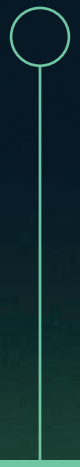
ENRX

Sinac®

STATIONARY INDUCTION HEATING SYSTEMS



Tailored induction heating for any task

Sinac is ENRX's range of complete stationary induction heating systems. Each Sinac includes a frequency converter, capacitors and, where necessary, a matching unit. All Sinac coils – the components that actually deliver heat to the workpieces – are custom-designed to best suit your specific applications and conditions.

Maximum productivity

Automatic frequency control maintains optimum output power throughout heating cycles. Output power can also be continuously regulated either manually or with standard external controls. Easy operation, small footprints and proven reliability help maximise equipment uptime and output.

Improved quality

Sinac delivers the quality-improving benefits of modern induction heating: precise, no-contact, controllable heat with reproducible temperatures and ramp-up and dwell times. Better quality also reduces costs by minimising scrap and re-working.

Operational flexibility

Sinac's wide range of systems and technical features let you choose a solution that's just right for your particular needs. Thyristor, IGBT and PowerMOS inverters are available – as are various rectifiers and matching and control systems, for example automatic load matching.

Unrivaled efficiency

Diode rectifier with a constant power factor of 0.95 at all power levels, and an efficiency factor of 85–87%.

The way to your Sinac

Sinac is used in various applications such as pre- and post-heating, welding, molding, brazing, hardening, bonding and shrink-fitting. You find customised Sinac induction systems in almost any industry, from automotive and electrotechnical to renewable energy and tube and pipe. How would we find the right Sinac for your application? Let's take a closer look.

Designed for your needs

Your inquiry regarding a heating system is handled by our sales support team, who possess the knowledge and experience to address all types of requests. Once we complete the evaluation process, our test lab is usually a good starting point for a project, and you are welcome to participate in the procedure. When the testing is done, you get a report with all the results and a recommendation on how to proceed. For brazing and shrink-fitting applications, it is also common for us to send the test part(s) for inspection.

Another option is to let our R&D department sort out what kind of coil design and frequency converter you need for your heating application. This approach is typically used in large projects and for customers who already know ENRX well.

What you get is a Sinac adapted to your application. Expect the desired heat distribution pattern and a high efficiency for your heating procedure. The compact frequency converter design is beneficial in tight production spaces, and the converters also have a long lifespan. A modern touchscreen makes daily operations easy, and remote services (optional) can save you lots of time and money.

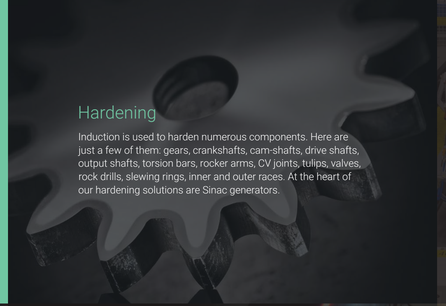
A wide range of technologies

ENRX employs several technologies to make Sinac work for your specific heating task. We offer a complete line of Sinac models equipped with parallel and serial compensated converters, delivering continuous output power ratings and frequencies ranging from 6 to 2,000 kW and 500 Hz to 400 kHz. Moreover, we master different methods resulting in high efficiency, including SiC semiconductor technology.

Regarding communication systems, we can integrate with most industry standards, for example, Ethernet, Profinet and Profibus, and also deliver local WiFi for remote service and other wireless applications.

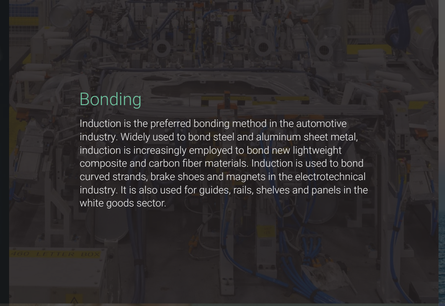
Employed worldwide

Sinac systems are hard at work at hundreds of plants around the globe. Sinac is ideal for virtually all applications and suitable for heating all kinds of electrically conductive materials. Here is a very partial list.



Hardening

Induction is used to harden numerous components. Here are just a few of them: gears, crankshafts, cam-shafts, drive shafts, output shafts, torsion bars, rocker arms, CV joints, tulips, valves, rock drills, slewing rings, inner and outer races. At the heart of our hardening solutions are Sinac generators.

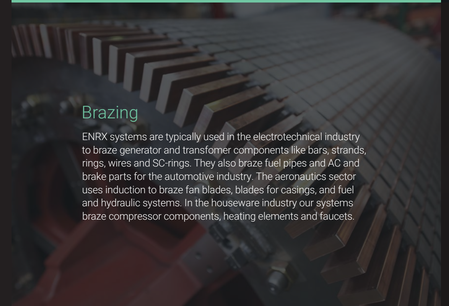


Bonding

Induction is the preferred bonding method in the automotive industry. Widely used to bond steel and aluminum sheet metal, induction is increasingly employed to bond new lightweight composite and carbon fiber materials. Induction is used to bond curved strands, brake shoes and magnets in the electrotechnical industry. It is also used for guides, rails, shelves and panels in the white goods sector.

Pre-heating

The reasons for pre-/ and postheating vary from industry to industry. Cable cores are preheated before insulation extrusion. Steel strips are preheated prior to pickling and zinc coating. Induction preheating also softens metals before bending, and prepares tubes and pipes for welding.

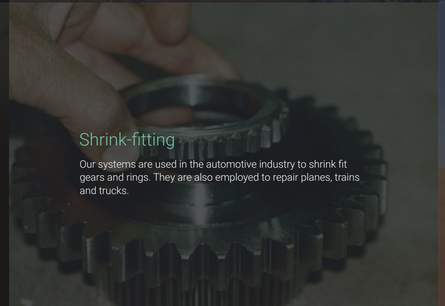


Brazing

ENRX systems are typically used in the electrotechnical industry to braze generator and transfomer components like bars, strands, rings, wires and SC-rings. They also braze fuel pipes and AC and brake parts for the automotive industry. The aeronautics sector uses induction to braze fan blades, blades for castings, and fuel and hydraulic systems. In the houseware industry our systems braze compressor components, heating elements and faucets.

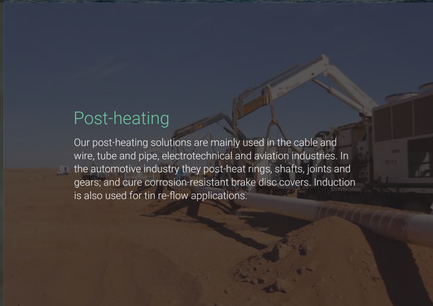
Annealing

Induction annealing and normalizing is widely used in the tube and pipe industry. It also anneals wire, steel strips, knife blades and copper tubing. In fact, induction is ideal for virtually any annealing task.



Shrink-fitting

Our systems are used in the automotive industry to shrink fit gears and rings. They are also employed to repair planes, trains and trucks.



Post-heating

Our post-heating solutions are mainly used in the cable and wire, tube and pipe, electrotechnical and aviation industries. In the automotive industry they post-heat rings, shafts, joints and gears, and cure corrosion-resistant brake disc covers. Induction is also used for tin re-flow applications.

Prepared for Industry 4.0

With easy updates to new features, your equipment is prepared for developments within advanced analytics and predictive maintenance, interconnectivity, condition monitoring and alarming, automation and real-time data, machine learning, and remote service and augmented reality.

CE

All Sinac products meet all the legal requirements for CE marking.

An eco-friendly technology

Induction heating is an inherently clean process. It is far more energy-efficient than other heating alternatives. It does not emit carbon dioxide. It eliminates open flames, reduces the need for fuel and transport, and promotes safer, healthier workplaces.

What is induction heating?

Induction heating is the process of heating electrically conductive materials, such as metals, by letting an alternating current create a magnetic field around a coil. When you place an object inside the coil, the object is immediately heated. The heat is generated into the object itself instead of by an external heat source via heat conduction.

ECO & ENERGY FRIENDLY

Fast

The produced heat in induction heating is instant. It takes less than one second to achieve a uniform surface temperature of 1,000°C on small metal components.

Accurate

The right temperature is delivered precisely where it is needed. Customised coils ensure optimal heat patterns with minimal energy consumption.

Controllable

Transistorised induction heating systems and process control software deliver complete control over the entire heating process.

Repeatable

Induction heating can accurately repeat the desired heating cycle, including key parameters such as temperature, penetration depth and heat pattern.

Clean, safe and compact

No gas, no open flames, no noticeable increase in ambient temperature and no excessive floor space occupied by furnaces.

A family for every need

Sinac is one of six product families within ENRX induction heating solutions. Together, these product families let you perform virtually any industrial heating task. In the unlikely event they don't meet your specific needs, we can sit down with you and devise your own customised induction heating solution.

ENRX also develops, commercialises and supplies mechanical handling equipment, coils and software control systems. We also offer a worldwide service program. To learn more about ENRX – and how we can help your business – please contact your nearest ENRX office.

Sinac®	Universal heat generators
Weldac®	High-output solid-state welders
Minac®	Mobile heat generators
Ventac®	Portable air-cooled induction heating system
HeatLine®	Industrial heat processing systems
HardLine®	Industrial heat treatment systems

More about our products, applications and the industries we serve.

Get in touch

info@enrx.com

About ENRX

ENRX is a global green tech company driven by induction. We offer induction heating, wireless inductive charging and contactless power supply with low or no carbon footprint for virtually any application within mobility and manufacturing.

THE RIGHT ENERGY CAN TAKE YOU ANYWHERE • ENRX.COM

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