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IN THE FOCUS
The new condenser GVX with microox® technology and Güntner Motor Management GMM in serviceable wall mounting in a whole foods store nearby Nuremberg

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Overview of topics

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Dr. Franz Summerer, head of Research and Development

Dear Readers,

just like in a well-performed play, every company has actors that appear onstage and actors behind the scenes. As long as everything goes according to plan, hardly anyone gives these invisible actors a thought.

However, they are exactly the ones who provide the essentials to perform the play onstage – just like the engineers, technicians and other committed employees in the Research and Development Department at Güntner. The customer's reactions and requirements are followed very attentively to implement them for products in-line with the market. And what does Research and Development signify other than achieving new knowledge and implementing it in practice? Of course, this requires considerable efforts in time, financial resources and manpower.

Often one even has to go a step further and anticipate the requirements and developments of the market, because one is convinced that the time is ripe for the next step in development. This is how we felt the situation at Güntner when we decided two years ago to develop, adapt and dimension the microchannel heat exchangers – up to then used for mobile cooling applications – for stationary refrigeration installations: microox®, the most significant project in the company's history, was launched.

The effort put forward for this project was enormous: Several teams, in total almost 50 employees, worked in parallel on different aspects of this new technology. The investments required solely for production, i.e. a new manufacturing plant and comprehensive machinery, amounted to 13 million euros. Many man-hours have been invested until the new technology was ready to be presented as the new condenser GVX at the Chillventa trade show 2008 in Nuremberg.

But the main focus was not on developing this new heat exchanger. The primary objective was to conceive a system of components that allows the user to achieve the highest possible energy efficiency. And not only the new condenser GVX with microox® technology is equipped with the newly developed control system Güntner Motor Management GMM! (Read more about the GMM on page 14.)

The highest priority was set on developing the optimum component system for various applications. In the case of the microox® technology, the development is not yet accomplished, because microox® will be implemented in other units series for diverse applications. Several technological challenges will come up, but:

Güntner's Research and Development Department is ready to face them!

Regional support for a good cause

The SOS Children's Village in Dießen, Germany

Here the children can grow up in a secure, family-based environment.

Success mostly is defined by economic and monetary figures. Unfortunately, succes in social sectors is much too seldom in the focus. However, living in an healthy social environment is also a very important factor for economic success.

A very impressing social success story is the one of the SOS Children's Villages. Founded in 1949 in Austria by Hermann Gmeiner, the association now mainly takes care of children that for various reasons cannot live with their biological parents. Each child lives in a stable family-based environment with siblings and an SOS mother/parent; and each family has its own small house in the Children's Village.

The SOS Children's Village in Dießen nearby the lake Ammersee in Bavaria was founded in 1956 and is the oldest Children's Village in Germany, but the initial idea has not lost anything of its topicality. Irrespective of their social background, religion or race, children find a home here.

The village is well integrated into the community of Dießen, the children visit the public schools and can stay in their families until they have accomplished their professional education. This, however, does not mean that they do not stay in contact with their foster family once they can stand on their own feet: Mostly they stay in touch with their family, even as adults, and get involved personally for their younger "siblings". Many of them become active regular sponsors and see to the fact that the necessary costs are covered, because only 60 % of the required financial means are financed by public funds. The remaining 40 % are provided for by individuals and companies. The Güntner Company is also one of the sponsors of the SOS Children's Village. Also this year, Güntner decided to donate for the SOS Children's Village in Dießen, instead of giving presents to its customers.

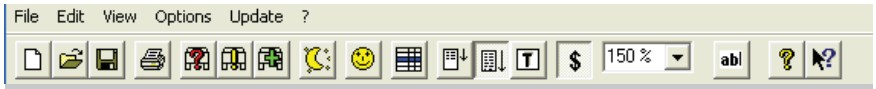
Trade shows and events in 2010

Trade show	Country	Location	Dates
VSK	Netherlands	Utrecht	Feb. 01 to Feb. 05, 2010
UAE Gulfood UAE	UAE	Dubai	Feb. 21 to Feb. 24, 2010
Climatherm	Greece	Athens	Mar. 03 to Mar. 07, 2010
Danske Koledage	Denmark	Odense	Mar. 04 to Mar. 05, 2010
MCE - Mostra Convegno Expocomfort	Italy	Milan	Mar. 23 to Mar. 27, 2010
bultherm expo energy	Bulgaria	Sofia	Apr. 13 to Apr. 16, 2010
IKS Sodex	Turkey	Istanbul	May 05 to May 08, 2010
Power GEN	Netherlands	Amsterdam	Jun. 08 to Jun. 10, 2010
Energie Froid Snefcca	France	Lyon	Sep. 20 to Sep. 30, 2010
Chillventa	Germany	Nuremberg	Oct. 13 to Oct. 15, 2010
Energie Froid Snefcca	France	Metz	Nov. 24 to Nov. 25, 2010

GPC News

New features for even more user comfort

Recalculate part load operation for condensers and drycoolers



The “moon-and-stars” icon symbolizes the recalculation for part load operation.

The Güntner Product Calculator GPC now has a new feature for calculating quickly, comfortably and flexibly different part loads. The sound emission can be determined in advance by indicating a reduced speed or reduced performance, the data is then output as a table for a user-defined temperature range. The “moon-and-stars” icon symbolizes that these recalculations are mostly used for night-time operation.

Against the often stated opinion that the speed has to be reduced immediately at lower ambient temperatures, this new feature provides real support for improving the plant’s energy efficiency. The fan speed is only reduced after the minimum condensing temperature has been achieved or if the sound level limits for nighttime operation require this.

How can I use the recalculation?

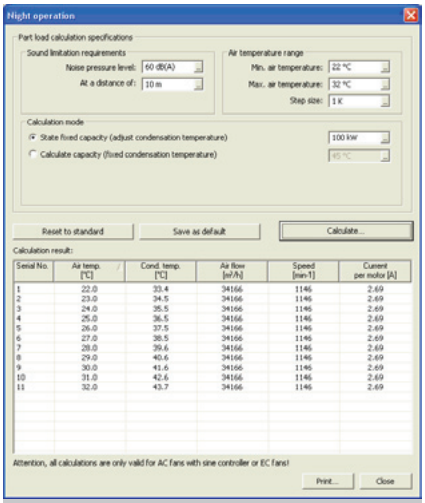
After having selected a condenser or drycooler, the menu item “nighttime operation” can be selected.

Adaptation to different requirements

The default values are preset according to the unit design. By clicking on “Calculate”, you can generate a table that shows to which value the condensing temperature can be reduced, depending on the ambient temperature at constant sound and performance requirements.

Not only the correct values for air volume flow and speed are shown in the table, but also the current consumption of the fans is indicated.

If it is necessary to reduce the sound power level for nighttime operation, the corresponding value has to be entered. For a fixed capacities, the table indicates the corresponding values for the condensing temperature.



The condensing temperature is reduced depending on the ambient temperature.

This results in new possibilities for realizing energy-efficient operation: The tables provide important information for recalculating units for nighttime sound limits. They also indicate the corresponding ambient temperature limit at a given speed and required minimum condensing temperature.

This new feature also offers the possibility to calculate the unit’s capacity at a fixed condensing temperature depending on the ambient temperature. The results of all calculations can be printed out or saved as PDF. These different options are an excellent basis for selecting the most energy-efficient operating mode of the unit! The energy efficiency can be further enhanced by selecting the appropriate control mode. Read more about this in our article about the Güntner Motor Management GMM on page 16.

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Freshly printed for Güntner customers

New Güntner brochures provide up-to-date product information

New data sheet GHK.2: The new NH_3 evaporator GHK.2 with the tube pattern 60 x 52 is the successor model of the GHS (tube pattern 60 x 60) and offers a wide range of application benefits, such as an improved condensation water drain and routing of air flow due to the Güntner Incline Design. The hinged side covering and the optional swivelling fans offer good accessibility for maintenance and cleaning. Additionally the GHK.2 is the first unit series equipped as standard with the option variable fin spacing: At the air inlet, the coil is designed with double fin spacing. With this feature, longer defrost intervals can be achieved, because the double fin spacing prevents that with high air humidity and high driving temperature differences, frost residues block the space between the fins and thus obstruct the air flow.

The data sheet of the new condenser system GVX with microox® technology has been revised and completed with detailed information about the available accessories. The condenser system can thus be implemented even more efficiently and an easier adjustment to the corresponding application conditions can be achieved.

Three Updated Info Brochures!

The Güntner Info Brochures “Recommendations for material selection”, “GVX” and “Güntner Motor Management GMM” have been completely revised and updated.

The brochure “Recommendations for material selection” has been completed with information about the microox® technology; the specifications concerning material selection for finoox® series (fin and tube heat exchangers) have been revised completely and further details have been added.

Also the Info Brochure “Condenser System GVX with microox® technology” has been upgraded with the latest information and gives a good overview of the benefits and technical characteristics of this groundbreaking heat exchanger development.

New user-friendly features have been integrated in the Güntner Motor Management GMM. A Low Capacity Motor Management (LCMM) has been developed that enables an energy efficient operation even with very low cooling loads in the minimum capacity range.

These Güntner Brochures are available in German, English, French and Spanish and can be requested by phone at +49 08141 242-0.

Updated Güntner Info Brochures

New system conquers the British market

Güntner's new condenser system, the GVX condenser with microox® technology is starting to penetrate international markets.

The GVX, the result of a two-year development period, is an adaptation of the conventional microchannel technology and fulfils the requirements of stationary refrigeration installations. Having successfully mastered the challenges during development (e.g. required high capacities with corresponding coil sizes, adaptation to the different application ranges, observation of the refrigerant pressure), Güntner conceived the GVX, a system that combines several benefits in just one system. This also convinced decision makers in Britain to opt for the new technology.

The new microox® technology in British supermarkets

The first UK installation of the innovative GVX condenser with the microox® technology was commissioned for leading discount supermarket chain Netto, by Carrier Refrigeration UK Limited, as part of the turnkey refrigeration installation at Netto's new store in Gosforth.

The installation coincided with the market entry of the GVX which has been selected to replace traditional tube and fin condensers. Installations are proceeding across multiple sites including the cutting-edge Netto store in Gosforth, which will be subject to a BREEAM environmental impact assessment.

Netto's store in Gosforth

Convincing benefits

The ground breaking technology condenser aligns itself perfectly for such applications as it incorporates energy saving and low environmental impact technology. The Güntner GVX condenser has up to 50 % lower refrigerant charge than traditional condensers, and it is manufactured with all aluminium heat exchanger panels that can be easily recycled.

The condenser is fitted with EC fans that are controlled through the Güntner Motor Management GMM, maximising energy efficiency. With fan parameters automatically set by the GMM, no hardware, software or special knowledge is required. This saves both commissioning and maintenance costs.

The condensers are rated at 60 kW and incorporate an integrated but independently controlled sub-cooler, further improving plant performance.

With retailers such as Netto continuing to pursue a reduction in their environmental impact, combined with other benefits such as modular solutions for wall and floor mounting, simple cleaning, and lighter weight, it is expected that the GVX will be very widely implemented in the next few years.

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Largest Indoor Shopping Centre in Europe

One of the largest and most prestigious shopping centres in Europe opened its doors in October 2008.

With a sales area as large as 30 football pitches, the Westfield London Shopping Centre receives more the 10,000 visitors every day. With more than 265 stores and its truly captivating architecture, the shopping centre brings its visitors the ultimate shopping experience.

Open to the public since October 2008, Westfield London accommodates some of the world's finest luxury brands, among them renowned brands such as Mulberry, Louis Vuitton and Prada. Other attractions include a 14-screen multiplex cinema and 46 restaurants. A drycooler system was required for Westfield London that could meet the shopping centre's air-conditioning demands. For this purpose Hans Güntner UK Ltd was approached. „After a thorough design process Güntner received the order for 61 dry coolers from Imtech Meica Ltd. In order to satisfy the high expectations of Westfield London, units were designed with the acclaimed Güntner GDRS sine controller ensuring the strict noise restrictions were adhered to." explains Justin Scofield, Managing Director of Guntner UK.

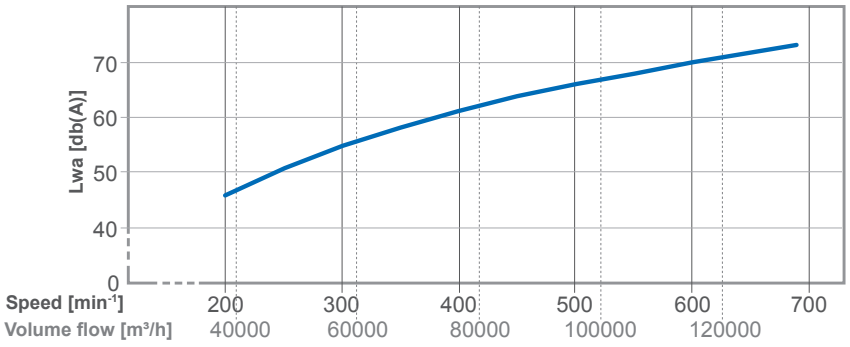
The Westfield Shopping Centre is very popular.

Güntner GFH drycoolers with GDRS sine controllers

With the site situated in one of the busiest regions of London, deliveries had to be carefully programmed resulting in the Güntner GFH dry coolers being delivered in 61 separate truck loads.

In order to achieve an optimal air flow to and from the units, the dry coolers have been placed in 5 rows on the shopping centre's roof. The longest row consists of 20 dry coolers of the type GFH 080.3A/2X6-N(S)-F6/2P, installed side by side. The dry coolers are equipped with the special Guntner supporting profile and therefore have fewer feet and consequently less supporting steel work. This resulted, not only in less work on the building site, but less weight on the roof. Another advantage is that the units are equipped with Güntner's proven floating coil design that further protects against leakages and consequently leads to long service.

61 Güntner GFH drycoolers ensure low-noise and energy-efficient operation at Westfield London.



Due to the integrated sine filters, the service life of the fans is considerably enhanced.

Low-noise operation

The shopping centre Westfield London is surrounded by residential buildings and therefore noise was a critical element of the planning application. In order to satisfy these requirements, Guntner UK selected GFH dry coolers with fans to achieve both normal and night time conditions controlled with the Güntner sine controller GDRS. The Güntner control systems reduce the fan speed during night-time operation to a minimum, so that residents are not disturbed by fan-induced noise.

At the same time, the sine controllers combine an energetically optimal continuous fan control with a low-noise and energy-efficient operation. Due to the integrated sine filters, the service life of the fans is considerably enhanced. Unlike conventional controllers, the sine controller GDRS generates no control-induced noise. Even at velocities with a frequency of approx. 0.5 Hz, i.e. at less than 1 % of the calibrated speed, the sine controller operates without generating additional noise.

Investments of more than £1.6 billion

Westfield Construction, a company of the Westfield Group, is responsible for the construction of the shopping centre in Shepherd's Bush, in the London Borough of Hammersmith and Fulham. The state-of-the-art complex has been built in five years' time by a workforce of 8,000 and with an investment volume of 1.6 English Pounds. Westfield London is the largest shopping centre in London, the third largest of its kind in England and the largest indoor shopping centre in Europe.

The drycoolers operate in a low-noise mode.

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New concept: penthouse coolers

Bauer Frischdienst is open for new approaches.

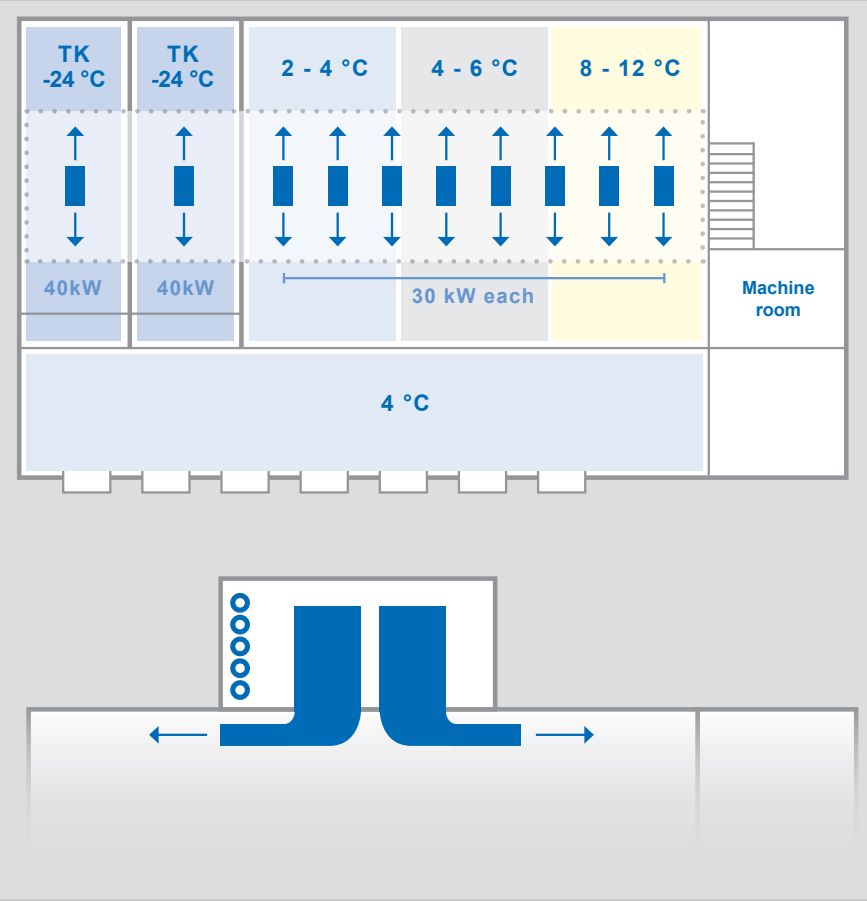
Tradition and progress in harmony with each other

Tradition and continuity do not necessarily mean a lack of development capability. This was proven convincingly by Bauer Frischdienst (a private dairy) when it came time to find a suitable cooling concept for the new storage warehouse to be built in Wasserburg am Inn.

The company TH. WITT Kältemaschinenfabrik GmbH was hired to find a way to implement the cooling requirements in a manner which suited the architectural solution already found. For the cooling area, the planning envisaged a large storage building with three temperature zones, which did not have to be sharply separated from each other. For the refrigeration and air-conditioning components, quality products from the company Güntner were chosen.

Erwin Stollmann, refrigeration systems engineering expert at WITT, explains: “Bauer Frischdienst made it clear from the start that they didn’t want a conventional concept with the evaporators mounted under the ceiling and the piping routed between the devices. They wanted something innovative.” Together with a consultant from the company Güntner, Erwin Stollmann visualised the alternative approach.

This new concept involved so-called penthouse coolers, already widely used in the American market. This means that the evaporators are not housed in the cold room itself, but in a separate compartment on the roof of the building. The air is blown through ducts into the building’s interior.



The new concept has many advantages:
positioning of the penthouse coolers and air distribution.

What at first sounds like an unnecessary additional investment actually brings numerous advantages.

Advantages for the building:

As the evaporators were no longer mounted below the ceiling, the building height could be reduced by about 50 cm without changing the storage capacity, which more than made up for the additional costs of constructing the compartment (penthouse) on the roof.

Advantages for the installation work:

For a conventional installation, the devices would have had to be individually fastened to the ceiling at a height of eight metres, which would have entailed significantly higher costs and, above all, would have taken longer.

With the penthouse construction, the devices could simply be lifted onto the roof with a crane.

Once the devices were installed, the walls and roof of the penthouse structure were built around the devices.

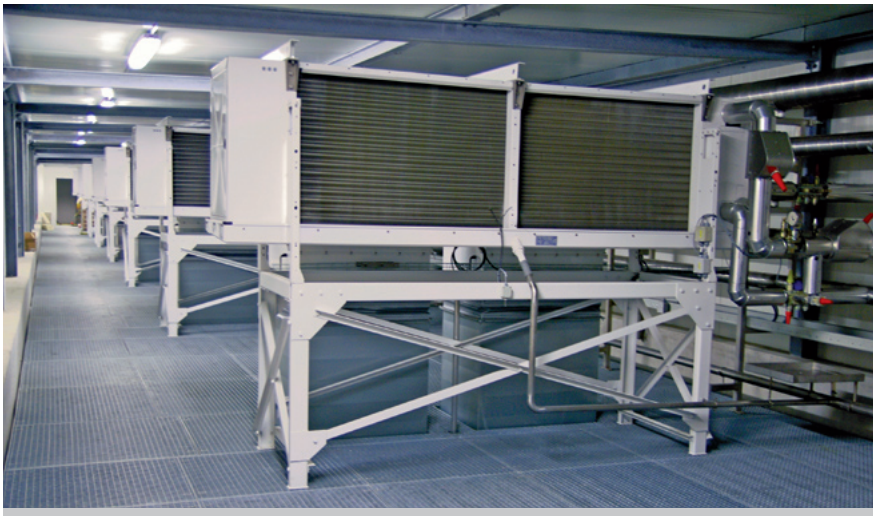
The piping is also much easier to lay, as instead of being laboriously installed overhead, it is simply routed along the side of the penthouse. Moreover, the material costs and installation costs of impact protection are also saved: as the piping is situated outside the hall, it can no longer be damaged by forklifts. Also, the drip water drainage is installed in the penthouse and no longer runs through the building.

The devices are easy to install.

Advantages for operation and maintenance:

The piping is easily accessible; it is also simple to carry out work on the devices. In addition, escape routes are perfectly integrated, as the penthouse has several doors to the roof, so personal injury in the event of a leak is practically ruled out.

Above all, operations in the building are not disturbed during maintenance and servicing: the devices can be accessed easily via the assembly aisle, there is no need for a hoisting device, normal work processes in the building are not interrupted and the forklifts can still access the aisles.



Good accessibility

In short, all challenges were met by means of close cooperation between WITT, Güntner and Bauer. As Erwin Stollmann points out: „We found the optimal system solution for the situation at hand!“

Energy efficiency at Fruchthansa

Cooling of fruit and vegetables in optimised system

The new Fruchthansa site near the A555

Energy efficiency and energy savings are topical issues in all walks of life. One example from Rhineland convincingly demonstrates that the implementation of these concepts is by no means synonymous with the reduction of flexibility: when building its new cold storage facility, the company Fruchthansa in Wesseling near Cologne chose a holistic concept, not just for the preservation of their products in storage, but with a sophisticated concept for optimal energy efficiency and thus significantly lower operating costs.

Initial situation

The company Fruchthansa, founded in 1968 in Cologne, offers comprehensive services in the fruit and vegetables sector on an international scale. This family business places considerable value on product quality and sustainability. Due to steady growth in recent years, the site at the Grossmarkt in Cologne had become far too small. The decision was made to build a new facility in Wesseling, which is easy to reach as it is situated on the A555 motorway.

Holistic energy concept

On the new site (area: 12000 m²), a holistic energy concept was to be pursued, with the two-pronged strategy of reducing cooling energy consumption as well as putting the extracted heat energy to good use. The company Müller Kälte- und Klimatechnik GmbH was in charge of the conceptual design and planning.

As energy efficiency was in the foreground, it was decided that the usual subdivision into a cooling system and a heating system was not to be realised, although this would have entailed less initial outlay. Meanwhile, the utilisation of the building's internal heat meant that there was no need for a gas connection at all (which saved having to pay the high connection costs) and that the transformers could be smaller (thus also reducing the supply costs to be paid to the power company). Electrical defrosting was completely done away with. Instead, a holistic, sustainable system was implemented. "It wasn't just about insulating the building in compliance with EnEV (German Energy Savings Act) and thus saving costs," says Werner Müller, Executive Planner. "Our goal was much more to do with bringing the cold consumers and the heat consumers into harmony with each other. For instance, the energy from the heat sources is stored centrally and, when needed, it is delivered to the consumption points, such as

Werner Müller, Executive Planner

heating systems, ventilation systems, the banana ripening facility and the defrosting of cooling units. A well-water heat pump is integrated into the air-conditioning circuit, just for exceptional cases when there is not enough energy available."

Installed Components

All components of the cooling and air-conditioning circuits were to be coordinated with each other and optimally controlled, so as to adhere to the principle of maximum energy efficiency. Therefore, quality devices from Güntner were used in most areas.

For instance, in the cold storage rooms (up to -1 °C), ceiling-mounted air coolers from the GGHN series are operated with cold brine, and defrosting in the drip tray is realised with warm brine. Not only do these devices operate in an energy-efficient way, they are also highly suitable for cooling sensitive goods (such as fruit) for preservation, without causing excessive moisture losses,

Cooling for preservation with low moisture loss

because the adequately dimensioned heat exchanger surfaces and continual control ensure that the operating temperature difference remains low. Even with open doors,

Picking area: good distribution of the cold

room temperatures of +/- 0.2 K can be maintained.

For the picking area, ceiling-mounted air coolers with dual discharge from the DGN series were used. The devices' routing of air flow ensures draught-free cooling and good distribution of the cold inside the room.

Devices from the GVH series were chosen as the condensers. These condensers are positioned on the roof and are kept separate from the surroundings by means of noise protection measures. As allotment gardens are situated on the other side of the motorway, noise protection requirements had to be adhered to. Despite this construction measure, the condensers still operate efficiently and enable sliding reduction of the condensation temperature to 28 °C in ambient temperatures of up to 20 °C, which are only exceeded in summer.

"The achieved energy savings are enormous," says Werner Müller. "If you compare the operating costs, it is clear that the higher investment costs amortise very quickly."

New storage facility saves operating costs:
Although the cooled volume is now 2.3 times that of the old facility, the energy costs are only a third as high. The systems' connected load has almost halved, which also enables cost savings.

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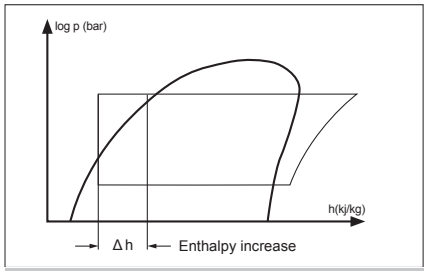
Refrigerant subcooling and system efficiency

The influence of refrigerant subcooling on system efficiency

To date, much has been written on the topic of subcooling in trade journals and other publications. It has also been the subject of (at times controversial) debate among experts. This situation has motivated Güntner to embrace the topic in order to improve the operation of cooling systems. Here, fundamental considerations are explained, which will later be expanded on in a detailed feature article.

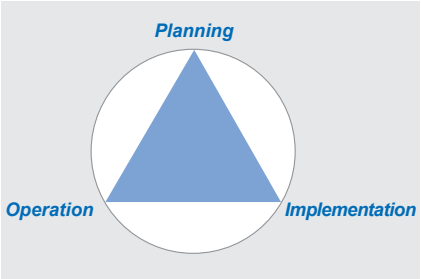
Subcooling – what is it?

In refrigeration engineering, to subcool a fluid means to reduce its temperature below the condensation point at the corresponding vapour pressure. What influence does this have on system efficiency and on the interplay of components in the refrigerant circuit?



Enthalpy increase caused by subcooling

Systematic use of subcooling should increase the operational reliability of cooling systems and bring economic benefits. Improvement of the system's COP is of importance in this context. The commercial cooling systems to be looked at in detail in this article are often unique. This means that for an optimally functioning system, the following three points must form a symbiosis:



For an optimally functioning system, the these three points must form a symbiosis.

- Planning skills and expertise (Planning)
- Professional implementation in practice (Implementation)
- Operators trained in the use of the system technology (Operation)

Subcooling of liquid refrigerant in compression refrigeration systems is a MUST!

The reasons for this are known to specialists and are briefly summarised here:

1. To ensure bubble-free refrigerant upstream of the expansion valve:
   - Guarantees higher operational reliability
   - Prevents cavitation
   - Guarantees valve performanceg
2. To increase the utilisable vaporisation enthalpy

So this is not about saying „YES" or „NO" to subcooling, but rather „WHERE does it come from?" and „HOW MUCH is possible or necessary?"

WHERE does subcooling come from?

Important! Subcooling can generally only be generated if a gas seal (receiver / siphon) is realised in a system component or pipe.

Possible types of subcooling:

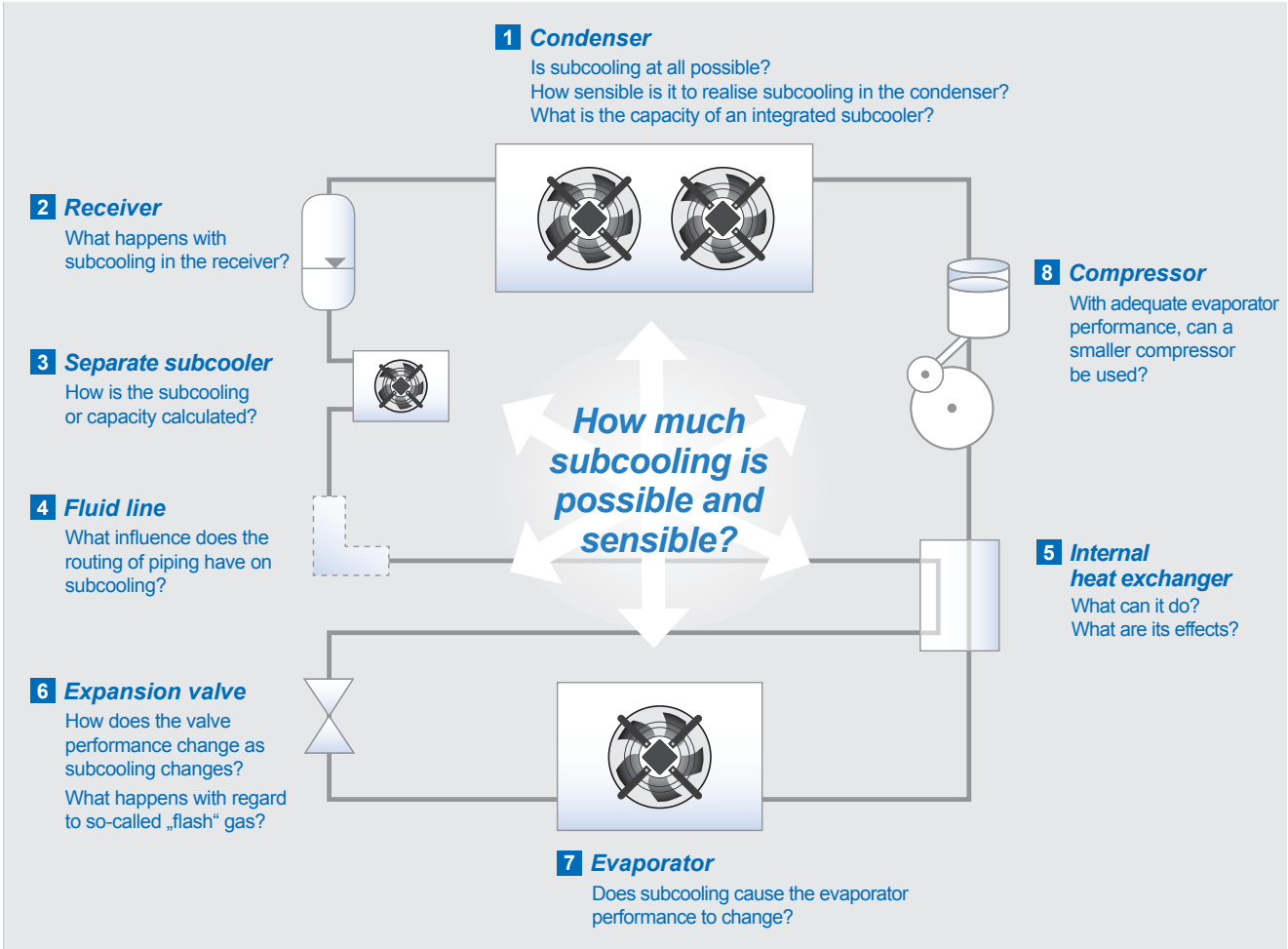
1. Uncontrolled
- In an air-cooled condenser
- In an air-cooled condenser with refrigerant accumulation
- In an air-cooled condenser with separate subcooler coil in the air inlet (the sequence of components is important: condenser -> receiver /siphon -> condenser's subcooler coil)
- In a standing receiver
- In the fluid line or pipe components
- In an internal heat exchanger (technically correct term: liquid-suction heat exchanger)

2. Controlled
- In a separate air-cooled subcoolerr
- In a separate water-cooled subcooler

3. Partially or indirectly controlled (for compressor efficiency)
- Economiser operation at compressors
- Subcooling in a two-stage compression process

HOW MUCH subcooling is possible?
Economic limits and the limits of components

Many questions! In the afore-mentioned detailed feature article, the answers will be provided, along with suggestions and practical tips for sensible use of subcooling. The feature article will be available as of calendar week 52 of 2009 on the Güntner website www.guentner.com in German and English.



What influence does supercooling have on the individual components?

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Güntner Motor Management GMM for EC fans

Customised development for maximum cost-effectiveness

Combining EC fans with GMM creates an intelligent heat exchanger system which enables energy-optimised operation of the heat exchanger, as well as maximum efficiency regarding maintenance and servicing. The EC fans with GMM are available as an option for condensers and drycoolers.

Three key features as basic functions

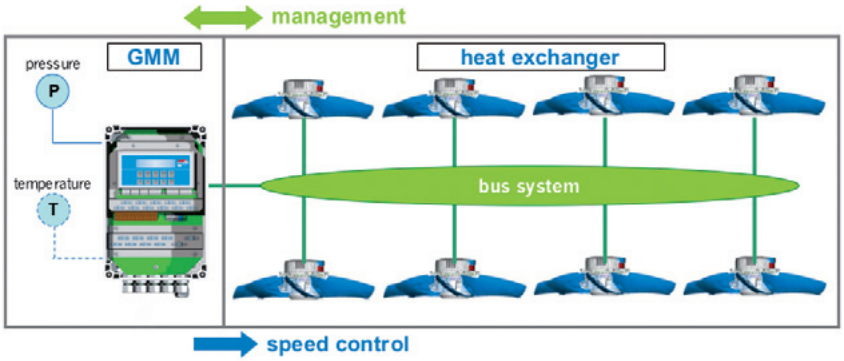
1.) System manager
The controller manages the EC fans during commissioning, servicing and system operation. This plug-and-play-capable system automatically executes all programming according to the respective design point of the heat exchanger and displays detailed information in real time.

2.) Processs controller
The GMM adjusts the fans' speed according to pressure or temperature, controls processes and thus creates an energy-optimised heat exchanger system.

3.) Information manager
The GMM offers communication interfaces with superordinate control systems and with the EC fans. It shows all key operation-related information on the display and makes it available to superordinate systems via a bus system or standard interface. This communication functionality increases the reliability and transparency of system operation.

Flexible application options

There are operating modes in which the GMM realises control independently, and others in which it operates as a slave, following instructions from a superordinate controller.



The GMM communicates via a bus system.

Energy efficiency

All control functions are optimally harmonised with the Güntner heat exchangers.

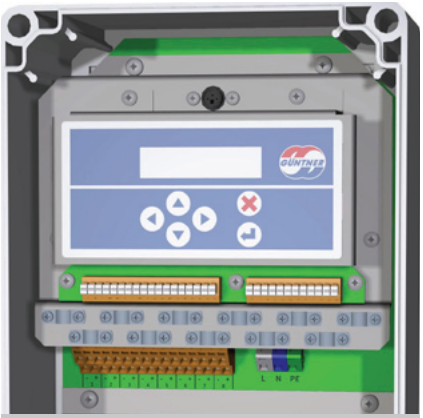
In addition, the GMM offers functions such as Low Capacity Motor Management (LCMM), which ensures energy-optimised operation in the heat exchanger's low capacity range as well. This function is necessary because the EC fans have a minimum speed of about 10 %, so control in the heat exchanger's 5 % range (e.g. during winter operation) is impossible without LCMM

Operational reliability

With condensers, the GMM creates more stable pressure ratios in the cooling circuit and thus increases the system's operational reliability. All of the system's components which are important for operation are monitored permanently. In the event of an operating fault, the system automatically switches to emergency mode.

This "bypass operation" mode can be activated and configured via the GMM controller's plain text display.

An intelligent system with a multitude of advantages – too many to list here in their entirety. Ask for our info brochure!



The GMM with plain text display and input keys

Diversity for providing customized solutions

Solution-oriented collaboration of Combitherm and Güntner

Air conditioning for air crafts

The market for high-quality ground-based aircraft air conditioning units is growing continually. Combitherm GmbH reacted to this situation already years ago and developed its own ground-based air conditioning units, the so-called TRACUs (Truck Air Conditioning Units). These mobile units have the advantage that they operate at considerably lower noise levels and have a higher energy efficiency than the up to now often used auxiliary power units (APUs). Unlike these APUs, the TRACUs do not operate with kerosene.

These units excel especially in flexibility and adaptability. The ground-based air conditioning units not only have to comply with the effective local requirements, but also have to be adapted to the climatic conditions on-site. Whereas in Northern climates a heating function may be required, the unit will be mainly used for cooling in Southern regions.

High quality standards

Besides temperature and air humidity control, system reliability, service life, environmental compatibility and operating costs are of utmost importance.

To satisfy its own high technical and quality standards, Combitherm is also very demanding when it comes to selecting component suppliers. Not only the product quality, but also the ability to develop individual solutions and custom-designed units was a determining factor for selecting Güntner heat exchangers. Güntner's comprehensive product range including condensers, dry-coolers, evaporators and air coolers ensures that the appropriate unit for each application is available.

In order to cover a large application range, the copper tubes and fins of the units were reinforced for increasing material resistance against vibrations and high air pressure.

For optimal corrosion resistance, all heat exchangers are epoxy-coated and can thus be used in locations with aggressive ambient conditions, such as desert sand or maritime air.

Individual solutions

This diversity is necessary, because ground-based air conditioning units cover a large refrigerating capacity range for temperatures from -20 °C to +55 °C. Thus it is possible to provide the appropriate air conditioning system for virtually any aircraft at any airport in the world.

Mobile air conditioning for air crafts

Product innovations at the Güntner Roadshow 2009:

”Successful together” was the motto of the Güntner Roadshow, which began in spring, at first in Germany, Austria and Switzerland.

In cooperation with the leading specialised wholesalers Fischer Kältekli-ma, Frigotechnik, Reiss Kälte-Klima and Schiessl Kälte- und Klimaanla-genbedarf, Güntner staff (including Thomas Penning, the Key Account Manager responsible for specialised wholesale trade) provided informati-on on innovations from the company Güntner. The new ceiling-mounted slimline unit coolers GDF and GDM, as well as the GVX condenser with microox® technology, were introdu-ced with interesting speeches and product presentations. In the Günt-ner Roadshow trailer, the visitors were able to take a closer look at the products and gain a better under-standing.

In view of the positive response to the Roadshow in the German-spea-king world, it was then extended to include France, Poland and Hungary as well. The wholesalers GFF and Le Froid in France, Termo Schiessl in Poland and Soós és Társa Zrt. in Hungary all took part.

The organisers can look back on the Roadshow with satisfaction: “Some-one has been thinking here” was the conclusion of many industry repre-sentatives, who were evidently highly satisfied with the event. In particu-lar, the new features in the GDM and GDF series catered precisely to users’ wishes and requirements. Naturally, it was essential that the Roadshow also include a presenta-tion of the advantages and techni-cal features of the new condenser system GVX with microox® techno-logy. This new technology could be examined in detail in the Güntner Roadshow trailer.

Thomas Penning (center) ex-plains technical details to road show visitors.

Detailed information on the GVX, GDF and GDM series can be found in the Güntner info brochures (read more on page 6).

Techno-Tour in Russia

The organisers of the Techno-Tour can look back on a successful year of presentations: the Techno-Tour in Russia began in December 2008 and will continue until the end of Decem-ber 2009.

On the Techno-Tour, specialist presentations on the subject of refrigeration engineering are given in eleven Russian cities. For years, the companies Güntner, Bitzer, Dan-foss, Dupont and Testo have jointly organised an Info-Tour in Germany, Austria and Switzerland, which gave rise to the idea of jointly organising a series of presentations in Russia as well. Due to the positive response to the Info-Tour, this idea was willingly embraced by the Russian represen-tatives of the companies Bitzer, Dan-foss, Testo and Güntner and is now being realised for the first time. This series of presentations is all about increased efficiency in refrige-ration systems. This topical issue is examined from the different per-spectives of the companies involved, attracting great interest in industry circles. In addition, the audience receives first-hand information about the participating companies’ product innovations in the field of refrigerati-on / air conditioning. Refreshments are served as well: at the end of each presentation, a buf-fet provides a relaxed environment for professional discussions.

You can learn more about the Techno-Tour here (website in Russian): www.techno-tour.ru

Oleg Romanyuk, staff member at Güntner’s Moscow office

Dual-system studies successfully completed

Francesco Ianní is the first BA graduate at Güntner

With a first-class degree, the Italian Francesco Ianní from Mannheim completed his dual-system studies in refrigeration systems engineering at Güntner AG & Co KG on 30/09/2009 and is thus the first BA graduate at this tradition-rich company.

After he finished his training as a refrigeration systems engineer at the company Rütgers in Mannheim, Francesco obtained his technical college entrance qualification. At the European Academy of Refrigeration and Air Conditioning (ESaK), he found out about the study course offered by the company Güntner. “Everyone who works in the refrigeration industry has already heard of this company. Güntner is simply a market leader,” laughs Francesco. “In the semester break, you work at the company. It’s challenging, but this is precisely where the big advantage lies: as practice was so closely interwoven with theory, I was able to apply what I’d learnt at the academy almost immediately and even earn some money at the same time,” explains Francesco.

”In my thesis, I studied the new microox® technology in great detail and compared it to the long-established finoox® technology. I thus obtained considerable insight into the Güntner products, while simultaneously helping to advance the microox® project.” Above all, his coach Peter Roth played a key role: “He supported me with constructive criticism all throughout my studies and provides me with important advice to this day.”

Francesco Ianní is delighted with his degree (l to r: Dr. Franz Summerer, Dirk Obländer, Bernd Gantner, Francesco Ianní)

And he still works with him: Francesco is now employed at Güntner as a research engineer.

Impressum

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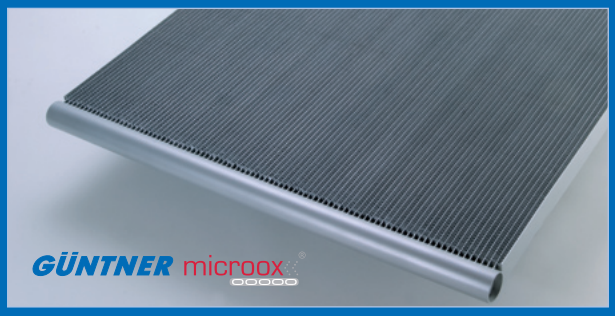

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