



CRISBAG[®] TOTE-BASED ICS BHS FOR AIRPORTS

BRINGING REDUNDANT, END-TO-END BAGGAGE HANDLING TO AIRPORTS

CrisBag[®] is a best-in-class tote-based ICS baggage handling system. It is designed for use in airports, combining baggage sortation, early baggage storage and transportation in one system. Each item of baggage remains in the same individually controlled tote throughout the complete process from check-in to baggage storage, certified in-tote screening and transportation to make-up, including the potential for batch building. This enables CrisBag[®] to deliver 100% tracking and traceability at every stage of the baggage handling process.

More and more airports around the world opt for individual carrier system technology for baggage handling. CrisBag[®] is a proven ICS chosen by leading airports across five continents and at least seven of the nine exclusively Skytrax 5 star-rated international airports have currently implemented ICS.

FEATURES

- › High capacity
- › Compact and modular design using standard modules for flexible configuration and reduced footprints
- › All elements factory tested, and quality guaranteed
- › 'One bag per tote' and a unique 'one tote per section' concept
- › In-tote screening eliminates the need to remove baggage from the tote
- › Three tote sizes; standard and large totes running on the same track.

BENEFITS

- › Fast, safe, and flexible baggage handling from check-in to discharge
- › 100% accurate track-and-trace of baggage through every stage
- › Ultra-low energy consumption and maintenance cost
- › Compact and custom configuration using standard modules
- › High operational efficiency and eliminates bag jams.

HIGH MODULARITY MEANS GREATER FLEXIBILITY



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The CrisBag® system is flexible enough to deliver systems ranging from the very small and simple, to extremely large and highly complex by using a wide range of standard modules. Each system can combine a mix of baggage handling elements, such as top- and side-loaders and discharges. Straight, curved, merge and divert transport sections can be installed at angles ranging from 0 to 15 degrees. The unique combination of these standard modules allows CrisBag® to be exactly configured to fit any airport.

Greater flexibility also means high efficiency and space saving. The combination of 3D movement, tote stacking, and a low section height supports the creation of ultra-compact systems with a minimum footprint and tight vertical integration. CrisBag® can, for example, be installed immediately below a ceiling to free valuable floor-space and make best use of every centimetre of vertical space.

Flexibility in design leads to flexibility in operation. The CrisBag® baggage handling system allows users to reroute baggage during its journey through the system including the ability to reverse totes to travel an alternative route should this be necessary. Various baggage storage system options enable airports to best fit the system to their needs for baggage handling of early storage, lost bags as well as batch release for a more efficient make-up process.

IN-TOTE SCREENING

In-tote screening allows airports to meet the latest screening regulations. By eliminating the need to remove baggage from the tote during screening, the system ensures that each tote, and each item of baggage, is 100% tracked and traceable at all times. The CrisBag® totes are ECAC Standard 3 and TSA certified.

IMPROVED OPERATION AND MAINTENANCE THROUGH SOFTWARE AND DATA ANALYTICS

The CrisBag® baggage handling system is built on a digital platform with software

and data solutions acting as the interface between the physical system and the users who operate, maintain, and manage it.

Building on this digital platform, airports use data analytics to analyse baggage flow throughout the system and identify areas requiring improvement. Advanced algorithms enable us to optimize the baggage handling process over time.

Further, the use of data-driven, condition-based monitoring tools enables better maintenance schedules and streamlining of operational teams. They drive preventative maintenance with a lean approach and more flexible use of staff without compromising the quality of the O&M operations.

GREENER AND MORE EFFICIENT

Regenerative braking, automatic start-stop and automatic transition between static and dynamic tilt mechanisms are just some of the energy management features in CrisBag® that bring the system to its low energy consumption level.

The recovery of braking energy means energy is fed back into the system for later use and the automatic start-stop comes from each CrisBag® section being independently controlled to intelligently power-off sections immediately when not in use. Tilt mechanisms can be selected by monitoring baggage flows upstream and downstream. The system controls select dynamic tilt in peaks or static tilt during off-peak periods to put less stress on system components.

These features not only reduce the system's total energy consumption by up to 60% compared to a conventional conveyor system, but they also reduce maintenance costs. Tests in live installations show that each individual section is in operation for only about 10% of the total system run-time, which reduces maintenance hours and minimises the need for replacement parts.

ULTRA-LOW MAINTENANCE AND PRODUCTIVE LIFE CYCLE COSTS

All CrisBag® elements are factory tested and quality guaranteed before shipping, reducing the integration risk to a minimum. Using standard modules within the CrisBag® system means that each module can be used in different parts of the system. This significantly reduces spares inventory without compromising the system flexibility or performance. The use of strong but lightweight components means that only one person is required for part replacements and the system can be serviced from one side only.

Availability and redundancy are optimised through clever system design, the use of double belts and the possibility for reverse tote operation. The energy-efficient drive system uses motors which are controlled by frequency inverters. This design eliminates the need for a gear box and also means that the system has no oil leaks.



CRISBAG® STANDARD MODULES

Baggage handling

- > Self bag drop
- > Side loader
- > Top loader
- > Adaptive discharge with dynamic and static tilt
- > Manual handling station
- > Service/walk-through

Basic transport

- > High speed section
- > Straight section
- > Curved section
- > Incline/decline section
- > Acceleration/deceleration section

Flow split/merge

- > Diverter
- > Merger
- > 90° transfer
- > Vertical sortation and transport
- > Lifts

Storage

- > Early baggage storage (EBS)
- > CrisStore multi-functional storage
- > Stacker/empty totes storage

CrisBag® totes

- > Standard baggage tote
- > Large baggage tote
- > Oversize (OOG) baggage tote

SPECIFICATIONS

Speed

- › 0.5 - 10 m/sec (1.6 – 33 ft/sec)
- › Nominal sorting: 2.3 m/sec (7.6 ft/sec)

Capacity

- › Dynamic discharge 3,000 totes/h
- › Static discharge 1,800 totes/h

Baggage dimensions

- › Minimum baggage size
- › Length: 150 mm (6 in)
- › Width: 50 mm (2 in)
- › Height: 50 mm (2 in)
- › Weight: 0.5 kg (1 lbs)

Maximum baggage size

- › Length: 2100 mm (83 in)
- › Width: 750 mm (30 in)
- › Height: 550 mm (22 in)
- › Weight: 75 kg (165 lbs)

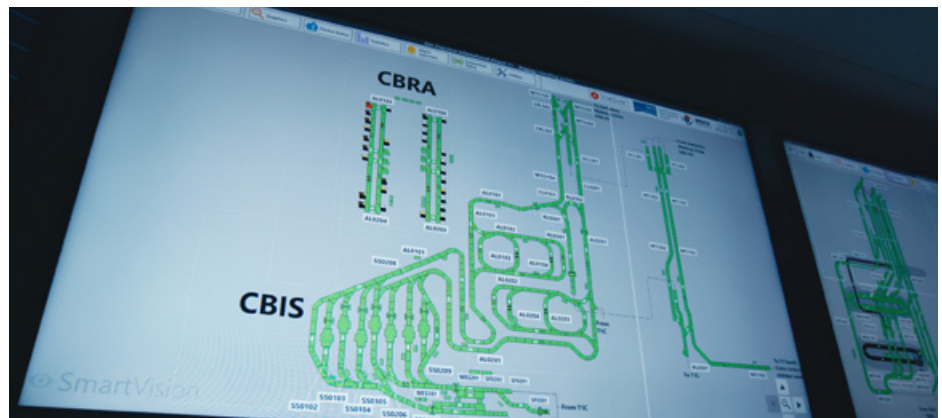
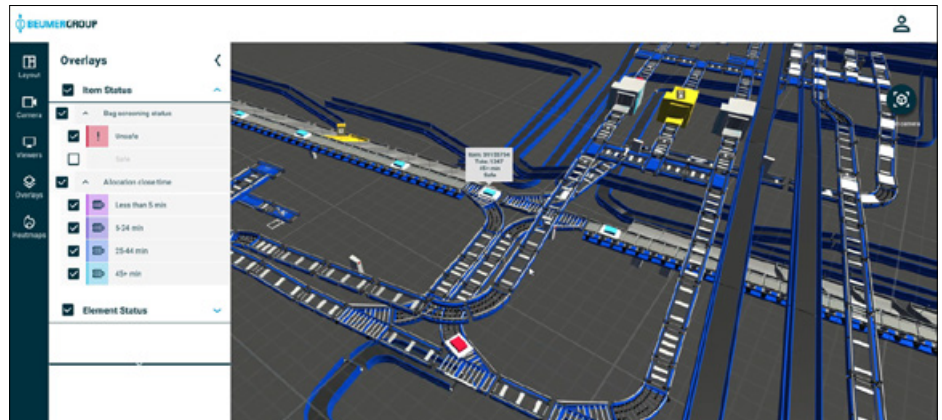
Standard tote size

- › Length: 1150 mm (45 in)
- › Width: 900 mm (35 in)
- › Height: 200 mm (8 in)
- › Weight: 14 kg (31 lbs)

Large tote size

- › Length: 1650 mm (65 in)
- › Width: 900 mm (35 in)
- › Height: 200 mm (8 in)
- › Weight: 19 kg (42 lbs)

Oversize tote also available



BEUMER GROUP'S GLOBAL SUCCESS

BEUMER Group has over 1,500 system installations worldwide including small regional airports and major international

hubs. A comprehensive selection of case studies is available on our website at <https://www.beumergroup.com/i/airport-baggage-handling/>