

>> PRESSURE DENSE PHASE CONVEYING

>> FEATURES:

- Gentle conveying
- Mild steel and stainless steel construction
- Control system utilizes sensors to control dense phase convey rate
- Air-to-product ratio is maintained for reliable conveying, no plugging
- Compressed air as conveying medium
- Batch sequence operation
- Optional—continuous dense phase



Pressure Dense Phase Conveying

Each system is purpose designed and built to suit the application using a variety of technologies including fluidization, pulse phase, stepped convey lines, slugging, boosting, modulation and more.

PPS has a system to meet all applications:

- High capacity conveying
- Long distance conveying
- Gentle conveying of friable materials
- Sanitary conveying of food and dairy products
- Multi-product systems

Sequence of Operation

Product is loaded into the dense phase vessel to a pre-set level. The various valves are then shut and the vessel is pressurized to a pre-set level and the discharge valve then opens. Depending on the various options, a number of other valves are opened to enhance the product flow.

The product is sent over as a batch, once the vessel has emptied and the line has purged clean the vessel is stopped being pressurized and the product discharge valve is closed.

Excess pressure in the vessel is vented and the vessel is ready for a fresh charge of product.



Compressed air control panel



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>> PRESSURE DENSE PHASE CONVEYING

>> BENEFITS:

- Reduced wear on pipelines
- Low conveying velocity
- Suited to gentle conveying of agglomerated and abrasive powders
- Low air to product ratio
- Reduced filter area
- Minimum product breakage and degradation
- Minimum degradation of blended powders
- Compressed air as conveying medium eliminates the need of separate dehumidification

Design

The system design including vessel sizing is dependent on the product characteristics and the required throughput. In some applications, tandem vessels working in sequence should be considered.

Depending on the application, the equipment may be optioned with:

- Booster Valve
- Product Fluidizers
- Modulating Valve
- Inlet Surge Hopper

The pipe work specification is an important part of the system. This is determined by technical analysis of:

- Product
- Rate
- Distance
- Elevation
- Number of bends

On some systems, it may be necessary to include compressed air injection points along the line to maintain product flow. On higher-pressure applications, it is sometimes advisable to increase the pipeline size towards the end of the run to compensate for the air expansion as the pressure decreases.



Typical system valves and level controls



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