



BACKER



LIFE SCIENCE SOLUTIONS

SAFETY · RELIABILITY · TEMPERATURE CONTROL

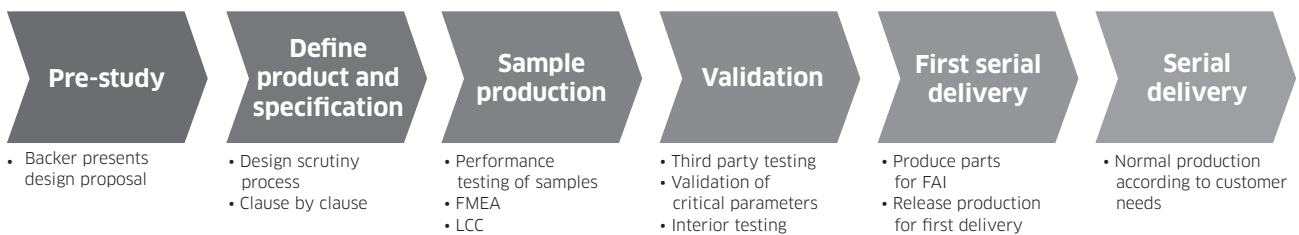
BACKER LIFE SCIENCE SOLUTIONS

Backer Life Science Solutions is a cooperation between companies within the Backer Group, providing solutions and technology for the life science sector. Backer life science wants to make it easy for customers and partners to get high quality solutions for a wide spectrum of heating related life science applications. The solutions cover both heating components, complete systems, resistor solutions and intelligent control systems. Backer life science solutions is your single point of contact and inspiration in the heating related life science industry.

Backer Life Science Solutions:

- Different heating and resistor technologies for optimal cost and technical solutions
- 60 years of accumulated competence and experience in the life science industry
- International organization with local presence
- Many specialized R&D departments to bring new innovative solutions to the market
- Customized solutions fulfilling special requirements
- Strong focus on components and systems for sustainable energy solutions

PRODUCT DEVELOPMENT



QUALITY

We strive to deliver the highest quality products combined with a flexible way of working. This permeates the whole process from sales, product development, manufacturing, customer service and logistics. Backer delivers products that meet all relevant standards and tests, certifying products according to customer specifications. We also have possibilities to carry out tests in modern labs, constantly improving our product performance and energy efficiency.

DID YOU KNOW?

The majority of all companies in the Backer Group are ISO certified and all of the companies will be by 2020.

ISO 9001 · ISO 14001



TECHNOLOGIES



Tubular Heating Elements



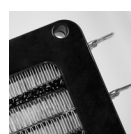
Printed Elements



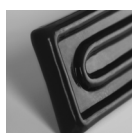
Supported wire Elements



Measurement & Control



PTC Elements



IR & Halogen Elements



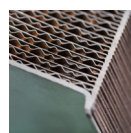
Heating Cables



Suspended Wire Elements



Heat Pump Technology



Special



Innovations for the future

A partnership with Backer gives you a dedicated team of designers, project engineers and technical experts in the fields of electric heating, measurement and control, ready to provide you with the optimal solutions for your needs.

HEATING COMPONENTS

FLEXIBLE FOIL ELEMENTS

Flexible, lightweight and space-saving

Flexible elements, or foil elements, offer many advantages, beside the fact that the material is flexible. Examples include the ability to have multiple circuits or multiple voltages in the same element, or the ease of locating a sensor. Foil elements provide excellent thermal transfer where you need it most. They are used in thermal control design to protect components under cold-case environmental conditions or to make up for heat that is not dissipated. Foil elements are a space-saving, efficient alternative to applications where precise heat and maintaining exact temperature are important. They are supplied in various materials such as Polyimide, Polyester, Silicon, PTC and Mica.

Benefits

- Thin, flexible & lightweight
- Customized shape
- Multiple temperature zones
- Efficient heat transmission
- Simple assembly
- Wide material selection

Technical specifications

We offer standard products as well as fully customized solutions

Voltage: Up to 1000V

Power density: From 0 to 5W/cm²

Max temperature: 600°C



Infusion bag heaters

The heater is integrated into the bag and together with our temperature controller, the infusion liquid maintains the required temperature.



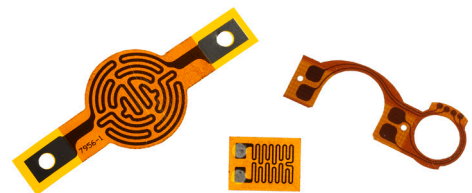
Defibrillator heaters

Our heater automatically starts to heat the cabinet when the temperature drops below 10° C to ensure that it functions even in cold environments. The heater is also supplied with LED lights and an integrated temperature control.



Anesthesia heaters

We customize the heat so it is exactly in the right spot, for both temperature and range. Vaporizing moisture and keeping the right climate are important. By using a flex foil with an integrated controller, we can optimize and ensure proper functioning.



Heaters for Alcohollocks & Inhalators

Our heaters allow exact humidity control. With flexible foil, we can customize heaters in different shapes and very small sizes to fit your application perfectly.



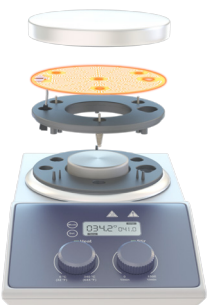
Surgery beds/Incubator heaters

The operating table heater keeps the patient warm during an operation and the incubator heater warms newborns or premature babies and maintains a temperature of 37°C with the integrated temperature control.



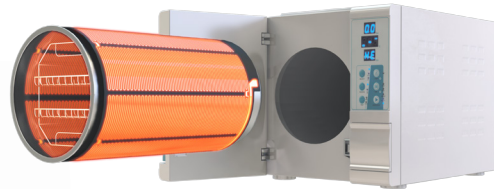
Test-tube heaters

Heaters for applications that require small, exact and direct heat. Our heaters are good for applications that need the heater to route around tubes and have different power zones.



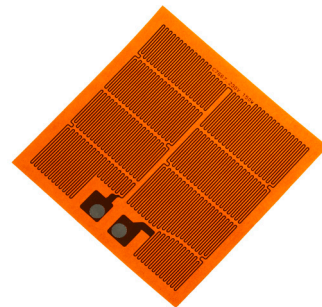
Magnetic stirrer heaters

Our heaters are placed between the metal plates and maintain an even temperature. The heater is customized to provide a reliable, quick heating time for the stir plate.



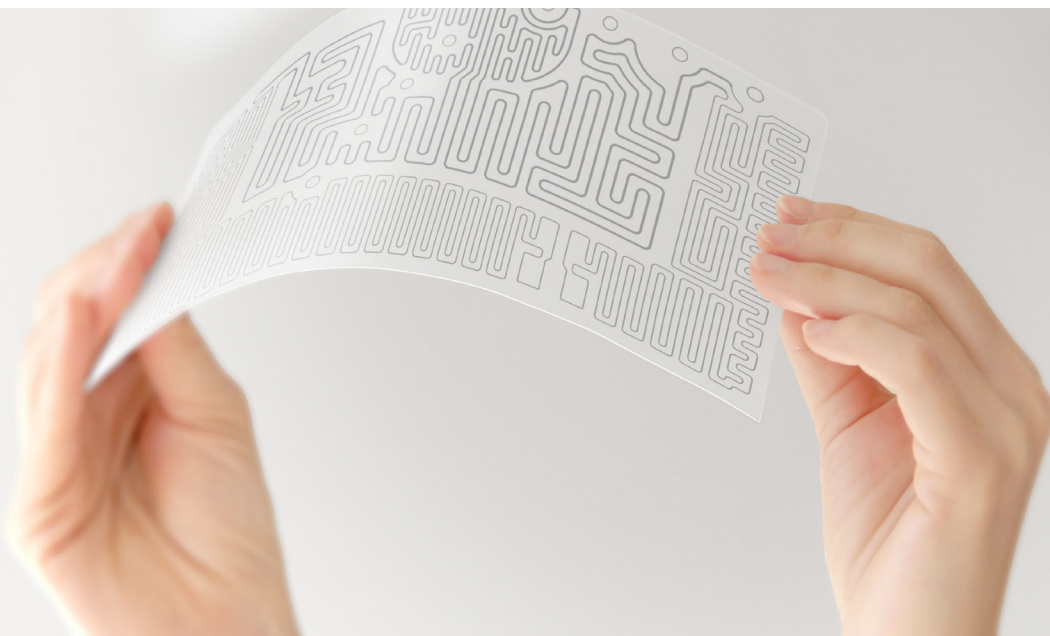
Autoclave heater

Our flexible foil heaters can be used as booster heaters and for applications such as autoclaves and vaporizers. Our heaters prevent dripping from the top of the vessel and speed up the cycling time.



In vitro fertilization heaters

Maintaining an exact temperature is critical. This can be achieved with a combination of foil heating and accurate temperature control.



TUBULAR ELEMENTS

Endless possibilities

Tubular heating elements can be used for several different applications which require a uniform heat source over a distributed area. They are very versatile and can be designed with wide range of diameters, lengths, materials and voltage ratings. The flexibility of these heating elements allows them to be formed into virtually any shape, including precision forming for a tight fit into milled grooves of manifold surfaces. Tubular heating elements provide an economical, robust, and versatile heat source. The precision fit optimizes heat transfer to the working surface. These tubular elements can be clamped, immersed, cast into metal or spaced away from the work as radiant heaters. They can also be positioned in ducts or vessels for heating air, liquids or gases.

Benefits

- Well established safe technology
- Endless possibilities
- Robust

Technical specifications

We offer standard products well as fully customized solutions.



Tubular elements

- Diameters: 6,4mm / 8,5mm / 14,0mm
- Welded or brazed into flange
- Can be equipped with sensor tube for thermostat, safety cut-off or thermistor
- Can be equipped with wire harness according to customer's choice
- Tube materials: 1.4404 / 1.4547 / 1.4876 / 2.4858



Dialysis equipment

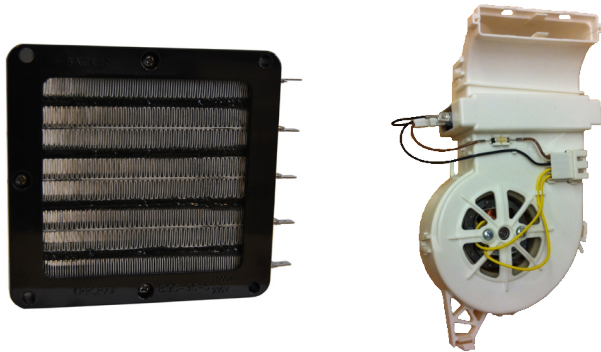
- Protection Class II, fulfilling EN 60601-1-11 for home dialysis equipment
- Tube diameter: 14mm, 16mm
- Tube material: 1.4404 / 1.4539 / 1.4547 / 1.4876 / 2.4858
- Can be electro-polished
- Possibility for built-in sensor tube
- Can be equipped with spot-welded wires according to customer's choice

Through-flow-heaters / Complete boilers / Steam generators

- Tubular stainless steel elements, welded into stainless steel tanks.
- With leakage guarantee
- Can be equipped with sensor tube for thermostat, safety cut-off or thermistor
- Can be equipped with wire harness according to customer's choice

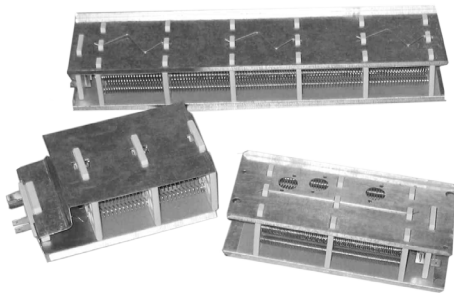


TUBULAR ELEMENTS FOR DISINFECTION & STERILIZATION EQUIPMENT



PTC-elements for the drying process after washing

Backer can offer both separate PTC elements, as well as complete units in plastic housing with fan and air channels. The PTC-technology is self-regulating, and can eliminate some temperature control components in the system. As the temperature increases, so does the resistance of the PTC-chips, and the power is thereby reduced.



Open coil heaters for the drying process after washing

For high power and high efficiency, for operation in combination with a fan. Can be equipped with thermostats and safety cut-offs. Can be equipped with wire harness according to customer's choice.



VACUUM BRAZING

Vacuum brazing process is a unique method to join parts

Vacuum brazing is an excellent joining method to form gas-tight and corrosion resistant seals which are mechanically strong. As the base materials do not melt, it is possible to unite complex designs where thin parts with narrow tolerances are used. Brazing is done in high temperature under high vacuum which leaves a clean finishing on parts without the need of post-process treatment. These are some of the reasons why this method is preferred especially within the aviation, life-science, food- and medical industries.

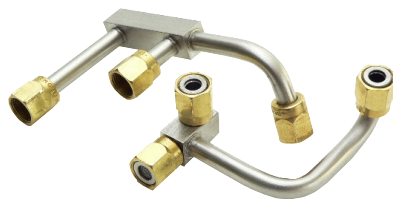
Benefits

- No corrosion sensitive brazing flux needed
> Outstanding corrosion resistance
- Uniform heat treatment without thermal stress
> Leak proof structure of brazing seams
- No cleaning treatment (e.g. pickling) needed
> Cost effective and no risk of cleaning agent residues
- Most effective method to join complex structures
> High quality and repeatability



Heating baths

In most cases heating element is brazed underneath a steel bath which is used for e.g. distilling, heating and tempering. This indirect heating method prevents hot spots and allows easy cleaning inside the bath. Various materials available and add-ons as thermostats, cut-outs, harnesses.



Distribution blocks

Designed to distribute liquids inside various appliances. Seams are brazed under vacuum to perform reliable leak proof design and to give high corrosion resistance.



Heating vessels

Can be used as a steam generator and liquid heater e.g. in sterilization equipment. Tubular heating element is brazed outside (indirect heating) or inside (direct heating) the vessel. Indirect heating gives even heat transfer into the media and direct heating is more effective and faster to heat up. Vessels can be delivered with various materials and bespoke connections. Also thermostats and other controls available.



THICK FILM ELEMENTS

Quick heating, stable and high efficiency

Thick film heating elements feature a quick temperature rise, an extremely low thermal capacity and minimum temperature fluctuations. Their high efficiency of 70 - 95% depends on the mode of operation (direct or indirect heating). The substrate (printing area) must be flat, but can be of various shapes and can contain openings manufactured in advance (before the printing process).

Benefits

- The element on sheet ensures significantly better heat transfer to flat wall as compared to tubular element
- Quick temperature rise time - energy savings
- Possible high surface load - tens of W/cm²
- Inner surface of heated vessel remain smooth and easily washable
- Very suitable for heating of aggressive liquids
- No need to discharge the vessel content during maintenance
- Heating through sufficiently large area may effectively prevent burning of content to the vessel surface

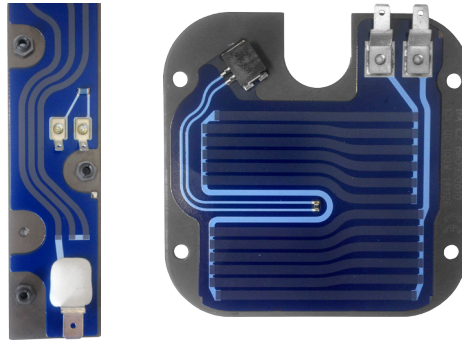
Technical specifications

Voltage: Customized to request, up to 400V
Power density: From 0 to 50W/cm²
Max length, width, diameter: 200mm
Max temperature: 350°C



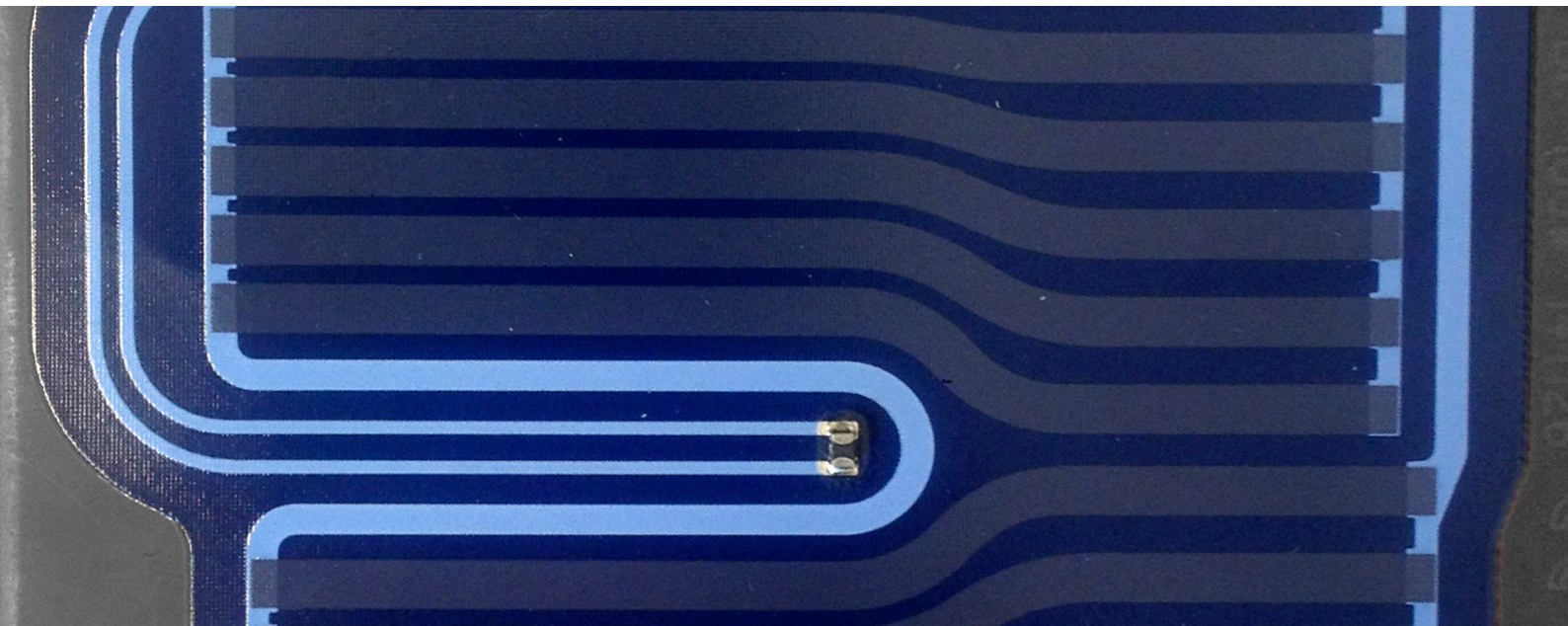
Packaging machine heaters

Process control is important in a modern production line. Backer can supply reliable heating solutions for most plastic and packaging machines and for other equipment. Our knowledge makes it possible to engineer the heat to be at your tool or in the melt at your blisterpack.



Ultrasonic cleaner heaters

Heating of the vessel for degreasing and ultrasonic cleaning.



TEMPERATURE CONTROL

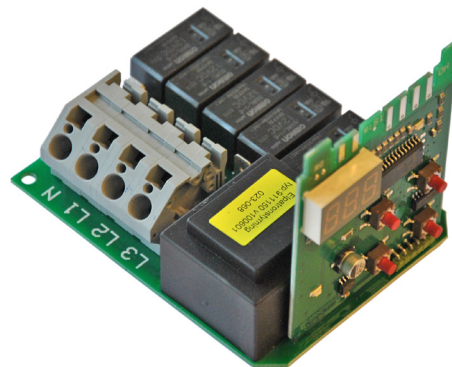
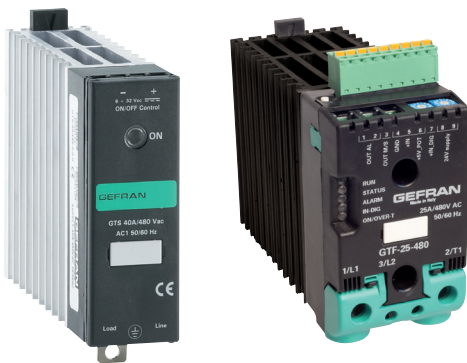
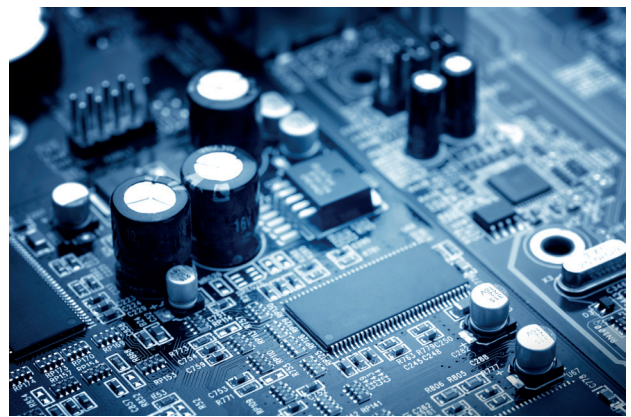
ELECTRONIC CONTROL SYSTEMS

Temperature control

It is usually necessary to arrange some form of control to ensure that the desired temperature is maintained. Accurate temperature control is therefore needed. This can be achieved with electromechanical thermostats of bimetallic type when temperatures and surface ratings are low, while electronic thermostats are preferred when temperatures and surface loads are high. We can fit thermostats, temperature fuses and sensors of thermo element type, thermistors and resistance sensors directly to elements in accordance with customer specifications. This helps to ensure reliable control.

Integrated temperature control

Heaters are used with thermostats, NTC, PT100/PT1000 sensors, thermocouples, solid-state or digital controllers to provide exact temperature control of a particular component. The demand for smart simple solutions creates new applications and we can offer solutions with integrated thermal controllers and sensors communicating through RS232, WiFi or Zigbee.



Motorcontroller

- Soft Starter
- Soft Starter with brake
- Compressor Soft Starter

The P-Line range of Soft Starters covers a wide spectrum from 0.1 – 110 KW motors, making them ideal for a variety of Soft start/stop applications.

The units incorporate an optional High Torque Kick start feature, the initial torque is adjustable by the user and the units offer fully adjustable start and stop ramp times.

Inverters

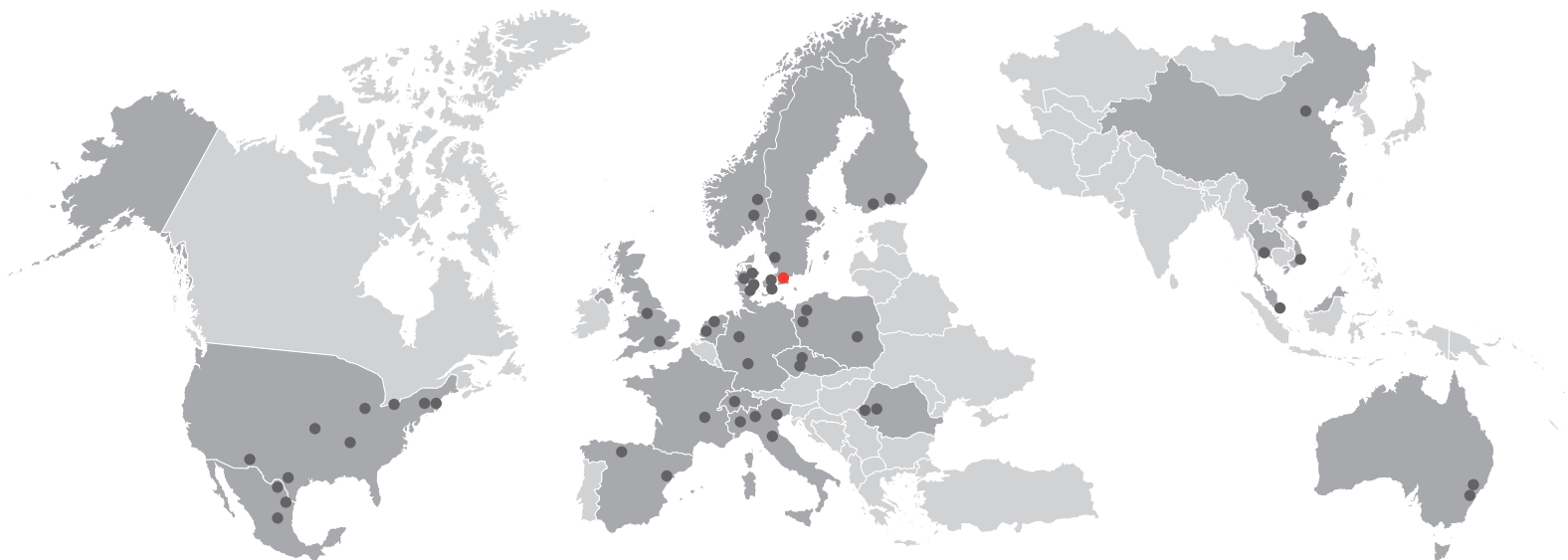
We supply electronic control systems to meet the high demands of control and safety of the automotive heating devices. Our control systems are designed according to customer requirements and to ensure that safety and valid regulations are met.

CUSTOMIZED SOLUTIONS

Backer supports many segments of the Life Science /Analytic industry. We recognize the importance of technological advancements and are developing and designing heating solutions that will work in the medical field. Our knowledge and expertise in heating products will allow us to produce a heater that meets your heating specifications. Among our customers, you will find globally known companies.



BACKER WORLD WIDE



NORTH AMERICA

EUROPE

ASIA/OCEANIA

BACKER GROUP

Backer develops, produces and sells customized solutions and components for electric heating, measurement and control. The original technology was stainless steel tubular elements, however the Group has developed and acquired technologies that have made Backer the worldwide leader. Our product range today is comprised of materials such as; aluminium radiators, cast, ceramic, thick film and other flexible elements along with a wide range of control products. Backer is com-

prised of more than 30 production units that together contribute to the company's vast technical expertise.

Backer delivers heating and control solutions to businesses in industries such as HVAC, Transportation, Energy & Environment, Home Appliance, Industrial & Projects, Advanced Technology and Commercial Equipment; all with their specific requirements and needs for customized solutions.

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EVERYDAY · EVERYWHERE