

# FEEDER



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.

“

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

”



## Introduction

- | Feeders play a pivotal role in modern manufacturing and production environments, where the efficient handling of materials is essential for seamless operations. These specialized devices and systems are designed to transport and dispense a wide range of materials, ensuring a steady and controlled flow throughout various industrial processes. By automating material handling tasks, industrial feeders contribute to increased productivity, reduced manual labor, and improved product quality.
- | The primary purpose of industrial feeders is to regulate the flow of materials, ensuring a consistent supply to downstream processes or equipment. They are used to prevent bottlenecks, improve production efficiency, and reduce manual handling of materials.



## Types of Feeders

Vibratory Feeders

Screw Feeders

Belt Feeders

Vibrating Grizzly Feeders

Loss-in-Weight Feeders

Apron Feeders

Rotary Feeders

Pneumatic Feeders

Reciprocating Feeders

Gravimetric Feeders



## Working Principle

The working principle of an industrial feeder depends on its type and design. However, the primary goal of all industrial feeders is to transport materials efficiently and reliably from one point to another in an industrial process:

### Vibratory Feeders

Vibratory feeders use vibrations to move materials along a controlled path. The feeder consists of a vibrating base or bowl that holds the materials. The base vibrates at a high frequency, causing the materials to move forward in a series of small hops or jumps. The slope of the feeder and the rate of vibration can be adjusted to control the flow rate of materials.



## Screw Feeders

Screw feeders use an auger or screw mechanism to transport materials along a fixed path. The materials are loaded into the feeder's hopper, and as the screw rotates, it moves the materials forward. The pitch and speed of the screw can be adjusted to control the feed rate and ensure accurate dosing.

## Screw Feeder Works

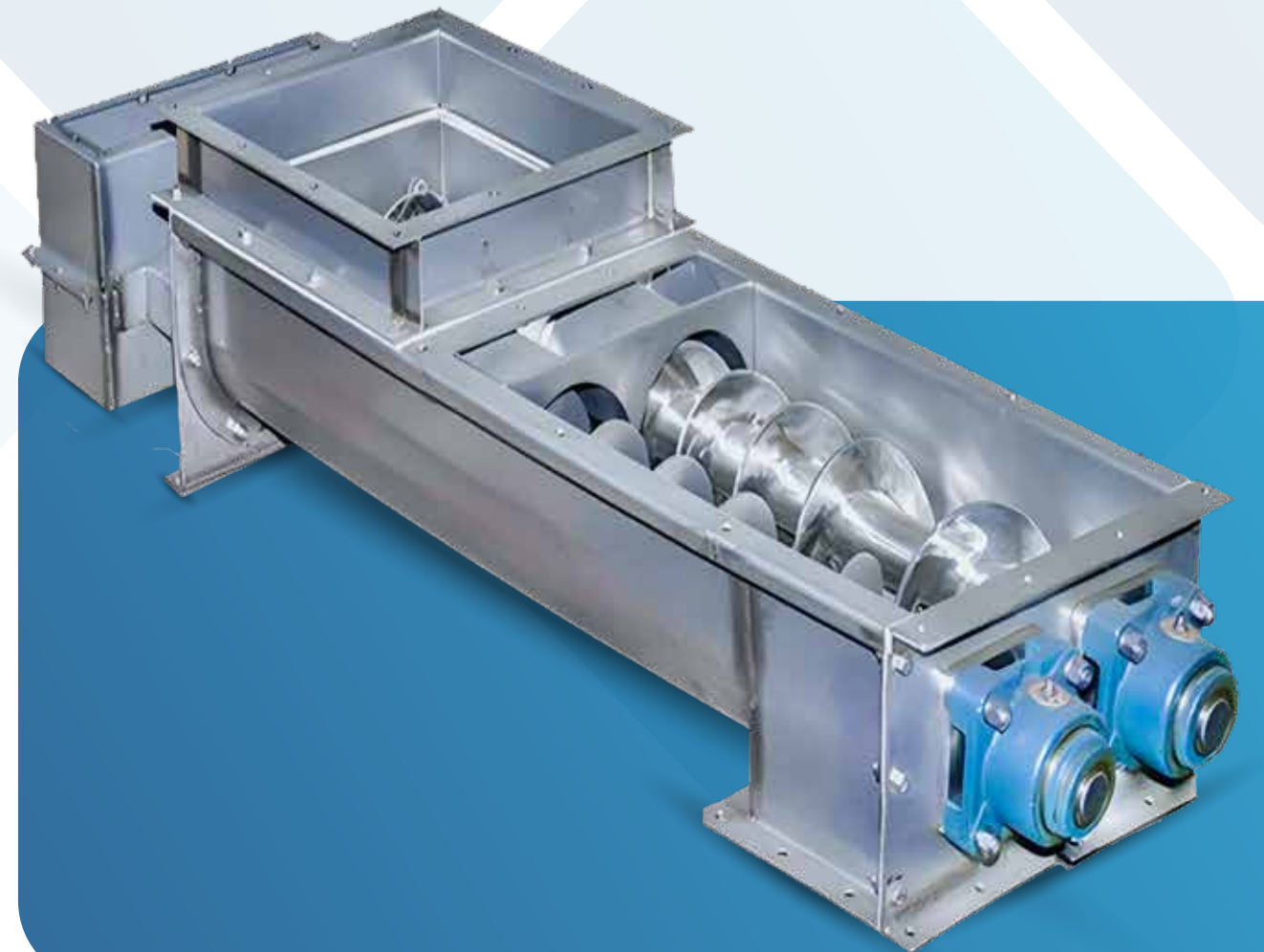
**Screw Rotation:** A helical screw rotates inside a trough or cylindrical casing.

**Material Movement:** As the screw rotates, it moves material along the screw's axis from the inlet to the outlet.

**Controlled Flow:** The speed of screw rotation controls the rate of material flow.

**Gravitational Feed:** Material enters the feeder through a hopper by gravity.

**Variable Speed:** Feeder speed can be adjusted for different material flow rates.



## Belt Feeders

Belt feeders use a conveyor belt to transport materials from one point to another. The belt is driven by pulleys or rollers, and the materials are placed on the belt at one end. As the belt moves, the materials are carried along the surface to the discharge point, where they can be deposited onto another conveyor or processing equipment.

## Belt Feeder Works

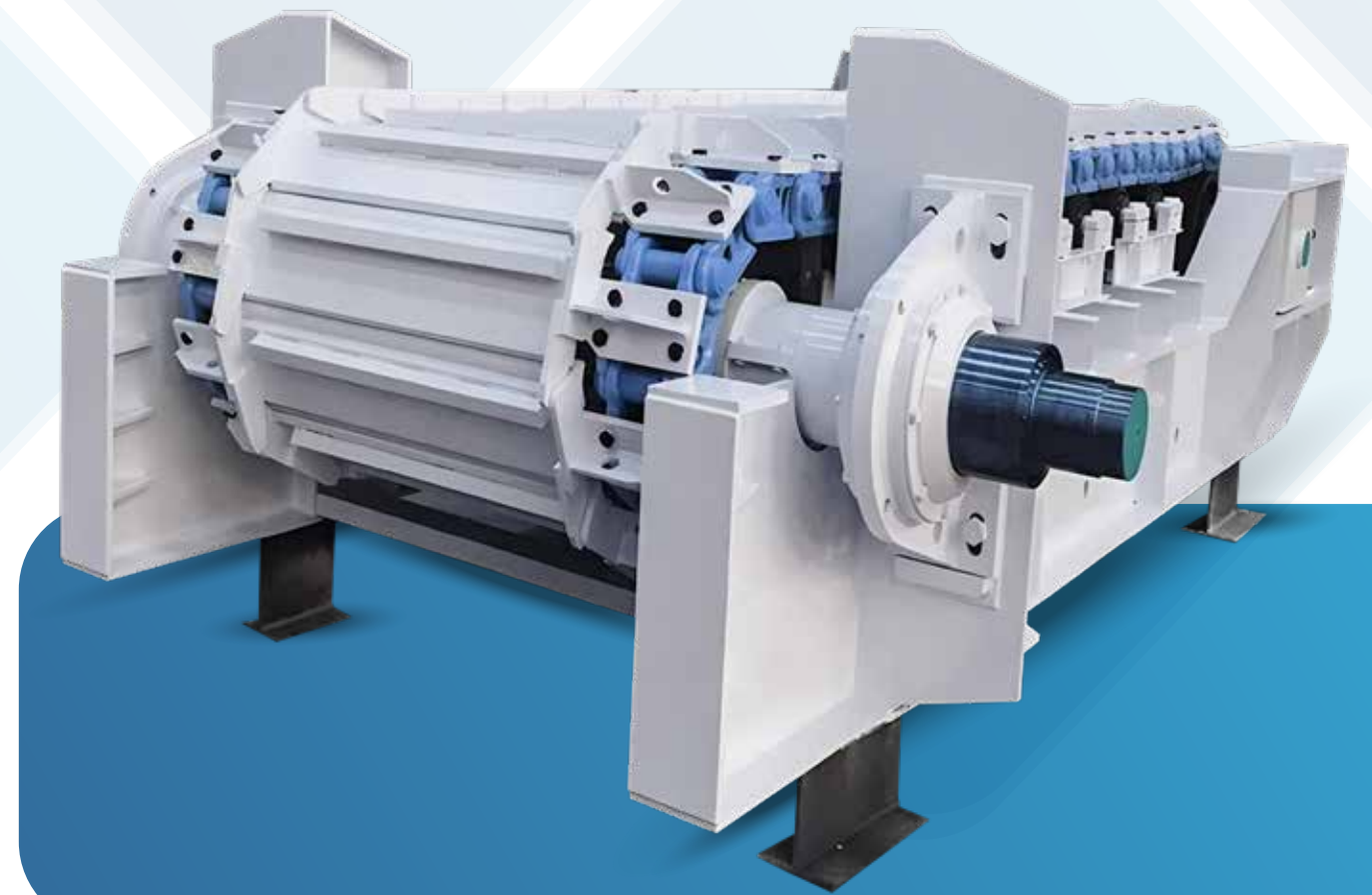
**Material Loading:** Bulk materials are loaded onto the belt at the feed point.

**Controlled Discharge:** Belt feeders regulate the flow of material by adjusting the belt speed or feed gate.

**Adjustable Speed:** The speed can be varied to control the rate of material flow.

**Drive Mechanism:** A motor and pulley system drive the belt.

**Low Power Consumption:** They typically consume low power due to efficient design.



## Vibrating Grizzly Feeder

A Vibrating Grizzly Feeder (VGF) uses vibrations to move material across grizzly bars, separating fines from larger materials before crushing. It's commonly used in mining and construction to improve efficiency and reduce crusher load.

## Vibrating Grizzly Feeder Works

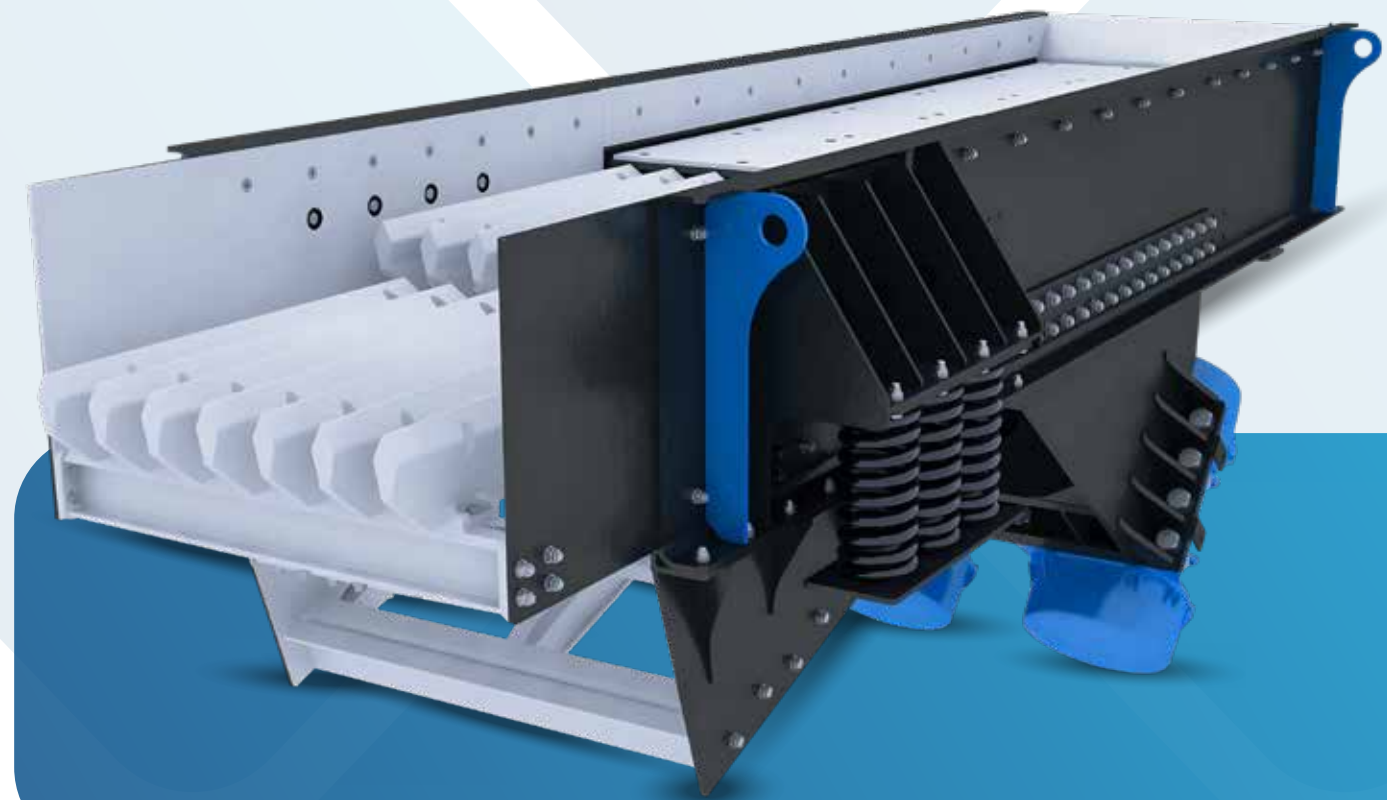
**Vibration Mechanism:** Motors or shafts create vibrations to move material.

**Material Flow:** Vibrations push material evenly across grizzly bars.

**Grizzly Bars:** Allow small particles to pass, larger ones continue forward.

**Separation:** Finer materials fall through, larger ones are processed.

**Heavy-Duty:** Designed for heavy loads, ideal for mining and construction.



## Loss-in-Weight Feeders

Loss-in-Weight Feeders precisely measure and control material flow by continuously weighing the material in a hopper as it is dispensed. The system monitors the weight loss to maintain a consistent feed rate, ensuring accurate dosing. These feeders are widely used in industries like food, pharmaceuticals, and chemicals for handling powders, granules, and liquids.

## Loss-in-Weight Feeder Works

**Weighing:** The entire feeding system (hopper, feeder, etc.) is placed on a scale or load cells.

**Initial Calibration:** The system measures the initial weight of the material in the hopper.

**Material Dispensing:** The feeder dispenses material at a controlled rate.

**Weight Monitoring:** The system continuously measures the decreasing weight as material is fed.

**Precision:** Once the desired amount of material is dispensed, the feeder stops to avoid overshooting.



## Apron Feeders

Apron feeders are made of overlapping pans or plates attached to a chain or conveyor belt that transport bulk materials. As the chain moves, the pans carry the loaded materials along a fixed path, ensuring a smooth flow and minimizing spillage. This robust design makes apron feeders ideal for heavy-duty applications in industries like mining and aggregates.

## Apron Feeder Works

**Purpose:** Handles bulk materials for processing.

**Construction:** Heavy-duty steel plates linked as a conveyor.

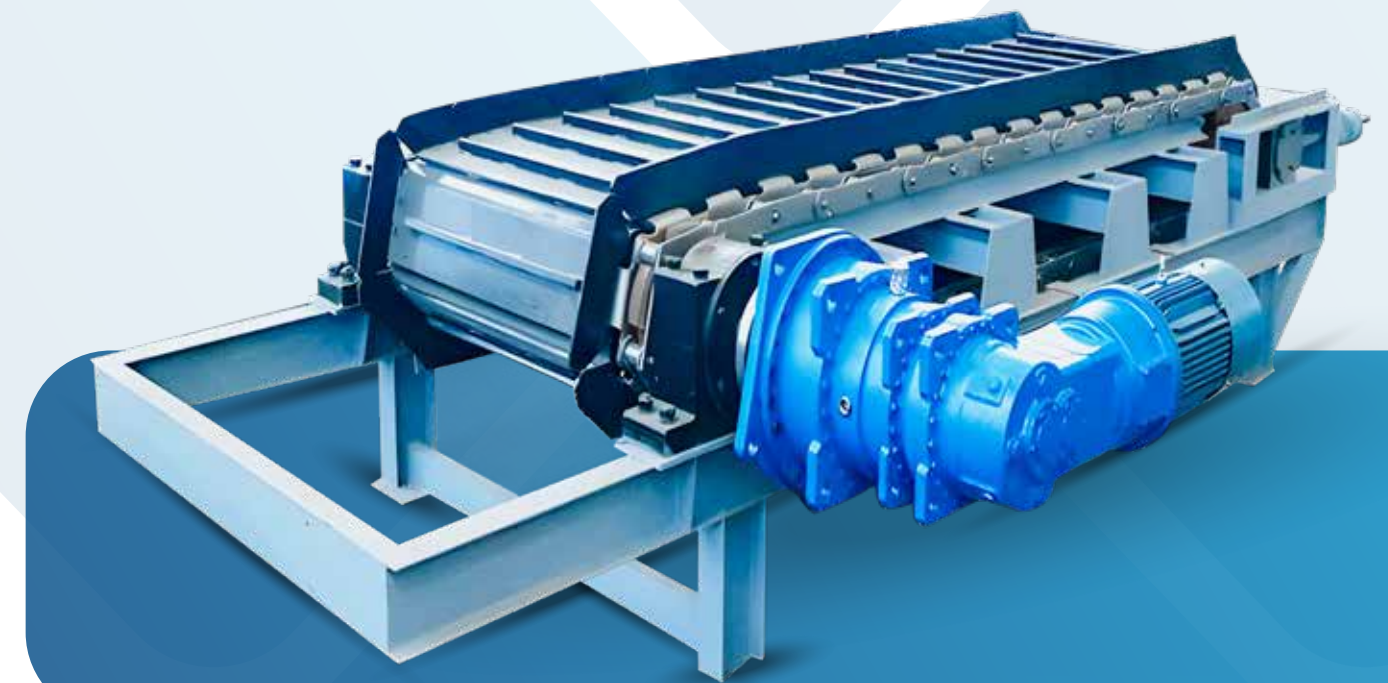
**Operation:** Driven by pulleys and rollers to move materials.

**Versatility:** Handles various materials like ores and coal.

**Feed Control:** Adjustable speed for precise feed rates.

**Durability:** Built to withstand heavy loads and abrasion.

**Incline:** Usually installed at a slight angle for gravity flow.



## Rotary Feeders

Rotary feeders utilize a rotating mechanism to discharge materials from a hopper or container. The rotation of the feeder's components enables a controlled release of materials at a predetermined rate, making them effective for managing the flow of bulk materials in various industrial applications. This design ensures consistent and accurate feeding, which is essential for processes like mixing, batching, and conveying.

## Rotary Feeder Works

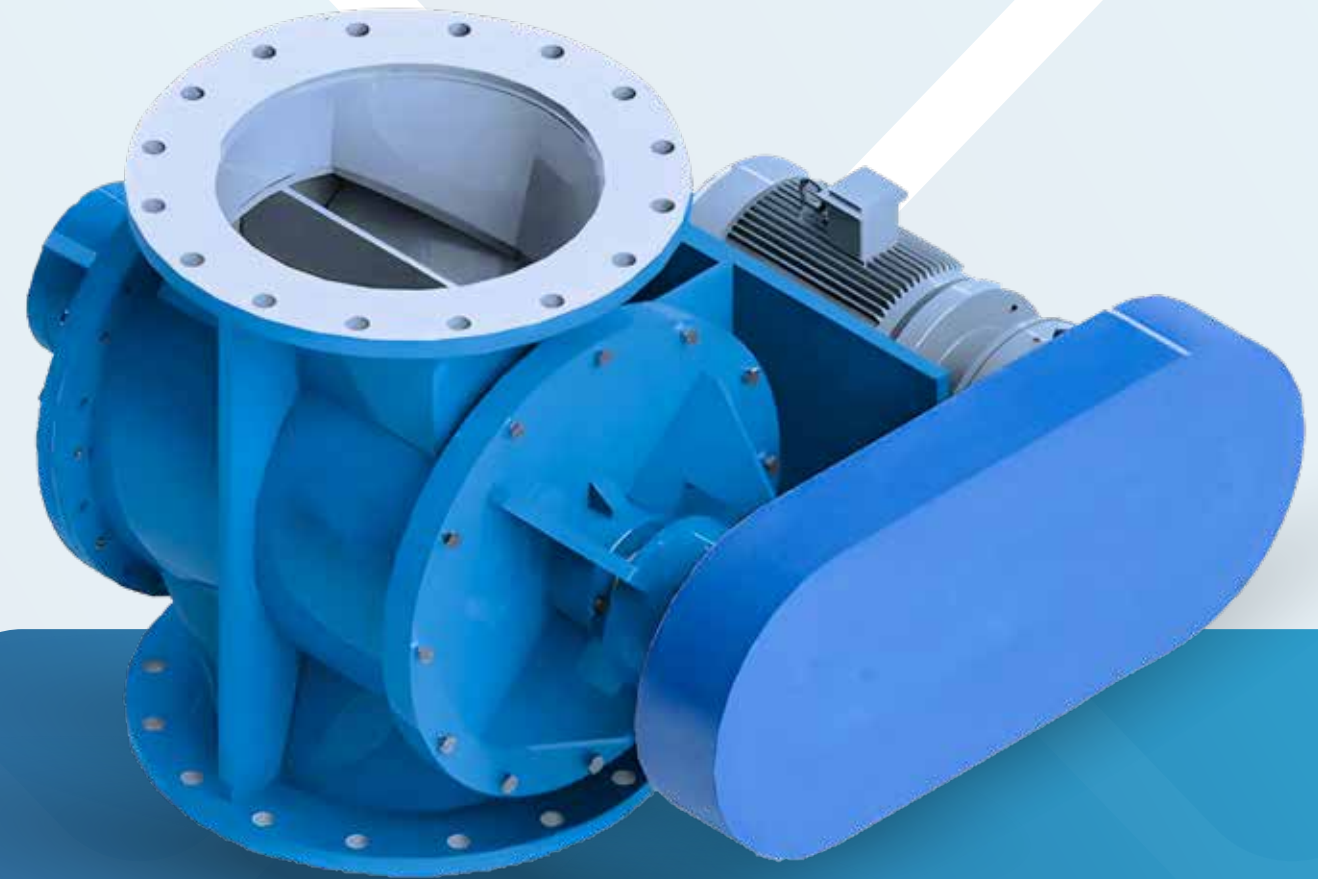
**Rotation:** Uses rotating components to discharge materials.

**Controlled Release:** Allows for precise material flow at a set rate.

**Hopper Integration:** Connects directly to a hopper or container.

**Consistent Feeding:** Ensures uniform and reliable material delivery.

**Versatile Applications:** Suitable for various industries, including food, pharmaceuticals, and mining.



## Pneumatic Feeders

Pneumatic feeders use air pressure to transport bulk materials through pipelines. By combining air pressure and vacuum, they efficiently move powders and granules from hoppers to designated locations, ensuring precise feeding and reducing contamination. This makes them ideal for industries like food processing, pharmaceuticals, and chemicals.

## Pneumatic Feeder Works

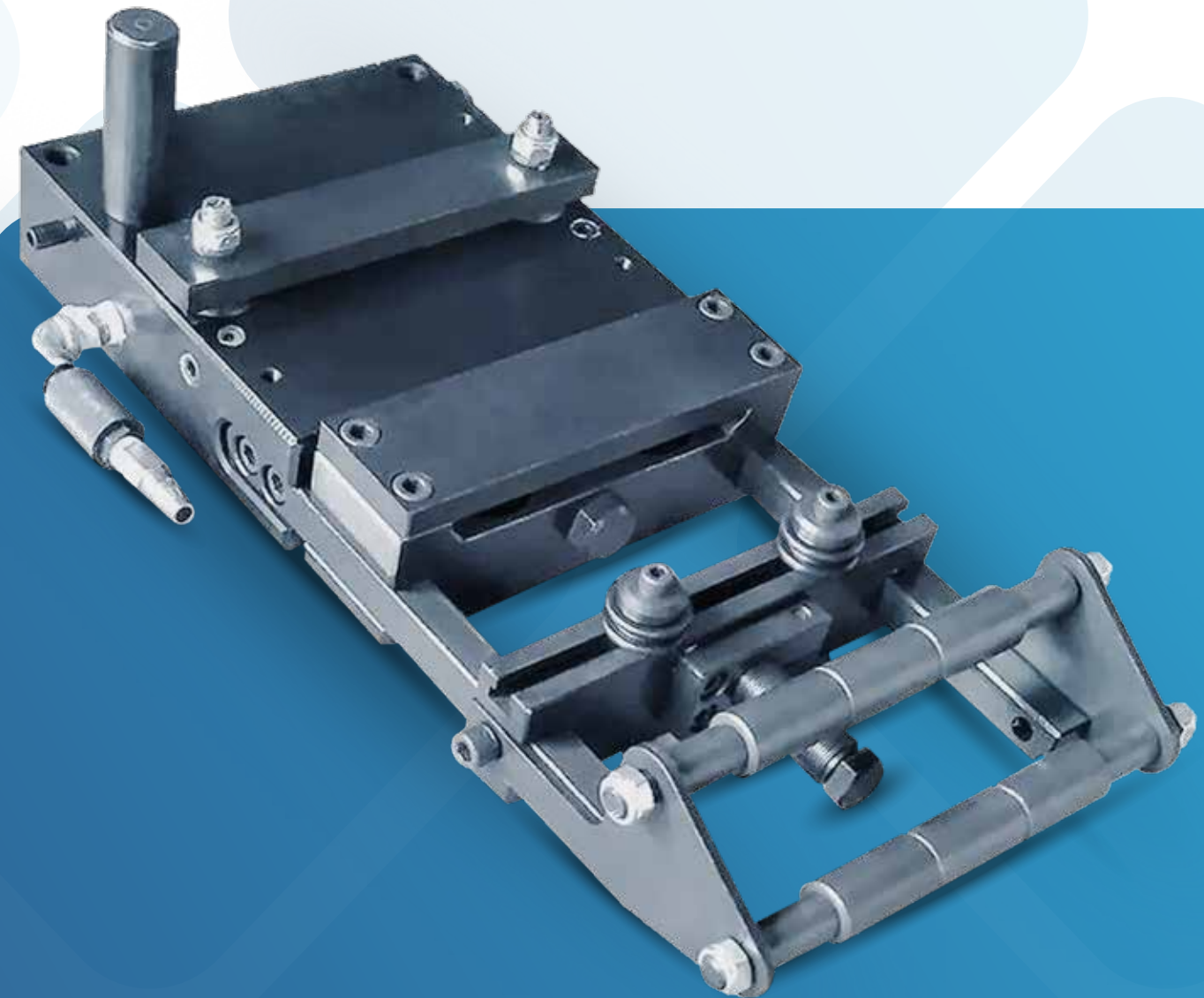
**Air Pressure:** Uses compressed air to move materials through a system.

**Material Transport:** Airflow carries bulk materials along pipes or ducts.

**Controlled Feed Rate:** Adjusts airflow to regulate the speed and volume of material delivery.

**Versatile Applications:** Ideal for transporting powders, granules, and other bulk materials in various industries.

**Sealed System:** Operates in a closed environment to minimize dust and contamination.



## Reciprocating Feeders

Reciprocating feeders use a back-and-forth motion to transport bulk materials from a hopper, allowing for controlled and consistent discharge. This adjustable feed rate makes them ideal for industries like mining and aggregates, enhancing productivity in material handling systems.

## Reciprocating feeder Works

**Reciprocating Motion:** Utilizes a back-and-forth motion to move materials.

**Material Loading:** Materials are loaded onto a hopper or tray.

**Controlled Discharge:** The motion allows for controlled release of materials at a consistent rate.

**Adjustable Speed:** Feed rate can be adjusted based on process requirements.

**Applications:** Commonly used in mining, aggregates, and bulk material handling.



## Gravimetric Feeders

Gravimetric feeders work based on weight measurement. They continuously measure the weight of the material being dispensed. A load cell or weighing system monitors the weight, and a control system adjusts the feed rate to maintain a constant weight flow. This ensures precise dosing and accurate material handling.

## Gravimetric Feeder Works

**Weight-Based Feeding:** Measures material weight for precise control.

**Continuous Monitoring:** Constantly adjusts feed rate to maintain accuracy.

**Load Cells:** Utilizes sensors to measure the weight of materials.

**Controlled Discharge:** Releases material at a set weight-based rate.

**High Precision:** Ideal for applications requiring accurate material dosing.



## APPLICATIONS

- | Chemical Industry
- | Construction/ Cement Industry
- | Food Industry
- | Pharmaceutical Industry
- | Plastics Industry
- | Water Treatment Industry
- | Mineral or Ore Material Industrial Industry
- | Glass, Steel, Coal Industry
- | Powder Industry

## Features

- | High performance
- | Highly controllable
- | Built with the high quality stainless steel material or special Alloys
- | Highly customizable
- | Corrosion free
- | Tailor made to fit your requirements
- | Easy functions
- | Material Compatibility

## Construction

- | Industrial feeders are typically constructed with a sturdy frame and structure to support the weight of the materials being handled and withstand the stresses of continuous operation. The frame is often made from materials such as steel, stainless steel, or other durable alloys.
- | Many feeders have a hopper or receiving area where the materials are loaded before they are transported. The design of the hopper may vary depending on the characteristics of the materials and the desired flow rate. Hoppers are often equipped with gates or discharge openings to control the material flow.
- | The transport mechanism of the feeder varies based on the type of feeder. For example, vibratory feeders have a vibrating base or bowl, screw feeders have rotating augers, and belt feeders use conveyor belts. The transport mechanism is carefully engineered to ensure smooth and controlled material movement.
- | Industrial feeders are often equipped with control systems to regulate the material flow rate and ensure precise dosing. In gravimetric and loss-in-weight feeders, load cells or other weighing devices are integrated to measure the weight of the material, allowing for accurate control.
- | Feeders are designed to be easily integrated into existing industrial processes. They may have mounting brackets, flanges, or other attachment points to secure them to other equipment or structures.
- | Depending on the materials being handled and the specific requirements of the industry, feeders may have surface coatings or liners to prevent material buildup, reduce wear, or facilitate cleaning.

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