Pneumatic Conveyors

- the most efficient way to transfer powders and granules

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Nilfisk®

Pneumatic Conveying

- for a safe, pure and effective environment

Nilfisk offers comprehensive conveying solutions for a variety of industries and applications. These solutions effectively control powder, debris and potent compounds that threaten product purity and employee health.

Our pneumatic conveying systems help minimize the discharge of dust into the environment, while maintaining a high level of efficiency and safety.

Nilfisk helps manufacturing facilities with a variety of cleaning challenges, while meeting industry guidelines and standards. Nilfisk employees are there every step of the way, from product demonstrations, to on-site training and post-sale follow-up.

Expert Support

We support you with a highly-trained direct sales team. Dedicated to solving your manufacturing challenges, our team analyzes your processes and recommends the best vacuums and features for your particular application.

Locate your sales rep at:
www.NilfiskIndustrialVacuums.com/FindARep.aspx

Learn more about Pharmaceutical Vacuum Solutions:
www.PharmaceuticalVacuum.com

Visit the Nilfisk Industrial Vacuums site:
www.NilfiskIndustrialVacuums.com

Watch how-to videos and customer case stories:
www.youtube.com/NilfiskVacuums

Call customer and technical support:
1-800-NILFISK

Dedicated engineering department

Dedicated sales team

Worldwide technical assistance

Applications

FOOD

Conveying of:

- Bakery products
- Sweets, sugared almonds, candies
- Coffee & tea
- Sugar and derivatives
- Snacks
- Pet food

PHARMACEUTICAL

Conveying of:

- Pills
- Capsules
- Powders
- Excipients

PLASTICS

Conveying of:

- Cleaners
- Toners
- Extrusion
- Injection molds

Advantages to Nilfisk Conveying Solutions

Nilfisk conveying solutions help facilities all over the world automate production processes, specializing in the transport of powder, grain and capsules.

- Easy and quick to install on related machines
- Lower production costs
- Increase production capacity
- Easy to maintain
- Helps enable a dust-free environment
- No granule chipping
- Low noise level
- Highly flexible solution

What is Pneumatic Conveying?

- transfer powders and granules within processing machinery

Pneumatic conveyors transfer powder or granules within processing or manufacturing machinery in selected quantities and within desired time. The transfer of materials takes place in perfect hygienic condition, respecting both the environment and the operators' health.

Benefits of pneumatic transfer compared to mechanical transfer:

- absence of mobile mechanical parts, except for the exhaust valve, preserves the material's integrity;
- contact with external agents is minimal, ensuring an optimal level of hygiene;
- perfectly integrated into manufacturing processes, enhancing their efficiency;
- higher safety, efficiency and automation.

Due to a high level of efficiency featured in the filtration system, Nilfisk pneumatic conveyors minimize the discharge of dust into the environment, ensuring equipment is non-polluting and environmentally-friendly.

Operating principle: A suction system creates vacuum within the hopper, allowing the material to be suctioned. The material is then discharged at the desired location i.e. a mixer, a packaging machine or a container.

Why Choose Nilfisk Pneumatic Conveyors?

- various options to meet any industry application need

FLEXIBILITY: Nilfisk conveyors are perfectly integrated in the production process and are available in electric and pneumatic models with capacities ranging from 2 to 11 liters and conveyance of materials from 100 kg/h to 1300 kg/h.

PRODUCT QUALITY: Move mixtures while still preserving their integrity and keeping the percentages of single components intact. (Validated by a study made in collaboration with the University of Parma.)

PRODUCTIVITY: Increase automation and health and safety of your personnel by eliminating the task of manually scooping powder into process machines.

How to choose the right pneumatic conveyor

Choosing the best conveyor for your application is highly important for the efficiency of the product. The conveyed material, quantity and level of hygiene required for both the industry and application should be taken into consideration when selecting the right pneumatic conveying option.

APPLICATION	*KG/H	PUMP (SIZE) OR MOTOR (KW)	RECOMMENDED PNEUMATIC CONVEYOR	SUGGESTED MATERIAL	TECHNOLOGY	CERTIFICATIONS
FOOD AND PHARMA	2200-2600	H600	PCC64HF	Powders or grains	Compressed air	USDA FDA Ex
	1300-2200	H400	PCC44HF	Powders or grains	Compressed air	USDA FDA Ex
	600-1300	H200	PCC24HP	Powders or grains	Compressed air	USDA FDA Ex
	300-600	H100	PCC12HP	Powders or grains	Compressed air	USDA FDA Ex
	100-300	H060	PCC00HP	Powders or grains	Compressed air	USDA FDA Ex
	100-500	0.6 KW	3VT	Powders	Electrical	
	50-700**	1.5 KW	9505	Empty capsules	Blowing-based electric system	
	100-600	2.2 KW	PCT421FG	Fragile grains	Electrical	
	** capsules per second					
FOOD AND OTHER INDUSTRIES	2700-3100	S600	PCC66SF	Powders or grains	Compressed air	FDA Ex
	1700-2700	S400	PCC44SF	Powders or grains	Compressed air	FDA Ex
	100-300	1 KW	A128XRF	Grains	Electrical	
	100-300	1 KW	A128XR	Grains	Electrical	

* performance may vary depending on the material bulk's density and on conveying length.

Operational Layout
- Filling

1 Standard pick-up:
The material is collected from small containers at ground level through a probe tube inserted into the pick-up point by the operator; it is then transferred to the desired area.

3 Pick-up with feed adapter:
The material is collected from a loading station, automatically fed by a production process upstream. The pneumatic transfer is continuous and does not require operator intervention. The feed adapter, installed underneath the product pick-up unit, allows variations of air intake, in order to obtain an optimal material-air mixture (dense phase versus dilute phase).

2 Loading station pick-up:
The material is collected from a loading station, where the operator pours the material to be transferred; it is then transferred to the relevant area. In this way, the material is suctioned without the operator's action.

4 Hopper pick-up in a controlled atmosphere:
The hopper from which the material is collected has a remarkable capacity, allowing the transfer of high quantities of material.

PCC Line

- compressed air pneumatic conveyors

Vacuum generation within this type of pneumatic conveyor is carried out by compressed air systems. Different from other technologies, this system has a low noise level, high flexibility and small footprint. Thanks to vacuum generation technology, the pump feed compressor's energy consumption is similar to that of electric systems such as side channel blowers or vane pumps.

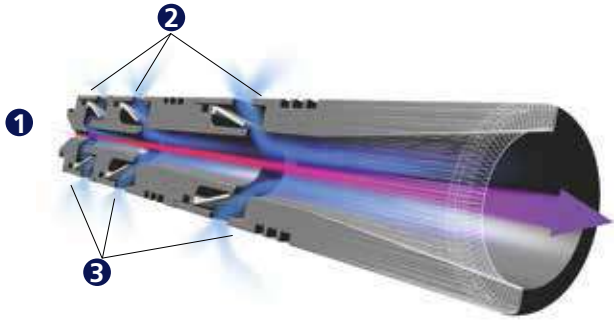
STANDARD LINE - For food, chemical and other industries which require a high level of hygiene.

This conveyor line is ideal when a perfect balance between performance, compactness and low maintenance needs is required. Made of AISI 304 stainless steel, standard conveyors guarantee a very high level of hygiene. This range features pump technology capable of conveying up to 3100 kg/h of powders and granules.

PREMIUM LINE - For food and pharmaceutical industry, which require the highest level of hygiene.

This line is employed where an optimal level of technology and efficiency is required; it is mostly employed in the pharmaceutical and food industries, where an optimal level of hygiene and excellent production materials are required. All parts in contact with the material, except for the gaskets and the filter, are made of AISI 316L stainless steel; the pump is even more efficient in terms of energy consumption, and can transport up to 2600 kg/h.

COAX™ Technology



Nilfisk's COAX technology cartridges are the core of compressed air vacuum pumps for the PCC conveying range. This suction system can supply 30% more vacuum compared to traditional systems, reducing energy consumption.

When incoming compressed air enters the ejector (1) and flows within it, the nozzles (2) open due to the different levels of generated pressure. The air can now flow (3), generating a determined vacuum. Based on the pressure of the incoming air, the ejectors have ability for different air suction capacities.

* COAX technology is featured in all PCC models.

Premium Pharma Line - PCC00HP

Premium Pharma Line - PCC12HP

Premium Food Line - PCC44HF

Premium Food Line - PCC44SF

Electric Pneumatic Conveyors
- high efficiency, dust-free conveying

Electric pneumatic conveyors generate vacuum through side channel blowers, vane pumps or universal motors. Nilfisk electric pneumatic conveyors are compliant with Regulation 1935/2004, in both the food and pharmaceutical industries.

STANDARD LINE

- **3VT** - convey powder mixtures up to 500 kg/h and/ or grains smaller than 1 mm, while avoiding product segregation and contamination.
- **9505** - convey empty capsules with air power to effectively transfer capsules through rigid sanitary piping into a hopper above the capsule filling machine without damage.
- **A128X** - convey materials up to 300 kg/h and grains larger than 1 mm.

"MODULAR SYSTEM" RANGE

Custom-made for specific applications

With the potential to transfer up to 3000 kg/h* of powders or grains, these conveyors are comprised of 2-12 kW suction units with side channel blowers for transport during the fluid or semi-dense phase. Different types of hoppers are used, based on the type of material and amount to be transferred:

- AISI304 stainless steel grain hopper
- AISI304 stainless steel powder hopper
- AISI316L mirror-polished stainless steel powder hopper
- AISI304 stainless steel grain/fragile material hopper

Our team of experts perform feasibility studies in order to identify the best solution for each individual industry and application.

* based on the bulk density, conveying, length and height.

3VT series

9505 series

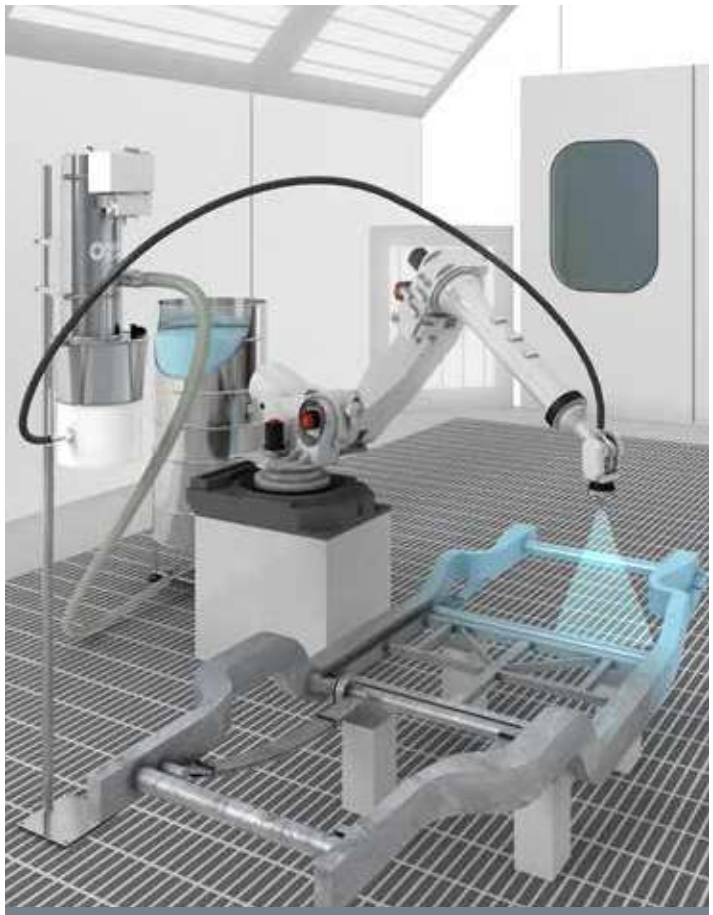
A128XR series

Comprehensive coffee processing - transfer of ground coffee to packaging machine

Tablet transfer to blistering machine

Dust control solutions for the entire tablet and capsule production process

Filling of dosing unit on double vertical packaging machine



Industrial painting robot feeding

Technical Specifications

Electric Pneumatic Conveyors

Description	Unit	3VT	9505	A128XR
Voltage @ 60 Hz	V	220 / 460	220 / 460	110
Power @ 60 Hz	HP (W)	0.94 (700)	0.67 (500)	1.34 (1000)
Waterlift, max.	in. (mm) H_2O	291 (7391)	47.5 (1207)	85 (2150)
Airflow, max.	CFM (L/min)	9.4-14.7 (267-417)	46 (1300)	95 (2700)
Min./Max. Inlet Air Pressure	psi (bar)	60-90 (4-6)	-	-
Hopper Capacity	gallons (L)	2.9 (11)	53 (200)	2.11 (8)
Dimensions (L x W x H)	in. (mm)	40.0 x 18.0 x 120.0 (1015 x 450 x 3050)	24.0 x 47.2 x 47.2 (610 x 1200 x 1200)	12.0 x 12.0 x 29.0 (300 x 300 x 730)
Throughput Range	kg/h	100-500	50-700**	200-300
Pump/Motor Size	KW	0.6	0.5	1.0

Compressed Air Pneumatic Conveyors

Description	Unit	PCC00HP	PCC12HP	PCC24HP
Voltage @ 60 Hz	V	-	-	-
Power @ 60 Hz	HP (W)	-	-	-
Waterlift, max.	in. (mm) H_2O	300 (7620)	300 (7620)	300 (7620)
Airflow, max.	CFM (L/min)	27 (764)	54 (1529)	110 (3114)
Min./Max. Inlet Air Pressure	psi (bar)	60-90 (4-6)	60-90 (4-6)	60-90 (4-6)
Hopper Capacity	gallons (L)	0.53 (2)	0.79 (3)	1.8 (7)
Dimensions (L x W x H)	in. (mm)	12.4 x 15.2 x 11.3 (315 x 386 x 287)	17.4 x 19.3 x 26.4 (442 x 490 x 671)	17.4 x 19.3 x 37.2 (442 x 490 x 945)
Throughput Range	kg/h	100-300	300-600	600-1300
Pump/Motor Size	KW	H060	H100	H200
SPL @ 1.5 M	dB(A)	73	77	77

Compressed Air Pneumatic Conveyors

Description	Unit	PCC44SF	PCC66SF	PCC44HF	PCC64HF
Voltage @ 60 Hz	V	-	-	-	-
Power @ 60 Hz	HP (W)	-	-	-	-
Waterlift, max.	in. (mm) H_2O	300 (7620)	300 (7620)	300 (7620)	300 (7620)
Airflow, max.	CFM (L/min)	187 (5295)	231 (6541)	176 (4984)	328 (9288)
Min./Max. Inlet Air Pressure	psi (bar)	60-90 (4-6)	60-90 (4-6)	60-90 (4-6)	60-90 (4-6)
Hopper Capacity	gallons (L)	3.7 (14)	3.7 (14)	3.7 (14)	3.7 (14)
Dimensions (L x W x H)	in. (mm)	18.2 x 17.3 x 42 (462 x 439 x 1067)	18.2 x 17.3 x 51.9 (462 x 439 x 1318)	19.1 x 21.8 x 40.9 (485 x 554 x 1039)	19.1 x 25.8 x 40.9 (485 x 655 x 1039)
Throughput Range	kg/h	1700-2700	2700-3100	1300-2200	2200-2600
Pump/Motor Size	KW	S400	S600	H400	H600
SPL @ 1.5 M	dB(A)	77	77	77	77

Safe Choice Commitment

At Nilfisk Industrial Vacuums we understand that you face many risks each day, just by operating your business. That is why Nilfisk is dedicated to helping you make smart choices to keep your facility and your workers safe. Our team of experts is ready to tackle any cleaning challenge – because in a world full of risk, you have to make safe choices.

We are committed to being that safe choice.
To learn more visit www.nilfiskindustrialvacuums.com.

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