

Press Release

Switch faster from painkillers to antibiotics with piFLOW®p SMART

Pharmaceutical companies and their contract fillers benefit from quick product changes. Because with Piab's Industry 4.0-capable vacuum conveyor piFLOW®p SMART, the active ingredients and fillers to produce painkillers to antibiotics can be switched faster. With piFLOW®p SMART the changeover of tablets can be done up to six times faster than with conventional conveyors.

Everyone is currently talking about the bottleneck in medication. More pharmaceutical companies are required to deliver quickly. It is important to provide both large quantities of active ingredients and fillers for a medication, e.g. headache tablets, in order to be able to produce large quantities quickly. On the one hand, substances must be filled into the mixer in the right amount and composition. On the other hand, there must also be quick changeover to other necessary medications, such as antibiotics, particularly in the current cold period. The faster the conveyor can be switched from one product to another, the more efficient the process.

Active ingredients and fillers in differently fine pulverization and density have so far been a major challenge when converting the conveyor system to the new material. Because it had to be done manually by experienced employees who, in addition to knowing the correct setting of the performance parameters, needed to have a sense of the right one set-up from many years of experience. If there is a shortage of skilled workers, this can create a bottleneck. Regardless of this, the manual changeover usually takes up to an hour.

Not so with the self-optimizing conveyor system, the piFLOW®pSMART. This leads to adjustments in ten minutes, more accurately and more quickly than with conventional conveyors. Based on machine learning, a smooth material flow can be guaranteed under all conditions and at speeds that are precisely matched to the specific substances. Parameters can be adjusted regardless of the pipe diameter or delivery length. These adjustments are automatically checked every four seconds. The changeover is not only faster - 10 minutes instead of an hour - but also more reliable, an important factor in the production of highly effective medicines.

This is made possible by the combination of sensors, an electrical control unit and intelligent software. An electrical control unit automatically regulates the supply air unit based on strategically placed vacuum and pressure sensors. This is used to start or stop the vacuum pump and to close or open the valves in the conveyor system. Level sensors protect against overfilling and monitor the emptying process. In this way, the material flow can be adjusted so that both the properties of the conveyed ingredients themselves and the environmental conditions, such as temperature and humidity, which influence the properties of the conveyed goods, are harmonized accordingly. An integrated air delivery unit automatically adjusts the air ratio and continues to do so throughout the cycle. piFLOW®p SMART is based on the well-known COAX® ejector technology and is pre-programmed with advanced algorithms to eliminate complex manual timer settings. It enables continuous, adaptive and automatic fine-tuning of the conveying process as well as the processing of previously created programs.

In addition to its Industry 4.0 functions, the new piFLOW®p SMART vacuum conveyor is equipped with other elements that make product handling easier and safer. These include automatic filter cleaning, multiple filter shock and material safety blocking. The intelligent control unit ensures that there are no blockages within the conveyor system by adapting the emptying of all vertical pipe sections at the end of each suction cycle. Together, such anti-blocking and cleaning functions with air

ensure a long service life of the conveyor and its filters. The system also recognizes and prevents overfilling or emptying of the container. In this way, the entire filling volume of the container can be used, and the material throughput can be optimized.

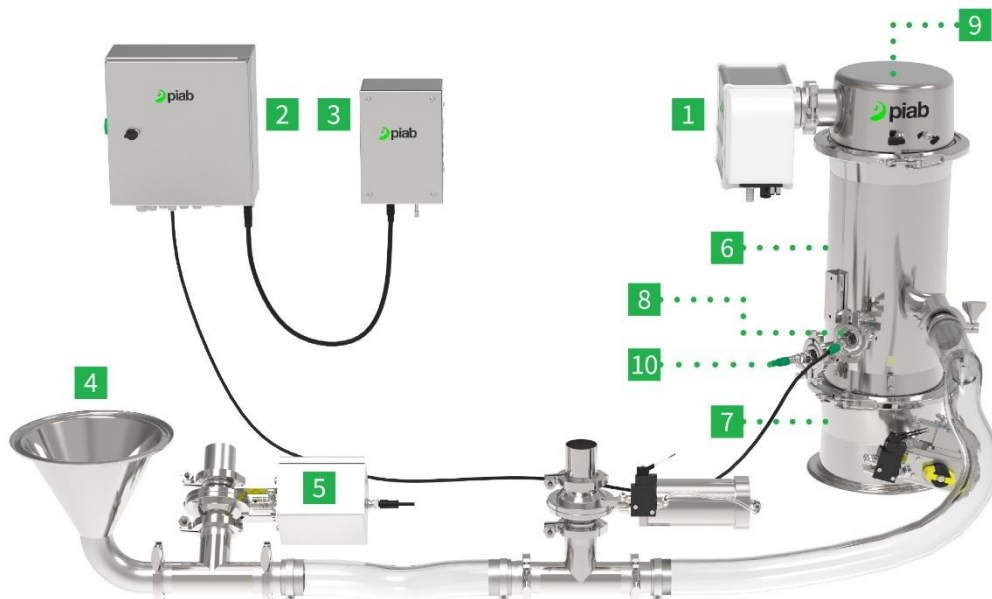
For use in the pharmaceutical and food industries, all materials that come into contact with the material to be conveyed meet the requirements of the FDA and EC number 1935/2004 and are designed in accordance with the USDA guidelines.

With Piab's piFLOW®p SMART, active pharmaceutical ingredients can be provided quickly and reliably and help to counteract the current supply bottlenecks for various preparations.

Photos



Switching from one active ingredient to another must not only be quick, but also safe.



piFLOW®p SMART from Piab is a complete system. It has a heart, brain and senses. At its heart (1) vacuum is generated with compressed air and with the COAX® technology from Piab. The system's brain, the electrical control unit (2), automatically controls the pump. This is done using its valve unit (3), which detects vacuum and pressure and converts electrical to pneumatic signals. With the bottom flap (7) closed, powders, grains or granules are transported from the feed point (4) through the air transmission device (5) and the delivery line to the container (6). When the conveyor is full, the upper sensor (8) turns on, the pump stops, and the bottom flap opens. At the same time as the material is discharged, there is a blast of compressed air that cleans the filter (9). The lower level sensor (10)

switches off. This closes the bottom flap and the pump starts. And with that the next funding cycle begins!

About Piab

Piab provides smart solutions for the automated world, helping thousands of end users and machine producers in e-commerce logistics, food, pharma, automotive and other manufacturing industries to improve energy-efficiency, productivity and working environments. With more than 700 employees and SEK 1,2 bn in sales 2018, Piab is a global organization, serving customers in almost 70 countries from a network of subsidiaries and distributors. By leveraging the ongoing technological development in automation and robotics, and targeting high-growth segments and geographies, Piab's vision is to become the global leader in gripping and moving solutions.

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