



INDUSTRIES, INC.
Muncy, Pennsylvania 17756
PH: 570-546-3165 FAX: 570-546-1888
e-mail: mktinfo@younginds.com
http://www.younginds.com

Multi-Phase® Low Velocity Dense Phase Pneumatic Conveying

Reduce product breakage by controlling your conveying air

Hammering, slugging, surging and severe vibrating of the convey line piping are to often standard operating conditions for dense phase conveying systems. This "RUN WILD" state causes material breakage and generation of fines in your product. This "RUN WILD" condition is caused by not having control of the pneumatic conveying system air pressures and volumes.

Until now it was not possible to control dense phase conveying of materials. With The Young Industries, Inc. patented Multi-Phase dense phase systems, control of dense phase conveying is a reality.

The control of the continuous transfer of materials using the patented Multi-Phase Low Velocity Rotary Valve type continuous dense phase system is accomplished in several ways. First, the conveying air is metered into the system by a high speed, precision control valve. This valve, called a M/P valve, is opened and closed in small increments by a precision stepper motor making it possible for finite control of the air volume. Second, the material is metered into a pressure vessel by a High Pressure/Low leakage rotary valve. This rotary valve sets the thru-put capacity of the system. The unique design of the High Pressure valve ensures that the product is not damaged as it is metered into the vessel and air leakage thru the valve is kept to a minimum.



High Pressure rotary valve with transport vessel and air control piping

The rotary valve discharges the material into a transport vessel. The rate that the material is fed into the convey line is controlled by high and low level indicators located in the transport vessel.

Low velocity dense phase pneumatic conveying systems have Four (4) stages that must be controlled

for stable conveying. These stages are (1) start up, (2) normal operation, (3) shut down, and (4) emergency shut down. The controls and instruments used in the Multi-Phase Low Velocity Continuous Dense Phase system make automatic adjustments as the system progresses through these stages. The system pressure, vessel high level and vessel low level control the amount of air used to convey the material. This eliminates pulsing, surges and line hammering. The material is conveyed at the lowest possible velocity based on the required thru-put capacity of the system, the inside diameter of the convey line and the handling characteristics of the material.

The patented Multi-Phase Low Velocity system electrical controls automatically adjust the conveying air volume and air pressure to the ideal settings for the required conveying capacity. **The panel actually teaches itself to find the proper setting for conveying.** When the input rate to the system varies; because of a change in the feed conditions like reduced feed rate change in material bulk density or particle size; the electrical control automatically adjusts the air volume to match the new conditions.

When material is conveyed to numerous use points, the controls can adjust air volume for the new routing. It sets the air volume to the minimum required for the new conditions. This ensures the product is conveyed at the minimum conveying velocity for the required

capacity, distance and line size.

You will like the Young Industries Multi-Phase Low Velocity Rotary Valve Type Continuous Dense Phase system because:

1. You will not break up your product when it is conveyed in this system. You will not get fines, angel hair or change in your material's particle size in conveying the material to the farthest destination point. You will be conveying the material at the lowest possible velocity.
2. You will use less air to convey material.
3. You will not experience surging, hammering or vibration of your piping and building supports.
4. You can install the system and not worry about set up or operation of the controls. The system will automatically control the start-up and conveying of your product under the various process conditions.

Your next step is to witness a test, using your material, demonstrating this proven low velocity pneumatic conveying method. Please contact us, at 570-546-3165, to establish a convenient testing date or if you desire any additional information.