

APPLICATION INDUSTRIES



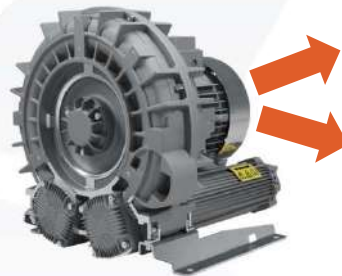
SIMPLIFIED FLUID HANDLING

Introduction

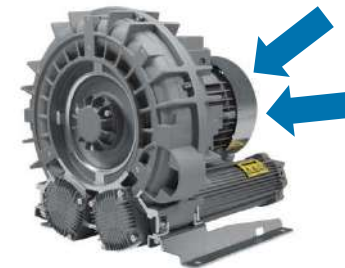
Industries



COMPRESSION



SUCTION

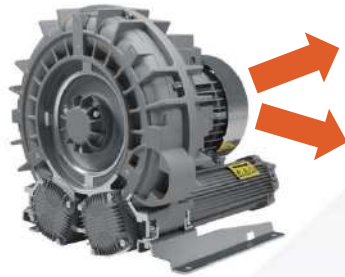


Introduction

Functionalities

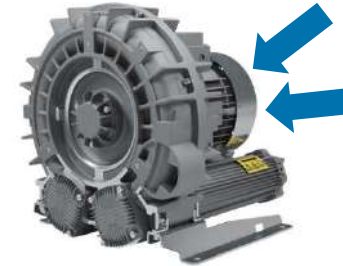
Applications (e.g.)

COMPRESSION



- Water oxigenation for fish farming
- Aquarium aeration
- Floating aeration
- Antipollution barriers
- Wastewater treatment plant
- Drying of parts or products or marble
- Temporary emergency tents
- Seeder machines
- Ice storage for industrial uses
- Pneumatic conveying
- Silo loading
- Hopper loader
- Biogas and biomethane plants
-

SUCTION



- Portable vacuum systems
- Car dust exhausting
- Anesthesia Gas Evacuation System
- Animal drying plants
- Pick & Place
- Soil remediation and ventilation
- Vacuum tables
- Dental systems
- Hospital tube systems
- Socks spinning
- Centralised vacuum system
- Humidity aeration
- Pneumatic conveying
-

Water treatment



SIMPLIFIED FLUID HANDLING

Wastewater treatment applications

1. Oil separation



The oil separation, or degreasing process, aims **to remove the excess of oils and fats from the water**. The air is blown from the bottom of the tanks through porous diffusers. The emulsified fats, pushed towards the surface, are discharged into a collection well.



MS, MD, TD

2. Biological oxidation



In the biological oxidation phase, **the air blown through porous diffusers provides the oxygen that degrades the organic substances** present in the wastewater.



MS, MD, TD

3. Air-lift



The air generated by the blower feeds the air-lift pump, used for lifting and recirculating water with mud or sand.



MS, MD, TD

Trasversal application: Paper & printing, Textile, Food&Beverage, Oil&Gas



Wastewater treatment applications – our installations



Wastewater treatment applications – our installations



Industrial cleaning



SIMPLIFIED FLUID HANDLING

Industrial cleaning applications



Centralized vacuum system

1. Vacuum systems



The blower is installed as a part of the industrial vacuum system for **de-dusting or debris removal**. There are 2 type of vacuum systems: centralized or portable. Some installations also requires ATEX blowers.



MS - ATEX version



Portable vacuum system

Food & Beverage



SIMPLIFIED FLUID HANDLING

Food & Beverage applications

1. Drying systems



Liquid drops removal → The blowers are used to dry and completely remove liquid drops from the product.

Condensation removal → In addition, the blowers generate a hot air flow that removes the condensation from bottles thanks to a series of nozzles, adjustable in height, depth and inclination.



MS, TS, Air knives

2. Pneumatic conveying



Product handling in compression → the blower is used to convey powders or solid products from a single point to another

Product handling in suction → the exhauster is used to convey from one or several points back to a single point, in particular flours or powders that cannot be heated



MS, MD, TS, TD

Food & Beverage applications

3. Pneumatic presses



Wine production → The blower inflates the membranes inside the pneumatic presses **to squeeze the grapes and extract the liquid.**

Subsequently, through the inversion valve, the blower sucks the air from the membranes to deflate them at the end of the process.



MS, TS, Reversing valve

4. Pick & Place



Snack handling → Thanks to the flow of air generated by the suction blower, snacks are easily moved from one part of the production line to another



MS, TS, Reversing valve

Industrial automation



SIMPLIFIED FLUID HANDLING

Industrial automation applications

1. Drying systems



Trasversal application: F&B and Metalworking & industries

The product passes inside a drying tunnel in which **the blowers generate a flow of hot air** (average temperature 20 °C) which, through a series of nozzles adjustable in height, depth and inclination, **remove the droplets of liquid and condensation from the product**. Thanks to the drying it is possible to proceed with the subsequent stages of processing.



MS, MD, TS, Air knives

2. Vacuum tables



Trasversal application: fabric, leather, wood, marble, cardboard, glass or metal.

- **Fixing the material** → The blower is mainly used **in suction** to create a vacuum inside the air chamber below the slotted surface, blocking the holes and thus ensuring the fixing in place of the material.
- **Handling a heavy products** → The blower is **used in compression** to put in force air through the holes of the suction table. In this way, an air cushion is created that allows the object to remain slightly raised with respect to the surface and to be moved easily.



MS, MD, TS, TD, Reversing valve



Industrial automation applications

3. Pneumatic post



*Trasversal application:
Chemical &
Pharma industries*

- **Handling of a product in vacuum** → The blower is used to automatically pick up the products placed inside a box and transport them to a safer area, such as a warehouse
- **Handling of a product in compression** → The blower used in combination with the reversing valve allows the direction of the air flow to be changed. Thanks to it, the products are picked up from the warehouse and moved to the collection point.



MS, Reversing valve

4. Pick & Place



*Trasversal application: F&B
industry,
Packaging*

- **Withdrawal of the product** → The blowers are used **in vacuum** inside the gripping system of the pneumatic manipulators, creating a negative pressure that provides the force necessary to pick up the product.
- **Product positioning** → The blowers are used in combination with the reverse flow valves, to release the objects previously picked up.



MS, MD, Reversing valve

Packaging



SIMPLIFIED FLUID HANDLING

Packaging applications

1. Drying products/labels



The side channel blower is used inside the packaging machines to dry the product at the end of the processing stages. Proper drying is essential to ensure quality packaging and avoid damage to the packaging due to any residual drops or condensation.



MS, TS, Air knives

2. Pick & Place



Withdrawal of the product → The blower is used in suction inside the gripping system of the pneumatic manipulators, creating a negative pressure that provides the force necessary to pick up the product.

Product positioning → The blower is used to release the objects previously picked up.



MS, MD

Trasversal application: Pulp & Paper, Chemical & Pharmaceutical, Food & Beverage

Oil & Gas



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Oil & Gas applications

1. Oil Vapour Extraction



In power plants and refineries, the side channel blowers are used **in suction to convey the oil mist** through the separation chambers of a filter, which collect the oil particles which are then discharged or reintroduced into the system, returning clean air to the environment.



MS - ATEX version

2. Remediation of soil



The side channel blower is used **in compression to induce the air** to pass through the ground through an extraction well, while **a second blower sucks in the volatile pollutants** bringing them to the surface through a second well, leading them to the blast chillers.



MS, MD, TD - ATEX version

Oil & Gas applications

3. Wastewater treatment



FPZ side channel blowers are used in traditional activated sludge plants or in systems with membrane bioreactors (i.e. MBR - Membrane Biological Reactor and SAFF - Submerged Aerobic Fixed Film reactor). The most common applications are: **oil separation**, **biological oxidation** and **air-lift**. (see *Wastewater treatment applications*)



MS, MD, TD

4. Biogas delivery



Delivery of biogas from landfills for flaring, burner and co-generation plants.

Gas suction from tanks and facilities for flaring, burners and co-generation plants.



MS - ATEX version

Oil & Gas applications – our installations



Metal working



SIMPLIFIED FLUID HANDLING

Metal working applications

1. Industrial vacuum cleaners



The blower is used to **suck shavings, welding fumes, oils, and dusty substances** dispersed into the environment during processing, ensuring high standards of hygiene and cleanliness on production lines, departments and on processing machinery.



MS, MD, TS

2. Galvanic treatments



The blower is used **to blow the air from the bottom of the tank** and create a mild agitation of the galvanic bath, favoring the replacement of the solution on the piece to be treated and contributing to the deposit of the liquids that will give shape to the finished product.



MS, MD, TS, Air knives

3. Drying systems



Blowers are used on washing tunnels for metal components (such as screws, bolts, brake supports, pipes, casings, etc.) **to pre-dry the pieces** between one treatment cycle and the next or **to dry and remove drops of liquid and condensation.**



MS, MD, TS, Air knives

Pulp paper & printing



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Pulp paper & printing applications

1. Paper cutting



The blower is used near the grinding wheels **to suck away the sparks** produced by the sharpening of the blades avoiding direct contact with the paper



2. Rollers cleaning



The blower is used **to suck away the nebulized solvents** for the routine cleaning of the rollers on the printing lines. The solvents are then led to a special filter which condenses them and expels them from the system.



3. Stickers drying



The blower is used **in compression and in combination with the Windblade™ air knife** inside the ovens to keep the air temperature high and dry the adhesives after the coating phase.



Pulp paper & printing applications

4. Adhesive films



The blower is used inside an oven to **create a vacuum allowing the decorative film to adhere to the profile**. The design on the film is then imprinted on the surface.



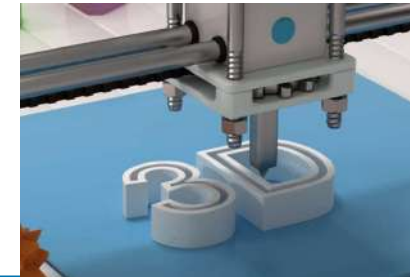
5. Shaving recovery



The blower is used in paper **mills to suck up the various process residues**, such as shavings and dust, keeping the environment clean and free of dust which is harmful to operators.



6. 3D Printing



The side channel blower is used **to clean the debris, chippings or dusts** from the printing process.



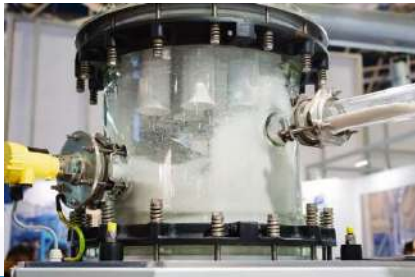
Plastic



SIMPLIFIED FLUID HANDLING

Plastic applications

1. Pneumatic conveying



Handling of a product in vacuum → In the production process of plastics different types of polymers are used which are mixed together. The blower is used to convey polymers from one silo to another.



MS, TS, TD

2. Polymers drying and dehumidification



The blower is used inside the dehumidifiers **to create hot air that dries the polymers** by eliminating any residual water contained within them, ensuring a quality finished product (free of water bubbles and inefficiencies).



MS, MD

Textile



SIMPLIFIED FLUID HANDLING

Textile applications

1. Vacuum tables for cutting



The blower is used **in vacuum to create a void inside the air chamber** below the slotted surface, blocking the holes. Since the fabric is a breathable product, a cellophane is spread over it that prevents the passage of air, thus **ensuring the fixing of the material**. The fabric is cut automatically by software-controlled cutting heads.



MS, TS

2. Circular machine for socks



The side channel blower is used inside the circular sewing machines **to convey the socks produced inside a collector**. The circular machines with the help of needles and threads form the sock, which is carried in a binder. The pneumatic conveying process takes place via a side channel aspirator.



MS

3. Sewing machines



Fixing the material in vacuum → The blower is used in vacuum to keep the product still, to which glues can be applied and elements such as cuffs, collars, pockets or belts can be trimmed and sewn.



MS, Reversing valve

Textile applications

4. Yarns processing



The side channel blower is used in yarn winding and fabric manufacturing processes **to keep the yarn under tension in case of breakage.**



MS

5. Colour drying



The blowers are used **to dry the material** after colouring it.



MS

Textile applications – our installations



Electronic



SIMPLIFIED FLUID HANDLING

Electronic applications

1. Drying systems



Liquid drops and condensation removal → The product passes inside a drying tunnel in which the blowers generate a flow of hot air which, through a series of adjustable nozzles in height, depth and inclination, allow you to remove drops of liquid and condensation from the product.

Thanks to the drying it is possible to proceed with the subsequent stages of processing.



MS, Air knives

2. Pick & Place



Withdrawal of the product → The blower is used in suction inside the gripping system of the pneumatic manipulators, creating a negative pressure that provides the force necessary to pick up the product.

Product positioning → The blower is used in combination with the flow reversing valve, to release the objects previously picked up.



MS, MD, Reversing valve

Chemical & Pharmaceutical



SIMPLIFIED FLUID HANDLING

Chemical & Pharmaceutical applications

1. Drying systems



The product passes inside a drying tunnel in which **the blowers generate a flow of hot air** which, through a series of nozzles adjustable in height, depth and inclination, **remove the droplets of liquid and condensation from the product**. Thanks to the drying it is possible to proceed with the subsequent stages of processing.



MS, TS, Air knives

2. Pneumatic conveying



In compression or suction applications
→ the blower is used for **conveying raw materials** necessary for the production of drugs such as powders and granules from a single point to several points or viceversa.



MS, MD, TS, TD

3. Vacuum cleaners



The blower is used **to suck dusty substances dispersed into the environment** during processing, ensuring high standards of hygiene and cleanliness on production lines, departments and on processing and packaging machinery.



MS, MD, TS, TD

Painting & Dye



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Painting & Dye applications

1. Dust removal



Dust removal sanding, in suction → In auto body shops, before the painting phase, surfaces must be prepared and sanded. The blower is necessary to remove the putty dust, which is particularly harmful for the operator, during the sanding process.



2. Drying system



Paint drying, in compression → In auto workshops, thanks to a low pressure air flow, the blower gently dries the paint, without creating ripples. Furthermore, the blower allows to dry even small and medium-sized surfaces, without turning on the oven. This solution means significant energy savings.



3. Pad printing



After each painting phase, the blower is used **in compression to dry the colour** and allow the object to continue its cycle.



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