

Coperion K-Tron Omniveyor™ System

Dense Phase Pressure Vessel Pneumatic Conveying in Combination with AIM Air Injection Modules

Dense phase pressure vessel systems employ high air pressure — above 1 bar(g) [15 psi(g)] — and low air volume as the motive force to convey powder or granular bulk solid materials through a pipeline at low velocity. This low velocity makes this type of bulk solid materials conveying especially suitable for premixed materials, materials with high bulk density, materials which are abrasive, friable, or tend to segregate. It is optimal for fine bulk solids such as powders or for non-abrasive larger particles like granulate, coffee beans or pet food. Since there are no moving parts besides the inlet valves on the pressure vessel, less wear occurs.

The world's most technologically advanced pneumatic system, the Coperion K-Tron Omniveyor pressure vessel system in combination with Air Injection Modules (AIM), provides single point control of convey air pressure and air flow along the entire length of the convey line, whether the rate and distance are small or large, or anywhere in between.

Utilizing Coperion K-Tron AIM automated air control components, the Omniveyor system is capable of achieving all modes of pneumatic conveying from dilute phase to dense phase slug flow. The AIM components are key to the Omniveyor system's ability to handle virtually every dry bulk solid material in a safe, efficient, effective manner. The system is ideal for dissimilar processes that change material often. In fact, the AIM components are so advanced, that the system can actually convey material in reverse to break any stoppage that might occur.

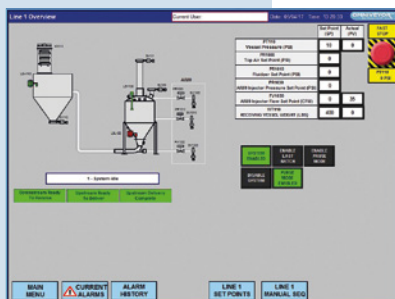
Minimizing air consumption in a pneumatic conveying system provides significant energy cost savings. Coperion K-Tron has test labs located around the world and fitted with cutting edge analysis instruments for determining the handling characteristics of any bulk material. Our test centers will help design the best system for minimal air consumption and highest reliability.

The Omniveyor system comes complete with an all-encompassing control system for the AIM components as well as all system functions. It is a radical departure from dense phase systems that employ manual pressure adjustments and flow regulation with no feedback along the convey line. It can adjust air flow and pressure to every AIM from the control panel. This allows system optimization from the control screen for the current application, or for future applications with different materials and/or convey rates utilizing the same system components.

Omniveyor system components are available in mild steel or stainless steel, depending on sanitary requirements and the type of application. Food grade executions are also available. It can be configured for batch conveying or continuous conveying as needed.

Features

- Low material conveying velocity
- Minimizes wear and abrasion
- Reduces degradation
- Material conveys in slugs minimizing segregation
- Capable of high conveying rates and long distances
- Low maintenance—only two moving parts, no lubrication or special tools required
- Simple to operate controls
- Robust, reliable, safe
- Low-maintenance
- Components are shipped fully assembled and tested



OMNIVEYOR™
by Coperion K-Tron

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Available only in the Americas

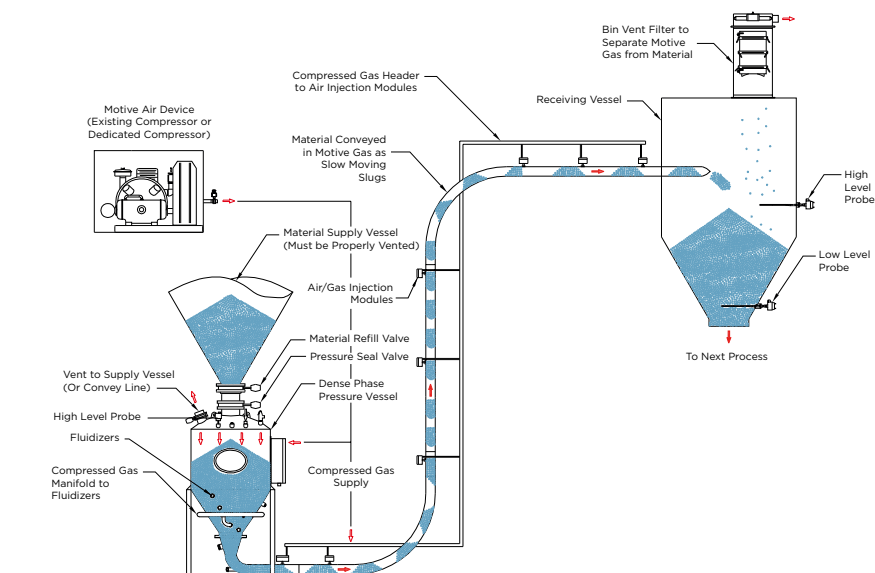
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Purged system

Most common configuration for a dense phase pressure vessel system. The vast majority of the conveying cycle will occur with slow velocity, except at the very end of the cycle when air velocity will increase to purge material out of the line.

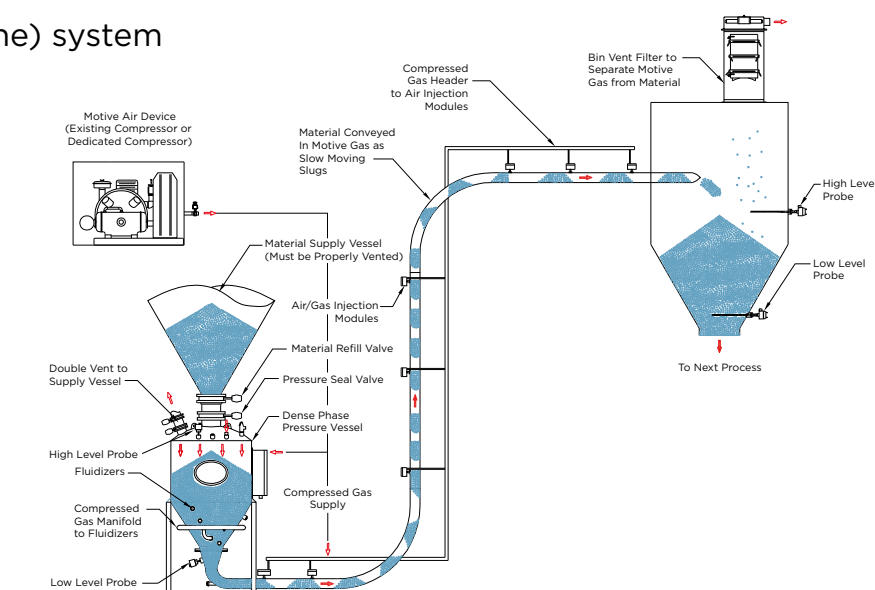
Shown with two inlet valves on the pressure vessel for applications with abrasive materials.



Non-purged (full line) system

This is the most common configuration for a dense phase pressure vessel system when the objective is to reduce degradation or segregation of the material. The entire conveying cycle will occur in dense phase mode as the system will depressurize when material is in contact with the low level probe.

Shown with two inlet valves on the pressure vessel for applications with abrasive materials.



Continuous system

Combining two dense phase pressure vessels in the same conveying system results in uninterrupted conveying of material from the source to the destination.

This configuration is typically used when the source has a continuous high rate of discharge or when the conveying distance is very long (500 feet) and the size of a single pressure vessel is prohibitive.

