

# piFLOW®

Simplifying material handling



## ***Our Mission***

*“Our mission is to increase productivity for industrial customers and provide energy saving solutions by promoting our superior technology universally.”*



# Vacuum conveying and its great benefits

Vacuum conveying is a modern way of transporting powders and granules with a number of benefits, see below.

## Reduce product scrap and product contamination

When using a vacuum conveyor your customers are working with an enclosed system where they will not have any foreign material mixed in or have any product falling off the sides into the surrounding area. It is also a very gentle way of transporting the product, meaning that the product will be intact/not damaged throughout the whole transportation process. The velocity is adjusted depending on the product's fragility – giving your customer minimum product scrap.

## Small Footprint

The vacuum conveying solution has a small plant floor footprint since the tubing can go strictly vertical from the point of suction. The tubing is normally mounted in level with the discharge point and therefore not in conflict with other machinery. This means that your customer can utilize the space in a more cost efficient way.

## Minimize maintenance

Piab's vacuum conveyors have very few moving parts, meaning that the service and maintenance cost is kept at a very low level without needing to compromise on the reliability of the system. You can disassemble the conveyor body without using tools. The pump unit is designed with a separate vacuum module that can easily be removed for cleaning, resulting in reduced downtime.

## Dust free working environment

When comparing with mechanical conveying systems such as screw and belt conveyors – another important advantage of the vacuum conveying is a dust free working environment. As vacuum conveying is an enclosed system you will be able to improve the working environment, and it will also give you the possibility to convey materials that are hazardous to inhale that needs to be contained.



## Production flexibility

By replacing just a few parts of the modular vacuum conveying solution, one can easily change the installation in order to increase conveying distance, change the plant layout or enhance the system capacity at a very reasonable cost. This gives a future proof installation without compromising the reliability of the system.

## The principle of vacuum conveying

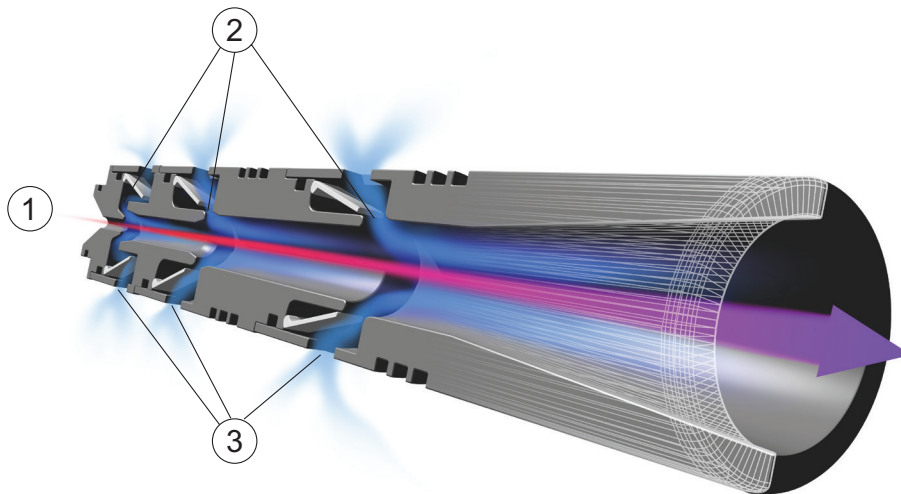


- ▶ Vacuum is created with compressed air through COAX® technology (A). The pump can be automatically controlled.
- ▶ The bottom valve (B) closes and the vacuum increases in the container (C) and the conveying line (D).
- ▶ The product is carried away from the feed station (E) into the conveying line and then to the container.
- ▶ The filter (F) protects the pump and the surrounding area from dust and small particles.
- ▶ During the conveying time, the air shock tank (G) is filled with compressed air.
- ▶ At a preset time, the pump and the conveying are stopped and the bottom valve (B) is opened. The product is discharged at the same time as the air shock is activated and the compressed air cleans the filter from dust and small particles.
- ▶ When the pump starts again, this process is repeated and a new cycle starts. The suction time and emptying times are normally controlled by a pneumatic or an electric control system.



# Increase your customers energy efficiency through COAX<sup>®</sup> technology

COAX<sup>®</sup> cartridges are based on advanced technology for creating vacuum with compressed air. The COAX<sup>®</sup> cartridges are smaller, more efficient and more reliable than conventional ejectors, which allows for the design of a flexible, modular and efficient vacuum system. A vacuum system based on COAX<sup>®</sup> technology can provide your customer with three times more vacuum flow than conventional systems, while reducing energy consumption.



When compressed air (1) passes through the nozzles (2), air is pulled through with the stream of compressed air. Suction will be generated at the opening of each stage (3), resulting in vacuum.



Pump *piPREMIUM* suitable for *piFLOW<sup>®</sup>p*



Pump *piBASIC* suitable for *piFLOW<sup>®</sup>i* and *piFLOW<sup>®</sup>f*

## piFLOW<sup>®</sup>p

The piFLOW<sup>®</sup>p is best used when a premium technology is needed, e.g. in the food and pharmaceutical industries. It is made of steel quality ASTM 316L. The design makes it very easy to use and install. It is available with antistatic filters and seals and also with automatic filter cleaning.

### Tailor your own conveyor without compromising quality

When you have a need to tailor make your conveyor and still have the high requirement on hygiene, piFLOW<sup>®</sup>p is the best option. It is built on standard modules and you can combine and change them in almost endless combinations. All parts still meet the high requirements of the pharma and food industries. So, you have the possibility to tailor your own conveyor without compromising on quality.



### Industry standards



Piab offers conveyors for ATEX Dust applications. piFLOW<sup>®</sup>p is type examined according to ATEX Dust by a third party. Piab has a quality management system which fulfills the high standards that is required for delivering ATEX Dust equipment on a regular basis.



All material that is in contact with the conveyed product fulfill the requirements issued by the U.S. Food and Drug Administration (FDA).



The piFLOW<sup>®</sup>p fulfills the requirement issued by the United States Department of Agriculture (USDA).

IQ/OQ documents are available.

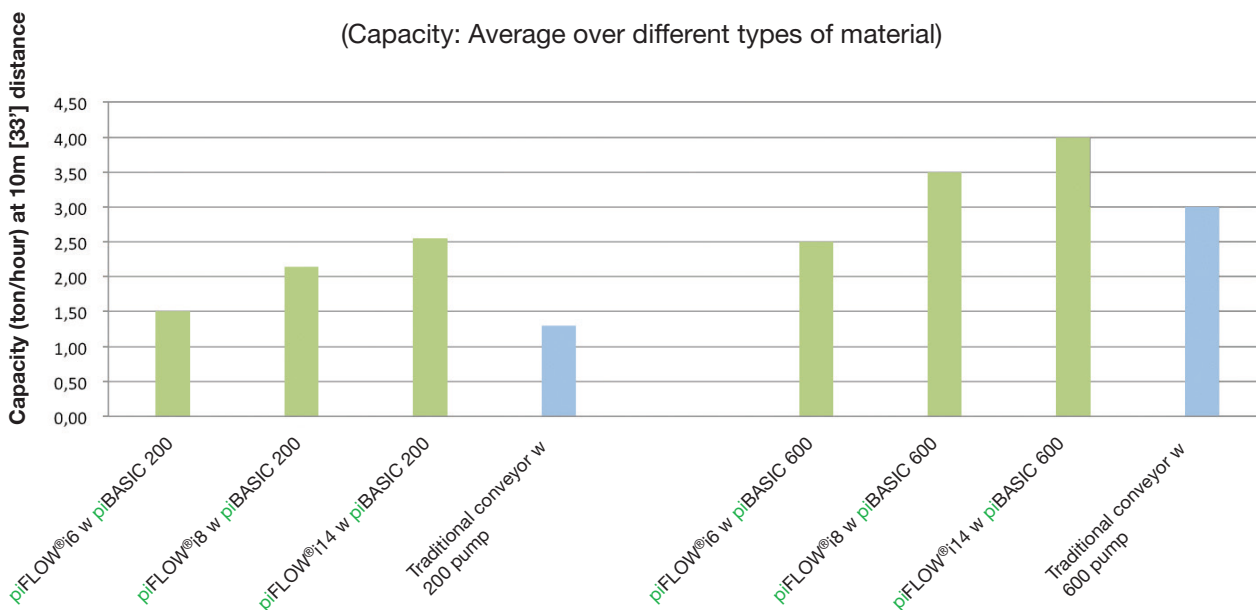
## piFLOW<sup>®</sup>i and piFLOW<sup>®</sup>f

The piFLOW<sup>®</sup>i is a basic conveyor widely used in the general industry and sometimes in the chemical industry. piFLOW<sup>®</sup>f is a basic conveyor but still the most cost efficient powder conveying concept for the food industry. Both conveyor models are made of steel quality ASTM 304L. The design makes them very easy to use and install. There is a choice of filters, washable and antistatic filters are available and also antistatic seals can be delivered.

### Maximize your customer's throughput

The piFLOW<sup>®</sup>i/f series are designed with a full opening option making it possible for your customer to maximize the material throughput and increase the overall capacity of their system. The full opening gives an instant discharge, i.e. increased material throughput.

#### Performance



### Industry standards



Piab offers conveyors for ATEX Dust applications. piFLOW<sup>®</sup>i and piFLOW<sup>®</sup>f are type examined according to ATEX Dust by a third party. Piab has a quality management system which fulfills the high standards that is required for delivering ATEX Dust equipment on a regular basis.



All material used for piFLOW<sup>®</sup>f which is in direct contact with the conveyed product fulfill the requirements issued by the U.S. Food and Drug Administration (FDA).

# Optimize your vacuum conveyor

## Filter

Filter type	Material	Grade of filtration	Applications	Quality standards
Pleated Filter	Polyester	0.5µm	Extreme fine and free flowing powder	ATEX, FDA
Pleated Rod Filter	Polyethylene	0.5µm	Fine powder	ATEX (only the black filter), FDA
Textile Filter bags	Polyester	5µm	Granules	ATEX, FDA, Food quality



*Pleated Filter*



*Pleated Rod Filter*



*Textile Filter bags*

## Control units

Piab control units are fully pneumatic operated with an extremely reliable function. The full pneumatic design also removes any source of ignition from the system and at the same time simplifies the validation process.



**Control unit CU** is integrated in a stainless steel box for hygienic requirements. The unit is designed to control all functions of the conveyor with simple installation and settings of the timers. The CU is compliant with ATEX.

**Control unit PPT** is designed to control the basic functions of the conveyor. The unit can be ordered with or without manual start/stop. The PPT is compliant with ATEX.



**The Valve unit VU-EP** is designed to convert an electrical signal to a pneumatic signal, when there is a need to control the conveyor with a PLC or similar electrical control systems. The unit is prepared for connection to Piab conveyors main functions and is therefore easy to install.



## Feed point

The surrounding air is the carrier of the product and should be added at the feed point. Is the product to be conveyed directly from a container? Is it to be picked up from up high or down low? Piab offers many different options from Feed nozzles and Feed adapters to Feed stations.



### Feed nozzles and suction pipes

To manually feed the conveyor directly from bags, barrels, buckets, etc. The air flow intake into the nozzle can be adjusted to optimize the transport of the product into the conveying line.



### Feed adapters

The feed adapters are suitable for Piab feed station, customized hoppers, big bag unloaders or silos. The feed adapters can adjust the carrying air to optimize the transport of the product into the conveying line.



### Feed station

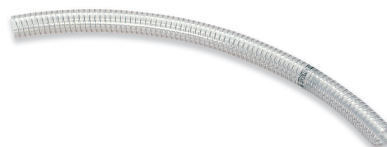
The feed station should be placed under a big bag or for dumping small bags. It has fluidization as an option for sticky, bridging, non-free flowing products to make the transport problem-free.

## Piping

Pipes have lower friction (faster and gentler conveying) than hoses and should be used in all stationary installations. Total conveying distance, vertical distance, number of pipe bends, diameter, whether you are using steel pipes, vacuum hoses or a combination of pipes and hoses, the type of connections between the pipes, these are all factors to consider when you choose piping system.



*Stainless steel pipe bend*



*PVC hose*

## Warranty

Piab offers a warranty to distributors, integrators and users of Piab products worldwide as per the following definitions:

- ▶ A five-year warranty is valid for complete vacuum conveyors excluding blower pumps and controls.
- ▶ A five-year warranty is valid for vacuum pumps excluding blower pumps, accessories and controls.
- ▶ A one-year warranty is valid for other products.

General warranty principals:

- ▶ Piab guarantees against defects in the manufacture and materials by normal use in a proper environment, when following the instruction for care, maintenance and control described in the appropriate Piab manual.
- ▶ Piab replaces or repairs, free of charge, faulty products provided that these are returned to Piab and found to be covered by the warranty.
- ▶ It is at Piab's discretion whether a faulty product should be sent back to Piab for replacement or if the repair shall be made locally at Piab's expense.
- ▶ This warranty does not include wear parts such as filter elements, seals, hoses, etc.
- ▶ This warranty does not include subsequent damages caused by defective products.

## piFLOW®

### **Integrate 60 years of global vacuum experience into your solution**

With more than 60 years of experience we are the leader within vacuum technology – that is our core business. We have built up a global expertise in vacuum conveying that you now can easily access.

We have integrated our products in various industries e.g. Consumer and food, Pharmaceutical and Chemical. Now we are opening up the possibility for you to integrate the vacuum conveyor as a part of your solution. This gives you the possibility to focus your resources on your core business.

With our world-wide sales offices, we will be your local conveying expert for you to grow your business.

### **Short delivery time**

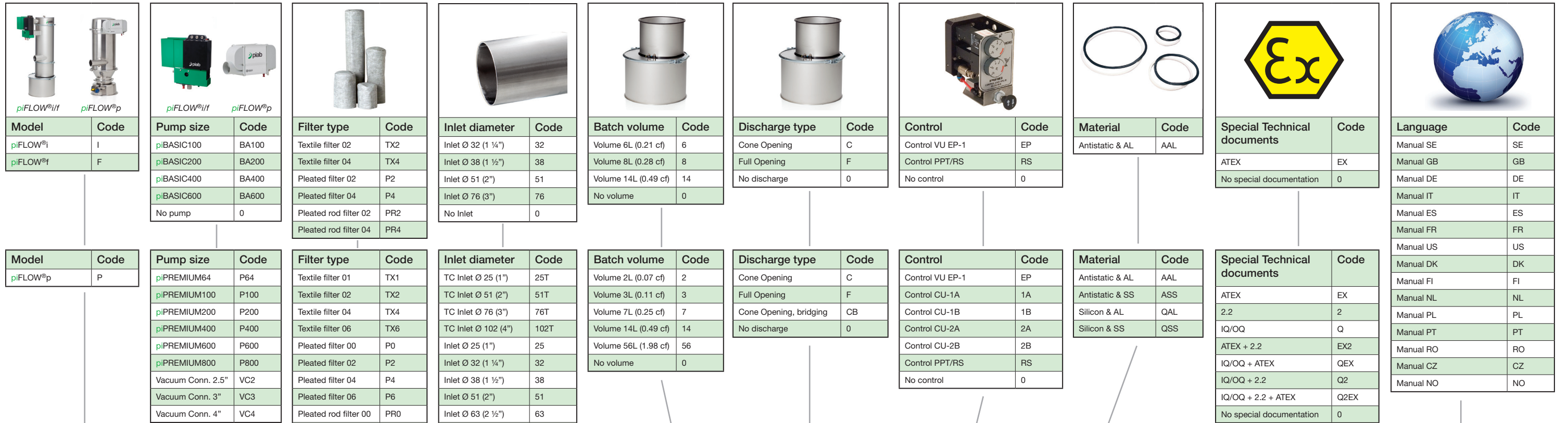
Our vacuum conveyors are all designed through a modular program based on standard components. This gives you the possibility to convey a wide range of different customer products, still with a limited number of standard modules. Hence you can depend on the piFLOW® being available with a short delivery time, avoiding costly stock.

### **Instant access to all documentation**

To simplify the process we give you access to our unique web interface where you are able to configure your product and download relevant documentations e.g. CAD files, datasheets, manuals etc. This gives you the benefit of being in control of your projects in an easy way.

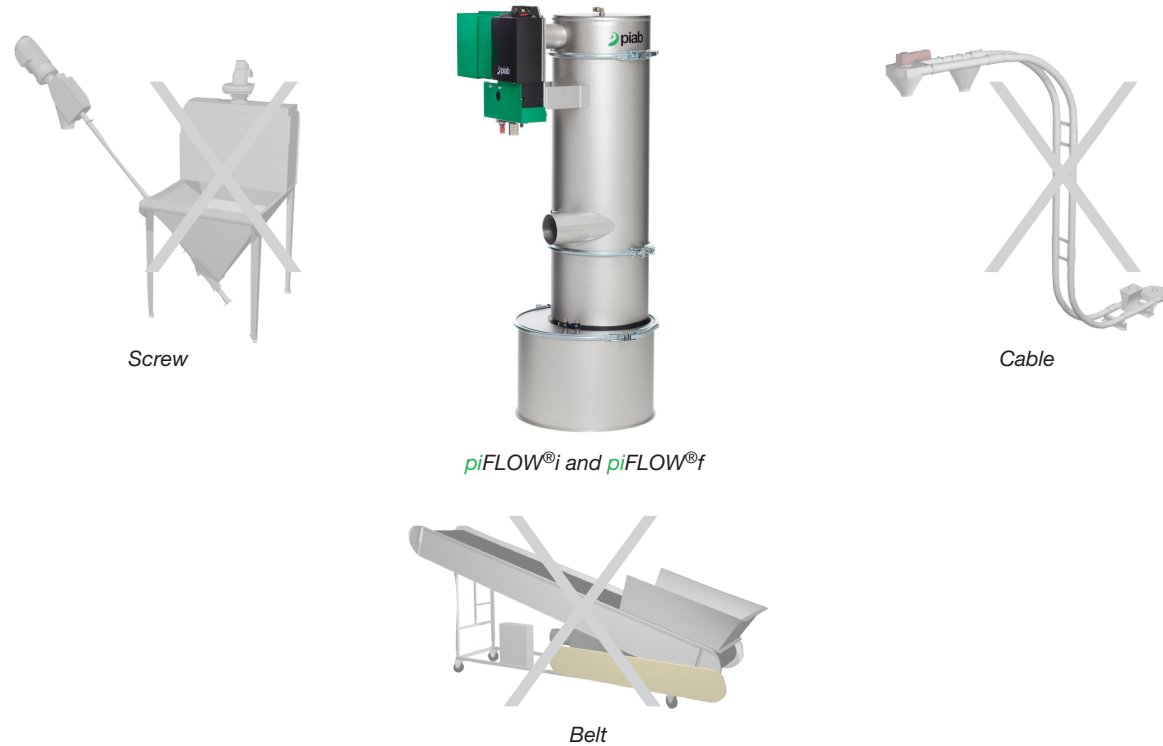


# piFLOW® Conveyor Customer Code



**I . BA100 . TX2 . 32 . 6 . C . RS . AAL . EX . GB**

**The piFLOW<sup>®</sup>i and piFLOW<sup>®</sup>f series – The most cost efficient alternatives to other conveying methods**



**piFLOW<sup>®</sup>p – Integrate the state of the art component with your solution**



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**No need to compromise**

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