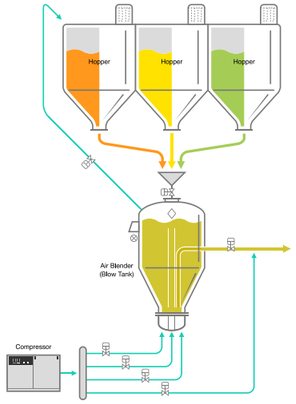
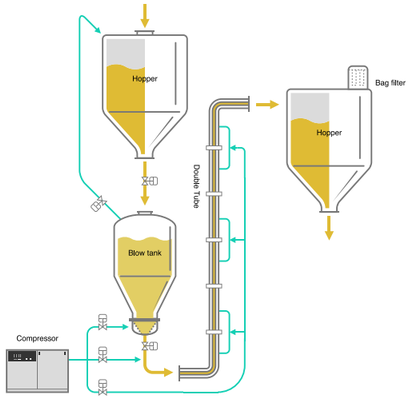
High Flow Pneuma WMT (Weighing and Mixing Type)

- High Flow Pneuma WMT is a High Flow Pneuma-derived system for material weighing, mixing, and transporting with a newly added air blending function.
- Multiple kinds of materials are weighed and mixed with the air in a blow tank and then transported automatically.
- An additional mixing system is not required.



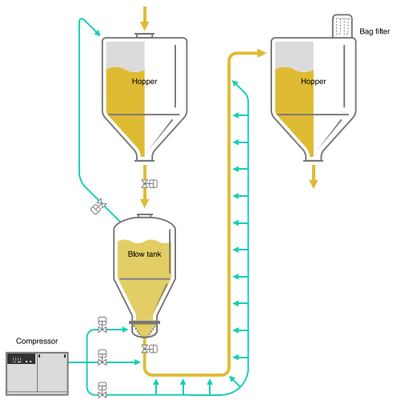
High Flow Pneuma DTM with Shake-off Mechanism

- The powders adhering to the transport pipe are shaken from the pipe by deforming the elastic inner tube with the compressed air injected between the steel outer pipe and the tube.
- The shake-off mechanism prevents clogging of the pipe by adhesive powder.



Thrust Flow with Low-speed Plug type Conveyance Mechanism

- Low-speed plug type conveyance can be achieved with the thrust air.
- This system is suitable for conveying delicate and brittle powder and granular materials that should avoid crushing.



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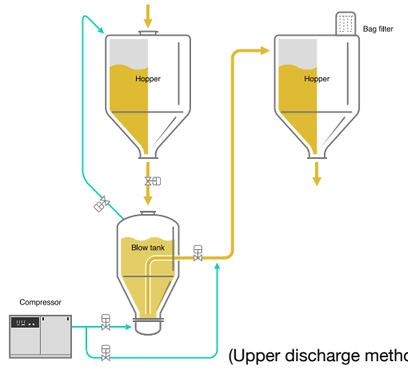
High-pressure and High Solids Loading Ratio Pneumatic Conveyance System

HIGH FLOW PNEUMA

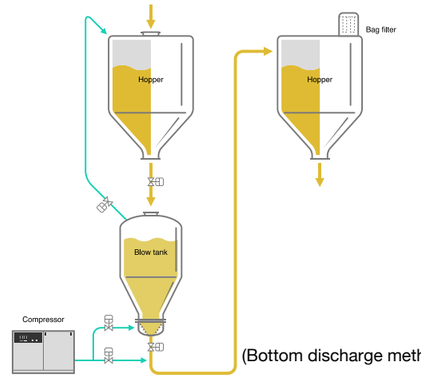
High Flow Pneuma offered by Denka Consultant & Engineering Co., Ltd., (DCE) is a high–pressure pneumatic conveyance system. High Flow Pneuma conveys powder and granular materials pneumatically at a high solids loading ratio. This system accomplishes long-distance and large-scale conveyance, which is difficult for conventional low-pressure pneumatic conveyance systems.

Standard Configurations of High Flow Pneuma

The figures below show the standard configurations of High Flow Pneuma.



(Upper discharge method)



(Bottom discharge method)

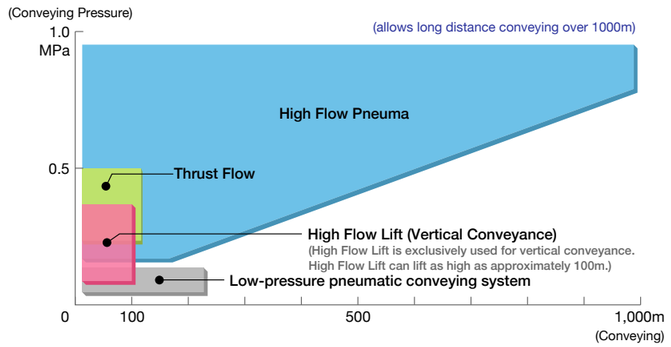
- High Flow Pneuma is a batch conveyance system consisting of four processes (a charging process to charge the powder/granular material into the blow tank, a pressurization process to raise the pressure in the tank, a conveyance process to convey the material, and a blowing process to clean the inside of the pipe).
- This system consists of a compressor as a source of the air supply, the blow tank to thrust the material into the transport pipe, the transport pipe, and a bag filter.
- A fluidization bed is provided at the bottom of the blow tank. The fluidized material is fed to the transport pipe constantly.
- This system can convey the material stably by controlling solids loading ratio and the velocity of the flow optimally depending on the conveyance distance.
- The material is separated from the air in the bag filter of the destination hopper.

Features of High Flow Pneuma

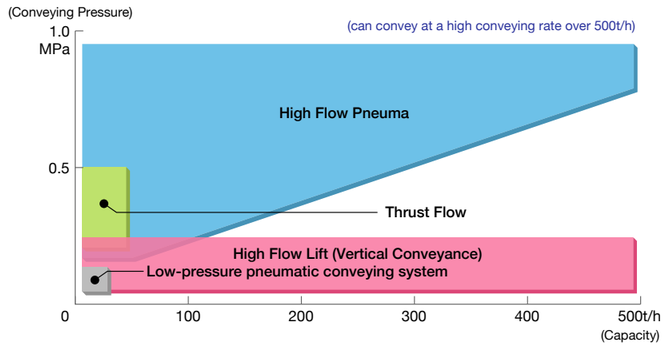
- The material can be conveyed through the shortest route (provided that a space to lay the piping is secured).
- Maintenance of this system is very easy because it has few mechanical moving parts.
- The automatic operation mode saves labor.
- Use of the compressed air allows the system to convey the material at a high solids loading ratio.
- This system can convey a large amount of power and granular materials efficiently with a small amount of air (high density).

Example of High Flow Pneuma (PCI)

• This system can convey a material over a long distance.



• A large amount of material can be conveyed.



• Powder/granular material can be conveyed at a low speed without powdering (10 m/s or less)

• This system can feed with constant mass flow rate. The mass flow rate is adjustable.
Constant and continuous conveying is available in a continuous feed type (High flow Pneuma with vertical twin tanks).
• The fluidization bed prevents clogging of the pipe and allows the system to convey the material stably.

Application Areas

• Steel and metal industries (conveyance of pulverized coal, feeding a material to a burner, conveyance of ore, flux, dust, and waste plastic)
• Inorganic substances (such as cement, ceramic powders, lime, and calcium carbonate)
• Food (such as granulated sugar, grain, wheat flour, and salt)
• Resins (such as plastic powder, pellets, and compounds)

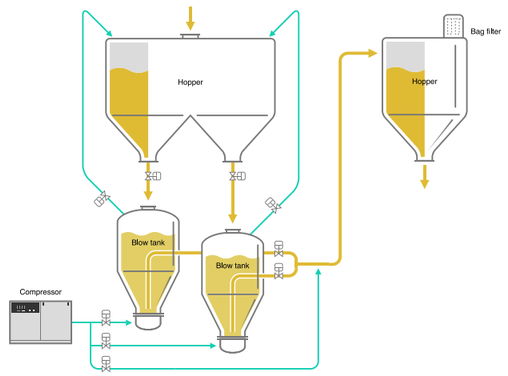
High Flow Pneuma-derived System

High Flow Pneuma for Continuous Conveyance

Basically, High Flow Pneuma is a batch conveyance system. However, DCE can design this system to convey a material continuously to suit customer needs. This system can control the conveyance amount accurately. It is used as a feeder for which a quantitative conveyance capability is required.

High Flow Pneuma (Two-tank Type)

• Two blow tanks are installed in a row. While one of the tanks conveys powder and granular material, the other is filled with the material. This means that the material is conveyed continuously by either of the tanks.
• Since the system is designed to share the compressor and the conveyance piping with the two tanks to avoid redundant configuration and conveys the material continuously, the conveyance amount can be increased.



High Flow Pneuma Continuous Feed Type (with Vertical Twin Tanks)

• The two blow tanks are installed in a line. While blow tank conveys powder and granular material, the Middle tank charges the material so that the material can be conveyed continuously.
• Constant conveying is available. Mass flow rate is adjustable.