

MTTS **MULTISORTING TILT-TRAY SYSTEM**

The MTTs - Multisorting Tilt-Tray System is an innovative Tilt-Tray sorter especially designed for airport Baggage Handling applications.

The system consists of a continuous train of transport cells moving around a closed loop. Objects are loaded on to trays fitted on carts. Trays tilt at the designated output so that objects automatically unload through inclined chutes.

The main innovation lies in the patented Tilting Activation system that applies the Direct Drive Tilting Motion Technology provided by an innovative Curved Section Linear Synchronous Motor.

Benefits offered by this solution are significant compared to traditional tilt-tray sorters, in which trays are tilted either by electromechanical actuators or traditional rotating motors. Specifically, the accurate control and high accelerations granted by linear motors reduce unloading time and improve unloading trajectory precision, making it possible to increase operating speed and reduce the space allocated for outlets. The use of Linear Synchronous Motors also reduces power consumption and eliminates wear on the actuator - a critical issue in conventional Tilt Tray solutions.

MAIN TECHNICAL FEATURES

- Propulsion system based on durable frictionless Linear Synchronous Motors that ensure low noise levels
- Direct Drive Tilting Motion Technology, eliminating electromechanical actuators or traditional rotating motors
- Distributed Cell Control to increase sorter reliability
- On-board contactless energy transmission, derived from Inductive Power Transfer, ensures a constant flow of power for tilting cells, with no need of on-board batteries or energy accumulation systems. Also available with sliding contacts
- Wireless Signal Transmission
- High-strength wheels and rails, coated in stainless steel, significantly reducing friction
- Long-life, self-lubricating bearings
- Ball-and-socket coupling between carts with elastic cell over-strain recovery
- Safety lock on each cell guaranteeing a stable tray position
- Wide range of Loading Capacity: 30, 45, and 90-degree induction lines with acceleration adjustment according to sorter speed, in order to increase the stability of baggage and maximize production capacity.



LOW MAINTENANCE COSTS

The MTTs has extremely low maintenance requirements:

- No mechanical wear (Linear Synchronous Motors, Inductive Power Transfer, Wireless Signal transmission)
- No transmission devices (Direct Drive Tilting Motion Technology)
- No batteries on-board
- Improved resilience - larger diameter wheels
- High-strength, long-life rails
- On-board "test cell" feature with self-diagnostic function
- Improved availability and maintainability: malfunctioning cells do not affect the operation of other cells and can be replaced during scheduled maintenance periods.

ENERGY SAVING

The MTTs has very low energy consumption drawn from the application of the Linear Synchronous Motor Technology.

Significant savings can also be obtained by adapting the sorter speed and its throughput in low peak traffic periods.

Based on typical traffic fluctuations during the day at main airports, it has been demonstrated that adjusting speed according to real operating requirements lead to energy savings of more than 30% compared with constant speed systems.

HIGH PERFORMANCE WITH A BROAD RANGE OF BAGGAGE

The MTTs can sort all types of baggage that respect, and in some case exceed, the maximum dimensions established by IATA. Maximum weight is up to 60 kg. Overload automatic check control is available for avoiding damage.

TECHNICAL SPECIFICATIONS

Sorting Technology	Tilt-Tray
Propulsion Technology	Linear Synchronous Motors
Tilting Technology	Curved Linear Synchronous Motors
Size of sorted Items (mm) (*)	Up to 1,100(l) x 900(w)
Weight of sorted items	Up to 60 Kg
Incline	Up to ± 12 degrees
Sorter nominal capacity	Up to 6,000 cells/hour
Sorter noise level	< 65 db(A)
Environmental conditions	5 °C to 45 °C
Humidity Range	0-90% non condensing

(*) Up to 1,500 x 900 loading items on two cells