



# **BEUMER TILT TRAY SORTER SYSTEMS**

# BEUMER TILT TRAY SORTER SYSTEMS TAKING GOODS SAFELY TO THEIR DESTINATION



Smooth logistics for parcels, packages and large letters: BEUMER Tilt Tray Sorter systems transfer consignment units in and out rapidly, carefully and reliably. They can be integrated into the most demanding automated material flow systems and are based on experience acquired from many sortation systems installed worldwide.

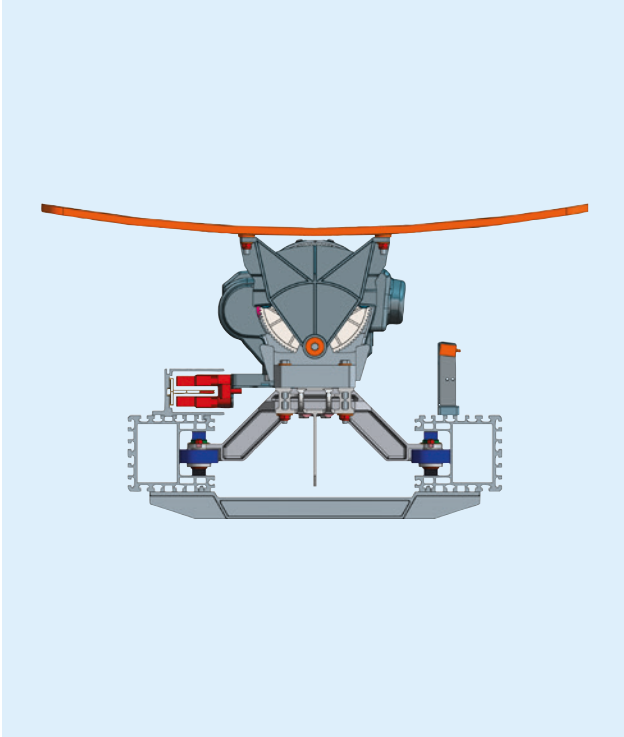
## SORTATION AS EFFICIENT AS IT IS FLEXIBLE

BEUMER Tilt Tray Sorter systems ensure your consignments flow smoothly. A high sortation speed and perfect system coordination shorten delivery times, while the extremely precise sortation system reduces the number of misplaced items. And that makes for happy mail recipients. The modular design of the BEUMER Tilt Tray Sorter systems lets you adapt them to best suit local circumstances, expected throughput volumes and other specific requirements.

## GENTLE DISTRIBUTION – ONE OF OUR STRENGTHS

The mechanical BEUMER Tilt Tray Sorter is the base model for our modular design kit. The mechanical tipping elements permit a guided, two-dimensional discharge of items to both sides. This makes the item slide off the tray without any catapult effect so that it leaves the tray at a clearly lower speed than with comparable systems. The parcels, packages, large letters and all other items being sorted are transported safely and discharged with maximum accuracy.

The tilt element of the BEUMER E-Tray Sorter is driven by an electric motor, which reduces the tilting and running noise. The power supply to the tilt elements is provided by a contactless power transmission system. Decoupling the tilt movement from the sorter speed makes it possible to increase the sortation speed quite significantly.



BEUMER E-Tray Sorter



BEUMER Tilt Tray Sorter

## 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 solutions come 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.

## TOTAL ASSURANCE FROM QUALITY TO SERVICE

The sortation and distribution systems of the future demand well thought-out plans and system solutions. BEUMER Group responds to this challenge with a balanced portfolio of products that is internationally renowned for its dependability and quality. Continuous and skilled customer care, global services and a reliable repair and maintenance service round out the picture. And when you need rapid assistance, you can reach us any time via the BEUMER Group hotline.

## HIGHLIGHTS

- › Gentle item handling
- › Robust design
- › Stable carriage connection using ball-and-socket bearings
- › Low maintenance costs
- › Low-maintenance, low-wear linear motor drive, or alternatively the energy efficient BEUMER OptiDrive® design
- › Material flow control via the modular BG Software Suite

# BEUMER TILT TRAY SORTER MODULAR, GENTLE AND STURDY



The BEUMER Tilt Tray Sorter, with mechanically controlled tipping elements, is a high-performance sortation system for goods of all kinds – from small transport bags to large, heavy boxes. Its extraordinary sortation quality and careful handling ensure that parcels, packages and large letters and all other items being sorted are transported safely and discharged with maximum accuracy.

## MECHANICAL HANDLING OF THE GENTLE KIND

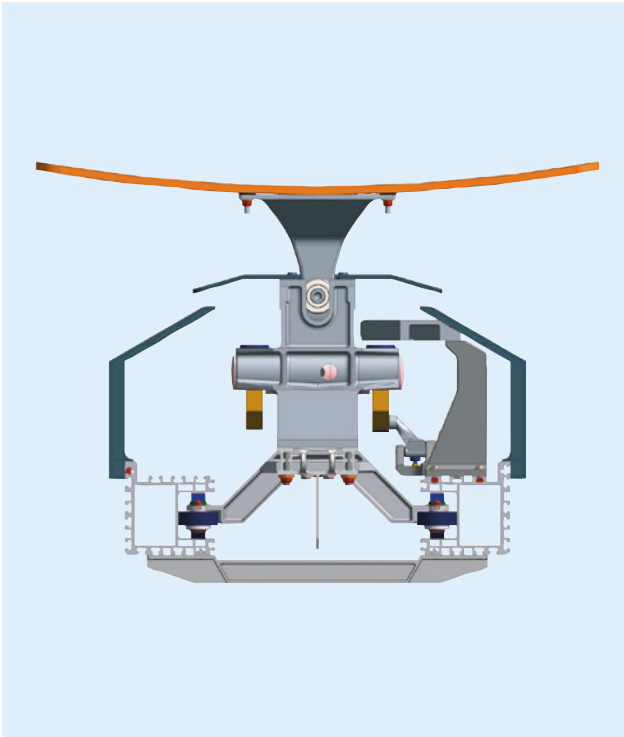
The BEUMER Tilt Tray Sorter is based on a carriage with high torsional rigidity and is available in sizes BS 7, BS 25 and BS 55. The tipping element permits a guided, two-dimensional discharge of items to both sides. Besides the lateral tipping movement of the tray, the tipping axle is also lowered vertically. This lets the item slide off the tray without any catapult effect, so that it leaves the tray at a clearly lower speed than with comparable systems. Length and shape of the discharge rail are optimised for a fully controlled and reproducible discharge movement that is independent of the goods being transported.

## FRAME AND TRACK

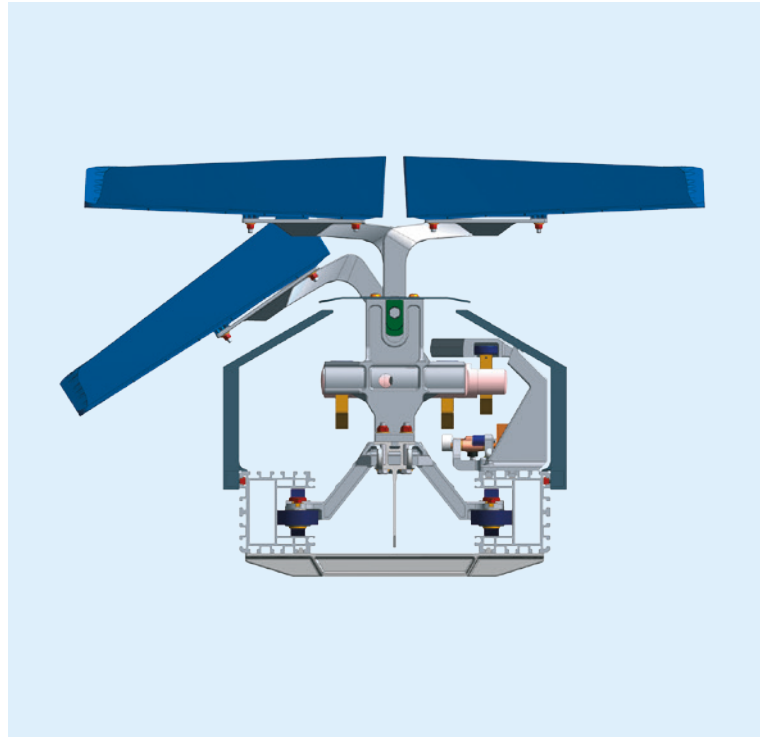
The frame is made of anodised, extruded aluminium profiles with integrated tracks. Safety covers, photocells and other components can be conveniently attached at any position along the frame.

## CARRIAGE

Low-maintenance 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.



BEUMER Tilt Tray Sorter with 2D tilt element



DD tilt element to double sortation performance

## 2D TILT ELEMENT

The 2D-tilting element consists of a cast aluminium body with an integrated base to mount the tray. It houses moving components such as the shift device with slide tappet. As the slide tappet is lifted by a tipper, the roller at the upper end of the slide tappet engages with the guide channel in the stationary discharge rail. Guided by the outward directed channel, the roller travels inside the rail and moves the shift device sideways. This results in the tray being simultaneously lowered and tilted sideways. Each tilting element carries a tray made of laminated beech wood. However, material, size and shape of the tray can be selected depending on the type of product to be sorted.

## DD TILT ELEMENT

The DD tilt element is a variant of the 2D tilt element. A smart division of the tilt element enables the right and left halves to be controlled individually at different locations, discharging the products they carry either to the right or to the left – every bit as gently as with the 2D tilt element. This arrangement enables the DD tilt element to double the sorter capacity.

## HIGHLIGHTS

- › Available in sizes BS 7, BS 25 and BS 55
- › Patented, low-maintenance tilt element with lowering tilt axle
- › Very highly flexible layout
- › DD tilt element arrangement doubles capacity
- › Temperature-resistant from -30°C to +45°C

# BEUMER E-TRAY SORTER

## GENTLE, SWIFT AND VERY QUIET SORTATION



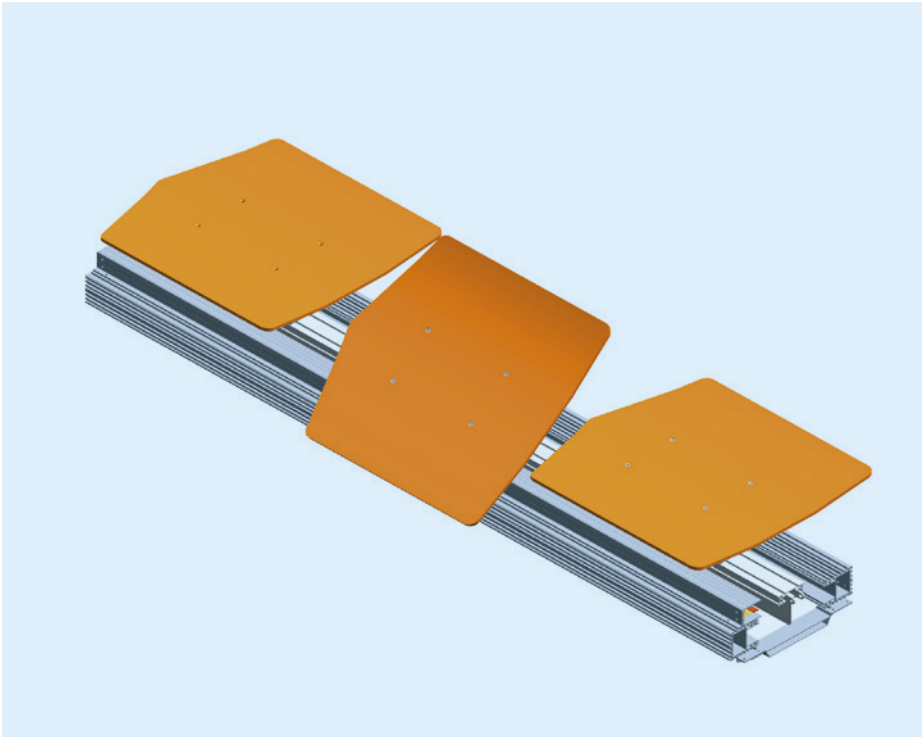
The tilt elements of the BEUMER E-Tray Sorter are driven by an electric motor, which keeps noise to a minimum. The power supply to the tilt elements is provided by a contactless power transmission system, which means low operating costs. Decoupling the tilt movement from the sorter speed makes it possible to increase the sortation speed quite significantly.

### SMART SOLUTION FOR SMART LOGISTICS

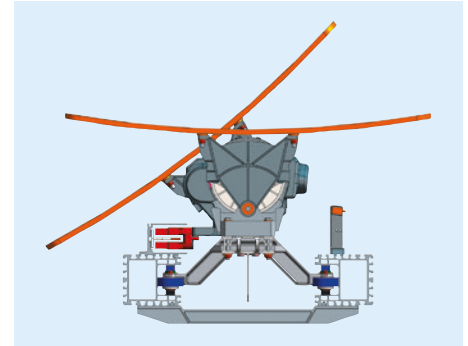
The patented BEUMER E-Tray Sorter with motor-driven tilt elements is available in sizes BS 25 and BS 55. The tipping element permits a guided, two-dimensional discharge of items to both sides. The fact that tilt movement and sorter speed are independent makes it possible to increase the sortation speed quite significantly. As an option, the BEUMER E-Tray Sorter can be supplied with a closed deck to prevent the conveyed goods from falling between the sortation trays.

### E-TRAY TILT ELEMENT

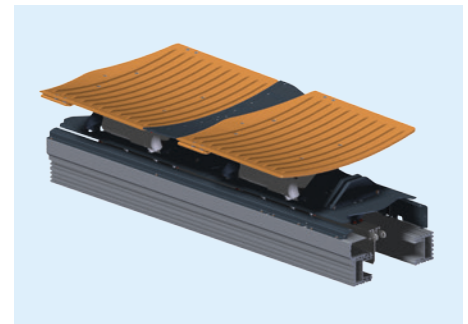
The E-Tray tilt element is motor-driven without mechanical activation. For this purpose each tilt element is equipped with a DC gear box motor which carries out the tilting and set-up of the tray by means of a patented circular gear disc. The main characteristic of this drive concept is the resulting self-locking of the tray in the home position which transfers the load force to the carriage, eliminating stress forces during the loading of the articles to be sorted onto the tray.



Sorter frame made of extruded aluminium profiles with integrated tracks



BEUMER E-Tray Sorter with contactless power transmission



BS 25 ET-CD, tray version with closed deck

### CONTACTLESS POWER TRANSMISSION

The outstanding feature of the BEUMER E-Tray Sorter is its unique contactless power transmission system. The selected frequency makes it possible to achieve a very high transmission efficiency rating of up to 98%.

### CONTACTLESS DATA TRANSMISSION

Stationary infrared (IR) data transmitters are located along the sorter loop where the E-Tray unit performs discharging actions. An additional, optional IR data transmitter sends control commands for each sort item, specifying the individual handling characteristics that depend on footprint, shape or weight.

Each E-tray is equipped with a control unit. The control unit comprises an IR data transceiver and a microprocessor. The microprocessor processes the control commands captured by the IR data transceiver and adjusts the tilt speed of the E-Tray by means of the MF/DC converter. The control unit monitors the status of each E-Tray as well. A stationary E-tray check module, also equipped with an IR data transceiver, is installed strategically in the sorter loop, for instance shortly before an induction group. This module receives status reports from each E-Tray and forwards them to the control unit for further processing.

### HIGHLIGHTS

- ›  $v_{max}$  up to 2.7 m/s
- › Available in sizes BS 25 and BS 55
- › Tilt procedure generated by electric motor with tilt element self-locking in the home position
- › Tray is set up immediately after the discharge point
- › Low-noise operating and tipping process
- › Covered deck available as an option

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