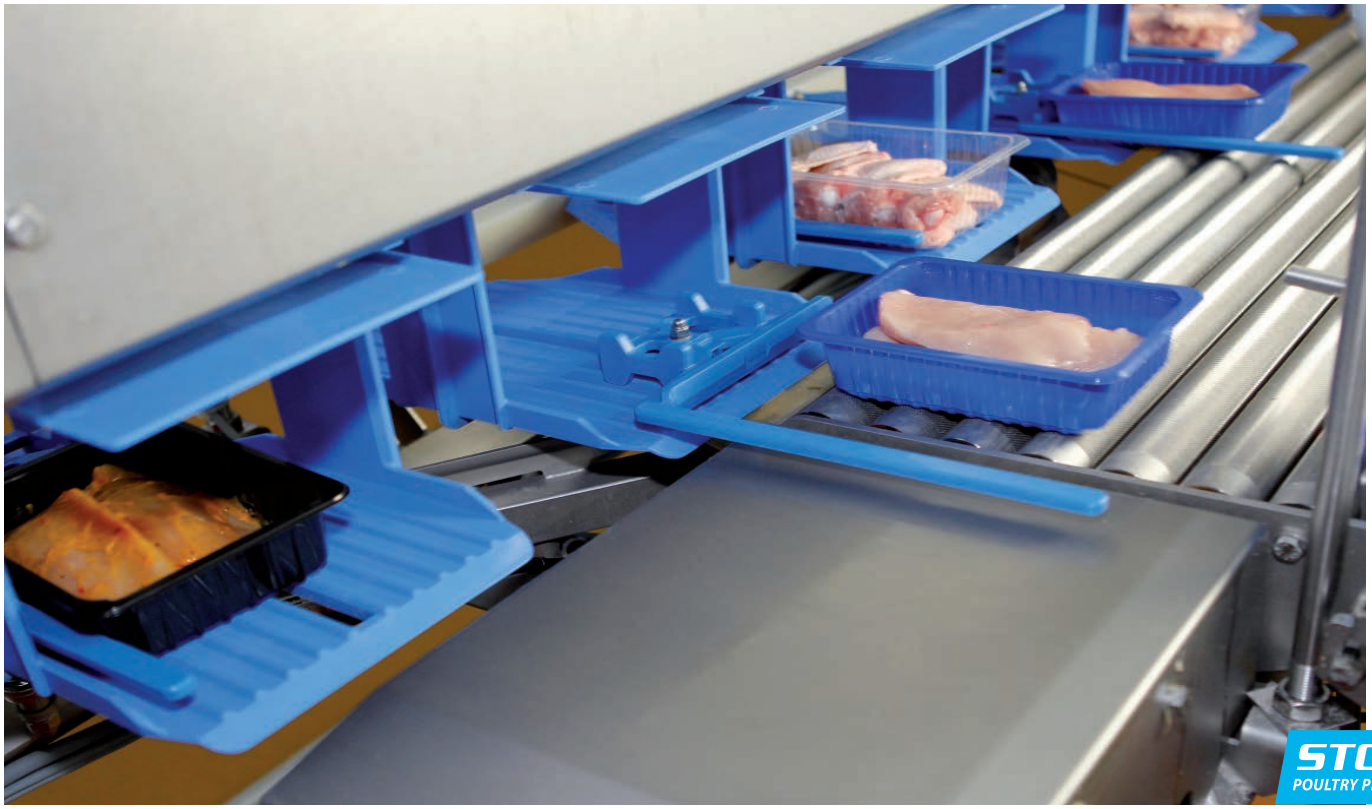
marel POULTRY

The intelligent packing and tracking solution

Stork TrayTrack

- Fully automatic and flexible in-line process
- Improved packing room logistics
- Reliable tracking and tracing

Matches best use of automatic sealing, wrapping and labeling equipment



Trays are picked-up automatically at the loading station

The hands down flexible and reliable logistics solution

The portion packaging area of a large poultry processing plant offers many challenges. Product is packed into a wide variety of different trays. Once filled, these trays have to be closed and labeled. Changing from one size of tray to another or changing rolls of film means machine stops. Product then accumulates. The more frequently this happens, the greater the potential disruption to production.

Why TrayTrack?

The accumulation problem happens most often when each tray filling line ends in its own "hard-coupled" tray closing and labeling equipment. To solve this, some plants have separated tray filling and tray closing and labeling operations. Filled trays are transported on a system of belts to the closing and labeling area, where operatives then transfer them manually to available closing and labeling equipment. Any additional flexibility has, however, been bought at the cost of additional labor and reduced tracking and tracing reliability.

It was to solve this dilemma that Marel Poultry developed its Stork TrayTrack system.

The unloading station in action

What the system does

TrayTrack consists of an overhead conveyor system equipped with specially developed tray carriers, automatic tray loading, unloading stations, and software control running the system.

The system collects trays from the end of each tray filling line and distributes them intelligently over a number of tray sealing and labeling lines sited away from the meat packing area.

The aim of the system is to ensure the smooth flow of product through the packaging department to the chill store by matching trays as perfectly as possible to the capacity of available tray sealing and labeling equipment.

At each tray filling line trays are loaded automatically onto TrayTrack carriers as and when empty carriers become available. The trays are then transported to the unloading stations where they are unloaded automatically onto conveyors feeding tray closing and labeling lines.

In the control system, each tray filling line can be virtually connected to each packaging line. The system's electronics then run the system, making the best possible use of available tray closing and labeling equipment.

Making best use of equipment

Machine stops to change tray sizes or labels are inevitable in today's complex portion packing operations and can cause considerable downtime.

By introducing buffers into the transport of trays from the tray filling lines to tray sealing and labeling equipment, TrayTrack minimizes the effect of machine stops on production.
A buffer at the end of each tray filling line allows trays to accumulate. A further buffer is provided by allowing trays to make more than one circuit of the system. This will happen if the tray closing and labeling line to which a tray has been allocated is not available to receive it.

If buffers become full, the system's line clearer creates additional capacity by unloading trays not unloaded at any of the preceding unloading stations. This allows trays from the buffers at the end of the tray filling lines to be loaded onto the system and keeps product flowing smoothly.

High placed unloading stations create space >>

Fully automatic and flexible

TrayTrack is a flexible system able to handle a wide variety of tray sizes at the same time. Different tray sizes will usually be allocated to different tray closing and labeling lines.

The system is fully automatic and needs no labor.

Because the system minimizes the effect of machine stops on production, there is scope for further labor savings, as there will be less need for rectification work on trays caused by closing and labeling equipment downtime.

Improved packing room logistics

TrayTrack uses a standard overhead conveyor system. It keeps the floor clear and allows tray packing, tray closing and labeling to be done in separate areas.

The use of an overhead conveyor with rises, falls and corners means that the system can always be laid out in a way which optimises packing room logistics. It will fit into virtually any situation.

Unloaded trays en route to their closing and labeling machine

TrayTrack components

Overhead conveyor and TrayTrack carrier

TrayTrack uses a Stork Sigma overhead conveyor system equipped with TrayTrack carriers at 12" pitch.

The carrier has been designed to transport trays of different dimensions, weights and materials.

Its bottom is slightly inclined to ensure that trays stay on the carrier during transport and is ridged to reduce friction and resistance when loading and unloading trays automatically. The carrier is covered at the top to prevent contaminants falling onto meat in the unsealed trays.

To load and unload trays automatically, the carrier has a sliding arm, which is moved forwards and backwards by an electronically activated flipper mounted at each loading and unloading station.

Loading stations

Each loading station has a buffer, a loading area with rotating rollers and an electronically activated flipper to move the carrier's sliding arm into the loading position.

After filling, trays accumulate in the buffer and only move forward onto the loading area, when the system signals that an empty carrier is available.
The rotating rollers in the loading area and the sliding arm on the carrier ensure that the tray is correctly loaded onto the empty carrier.

Unloading stations and line clearer

An electronically activated flipper mounted at each unloading station moves the sliding arm of the carrier forward, unloading its tray for transport to a tray closer and labeler.

Tray carrier cleaning

The last unloading station in a system acts as a line clearer, whose main functions are to unload trays, for which no destination has been programmed and to act as a safety valve when buffers feeding the system's loading stations become full. It keeps trays flowing smoothly from the tray filling area to the tray closing and labeling lines.

Tray carrier washer

Each TrayTrack line has an automatic washing and drying unit for tray carriers. Spray nozzles rinse carriers after production. Surplus water is then blown off to ensure that carriers are both clean and dry.

Software controls

Its software controls are TrayTrack's brain. They allow management to allocate each tray to specific tray closing and labeling equipment.
The controls then run the system. They ensure that trays are loaded onto available empty carriers and unloaded at the correct unloading station. They also ensure that a tray is not unloaded if the tray closing and labeling equipment to which it has been allocated is not in operation or not ready to receive it. They manage the buffers at the loading stations and line clearer to ensure smooth operation of the system at its designed capacity.

The system's software module is part of Marel's Innova PDS plant-wide monitoring and control system. This system will track and trace product through to tray closing and labeling equipment. It also gives full real-time information on the trays handled by the system and, importantly for plant management, on the efficiency of tray closing and labeling equipment.

Capacity

The TrayTrack system handles trays of all kinds of sizes and materials, such as polyethylene and polypropylene.
The system's capacity can match the highest current processing speeds in the poultry industry, taking into account the capacity of available tray sealing and labeling equipment.

Advantages at a glance…

- Makes best use of available tray closing and labeling equipment
- Fully automatic with no labor required
- Will handle a wide variety of tray sizes, weights and materials
- Keeps floor space clear and accessible
- Allows tray closing and labeling to be done in central packaging area
- Reliable tracking and tracing
- Automatic inline buffering when tray closing equipment is temporary off line
- Full information on trays handled and on tray closing and labeling equipment efficiency

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Marel is the leading global provider of advanced equipment and systems for the fish, meat and poultry industries.

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