

AAT FREEZING



Box FREEZER

THE **EVOLUTION** OF
FREEZING TECHNOLOGY

SHOCK FREEZING – COOLING – TEMPERING





AAT-FREEZING Systems

We offer fully automated shock freezing systems, cooling systems, short-term storage systems and tempering systems for food in boxes or cartons.

AAT-FREEZING systems are among the most advanced freezing systems on the market. The freezing systems are automatically loaded with the products through an air lock. After shock freezing, the finished products are automatically transported out. The BoxFreezer

has a throughput of 3 to 30 tonnes per hour. The Small BoxFreezer (NEW) covers the range from 100 kg to 2 tonnes per hour. As a result of specific adjustments, AAT-FREEZING systems are also compatible with industry standard 4.0.



“Development of the BoxFreezer has made enormous advances within the last 4 years. And we will continue to drive development even further in our future BT-Group Innovation Centre: Right down to the very last nut and bolt. We will continue to invest heavily in the continuous improvement of our systems. Satisfied customers are our ultimate goal and gaining their trust in our systems is our most valuable reward.”

Martin Kink, Head of Division of AAT-FREEZING & Authorized Representative of AAT GmbH

ADVANTAGES OF BoxFreezer

- ▶ Simultaneous freezing of different product types with different freezing times
- ▶ Improved, guaranteed freezing quality
- ▶ Labour saving operation
- ▶ Savings on energy costs due to optimised freezing times
- ▶ Savings on energy costs due to the multi-zone design concept – where zones are not needed, they can be simply switched off
- ▶ Compact design enables high loading volumes
- ▶ Long operating times between defrosting operations
- ▶ Automatic loading and unloading devices with clear display of movement configuration and freezing times
- ▶ Flexible, configurable loading and unloading strategy enables fast adjustments to changing production conditions
- ▶ Scheduled unloading procedures can be programmed by computer
- ▶ Database option allows storage and archiving of production records and data by the plant control system or by computer (Ethernet)
- ▶ High availability and fast fault analysis via remote maintenance module or the Internet

Do not settle for basic system design, choose the best.
We are certain to have the right solution for you.

Experience

Available for immediate use in a wide range of versions. AAT has a long and successful history in developing specific solutions. Our experts analyse your requirements so that the BoxFreezer can be completely customised to your production design concept. We give efficiency and cost savings top priority. This ensures high utilisation, product safety and quality for your customers.

The best possible freezing quality

One of the most important features of our BoxFreezer is its excellent freezer quality. The temperature curve has an optimum profile and product packaging is handled carefully during the process. Due to a very short freezing time, your products only spend a short time in the BoxFreezer. As a result, there is minimal impact on product colour and appearance.

No ice formation

Due to the integration of MUNTERS air dehumidifier systems, ice formation in our systems has been reduced by more than 95%. In particular, it has been possible to completely eliminate ice formation in the air locks.

AAT-FREEZING Services



CONTROL



MOVE



CARE

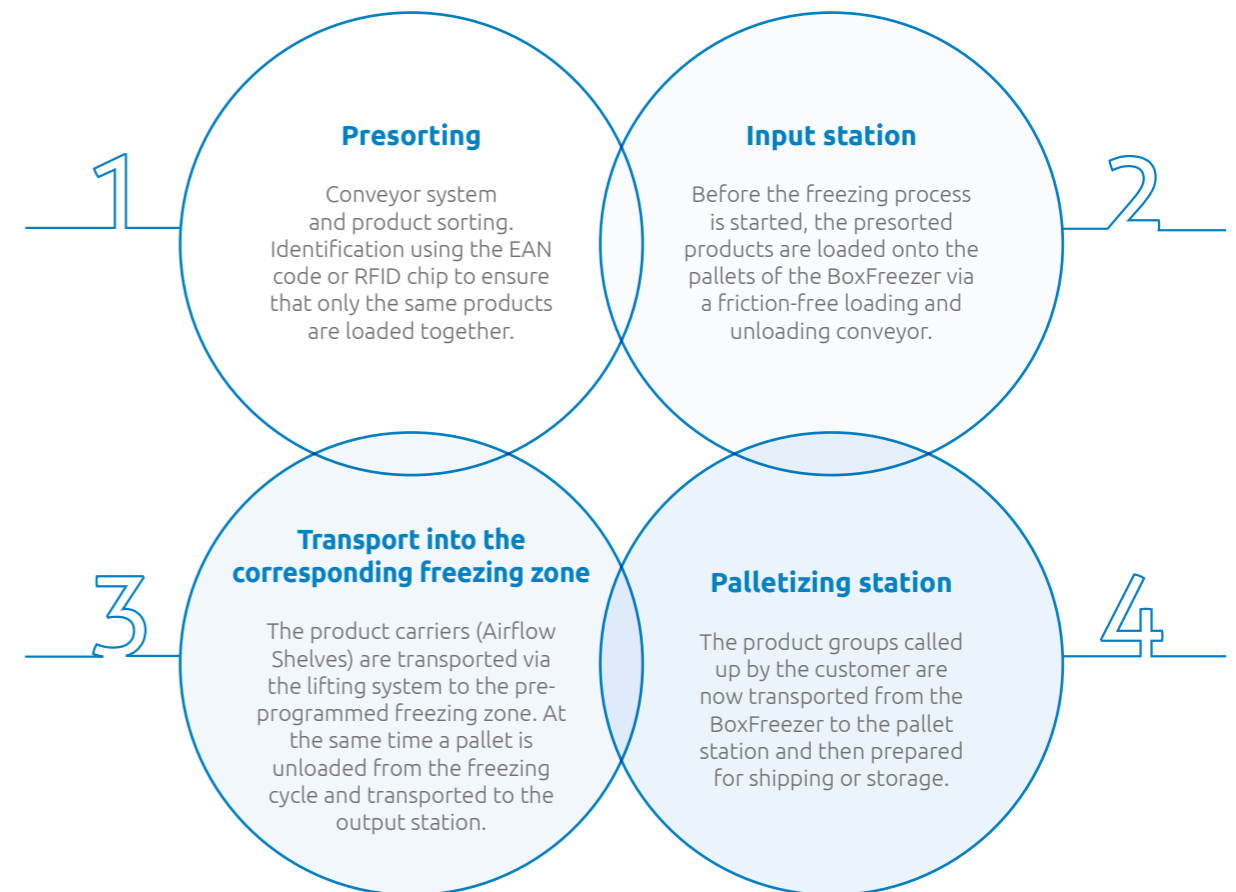
- Freeze management systems
- Freeze control systems
- PLC
- Visualisation
- Fully automatic complete systems including robots, sorting, palletising, pallet wrapping, carton strapping, weighing stations, contour control stations and X-ray inspection systems
- Round-the-clock hotline
- Preventive maintenance
- Service agreement
- On-site service
- IT services

AAT-FREEZING – optimum freezing quality for your products

Presorting and palletising

We supply a complete presorting system with conveyor technology and control mechanisms to ensure the best possible operation of your product workflow. The same applies for the output station. In addition, we can also assist you with subsequent work steps, such as manual or automated product packaging or transport to the warehouse. We can supply systems that are customised to your specific work process.

Freezing process



The design of the BoxFreezer has been arranged for the most careful handling of packaging at the maximum freezing level.

AAT BoxFreezer

Sophisticated, innovative design, space saving and flexible.

For products that require different freezing processes, there are up to three freezer zones available. This is just one of the many innovations contained in our BoxFreezers.

AAT FREEZING

AIR COOLERS

The air coolers are mounted laterally relative to the direction of flow. This allows for even cooling along the entire system. In addition, this optimises the air flow to the product.

INSULATION

The BoxFreezer is completely enclosed in insulation to ensure efficient freezing without unnecessary waste of energy.

INNOVATIVE PRODUCT CARRIERS (AIRFLOW SHELVES)

The Airflow Shelves are designed to allow the air to flow through the sides, above, and below the product. This will cool the product faster and more efficiently.

AIR LOCKS

Thanks to the flexible design, the loading and unloading airlocks can be positioned at any point in the refrigeration cycle. It is also possible to install two loading airlocks and two unloading airlocks. To avoid ice formation in our systems, we use Munters air dehumidifiers.



PALLETIZING STATION

Here, the products are sorted for shipping or storage in a refrigerated warehouse.

FREEZER ZONES

The system can be designed with multiple freezing zones and can therefore adapt flexibly to your needs.

Example:

- Frozen products -18 °C: Freezing in zone 1 +10 °C to -18 °C
- Fresh products 0 °C: Cooling in zone 2 +20 °C to 0 °C
- Convenience food 0 °C: Cooling in zone 3 +30 °C to 0 °C

WITHOUT MUNTERS
Air dehumidifiers



WITH MUNTERS
Air dehumidifiers



MUNTERS DEHUMIDIFIERS

To avoid ice formation in our systems, we use Munters dehumidifiers. This ensures that there is no ingress of moisture into the BoxFreezer from the surrounding areas (slaughter or production rooms, etc.) and the products. This process is adapted to match individual conditions and ensure optimal freezing of the products.

OPTIONAL QUALITY CONTROL

- Reject Products:
- Damaged package
 - EAN code unreadable

LIFTING STATION

The lifting system moves the products to the programmed level and ensures optimal filling of the BoxFreezer.

PRESORTING

Here the incoming products are presorted.

Example:

- Frozen products -18 °C: Freezing in zone 1 +10 °C to -18 °C
- Fresh products 0 °C: Cooling in zone 2 +20 °C to 0 °C
- Convenience food 0 °C: Cooling in zone 3 +30 °C to 0 °C

AAT-FREEZING – innovative, flexible and high performance

The ingenious design of our Airflow Shelf directs the air ideally and in a controlled manner over the product. Your product is frozen faster and more gently. This saves you time and money. The arrangement of the cooling unit allows a continuous flow of cold air through the open pallet floors. As a result, the cold air reaches the products faster, which significantly

reduces the freezing time. Since the air only has to be distributed across the width of the system, the total distance that the cold air has to travel is shorter than with other systems. Consequently, the temperature curve is optimised, ensuring uniform freezing of the products.

Our BoxFreezers are packed with innovation. Their design is thoroughly thought out, space saving and very flexible.

No ice formation

By incorporating a MUNTERS air dehumidifier system, ice formation in the air locks could be eliminated.

Reconfigurable

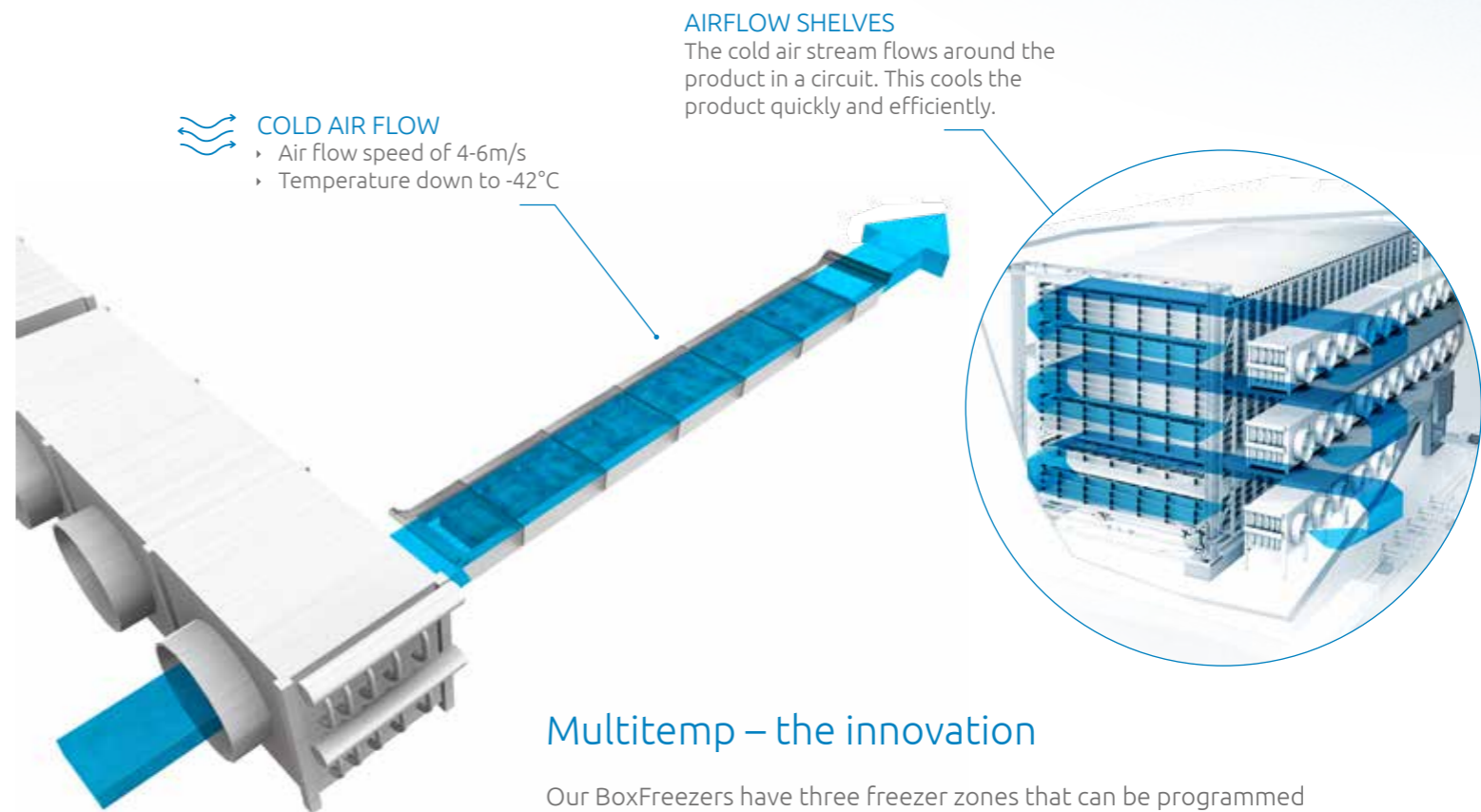
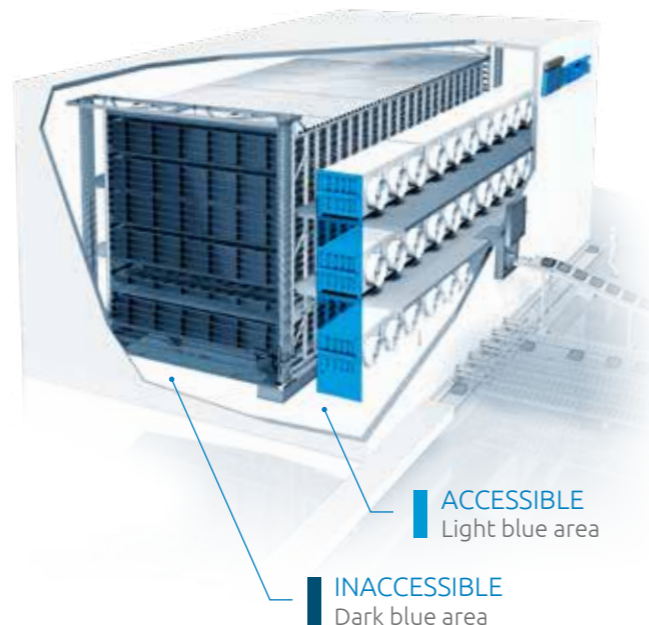
If required, you can flexibly reorganise the pallets to match different requirements for loading and unloading movements.

Flexible loading and unloading movements

The air locks are custom designed for the customer, so that integration of the system into your specific hall layout is enabled. As a result, transport routes are kept to the minimum and let you layout your production line for maximum space saving and flexibility.

Good accessibility

In continuous operation, the BoxFreezer is readily accessible for your employees, as only the corresponding product zone is cooled.



Multitemp – the innovation

Our BoxFreezers have three freezer zones that can be programmed independently. For example, one zone can be used for shock freezing at -20 °C and another zone can be switched off to save energy costs. The multitemp option is an exclusive innovation of our company.



i Meat products are very sensitive and must be handled accordingly. With our BoxFreezer, the products are frozen as quickly as possible so that they are optimally preserved. Overall, our advanced freezers contribute to improved product quality.

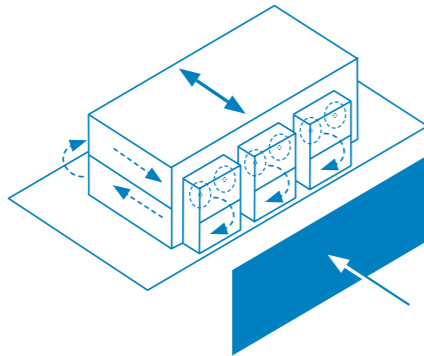
AAT-FREEZING ensures the quality of your product



AAT-BoxFreezer compared to traditional systems

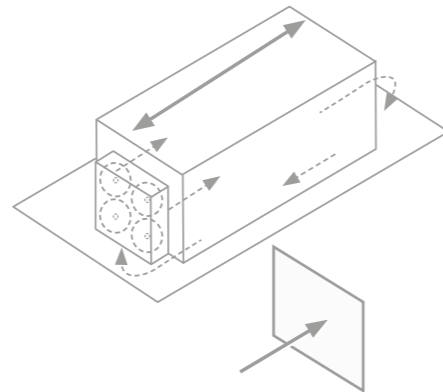
BoxFreezer

AAT BoxFreezer
Transverse airflow



With air flow directed transversely, the distance travelled is much shorter – by almost 10 metres – and a much greater surface area is covered. As a result all cartons are cooled with a constant flow of air.

Conventional system
Longitudinal airflow

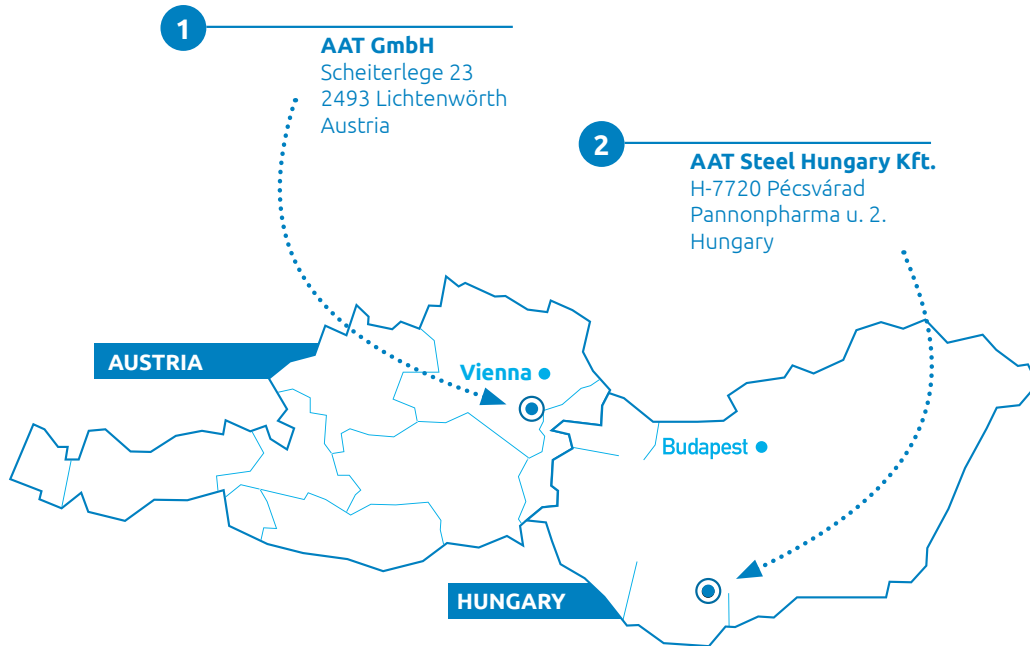


In a longitudinal orientation, the air flow must cover a much longer distance and as a result only has a very small cooling surface. For this reason, the air flow slows down and the air heats up faster.

Freezer zones	Multitemp is possible.	✓	Multitemp is not possible.	X
Cold air flow	Airflow Shelf allows ideal air flow management.	✓	The airflow is not specifically directed.	X
Product transport	Smooth transport of cartons and containers over rollers, chains and link belts (boxes will not be pushed).	✓	Goods can be damaged by pushing and dust and dirt can be generated.	X
Loading and unloading	Flexible positions for transporting product in and out.	✓	Transport of product in and out is only possible at the front and the back.	X
Transport direction	The mechanical system can transport the load in both directions. Reorganisation to match your supply program is possible.	✓	The load (load container) can only be moved in one direction. Reorganisation of load containers is not possible.	X
Access / maintenance	Access to the BoxFreezer is possible even when the airflow is switched on. The air flow is directed only to the product area.	✓	Access during cooling not possible because the air flow covers the entire area.	X



Locations:



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