

Automatic Tray Retrieval System

The scanner is not the bottleneck. An empty tray at the front of the lane is.

THE RETURN LOOP SETS THE THROUGHPUT

A checkpoint is measured by its screening machine, and that is the wrong measurement. A lane stops the moment there is no empty tray waiting where passengers divest - and trays never stay where they are needed, because they accumulate at the far end where people collect their belongings and walk away. The constraint is circulation rather than inspection. Throughput is therefore specified as trays present at the divest end per hour, not conveyor speed, and the number of trays circulating is calculated from peak rate and tray dwell time: too few starves the front, too many floods the back.

IT RUNS BESIDE HANDS AND BELONGINGS

This is not a factory conveyor behind a fence. It operates in a public queue at waist height, used by people who have never seen it before, who reach into it, lean on it and drop coats, laptops and passports into it. So nip points are designed out rather than guarded over, edges are radiused and covered, force and speed are limited, and stopping is fail-safe - the safety case is the design, not an accessory bolted to it.

JAM RECOVERY BEATS PEAK SPEED

Trays tilt, overlap and jam - a certainty rather than a risk. A design that needs the whole lane stopped to clear one tray loses far more capacity across a day than its headline rate ever won. Sectional stop, tool-free hand access and self-clearing geometry are what determine the numbers a terminal actually measures.

THE MACHINE

- Divest and re-compose ends - the two points a passenger actually touches
- Return conveyor and lifts - the loop beneath or behind the lane
- Stacking, destacking and singulation - one tray at a time, the right way up
- Control, safety and integration - sectional stop, guarding, screening interface

VARIANTS

Single-lane tray return · Multi-lane centralised return · Retrofit into existing checkpoints · Tray management, stacking and storage

SCOPE - STATED PLAINLY

This is the tray return loop. It is not a full baggage handling system and is not offered as one. Ours: divest and re-compose ends, return conveyor and lifts, tray stacking and singulation, guarding and sectional stop, controls and the screening-equipment interface, terminal survey, installation, commissioning, documentation, training, spares and AMC - including build to the customer's specification. Bought-in certified: drives, sensors, control hardware. The customer's: the terminal, its lane layout and its throughput requirement.

STATUS

Engineered to order. Equipment of this class has been quoted against an automatic tray retrieval system requirement for an airport authority; no delivered automatic tray retrieval system is claimed.