



THERMAL SYSTEMS

IDEAS

KNOW-HOW

QUALITY

Innovations made by Rehm.



[www.rehm-group.com](http://www.rehm-group.com)

# Imprint

Rehm Thermal Systems GmbH

Leinenstraße 7

89143 Blaubeuren-Seissen

T +49 7344 - 96 06 0 | F +49 7344 - 96 06 525

info@rehm-group.com | www.rehm-group.com

WORLDWIDE  
YTD 2020





## Your vision is our mission!

### Success for our customers

With more than 25 years in the industry, Rehm Thermal Systems is able to look back at rapid, positive company development. Convincing system innovations, longstanding customer and supplier relations, a clear statement where resource management and energy-efficient manufacturing are concerned and continuous globalization are factors against we measure our success, and will continue to do so in the future as well. But what distinguishes the character of an enterprise? As a mid-sized, owner managed business we focus special attention on competence, diversity,

precision and top quality – values which are not only made apparent by the satisfaction of our customers, but rather in all of our manufacturing processes as well. Thanks to our know-how, we've taken our place amongst today's technology and innovation leaders, and we enjoy worldwide recognition. With production locations in Germany and China, as well as branch offices and representatives around the globe, we're able to serve international markets quickly and offer outstanding on-site service. Get in touch with us, we'd be happy to advise you!



**Johannes Rehm**  
CEO

# What we do

## Innovative products from Rehm

Rehm Thermal Systems with company headquarters in Blaubeuren, Germany, is a specialist for thermal system solutions and produces innovative manufacturing equipment for the electronics and solar industries.

We implement custom tailored applications for our customers covering all aspects of soldering, coating, testing and curing PCBs. With an extensive product range including reflow soldering systems based on convection, vapor phase and vacuum, as well as coating and drying systems, cold and hot function testing systems and systems for metalizing solar cells, we supply manufacturing solutions for a diverse range of applications. Our processes work with

temperatures ranging from  $-55$  to  $1200$  °C. Above all with the implementation of individualized special systems which are matched ideally to customer requirements, Rehm has established its reputation at the international level. In this respect, in-house production and expert assembly are especially important. We produce everything ourselves – from sheet metal, mechanical and electronic components, right on up to the finished system.

By means of intensive R&D work and collaborations with universities and renowned research institutes, we're always in tune with the times and we develop new, innovative solutions for reliable and stable electronics manufacturing.



### Convection Soldering

#### VisionXP+ Vac

For excellent results:  
Convection soldering with vacuum for void rates of less than 2 %

#### VisionXP+

Best-in-class system for high-end mass production

#### VisionXS

Flexible system for mid-sized production lots

#### VisionXC

Compact system for small and mid-sized manufacturing lots



### Condensation Soldering

#### CondensoX-Line

All-around talent for inline vapor phase soldering with vacuum

#### CondensoXP/HS

Single or 2-axis loading for high throughput levels in the high-speed range

#### CondensoXM

Diverse system with extended conveyor axis for a flexible workflow

#### CondensoXS

Top performance in an extremely small space with a 25 % smaller footprint

#### CondensoXC

Reliable vapor phase soldering processes with and without vacuum



### Contact Soldering

#### Nexus

Contact soldering system for void-free and flux-free soldering up to  $450$  °C using a variety of process gases



### Tests | Trials

#### Securo Plus

Hot function testing system for temperature ranges from  $+80$  °C to  $+120$  °C

#### Securo Minus

Cold function testing system for temperature ranges down to  $-55$  °C



### Drying | Hardening

**RDS**

Curing of adhesives, paints (e.g. for protective coatings), casting resins, encapsulating compounds, silicone gels etc.

**RVDS**

Vertical conveyance and drying concept with minimal space requirement

**RDS UV**

Compact system for curing in UV applications

**RDS Magazine Dryer**

New process for electronic components in the high performance range



### Coating

**ProtectoXP**

Protective coating for electronic assemblies using a highly selective conformal coating system with maximum flexibility

**ProtectoXC**

Reliable coating – for small-scale production environments and small lot sizes



### Special Systems

**RSS**

Individualized system solutions: customized and matched to your production setting



### Solar Equipment

**RFS**

Outstanding heating power for top quality metallizing of solar cells

**RDS Solar**

Diverse production layouts for drying processes in solar cell manufacturing

# Specialist in numerous industry sectors

## Fields and application ranges

Those who want to achieve perfect results again and again each day have to be extremely familiar with their customers' industry sectors. Rehm has been active in a great variety of industry settings ever since the company was initially founded in 1990.

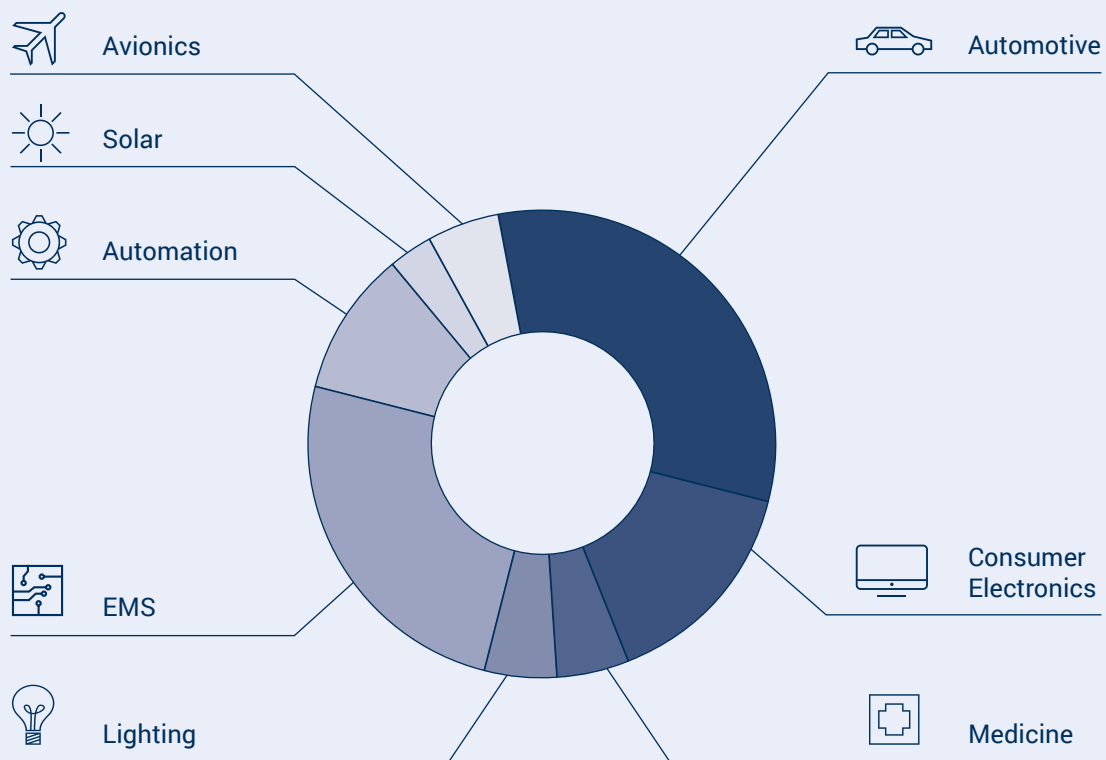
Equipment from Rehm Thermal Systems is taken advantage of in the automotive industry, medical technology, aviation and aerospace technology, consumer electronics, lighting, automation, testing and the solar industry. Numerous

renowned customers have been placing their faith in our innovative ideas for many years and are convinced of the quality of our products.

With more than 5500 systems installed around the world, we're able to address the needs of our customers in an individualized fashion as reliable industry specialists. Many new system concepts evolve in close cooperation with our customers and partners, and on the basis of continuous market analysis. And we always keep an eye on the latest developments in this respect.

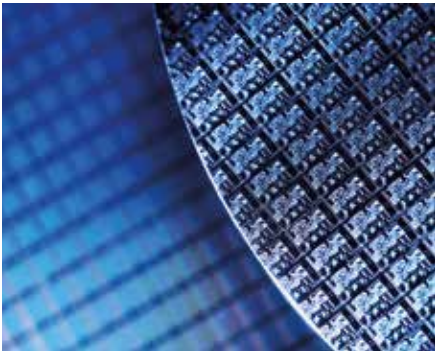
### From cars to smartphones

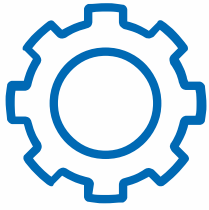
Rehm quality enhances many products



Right at home in numerous industry sectors: Today, Rehm Thermal Systems is a technology and innovation leader in the field of mechanical engineering for modern and efficient electronics manufacturing.







»Quality, know-how,  
an innovative power and customer  
focus have made us one of  
today's technology leaders in  
our industry sector.«

Johannes Rehm, CEO

concerning the corporate philosophy





# Global Player, internationally networked

## With regional roots

For Rehm, operating globally not only means being in a good position to market thermal systems around the world. Continuous expansion of worldwide support is important for us, so that our customers can benefit from quick, on-site service – before, while and after investing in a Rehm system.

We cooperate with business partners on all continents. With production locations in Blaubeuren Germany and Dongguan China, plus branch offices in Hungary, the Czech Republic, Russia, China, Mexico and the USA, Rehm is a well-established player at the international level as well as a technology leader in the fabrication of efficient machines for the economic production of electronic PCBs. And thus Rehm is always present where it makes good economic and business sense.

In 2004, Rehm discovered the great potential of the Asian market and launched a joint venture in Shenzhen, as well as a branch office in Shanghai with administration in Hong Kong. General conditions and the industry sector developed so well that Rehm founded its own production location in Dongguan with a Technology Center in Suzhou in 2007. Rehm produces systems which are targeted specifically at the requirements of the Asian market at its plant in China. Despite this expansion, our location in Germany still serves as company headquarters. Rehm has been manufacturing its systems in Blaubeuren ever since initial company expansion in 1993. Over the years, the company has continuously invested in this location too, most recently in 2013 with the construction of a new building and a modern Technology Center. All international activities of the 26 representatives in 24 countries are coordinated from Blaubeuren.



1. Atlanta, USA

Already in 1999, Rehm succeeded in spanning the Atlantic. Rehm USA in Atlanta, Georgia, is responsible for sales and service in the USA and Canada. The Atlanta branch office is equipped with a demo center.



2. Szendehegy, Hungary

Rehm Hungary is responsible for product support in Hungary and Romania. Founded in 1999, our on-site service team assures short response times – regardless of whether training in the national language or replacement parts are concerned.



3. Pribor, Czech Republic

Our branch office in Pribor has been providing support for Rehm systems in the Czech Republic and Poland since 2001. In addition to an assortment of replacement parts, we also offer training, consulting and software in the respective national language.



4. Hong Kong, China

Our branch office in Hong Kong was founded in 2004 and is responsible for business and commercial administration of all processes for Rehm's customer base in Asia, and serves as an on-site contact partner.



**5. Dongguan, China**

Rehm has been operating its second production location in Dongguan since 2007. Roughly 200 employees manufacture time tested soldering systems for the Asian market on 7000 m<sup>2</sup> of floor space. The location is equipped with its own metalworks.



**6. Shanghai, China**

The application center in Suzhou close to Shanghai was also founded in 2007 and provides customers with the opportunity of trying out systems and test equipment. Our team is at the disposal of customers for consultation and training on our systems.



**7. Guadalajara, Mexico**

We've also been present in Mexico since 2014, because there's significant interest in innovative reflow technology there as well. Our new facilities include a demo center for soldering tests and training, as well as a replacement parts warehouse.



**8. Moscow, Russia**

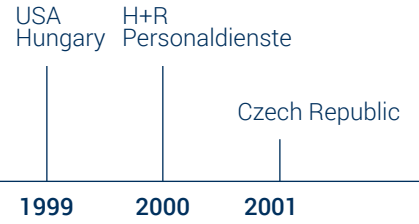
In order to further expand our international sales network into Russia, we founded our own branch office in Moscow in 2015. Our on-site team serves as a contact partner for customers with questions concerning all aspects of sales and service.



1990



# Rehm Chronicle



## Always in motion Company evolution

**April 1, 1990: an innovative idea, a welding unit and 45 m<sup>2</sup> of production floor space – recalls managing director Johannes Rehm with regard to the initial beginnings of his company, and he’s enthusiastic about the way it has developed up through today. More than 25 years ago, he ventured down the path to autonomy and founded Rehm Anlagenbau, now doing business under the name of Rehm Thermal Systems, together with Wolfgang Zeifang as the company’s first employee, who still holds the position of technical plant manager.**

In the early 1990s, reflow soldering technology was still at the beginning of its evolutionary development. Managing director Johannes Rehm’s successful idea provided the industry sector with decisive impetus in the year 1990. He built a small reflow soldering system that made it possible to implement highly stable soldering processes with the help of a gas-tight

process chamber which can be easily accessed via a door. This innovation quickly aroused the interest of several renowned customers and the company’s young founding father was soon able to benefit from profitable collaborations. Rehm has been on a course of expansion ever since. The company’s product developments are always targeted at technological progress. Right from the very beginning, Johannes Rehm was a pioneer in the field of reflow soldering technology. Maintaining a dialog with customers and partners, involvement in outstanding research projects, collaboration with universities and institutes and the fundamental principle of mutually developing technologically demanding products with the strictest quality standards have remained as one of Rehm’s distinguishing trademarks right up through today. The company is always in tune with the times, and responds to customer requirements and market trends. Advancing globalization led to worldwide expansion of sales activities and

Rehm BlechTec

Shenzhen  
Hong Kong

Dongguan  
Shanghai

present

Mexico

Russia

2003

2004

2007

2014

2015



1. Company "building" in Gamerschwang, with 45 m<sup>2</sup> of production floor space
2. The first SMS-1000/300 machine
3. J. Rehm & W. Zeifang at the first company meeting in 1990
4. Initial dialogs with customers
5. Rehm at SMT 1992
6. 1993: New company building in Blaubeuren-Seissen

7. Today's company building with roughly 12,800 m<sup>2</sup> of overall floor space
8. Best-in-class system: VisionXP+
9. J. Rehm and W. Zeifang, an integral part of general management
10. 500 creative employees work for Rehm today
11. 200 m<sup>2</sup> of booth floor space at SMT 2014
12. Rehm Technology Center at the Blaubeuren location

to the founding of an additional production facility in the Chinese city of Dongguan. In addition to Rehm Thermal Systems, the Rehm Group also operates subsidiaries including Rehm BlechTec which is specialized in stainless steel, aluminum and sheet metal fabrication, as well as H+R Personaldienste. Staff is growing along with the product portfolio. Today, more than 500 creative employees are working for Rehm around the globe on the development of the most up-to-date innovations. Renewable energy sources, efficient use of resources, ongoing miniaturization of components and the increasing use of electronics in nearly all areas of life are providing opportunities for penetrating new and interesting field of business. For example, Rehm invested in the development of systems for the production of solar cells, is involved in projects dealing with battery manufacturing and is addressing the issue of protective coatings for sensitive electronic components. Attention is also focused on innovative function testing systems and

new special solutions such as reel-to-reel processes for the production of LEDs and wearables. The new product ranges are providing for further growth in all directions. And building construction has had to keep up with all of this expansion too. Whereas Rehm's first soldering system was produced within very close quarters in 1990, company headquarters in Blaubeuren now comprises a building complex with generous amounts of production floor space, as well as offices and break rooms. Our customers can try out systems, become familiar with the associated technology and conduct extensive soldering tests at our own Technology Center. Active collaboration with customers is a decisive factor for Rehm's success. But success is more than just a measurable sales figure. It's expressed to a much greater extent in the form of satisfied customers, motivated employees, longstanding business relations and technological progress. Up through today, these values are the basis of Rehm's corporate philosophy.



»In the development of our systems, we focus on the current market trends and incorporate our own creative ideas!«

Jochen Burkhardt, R&D and Technology

concerning the demands placed on innovation at Rehm



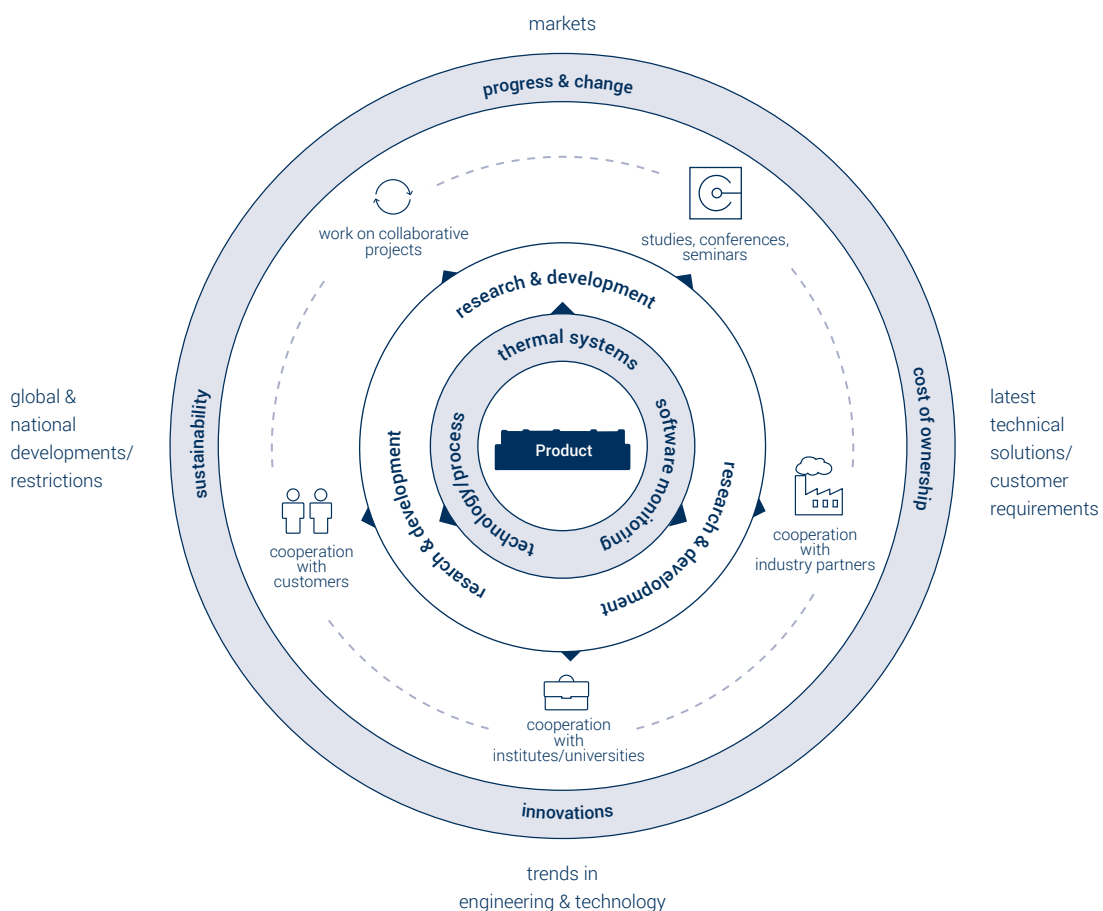


# Stagnation is not part of our vocabulary.

## Active research and development work

Research is part of the daily routine at Rehm. In the search for sustainable solutions and new target markets, our R&D team concerns itself with product optimization and further development. Together with various scientific facilities, universities, institutes, customers and partner companies, we explore numerous development proposals.

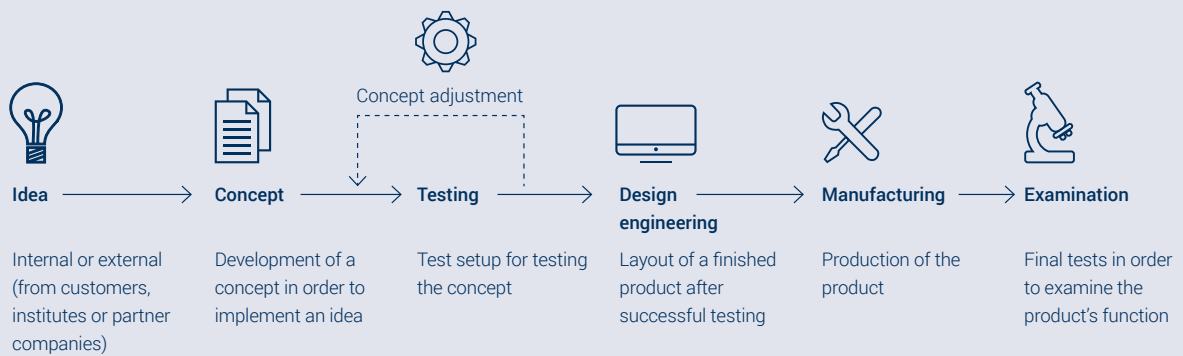
And in doing so we've always remained loyal to our guiding principle: an innovative approach and creative implementation of new ideas. Self-financed bilateral projects are just as much a part of our research work as state subsidized joint research projects. Strong networking within the market and the research community makes it possible for us to detect trends without delay, and provides us with vital impetus and ideas for new system concepts. Hand in hand with sales, design engineering, production and quality management, our customers are provided with well-versed consultation already during the development stage, and are able to profit from our technological know-how.





## From an idea to a prototype

### R&D conceptualization

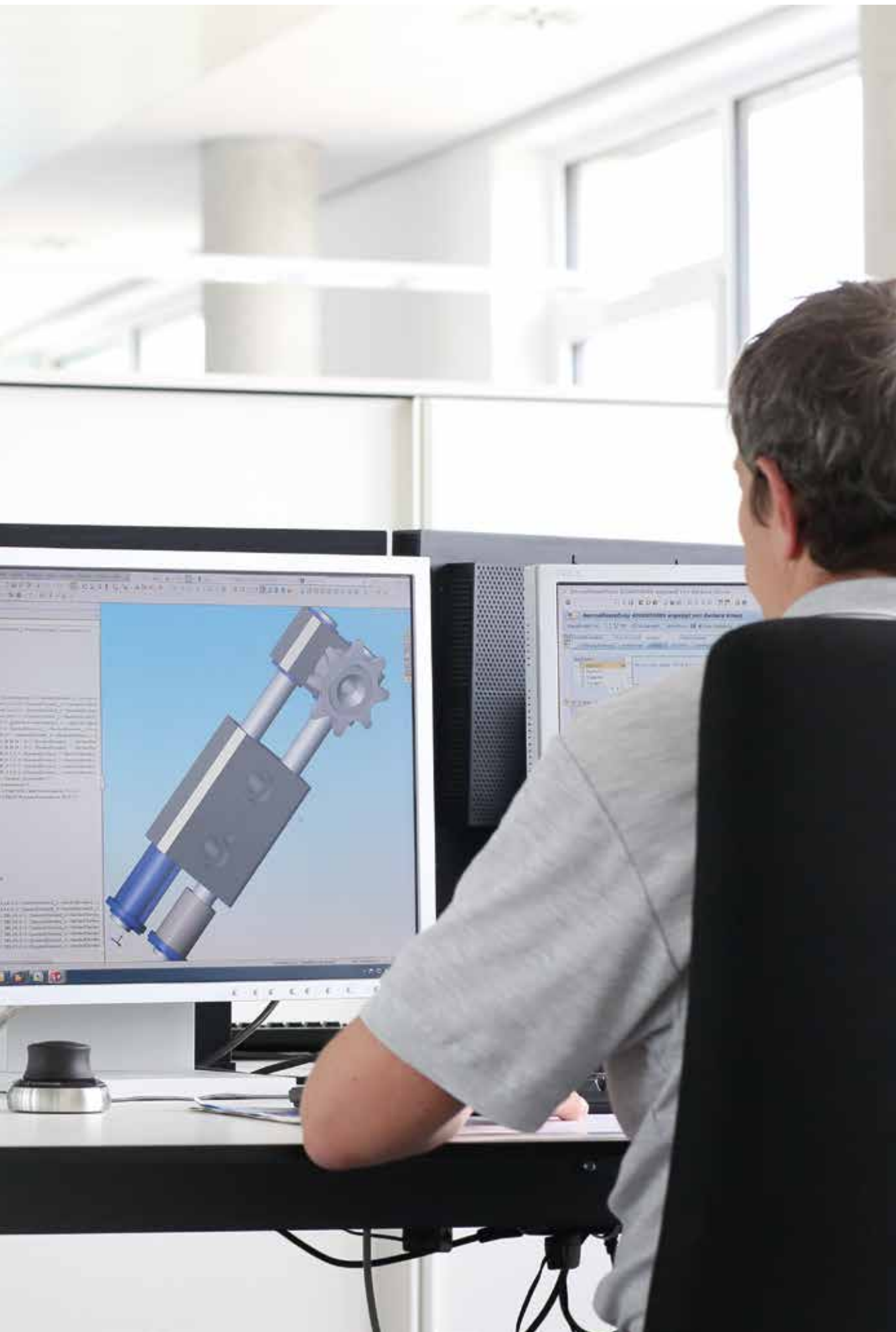




»We design complex projects on the basis of our many years of experience – from standard models right on up to special systems.«

Jochen Kuhn, Director of Design Engineering  
concerning flexible machine configuration





# Shaping ideas

## Custom tailored system designs

In cooperation with the R&D department, Rehm's engineers develop mechanical parts and control components at the PC – i.e. the core elements of our systems. Based on many years of experience, we put complex engineering projects into action. We contribute our knowledge in the following areas:

**Adaptive design engineering:**

Redesign, optimization and improvement of existing systems, new materials

**Variant design:**

Modification of existing system types based on customer requirements

**Initial design engineering:**

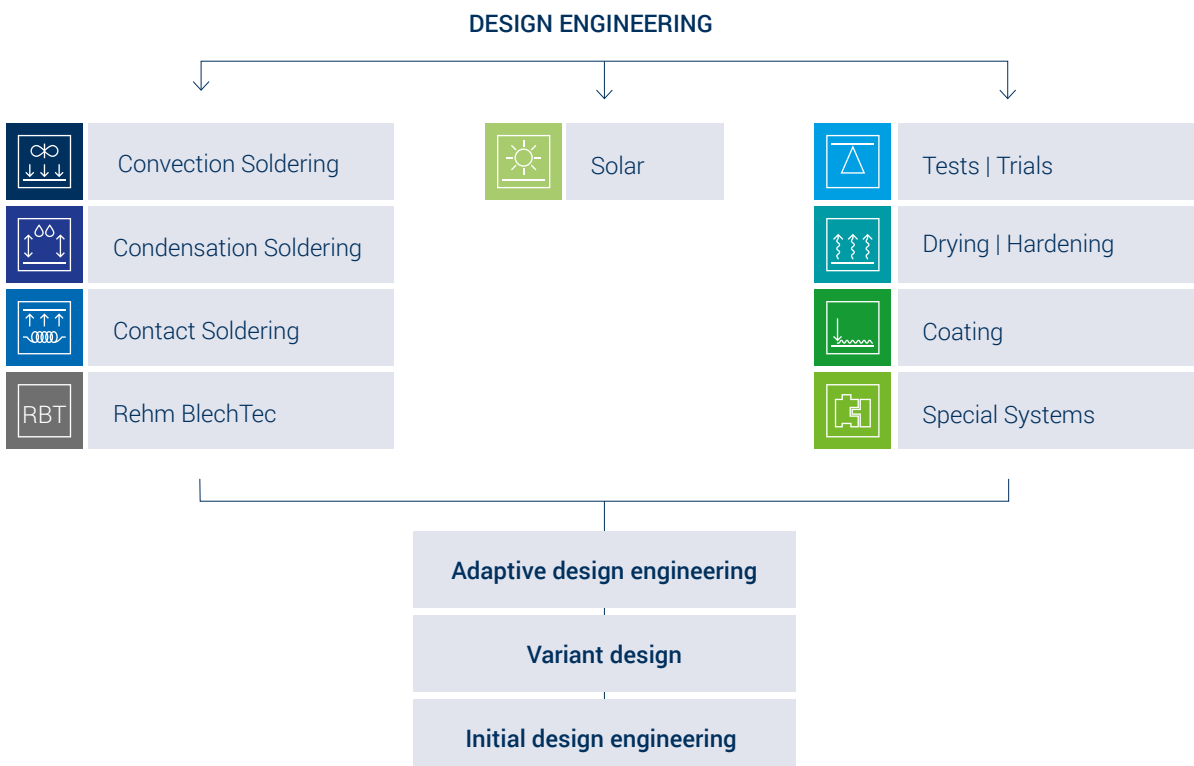
Design of entirely new systems

Rehm's engineers plan the design specifications for the system concept, prototype fabrication and series production with the help of modern 3D CAD software. On the basis of the resultant design models, our systems are then manufactured in the production department. In addition to the highest possible levels of precision and close attention to detail, our work also takes qualitative product and material specifications into consideration, as well as individual customer requests and requirements.

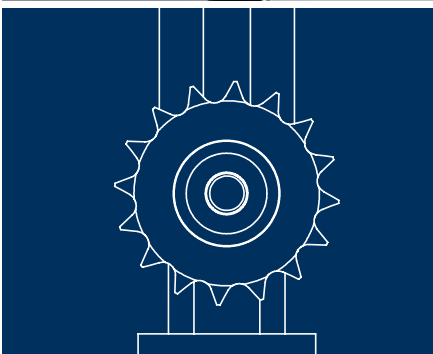
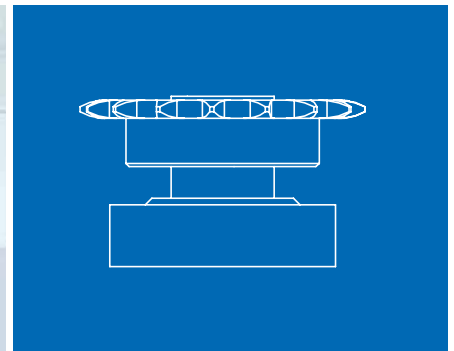
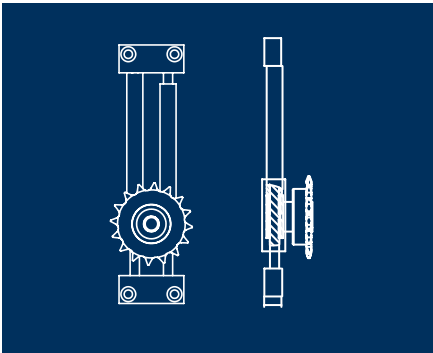
Aside from mechanical design engineering, the feasibility of the systems and capabilities for their production are discussed and evaluated at regular intervals with our electrical engineers, production employees and software developers. This results in suitable systems which are precisely matched to the production environments of our customers and planned right down to the smallest details.

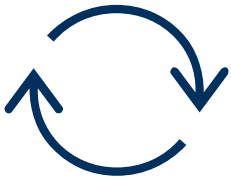
### 3D Design

#### Design engineering at Rehm









**»A motivated team,  
a well-structured sequence and  
perfect interaction are the essential  
ingredients of a good  
manufacturing process!«**

Willi Ott, Production Manager

concerning routine daily production at Rehm





# Made by Rehm

## Exact manufacturing strategies

**Systems from Rehm stand for quality and precision. And thus we produce everything ourselves at company headquarters in Blaubeuren – from coverings through electrical circuits, right on up to final assembly. Rehm BlechTec provides our systems with a foundation in the form of a steel base frame.**

The technicians at Rehm BlechTec manufacture numerous metal parts for our systems with the help of ultramodern machines and process technologies. Steel, stainless steel, aluminum and other materials are used in order to do justice to our high quality standards, and to assure a long service life for the machine.

The manufacturing departments are spread out over roughly 3000 m<sup>2</sup> of production floor space at Rehm. Our standard models are produced in accordance with the lean management system. The goal is to run production in a process-optimized, flexible and error-free fashion, thus assuring an efficient manufacturing sequence. For this reason, our machines are manufactured by means of synchronized

production with high levels of vertical integration. This results in advantages such as better planning for material availability and the ability to closely adhere to our customers' required delivery dates. Our mechatronics technicians, industrial mechanics and gas and water pipe fitters make all of the mechanical and electronic components available for our machines in preassembly. During the course of four work cycles, heating units, the cooling tract, nitrogen supply, the conveyor system, residue management, electronic control components, software and coverings and then assembled into the system. With the help of lean manufacturing we achieve shorter throughput times, are able to maintain our customary high levels of quality and can act in the best interest of our customers as a reliable industry partner.

Special machinery manufacturing provides our customers with special solutions for their individual manufacturing environments. We respond to customer requests and requirements and produce custom tailored systems, which are not otherwise available from the market.



GAS/  
WATER



CABLE ASSEMBLY



BOTTOM HEATING



MECHANICAL SYSTEM



SWITCHING FLAP



RESIDUE  
MANAGEMENT

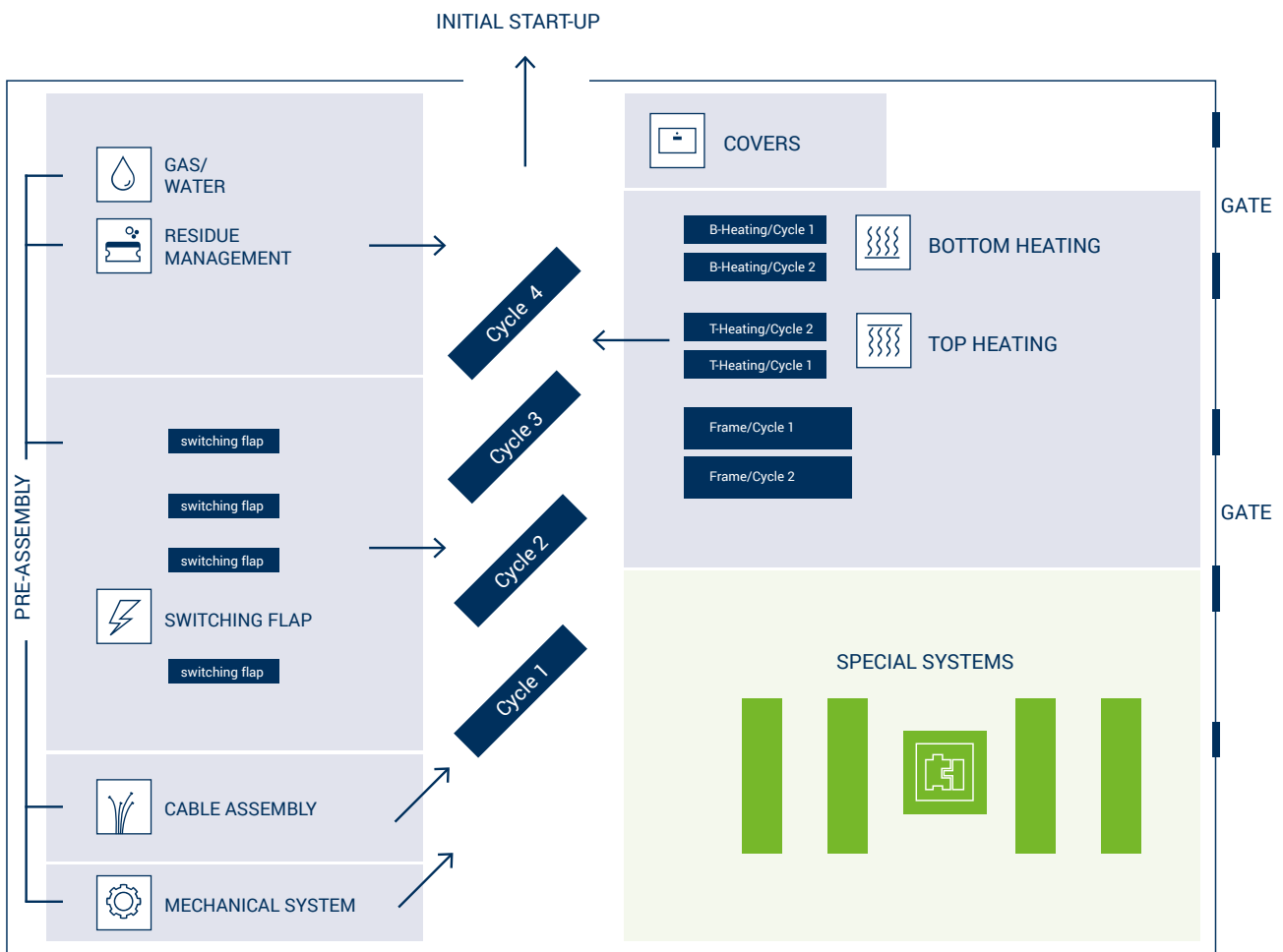


TOP HEATING



COVERS

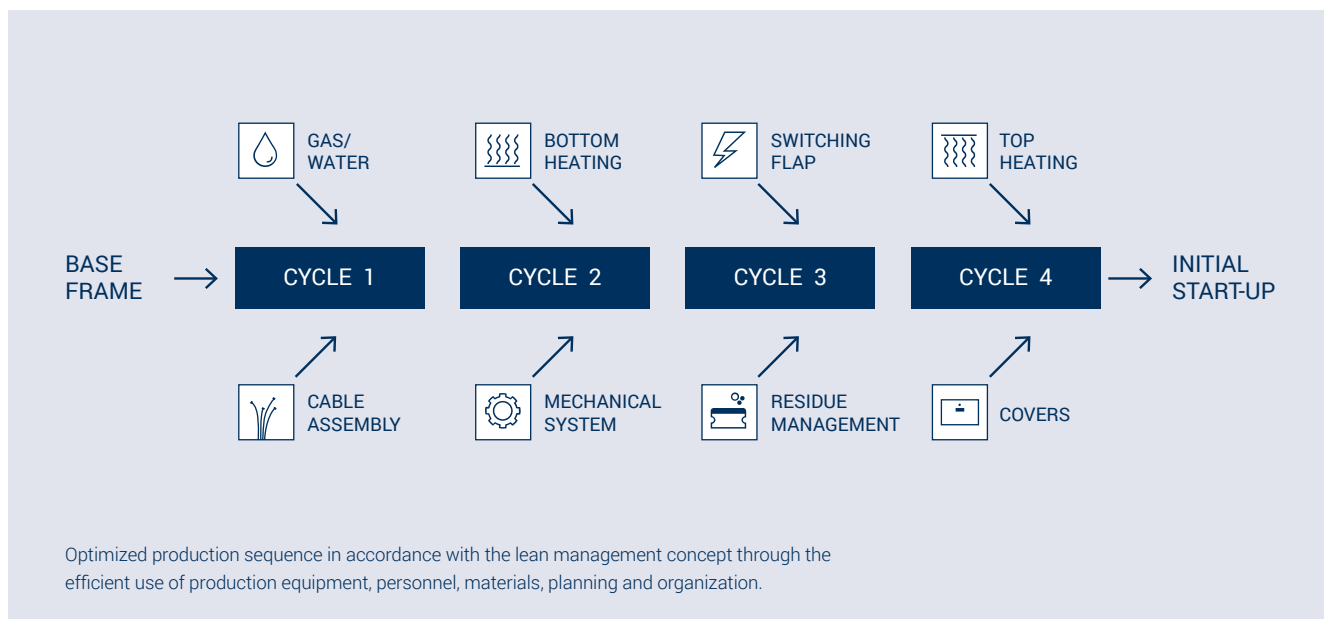




Schematic representation of one of Rehm's production areas with corresponding workstations.

## Lean manufacturing

Everything from a single source



Optimized production sequence in accordance with the lean management concept through the efficient use of production equipment, personnel, materials, planning and organization.







**»Experience the soldering process live! Together we can improve process parameters in order to optimize your production line.«**

VisionXP+ VAC

Reflowlöten mit und ohne Vakuum

Helmut Öttl, Director of Process Development and Application

concerning the Rehm Technology Center



# Technology Center

## Experience the soldering process live.

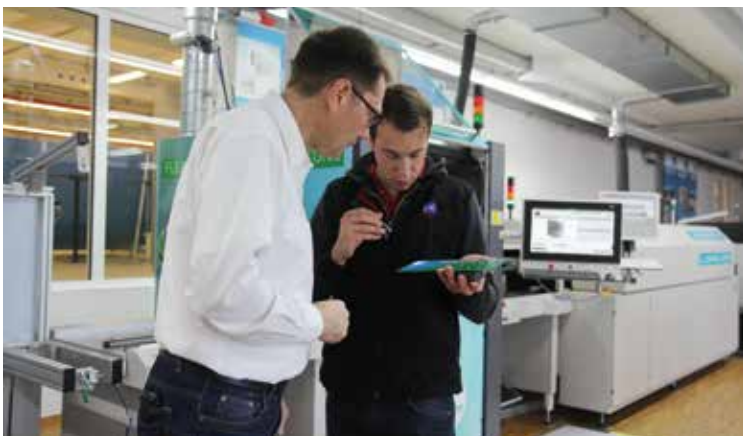


**How can ideal temperature profiles be prepared? Which technology can be used to minimize voids in solder joints? Rehm has the answers.**

Rehm has a high-tech applications and demo center with a total of 460 m<sup>2</sup> of presentation floor space at company headquarters in Blaubeuren. Here, with the help of our application specialists, customers are able to test PCBs in direct combination with convection, vapor phase and vacuum soldering processes, create individualized temperature profiles and ascertain best possible parameter settings for the production process. Our technology center has been

furnished with a complete SMT production line based on the most up-to-date equipment to this end – from paste printer and placement machine, right on up to the reflow soldering system. A complete coating line for selective conformal coating demonstrates the reliable protection of sensitive components against environmental influences. And Rehm has extensive equipment at its disposal for PCB testing and the analysis of test results as well.

Feel free to schedule an appointment by e-mail at [info@rehm-group.com](mailto:info@rehm-group.com) in order to experience the soldering process live at our Technology Center.



### MANUFACTURING EQUIPMENT

- › VisionXP+/Vac, VisionXC, CondensoXS, Protecto and RDS (line), RDS UV
- › Stencils and paste printer
- › Placement system
- › Handling system
- › Cleaning system

### TEST EQUIPMENT

- › Thermal imaging camera
- › X-ray inspection
- › BGA inspector, fly inspector
- › Rework station



## Technology Academy

### Exchange of experience and know-how



**New ideas can only be developed by means of a regular exchange of knowledge and experience with customers and colleagues. Rehm provides you with a forum.**

You can participate in seminars and workshops covering interesting issues from the electronics industry at our Technology Academy. Beyond this, we hold various training events dealing with the technological background information associated with our systems and their use, and provide you with comprehensive consultation regarding all of the relevant processes.

Our speakers are also more than happy to come to your company facilities to offer special training sessions covering your specific issues, for example system technology or machine operation. Interested parties are requested to contact [info@rehm-group.com](mailto:info@rehm-group.com).

#### USER TRAINING

One-on-one or group training for system technology and machine operation

#### PROCESS CONSULTATION

Individual consultation covering profiling, system configuration and error analysis

#### TRAINING | SEMINARS

Theoretical basics and workshops dealing with issues such as soldering technology, vacuum processes and protective coatings

**THE COMPANY**

About Us  
Locations  
Chronicle

**KNOW-HOW**

Research & Development  
Design Engineering  
Manufacturing

**PROCESS CONSULTATION**

Technology Center  
Technology Academy  
Service

**VALUES**

Quality  
Sustainability  
Social Responsibility

## On-site service

We are there for you worldwide.

**We place extremely high demands on the quality of our systems. We want to fulfill these demands with regard to our services offerings well. From Blaubeuren to Atlanta and Příbor, all the way to Szendehely, Dongguan and Guadalajara – we provide you with support and respond to your concerns regarding all aspects of sales and service. Anywhere, all over the world!**

Do you need special consultation concerning our systems, an installation or a replacement part? For us, responsibility doesn't end when the sales deal has been closed! We maintain intensive contact with our customers and suppliers after investment in a Rehm system too. And special attention is focused on very short response times in this respect. Delivery dates, installations and service inspections are firmly scheduled at Rehm. And our service department is available to you around the clock to answer questions about your application – in order to keep your production line running smoothly.



**24 hours**  
a day available

**Service**   
from A to Z

in **24** countries  
on site



### Contact information:

**Service-Center:**

Mon – Thurs 07:00 – 16:30  
Fri 07:00 – 12:15  
service@rehm-group.com

**24h-Service-Hotline:**

Germany +49 (0) 7344 - 9606 511  
China +86 769 8328 0260





## Our guarantee for success: We bank on quality!

**The satisfaction of our customers is our measure for success and it permeates each and every detail of our production system. “Made in Germany” is seen as a guarantee for quality and a success factor, upon which our customer can rely without reservation anywhere in the world.**

We manufacture high quality thermal systems “Made by Rehm” in accordance with German quality standards and established guidelines. Our systems are certified in accordance with the ISO standard at regular intervals, so that each and every part complies with our demand for perfection. Our

subsidiary, Rehm BlechTec, has also been distinguished as a specialized welding shop for many years in accordance with strict quality criteria, and provides outstanding metalworking services for Rehm’s systems. Beyond this, and in addition to compliance with internal specifications and legal requirements, our lived quality management system targeted at optimization and continuous improvement, for example by means of training programs for employees, is of central importance for us. As a result, Rehm does justice to the requirements of its customers in the long-term and is able to maintain business relations on a basis of mutual trust and cooperation.

- › **Regular audits and certification in accordance with the ISO standard**
- › **CE-compliant system planning and design**
- › **Avoidance of errors by means of continuous improvement**
- › **Training in accordance with a defined quality matrix**
- › **Customer satisfaction and customer orientation**






**»We care about sustainability.  
In all of our processes, we deal  
with natural resources in an  
environmentally sound fashion.«**

Günter Dieckmann, Director of Quality Management  
concerning the efficient use of resources at Rehm







Designed for LOW ENERGY consumption



100 % Sustainability and 100 % Efficiency

## Resource management

### Focus on environmental issues

**Sustainability is essential. This trend has long since reached the electronics industry as well. Companies can reduce their energy consumption in the long-term by investing in efficient systems. For us, energy efficiency and resource management are equated with assuming responsibility for our products over their entire lifecycle.**

Our energy concept combines top quality, energy-saving technologies with the requirements of modern manufacturing companies. Tradition meets globalization – we purchase raw materials from suppliers in our own region to manufacture systems which assert themselves successfully in global markets. Minimal materials consumption, reliable recycling and short transport distances, as well as rugged systems with long service lives which can be retrofitted, consume minimal amounts of energy and have low emissions are distinguishing factors of our time-tested quality.

- **Implementation of key measures for the conservation of natural resources**
- **Distinguished with the “Ecoprofit” environmental certificate**
- **Sustainable, CO<sub>2</sub> neutral packaging with Karopack®**
- **In-house company heat recovery system**
- **Corporate environmental protection policy**



## Together. For each other. With each other.

### Social responsibility

**“We’re not only responsible for what we do,  
but rather for what we don’t do as well.”**

(Lao-tzu, Chinese philosopher)

The Rehm Group exemplifies trustful coexistence. We undertake to assure that our company fully complies with the basic principles of all legal requirements, and in particular to work towards this goal by appropriately shaping and adapting our guidelines and processes. Respect for human rights and fair working conditions for our employees at our

worldwide production locations and sales offices, as well as the rejection of all forms of discrimination, enjoy top priority at Rehm.

As an internationally active company, we also assume social responsibility and get involved with social projects of various types in the Ulm region, as well as nationwide. For example, we support schools with technical equipment and organize free time activities within the framework of sponsoring programs.

- › Adherence to essential rules of conduct and corporate compliance
- › Involvement in the nationwide “Future Sports” project
- › Projects and learning sponsorships with schools in the region
- › Training programs for pupils preparing to launch their work careers
- › Sponsoring activities for social institutions





THERMAL SYSTEMS



June 2017 - Technical changes without prior notice, Art.-No. 1105954



## Rehm Worldwide

As a leading manufacturer of innovative thermal system solutions we have customers on every continent. With our own locations in Europe, America and Asia as well as 27 agencies in 24 countries we are able to serve the international markets quickly and to offer outstanding on-site service – worldwide and round the clock!

- Location
- Production facility
- Representation



### Rehm Thermal Systems GmbH

Leinenstrasse 7  
89143 Blaubeuren, Germany

T +49 73 44 - 96 06 0 | F +49 73 44 - 96 06 525  
info@rehm-group.com | www.rehm-group.com