Customized special units for meat refrigeration

Achim Haas GmbH uses Güntner defrost flap

Headquarters of Achim Haas GmbH in Nonnweiler: Freezing room and deep-freeze store added to the complex to satisfy growing demand

Line of Business:	Industrial Refrigeration
Application:	Food Cooling, Meat Product Cooling
Country / City:	Germany / Munich
Fluid:	R404A
Product:	Wall/ceiling unit cooler GHN, Ceiling unit cooler DHN, Process unit cooler GBK

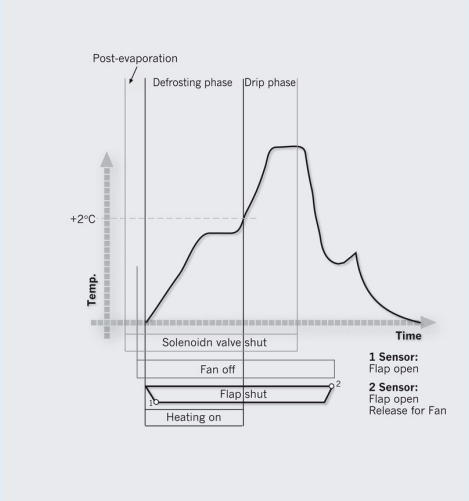
Achim Haas GmbH in Nonnweiler, Germany, specialise in the production of sausages for further industrial processing, and had to enlarge their storage and work-room capacities. Following rising demand from customers in industry, canteens and restaurants, the third building phase has just been completed. The additions were one freezing room and one deep-freeze storeroom,and two work rooms for processing raw goods. As in the company's entire production operation for the last 10 years, Güntner units are used exclusively in the new rooms. What is new is that the factory is now using the Güntner defrost flap for the first time.

Güntner defrost flap: Proven in use

The building of a new freezing room and of a deep-freeze store allows Haas GmbH to keep larger quantities of raw meat in readiness. Managing Director Achim Haas says: “This makes us ready for even short-term increases in demand in the whole of Germany and in the neighbouring countries.” The refrigeration technology for the new rooms was in the hands of the engineering office of Dieter Sperber in Munich.

Special units for the meat industry

When selecting condensers and evaporators, Sperber has for years preferred to rely on Güntner products. “In the meat industry, production often demands special units. Güntner are very flexible in this respect, whereas other manufacturers often have difficulties in the area of special units. A further advantage is the good price-performance ratio of the technically proven units,” says Sperber. Haas use special units from Güntner in the new freezing room for production meat, too. The room is filled with some 10,000 kg of raw meat a day, and is dimensioned to hold 30 tonnes. The goods – mainly already cut pork – are delivered at an average temperature of +7 °C, are stored in E2 standard boxes and cooled down to –18 °C within 36 hours. To provide cooling, the contracted plant-construction company Moersch from Saarburg installed two Bitzer R 404A motor compressors in the two-stage version. As heat exchangers, two Güntner dual discharge unit coolers type S-DHN 066D/312-E, are used. With their compact construction, these evaporators offer high performance while taking up little space, thus contributing to optimum utilisation of the storage space. For use in the new freezer room, the units were equipped with an additional circuit for hot-gas defrosting, and with one Güntner defrost flap each.



Flap control for energy-saving defrosting

Gentle deep freezing

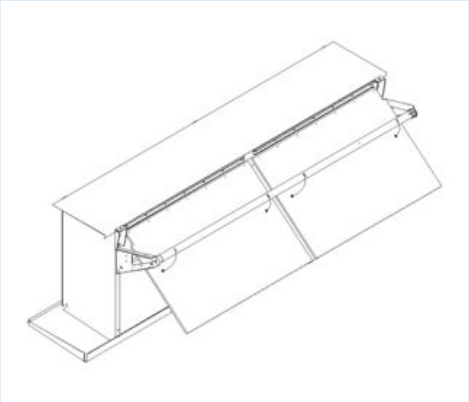
The new deep-freeze storage room enlarges the existing storage capacity from three to four rooms. Here, production stores the frozen raw meat at –25 °C, which not only preserves the quality of the meat, but also ensures good further processing. Raw meat can be minced and cut better and more gently when slightly frozen. The room, which is 70 sq. metres in area and 4.7 metres high, is supplied by an R404A compound refrigeration system. A unit cooler type GHN, version 051D/212 with Güntner defrost flap is mounted close to the ceiling. Like the double-coil evaporator in the freezing room, the series GHN has the proven Güntner floating coil principle, thus offering a high degree of protection from leaks and operating safety. The removable drip tray makes the evaporator quick and easy to clean when necessary.

The new freezing room at Achim Haas GmbH

Maturing room at Achim Haas GmbH

New: the Güntner defrost flap

To optimise the defrosting processes in both the freezer room and the deep-freeze storage room, the company has fitted the S-DHN and GHN evaporators with the Güntner defrost flap. The flap is closed during defrosting, preventing the escape of vapour and undesirable icing up. This significantly increases the efficiency of the defrosting process. When the defrosting process is complete, the flap is opened again for normal operation.



Design drawing of the Güntner defrost flap

Engineer Dieter Sperber confirms: “Now,about six months after the commissioning of the units, Haas have had very good experience with the defrost flap. Compared with other rooms that were fitted with units without defrost flaps in 1998, the defrost times are considerably shorter. In addition, less warmth escapes into the room, and there are no problems with formation of frost or snow, which has a positive effect on the conservation of product quality.”

Güntner DHN with defrost flaps closed (evaporator in background obviously with excess warmth)

Güntner GBK in hygienic version, used for draught-free, low-noise cooling

Processing-room evaporator with adjustable dehumidification

On the basis of the good experience with the series GBK, which is specially developed for work rooms, Engineer Sperber selected three processing room unit coolers type GBK 045 1A /24 for the two new work rooms. The units' proven system ensures draughtfree, low-noise cooling of the rooms, and with the additional heating element can be individually adjusted to the working conditions respectively required. For drying after the cleaning phase, the evaporators were equipped with additional PWW heaters, which are supplied from the heat-recovery of the refrigeration system. "In this case, we worked together with Haas to implement special dehumidification controls, which have already proven themselves in practice," explains Sperber. Room ventilation and heaters are combined via the implemented Wurm controls to achieve efficient drying of the room, and thus the greatest possible freedom from germs.

Practical tip: Unit version and dimensioning for meat-processing companies

- Suitable choice of material:
  For meat-processing companies, unit versions in stainless steel with epoxy fins are preferred, because these surfaces are particularly resistant to the aggressive cleaning agents typically used in this sector.
- Product-oriented dimensioning:
  When dimensioning the evaporators, one should be generous with surface area, so as to prevent the meat from drying out.
- Planning ahead:
  In the case of young companies in particular, the expected growth of the company must be taken into consideration. Serious dimensioning with the Güntner Product Calculator (GPC) should allow for reserves of area of at least 20 percent per unit.