



BG OPTIBULK BEUMER UNLOADING SYSTEM

BG OptiBulk is used for unloading of material from trucks with moving floor trailer or from dump trucks. The truck unloads the material on a chain belt conveyor. BG OptiBulk is intended for unloading of inhomogeneous material, which is difficult to handle. Such materials have low bulk density, high moisture and grain size, for example, alternative fuels used in the cement industry or biomass in power generation. BG OptiBulk was also designed for materials containing high amount of fine and explosive dust-environment with possible explosion risk (with ATEX regulation in European Union).

Combined unloading station is suitable for receiving dump trucks as well as moving floor trailers. It keeps a capacity allowing fast and simple dumping of the material.

Unloading station consists of a flat chain-belt conveyor and side steel walls.

In case tow truck is not present, moving floor trailer can be connected to a single hydraulic station so the discharging of material can continue.

To minimize the risk of damage of station due to improper drive-in of the car, special guide rails are installed. Rails are from rigid steel tubes with black and yellow stripes.

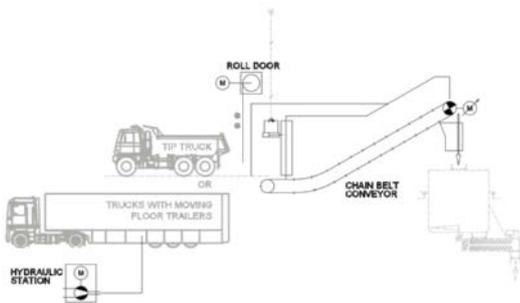
BASIC DATA

BG OptiBulk can be used for:

- › Quick unloading: No need for hydraulic unit or direct combustion. Down-stream buffer bin required or belt (chain) conveyor.
- › Direct combustion: Hydraulic unit is usually required while the truck is detached. Downstream equipment is usually BG OptiFeed or double screw conveyor with belt weigh feeder.

OptiBulk can be equipped with roll-up door, pneumatic sealing for trucks and dedusting filter units.

BG OPTIBULK



UNLOADED MATERIAL

- › Bulk density range:
0.08 – 0.8 t/m³
- › Max. grain size: 300 mm
- › Max. temperature: 65 °C

TECHNICAL DATA

- › Dimensions (L x W x H): 15,7 x 3,5 x 8,8 m
- › Belt width: 2,8 m
- › Opening width: 3,0 m
- › Discharge height: 6,6 m
- › Hydraulic power unit: single (for moving floor trailers only)
- › Unloading time: approx. 7 min (for 90 m³ moving floor trailer)
- › Belt storage capacity: 30 m³

For optimal adjustment of the unloading speed we recommend to use frequency converter.

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BG OPTIDOCK

BEUMER UNLOADING SYSTEM

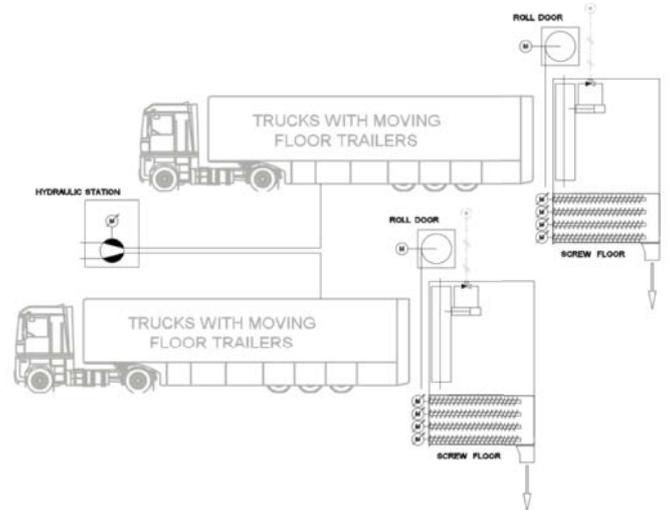
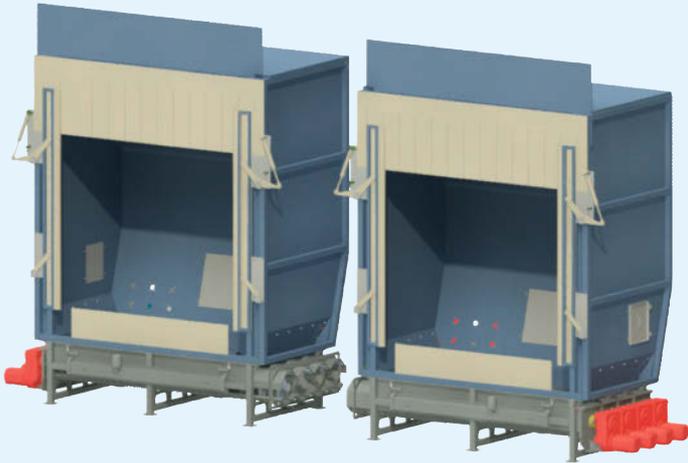
BG OptiDock is used for unloading of material from trucks with moving floor trailer. The material is then discharged to the following device (usually drag chain conveyor). BG OptiDock is intended for unloading of inhomogeneous material, which is difficult to handle. Such materials have a low bulk density, high moisture and granularity, for example, alternative fuels used in the cement industry or biomass in power generation. BG OptiDock was also designed for materials containing high amount of fine and explosive dust-environment with possible explosion risk (with ATEX regulation in European Union).

BG OptiDock serves for simple discharge of material, brought by trucks, and introduces it into transport and feeding system (usually drag chain conveyor). The unloading station consists of one receiving box and one screw floor. The opening for the truck receiving is equipped with simple rubber sealing. As an option, pneumatically controlled rubber strips for sealing of the gap between the station and the truck can be installed. When the truck is not present, the station is closed by means of roll-up doors or the discharging of the material can continue if hydraulic unit is installed. Station is equipped with solenoid valves for control of the pneumatic cylinders and traffic lights.

BASIC DATA

- Feed rate: 1 – 30 t/h
- Feed rate for bulk density: 0.08 – 0.8 t/m³
- Can be equipped with roll-up door or with dedusting filter
- Rubber sealing controlled via pneumatic cylinders

BG OPTIDOCK



UNLOADED MATERIAL

- › Bulk density range:
0.08 – 0.8 t/m³
- › Max. grain size: 200 mm
- › Max. temperature: 65 °C

TECHNICAL DATA

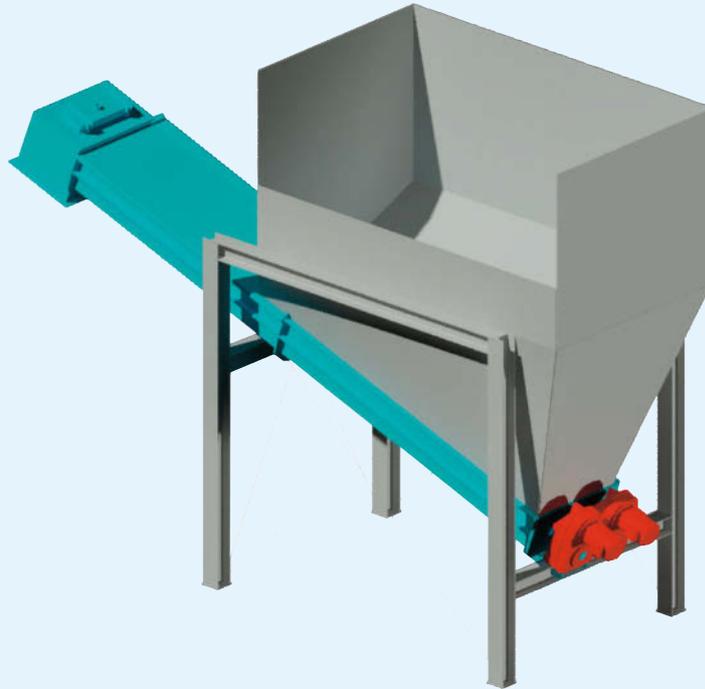
- › Dimensions (L x W x H): 3,8 x 2,1 x 5,5 m
- › Screw diameter: 4x 350 – 450 mm
- › Inner window width: 3,0 m
- › Inner window height: 3,8 m
- › Hydraulic unit: single or double
- › Dedusting: 450 – 1200 m³/h (optional)

For drive unit speed control it is recommended to use frequency converters.

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RECEPTION BOX WITH DOUBLE SCREW CONVEYOR BEUMER UNLOADING SYSTEM

The reception box is designed for unloading of bulk material from wheel loaders. The unit consists of a double screw conveyor and a reception box. It is used mainly for alternative fuels, exceptionally for heavy materials e.g. fine limestone, sand and cement. The screws can be executed in anti-abrasive design, the box can be equipped with lining, the hopper can be made of structural steel or stainless steel. An explosion proof measure ATEX can be incorporated.

The equipment serves for high-capacity unloading of bulk materials. The material is dumped from the wheel loader to the reception box (about 2 m³ to 15 m³). The material is then being extracted from the reception box via a double screw conveyor. The feeding capacity can be adjusted via frequency converters; in special case it is possible to use a screw bottom (i.e. multiple screws up to 5) instead of a double screw for higher conveying capacity.

BASIC DATA

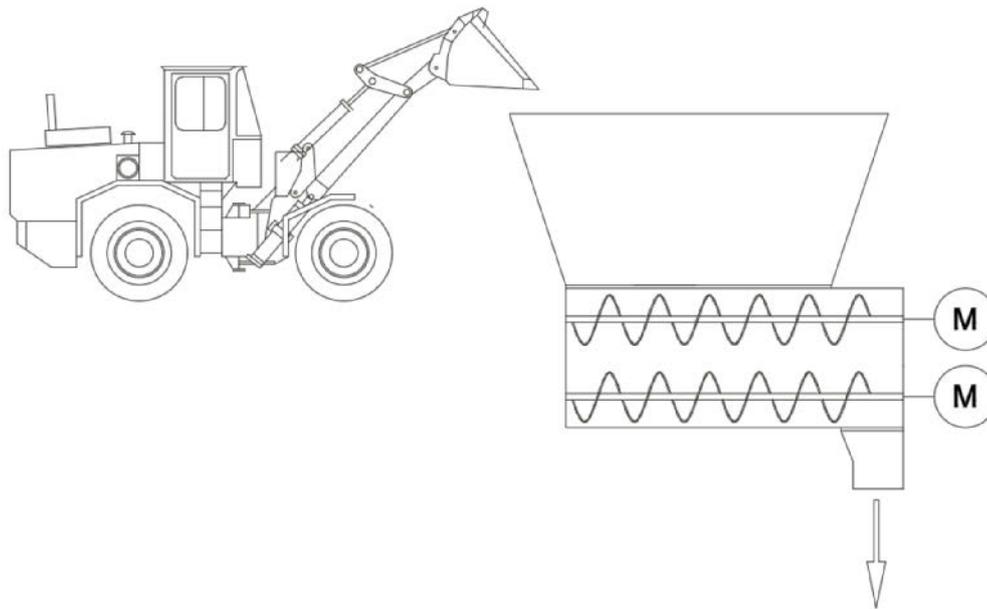
Used for

- Alternative Fuels
- Heavy materials

Properties:

- Wear protection
- Screws with shaft
- Chute with lining

RECEPTION BOX WITH DOUBLE SCREW CONVEYOR



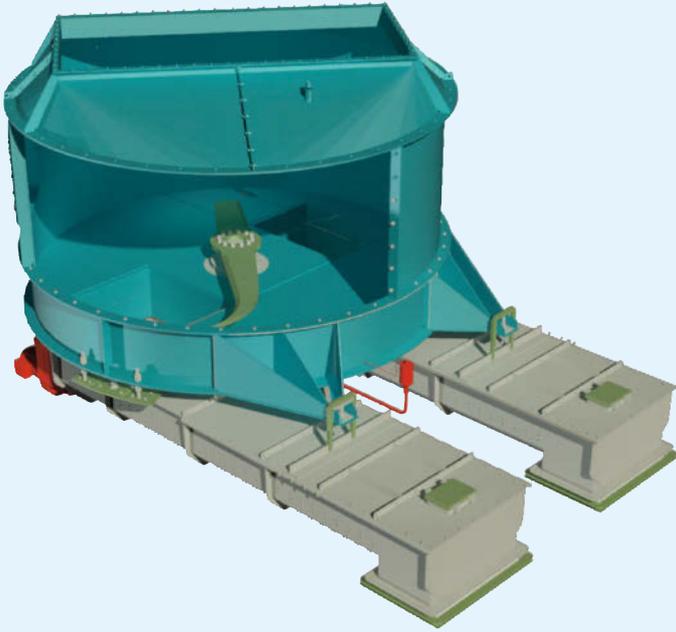
UNLOADED MATERIAL

- › Bulk density range:
0.08 – 1.5 t/m³
- › Max. grain size: 300 mm
- › Max. temperature: 65 °C

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BG OPTIFEED DUO BEUMER FEEDING SYSTEM

BG OptiFeed Duo is designed for continuous feeding of bulk materials into two separate feeding points (for example two inlets into preheater tower). The material is stored in a buffer bin and is extracted from this bin via two single or double screw conveyor. The buffer bin is equipped with an activator for an optimal extraction of the material.

Screw conveyors are placed on load cells in the outlet area. These load cells give information about the actual material load in the screw conveyors. The product of the actual material load and the speed of the material in the screw conveyor trough results in actual value of the feed capacity. The speed of the material in the screw trough, which is proportional to the screw revolutions, is controlled so that the actual feed capacity corresponds to the desired value.

The whole feeding system rests on 4 load cells which give information about the total amount of the material weight in the whole system. This information is used for on-stream calibration.

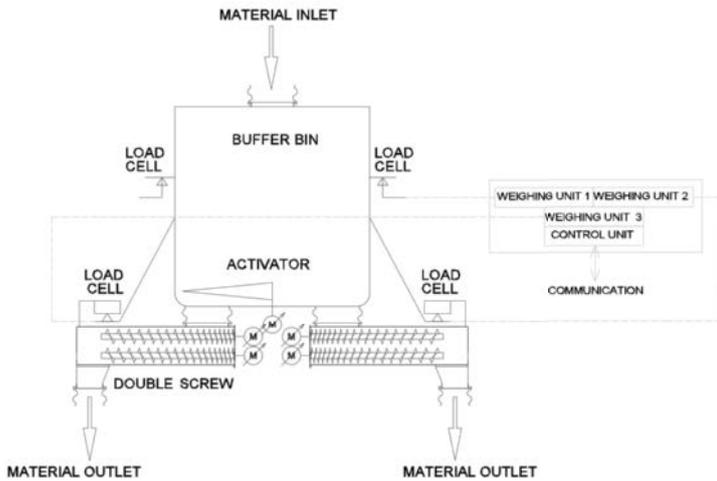
BG OptiFeed Duo is suitable for continuous feeding of the material into two feeding points. It is designed as a closed system with automatic calibration, allowing stabile feeding with high accuracy. BG OptiFeed Duo is intended for feeding of inhomogeneous material, which is difficult to handle. Such materials have low bulk density, high moisture and grain size, for example, alternative fuels used in the cement industry or biomass in power generation. The feeding unit was also designed for materials containing high amount of fine and explosive

dust-environment with possible explosion risk (with ATEX regulation in European Union).

BASIC DATA

- Feed rate: 1 – 2 x 20 t/h
- Feed rate for bulk density: 0.08 – 0.8 t/m³
- Control range 1:10
- Maximal feeding accuracy: 1 – 2 %
- Completely closed
- Dust-tight feeding system with the possibility of pressure compensation
- Suitable for crane halls and preheater tower

BG OPTIFEED DUO



FEEDING MATERIAL

- › Bulk density range:
0.08 – 0.8 t/m³
- › Max. grain size: 200 mm
- › Max. temperature: 65 °C

DIMENSIONS

- › Bin diameter: 4 m
- › Bin height: 1,6 – 4 m
- › Bin volume: 20 – 50 m³
- › 2x Double screw diameter: 400 – 500 mm
- › 2x Single screw diameter: max. 850 mm
(for max. 300 mm 2D material)

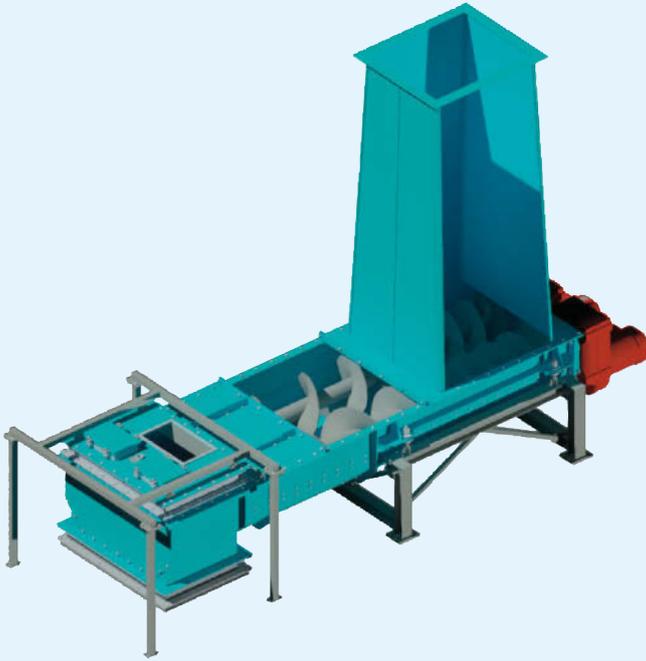
Tab.1 Bin dimensions

| BIN DIMENSIONS | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--|
| DIAMETER \ HEIGHT | 1.6 m | 2.1 m | 2.5 m | 3.1 m | 3.7 m | 4 m | |
| 4.0 m | 20 m ³ | 25 m ³ | 30 m ³ | 35 m ³ | 45 m ³ | 50 m ³ | |

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BG OPTILOCK BEUMER FEEDING SYSTEM

SEALING PRINCIPLE

BG OptiLock has been specially designed for feeding of alternative fuels into combustion process in the cement plants (into preheater or calciner). The air-lock principle is achieved via keeping a constant level of the material inside the BG OptiLock. BG OptiLock was designed to fulfill the rising demand for proper sealing and lowering of false air leaking into combustion processes. BG Opti-Lock is intended for feeding of inhomogeneous material, which is difficult to handle. Such materials have low bulk density, high moisture and grain size, for example, alternative fuels used in the cement industry or biomass in power generation. BG OptiLock was also designed for materials containing high amount of fine and explosive dust-environment with possible explosion risk (with ATEX regulation in European Union).

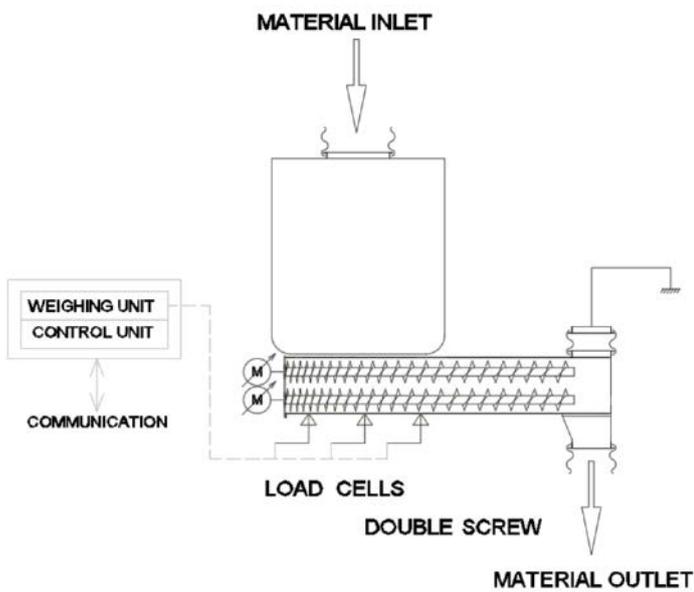
BG OptiLock is designed for continuous feeding of bulk materials. The constant amount of the material is maintained in a small buffer bin and is extracted from this bin via single or double screw conveyor.

The whole system is placed on 4 load cells. These load cells give information about the actual material load in the buffer bin and the double screw conveyor. The speed of the material extraction screws is controlled so, that the indicated weight of the whole system and the actual volume of the material in the bin is constant, thus, keeping the system air tight.

BASIC DATA

Feed rate is 1 – 30 t/h, for bulk density 0.08 – 0.8 t/m³ and for control range of 1:30.

BG OPTILOCK



FEEDING MATERIAL EXAMPLE

- > Bulk density range:
0.08 – 0.8 t/m³
- > Max. grain size: 200 mm
- > Max. temperature: 65 °C

DIMENSIONS

- > OptiLock length: 3,1 m
- > OptiLock height: 5,4 m
- > Bin volume: 2 m³
- > Double screw diameter: 400 – 500 mm

Tab.1 Capacity table

| Capacity | Bin volume |
|----------|------------------|
| 10 t/h | 2 m ³ |
| 20 t/h | 2 m ³ |

It is recommended to use frequency converters.

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FEEDING SCREW CONVEYOR BEUMER FEEDING SYSTEM

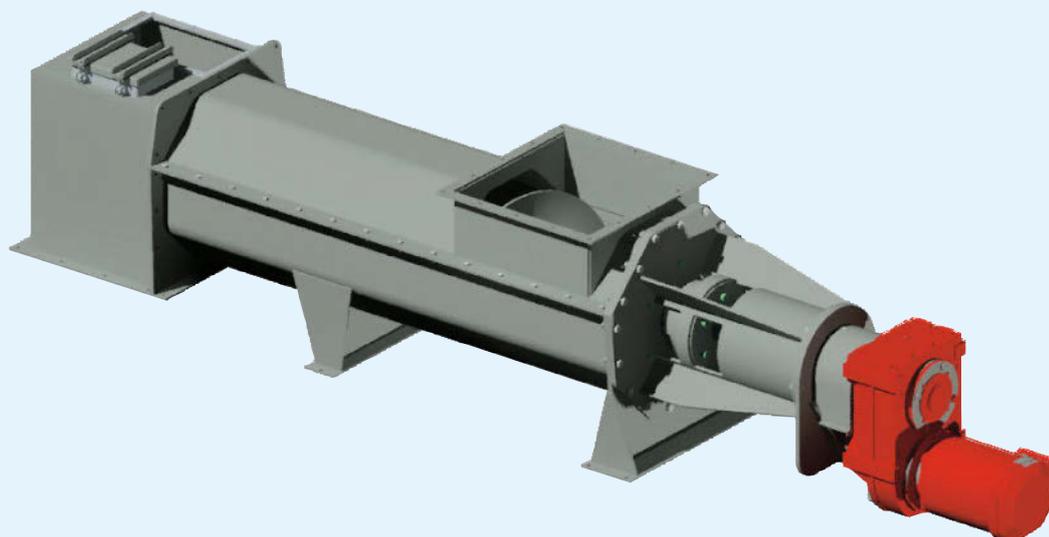
Beumer Feeding Screw Conveyor is a device specially made for feeding of alternative fuels into combustion process in the cement plants (into preheater tower or calciner). The Feeding Screw Conveyor is suitable for emergency cases inside the outlet chute and in case of fire it blocks escaping fire through layer of material inside it. Feeding Screw Conveyor is intended for feeding of inhomogeneous material, which is difficult to handle. Such materials have low bulk density, high moisture and grain size, for example, alternative fuels used in the cement industry or biomass in power generation. It was also designed for materials containing high amount of fine and explosive dust-environment with possible explosion risk (with ATEX regulation in European Union).

Feeding Screw Conveyor is held by two bearings, ca. 0,5 m apart. In case of fire, there are only steel parts exposed, thus, lowering the risk of burning. The whole screw conveyor trough should be filled with material. In case of fire the fire cannot escape and damage preceding equipment.

BASIC DATA

- Feed rate: 1 – 20 t/h
- Feed rate for bulk density
0.08 – 0.8 t/m³
- Heat resistant
- Wear resistant

FEEDING SCREW CONVEYOR



FEEDING MATERIAL EXAMPLE

- › Bulk density range:
0.08 – 0.8 t/m³
- › Max. grain size: 200 mm
- › Max. temperature: 65 °C
- › Max. moisture: 55 %

DIMENSIONS

- › Screw length: 2 – 3 m
- › Screw diameter: 400 – 500 mm

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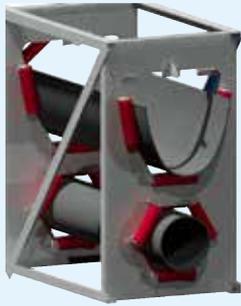
U-SHAPE CONVEYOR BEUMER CONVEYING SYSTEM

Beumer U-Shape conveyor is suitable for conveying of bulk materials, especially for material with high lump sizes. It combines advantages of pipe and trough belt conveyors. The U-Shape conveyor is open in the upper strand for the material transportation, in the lower strand it forms a pipe to lower the spillage along the route. This design allows vertical and horizontal curves, thus avoiding transfer towers. The conveyor is mainly used in the cement industry for alternative fuels transportation. U-Shape conveyor was also designed for materials containing high amount of fine and explosive dust-environment with possible explosion risk (with ATEX regulation in European Union).

U-Shape conveyor is very similar to pipe conveyors. Main carrying element is a rubber belt. The upper strand is open and forms a „U“ shape. This shape allows material transportation with high lump size or fluctuations in the feeding area. The lower strand is closed and forms a pipe shape to lower the spillage along the whole route.

U-Shape conveyor allows vertical and even horizontal curves. At the same time, the U-Shape conveyor capacity is around 80 % higher than for the Pipe conveyor and can be loaded at any point along the conveying route. These advantages can lower the investment cost in case of big particle size or high conveying capacity.

U-SHAPE CONVEYOR



MATERIAL RANGE

- › Bulk density range:
0.08 – 4 t/m³
- › Max. grain size: diameter of the pipe section
(ie. U300 -> 300 mm)

MATERIAL RANGE

- › Max. temperature: 65 °C
- › Max. moisture: 40 %

TECHNICAL DATA

Tab.1 Capacity and lump size acc. to the diameter

| Type | Belt width (mm) | Capacity (m ³ /h) | Max. speed (m/s) | Max. lump size (mm) | Vertical/horizontal radius |
|------|-----------------|------------------------------|------------------|---------------------|----------------------------|
| 150 | 600 | 200 | 2,1 | 150 | Depends on belt tension |
| 200 | 800 | 370 | 2,1 | 200 | Depends on belt tension |
| 250 | 1000 | 900 | 3 | 250 | Depends on belt tension |
| 300 | 1200 | 1400 | 3 | 300 | Depends on belt tension |
| 350 | 1400 | 1900 | 3 | 350 | Depends on belt tension |
| 400 | 1600 | 3100 | 3,7 | 400 | Depends on belt tension |
| 450 | 1800 | 3900 | 3,7 | 450 | Depends on belt tension |
| 500 | 2000 | 4600 | 3,7 | 500 | Depends on belt tension |

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CHAIN BELT CONVEYOR BEUMER CONVEYING SYSTEM

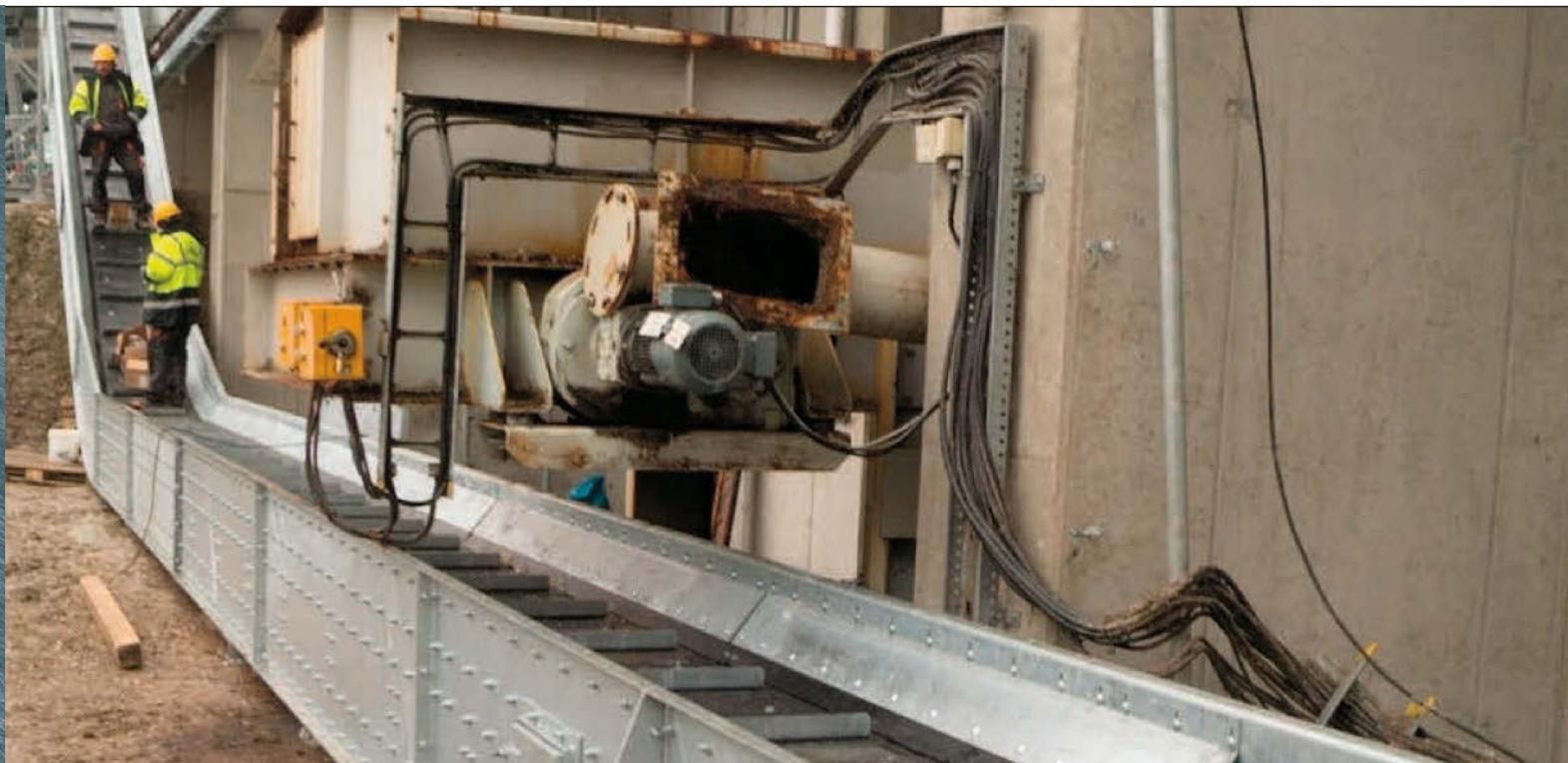
The chain conveyors are suited for continual horizontal or steeply inclined transport. The chain belt conveyors are capable of carrying a greater diversity of bulk solid products from fine grain to bulk material at higher rates and over longer distances.

The chain belt conveyor is used for bulk material conveying (especially for alternative fuels), short and middle distances (up to 60 m) are suitable options. Chain belt conveyor combines the properties of trough belt conveyor and chain conveyor, i.e. the material is carried in the upper strand by belt and at the same time the chain belt conveyor is fully closed. The belt is attached to a chain which provides the pulling force for the conveying. The conveyor was also designed for materials containing high amount of fine and explosive dust-environment with possible explosion risk (with ATEX regulation in European Union).

BASIC DATA

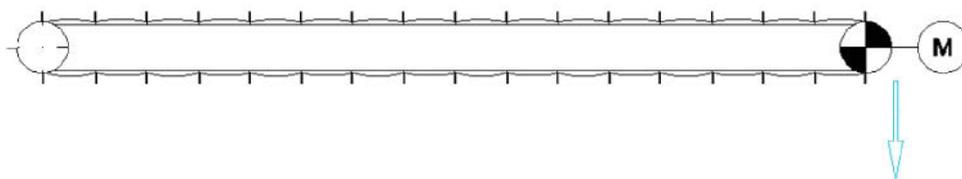
- Lower wear
- Anti-flame belt
- Longer life of steel sheets

CHAIN BELT CONVEYOR



FEEDING MATERIAL

- › Bulk density range:
0.08 – 0.8 t/m³
- › Max. grain size: 200 mm
- › Max. temperature: 65 °C
- › Max. moisture: 55 %



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