



# **BEUMER BELT TRAY SORTER**

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## HIGHLY VERSATILE AND EFFICIENT



The BEUMER Belt Tray Sorter sorts and distributes any goods efficiently and gently

Do you need a sorter that will handle any kind of article carefully but with maximum efficiency? The BEUMER Belt Tray Sorter is just what you are looking for. It will reliably sort all kinds of goods and transport them carefully and safely to the right destination. A combination of contactless power and data transmission and a flexible, modular structure will give you maximum flexibility and keep operating costs down.

### HIGH PERFORMANCE FOR MANY DIFFERENT PRODUCTS

Rapid yet careful product sortation is indispensable for many branches of industry. The BEUMER Belt Tray Sorter offers the ideal solution, reliably and carefully directing all types of article to the right destination, regardless of size, shape or surface structure. That makes it ideal for the following, for example:

- Letter trays, packets and small envelopes in the postal and courier industry
- Shoeboxes and polybag goods in the footwear and clothing industry
- Plastic film-wrapped products with high-friction surfaces from mail-order companies and the newspaper distribution industry
- Unstable and sensitive products, such as frozen foods, cakes and dairy products
- Products with extreme variation in type, shape and frictional behaviour

### CAREFUL SEPARATION – CURVES ARE NO PROBLEM

The fully controlled separation process enables the BEUMER Belt Tray Sorter to handle goods very gently on the way to their destination. Separation profiles for the belt trays can be adjusted to suit each separate group of products, minimising damaging effects on the products and also reducing noise. The use of a crossbelt to ensure gentle separation also means narrow, tightly grouped destination points are no problem – even in curved areas.

As a result, the sorter needs comparatively little floor space. And because the starting position for each separation procedure can be individually pre-selected, a high fill rate can be achieved at the destination points. This means that heavy goods can be separated from light and fragile items at a single destination point.

Belt Tray specifications						
Sorter		BS 7	BS 25	BS 25 WB	BS 25 WB DB	BS 55
Drive type		linear drive/BEUMER OptiDrive®				
Max. speed	m/s	2,5	2,7			
Max. product weight	kg	10	32			55
Max. product size (LxWxH)	mm	700 x 550 x 350	800 x 600 x 700	1000 x 800 x 800	1200 x 800 x 600	1200 x 800 x 600
Min. product size (LxWxH)	mm	40 x 40 x 1	50 x 25 x 2,5	150 x 100 x 5	150 x 100 x 5	150 x 100 x 10
Max. tray capacity	St/h	22.500	21.600	16.200	16.200	16.200

### HIGHLY FLEXIBLE, RELIABLE AND EFFICIENT

Contactless power and data transmission mean the BEUMER Belt Tray Sorter offers maximum flexibility. Add in its modular construction and it can be perfectly adapted to all building environments. The system can also adapt flexibly to individual product requirements and seasonal peaks, thanks to its variable distribution profiles, starting positions and a high throughput rate.

The use of proven components and technologies ensures a high level of reliability in operation. Operating costs are kept down by the contactless power transmission system that uses no batteries and causes no wear and tear.

### END-TO-END SORTATION AND DISTRIBUTION SOLUTIONS

The BEUMER Group has been supplying sortation and distribution systems for trade, industry and service businesses around the world for many years. We develop individually coordinated system solutions, from individual machines through to fully integrated material flow systems. This is where our optimised software comes into play: the BG Software Suite based on highly modular software and a user-friendly user interface. The software is tested and checked using computer simulation to streamline the commissioning process. This minimises software errors and speeds up the time-to-market for customer-specific solutions.

Besides sortation and distribution we can also provide products and systems for your distribution centre to take care of aspects such as incoming goods, order picking and retrieval, as well as robot technology for palletising and depalletising.

### HIGHLIGHTS

- Contactless power and data transmission
- Modular structure using mechanical components that have proven their worth time and time again
- 50% fewer components than other crossbelt sorters
- 80% lower maintenance costs compared to power supply systems using contact wires
- Outstanding TCO and LCC
- Quality assurance in accordance with DIN ISO 9001

# MODULAR DESIGN HIGHLY RELIABLE AND PROVEN COMPONENTS



Sorter frame made of extruded aluminium profiles with integrated tracks

The BEUMER Belt Tray Sorter offers you a highly modular and dependable system. Like all sortation and distribution systems from BEUMER Group, the BEUMER Belt Tray Sorter is modular, and makes use of mechanical components that have proven their value in many different areas of industry.

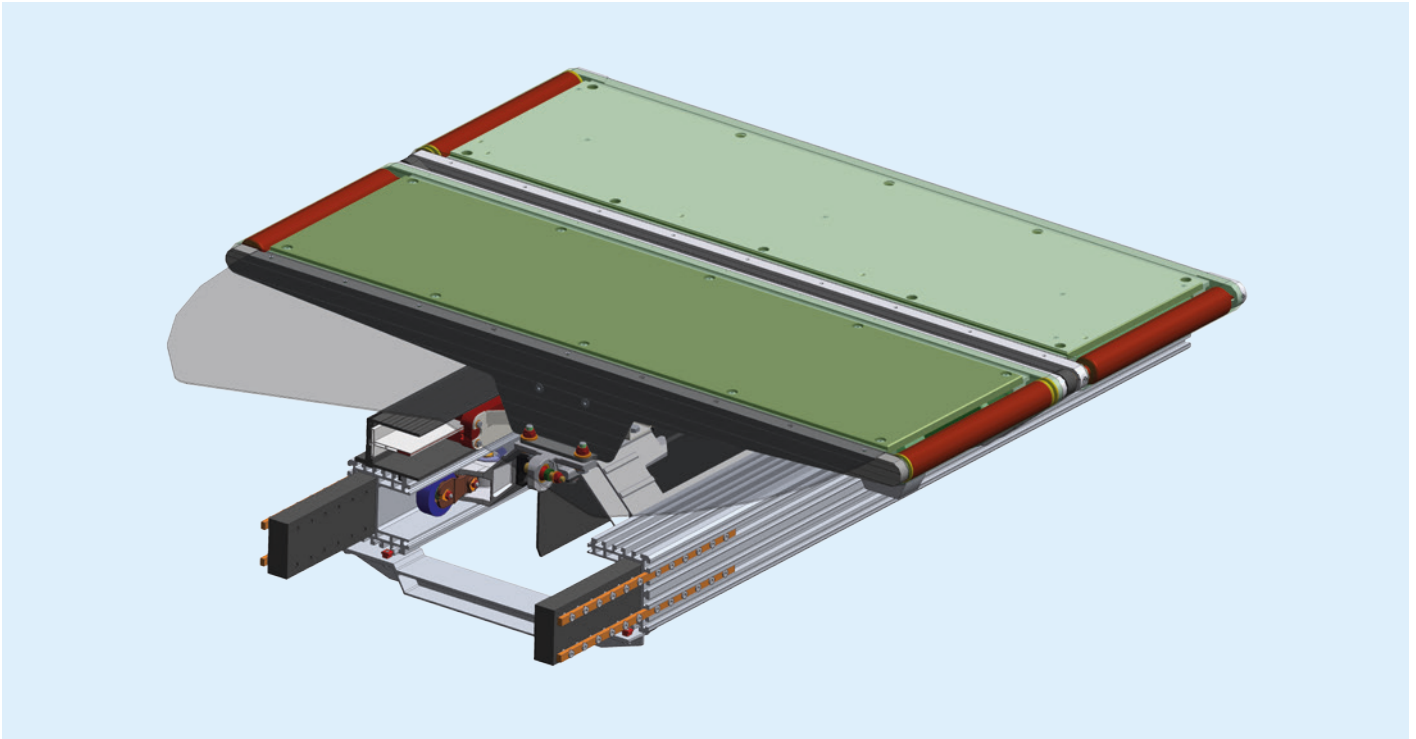
## BELT TRAY

The operating principle for the BEUMER Belt Tray Sorter is a series of travelling belt conveyors that operate at an angle of 90° to the sorter's direction of travel. The appropriate crossbelt is activated to load a given article. The item is transferred onto the crossbelt at a controlled velocity. The opposite process is effected during discharge: the belt is activated in the direction of the discharge and the product is smoothly transferred to the destination. The distance between the individual articles being transported is reduced to a minimum.

Each belt tray is driven by a standard, maintenance-free DC motor. The required energy is supplied by a travelling medium-frequency to direct-current (T-MF/DC) converter. The BEUMER Belt Tray Sorter uses 50% fewer components than other crossbelt sorters.

## FRAME AND TRACK

The frame is made of anodised, extruded aluminium profiles with integrated tracks. Safety covers, photocells and other components can be conveniently attached at any position along the frame.



BS 25 WB-DB (Double Belt)

## CARRIAGE

Maintenance-free carriages made of die-cast aluminium are assembled to form a continuous, closed loop. Support and guide rollers consist of sealed, permanently lubricated, polyurethane-coated grooved ball bearings. The carriage modules are screwed in place for ease of attachment and removal. The carriages are connected together using high-strength bolts and universal-type joints.

The Belt Tray Sorter itself, with two belts per carriage ("double-belt"), is a high-performance unit capable of sortation a large range of packages.

## INNOVATIVE DIRECT DRIVE

The BEUMER OptiDrive® is an innovative, low-noise direct servo drive based on the friction wheel principle. The contact force of the friction wheel automatically adjusts itself in proportion to the drive force required so that the friction wheel always operates at its optimum working point. That optimises the efficiency in the partial load range and minimises wear. The proportional friction pressure system acts in two directions. As a result the BEUMER OptiDrive® can drive or brake the sortation system with the same force.

## HIGHLIGHTS

- › 80% less power consumption than conventional sorter drives
- › Quiet operation (< 68 dB)
- › Efficient direct drive with double-action, proportional friction pressure

# POWER/DATA TRANSMISSION HIGHER FLEXIBILITY, LOWER COSTS



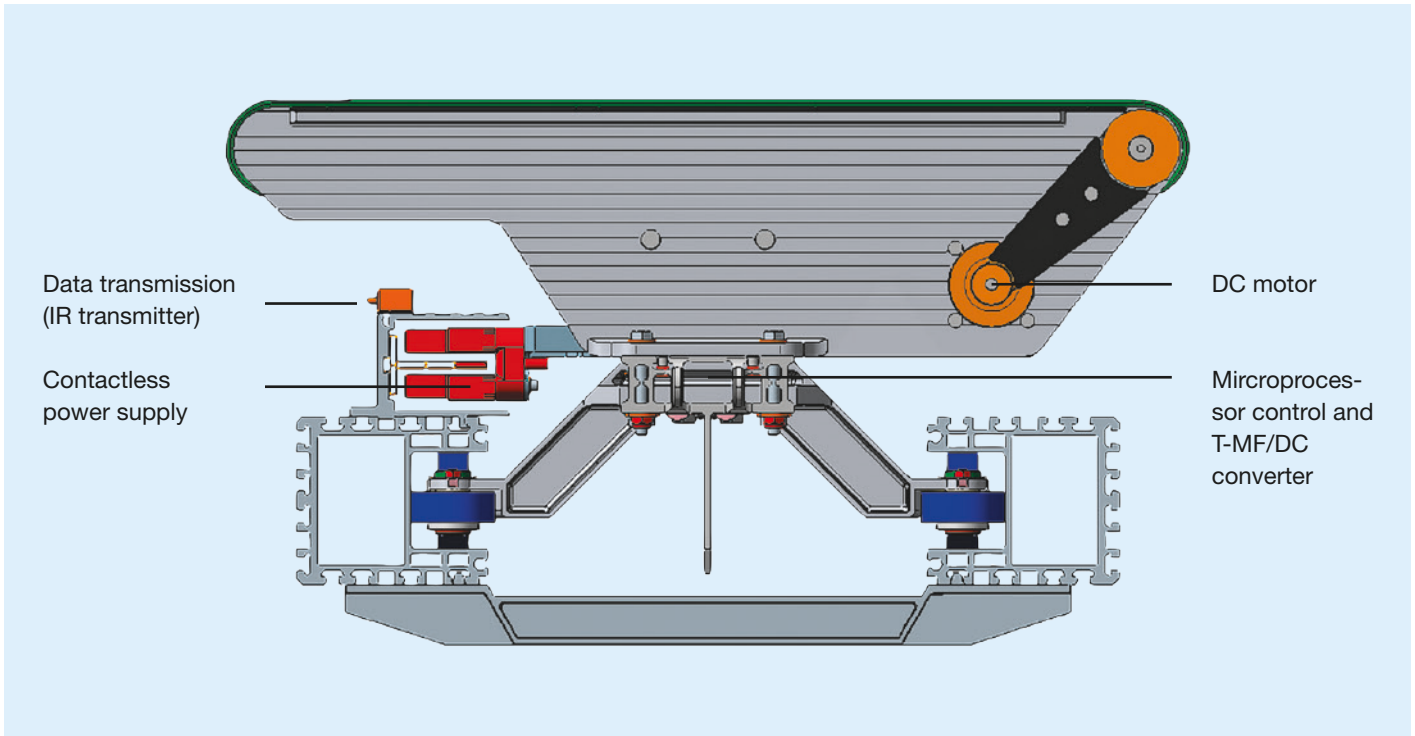
*High-performance sortation system with minimum wear and low maintenance requirements*

The unique contactless power and data transmission functions mean the BEUMER Belt Tray Sorter offers maximum flexibility and reduced operating costs.

## EFFICIENT, CONTACTLESS ENERGY TRANSMISSION

An outstanding feature of the BEUMER Belt Tray Sorter is the non-wearing and battery-free BEUMER contactless power transmission system. This converts the standard mains current into medium-frequency current to enable the electric power to be transferred from a fixed power supply across an air gap of approx. 20 mm to a travelling transformer. The selected frequency makes it possible to achieve a very high transfer efficiency rating of up to 98%.

This method of power transmission avoids both maintenance costs and environmental impacts. The BEUMER Belt Tray Sorter has no permanent connection between the moving consumer and the fixed supply cable (contact wire). This prevents the wear that power consumers using contact wires are prone to through the effect of friction.



Functional elements of the BEUMER Belt Tray Sorter

## SAFE, CONTACTLESS DATA TRANSMISSION

Stationary infrared (IR) data transmitters to activate the belt trays are located along the sorter loop, generally where the belt tray performs actions like loading or discharging. The IR data transmitter sends control commands for each sort item, specifying the individual handling characteristics that depend on footprint, shape or weight.

Each belt tray is equipped with a control unit. The control unit comprises an IR data transceiver and a microprocessor. The control unit processes the control commands captured by the IR data transceiver and adjusts acceleration, deceleration and speed of the belt tray via the T-MF/DC converter. The control unit monitors the status of each belt tray as well.

A stationary belt tray check module, equipped with IR data transceiver and microprocessor, is installed strategically in the sorter loop, for instance shortly before the induction group. This module receives function and status reports from each belt tray control unit for further processing.

## HIGHLIGHTS

- Contactless power transmission to suit requirements
- Friction and wear and tear are reduced to a minimum, keeping maintenance costs down
- Material flow control via the modular BG Software Suite

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