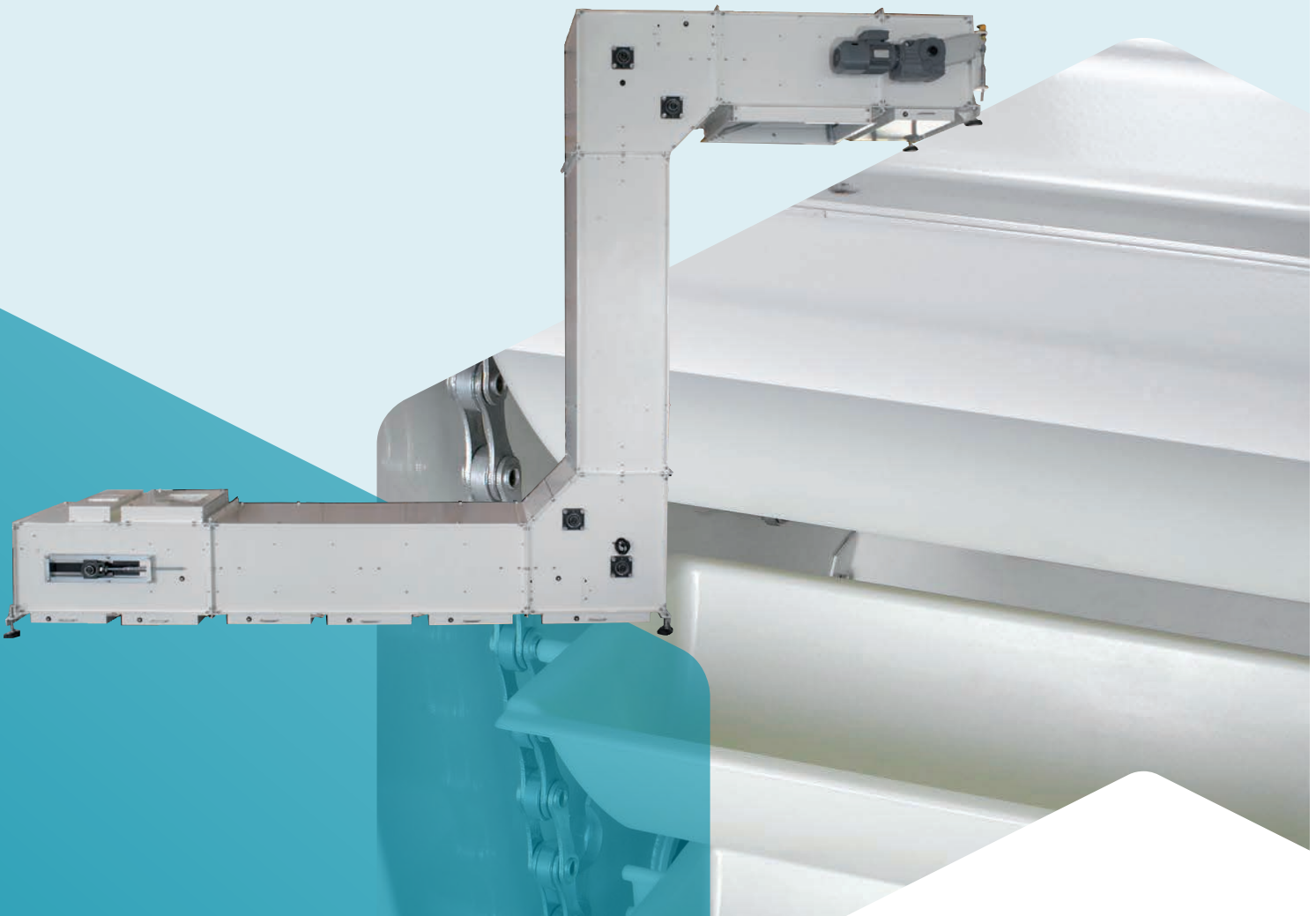


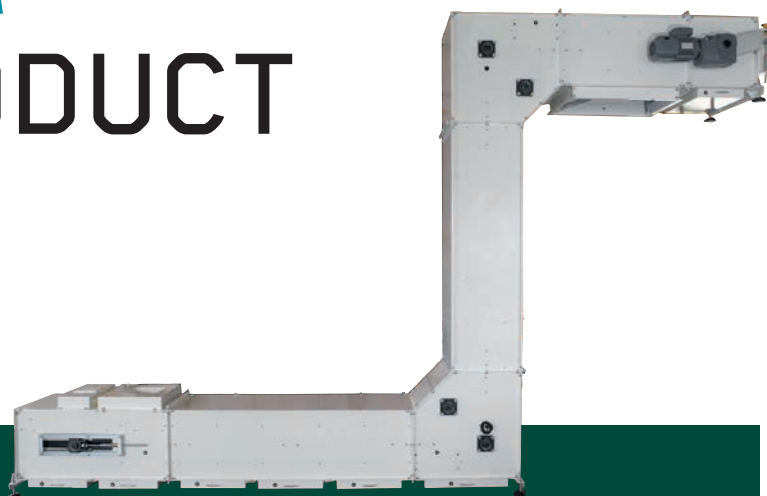
# PENDULUM BUCKET ELEVATOR

CONVEYING 





# SOLUTION FOR HORIZONTAL AND VERTICAL CONVEYING IN ONE PRODUCT



## OFFERING A GENTLE WAY OF HORIZONTAL AND VERTICAL CONVEYING

Cimbria is one of the world's leading producers of conveying equipment for agricultural and industrial products.

The Cimbria pendulum bucket elevators are delivered worldwide as singular supplied equipment or as a part of a total solution where they link key machines to form smoothly running industrial plants.

The pendulum bucket elevator distinguishes itself by its high degree of durability, safety of working and low power consumption when compared to the capacity.

[CIMBRIA.COM](http://CIMBRIA.COM)

## APPLICATION AND FUNCTION

Pendulum bucket elevators are used for very gentle vertical conveying of all kinds of granular products. Especially in the seed sector they are the most suitable conveyors. They can also manage big horizontal distances thus being able to replace the

combination of belt conveyor and normal bucket elevator. The pendulum bucket elevators produced by Cimbria can be delivered in two types, depending on the amount of product being conveyed.



### MODULAR STRUCTURE

The pendulum bucket elevator distinguishes itself by the modular design which makes it possible to design and manufacture elevators that meet specific application requirements.

### FORM AND FUNCTION

This conveyor has the benefit of combining horizontal and vertical conveying in one machine. Adding the very gentle way of conveying, the pendulum bucket elevator is the perfect conveyor for seeds and other sensible products. By means of using different speeds, there is a wide range of different hourly capacities that can be reached.

### SUPPORT AND SERVICE

Cimbria has an experienced, highly qualified workforce, its own development and construction department and modern production facilities. We keep all standard components in stock which means we can provide quick and efficient service for our customers.

## EXAMPLES OF MATERIALS TO BE CONVEYED

MAIZE



FINE SEEDS



WHITE RICE



SUN-FLOWER



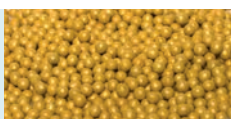
PEAS



PELLETS



COATED SEED



GRAIN



MINERALS



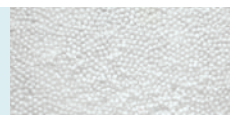
SOYA BEANS



COFFEE BEANS



GRANULES



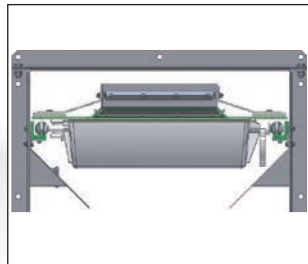
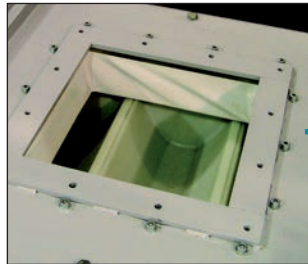
## PENDULUM BUCKET ELEVATOR CONSTRUCTION

The incoming product is fed to the pendulum bucket elevator continuously and very gently by means of a vibratory feeder. The edges of the buckets overlap each other in the inlet section and therefore prevent spillage of kernels. Due to the pivoted mounting of buckets in the chain, buckets keep their horizontal position all the way around in the conveyor until they

finally reach the outlet. There, each bucket is tilted and the product falling out is gently led into the outlet hopper. The pendulum bucket elevator can be equipped with a number of several inlets and outlets. Inlets can work at the same time, while outlets are used one at a time, which means only one outlet is active momentarily.

### INLET

The pendulum bucket elevator is flexible in terms of the number of inlets. Equal and constant filling of the buckets is highly important for a good operation. This can either be ensured by a vibratory feeder or by means of the foregoing machine which can, for instance, be a screening machine with adjustable feeding system, thus the product reaches the pendulum bucket elevator in a well dosed stream already. In such a case, a simple flange inlet is sufficient. Due to the overlapping of buckets as well as cover-matting in the inlet section, product loss comparable to the foot section of a normal bucket elevator is prevented.



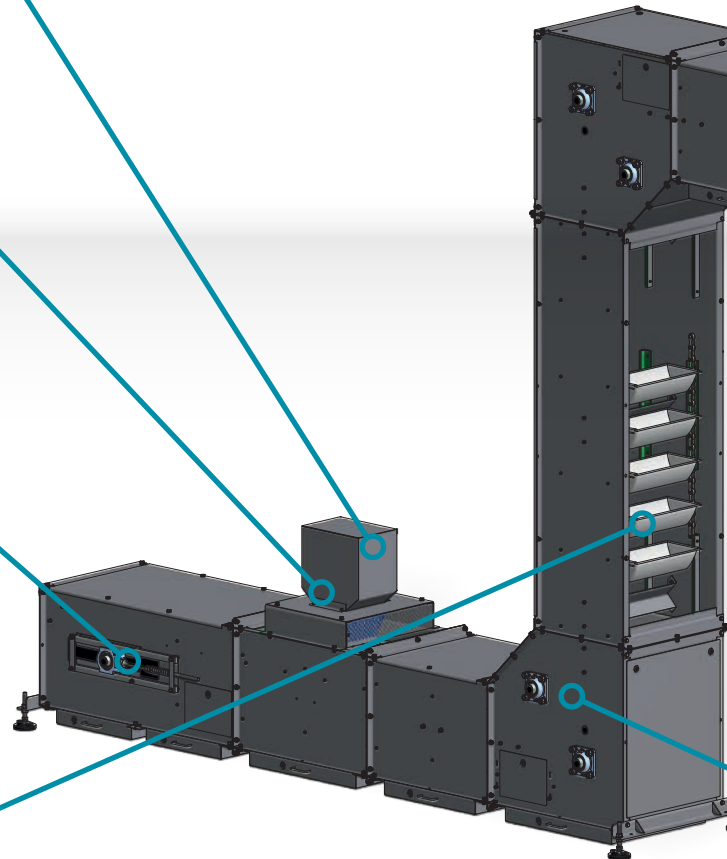
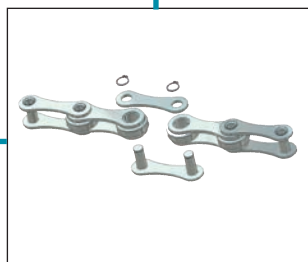
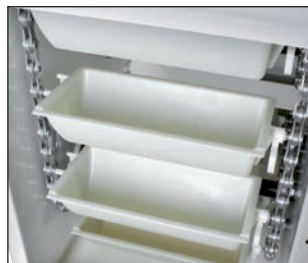
### TENSION STATION

The simple way of chain tensioning via manual spindles ensures a steady tracking ability of the chain and therefore an even and steady transport of the buckets.



### CHAIN AND BUCKETS

The high-tensile, chromated chain grants a long lifetime. Plastic buckets reduce the necessary drive power and at the same time treat the product to be conveyed very gently. On demand, also antistatic buckets can be offered as an option.





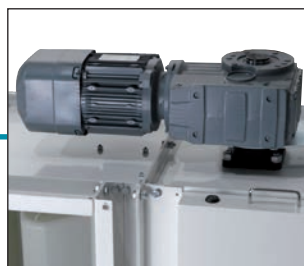
## MODULAR SYSTEM ADAPTED TO YOUR REQUIREMENTS

### DRIVE

Cimbria is a producer of high-quality machines. Therefore all geared motors used on our pendulum bucket elevators are supplied by SEW. Especially the relatively low required drive power of the pendulum bucket elevator means energy saving and therefore reduction in operation costs for our treasured customers.

PBE 10: 1,1 – 1,5 kW

PBE 20: 1,5 – 2,2 kW



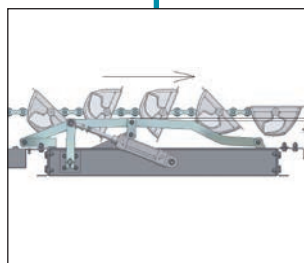
### OVERLOAD SWITCH

The overload switch on the drive station stops the drive immediately in case of abnormal torque on the geared motor, which is most likely caused by an internal mechanical blockage of the pendulum bucket elevators due to big foreign parts coming in by accident.



### OUTLET

The number of outlets on a pendulum bucket elevator is flexible. One outlet is always fixed, while additional ones are either actuated by hand or pneumatically by the central plant control panel. No matter how the outlet is actuated, the function is always the same: The bucket reaches a crank which is mounted on the side wall of the outlet section. When the cam mounted on the side of each bucket runs over this crank, the bucket is tilted. This gentle way of tilting prevents the product from getting any hard knocks in the outlet zone, whereas a normal bucket elevator throws out the product into the outlet parable at comparable high speed. The possibility of several outlets further optimises the flexibility of this conveyor and therefore of customer's plant.



### SPEED GUARD

A speed guard in the lower corner station of the pendulum bucket elevator reliably detects and reports about an eventual chain breakage.



### ACCESSORIES

- Frequency converter
- Vibrating feeder
- Intermediate outlet

## MODELS AND CAPACITIES

### MODELS

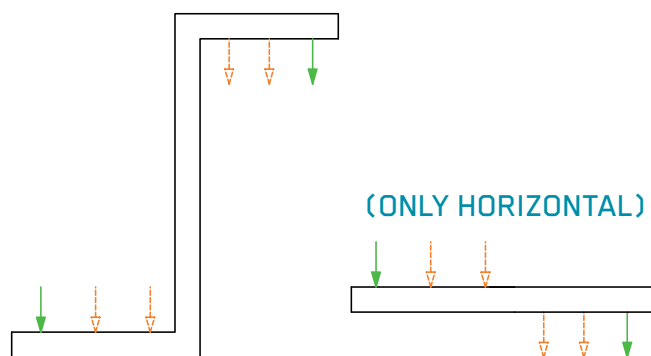
As standard, the pendulum bucket elevator is supplied as a Z, I or C-version. For special installations, the elevators are formed as a C-Z-version, an E-version, an angle Z-version or a double Z-version, referred to as the stair version. Additionally, other models can be supplied on request.

### CAPACITIES

The pendulum bucket elevator is available in two different types based on a bucket filling degree of 75% and a chain speed of 0,35 m/s

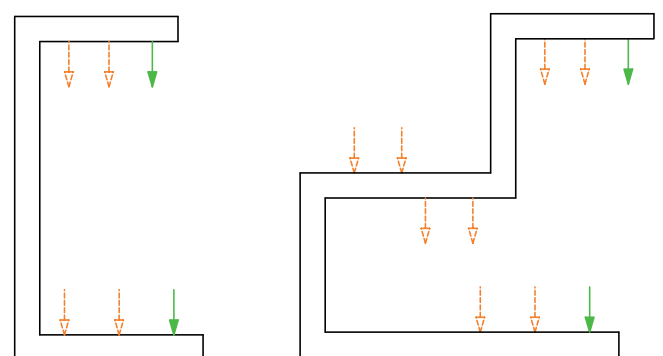
- PBE 10 for max. 10,5 m<sup>3</sup>/h
- PBE 20 for max. 23 m<sup>3</sup>/h

## STANDARD INSTALLATIONS



Z-INSTALLATION

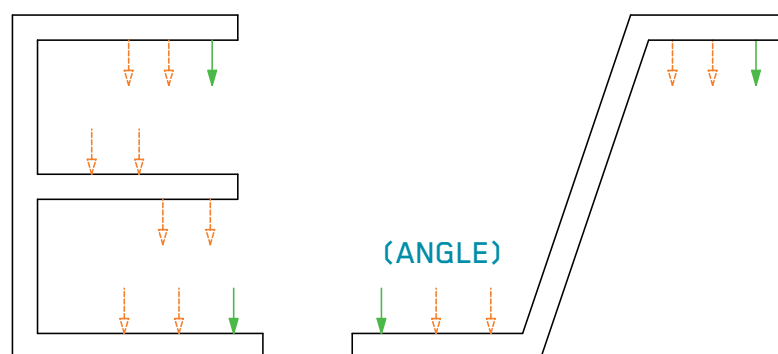
I-INSTALLATION



C-INSTALLATION

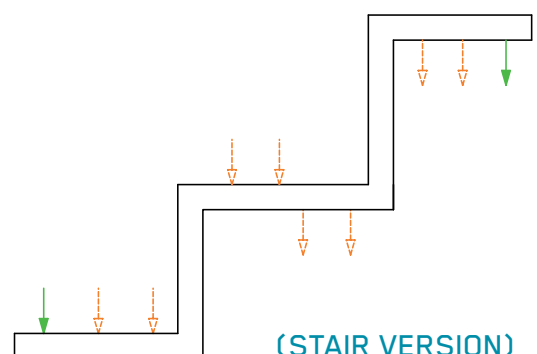
C-Z-INSTALLATION

## SPECIAL INSTALLATIONS



E-INSTALLATION

Z-INSTALLATION



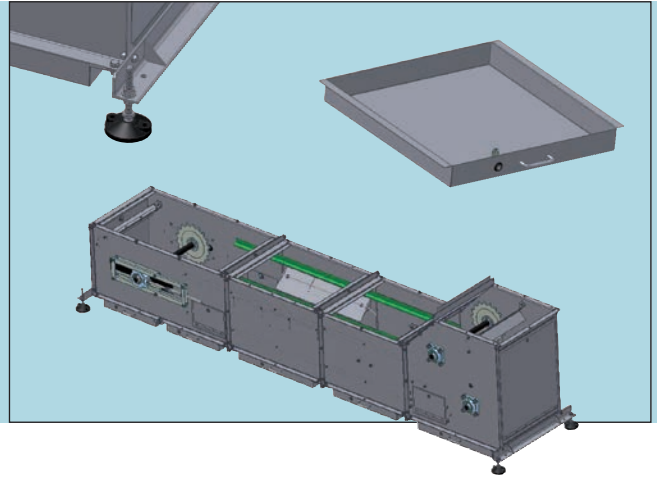
DOUBLE Z-INSTALLATION

## BENEFITS

### ASSEMBLY AND MAINTENANCE

The single sections of the pendulum bucket elevators are delivered fully preassembled. Therefore, assembly on site is reduced to a minimum, meaning that only the sections have to be connected and chain plus buckets to be inserted.

Levelling feet ease the straightening on site. Generous maintenance doors and sight windows grant a good view and access to the inside of the machine for control and maintenance purposes. Single spilling kernels can quickly be removed out of collecting drawers mounted in the bottom of horizontal sections.



### EXPERIENCED AND RELIABLE SUPPLIER

- comprehensive documentation
- high industrial quality
- more than 60 years of experience
- local representation in 60 countries
- numerous installations world wide
- can be supplied as stand alone equipment or as part of a turnkey plant

### MODULAR CONSTRUCTION

- Most gentle conveying, suitable for very fragile and sensitive productions also
- combination of horizontal and vertical transport for gentle conveying
- quiet running
- easy and quick replacement in case of damaged or worn parts without having to dismount the bucket elevator
- easy assembly and flexibility in installation
- reliable operation
- minimum of maintenance
- low energy consumption
- minimised downtime = maximised profit for the end-user

### COMPREHENSIVE PRODUCT PROGRAMME

- handles all dry bulk materials from industry to agriculture
- customised solutions to suit specific customer requirements
- day-to day delivery of spare parts
- standard components in stock
- extensive range of accessories for all applications
- full compliance with the ATEX directive
- continuous development of new products and features

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