

>> VACUUM DENSE PHASE CONVEYING

>> FEATURES:

- Non-suspension flow
- Low conveying velocity—200 to 1000 FPM
- High solids to air ratios up to—40:1
- Multiple pick-up possible
- Gentle conveying—minimum product degradation
- Best suited to cohesive, fluidizable powders



Operation

Dense phase vacuum conveying systems are high capacity vacuum pumps (up to 99% vacuum) to convey materials from a feed hopper or silo to a receiving vessel (also known as a vacuum hopper) where the air and product are separated by a filter. When this vessel is full, the vacuum is isolated and the conveyed product discharged into the destination silo. The product conveys through the pipeline at a controlled low velocity, usually in a fluidized state to reduce friction and pressure drop.

Valves and sensors are used throughout the system to control the applied vacuum and product fluidization settings and velocities at all parts of the system to ensure smooth, reliable conveying of the product.

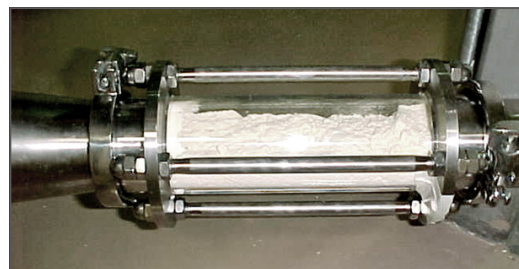
Conveying Fragile Materials

Vacuum dense phase conveying systems are an ideal system solution when conveying fragile or abrasive materials. A vacuum dense phase conveying system allows for the gentle conveying of these materials while offering design flexibility and customization.

Applications

Dense phase vacuum conveying systems are particularly suitable for systems which convey materials at high capacities over short to medium distances, from multiple sources to a single or multiple destinations.

The low convey velocities and vacuum method make it particularly suitable for food, dairy, and pharmaceutical applications with friable or fragile agglomerated powders.



Suited to

- Friable agglomerated powders
- Food and dairy powders
- High fat powders
- Heat sensitive powders
- Abrasive powders



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>> VACUUM DENSE PHASE CONVEYING

>> BENEFITS:

- Low powder damage
- Control systems utilize sensors to control convey rate
- Air-to-product ratio is maintained for reliable conveying, (no plugging)
- Low cost to convey from multiple sources

Vacuum Dense Phase

Powder Process-Solutions designs vacuum dense phase systems for powder, granules and agglomerates. Low volume, low density air is used to convey at low velocities, ensuring low product degradation at the destination. Depending on the application parameters, vacuum dense phase systems are used at controlled air to solids ratio to minimize product damage. This gives us the ability to design conveying systems with multiple sources and destinations

System Components

- Infeed point(s) to funnel powder and fluidize in a controlled manner as powder enters the convey line
- Gas booster points along the convey line to maintain control of powder velocity
- Vacuum receiver hopper(s) to collect conveyed powder
- Discharge valve (butterfly valve for intermittent discharge, rotary valve for continuous discharge)
- Air control valves and pressure monitoring
- High vacuum pump(s)
- PLC based control system with easy operator interface (HMI)



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