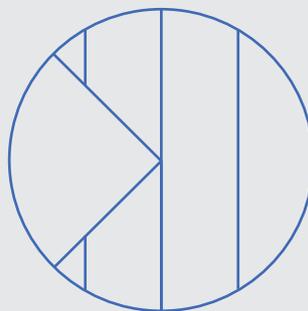


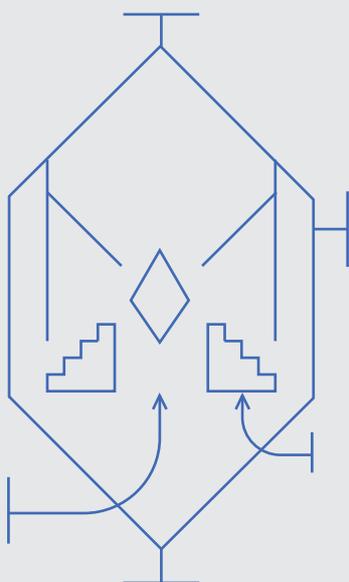
Material Handling System



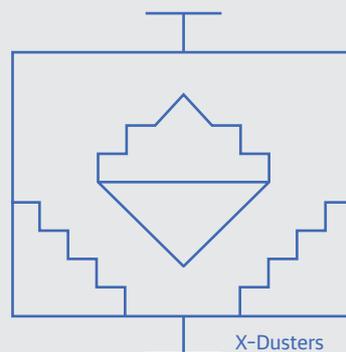
Pneumatic Conveying



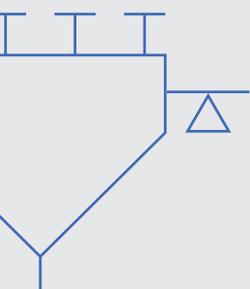
Rotary Feeder



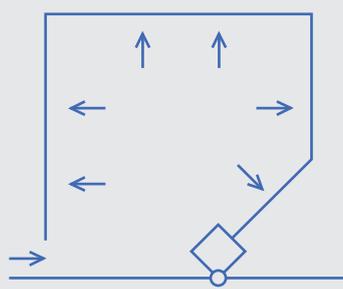
Elutriator



X-Dusters

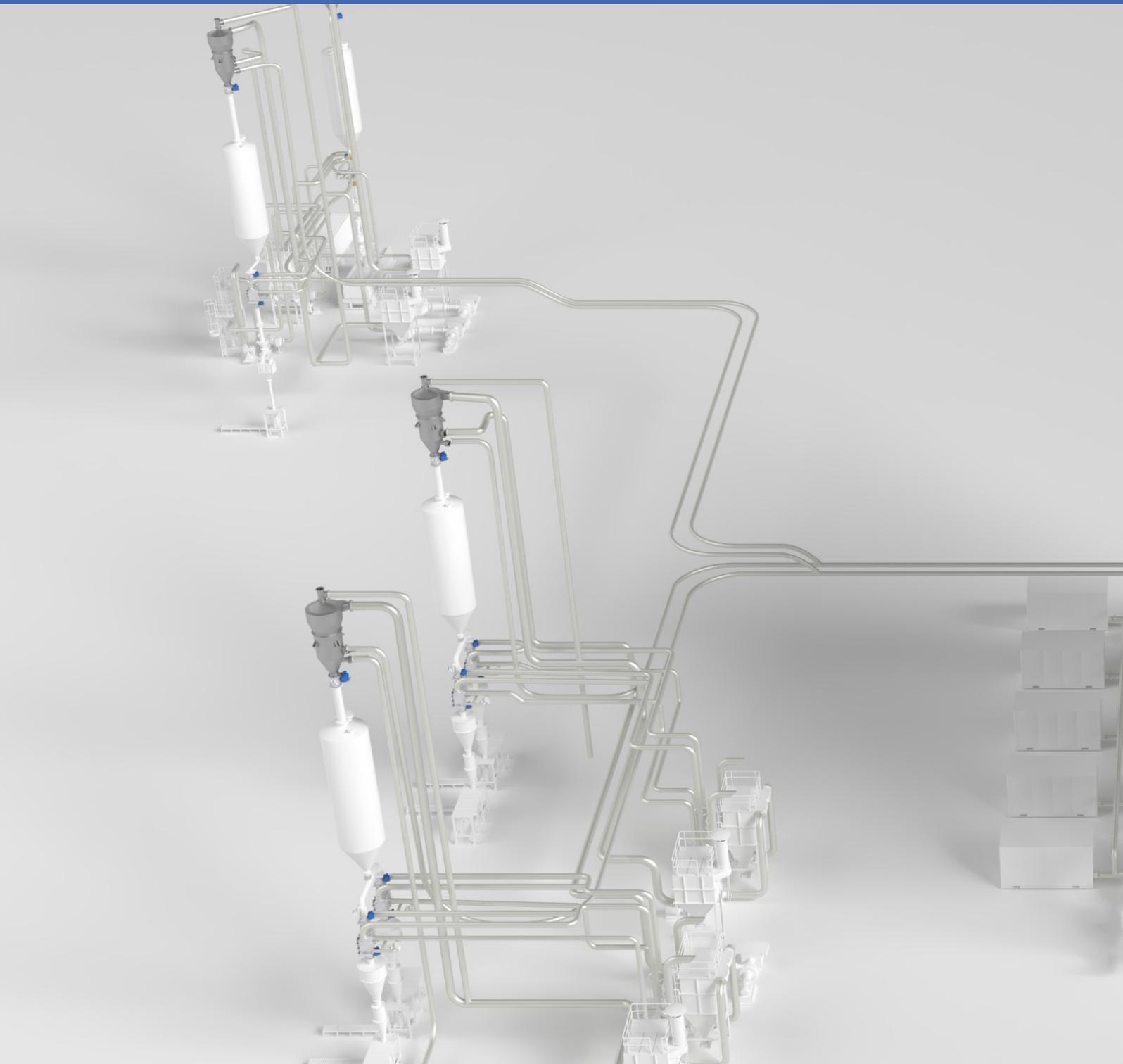


Weighting

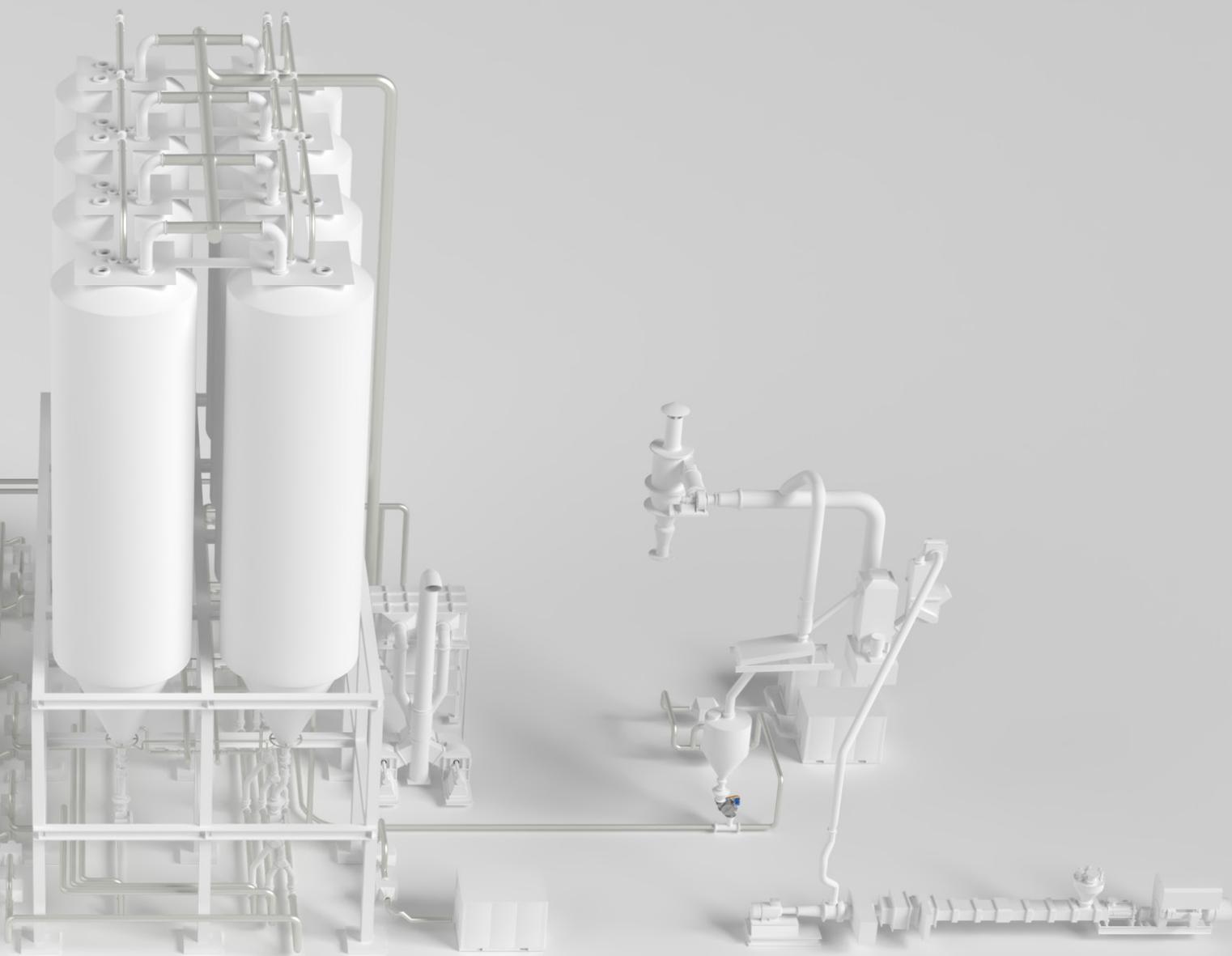


Sealing





Creating a better world with our technology



Our quality creates pride. Our technology creates possibility. Our people create a better world. Based on our design, manufacturing, and service references, we are leading the field of Pollutant Control and Material Handling.



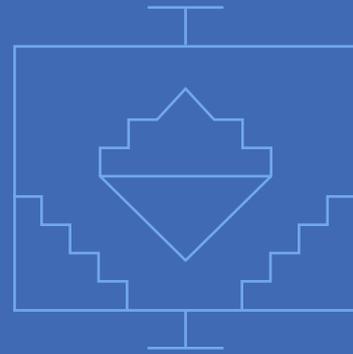
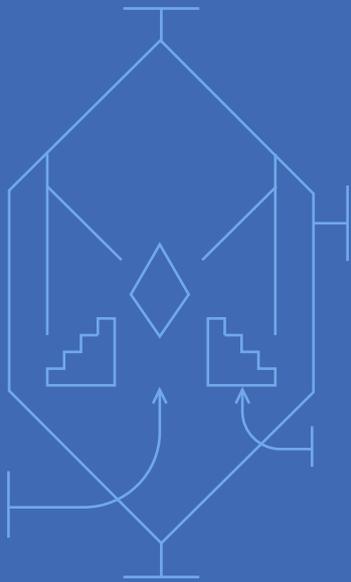


Table of Contents

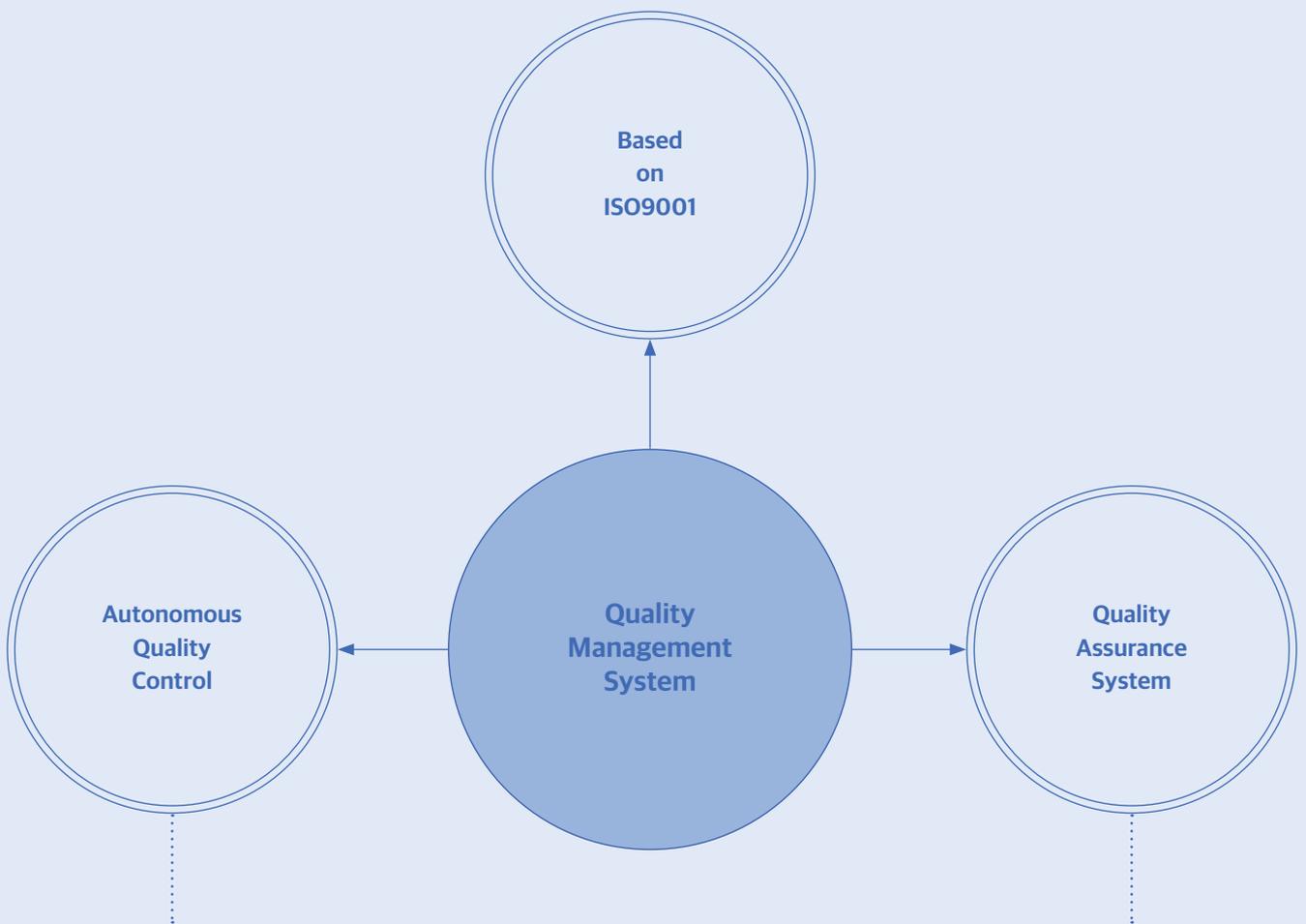
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| | <p><i>Quality Control</i> 6</p> <p><i>Material Feeding System</i> 8</p> <p><i>Rotary Feeder & Ejector Package</i> 10</p> <p><i>Pneumatic Conveying System</i> 12</p> <p><i>Silos (Storage & Blending)</i> 14</p> <p><i>Degassing System</i> 16</p> <p><i>Dust & Streamer Removal System</i> 18</p> <p><i>Sea Bulk Unit & Tank Lorry Loading System</i> 20</p> <p><i>Central Vacuum Cleaning System</i> 22</p> <p><i>Performance</i> 24</p> |
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Quality Control

The Core of All Manufactures



Quality is a decisive factor in building trust with customers, so we have a stricter standard of quality than of anything else. We work with a critical sense that failure to comply with quality standards means taking irreversible risks.



- * Establishment of Quality Plan in advance
- * Accurate and Professional Inspection and Examination of each process
- * Regular Education and Training

- * Rapid customer response
- * Quality Data Analysis and monitoring
- * Immediate quality improvement activities

Material Feeding System

Automatic and accurate measuring



What is a Material Feeding System?

The process of designing and building a production system that supplies input facility, piping systems, raw material storage, and storage systems separately while connecting them all to one line is called a material feeding system. It is a system that automatically quantitatively supplies raw materials, and a facility that quantitatively weighs and inputs raw materials into a silo in real time using a weighing system. At this time, the accuracy of weighing and dosing is very important in order to maintain a certain quality of the finished product and reduce the occurrence of defective products due to incorrect raw material input.

According to customer's needs, Conep can supply optimal loss-in-weight feeders, volumetric dosing units and dosing screws, plus our patented Rotary Feeder for direct bulk raw material injection into the Pneumatic Conveying Systems, mixers, or extruders. This maximizes productivity by shortening work time, maximizes reliability of the production process by supplying accurate weighing equipment, and saves energy. In addition, it minimizes defects in the entire process and prevents the waste of raw materials so that the factory can be operated reasonably.

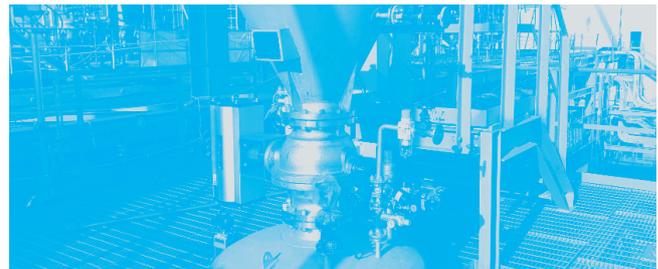
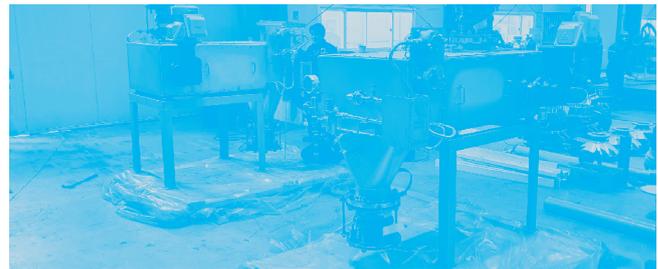
Two forms of Dosing

Conep applies two different dosing technologies- Volumetric and Gravimetric- depending on the process. Volumetric dosing is a method of controlling the supply volume by adjusting the motor RPM of a rotary body such as screw. This advantages of this form of dosing are its low Hopper's capacity limit, low price, and high impact resistance. However, its disadvantages are changes in feeding depending on the filling rate and storage volume, difficulty in responding to changes in raw material properties, and a deviation of 5-20% when processing high-viscosity materials.

Accordingly, for plants with complex and difficult processes, it is recommended to introduce a Gravimetric type system that controls the amount of supply by calculating the weight reduction value due to raw material feeding using the weight of the feeder.

The advantage of Gravimetric dosing is its high accuracy, with a deviation of 0.5-1%, so it can respond to changes in raw material properties due to internal and external

environments, and it can freely adjust flow rate. Its disadvantages are that it requires a substantial upfront financial investment, and it is vulnerable to vibration or shock, which makes it impossible to use Vibration dosing screws. But it can be applied to Belt Type, Screw Type, Disk Type, and all industries that require high-density input of raw materials such as plastic, chemical, textile, and food.



Applications

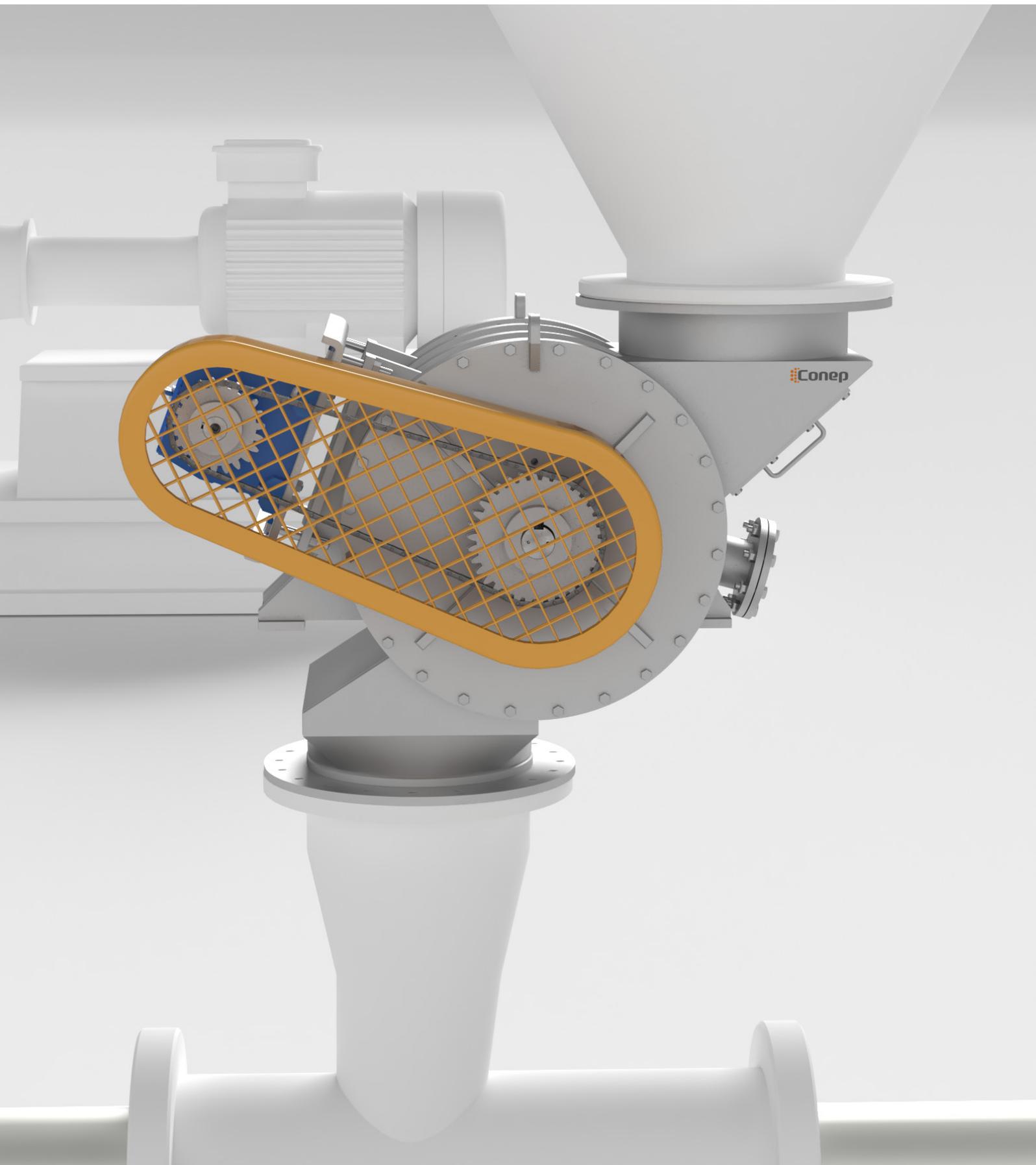
- ✓ Material Feeding
- ✓ Storage and Discharge
- ✓ Screening and Mixing
- ✓ Pneumatic Conveying
- ✓ Powder Coating Screening and Recovery
- ✓ Plastic Compounding

Conep's Advantages

- ✓ Accurate quantification of powder ingredients
- ✓ Dust-free dosing of powder bulk material
- ✓ Continuously maintaining the quality of a mixed product
- ✓ Durability with reduced maintenance requirements

Rotary Feeder & Ejector

Realize Powerful Airlock with Patented Technology



A Creative solution to maximizing Airlock

The pressure of air (or nitrogen) in the pneumatic transfer system is most important for the material to reach a distant destination. If there is an air leak, the raw material cannot be transferred properly due to lack of air pressure. The rotary feeder discharges raw materials and provides quantitative supply, but the most important function is the 'air lock' function to prevent air leakage as described above. The degree of air leakage may vary depending on the accuracy of the rotor blades and clearance during assembly. However, even if all parts are assembled correctly, inevitable leakage occurs due to the tolerance of the circumference for the rotation of the rotor (clearance leakage, displacement leakage, labyrinth leakage).

Air leaks from rotary feeders occur between the wing and the body, and between the shaft and the sidewall. Existing products use compressors to supply the IA (Instrument Air) at constant pressure to prevent spillage. However, this method has the disadvantage of high energy and maintenance costs. If spillage continues to occur, the air (including foreign substances such as dust) causes ambient contamination and loss of raw materials. Conep discovered this problem through many years of experience and had long hoped to solve it.

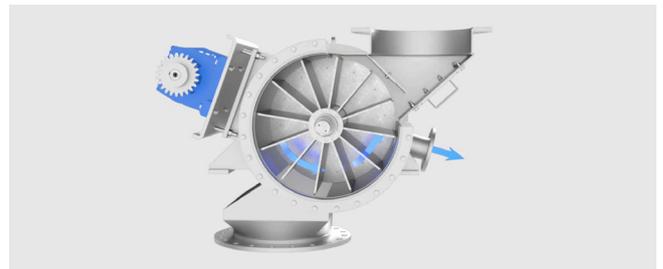
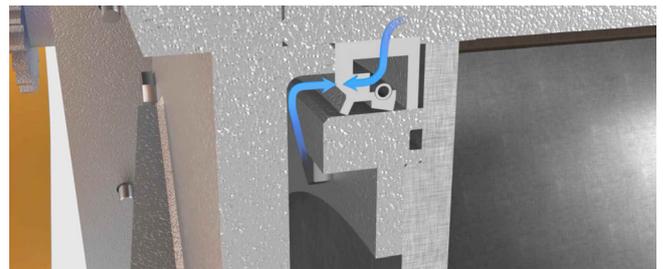
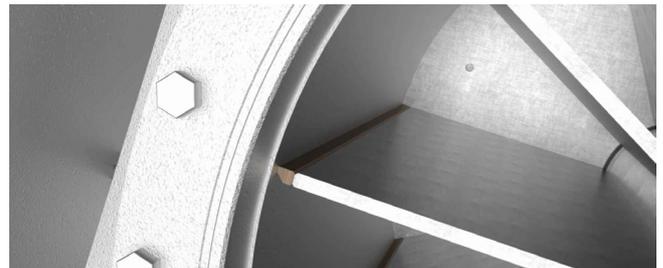
Conep has now developed a new concept of a Rotary Feeder with sealing technology. A gasket of synthetic rubber is installed in the gap between the rotor and the body, the shaft and the sidewall. The sealing expands with the pressure of the air inputted by the compressor and with the pressure of the outflowing air, and closes the gap to prevent air leaks to outside. This reduction in air consumption can reduce the cost of running and operating the equipment.

This technology helps maintain constant air pressure, allowing the raw material to be transported perfectly to the next process more than 200 or 300 meters away.

The Concept and Principles of the Ejector

The Ejector is a type of pump that utilizes the venturi effect. It is a mechanical device that sucks in and transfers materials using the energy of a high-pressure fluid. The high-pressure fluid is passed into a chamber through a nozzle (Converging & Diverging nozzle), and the ejector is a device that utilizes the Bernoulli's theorem principle, which speeds up and lowers the pressure when the fluid flows through a narrow passage.

Conep can supply a highly reliable raw material transfer system capable of long-distance transfer by making good use of the patented principle of the Rotary Feeder and the Ejector.



Applications

- ✓ Using with granular products and pellets
- ✓ Feeding pneumatic conveying systems
- ✓ Exhausting materials
- ✓ Metering

Conep's Advantages

- ✓ Production of large-capacity products for raw material production lines
- ✓ Purge Air injection technology prevents raw materials from being jammed during transferring and supply
- ✓ Almost no debris of raw materials
- ✓ Adding vents to prevent raw material bridge
- ✓ Optimal efficiency with patented sealing technology
- ✓ Minimized wear-and-tear due to the composition of different materials of rotor blades and body

Pneumatic Conveying System

Diverse designs and optimal performance



Pneumatic Conveying System

Pneumatic Conveying System is a system in which powder or pellet-type raw materials are transferred from one process to another in a fully enclosed conveying pipeline using the flow of gases such as high-pressure air or nitrogen.

Pneumatic Conveying System is a method of moving raw materials by using pressure difference and the air flow accordingly in a pipe sealed by a blower or compressor. The transfer line is divided into a press-in type and a suction type depending on whether the pressure inside the pipe is positive or negative, and it can be moved successfully without damage or loss of raw materials according to the airflow generated by this pressure difference.

Pneumatic Conveying System- Types and Advantages

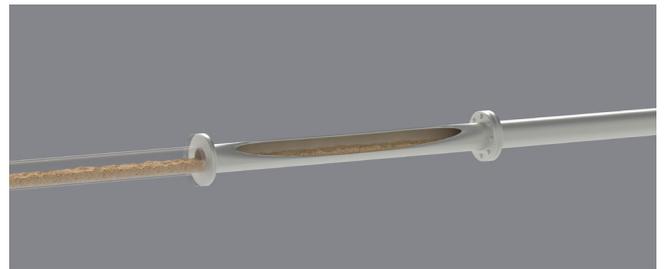
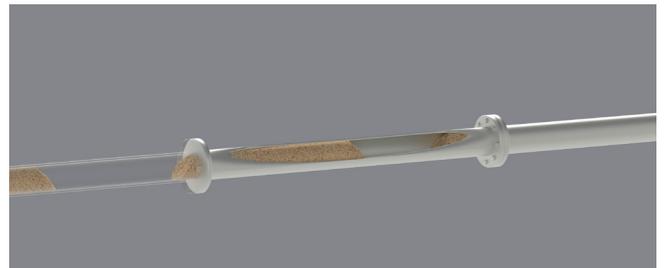
The Pneumatic Conveying System is typically divided into dilute types and dense types, and each type is separated according to the transfer form of the raw material and transfer pressure. Dilute Type means that the raw material is transported floating in the air flow. Since a lot of air is conveyed at a lower pressure than the Dense Type and since the conveying speed is as fast as 20~45m/sec, impurities such as dust and streamers may form due to abrasion of pipes and damage to raw materials.

On the other hand, the Dense Type increases the mixing ratio(material/Air) of the transported materials, and is advantageous for transport of fragile or highly abrasive raw materials by transferring raw materials at higher pressure and lower speed than the Dilute Type.

The Pneumatic Conveying System has a completely sealed transfer pipe, so it is possible to transport the material without any contamination to the material or the surrounding environment as foreign substances do not penetrate from the outside and internal substances do not leak to the outside. In addition, it is advantageous to reconfigure or extend lines as opposed to mechanical transport facilities, and it is also advantageous to be able to freely design transfer routes.

Based on our experience in applying various kinds of materials to chemical and steelmaking processes, Conep has developed the Semi-dense Type, which combines the Dilute

and Dense types. It allows the quick and stable transfer of raw materials at a speed of 15-20m/s. In this way, Conep can design and supply an economical and efficient Pneumatic Conveying System to meet our customers' needs.



Applications

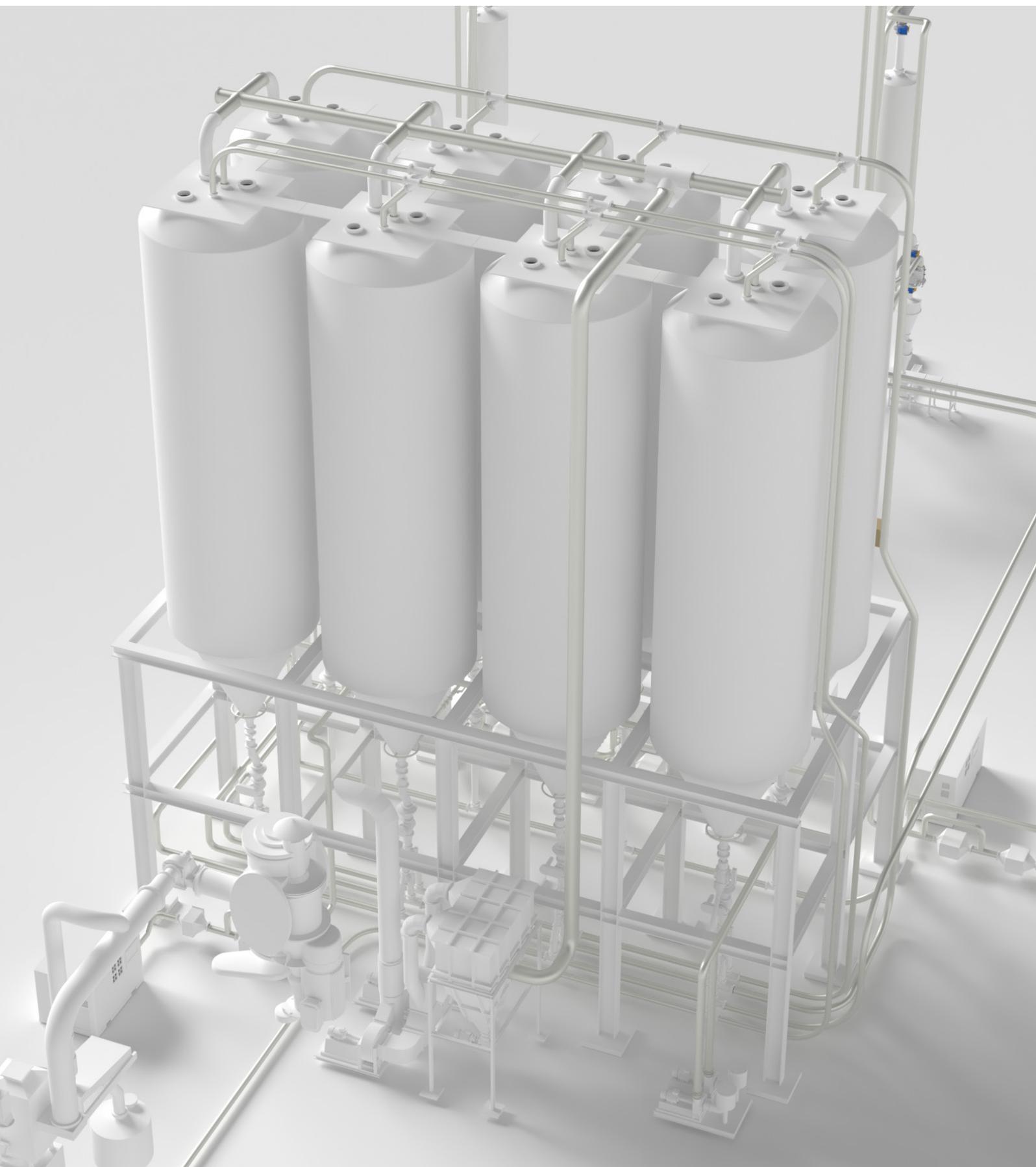
- ✓ Pelletized materials
- ✓ Coal fines
- ✓ Starch
- ✓ Sands
- ✓ Sugar
- ✓ Metal powders
- ✓ Cement powder
- ✓ Granular materials
- ✓ Carbon black
- ✓ Fly ash

Conep's Advantages

- ✓ Very high efficiency
- ✓ Dust-free enclosed system
- ✓ Hygienic, user-friendly
- ✓ Space and height saving design
- ✓ Flexible configuration of pipes
- ✓ Stable transport
- ✓ Smooth and low wear for products and plants

Silos

For safe storage of raw materials



Safe, non-corrosive storage silos

Recently, silos come in a wide variety of types including Storage Silos and Mixed Silos. Each has its own advantages and characteristics, so you can choose the one that best suits your application. Whichever you choose, it is sure to be less dusty, more efficient, and longer-lasting. No matter what raw materials are stored and suitable for the process, efficient and complete regeneration is always a top priority. It affects productivity and profitability, not to mention safety. If there is a problem with retrieving the raw materials from Silo, a serious bottleneck in operation can occur.

The Blending Silo is suitable for high capacity, low pressure, and dust applications in the bulk raw material industry.

The silo must be able to differentiate incoming powder, and effectively collect and store it. In addition, it should be designed so that input, emission, and storage can be automatically controlled. It should be easy to pressurize, thermally insulate, moisture-proof, etc., and it should be designed to prevent degeneration, damage, insect damage, and wind damage to the stored goods. The bridge phenomenon in the Silo must be prevented, and an accurate design based on the material properties is needed. Considering all of the above factors, Conep has the technology to store and recover the raw materials more safely, and to provide Silos and Hoppers for storage and emission.

Optimized Design

Conep considers the application of regulation(code) by each application condition, wind and earthquake loads by region, and uses venting or grounding to implement a safe and optimized design. In addition, it is designed to prevent bridging by considering the characteristics of the raw materials to be stored, and to prevent ratholing flow due to the asymmetric flow resulting from the separation and agglomeration of raw materials inside the silo.

In addition to Silo, Conep is able to design and supply an integrated system of degassing, which discharges residual gases such as VOC inside the silo to prevent explosion, and the blending system to improve quality of raw material.



Applications

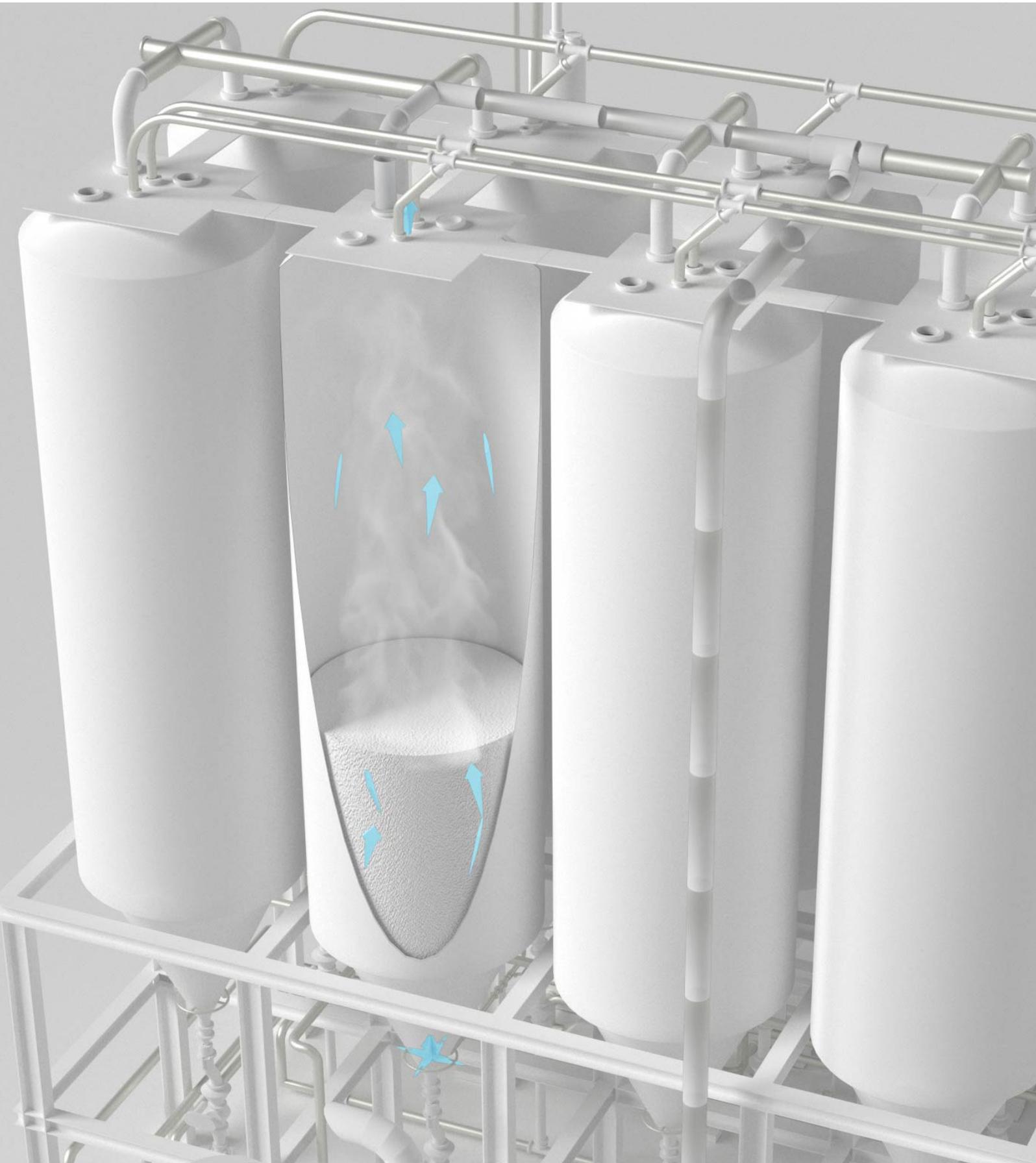
- ✓ Flour factory
- ✓ Sugar factory
- ✓ Petrochemical Industry
- ✓ Steel Industry
- ✓ Coal Industry
- ✓ Chemical Industry

Conep's Advantages

- ✓ Flexible discharge
- ✓ Anti-corrosion
- ✓ Maintenance-free
- ✓ Weather-resistant

Degassing System

Essential for a safe process



Risk of explosion

Explosions constantly occur every year around the world. They take place when combustible powder or gas suspended in the air in an enclosed space (especially in storage silos, dust collectors, ducts, etc) is ignited by a source such as static electricity or electric sparks, and then reacts with oxygen in the air.

Essential system for disaster prevention

The degassing system removes VOCs or residual gases continuously generated from the pellet product stored in the storage silo to prevent explosions and fires and to improve product quality. This technology adjusts the gas concentration by supplying an appropriate amount of diluted air inside the silo.

Conep provides an optimal system by calculating the temperature and amount of diluted air that guarantees high efficiency based on our diversified understanding of raw materials. Components such as blowers, filters, and nozzles necessary for this system fall within our specialized fields for which we have accumulated experience in various processes over a long period of time and thus have guaranteed excellence in quality and performance.

Components with guaranteed performance

The Degassing system mostly consists of the following components: the silo nozzle, the degassing blower, the intake filter, and the heat exchanger. The silo nozzle is a device that supplies degassing air inside the existing storage silo. The core know-how of this technology is to treat raw materials so that they do not enter the nozzle, and to make sure they operate in a location that does not interfere with existing facilities.

The degassing blower is a piece of equipment that supplies external air to the storage silo. It is important to identify the intake and blending processes of existing facilities, and to design air volume and pressure so as not to affect these two processes.

The intake filter is installed in front of the blower to prevent foreign substances in the air from entering the storage silo. Recently, high efficiency filters have been required due to fine dust. We focus on supplying high-end filters in line with these needs.

The heat exchanger is a facility made to supply air at a constant, above ambient temperature to the storage silo. Installation of the heat exchanger is optional but recommended, since it is effective in reducing the concentration of VOCs.



Applications

- ✓ Petrochemical Industry
- ✓ Steel Industry
- ✓ Coal Industry
- ✓ Chemical Industry

Conep's Advantages

- ✓ Lower risk of explosion
- ✓ Improving product quality
- ✓ Elimination of static electricity generated during transportation
- ✓ Less than 30ppm of VOCs (main VOCs: C6H14)
- ✓ Reducing blending time

Dust & Streamer Removal System

For the high-end product



The importance of Dust & Streamer Removal

Plastic pellets generate impurities such as dust, streamers, angel hair, etc. due to friction in the conveying line. When the pellet is transferred at a high speed as in the dilute phase, foreign substances such as streamer or angel hair are generated as the pellet scratches against the pipe, and fine dust is generated when it is relatively slowly transferred at higher pressures as in the dense phase. In addition, dust may be generated due to the temperature and the characteristics of the raw materials.

These foreign matters lower the purity of the plastic pellet and cause problems by degrading the quality and performance of the end-product. It is important to clean the raw material with a dust removal system in the secondary process.

Our Patented Step Washing Deck

Pre-existing dedusting machines had problems of uneven and unsmooth air supply to the raw materials, raw material agglomeration, clogging of dust, or debris blocking the air supply nozzle.

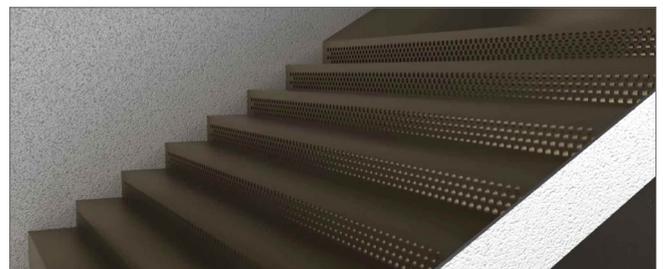
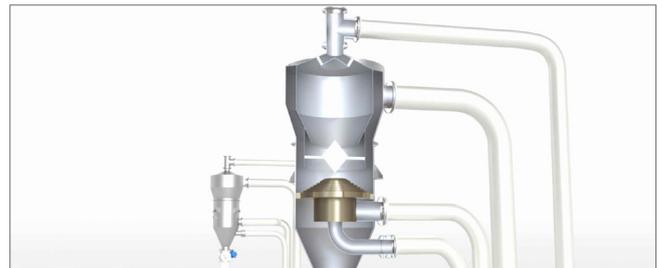
Accordingly, Conep has designed a step wash deck in which raw materials are fluidized to improve the problems of existing facilities and increase efficiency. The stepped deck has punch holes at every step of the stairs, so air is evenly supplied through the holes for efficient washing, and the innovative arrangement of the holes can avoid the accumulation and clogging of foreign substances.

In the case of the conventional straight deck, the supply of air was not smooth because the raw material rapidly descended due to acceleration. However, in case of the Conep's stepped deck, the raw material descends and collides with the step of the stairs, so that physical desorption is possible. As the speed of descent decreases, the air supply is smoother, and the dust separation efficiency is excellent.

Optimal Package

Conep's Dedusting Package System has an Elutriator installed at the front end, to remove more than 90% of the streamers and relatively bulky foreign substances. And it has X-Dusters to remove more than 90% of fine dust to produce clean raw materials with a pollutant level of less than 50ppm. Then the separated dust is completely removed at the Bag Filter, so

that only clean air is discharged, and the clean raw material is safely transferred to the next process through the Rotary Feeder.



Applications

- ✓ Petrochemical Industry
- ✓ Plastic Industry
- ✓ Food Industry
- ✓ Pharmaceutical industry

Conep's Advantages

- ✓ Maximized dust removal efficiency with patented stepped washing deck
- ✓ Fit on top of extruders and under silos
- ✓ Minimizing loss of raw materials and maximizing dust removal by finely adjusting dampers for each step
- ✓ Dust removal efficiency of 85-90%, less than 50ppm of dust guaranteed after washing
- ✓ Easy maintenance by using transparent door
- ✓ Various facility sizes by capacity

Sea Bulk & Tank Lorry Loading System

The most efficient and economical packing method



☰ The fast and stable method for packing materials

In order to load the bulk raw materials into shipping containers, truck tank lorries, etc., a fast and stable loading system that prevents loss or contamination of the surroundings due to leakage of raw materials is required.

The Sea Bulk & Tank Lorry loading is a system that loads the bulk products directly from the storage silo into a sea bulk container or tank lorry, which is the most economical and efficient way to load.

☰ Sea Bulk Loading System

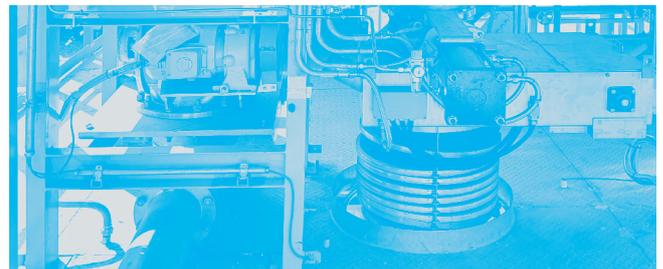
Sea Bulk Loading is a system that loads bulk raw materials to the side of sealed box-type shipping containers. It is based on the Pneumatic Conveying System that combines the feeding equipment such as Rotary Feeder and Ejector in the storage silo and blower.

In order to prevent contamination by infiltration of foreign substances into the raw material and damage by temperature, it has a heat exchanger or line filter to control the temperature for conveying air in the line supplied from the blower. It also connects the vent line to the dust collector for loading without loss or ambient contamination.

☰ Tank Lorry Loading System

Tank Lorry Loading is a system that loads bulk raw materials in powder or pellet state into Tank Lorries or Containers. It is an automated system that maintains a clean environment, prevents product loss and leakage of dust occurring during vehicle loading, and reduces manpower by applying an integrated Telescopic Chute. The loading chute is easy to move back and forth, left and right, and up and down to improve work efficiency.

Conep has design and manufacturing capabilities to supply both individual and combined systems for Sea Bulk and Tank Lorry Loading System.



Applications

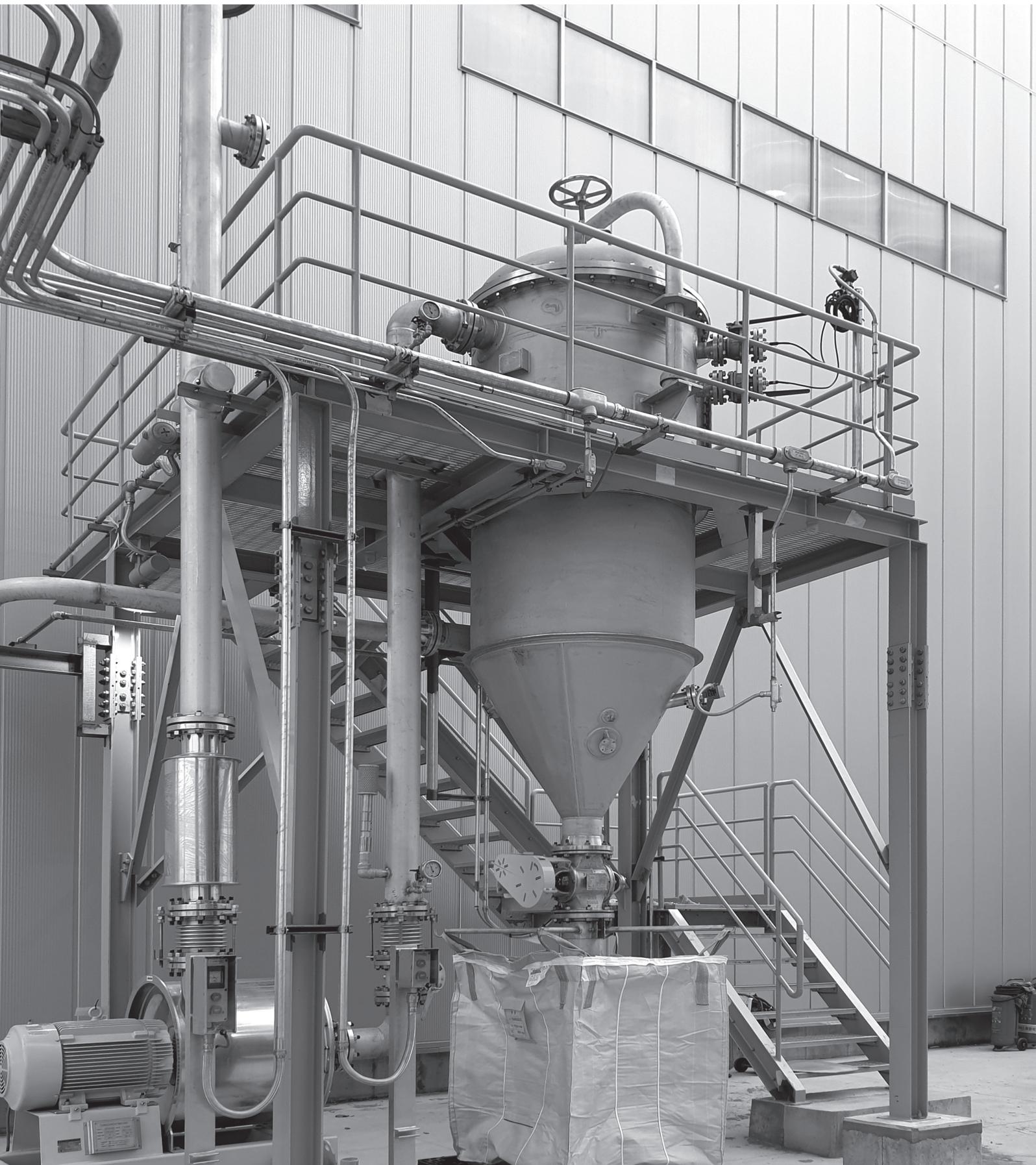
- ✓ Petrochemical Industry
- ✓ Plastic Industry
- ✓ Food Industry
- ✓ Pharmaceutical industry

Conep's Advantages

- ✓ Custom turnkey design, manufacturing, installation
- ✓ Efficient use of space with custom design
- ✓ Fully enclosed, dust-free loading facility
- ✓ All-line pneumatic conveying system with compact speed minimizes product performance degradation
- ✓ Specially designed loading arm and loading chute provide uniform filling
- ✓ The loading arm adjusts vertically to the truck's variable filling point
- ✓ Semi-automatic process with control
- ✓ Low energy consumption

Central Vacuum Cleaning System

Optimal cleaning system for a clean work place



Why Use a Vacuum Cleaning System?

Existing cleaning systems in production lines have problems such as dangerous and complex electric cables, heavy cleaning equipment, frequent filter replacement, and re-dispersed dust indoor without purification. Accordingly, in recent years, there has been a trend of applying a centralized cleaning facility (a vacuum cleaning system) in various places such as factories and buildings that pursue a pleasant indoor space.

Difference between central and individual systems

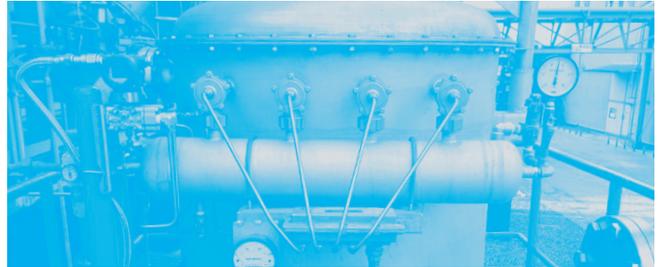
The central vacuum cleaning system is a method which connects cleaning hoses and tools to the suction valves installed on each floor. Dust sucked in on each floor is transferred to the central dust collection facility through a pipe, and only clean air is discharged. On the other hand, the individual vacuum system is a cleaning method of individually carrying an electric vacuum cleaner, and the collected dust must be transported and disposed of by the operator.

The central vacuum cleaning method is quieter than the individual type, and the dust collection capacity is 800~1600m³/hr, which is about 4 to 8 times larger than the individual capacity of 200m³/hr. The point cleaning capacity is 400 m³/hr, which is double the capacity of the individual type, and therefore highly efficient in reducing manual labor, and quickly and easily disposing of and recycling waste.

With the central system, dust is completely removed and discharged to the outdoors, but with the individual system, there is a high possibility that some of the dust is re-dispersed as the operator moves and handles the vacuum. The central system's upfront investment cost is higher than that of the individual system. But since the central system is processed at a time, the electricity consumption and maintenance costs are low, thus reducing the total costs.

Our Advantages

Conep provides the best cleaning solutions to solve all requirements by thoroughly analyzing each process. Since our Central Vacuum Cleaning System is specialized for plant cleaning, it is possible to select a filter suitable for the dust generated in the required cleaning space process, as well as provide turnkey solutions such as engineering, custom manufacturing, installation, and maintenance.



Applications

- ✓ Hot material conveying
- ✓ Fiber and fluff compacting
- ✓ Explosive material handling
- ✓ Anti-abrasion components

Conep's Advantages

- ✓ Work environment improvement
- ✓ Efficient removal of waste
- ✓ Reduction of maintenance downtime
- ✓ No secondary dust hazard by suction method
- ✓ No trailing cables
- ✓ Use of single or multiple operators



Hanwha Total Daesan Factory_Dust & Streamer Removal System



LG Chemical Daesan Factory_X-Dusters Package



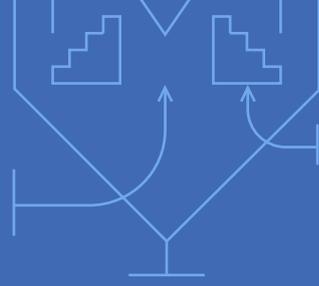
LG Chemical Daesan Factory_Sea Bulk loading System



Hanwha Total Daesan Factory_Degassing System



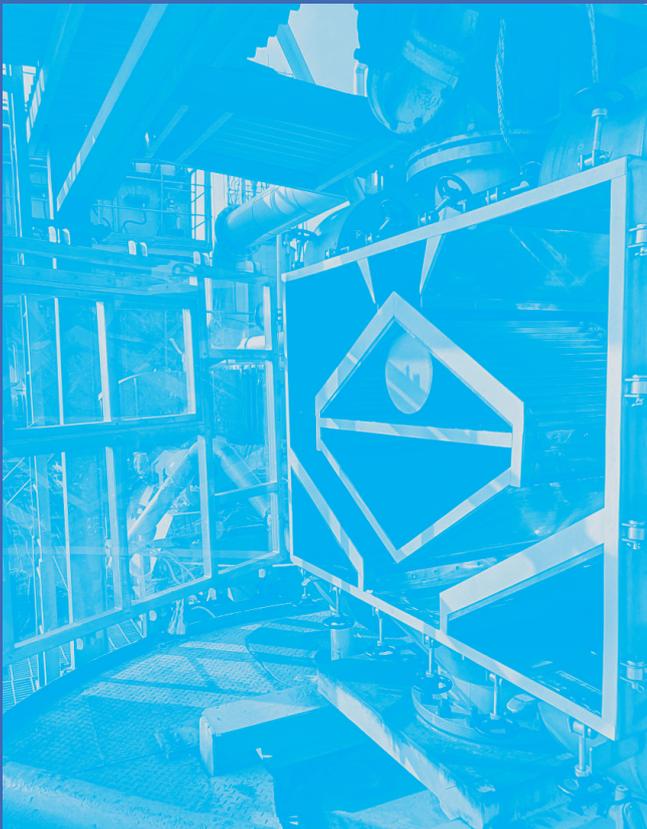
Hanwha Total Daesan Factory_Vacuum Cleaning System



LG Chemical Daesan Factory_Elutriator



Hanwha Solution Yeosu Factory_Injection Package



LG Chemical Daesan Factory_X-Dusters



Lotte Chemical_Rotary Feeder



Hyundai Steel Gwangyang Factory_Pneumatic Conveying System





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