



The dilute phase conveying system suspends material in a high-velocity air stream: a Roots blower provides the low-pressure air source, material is fed evenly through a rotary valve into the acceleration chamber and, after mixing with the air stream, is conveyed in suspension. It suits free-flowing, non-abrasive and non-friable powders and granules. The system can feed from one point and discharge at multiple points, or feed from multiple points and discharge at one point, over conveying distances of 100–300 m. With flexible layout, economical investment and simple maintenance, it is a common solution for packing-line feeding, silo transfer and inter-workshop conveying.

System Composition: Roots blower (air source) → rotary feeding valve (even feeding and air locking) → accelerator → conveying pipeline → multi-way diverter valve → silo / receiver → dust collector. The whole system operates enclosed under positive pressure, and the pipeline can run horizontally, vertically or at an incline, crossing walls and floors without extensive civil works.

Key Features

- ◆ Roots blower low-pressure air source — stable operation, adjustable air volume, low investment and running cost
- ◆ Rotary valve for even feeding + air locking, giving continuous feeding without pulsation
- ◆ High conveying velocity (approx. 16–40 m/s), suspension conveying without deposition
- ◆ Flexible multi-point feeding / multi-point discharge layout, pipeline routing adapted to the site
- ◆ Enclosed conveying, low dust, small footprint, quick installation
- ◆ Suits a wide range of powders and granules such as flour, resin, chemicals, feed and grain

Typical System Flow



◆ Selection notes: please provide material bulk density and particle size, conveying volume, conveying distance and lifting height, and the number of feed and discharge points. Pipe diameter is calculated from material properties and air velocity (recommended pipe-to-particle diameter ratio approx. 20:1).