



# **BEUMER MATERIALS HANDLING ECONOMICAL TRANSPORT OF BULK GOODS**

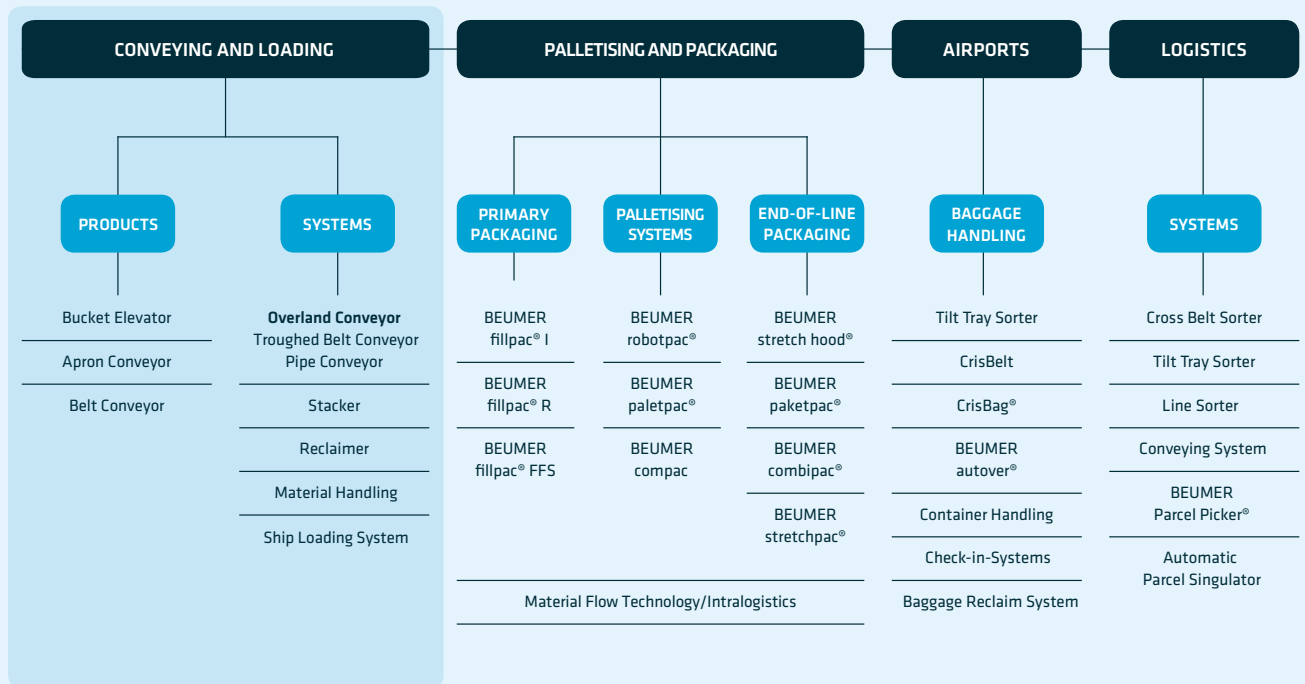


# MATERIALS HANDLING THAT MOVES MOUNTAINS

Every transportation scenario is different: it may involve moving coarse-grained material through rugged terrain from the quarry to the factory grounds, or hot materials from a kiln cooling system to a silo. However, all of these applications have one thing in common: when it comes to economical transport, the BEUMER Group provides the ideal solution.

## CUSTOMER SUPPORT

Customer Care, Parts Logistics, Hotline Support, Training and Qualification, Modernisation, Residential Service



## BEUMER - WE SET EVERYTHING IN MOTION

The BEUMER Group has a long history of supplying transportation solutions for bulk or general goods and hot materials of all kinds. The wealth of experience that we have gained from projects worldwide and in a broad range of industries enables us not only to offer economical plans but also to refine them, consistently and continuously. This ensures that our customers are always able to perform their transportation tasks economically, sustainably and with an eye to the environment.

## INDIVIDUAL TRANSPORT

Long distances, great heights, rough terrain, non-standard products – the BEUMER Group treats the individual needs of its customers as its own and develops the ideal transportation plan for each individual application. We can draw on a whole series of tried and true systems that our engineering team can turn into tailor-made transport solutions based on its wealth of expertise and experience. The BEUMER Group is also on hand for its customers at any time when it comes to operation, service and long-term improvement strategies, because we always focus on good customer support.

## PRODUCT OVERVIEW

- Conveyor belts – suitable for all kinds of bulk goods for any industry
  - Troughed belt conveyors
  - Pipe conveyors
- Apron conveyors – to transport hot materials
  - Apron conveyors
  - Belt apron conveyors
  - Hinged apron conveyors
  - Deep bucket apron conveyors
  - Tipping tray conveyors
- Bucket elevators – economical vertical transport
  - Belt bucket elevators
  - Chain bucket elevators
  - Heavy-duty belt bucket elevators
- System technology for alternative fuels – a blessing for the energy balance

# BEUMER BELT CONVEYORS OPEN OR CLOSED – EACH ONE TAILOR-MADE



BEUMER troughed belt conveyor, Binh Phuoc, Vietnam



BEUMER troughed belt conveyor, Asia Cement Group, Sichuan, China

Trucks and trains rapidly reach their limits on difficult terrain or when transport volumes build up. The highly flexible BEUMER belt conveyors are a better means of transport in such cases – both from an environmental perspective, thanks to energy recovery systems and low CO<sub>2</sub> emissions, and economically, because of the low investment and operating costs involved.

## BEUMER TROUGHED BELT CONVEYORS

The open troughed belt conveyors from the BEUMER Group are ideal for transporting bulk goods when large distances have to be covered quickly across rough terrain. The narrow curve radii and long centre distances permit large mass flows, particularly where heavy and solid materials are involved. The upper and lower strands can be used to transport different goods. This makes our troughed belt conveyors every bit as economical as they are flexible, and they pay for themselves quickly thanks to the low investment cost.

## BEUMER PIPE CONVEYORS

If goods have to be protected against environmental influences, or if the environment has to be protected from dust from the goods being transported, a closed pipe conveyor is the system of choice.

The BEUMER pipe conveyors permit especially tight curve radii and steep angles of inclination, while doing away with transfer towers altogether. This low-cost, low-maintenance transport solution also allows two different materials to be transported in the upper and lower strands.

## HIGHLIGHTS

- › Ideal for long distances
- › Energy recovery with downhill transport
- › Centre distances of up to 20 km
- › Horizontal curve radius of 100 m (pipe conveyor) or 400 m (troughed belt conveyor)
- › Transport capacity of over 10,000 t/h
- › Angle of inclination up to 30°



BEUMER bucket/belt conveyor

## EFFICIENT TRANSPORT EVEN FOR HOT MATERIALS

Transporting bulk goods economically is one thing, but you need a reliable, cutting-edge conveyor system when it comes to transporting hot materials. Refined technology, many years of experience and maximum precision assure the highest level of operational safety for BEUMER apron conveyors.

## INNOVATIVE CELL SHAPES

The closed string of cells enables hot materials of any kind to be transported cleanly. Overlaps in the cell side walls and banking of the floor plates both keep wear to a minimum and ensure that the goods being transported are conveyed reliably and cannot escape at any point. The cells can also be fitted with intermediate trays if the routes involve large inclines and extreme heights.

## HIGHLIGHTS

- › Ideal for hot materials and highly abrasive substances
- › Cell widths up to 2,000 mm
- › Angle of inclination up to 60°
- › Conveying speeds up to 0.6 m/s
- › Different designs permit a high level of flexibility
- › Belt or chain drives
- › Highly economical with low investment costs
- › Low-wear construction with a lengthy service life

# BEUMER BUCKET ELEVATORS MAXIMUM VERTICAL LIFTING OF INDIVIDUAL GOODS



BEUMER high-capacity belt bucket elevators



Whether hot or cold: BEUMER bucket elevators are the economical solution when it comes to vertically transporting bulk goods. As the market leader, the BEUMER Group has developed more and more highly refined technical designs for this type of conveying system for a number of decades now. Therefore the BEUMER Group can offer the perfect configuration for many different potential application scenarios.

## BEUMER HIGH-CAPACITY BELT BUCKET ELEVATORS

BEUMER high-capacity belt bucket elevators are an outstanding design for the transport of bulk goods, from those of a floury consistency to small pieces, such as raw meal, cement or grit. They transport fine-grained materials such as these in specially constructed buckets between 160 and 2,000 millimetres wide to heights in excess of 200 metres, and use much less energy in the process than a pneumatic conveyor system.

The buckets in the BEUMER belt bucket elevators are held in place using forged segment mountings to ensure an even distribution of retention forces in the belt, which is designed with steel cable-free zones. This structure is reliable in preventing the buckets from breaking loose.

The profiled rubber plate located between the bucket and the belt, the creation of “windows” on the belt side and the special finishing of the belt ends minimise the loading and thus the risk of both stretching and wear and tear to the BEUMER high-capacity belts. This is reflected in both the high level of availability and the long service life of the systems, as well as the maximum practical benefit that they offer.



*View of the central chain bucket elevator*



*BEUMER central chain bucket elevator*

## BEUMER CENTRAL CHAIN BUCKET ELEVATORS

The BEUMER central chain bucket elevator was developed expressly for maximum conveyor capacity; depending on design, sizeable centre distances can thus be achieved and conveyed volumes can reach 1,110 cubic metres per hour depending on bucket width. Their full strength comes to the fore with hot, abrasive or granular bulk material – for example in milling operations in the cement industry.

Because needs in terms of conveying capacity and conveying height differ, we have five types of chain available. This means that the ideal chain can be selected for each application while ensuring that chain safety is maintained. Using the high-strength BEUMER central chain enables loads to be lifted to substantial heights, in excess of 70 metres.

## HIGHLIGHTS

- › Vertical conveyance of bulk goods to heights of over 200 m
- › Transport capacities of up to 1,110 m<sup>3</sup>/h
- › Maximum wear resistance even with highly abrasive materials
- › High-temperature bulk goods can be transported

# BEUMER HEAVY-DUTY BUCKET ELEVATORS THE HIGH- PERFORMANCE ALL-ROUNDER



BEUMER heavy-duty belt bucket elevator, Tuas Power, Singapore

Heavy-duty systems are needed particularly when rocks and soil have to be transported. The BEUMER heavy-duty belt bucket elevators are perfectly suited for use in the cement and mining industries and in power stations.

## HIGH PERFORMANCE FOR ALL PURPOSES

The BEUMER heavy-duty bucket elevators are suited to all conveying scenarios involving the vertical transport of large volumes of heavy, highly abrasive bulk materials to great heights. The high-performance BEUMER heavy-duty bucket elevators can be used as recirculation units behind high-pressure roller mills in the cement and ore sector, or – in an explosion-proof version – to transport coal and related products.

## MAXIMUM LOADING, MINIMUM WEAR

The special steel cable used by the BEUMER heavy-duty belt bucket elevator makes extreme elevations and conveying capacities a possibility. Especially the high nominal strength and temperature resistance make the system ideal for dealing with extreme loads. Unlike traditional belt bucket elevators, there is no gap between the belt and the bucket, which means that bulk materials of any grain size can be transported with no risk of material becoming stuck. This guarantees reliable, low-maintenance operation at all times with extremely low noise emissions.





*Optimised bucket design for minimum wear and long service life*

## BUCKETS AS INDIVIDUAL AS THE MATERIAL TO BE CONVEYED

During the construction process, particular attention was paid to ensure the best possible means of attaching the buckets to the belt. Long plant service life and low maintenance costs are the results of the tried and true BEUMER bucket-belt segment fastening. A range of options are available in addition to the standard versions of the buckets, pipes and bucket elevator boot. Add-ons can therefore be supplied for the HD bucket elevator, such as rubber pipes for highly adhesive materials, or contactless, continuous belt position monitoring.

## INNOVATIONS FOR RETROFITTING

With decades of experience in the transport of materials of all kinds, the BEUMER Group has developed a high-capacity bucket elevator that can satisfy even the most extreme demands and stands out thanks to its above-average quietness of operation and long centre distances. This makes the BEUMER heavy-duty bucket elevator ideal not only for installation in newly constructed plants but also as a conversion option for existing systems.

## HIGHLIGHTS

- › Transport capacity of up to 2,000 m<sup>3</sup>/h
- › High temperature resistance
- › High nominal strength
- › Existing systems can be converted to BEUMER heavy-duty bucket elevators
- › Long centre distances
- › Various bucket versions available
- › Long service life even when transporting abrasive materials
- › ATEX version available
- › Noise reduction
- › High transport speed provides increased performance

# SYSTEM TECHNOLOGY FOR ALTERNATIVE FUELS CLEAN AND ECONOMICAL



System technology for the transport of used tyres



Constantly increasing energy costs are making alternative fuels more and more appealing for more than just energy-intensive sectors such as the cement industry. The BEUMER Group has been observing this trend for almost 30 years. It has developed system solutions that recover energy from waste and secondary fuels in a way that is economical and environmentally friendly.

## THE ECONOMICAL ENERGY ALTERNATIVE

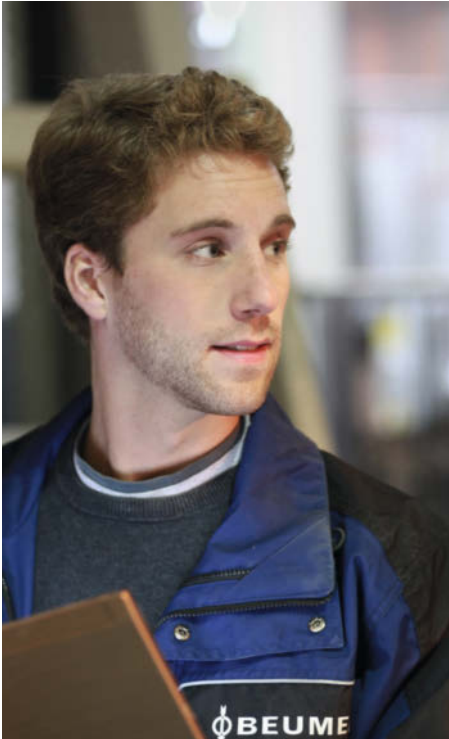
There is a wide range of alternative fuels available: used tyres, plastics and other mineral substances containing oil are mostly available in abundance and at low cost. Our systems enable these to be stored, separated, weighed, metered out and transported efficiently and without harming the environment. Systems from the BEUMER Group can even handle changing fuel types.

All system subassemblies and components have a modular structure, which means that our engineers can develop an individual solution for every application. The BEUMER Group's system technology gives customers a full package of services from a single source – a combination of turnkey solutions, expertise, service and engineering to ensure an ideal energy balance at a modest cost.

## HIGHLIGHTS

- › Economical energy recovery
- › Low-cost waste removal
- › No unacceptable environmental impacts
- › Fuel types can be changed
- › Precisely metered combustion processes

# SIMPLY WORLD-CLASS CUSTOMER SUPPORT



Performance of the plant and machinery used is reliably monitored.



## CUSTOMER CARE



Our customer care programme entitles you to multiple service options, such as maintenance and repair on site through our field service engineers or regular safety checks according to statutory rights. If hardware replacements are needed, our comprehensive warranty service ensures you are always covered.

## MODERNISATION



We are constantly developing new ways to upgrade our software and hardware to extend a system's lifetime, lower energy costs and increase efficiency. We will keep you informed of all relevant upgrade opportunities, based on an understanding of your business and system needs.

## TRAINING AND QUALIFICATION



We offer standard and tailored customer training programmes to make sure your teams are fully qualified to operate your systems. With hands-on guidance, conducted either on-site or at BEUMER Group locations, your teams can maintain optimal operational performance.

## SPARE PARTS LOGISTICS



We guarantee spare part replacements around the world through our local companies. As a BEUMER Group customer, you will have your own individual contact to assist you with technical inquiries, warranty issues or repair orders and to secure that your order is delivered on time.

## HOTLINE SUPPORT



Our hotline support is manned 24/7 by highly trained, multi-skilled engineers who all have at least four years of direct field experience. Most cases are solved remotely, however, should the problem require more specialised attention, a BEUMER Group engineer will be quickly sent out.

## RESIDENTIAL SERVICE



With our residential service, we are on-site every day to take complete responsibility for your system uptime, performance and operational efficiency. We can take care of all maintenance and management, including system improvements, contingency plans, specialist advice and repairs.

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