

BAND DRYER FOR SUPER ABSORBENT POLYMER



In Association with SVCH-Technologii, Moscow (Russia)
ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018

ABOUT US

KERONE is now renowned for serving the specialized needs of customers with the best quality and economical process of Heating /cooling and drying products, manufactured in a high-quality environment by a trained and qualified workforce (special purpose machinery)

-  48+ Years Manufacturing Excellence
-  Great Sale Support
-  Highly Customized Product
-  Adherence to Standards
-  Sound Infrastructure
-  Team of experts Delivering Quality
-  Timely Delivery
-  Cost Effective Solutions



KERONE is a pioneer in application and implementation engineering with its vast experience and team of professionals.



KERONE is devoteded to serve the industry to optimize its operations both economically and environmentally with its specialized heating and drying solutions.



KERONE is having immense expertise in manufacturing and implementing various types of engineering solutions.



KERONE is possessing employee strength of more than 280+ experts continuously putting efforts for happy industrial engineering solutions.

WHY CHOOSE US

With decades of expertise, cutting-edge technology, and a customer-centric approach, Kerone Engineering offers tailor-made heating solutions that prioritize quality, flexibility, and cost-effectiveness. Benefit from our commitment to excellence, post-sales support, and innovative solutions for your unique heating needs. Choose Kerone Engineering for reliability, performance, and unmatched value.

MISSION

- ✓ To enhance the value of customer operation through our customer need centric engineering solution
- ✓ We are committed to provide our customers, unique and best in class products in Industrial heating drying and cooling segment with strategic tie-up for the technical know-how with renowned leader in the industry specific segment

VISION

- ✓ Turn into a world leader in providing specialized, top-notch quality and ecological industrial heating, cooling, and drying solutions across the globe.
- ✓ To attain global recognition as the best of quality and environment-friendly engineering solution company.

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Enhance the value of customer operation through our customer need centric engineering solution.

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What is Band Dryer?

Conveyor belts are stacked one on top of the other to create band dryers. Long residence times and several passes are made possible on constrained floor space by multilayer. Band dryers are built using a number of modular components, each with its own heating and air circulation system. The often used continuous band drier consists of a single pass conveyor that circulates air.

To increase equality of treatment, hot air is circulated from below, above, or in a combination of both directions. The feeding, spreading, cleaning, heating, and chilling portions are frequently included in band dryers. Any type of product, including those that are delicate, sticky, pasty, or those need a long and precise residence time, can be dried using a band drier that is specially built and made for the job.



Principle



- Cooling section can be foreseen after drying zone.
- Band dryer can be fitted with accessories (feeder, spreader, cleaning devices, etc).
- Dryer is constituted by several modular sections with independent heating and air circulation systems.
- Process gas is blown whether downward or upward or in a combined arrangement in order to improve homogeneity of treatment.
- Band dryer is composed of one perforated conveyor supporting a layer of product, passed through by process gas.
- It is the most appropriate equipment for fragile, sticky, pasty products or product requiring long and accurate residence time.



Advantages of This Technology

- Energy saving due to gas recycling
- Highly homogeneous treatment
- Versatility of processes and applications
- Multiple processing in one single equipment
- Accurate adjustment of residence time
- Possibility to add accessories for mechanical action on product
- Adjustment of temperature, gas velocity and direction in each section

Conveyor Types

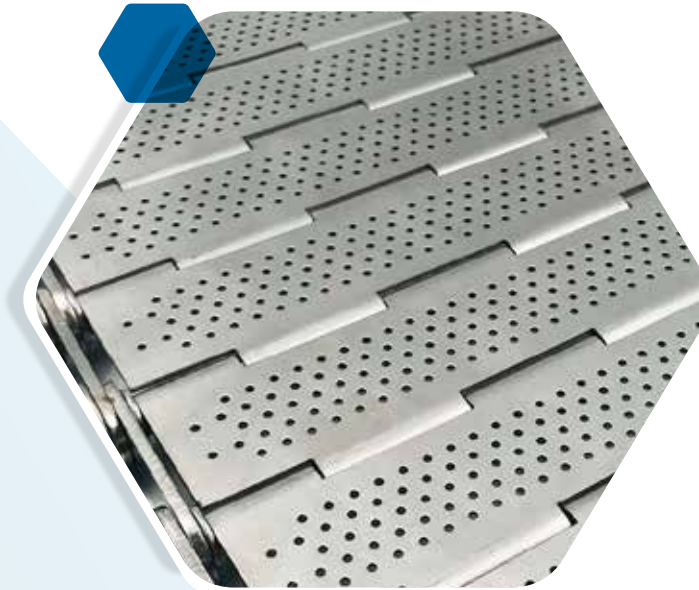
According to handled product, following types of conveyor can be proposed :

- Wire mesh
- Hinged perforated plates
- Wire and struts belt
- Continuous perforated belt

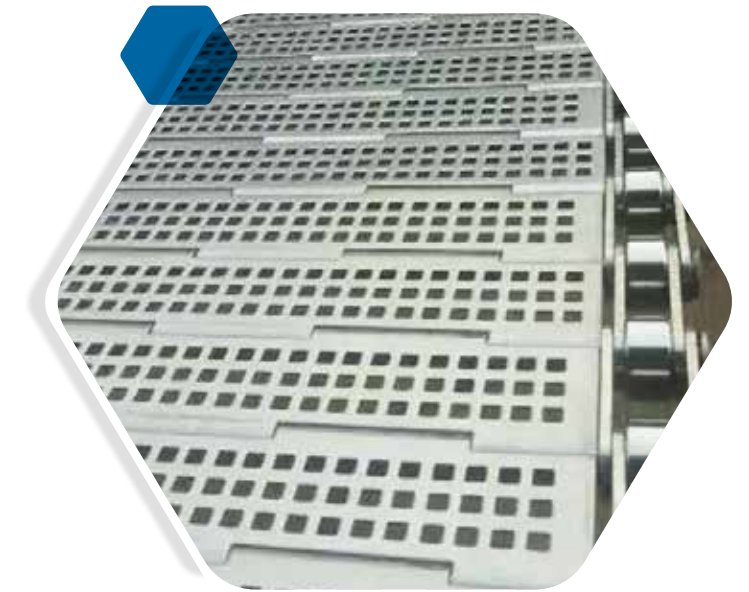
Accessories

A set of accessories can be foreseen :

- Spreader
- Rotary picker
- Feeder : oscillating, vibrating etc.
- Conveyor, cleaning device: rotating brush, scraper, washing tank, etc.



Continuous Perforated Belt



Hinged perforated plates



Rotary Picker



Spreader

Application

A wide range of materials can be dried.

- Thixotropic materials
- Fibrous materials
- Adhesive or cohesive materials
- Other materials such as irregularly shaped materials or filtered sludge cake can be used after applying a forming machine or granulator.
- Granular food (crackers, snacks, etc.), instant noodles, agricultural produce, chemical products, pod, beans, pigments, dyes, resins, fertilizers, etc.
- Regularly shaped construction materials (boards, rock wool boards, calcium silicate boards, plywood boards, etc.); also IC boards, automobile parts, electrical parts, mechanical parts.



Features

Conditions such as the temperature and airflow speed can be freely and accurately controlled to obtain a high quality dry product.

- The temperature, humidity and airflow speed can be easily set and controlled for each zone according to the progress of drying. (Zone control)
- The drying time can be freely adjusted for consistent heat progression, which produces uniform products with minimal drying unevenness
- Materials are dried while stationary, which greatly minimizes damage and dust scattering
- In particular, this dryer allows the granulating and shaping of sludge or irregularly shaped materials. Also appropriate for adhesive or thixotropic materials.
- An (automatic) washing device can be set on the conveyor to make cleaning easy and prevent contamination while maintaining excellent sanitation.
- Usable in a wide range of temperatures, from low temperature (humid air) to high temperature.
- Various models are available (from one stage to multiple stages) for compatibility with both low and high volumes.

Drying Conditions

The desired drying conditions can be selected

- Heat source:
Steam, gas, oil, electricity, exhaust gas, etc.
- Humidity:
Hot air circulation method, humidifier, dehumidifier, etc.
- Airflow Speed:
From low to high airflow speed.

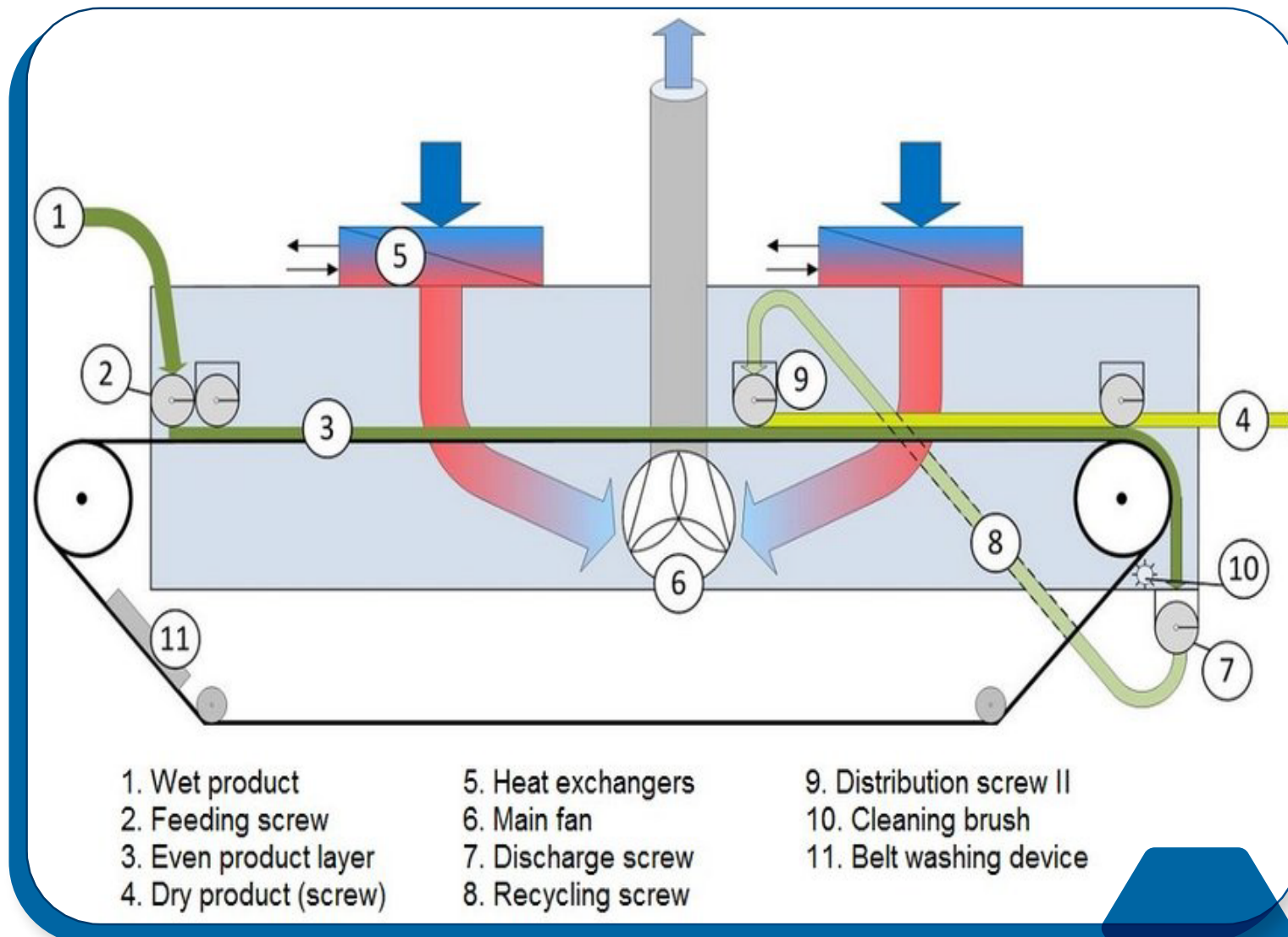


Construction

A band dryer is typically constructed using a stainless steel framework with a continuous belt made of a material that is suitable for the specific product being dried. The belt moves continuously through the dryer, carrying the product with it. Here are some of the key components of a band dryer:

Heating System

The heating system is used to provide the heat required for drying the product. It can use different types of fuels such as gas, electricity or steam depending on the design and requirements of the dryer.



Control System

The control system is used to regulate the temperature, humidity, and other parameters of the drying process. It typically includes sensors, controllers, and other components that allow the operator to adjust the drying parameters as needed.

Air Circulation System

The air circulation system helps to distribute the heated air evenly throughout the dryer chamber, ensuring that the product is dried uniformly. The system typically includes fans, ducts, and other components that help to regulate airflow.

Belt Tensioning System

The belt tensioning system ensures that the belt is kept tight and moves smoothly through the dryer. It typically includes a tension roller or other devices that can adjust the tension of the belt.

Product Loading and Unloading Systems

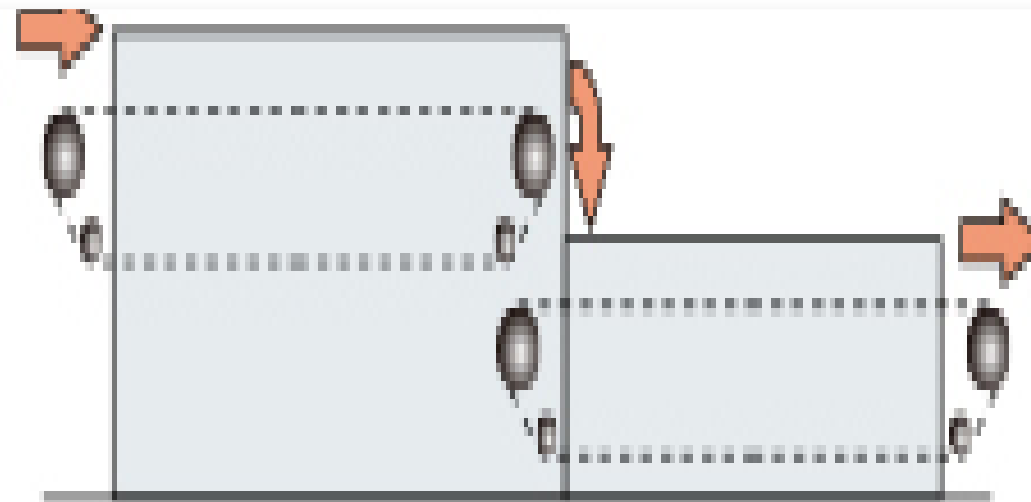
The product loading and unloading systems are used to load the product onto the belt at the beginning of the drying process and to remove the dried product at the end of the process. These systems may include conveyor belts, loading chutes, and other mechanisms.

Band Dry Models

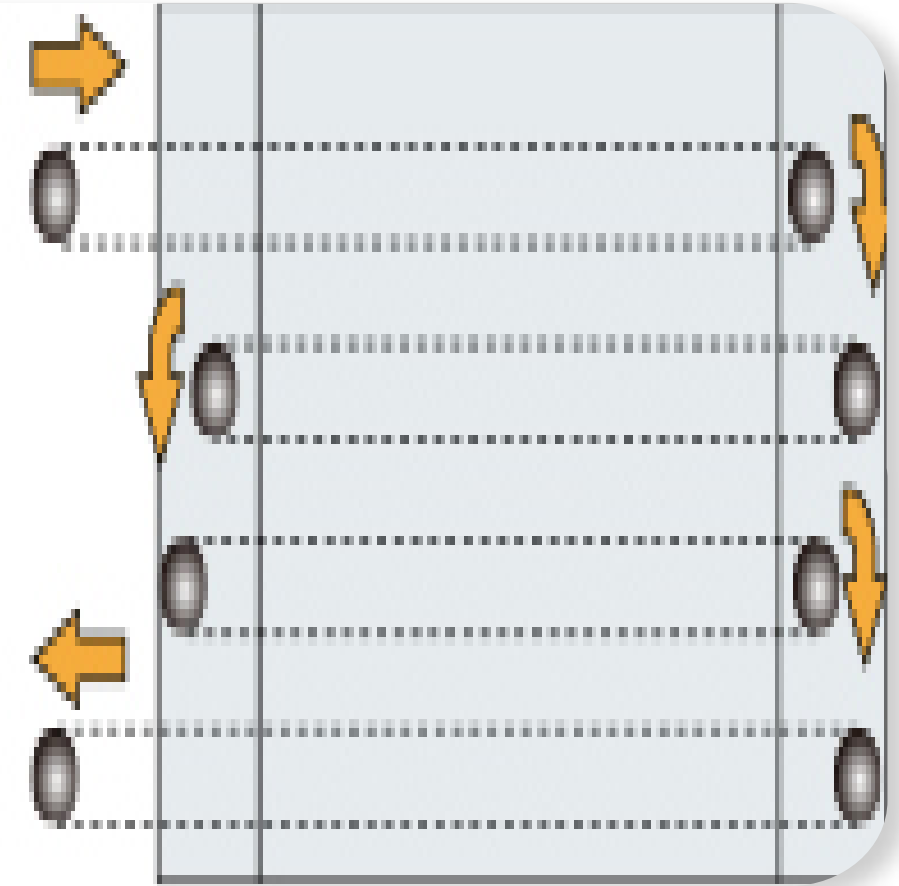
Model Examples



One Stage Band Type

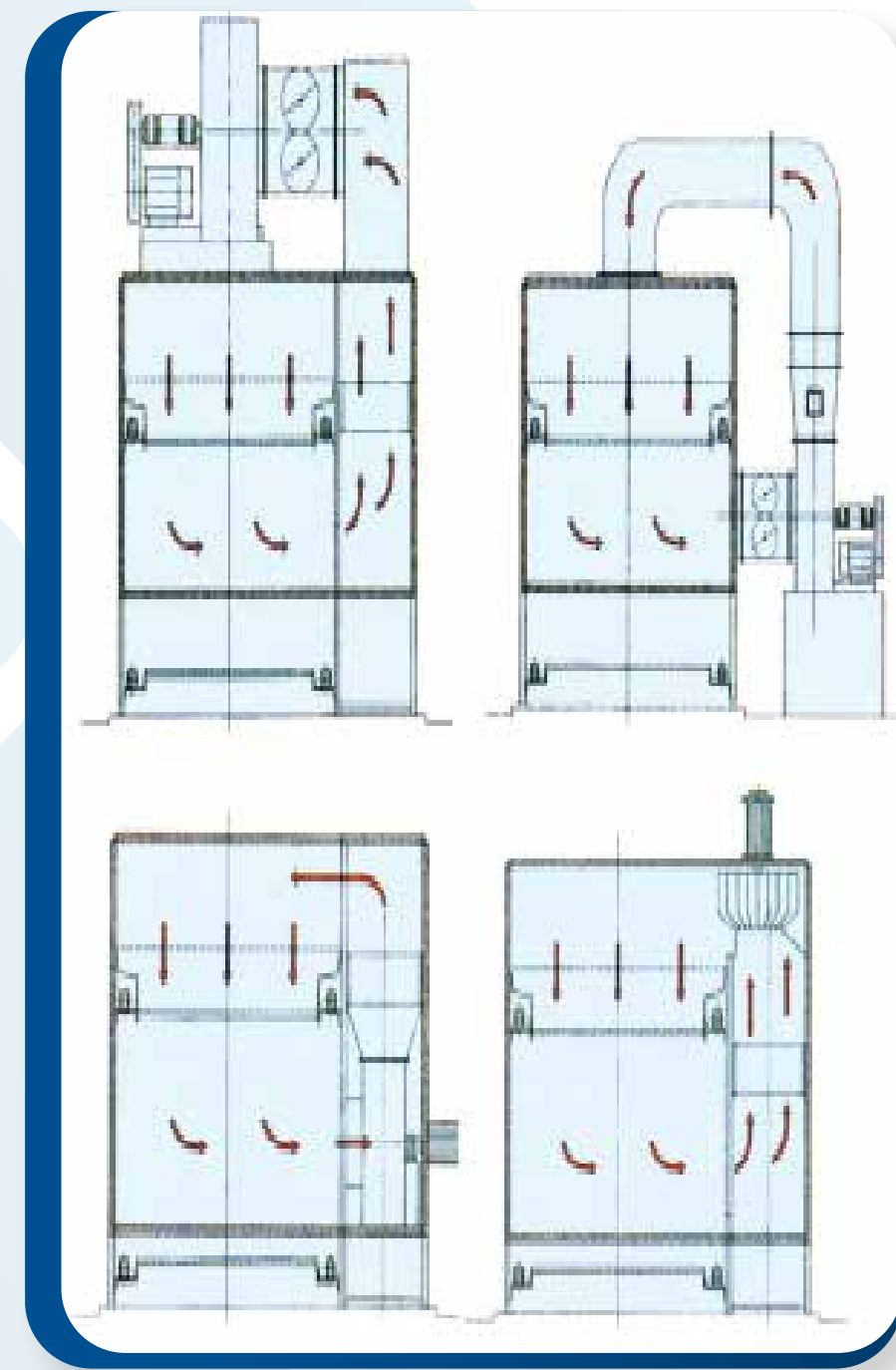


Composite one Stage Band Type

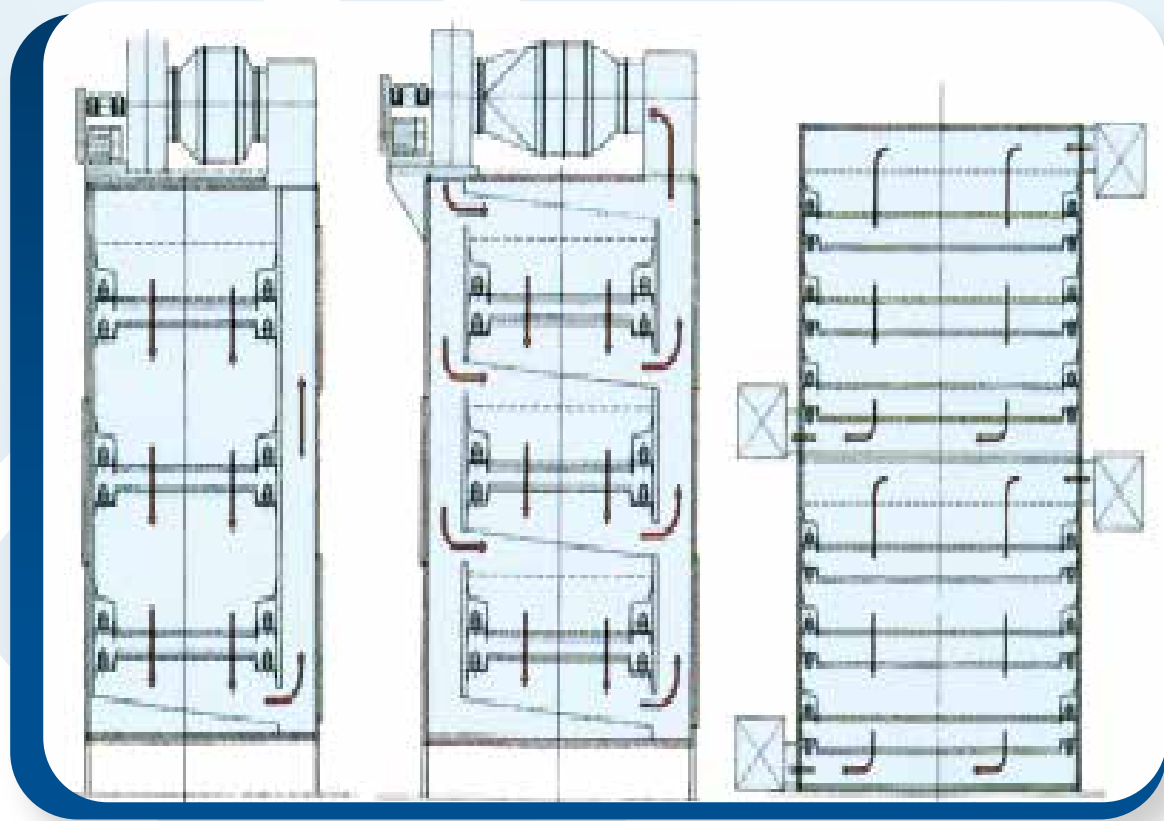


Multi Stage Band Type

One Stage Band Type



Multi Stage Band Type



Super Absorbent Polymers (SAPs)

- Super absorbent polymers (SAPs) are materials that are capable of absorbing and retaining large amounts of liquid relative to their own weight. They are also known as hydrogels, and are used in a wide range of applications, including personal hygiene products (such as diapers and sanitary napkins), agriculture (as soil conditioners), and water treatment (as flocculants).
- SAPs are typically made from cross-linked polymers that have the ability to absorb and retain water through a process called osmosis. When the polymer is in contact with water, the water molecules move into the polymer matrix, causing it to swell and expand. This process is reversible, and the polymer can release the absorbed water when it is placed in a dry environment.
- The unique properties of SAPs make them ideal for use in products where moisture absorption is a critical requirement. They are able to absorb many times their own weight in water, which helps to keep products dry and reduce the risk of leakage. Additionally, SAPs are non-toxic and biodegradable, making them environmentally friendly.



Advantage of Super Absorbent Polymer

The use of super absorbent polymers (SAPs) provides several advantages in various applications, including

- **Improved absorption:** SAPs can absorb and retain large amounts of liquid relative to their own weight, making them highly effective in products that require moisture control, such as diapers, sanitary napkins, and wound dressings.
- **Enhanced comfort:** In personal hygiene products, SAPs improve comfort by preventing skin irritation caused by moisture. This is because they lock in moisture and prevent it from coming into contact with the skin.
- **Cost-effective:** SAPs can reduce the overall cost of products by reducing the frequency of product changes. For example, in agriculture, SAPs can help reduce irrigation frequency and the need for fertilizers, which can result in significant cost savings.
- **Environmental friendliness:** SAPs are biodegradable and non-toxic, making them environmentally friendly. This is especially important in agricultural applications where the use of non-biodegradable materials can have a negative impact on the environment.
- **Versatility:** SAPs can be used in a wide range of applications, from personal hygiene products to agriculture and water treatment, due to their unique properties and ability to absorb and retain moisture.

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