

Pneumatic conveying is the best system for the transport, loading and / or unloading of granular products, powders and micronized any density.

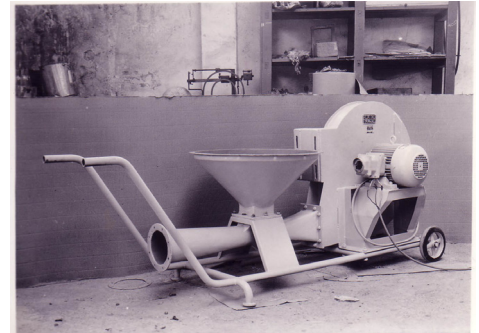
Operating Principles

•Pneumatic conveying is based on solids movement in an air stream at a determined speed and in a predetermined direction.

The pressure and volume of air required is calculated in each case, depending on the distance and the nature of the product to be transported.

A pneumatic conveying system consists, broadly, of the following elements:

- Centrifugal fan;
- Loading system (hopper, dossifier vane, venturi nozzle, ...);
- Cyclone and discharge system;
- Sleeve filter;
- Suitable diameter pipe network.



Pneumatic Conveying portable system

Advantages of the Pneumatic Conveyor

Pneumatic conveying offers positive advantages versus other mechanical systems as conveyor belt, worm screws, elevators, etc. We list some of them below:

OPERATIONAL SAFETY

- Only need a mechanical element: the fan. By this way the **maintenance costs are reduced**.
- No need to dismantle the installation in case of failure.
- The fan design allows overloads without danger of burning the motor.
- Minimal upkeep and maintenance.
- There are no complicated mechanisms or bodies liable to wear.

ASSEMBLY FLEXIBILITY

- The pipeline network can adapt to the configuration of your facilities, holding to the ceilings and walls, taking advantages of dead zones to leave as much usable space free.
- Pipes can go through walls, cornering, rise vertically and adapt any layout that could hardly be taken by conveyor belt or mechanical lifts.
- A large number of conveyors can successfully be replaced by a single pipe.

OTHER ADVANTAGES

- ✓ Pipes are always kept clean and do not retain any part of the carried product, allowing **carry** alternatively **different materials** without introducing significant contamination. This detail is of great importance in installations for **foodstuffs, pharmaceuticals, chemicals, dietetic**, etc...
- ✓ The air flow contributes the product, **keeps cool**, **aerate** and deliver in optimal conditions for packaging or further processes.



Pneumatic conveying to bagging equipment



Grinding equipment with pneumatic conveying

The design and calculation of pneumatic conveying facilities is not a fixed parameter technique. Each installation requires a particular analysis, empirically guided and based in our experience gathered in this field.

Therefore, only **specialized manufacturers** can take responsibility. **Consult** your problem

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Basic systems of Pneumatic Conveying

A.- Induction Circuit.

Low or medium pressure Fan.

Loading hopper with venturi nozzle.

Suitable for short distances and small outputs.

Systems for loading, transporting and/or bulk product download.

Essential for the transport of grain, chemical and all kinds of granular products not very fine, abrasive o sticky.

B.- Pressure Circuit.

Medium or High pressure Fan (blower).

Dosifier valves in the loading hopper and in the discharge of the cyclone.

Suitable to cover distances up to 200 meters and larger medium outputs.

C.- Closed-Circuit.

Very efficient and dustless system.

Distance up to 100 meters.

D.- Circuit for depression.

Medium or high pressure Fan.

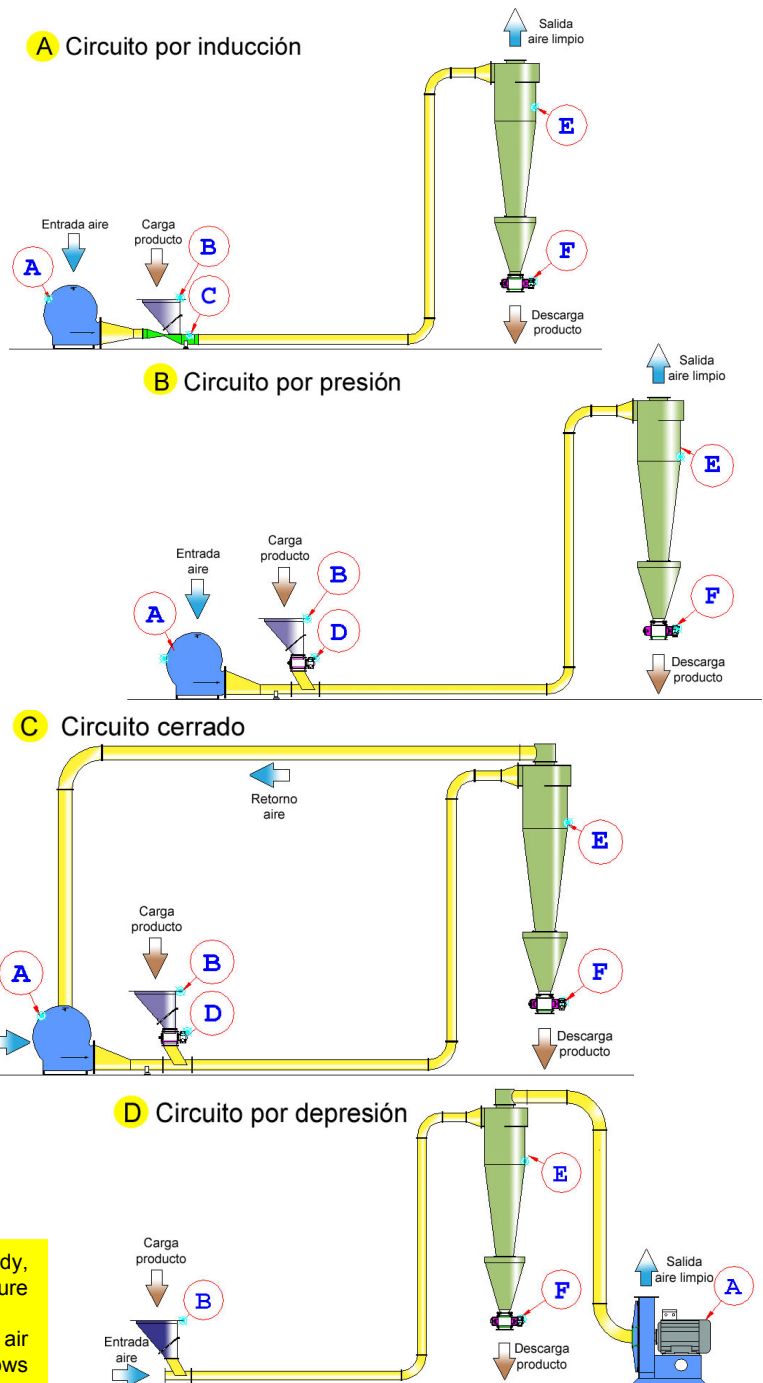
Capacity according section ducts.

Distance up to 100 meters.

We recommended these highly efficient facilities for pneumatic conveying of powders and finely milled.

Depression or vacuum system avoids loss of product leakage in the pipe system, ensuring a working atmosphere completely free of dust.

The fan is always place at the exit of the cyclone, preventing the product may block or wear out the fan impeller.



GRUBER HERMANOS, S.A. is specialist in the study, calculation, design and implementation of low pressure pneumatic conveying systems. This type of pneumatic conveying is based on keeping a low air speed that transport the particles through the use of low airflows and large pipe diameters.

ADVANTAGES OF LOW PRESSURE A PNEUMATIC CONVEYOR OVER OTHER.

- The reduced air speed in the pipes produces less wear, obtaining a longer duration of themselves and reducing maintenance costs.
- Being able to use low-pressure fans, the system is more simply, eliminating complicated blowing systems that requires higher and more costly maintenance.
- Needing less pressure for the same transport, installation is safer and requires less monitoring systems, reducing their cost.

A	fan
B	Loading hopper
C	Venturi nozzle
D	Loading dosifier valve
E	Unloading cyclone
F	Unloading dosifier valve

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