

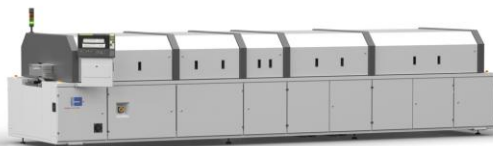
Press Release

10/28/2026

Rehm Thermal Systems Introduces Vision RCC: Three Technologies Combined in an Innovative Reflow Soldering Process

New soldering system combines convection, condensation and vacuum technology for reliable processing of complex SMD assemblies weighing up to 25 kg

Rehm Thermal Systems has launched the new Vision RCC, an innovative reflow soldering system specifically developed to meet the requirements of heavy and complex electronic assemblies. The patented system concept brings together convection preheating, condensation soldering and vacuum technology in an integrated process. The Vision RCC ensures uniform heating, precisely controlled soldering temperatures and solder joints with extremely low void levels – even for assemblies weighing up to 25 kg.



Vision RCC

The demands placed on modern electronics continue to increase. Particularly in power electronics, AI servers and 6G applications, as well as aerospace and humanoid robotics, increasingly complex electronic assemblies are becoming the norm. Large thermal masses, varying component heights and temperature-sensitive components present significant challenges for the soldering process. The Vision RCC addresses these requirements by combining proven technologies in a new, precisely coordinated system concept.

Three Technologies, One Integrated Soldering Process

What makes the Vision RCC unique is the interaction of three coordinated process stages: convection preheating, condensation soldering and subsequent cooling. An integrated vacuum stage further ensures solder joints with particularly low void levels.

In the first process zone, assemblies are uniformly preheated to approximately 210 °C using convection. This reduces temperature differences between lightweight and massive components before the actual

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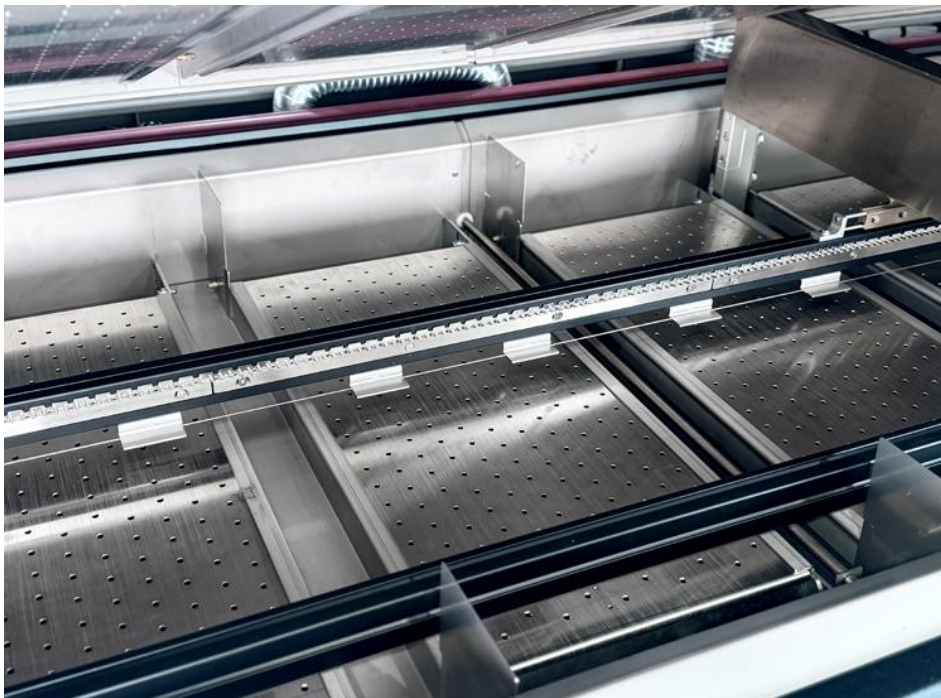
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soldering process begins. At the same time, the Galden® heat transfer medium is also preheated. Together, these measures can reduce the soldering time by up to 50 percent.



Transport for Heavy Boards

The soldering process itself takes place in a closed, vacuum-tight chamber. Preheated Galden® is injected using a patented process and vaporizes at the bottom of the chamber. As the vapor condenses on the assembly, heat is transferred particularly efficiently and uniformly.

One of the key advantages of condensation soldering is that the maximum soldering temperature is physically limited by the boiling point of the heat transfer medium. While smaller components reach this temperature more quickly, larger thermal masses can gradually catch up without overheating. This results in a highly uniform temperature distribution across the entire assembly, even when components have significantly different thermal masses.

Vacuum Technology for Solder Joints with Extremely Low Void Levels

Another distinctive feature of the Vision RCC is the combination of condensation soldering and vacuum treatment within the same process chamber. Once the solder has melted, the Galden® is extracted and returned to the closed-loop system. The vacuum process then follows without any need to move the assembly.

This significantly reduces gas inclusions in the solder joints. Under suitable process conditions, void rates of less than two percent are achievable. This is particularly important for electronic assemblies with demanding requirements for thermal performance and long-term reliability.

The amount of Galden® introduced into the chamber can also be precisely controlled, allowing the temperature gradient during soldering to be adjusted to specific requirements. This provides additional flexibility when processing different assembly designs and materials.

Safe Handling of Heavy Assemblies Without Additional Carriers

The Vision RCC has been specifically engineered to handle large and heavy electronic assemblies. A three-part transport system enables products weighing up to 25 kg to move safely through the individual process zones without the need for additional carriers.

While preheating and soldering operate in a synchronized, cycle-controlled process, the separate cooling section operates independently. This allows cooling gradients and exit temperatures to be adjusted according to the requirements of the individual application.

The system also offers flexibility in terms of process atmosphere. Depending on the application, soldering can be performed in air or under nitrogen with a residual oxygen content of less than 100 ppm.

The carefully coordinated interaction of the different technologies enables gentle processing of both lightweight and massive components. At the same time, it creates the conditions for stable and reproducible soldering results, even with demanding assemblies.

Resource-Efficient and Designed for Connected Manufacturing

In addition to soldering quality and process reliability, resource efficiency played an important role in the development of the Vision RCC. The system uses a closed-loop Galden® circuit in which the heat transfer medium is fully purified after each soldering cycle and returned to the process. This minimizes consumption and supports cost-efficient operation.

For intuitive operation and transparent process control, the Vision RCC is equipped with Rehm's ViCON operating and control software. Its user-friendly touchscreen interface allows operators to control and monitor the individual process stages. Functions for traceability, process analysis and MES connectivity support integration into modern, digitally connected manufacturing environments.

New Possibilities for Demanding Electronics Applications

With the Vision RCC, Rehm Thermal Systems expands its portfolio with a reflow soldering system specifically designed to meet the challenges of future generations of electronics. Wherever high assembly weights, complex component configurations and widely varying thermal masses come together, the combination of convection, condensation and vacuum opens up new possibilities for reliable and cost-efficient manufacturing.

With the Vision RCC, Rehm Thermal Systems demonstrates how different soldering technologies can be combined into one integrated process concept – delivering uniform temperature profiles, high soldering quality and future-ready electronics manufacturing.

About Rehm Thermal Systems

Rehm Thermal Systems is an expert in joining technologies for electronics manufacturing. With innovative system solutions for soldering, drying, and coating, we enable our customers to create reliable connections on electronic assemblies – tailor-made, process-safe, and future-oriented. Since 1990, we have been developing and manufacturing energy-efficient production equipment to the highest quality standards at our headquarters in Germany and at an additional production site in China. Our global subsidiaries and distributors provide customized solutions and competent service – wherever electronics are made.

Create your Connections – with Rehm, you shape the joining technology of tomorrow.