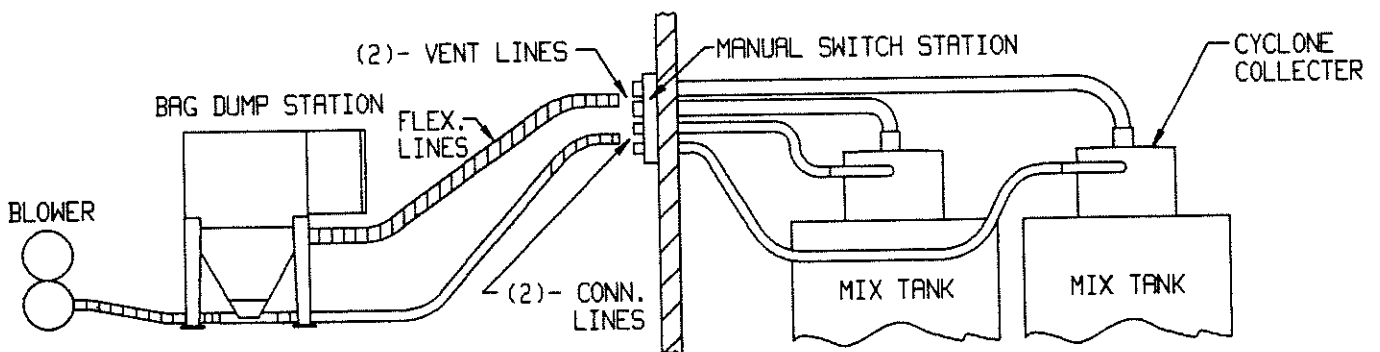
APPLICATION NEWS ~ AN-17

Requirement

Several times each year there is a requirement to load Dicalite into two mix tanks located outside of the building. There is not a dedicated space for locating unloading equipment so the equipment must be portable. The mix tanks located outside the building do not have any type of access platforms. This means the portion of the convey system located outside must be stationary and not require regular maintenance. There is no provisions for dust control in the area.

Solution

Young Industries supplied a special Model FBD10-4-C filter/bag dump station for controlling dust during the bag dumping operation. A Venturi eductor was used to draw a negative pressure on the bag dump station hopper. The bag dump and Venturi were mounted on a portable base. A positive displacement blower was located in a permanent location, approximately 20 ft. from the bag dump station. A manual switch station was mounted on the wall with permanent convey lines routed to each tank. At each mix tank was a high efficiency cyclone collector. The clean air discharge of the cyclone was routed back to the filter/bag dump station for dust control. The closed loop system enabled the customer to have a system which did not take much permanent floor space while offering efficient dust control. With this system there is no need to have access to the mix tanks and set up time is minimal.



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APPLICATION NEWS ~ AN-16

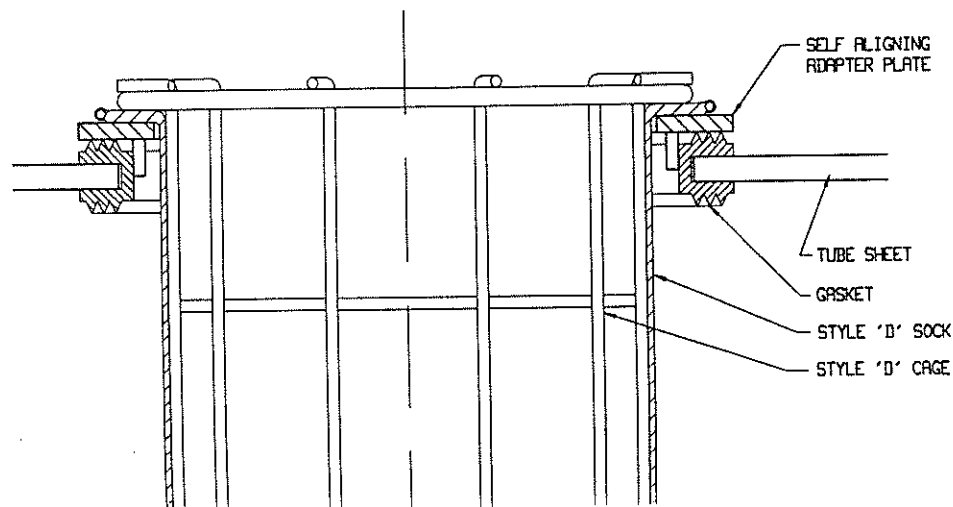
Requirement

Customer had purchased a VC Uni-Cage filter in 1977, equipped with Style 'C' filter tubes. Over the years customer had several instances where the filter bag slipped down on the cage leaving a gap at the top of the cage. This would cause the inline filter at the inlet of the blower to plug causing the system to shut down.

Solution

Young Industries designed a special self-aligning adaptor plate to be used in the existing Uni-Cage filter. This adapter plate would mount directly above the Style 'C' gasket. The adapter plate has alignment pins to make installation simple. Once the adapter plates are installed Young Industries Style 'D' flanged filter bag and cage are installed. The Style 'D' bag and cage eliminate the problem of bag slippage and leakage. The solution saved on excessive down time and was simple to install.

ADAPTER ASSEMBLY



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APPLICATION NEWS

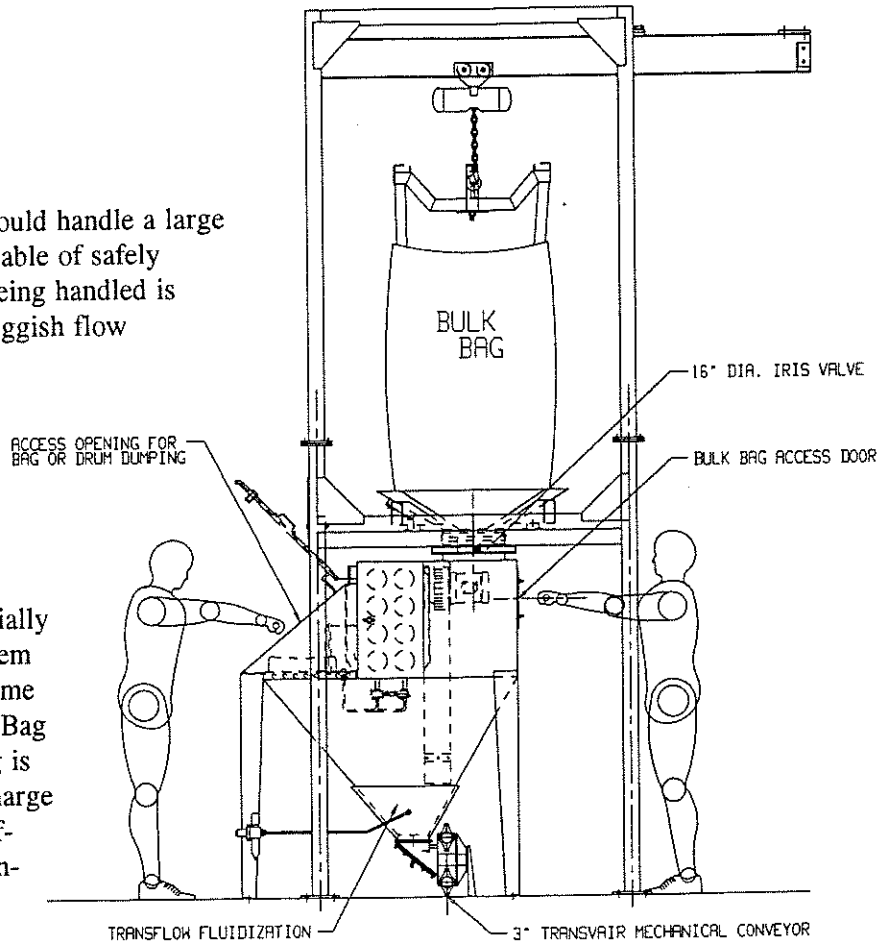
AN-15

REQUIREMENT

The customer required a system that would handle a large volume of 50 lb. Bags, but still be capable of safely discharging Bulk Bags. The product being handled is a fine powder, that is dusty and has sluggish flow characteristics.

SOLUTION

Young Industries provided a complete Bag/Bulk Bag Unloading System, specially designed for the requirement. The system consisted of a Bulk Bag Unloading Frame with hoist to lift and position the Bulk Bag on an Activator Hopper. The Bulk Bag is vibrated intermittently during the discharge cycle. Product is discharged into a Self-Contained Filter/ Bag and Bulk Bag Unloading Station.



The Unloading Station is provided with two separate inlet openings. One opening is dedicated for Bulk Bags, while the second opening is dedicated for standard Bags. The station is equipped with a 1200 CFM fan and continuous cleaning pulse jet filter. The station is designed for unloading both Bags and Bulk Bags simultaneous. A special baffling system is incorporated in the unit to optimize dust control at both inlet openings. To convey product from the hopper, a 3" Transvair Mechanical Conveyor is used. This Conveyor is dust-tight and conveys at a rate of 8 cu.ft./min.. Transflow fluidization is installed in the Unloading Station hopper to maintain product flow into the Transvair Mechanical Conveyor System.

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Application News

Edition No: AN-14

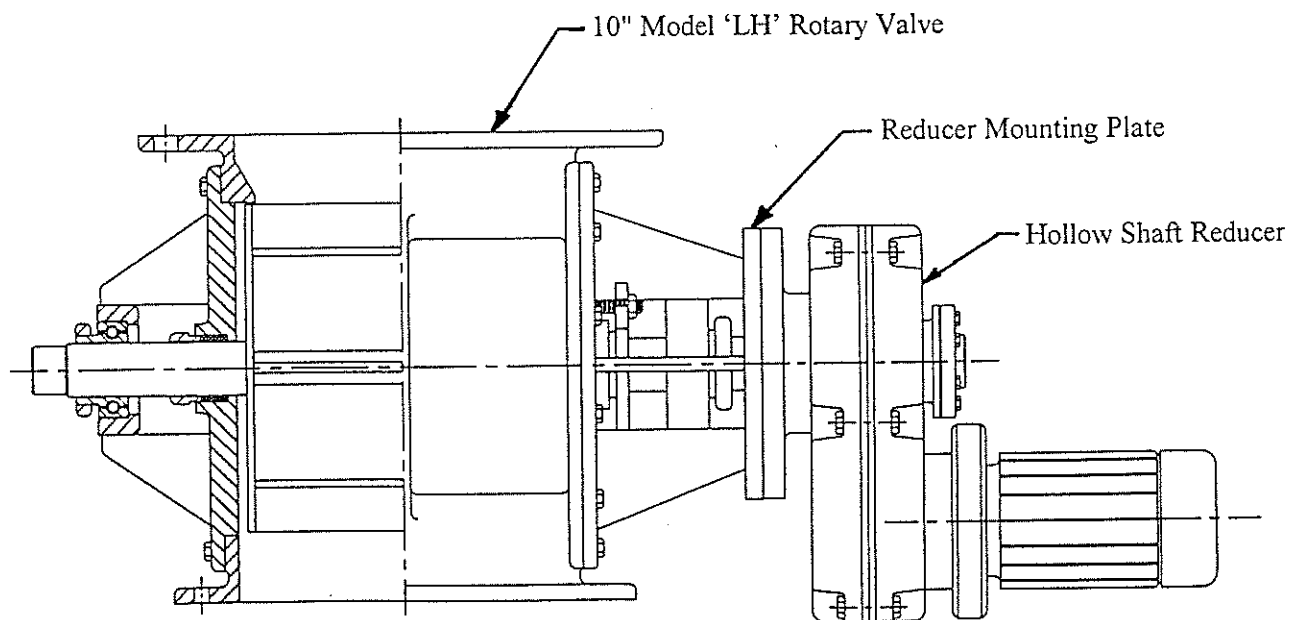
November 1997

REQUIREMENT

The customer required a rotary valve complete with a drive, but would not allow the use of chain drives or direct drive coupling. The customer had a space requirement problem that required a *UNIQUE* solution.

SOLUTION

Young Industries manufactured a rotary valve to utilize a hollow shaft reducer with a c-face motor. The end plate was designed to allow for the mounting of the hollow shaft reducer. This was done by adding a mounting flange to the outside of the drive end side plate. The rotor shaft was extended to slide thru the reducer when mounted. The rotor shaft is keyed and will be direct driven by the reducer at a fixed speed. This custom drive arrangement was utilized to meet the customers needs.

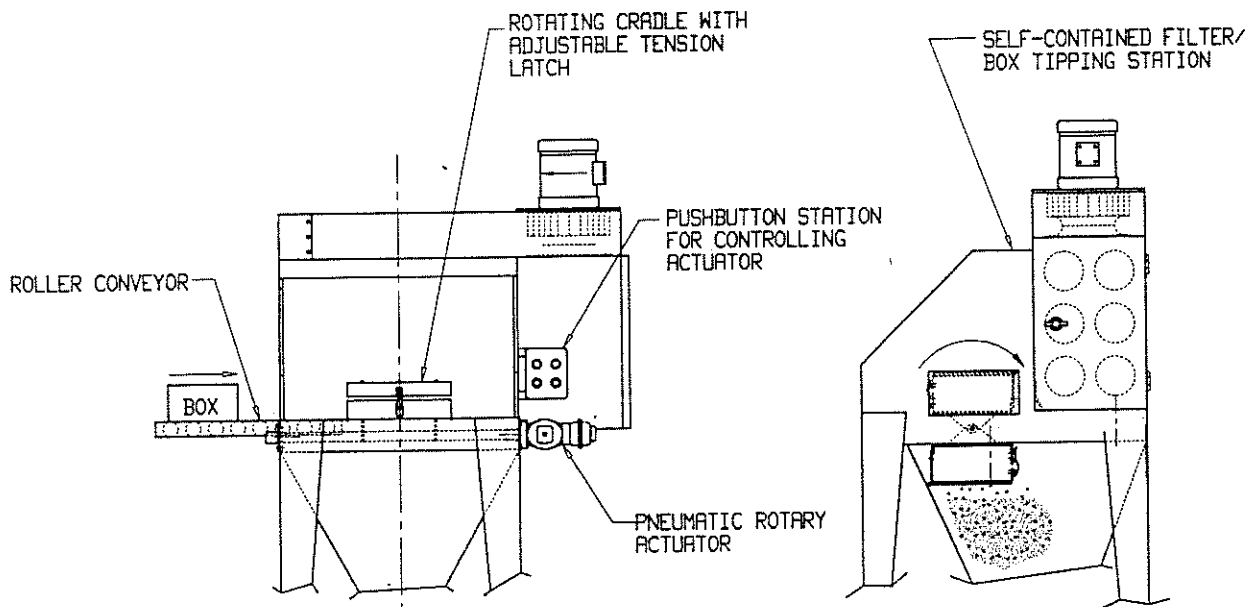


The Young Industries

Application News

Edition: AN-13

AUTOMATIC BOX TIPPING SYSTEM



REQUIREMENT

Small boxes of powder are to be dumped and conveyed. The boxes are approx. 12" square by 9" high. Because of the exposure limits for contact with the product, the customer requires a system that will automatically tip and dump the contents of the box, with minimal personnel contact. An integral dust control system is required to provide dust containment.

SOLUTION

Young Industries provided a special Model FBD 30-6 Self Contained Filter/Box Dump Station. This unit has a roller conveyor attached to the side of the station. A box of product is rolled from the roller conveyor onto the rotating cradle. With the *Self Contained Pulse Jet Filtration System* providing dust containment, the cradle(with box) is rotated 180 degrees, and the contents of the box drops into the hopper provided. The cradle is then rotated back to the original position, and the empty box removed from the cradle.

The system provided by Young Industries assures that personnel have minimal contact with the product. The rotation of the box in the cradle completely empties the contents of the box. The system was customized to meet the exact needs of the user.

The Young Industries

Application News

Edition: AN-12

CUSTOMIZED BULK BAG UNLOADING SYSTEM

REQUIREMENT

Customer required a specialized Bulk Bag Unloading System to be installed in a confined area above a Mix Tank. Dust containment was an important requirement due to the toxicity of powder being handled.

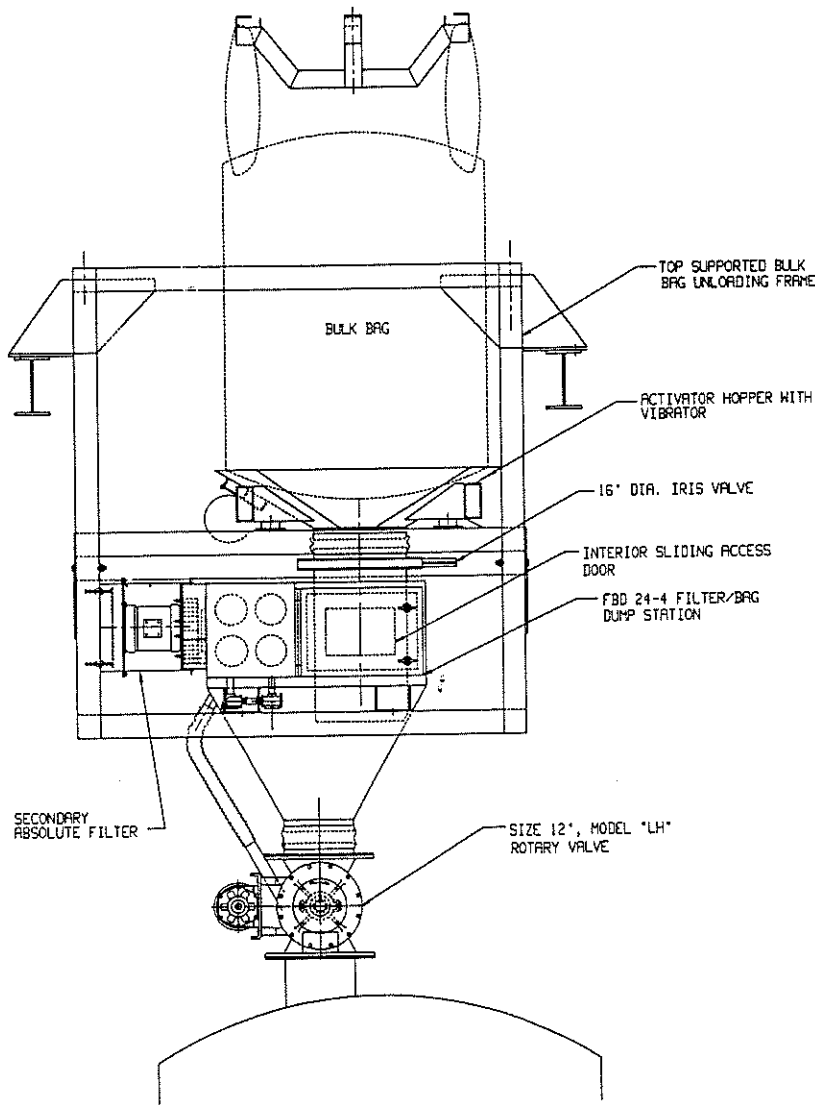
SOLUTION

Young Industries provided a special Top Supported Bulk Bag Unloading Frame. This frame included an Activator Hopper with vibrator to eliminate bridging of product in the Bulk Bag. Directly below the Activator Hopper is an Iris Valve connected to a Self Contained Dust Control Station. A Rotary Valve at the discharge of the station meters product into the Mix Tank.

OPERATION

Operator starts the Dust Control System, then opens Access Door and Interior Sliding Door. The Bag nozzle is pulled through the Iris Valve, and Valve is then closed around the nozzle. Nozzle is then un-tied. Sliding Door and Access Door are closed, then Iris Valve is opened. Product flows from Bag into hopper, and the Rotary Valve meters product into the process.

The system is designed to create a Dust-Free environment around Bulk Bag Unloading Area. Dedicated Dust Control System includes a Secondary Absolute Filter Element for maximum filtration efficiency. Safe-guards such as the Interior Sliding Access Door assures no product spills during Bulk Bag Unloading.



The Young Industries

Application News

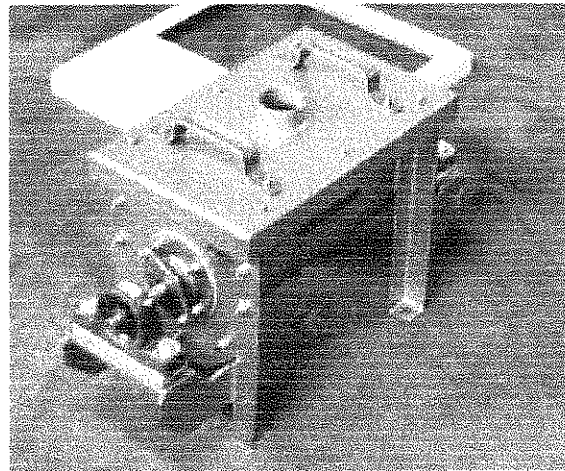
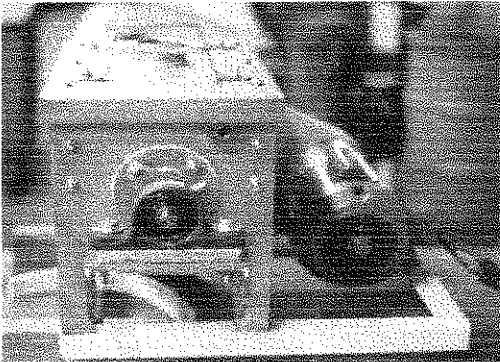
Edition No: AN-10

January 1997

Young Introduces New Lab Mixer

Corporations today are more cautious of how and where they spend capital funds. Spending money on capital equipment that does not meet process expectations is very costly. Too much time and product waste have always been two of the biggest problems in process development.

Young Industries has developed the means of performing accurate tests with less product waste in less time.



Bigger Is Not Always Better

This 1/4 cubic foot ribbon mixer is identical to a full scale model that was purchased from Young's. This miniature version mixer will allow the customer to do their own testing in their facilities with less product waste and reduce disposal cost. This unit will be operated by a single person who can simulate a variety of process variation in a fraction of the time than that of a full scale unit. This unit ensures exact up scaling and is available with all the same options as a standard unit.

Call Young Industries for additional information about lab and standard size horizontal ribbon mixers.



Shown above is Denny Shoemaker with the 1/4 cu.ft mixer.

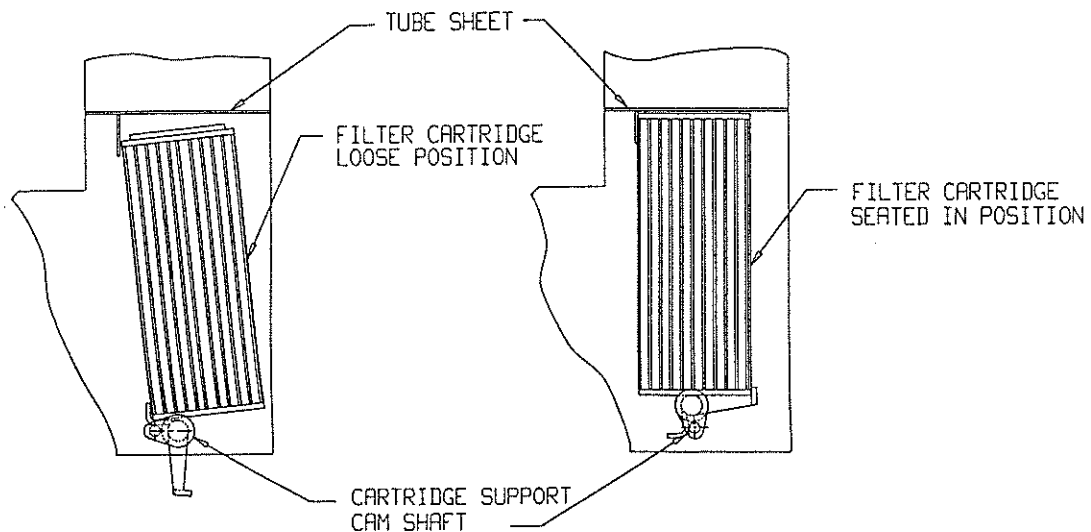
THE YOUNG INDUSTRIES INC.

APPLICATION NEWS

AN-09

REQUIREMENT

Over the last several years, Young Industries has offered a line of Filter Bag Dump Stations that utilize cartridges for the filter media. The standard design required each cartridge to be installed individually. This took too much time for applications that required frequent cartridge changes.



SOLUTION

Young Industries has developed a *cam-operated installation system* that requires very little time and effort to completely change Filter Cartridges. The cam shaft extends the width of the Bag Dump Station to support the cartridges. Located on the cam shaft are positioning bars which make it impossible to mis-align cartridges. The operator simply places the cartridges on the cam, and rotates a handle on the exterior of the Bag Dump Station. It's that simple! The cam shaft is constructed of heavy duty tubing for dependable operation. This cartridge installation system is available for the Model FBD10-3-C and FBD10-8-C Filter/Bag Dump Stations.

THE YOUNG INDUSTRIES INC.

APPLICATION NEWS

AN-08

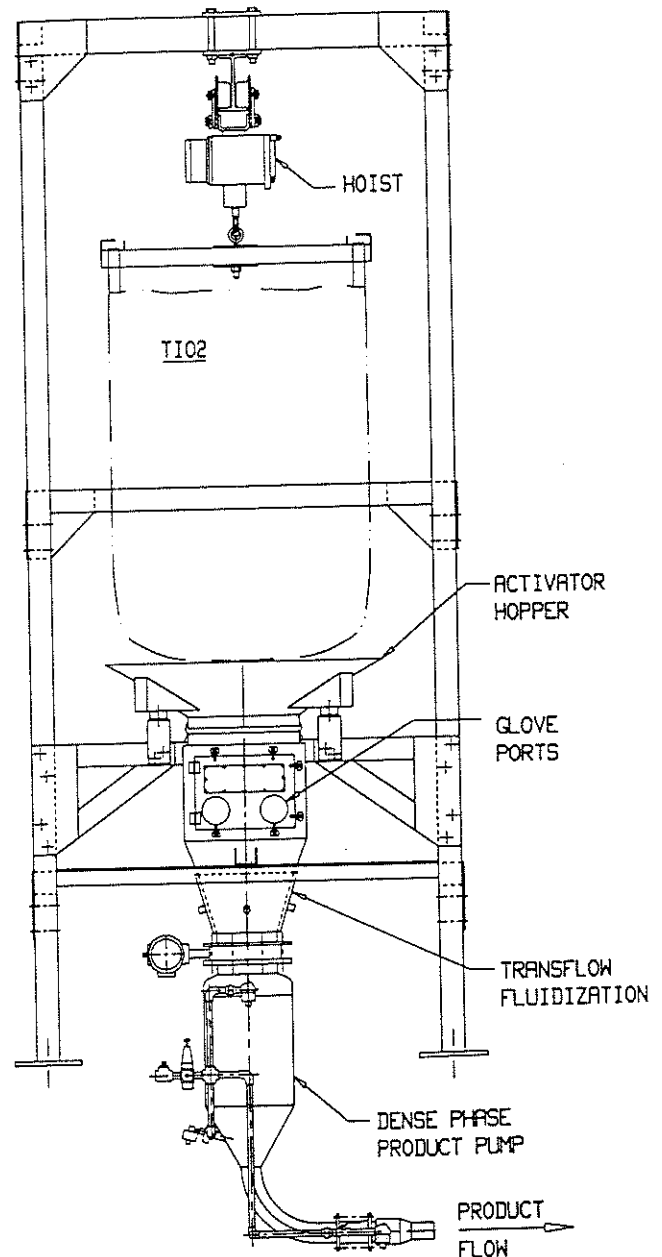
REQUIREMENT

The Customer required a **Bulk Bag Unloading and Convey System to handle TIO₂**.

The TIO₂ was to be unloaded from Bulk Bags, and conveyed to any of four mix tanks. System was to be designed to convey at a rate of 200 cu.ft./hr, over a distance of 50 ft. Dust control and operator exposure was a major concern of the system design.

SOLUTION

Young Industries supplied a dedicated Bulk Bag Unloading Station with Dense Phase Convey System to meet the requirements. The Bulk Bag is lifted by hoist, and positioned on a vibratory activator hopper to assure continuous material flow. Glove ports were provided so the operator would not come in contact with TIO₂ when opening the bulk bag. Transflow fluidization was installed on the access hopper to eliminate bridging of material. A 3 cu.ft. Vertical Product Pump was specially designed, utilizing Transflow fluidization for conveying the TIO₂. A Manual Switch Station diverts the flow of product to any of four different 3" convey lines. System capacity is 220 cu.ft. Per hour.



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APPLICATION NEWS

AN-07

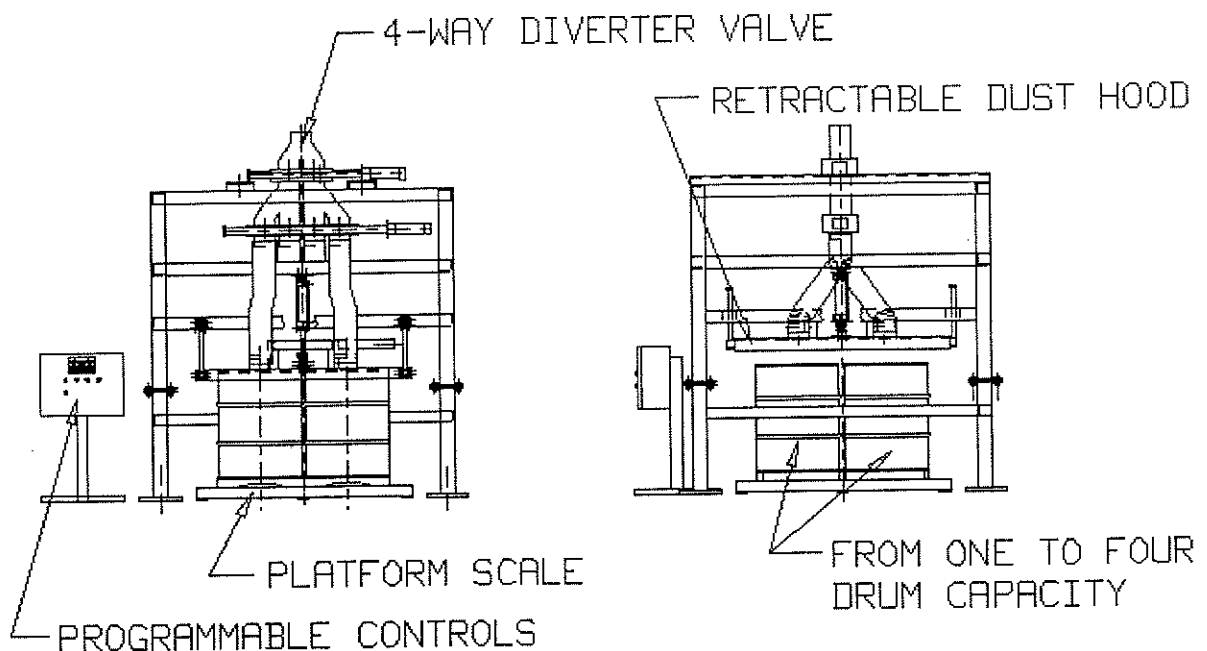
REQUIREMENT

CUSTOMER REQUIRED A MULTIPLE DRUM FILLING STATION. THIS SYSTEM MUST BE CAPABLE OF CHARGING FROM ONE TO FOUR DRUMS. ALSO, THE ASSEMBLY MUST BE COMPLETE WITH A REMOVABLE HEAD ASSEMBLY WHICH WILL ALLOW FOR CHARGING OF BULK BAGS. (NOT SHOWN)

SOLUTION

YOUNG INDUSTRIES SUPPLIED A "MULTI-DRUM/BULK BAG FILLING STATION." FROM ONE TO FOUR DRUMS CAN BE CHARGED TO A PRE-DETERMINED WEIGHT. WHEN WEIGHT IS ACHIEVED IN DRUM #1 THE SYSTEM AUTOMATICALLY SWITCHES TO DRUM #2, ETC., UNTIL FILL CYCLE IS COMPLETE. A DUST HOOD IS RAISED AND LOWERED ON THE DRUMS BEING FILLED. THE SEQUENCE OF OPERATIONS IS CONTROLLED BY A PROGRAMMABLE, MENU DRIVEN, CONTROLS PANEL.

ALSO, THE UNIT INCLUDES A BULK BAG FILLING HEAD ASSEMBLY. (NOT SHOWN) BOTH THE DRUM FILLING AND BAG FILLING HEAD ASSEMBLIES ARE COMPLETE WITH QUICK DISCONNECT FEATURES TO ALLOW FOR EASE WHEN SWITCHING BETWEEN DRUM AND BAG FILLING.



THE YOUNG INDUSTRIES INC.

APPLICATION NEWS ~ AN-06

Requirement

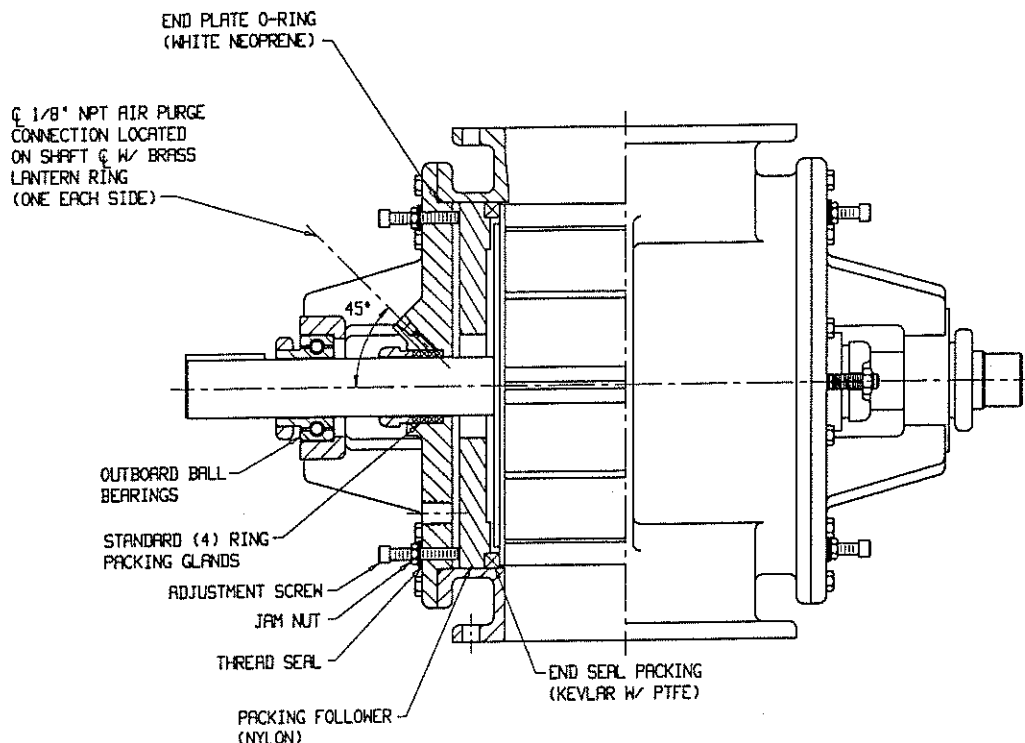
Customer required a drop-thru rotary valve to operate at a high internal and differential pressure while trying to maintain a low leakage rate across the valve.

Solution

Young Industries supplied a heavy duty constructed rotary valve with *End Seal Feature*. This feature will basically eliminate the air leakage which normally occurs between the rotor blades and end plates by using a shrouded rotor and utilizing peripheral sealing rings against the rotor shroud. The peripheral sealing rings are easily adjustable from the exterior of the valve. The *End Seal Features* will reduce the air leakage thru a rotary valve by approximately 50%.

Young Industries has designed and manufactured rotary valves for up to a maximum differential pressure of 60 PSIG.

Shown below is a typical section view of a rotary valve with the *End Seal Feature*.



THE YOUNG INDUSTRIES INC.

APPLICATION NEWS

AN-05

TRANSVAIR MECHANICAL CONVEYOR

NEW HEAVY DUTY DESIGN

REQUIREMENT

Over the last several years, we have asked users of Transvair Mechanical Conveyors what changes they would like to see in the design. The most common answer was to offer a HEAVY DUTY version of the Conveyor, designed for minimal maintenance.

SOLUTION

Young Industries has designed and manufactured a line of HEAVY DUTY Transvair Mechanical Conveyors. We considered the requirements of the user who is operating the Conveyor 24 hrs. per day, and the user that requires a pressure rated unit for handling explosive products. The result is a HEAVY DUTY Conveyor that has the following features.

- * **Dust and gas tight construction**, with O-ring tube seals
- * Heavy duty, **outboard greasable bearings**
- * **Triple Lip-seal** on sprocket shafts, with optional lantern ring and purge
- * **Hand wheel operated Rope tensioner** for quick rope tensioning
- * **100 PSIG design pressure**

The HEAVY DUTY Transvair Mechanical Conveyor is available upon request. This Conveyor is designed for the tough applications that demand special considerations. This Conveyor is Superior to any "Aero-Mechanical Type Conveyor" manufactured by other companies. The capabilities of Young Industries to design and manufacture equipment to meet the needs of the customer exceeds any of our competitors. The HEAVY DUTY Transvair Mechanical Conveyor is another example of Young Industries capabilities.

THE YOUNG INDUSTRIES

APPLICATION NEWS

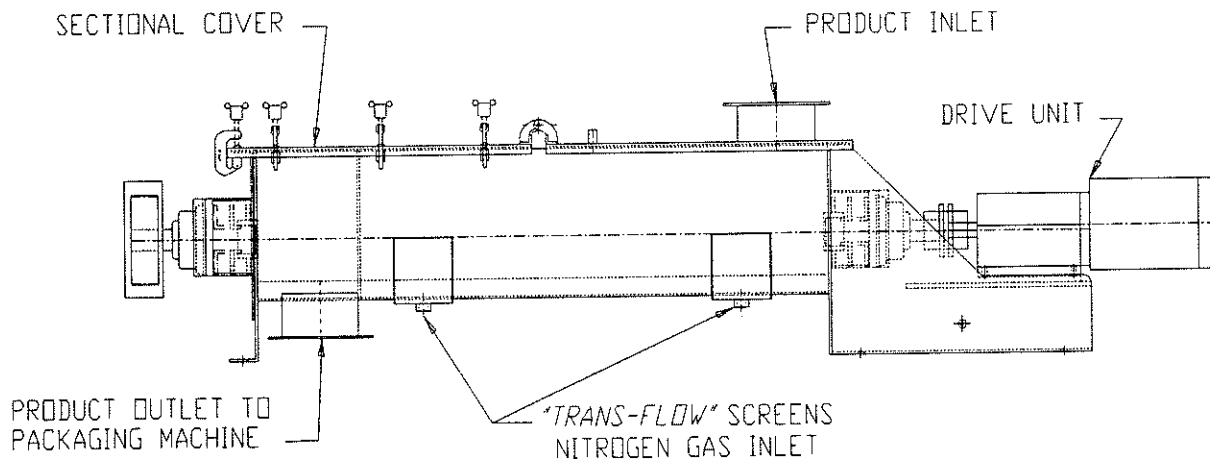
AN-04

REQUIREMENT

The customer was requested to increase the shelf life of their food product. After ample research, the customer concluded that introducing the product with a nitrogen gas prior to packaging would yield the results necessary. Because the nitrogen is lighter than air, purging was to be injected at a lower level allowing the gas to rise through the product. The product being a dry flake also required gentle agitation within a nitrogen environment to ensure complete exposure to the gas.

SOLUTION

For their continuous operation, Young Industries designed a special, low-speed, multi-shaft mixer that would be installed prior to the packaging process. This mixer was supplied with two "Trans-Flow" gas inlet screens fabricated within the bottom portion of the mixer trough. Because of the "Trans-Flow" screen's multi-layered design, it allows gas to flow through, but will not allow product to penetrate the screen. With the flexibility of the "Trans-Flow", molding the screen with the contour of the trough gave a smooth interior surface and eliminated ledges and dead zones where material would collect.



THE YOUNG INDUSTRIES INC.

APPLICATION NEWS

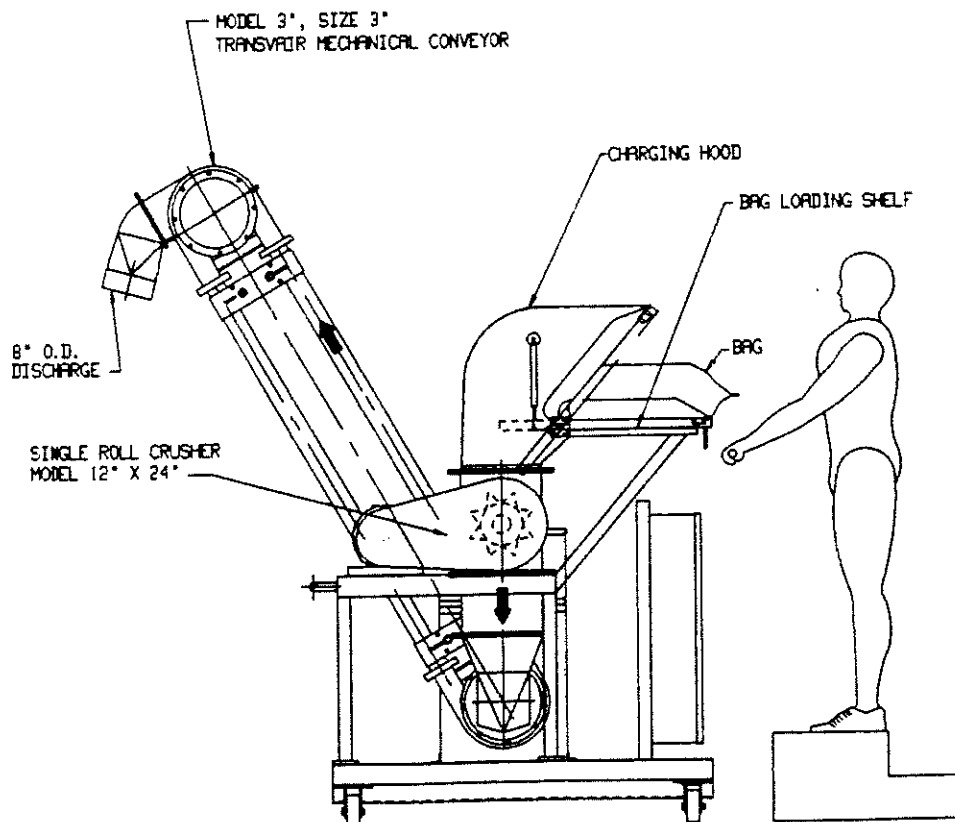
AN-03

REQUIREMENT

Customer required a system to convey crumb rubber from 50 lb. bags into mix tanks. The crumb rubber was approx. .125" dia., and particles would agglomerate in the bag. Because of the nature of the material, the agglomerates were difficult to break apart. A system was required to break up the agglomerates and convey product to the tanks. The system had to be portable and easy to use.

SOLUTION

Young Industries supplied a system to meet the customers requirements. A dumping hood allows the bag to be placed on a hinged shelf for bag opening. The operator raises the shelf, and the crumb rubber falls into a 12"x24" Single Roll Crusher. The crusher breaks the agglomerated material to minus .25" size. Material then drops into a 3" Transvair Mechanical Conveyor and is elevated at a 60 degree angle, discharging into the mix tanks. The complete system is 304S/S construction and is mounted on a portable base with casters. A NEMA 4X control panel was also supplied as part of the system.



THE YOUNG INDUSTRIES INC.

APPLICATION NEWS

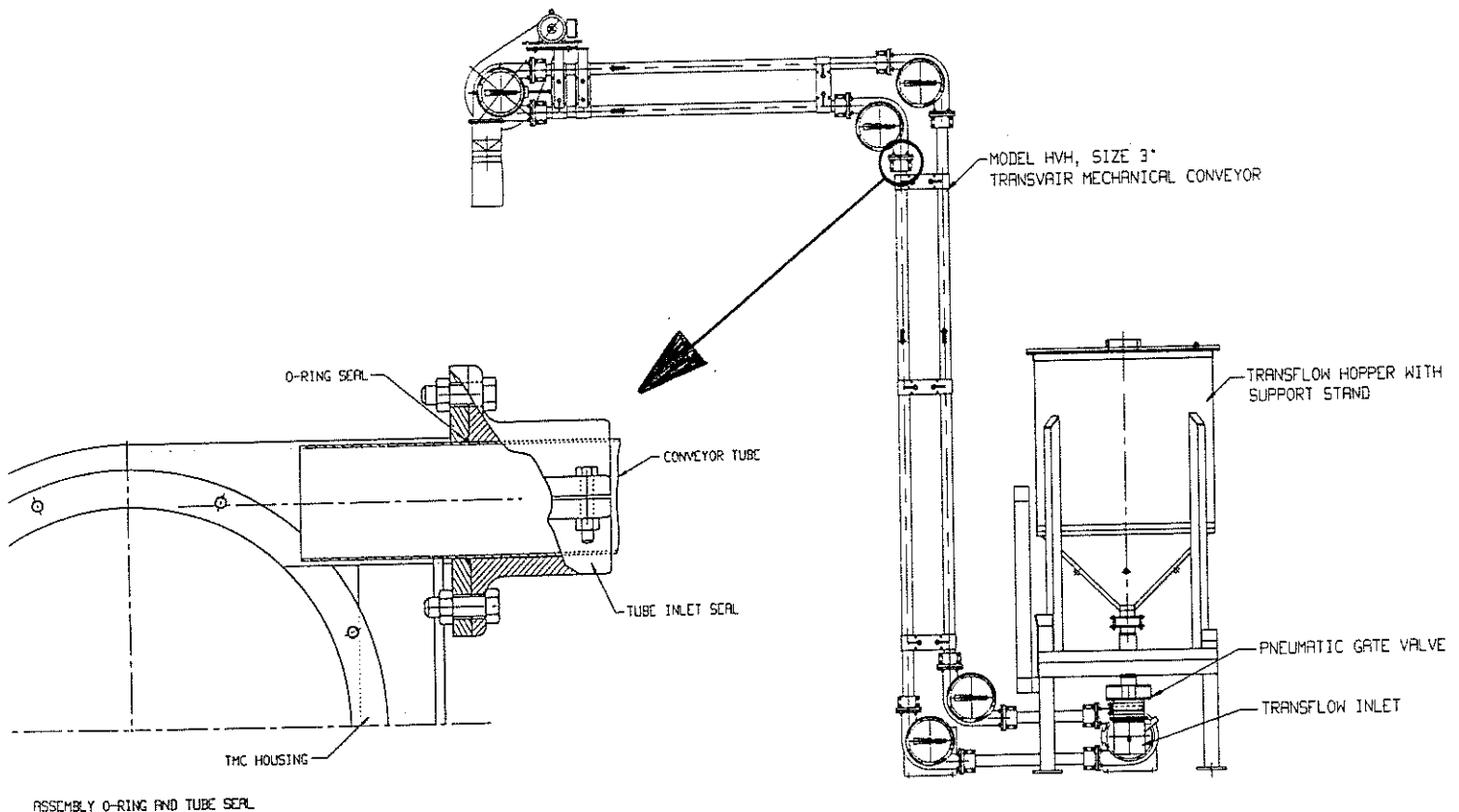
AN-02

REQUIREMENT

Customer needed a system which would allow storage of fine powders in portable bins, and a convey system to unload the bins within a tight space limitation. The system had to assure **POSITIVE-FLOW** of the fine powders and be **DUST-TIGHT**

SOLUTION

Young Industries manufactured several portable **TRANSFLOW** storage hoppers which fluidized the fine powders during the discharge cycle. A **Z type TRANSVAIR MECHANICAL CONVEYOR** was used to transfer product at a rate of 8-10 cu.ft./min. from the portable bins. Because of the fine particle size of the powder, the conveyor was fitted with **O-ring seals** at the tube joints to assure the system would be **DUST-TIGHT**.



THE YOUNG INDUSTRIES INC.

APPLICATION NEWS

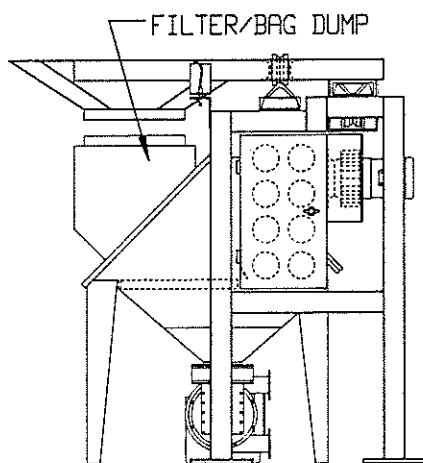
AN-01

REQUIREMENT

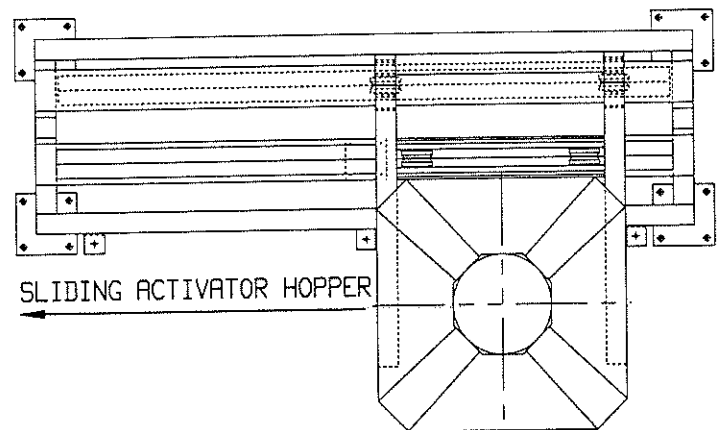
Several different powders were to be unloaded from bags and Bulk Bags into a reactor. The unloading area was confined, and had minimum headroom. The powders being handled were dusty and created a housekeeping problem.

SOLUTION

Young Industries supplied two(2) Model FBD 42-8 Self Contained Filter/Bag Dump Stations. One unit is complete with a 3" Transvaair Mechanical Conveyor, and the other uses an existing Rotary Valve to meter flow. Both Bag Dump Stations have charge doors with provisions for bag and bulk bag unloading. A special Bulk Bag Support Frame is positioned over both Bag Dumps. The frame has a bag activator hopper which rolls on the frame, to either of the Bag Dump Stations. The activator hopper is cantilevered on the frame and has heavy duty V-groove casters which allow easy movement between the Bag Dump Stations. The frame and Activator Hopper are designed for 2000 lb. capacity. The special design eliminates the need for two separate frames, and keeps the floor space requirements to a minimum.



Side View



Plan View



INDUSTRIES, INC.

16 PAINTER STREET

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APPLICATION NEWS

REQUIREMENT

Several times each year, there is a requirement to load Dicalite into two mix tanks located outside of the building. There is not a dedicated space for locating unloading equipment, so the equipment must be portable. The mix tanks located outside the building do not have any type of access platforms. This means the portion of the convey system located outside must be stationary, and not require regular maintenance. There is no provisions for dust control in the area.

SOLUTION

Young Industries supplied a special Model FBD 10-4-C Filter/ Bag Dump Station for controlling dust during the bag dumping operation. A Venturi Eductor was used to draw a negative pressure on the Bag Dump Station hopper. The Bag Dump and Venturi were mounted on a portable base. A positive displacement blower was located in a permanent location, approx. 20 ft. from the Bag Dump Station. A manual switch station was mounted on the wall, with permanent convey lines routed to each tank. At each mix tank was a high efficiency Cyclone Collector. The clean air discharge of the cyclone was routed back to the Filter/ Bag Dump Station for dust control. The closed loop system enabled the customer to have a system which did not take much permanent floor space, while offering efficient dust control. With this system, there is no need to have access to the mix tanks, and setup time is minimal.

