

CHILLING & FREEZING TUNNELS

MHM Automation's Chilling and Freezing Tunnels are the market-leading automatic tunnels for the meat and poultry industries.

Chilling and Freezing Tunnels employ an air blast based system that provides uniform conditioning to either chill or freeze product.

Typical cycle times range from 2 to 48 hours.

The integrated controls and automation designed for each system application allows for operator changes to the retention time set. The controls also deliver complete tracking of all product within the system, which aids in the management of further processes post chilling or freezing, such as palletising and distribution

APPLICATIONS

Chilling and freezing tunnels are suitable for operations with:

- › Medium to high volume throughput
- › Uniformity or variance of carton size
- › Products requiring the same or different chill or freeze times

BENEFITS

- › Fast chill or freeze improves shelf life and product quality
- › Fully automated loading and unloading
- › Eliminating manual handling preserves product quality and reduces incidence of injury
- › Energy efficient – a freezing tunnel typically delivers approximately 25% energy saving vs. manual blast cell freezing
- › Reliable, low maintenance design

SRT TUNNEL

The Single Retention Time (SRT) Tunnel is designed to accommodate varying product types and carton sizes that all require the same chill or freeze time.

The SRT tunnel can be designed to either chill or freeze product.

The SRT tunnel is a first in, first out system; all cartons complete a full rotation within the system. The carton in feed and out feed conveyors are therefore positioned at one end. These interfacing materials handling systems can feature multiple levels to decrease the load and unload times.

These tunnels utilise ammonia (NH₃) or low temperature CO₂ cascade systems, achieving air temperatures below -50°C (-58°F).

The SRT tunnel is suited to high throughput products within food processing operations that require the same conditioning.

MRT TUNNEL

The Multiple Retention Time (MRT) Tunnel is designed to accommodate varying product types and carton sizes that require different chill or freeze times.

It is a completely automatic air blast based system that provides flexibility to apply different cooling regimes for different groups of product.

Shelves within the system are allocated different retention times and the interfacing conveyors pre-sort and accumulate product types allowing transfer onto a designated shelf depending on the product retention time.

MRT tunnels are used for chilling or freezing and under some circumstances can do both in the same tunnel. The shelves move at different paces and the in-feed and out-feed carton conveyor transfers are typically placed at both ends of the tunnel.

The MRT tunnel is suited to food processing operations that have a range of products requiring different conditioning.

CASE STUDIES

> Inghams

Murarie, QLD, Australia

MRT tunnel with 4,400 carton capacity for poultry. Products are subjected to -25°C for between 30 minutes and 2 hours for chilling, or up to 24 hours for freezing. An SRT tunnel was also installed on this site, carrying a 3,600 carton capacity with a 2 hour chilling time.



> Vriescentrale Asten

Asten, Netherlands

SRT tunnel which operates at -45°C to shock freeze products to a core temperature of -25°C in 18 hours. Uses a cascade system where CO₂ is used as the refrigerant. This unique solution replaces a blast freezer which took several days to freeze the product, improving shelf life and increasing throughput capacity.



> SuKarne

Culiacan, Mexico

SRT tunnels installed at 7 processing sites across Mexico for the freezing and chilling of beef and pork.

