

Cooling professionals appreciate reliability

Pfannenberg chillers of the latest generation

Chillers · Edition 11.0



SHARING
COMPETENCE



Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY



Pfannenberger – 50-year thermal management tradition





From filter fans to chillers

More than 50 years ago Otto Pfannenberg invented the filter fan in Germany, which made him the founder of control cabinet thermal management. Today Pfannenberg GmbH is active as a thermal management specialist throughout the world – in altogether 42 countries on six continents.

However, the company is not only represented world-wide but also offers the entire range of industrial thermal management from one source: filter fans, air conditioners, heaters, thermostats, chillers and much more.

Pfannenberg GmbH has made it its task to engage in comprehensive and innovative environmental protection. Therefore all products, production methods and services live up to this standard. With research and further development Pfannenberg GmbH tries to continue improving its products and production methods so they adhere to the company's motto:

“Safety for man, machine and the environment”

Especially chillers are products which are extremely important to Pfannenberg. Our unsurpassed expertise in this area ensures perfect configurations for high-tech applications of machines. The company's main production site is in Fidenza, Italy. A completely new production site exists in Buffalo, New York, USA.

Below we would like to show you our diverse chiller series in greater detail.



We are at home in all industries

Cooling specialists and application all-arounders

We have positioned ourselves to supply chillers for all industry sectors. As our customer you profit from our many years of experience, unique expertise in thermal management technology and our worldwide presence, which ensures reliable and speedy logistics.

Wind – solar

Specifically this area of energy production requires the utmost in energy-optimised concepts. With respect to cooling, the Pfannenberg-specific combination of passive/active cooling constitutes the ideal solution with very low overall energy consumption.



Machine tools

When production processes are based on machine tools, consistent quality is required even when ambient temperatures are high. Therefore, the machine systems must not overheat, otherwise repetitive accuracy can no longer be ensured during manufacturing of many various types of products. It is this high technical quality of products that distinguishes German engineering and helps to make sure that machine tool manufacturers can consolidate their leading position in the global market.





Spezial

The various segments of the plastics industry (injection moulding, blow moulding, heat moulding, thermoforming, extrusion, etc.) require cooling with a temperature accuracy between ± 2 K and ± 0.5 K.

Pfannenberger chillers are able to meet these requirements in all application fields.

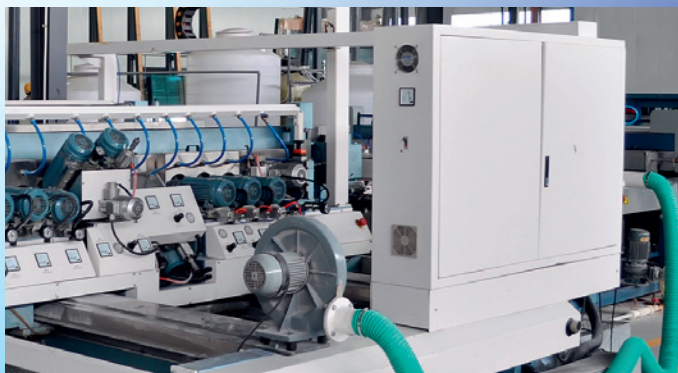
Laser

Modern laser/marking and cutting systems must work fast, accurately and cost-efficiently. When it comes to high-performance lasers, constant cooling temperatures are a significant factor. The smallest deviation may result in inaccuracies, and consequently, valuable raw materials would be wasted during processing.



Machinery

The drive motors of modern machinery must permanently deliver top performances in terms of accuracy and speed. Water-cooled drive motors are specifically designed to meet these requirements. Realising this concept throughout the lifecycle of a machine requires proper cooling.



Food and beverage

To produce top quality for end users while following the strictest specifications, cooling is required in many areas of the food and beverage industry, both in the production and packaging of the products.

Customers profit from our effective, modern chillers

When it comes to chillers for industrial applications, you should not make any compromises

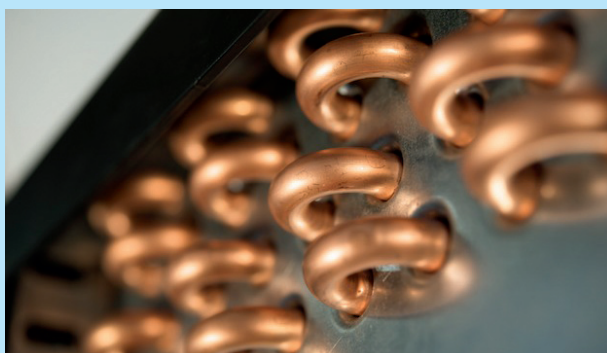
If you wish to be one of the leading suppliers in the field of process cooling, you not only have to offer a high-quality product but you must also establish a relationship with your customers which is characterised by a spirit of partnership. Being in a position to exchange competencies as well as offer excellent services requires the utmost in innovation, technology and trust.

Construction of the process chillers

Pfannenberg is active in various industry sectors and chillers are employed throughout the world. For this reason we use materials and components of supreme quality. They are made according to the highest standards. For you as our customer, this means above all optimum reliability for your application.



Fans from international brand manufacturers



Performance-optimised heat exchangers

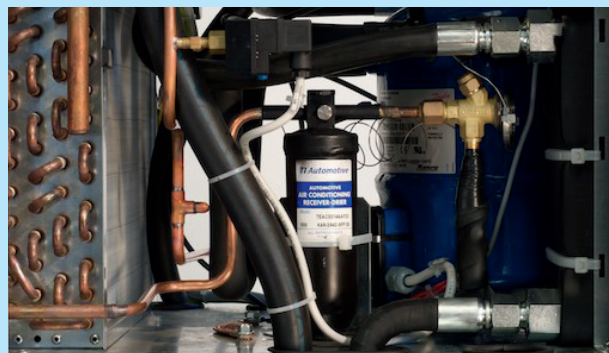




Precise output control



Optional fan control



High-quality cooling components

Process chillers for any Requirement

From compact-size shelf units to cooling a complete industrial plant, Pfannenberg offers you the absolutely perfect solution

Rack: The compact design of the unit allows it to be attached to the widest variety of machine types. This makes the Rack the optimum solution for those who want to save space when low output is required.

EB: The EB series has been specially developed for applications that require stable temperature control. Equipped with a programmable control module, these units can be used to realise small hystereses of the fluid temperature. For monitoring the functions of the chiller, a control module is optionally available that indicates the individual function statuses via an LED display.

HK: The HK series has been designed for indoor and outdoor applications for the cooling of water, oil and emulsions. These units have a “stand-alone” design for automatic operation.

AR: The AR series is a solution for process cooling within a control cabinet. AR offers enormous flexibility irrespective of the manufacturer of the control cabinet.

VLV: Conceived as an individual solution according to specific customer requirements.

Overview of our chiller programme



0 W 10,000 W 20,000 W 30,000 W 40,000 W 50,000 W 60,000 W 70,000 W 100,000 W



Our development department regards special requests as a welcome challenge

Even though the various Pfannenberg chiller series cover a major part of industrial standards, Pfannenberg meets the growing demands of modern production with its objectives of climate protection and efficiency.

Therefore even challenging tasks can be resolved thanks to our in-house R&D Department at short notice – many years of expertise as well as state-of-the-art product validation systems and production plants make innovative and complex individual solutions possible, too.



105,000 W 125,000 W 150,000 W 200,000 W

Cost-efficiency Master Plan

We secure your future with our modern philosophy

Pfannenberg subscribes to a corporate philosophy which focuses on the concerns and objectives of the users with respect to cost efficiency. This starts during the planning phase and extends far beyond the operation phase. Furthermore, Pfannenberg is one of the few suppliers who can supply a complete solution, i.e. a chiller solution as well as the complete handling and maintenance of your cabinet thermal management.

Pre-sales The right product at the right time – at Pfannenberg, service starts even before delivery. An analysis of the business environment, of the objectives and of the technology which the user has available is our investment in a sustainably successful cooperation.

Concept design Design that is perfectly adjusted to your application.

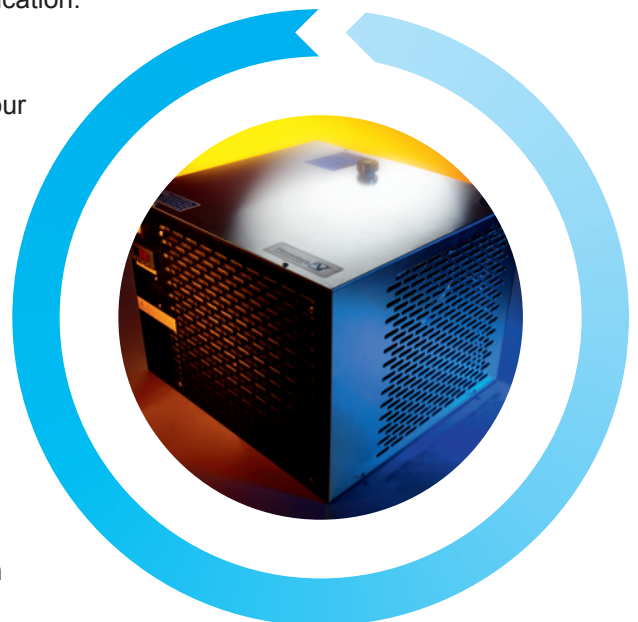
Installation and start-up operation Pfannenberg offers support in the installation and start-up operation of the chiller at your site. This ensures a smooth start and contributes to extending the long service life of the chiller.

Coaching and service Training courses by Pfannenberg experts, in combination with customised maintenance and repair packages, ensure that your production processes run smoothly and guarantee longer service life.

Energy efficiency Our chillers achieve top grades in energy consumption.

Reliability More than 20 years of experience in the field of recooling and the use of high-quality components ensure optimum long-term stability and top MTBF (mean time between failures).

Service friendliness Minimum MTTR (mean time to repair) and the shortest time needed to replace units thanks to perfect accessibility, standardised parts and a carefully thought-through plug-and-play concept minimise your repair costs and downtimes.



Benefits: risk minimisation and cost savings

Pfannenberg's master plan as described above spells crucial benefits for manufacturers and users. After all, Pfannenberg makes sure that the total cost of ownership (TCO) of your components is considerably reduced while your return on investment (ROI) receives a powerful boost.



New **ECOOL** passive/active chillers from Pfannenberger

The new generation of passive/active chillers comes with all **ECOOL** features:

- climate protection
- energy efficiency
- easy handling

That is the reason they carry the new **ECOOL** logo.

Our chillers with passive/active cooling possess unexpected energy savings potential.

Below we give you a good example of potential savings when using the Pfannenberger **ECOOL** passive/active chiller:

Pfannenberger **ECOOL**/VLV passive/active combination

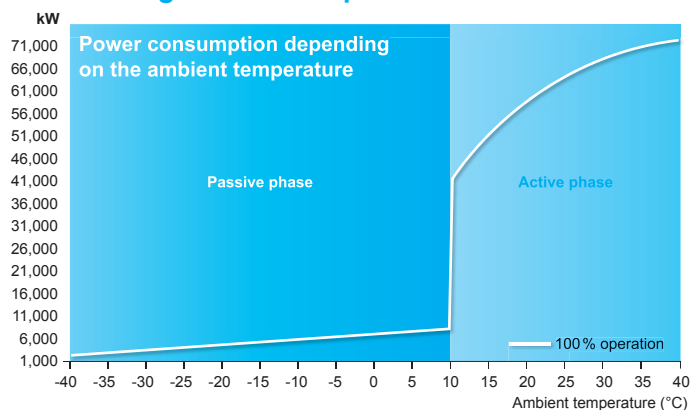
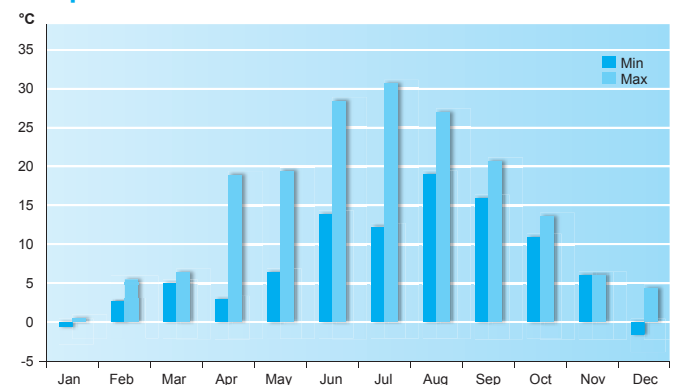


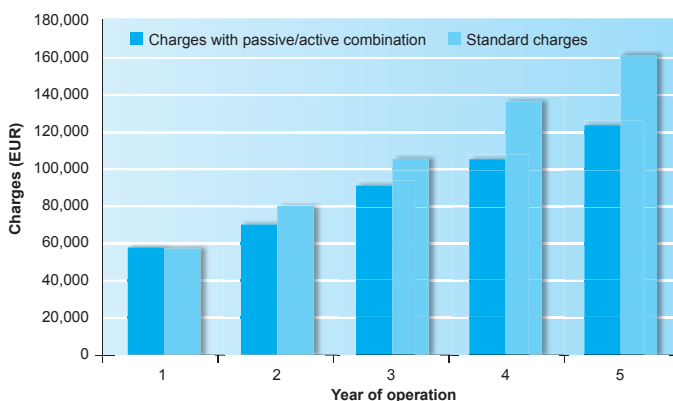
Chart of the power consumption in ambient temperatures between -40 °C and +40 °C. At a ΔT of 10 K ($t_{\text{water}} - t_{\text{environment}}$) the combination works in the passive mode up to an ambient temperature of +10 °C. Only once this temperature is exceeded does an automatic switch to the active mode take place.

Temperatures in 2008



The average temperatures in Germany in 2008 are shown here. During about five months a year the average temperature is less than +10 °C. Using the information from the chart on the left you can easily determine how many kWh you can save in one year because the chiller can remain in passive mode for five months.

Cost comparison



Cost development of Pfannenberger passive/active chillers and standard active chillers in a comparison:

Depiction of the total costs from energy costs, maintenance costs and acquisition costs.

After just two years the ROI (return on investment) is ensured.

Optimum in energy efficiency + Perfect service friendliness = Cost savings without any compromises!

Service – everything from one source



Availability

Depending on when you need to reach us, the Pfannenberg Service is available to you during business hours, and additionally on weekends or after business hours via the Pfannenberg Premium hotline.



Availability of spare parts

Pfannenberg ensures that its spare parts are available at short notice anywhere in the world so they can be delivered to you quickly when you need them. No matter in which part of the world you need them.



Training courses

To generate better understanding of thermal management technology among your staff, we also offer training courses. These enable your employees to recognize malfunctions more quickly and give them the expertise to make the right decisions when it comes to troubleshooting and resuming production.



Product validation

Efficient inspection and test laboratories are an investment many companies shy away from. Choose a cost-efficient option instead by taking advantage of the inspection and test labs of Pfannenberg.



Response time

No matter where you need assistance – the Pfannenberg service is available to you throughout the world. Choose your individual service level and establish our response time. When you select service level 3, our service technicians will be at your site within 24 hours at most after you have reported the problem.



Frequency of maintenance

Even the most reliable units require regular maintenance. With the individual service level which is defined in your maintenance agreement you are on the safe side.



Product development

Profit from the Pfannenberg R&D service for testing your own product ideas. For example in component development in the fields of system air conditioning, thermal management and signalling.



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