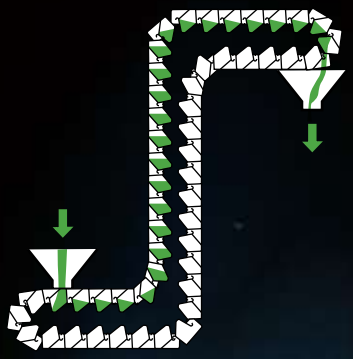
NERAK systems for bulk goods

Continuous and pendulum bucket conveyors

NERAK FÖRDERTECHNIK



NERAK continuous and pendulum bucket conveyors for the combined horizontal

|| **As experts in vertical conveying technology we offer the right solution for each individual application. And that means a cost-effective design as well as reliability and durability in operation.**

Whenever vertical conveying is the topic of conversation today, the name NERAK springs to mind. Innovation and reliability of our continuous bucket conveyors in all fields of the bulk materials handling have made us the market and technology leader world-wide.

If materials need to be conveyed on a 24/7 basis, with minimum amount of spillage, then NERAK is on the scene – for applications in the food and heavy industries.

Careful design and material selection ensure low maintenance and long life for all components in the system.

This, together with in-house production, ensures constant high quality as well as fast and flexible reaction times. OEMs and end users alike focus on NERAK continuous bucket conveyors when looking for an efficient solution to their conveying problems – whether for a single solution or large project.

We can offer the complete package from initial layout through design, manufacture, assembly, installation to commissioning. We maintain close customer contact through our large global network of sales and service.

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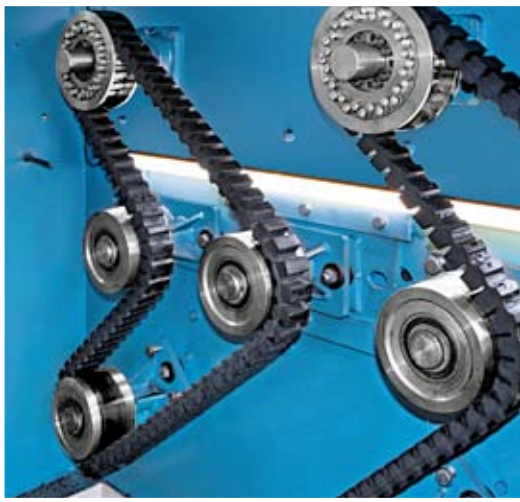
|| **Our strengths are quality, flexibility and the rubber block chain.**

At the heart of every NERAK conveyor drive system is the heavy-duty rubber block chain. The rubber block chain gets its high tensile strength from embedded vulcanized steel cables.

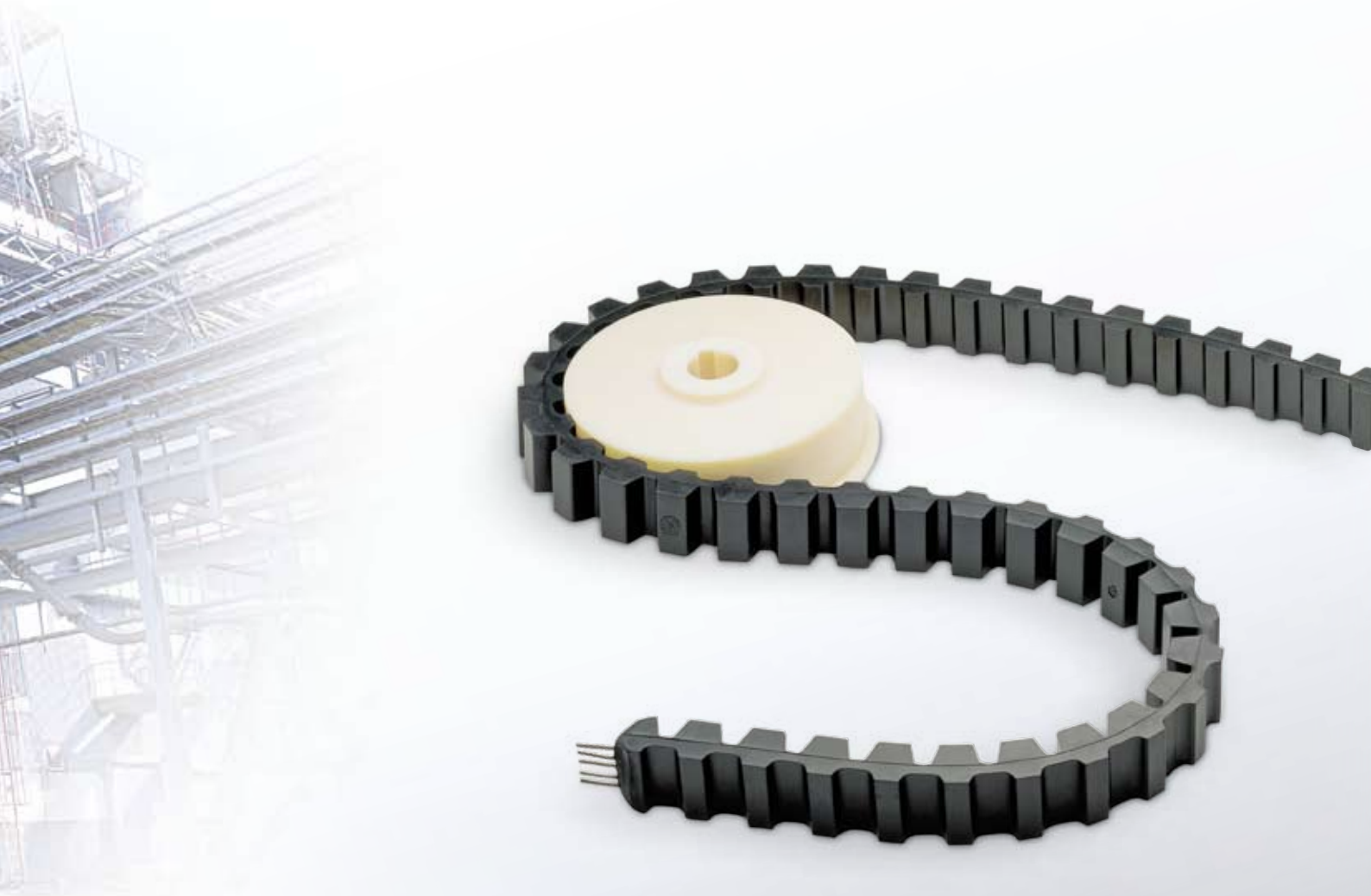
The outstanding features of this chain are that it has no links, is silent-running, wear-resistant and virtually maintenance free, all excellent qualities further enhanced by its corrosion-free design.

Thanks to the silent operation of the rubber block chain, there is no noise annoyance at the workstations in the immediate vicinity of the conveyor.

Moreover, operation with the rubber block chain is extremely cost-effective as there is no need for lubrication, regular adjustment and re-tensioning. Maintenance costs are thus reduced to a minimum.



The chain quality is subject to constant monitoring



NERAK continuous bucket conveyors

Continuous bucket conveyors are specially designed to convey bulk materials from one or more feed points to a central discharge. The conveying paths can be horizontal, vertical or inclining without any additional transfers.

Careful handling without product separation together with quiet running enable NERAK conveyors to be used for all bulk materials – from delicate foodstuffs to abrasive and coarse building materials.

Principle

The product is fed into the moving bucket belt at a controlled rate in a similar manner to feeding a normal belt conveyor. At the end of the conveyor, the buckets are emptied by gravity into the discharge section.

NERAK continuous bucket conveyors are very adaptable where space is limited. High throughputs can be achieved with low power requirements, and conveying heights over 50 m are possible.
The total conveying length is almost unlimited. At the same conveying capacity, continuous bucket conveyors take up considerably far less space than pendulum bucket conveyors.

Bucket belt

Two endless rubber block chains reinforced with steel cables are the driving element. The robust thick-walled plastic or steel buckets running between the parallel rubber chains are joined with flexible bucket strips to create a closed, gap-free and resilient conveying system. Of course, food-safe or conductive options are also available.

The relation between bucket width and pitch provides the best possible conditions for feeding and discharge. The materials of construction for all components make the NERAK bucket belt corrosion-free and largely chemically resistant, even with abrasive, humid or hot products at up to 220 °C.

Design and material selection ensure continuous quiet running (65 dB A).

Modular design of the continuous bucket conveyors allows for rapid and cost-effective replacement of parts suitable for the particular application.

Feed section

Depending on the application, the NERAK continuous bucket conveyor is equipped with one or more infeeds. The length of the feed opening is variable to suit the application, although the width is related to the bucket size. At the infeed, the product is fed into the buckets from the top at a controlled rate. Appropriate equipment can be supplied to provide a controlled rate of feed. The feed opening is sealed to the bucket belt.

Feed section

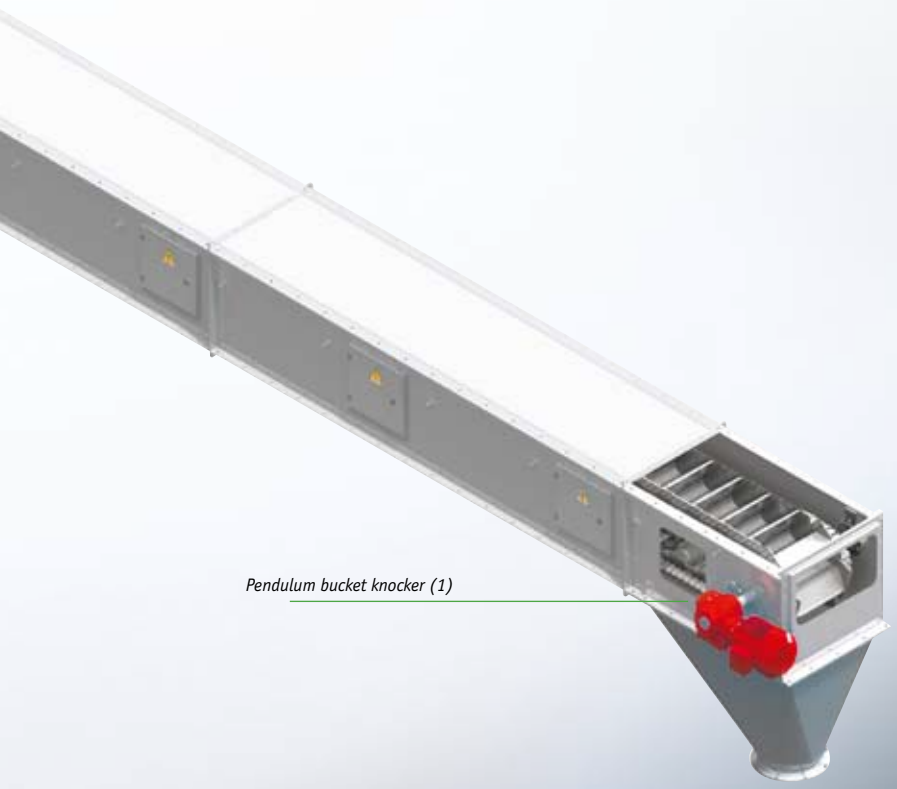
|| Discharge section

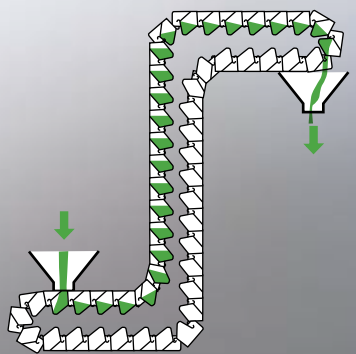
NERAK continuous bucket conveyors have just one discharge section. The length of discharge will be determined by the discharge characteristics of the product. A pendulum bucket knocker can assist product discharge from the buckets. Discharge chutes complete the connection to silos, packaging machines or other equipment in the production line.

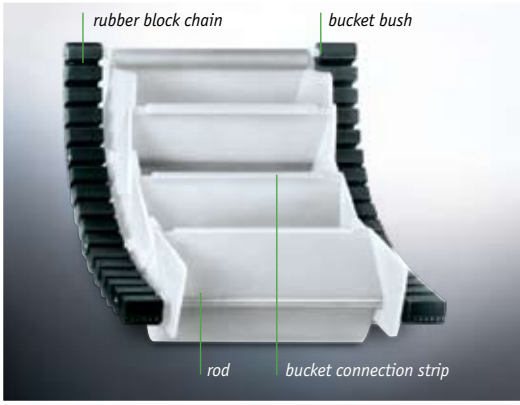
The drive is mounted in the discharge section. A geared motor is either directly connected to the drive shaft or via a transmission chain. On the opposite side of the drive shaft a backstop bearing prevents the bucket belt from running back.

|| Spillage

For some products NERAK continuous bucket conveyors can be supplied in a self-cleaning version: any product spillage in the bottom horizontal section is collected by the return strand of buckets and returned to the process. Alternatively, cleaning drawers, mesh or hinged bottom panels can be supplied.

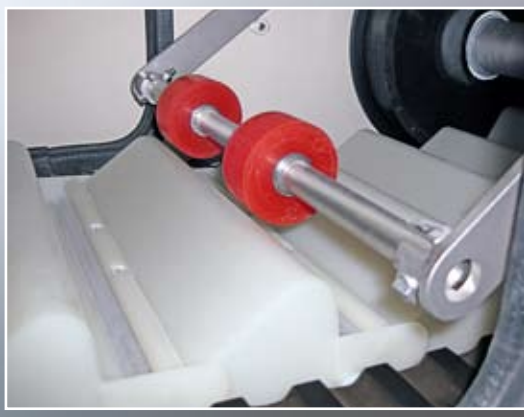






Bucket belt components and rubber block chain

Multiple bucket belt at the tensioning unit


Pendulum bucket knocker to assist product discharge

Discharge section of a WB 640 with 30 kW drive

NERAK pendulum bucket conveyors

Pendulum bucket conveyors are used to transport bulk materials from one or more feed points to any number of discharge points, and to elevate them to different levels, as required.

Principle

As with the continuous bucket conveyor, the product is fed into the moving bucket belt at a controlled rate. At the end of the conveyor the buckets are emptied by tilting mechanisms that are pneumatically or electromechanically controlled.

The well developed system, in particular the sturdy design of the bucket belt make it ideal for the widest range of applications – ranging from careful handling of delicate foodstuffs to the transport of abrasive coarse material as used in heavy industry. Low power consumption and great flexibility are the distinguishing features of the system.

Feed point with silicon seal

The feed section can be as long as required

Transition from horizontal to vertical conveying

|| Bucket belt

Two rubber block chains reinforced with steel cables provide the driving element. Running between the parallel rubber block chains, the robust pendulum buckets of plastic or steel are generally suspended in ball bearings. During the conveying operation, the bucket opening faces upwards. The bearings allow easy tilting of the buckets, thus ensuring optimum functional reliability.

The entire bucket belt is corrosion-free and does not require lubrication.

|| Feed section

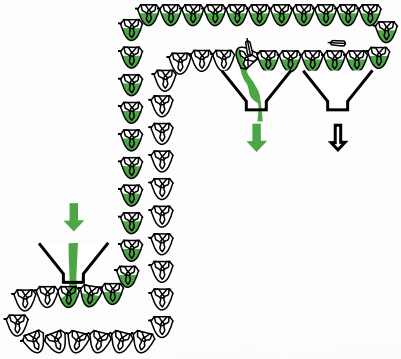
In the feed section the buckets overlap to form a gap-free bucket belt. Any number of feed inlets can be incorporated. The width of the bucket determines the width of the feed point. At the feed section, the product is fed into the moving bucket belt from the top in a controlled manner. The feed opening is sealed to the bucket belt.

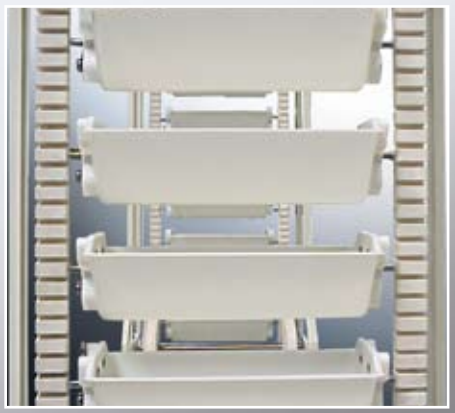
|| Discharge section

The NERAK pendulum bucket conveyor can be provided with any number of discharge points. The buckets are emptied by tilting mechanisms that are either pneumatically or electromechanically controlled. By tilting the buckets by up to 180°, the product is carefully discharged by gravity.

|| Drive system

A geared motor is either connected directly to the drive shaft or via a transmission chain. A backstop bearing is mounted separately on the drive shaft to prevent the filled bucket belt from running back.





The product is conveyed vertically upwards

Pendulum bucket conveyors can have any number of discharge points

Buckets are emptied by the tilting mechanism

NERAK continuous and pendulum bucket conveyors

|| **NERAK offers design solutions specific to customer requirements.**

Bucket conveyor casings are built from mild or stainless steel in open, dust-tight, water-tight, gas-tight or pressure shock-resistant structures.

Tubular frame with removable panels

Gas-tight horizontal pendulum bucket conveyor

Heavy-duty open frame structure

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Structure

- Robust, enclosed steel-plate structure for heavy-duty applications.
- Enclosed steel-plate structure with large removable panels in the horizontal sections for greater accessibility.
- Sturdy open profile structure for use in the steel industry.
- Gas-tight applications in the chemical industry.
- Open frame construction with removable mesh panels for fast and easy cleaning in the food industry.
- Elegant tubular frame structure – used mainly for packaging and weighing applications.

Sturdy steel-plate structure

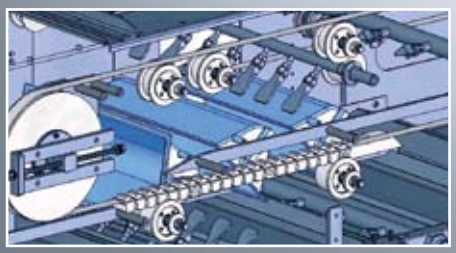
Open frame structure

Options

A tailored solution for every application.

Extensive range of options

- Conveyors in accordance with ATEX
- Gas-tight design
- Integrated weighing
- Cleaning systems with air
- CIP wet cleaning
- Buckets made from wear steel or stainless steel
- Buckets made from detectable plastic, suitable for foodstuffs
- Fire protection closures
- Feeding and discharge equipment
- Etc.



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The principle of the NERAK continuous and bucket conveyor technology provides individual conveying solutions for a wide range of materials:

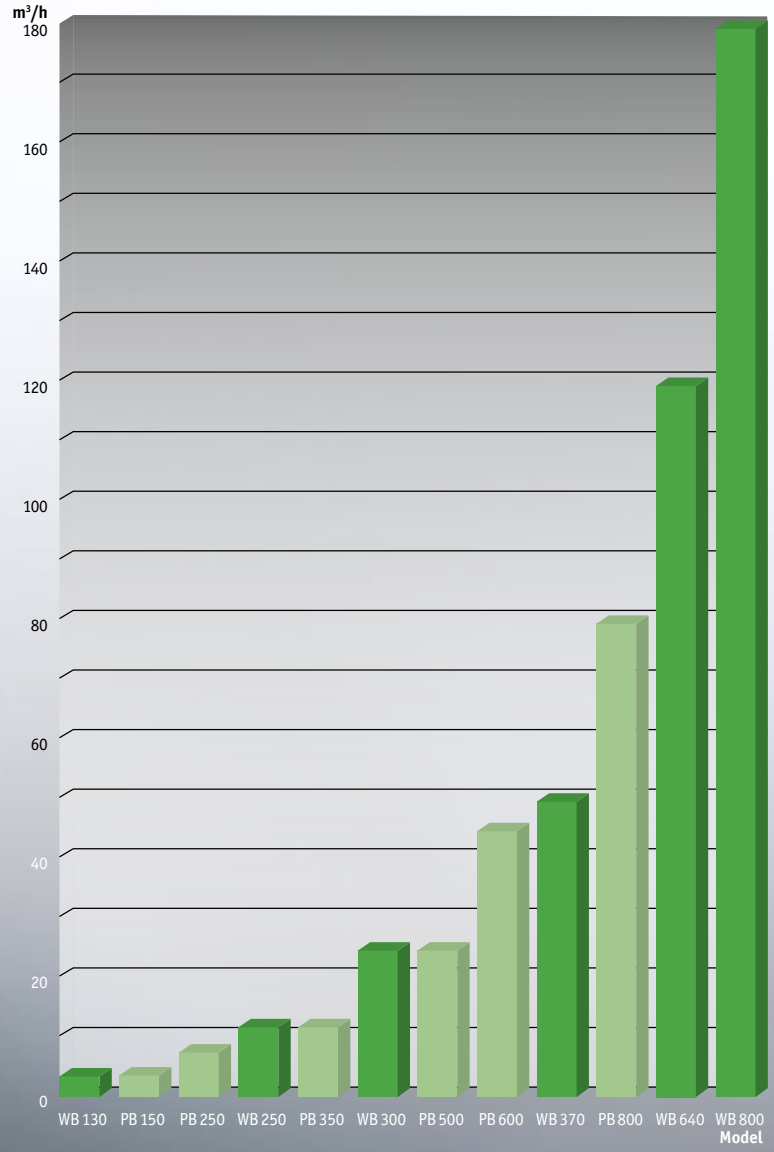
Building industry
- Tile cement
- Gypsum
- Loam
- Perlite
- Plaster
- Quartz sand
- Dry mortar
- Cement compounds

Chemical industry
- Aluminium oxide
- Barium
- Battery mass
- Fertilizer
- Glass fiber
- Urea
- Resins
- Catalysts
- Silica
- Phosphate
- Carbon black
- Sulphur lozenges
- Soda
- Soap powder
- Zeolite

Food
- Cereals
- Peanut puffs
- Frozen vegetables
- Pulses
- Instant tea
- Coffee beans
- Cocoa beans
- Potato crisps
- Chewing gum
- Dumplings
- Granulated sugar
- Marzipan balls
- Sodium bicarbonate
- Chocolate bars
- Nuts
- Breadcrumbs
- French fries
- Puffed rice
- Rice
- Salts
- Salt tablets
- Chocolate bars
- Sesame seeds
- Tobacco
- Tea
- Pasta
- Pet food

Heavy industry
- Burnt lime
- Iron powder
- Ore
- Refractory material
- Filter dust
- Old foundry sand
- Limestone
- Carbon
- Silicon

Miscellaneous
- Activated carbon
- Electrical waste
- Coins
- Broken glass
- Rubber granules
- Wooden pellets
- Cat litter
- Dried sludge pellets
- Cork
- Corundum
- Seeds
- Screw caps
- Spray grain
- Grit
- Tennis balls
- Toner
- Etc.



For current data sheets and sample CAD drawings please visit our website:
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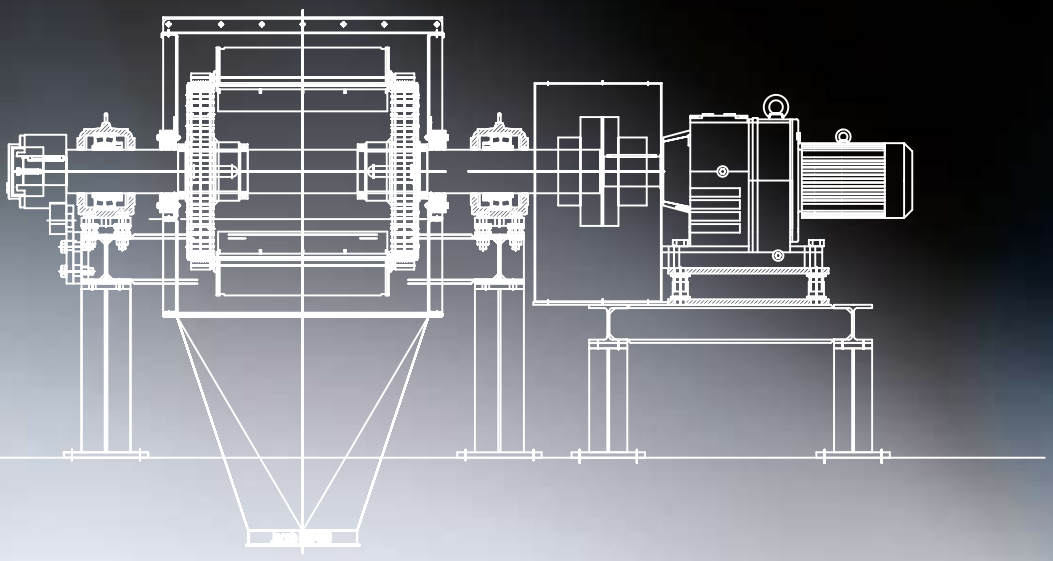

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