Press Release

efficiency in food and energy processes.

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Press kit from GEA Heat Exchangers and GEA Refrigeration Technologies for Chillventa 2010

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Designed for food and beverage industries and the catering business

Air coolers for CO_2 systems

GEA offers numerous air coolers for CO_2 refrigeration systems, owing to the growing demand, especially by the food and beverage industries. Examples are from the GEA Küba Green Line and Blue Line. The GEA Küba Green Line satisfies standard refrigeration requirements and covers the cooling-duty range from 1.5 to 52 kW. As a result, these systems are especially effective for small refrigerated counters and cabinets, as well as for supermarket storage. The Küba Blue Line includes the capacity range of 1.5 to 170 kW of cooling duty, and was designed for complex refrigeration applications. These products are effective for cooling rooms and cold stores, large refrigerated warehouses, and industrial uses: for example, in blast-freezing rooms.

The air coolers in both lines – with the exception of the smallest models, the Gastro FM and Junior DF – are designed for high system pressures and can also be operated with CO_2, instead of conventional refrigerants. The Blue Line is also available with NH_3 (ammonia) as refrigerant. As a result, users can apply environmentally friendly refrigerants to cool refrigerated rooms, work areas, and warehouses.

In order to keep operating expenses for refrigeration of larger rooms as low as possible, the Blue Line employs high-efficiency heat exchangers with the Küba HFE® tube-fin system. This system offers especially good heat transfer with low pressure drop – which enables not only reduced power consumption of the fans, but also compact unit dimensions at greater capacities. The geometry of the tube-fin system furthermore reduces frost formation and thereby shortens defrosting cycles.

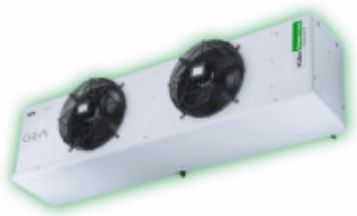

Photo: Kueba_marketplusSP.jpg

They can also be operated with CO_2, in addition to conventional refrigerants: Küba Air Coolers such as this model in the Green Line.

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New energy efficient motors for air coolers

Quietly, quietly – but with great efficiency

Greater efficiency, lower operating costs, less waste heat, as well as longer life cycles: these characteristics mark the newly developed low-power motors in the IE2 energy efficiency class. These quiet motors stand out with efficiency that is considerably greater than in conventional models, and they will be premiered with the high-duty SG Commercial air cooler in the Küba Blue Line. Users profit from greater power efficiency in the form of lower operating expenses.

These GEA Küba high-duty air coolers feature the special HFE® tube-fin system. It enables great cooling duty and assures refrigeration reliability. At the same time, lower air resistance considerably reduces power consumption by the fan and appreciably increases power efficiency. Operating expenses fall as a result of longer life cycles and more compact units – at greater output levels.

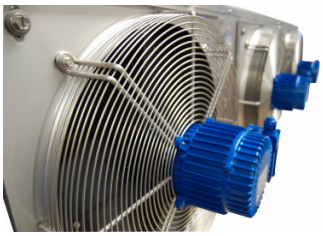

Photo: Kueba_IE2-Motor.jpg

New energy efficient motors, for example, once again significantly reduce power consumption for Küba Blue Line air coolers – which had already featured optimized power-consumption features.

Solutions and more for the food and beverage sector

Air Coolers beyond the standards

With its sector- and even application-dedicated solutions, GEA satisfies requirements placed on refrigeration systems that cannot – or cannot sufficiently – be satisfied by standard products. These systems are typically designed with employment of standard components that are upgraded to customized solutions by sophisticated choice of parameters and by air routing and enclosure structures matched to individual applications.

Special air coolers for special areas of application

GEA examples here are Goedhart Air Coolers for industrial applications (see photo), as well as stainless-steel models for enhanced corrosion protection. Also available are air coolers with low-silhouette design, as extensively used for example in fruit storage. In such facilities, good ventilation with only slight temperature differences is required, with relative humidity matched at the same time to the goods being stored. Fitted with quiet and energy-efficient EC motors, these low-silhouette air coolers also consume little power.

Special solutions for the meat industry

The Goedhart AU Range was developed for slaughterhouses. These coolers, designed for installation above the slaughter lines, direct their streams of cooling air directly to the products hanging below. This ensures great cooling effect with low consumption of power – and contributes to meat production with a minimum of microbe contamination.

More efficient use of cold-storage space

Raffel coolers with insulated enclosures for installation outside the cold room enable optimal utilization of the available space in cold-storage rooms. These units feature air dampers that close during the defrost cycle. This function not only assures efficient defrosting, but also prevents the entry of heat into the cold-storage rooms. These coolers likewise make it simple to locate refrigeration piping systems and condensate drainage outside the cold-storage rooms. This increases usable space and enhances access to refrigeration systems for maintenance.

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Photo: Goedhart_PLKs5fans-special_circuit.jpg

For special requirements that standard solutions cannot satisfy, GEA provides solutions with individually designed systems – such as this air cooler for industrial employment.

Coolers and evaporators for wholesale and retail users

Market-effective refrigeration solutions

The exhibited Searle solutions for refrigeration are market-effective in a dual sense. Firstly, they satisfy market requirements being placed for energy-efficient, reliable products. Secondly, many of them are especially designed for the needs of wholesale markets and supermarkets: for example, the new Searle MS coolers. They are highly effective for floor and wall installation and require no additional mounts. Units are available for horizontal or for vertical air flow, as required. They are delivered as standard models with a newly developed heat exchanger with 8 mm inner-groove tube in either copper or aluminum, plus aluminum fins with AC motors. As options, EC motors for the fans are also available with header covers. Thanks to their compactness and carton packing, they can be supplied on short notice – even overnight.

Smaller space requirements

The Searle MVX unit, including its enclosure, assures the smallest space requirements possible. EC motors come as standard equipment here. The space savings of these condensers result from the V-shaped configuration of the heat exchangers. Semi-hermetic or scroll compressors can be fitted in the enclosure, which is sound insulated. The unit is supplied on a mounting frame which allows the complete cooling unit to be lifted and mounted in one step of work.

An expanded product spectrum for CO_2 systems

The new coolers in the KECX and TECX lines are likewise being introduced in 2010. Owing to the high pressure possible with these models, they are effective up to 75 bar for CO_2 systems, and are on stock for prompt delivery. With these two lines, GEA continues to systematically expand its young Searle product portfolio.

Cooling towers for industry and for building climate control

Tailor-made from standard modules

GEA Polacel cooling towers have been designed for process cooling in the petrochemical industry and in the food and beverage sector – and for heat removal in building climate control. The spectrum of offerings includes various solutions, including CMDR cooling towers operating on the counterflow principle. Here, water flowing downward meets a stream of air being pulled upward by a fan. This enables great cooling capacity, compact enclosures, low power costs, and low evaporation levels. Advanced motors also contributed to efficient handling of resources. For example, permanent-magnet motors can be installed instead of conventional motors with V-belts and gears. This not only raises efficiency but also enhances the reliability of the drive system.

Thanks to the expandable and flexible GEA Polacel module system, standard solutions are possible for use in many applications. Here, the modular components for the required cooling duty and ambient conditions are assembled as necessary. Tailored solutions satisfy special requirements. The modules are delivered ready for use and can be installed in rows or in blocks.

In order that not only cooling duty suffices but also that good relations prevail with neighbors, the sound emission level plays a major role. Special measures ensure quiet operation: for example, installation of larger fans that operate at slower speeds, and floating dampers for the impact noise of falling water.

Picture: Polacel_Cooling_Tower.jpg

The Polacel Range of cooling towers features modular design in offering tailored solutions from standard components.

Optimized equipment configuration reduces operational costs

Energy-efficient HVAC climate control of computer centers, with GEA Ultra-Denco close control systems

The new GEA Ultra-Denco Close Control HVAC systems by GEA Air Treatment ensure exact temperatures and humidity in climate control. They were especially designed for employment in computer centers. This equipment range includes three sizes with a maximum cooling duty of 50 to 150 kW. New configuration and optimization of components – heat exchangers, filters, valves, and especially fans – have enabled GEA experts to minimize air- and water-side pressure drops and consequently to reduce power consumption by more than 50 %. Further savings potential is offered by the combination of systems with chillers that offer free-cooling functions: for example, GEA GLFC.

The Close Control HVAC units in the GEA Ultra-Denco Range are available, as standard, with 6-row high-capacity cooling banks and with modulating 3-point servovalves in 2- or 3-way versions – and with EC free-running (plug) fans. As a result of their efficiency of more than 90 %, EC fans – especially in partial-load mode as, for example, with standby redundant features – enable reduction of power consumption by up to 45 % in comparison to systems with AC fans in full-load mode. Location of the fans in a raised floor radically reduces flow reversal losses and thereby reduces power consumption of the overall unit by more than 50 %.

Enlarged filter surfaces – with the resulting reduction in pressure drop – lead to longer maintenance intervals. The large heavy-duty heat exchanger with 6-tube rows is designed for greater output: or for operation with more energy-efficient media temperature while enabling the same output. By optimization of the components through which water flows – such as heat exchangers, valves, and piping – GEA Denco has succeeded in extremely reducing water-side pressure drop.

Since the fans in this configuration pull in air only through the unit itself, the enclosure is not under pressure and is characterized by great air tightness. This prevents leaks. Service staff have simple access from the front to maintain the system.

Monitoring the pressure – and maintaining perfect climate control

When used in high-capacity server environments, a control-system combination with an automatic pressure-controlled system (APC) provides exact monitoring and optimization of the pressure prevailing in the raised floor. This configuration always supplies the correct amount of air that is momentarily required. Pressure-dependent control allows further reduction of power consumption by the fans. These solutions also minimize the risk of so-called hot spots: i.e., areas in which high temperatures can develop in small areas. This GEA system operates particularly effectively in combination with cold- and hot-aisle containment.

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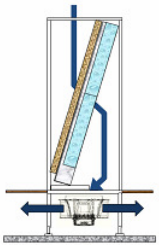
Free cooling opens up further potentials for saving

With cooling requirements over the entire year, one highly recommended solution is the combination of GEA Ultra-Denco Close Control HVAC units and chillers with free-cooling functions. As soon as these free-cooling systems can provide the water (or water-glycol mixture) 1 K below the required return-flow temperature, mixed operation is possible. At low air temperatures, it is often possible to switch off the compressor entirely: for example, during winter operation. This reduces compressor operation time and lowers power costs.

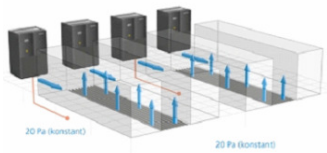
Photo: GEA_Ultra-Denco.jpg

The GEA Ultra-Denco Range assures exact temperatures and humidity.



Picture: GEA_Ultra-Denco_Ventilator.jpg

A new fan configuration allows optimization of operating costs of Close Control HVAC cabinets.



Picture: GEA_APC_System.jpg

The APC system provides constant pressure in the raised floor, up to the performance limit of the installed equipment.

The new Geneglace ND10 ice maker produces up to 3.5 tons daily

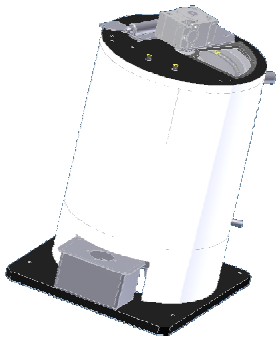
Tons of flake ice

GEA presents a new ice maker: the Geneglace ND10. It pioneers the new range of ice makers required in the food industry and in supermarkets. With a capacity of 3.5 metric tons of ice daily, this new unit is primarily designed for food operations.

Thanks to its closed design, its selection of material, and its simple cleaning, the ND10 satisfies the strict hygienic requirements of the food sector. The cover, for example, is made of polyethylene, which allows simple cleaning.

The big plus of this new machine is that it has fewer parts, and that the components are designed such that they are especially easier to clean. Many details, in addition, have been designed to allow extra-friendly maintenance. For example, the bearings of the main shaft and of the flaking tool are made of high-quality steel. As a result, changing bearings is easy and good bearing fit is ensured after re-assembly.

This new design will be launched on the market in 2011 and then applied throughout the range.



Picture: Geneglace_ice_maker_ND10.jpg

With production of 3.5 metric tons of flaked ice daily, the new Geneglace ND10 is especially designed for use in the food and beverage sector.

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The Grasso Smart ScrewPack Range with screw compressors

Quiet and thrifty: the new Smart ScrewPack

At Chillventa 2010, GEA introduces its new Grasso Smart Screw-Pack series of screw-compressor packages. Based on the philosophy of building a maximum of reliability, energy efficiency, and service friendliness in screw-compressor packages, the Smart ScrewPack will complement the existing range. The new concept integrates newly developed components: e.g., suction strainers and check valves with lower pressure losses to maximize EER values. The Smart ScrewPack Range includes a new design for high-efficiency oil separators designed to minimize oil carry-over. The compact and service-friendly design has been realized with an advanced oil-management center, which is produced exclusively for all GEA packages. Low vibration and noise levels, typical features of Grasso packages, were retained by use of stable base-frame design and an oil separator isolated from the compressor driveline. The Grasso Smart ScrewPack Range will be offered with volume ratings between 805 m³/h and 3,250 m³/h, in Grasso screw-compressor models P to XA.

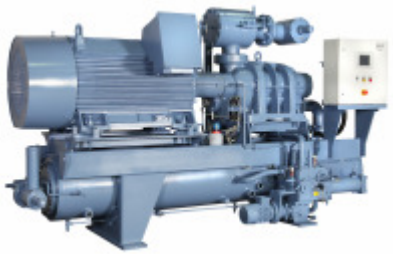

Photo: Grasso_SSP.jpg

The new Grasso Smart ScrewPack line is available with screw compressors in the performance range from 805 m³/h to 3,250 m³/h.

The Grasso ammonia chiller achieves an energy efficiency ratio (EER) of 5.5

BluAstrum: compact and efficient

At Chillventa, GEA is premiering a new chiller design that sets new standards in energy efficiency and compactness. For the heart of the completely new chiller range, the GEA development team has designed a high-efficiency compressor series with speed-control, frequency inverter, and variable Vi for maximum partial-load efficiency. The new Grasso chiller sets a new benchmark for ESEER values. Its compactness enables customers to replace older chillers easily with this high-efficiency Grasso chiller range. As an option, a new housing is available to reduce noise levels even further, allowing the chiller to be used over a wide range of operating conditions. The final series of the new design will comprise six chiller types with a capacity range from 500 kW to 2,000 kW. Additionally, air-cooled and heat pump series are being developed in parallel.

Photo: Grasso_BluAstrum.jpg

With its new Grasso BluAstrum Range, GEA is offering a compact liquid chiller that operates at great efficiency. Its compact design allows it to be taken into the installation site through standard doors. It is therefore not only ideally suited for new buildings, but also for replacement of older chillers that operate with the refrigerant R22.

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The Grasso high-pressure compressor is the key component of the prize-winning heat pump

Outstanding engineering

At Chillventa 2010, GEA will verify its competence in CO_2 technology: for example, with the Grasso ACR 130 bar compressor for transcritical CO_2 systems. It offers new possibilities in industrial refrigeration as well as for heat-pump applications. The Thermea heat pump HHS 1000, incorporating ACR compressor technology, won the German Environmental Award for climate protection with air-conditioning technology in 2009.

Photo: Grasso_ACR.jpg

This ACR compressor functions at operational pressure up to 130 bar. This makes it ideally suited for employment in transcritical CO_2 systems for refrigeration, or in heat pumps.

The new Grasso V Series piston compressor

Great performance, low total cost of ownership

The concept of the Grasso V Series – high efficiency at low operational costs – has already been accepted as a new standard in the industrial refrigeration market. After very successful introduction of the first two models, V700 and V1100, the Grasso V Series is now being expanded by two new models with larger swept volume:

- V1400 (8 cylinders with 1274 m³/h)
- V1800 (10 cylinders with 1592 m³/h).

These new models will be available from early 2011.

These models of course fully comply with the new applicable standard. Low power consumption as well as optimization of service intervals and costs as a result of the Grasso Maintenance Monitor are the main drivers in the low total cost of ownership calculation.

The finalization of these single-stage series can be expected in 2011 with the development of three smaller-sized models.

Photo: Grasso_V1100.jpg

The new Grasso V series. The reliable solution in piston compressors for industrial refrigeration with higher performance and lower energy and maintenance costs.

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For high system pressures and media temperatures up to 200 °C

Plate heat exchangers for CO_2 systems

CO_2 (R744) has a long tradition as a refrigerant without climatic effects. This non-combustible gas was first used as a refrigerant more than 120 years ago, but was superseded by CFC to a great extent. CO_2 is the most eco-friendly refrigerant on the market, since it has no ozone-depletion potential. Its global warming potential (GWP) is 1. Conventional refrigerants such as R410A pollute the environment much more, by a factor of up to 1890. The excellent thermodynamic properties of CO_2 also enhance economic efficiency, because its high pressure means that all plant components can have smaller pipework cross-sections – in turn enabling considerably more compact designs for implementation.

With its GML Range, GEA has now developed a compact plate heat exchanger for this future-oriented market. Stainless steel 1.4401 is used as the plate material and is brazed with copper solder. The units are designed for media temperatures of up to 200 °C. The new GML Range complies with the European Pressure Equipment Directive (PED) and will be available in two sizes.

Photo: PHE_GML_brazed.jpg

The new heat exchangers of the GML Range are outstandingly effective for the high pressures that occur in CO_2 systems, and for media temperatures up to 200 °C.

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Double-walled plate heat exchangers

More safety and reliability in processes

Another exhibition highlight is the high-pressure safety heat exchanger from the new DW Range that reliably separates two media from each other – even in the event of leakage. This safety feature results from double-walled, hermetically sealed plates, thus guaranteeing unprecedented process reliability. This double-walled safety design allows pressure loading of up to 45 bar.

Valve sets optimized for use in CO_2 compressors

New safety valves with 63-bar set pressure

GEA is contributing to the trend toward environmentally friendly refrigerants, with its latest series of AWP safety valves. They offer set pressure up to 63 bar (the predecessor series was only up to 28 bar). This makes the new valve sets optimal for use in CO_2 refrigeration systems. In comparison to machines with conventional refrigerants, compressors with the natural refrigerant CO_2 operate at significantly higher pressure and therefore require valves that are especially designed for this use.

But it is not only the set pressure that makes these valves ideal for use in CO_2 circulation systems. GEA developers also placed great value on a high degree of tightness: after all – and in contrast to safety valves in the chemical sector – 100 % tightness is absolutely critical with CO_2 refrigeration systems. This is the only way over the long run to ensure safe operations and, in turn, a high degree of efficiency. The selection of materials here also takes full account of this natural refrigerant, which means that media-caused wear to material and resulting long-term damage will not occur.

GEA developers have oriented their design of safety-relevant valve sets to conventional dimensions typically offered on the market. Nominal diameters of DN 15/15, 15/25, 20/32, and 25/40 (the inlet and outlet diameters, respectively) virtually cover all cases of application. The valves are available in two versions: backpressure-dependent valves (SVA models) and backpressure-independent valves (SVU models).

These new safety valves will be presented to the public in their world premiere at Chillventa 2010.

Photo: AWP_safety_valve.jpg

Owing to their set pressure of up to 63 bar, these new AWP safety valves are especially effective in use with CO_2 refrigeration plants.

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Press Relations and Public Affairs:

GEA Refrigeration Technologies GmbH
Annette Wille
Dorstener Strasse 484
44809 Bochum, Germany
Tel.: +49 (0)234 91534-206
Fax: +49 (0)234 91534-299
annette.wille@geagroup.com
www.gearefrigeration.com

GEA Heat Exchangers GmbH
Dirk Schlichting
Suedstrasse 48
44625 Herne, Germany
Tel.: +49 (0)2325 468-418
Fax: +49 (0)2325 468-201
dirk.schlichting@geagroup.com
www.gea-heatexchangers.com

Press'n'Relations II GmbH
Ralf Dunker
Guntherstrasse 19
80639 Munich, Germany
Tel.: +49 (0)89 17 99 92 75
Fax: +49 (0)89 17 99 92 89
du@press-n-relations.de
www.press-n-relations.de

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