



**Heating systems for composites
and industrial applications**

EXPERTISE IN HEATING PLATEN TECHNOLOGY + SERVICE

Welcome,

and thank you for taking an interest in our company.

ELKOM Elektroheizplattentechnik GmbH provides important developments and high-quality products in the fields of veneer press heating and heating/cooling platen and vacuum technologies. So look no further if you require individual technical advice and innovative solutions to these issues.

Please contact us: We will be happy to assist you and look forward to rising to your challenge.

Angelika Uphoff
Managing Partner



The competence

Numerous patents and utility patents are testament to the company's innovative strength. Satisfied ELKOM customers worldwide rely on individual technical advice, on a professional realization and on committed service. Their trust obliges us to deliver top performance.

Discerning customers from the industry and from composite processing value the individuality and our experience of more than 30 years in fields of application such as aerospace, automotive, construction industry, building technology, plastics processing, mechanical engineering, and medical engineering.

Thomas Schalm
Managing Partner

The know-how

ELKOM quality covers the entire manufacturing process: from design-engineering CAD/CAM handling to state-of-the-art five-axis machining centres for parts up to 2500 x 6000 mm, to final production and assembly, commissioning and service.

The philosophy

Working in close cooperation with customers and suppliers, outstanding product quality and committed service make ELKOM a globally recognized partner in many sectors of the industry.

“**ELKOM** products are the fruit of a long international experience in combination with innovative impulses from research and teaching.”

“This is what **service** means to us:
Developing intelligent solutions to your challenges.
Transparent project planning, efficient execution,
pinpoint delivery.”

Competent advice

Our team will accompany you through changes, support you in the implementation of new systems, and advise you on the basis of accumulated know-how and years of experience.

Individual realizations

We love challenges: For individual special designs and products with special voltages you will be in good hands with us. We plan carefully, organize and realize accurately – just like you would expect from us.

Your project from A to Z

From advice to project planning and manufacture to delivery, assembly and commissioning: We are at your service and manage your project in a comprehensive and reliable way.

The system advantages of **heating platen technology**

High cost effectiveness

ELKOM products are easy to operate and stand out for their fast operational readiness. They will convince you because both cost and performance are just right.

Serial quality

We only work with high-quality aluminium alloys. All surfaces come with wear-resistant gold-coloured hard-anodized finishing as standard. Your benefit: minimal cleaning and maintenance effort, optimal scratch and abrasion resistance. The combination with our solid ELKOM high-pressure insulating plate makes a pressure-resistant, high-strength compound.

Flexible modular system

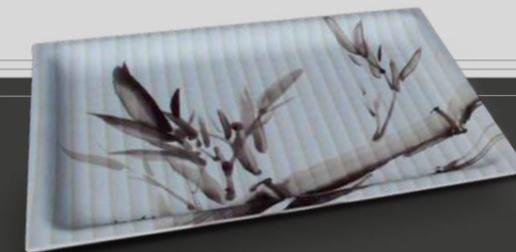
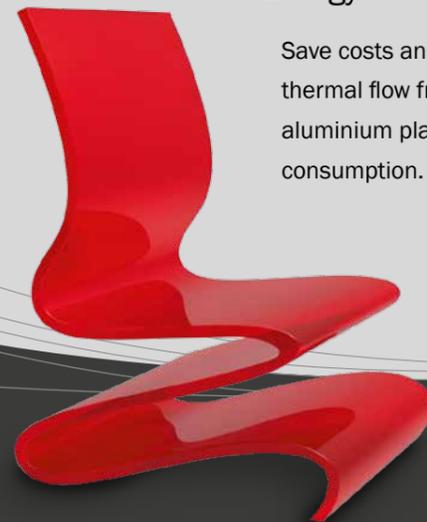
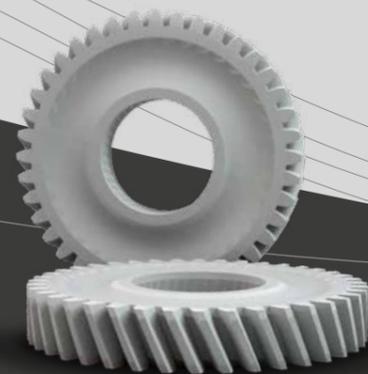
ELKOM provides top service: In case of surface damages caused by operating errors all components can be replaced individually and at a reasonable price, fast and without fuss.

Energy efficiency

Save costs and resources at the same time: The 100% thermal flow from the heating conductor to the solid aluminium plate allows for particularly low power consumption.

Responsibility & sustainability

Our state-of-the-art manufacturing processes save the environment and resources. Consistent recycling of all materials is a matter of course in our house. From product engineering to waste disposal: We consider and optimize all social and environmentally relevant aspects.



“The wide range of configuration possibilities
of our products enables every company to have individual applications.”

Practical pre-tests for your innovative technologies and new materials:
Only at **ELKOM**.



One-of-a-kind in the industry: The ELKOM **Test and Training Centre**

Come and benefit!

We actively support you in the development of new production processes. In our Test and Training Centre you can subject new or projected technologies to a test run with your own material.

We provide you with different test machines and devices, and we are on hand with help and advice.

Diverse target groups

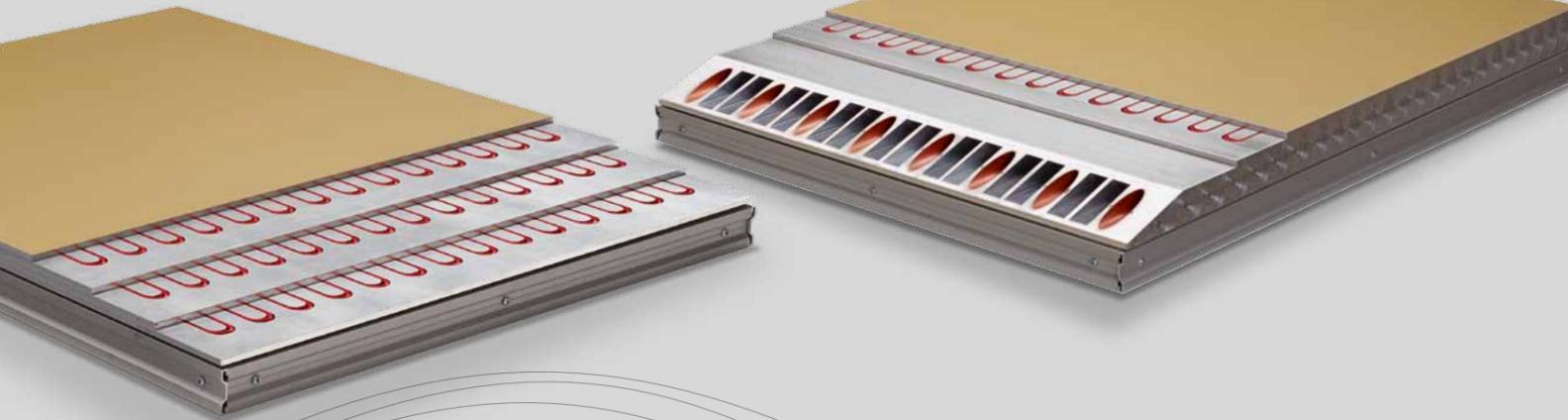
Whatever material you work with – plastics, polyurethane, glass or composite materials, for special solutions for tempering and vulcanizing, restoration of paintings, etc. –, our Test and Training Centre is always worth a visit. Please feel free to make an appointment.



ELECTRICAL SPECIAL HEATING PLATEN

For customized applications in all sectors of the industry

- High-quality, pressure-resistant construction: We only work with high-quality aluminium alloys in combination with our solid ELKOM high-pressure insulating plate.
- No standardization: We plan, design and manufacture in accordance with the physical requirements of the application (pressure – temperature – cycle time – stress caused by forming – surface precision).
- Exclusive ELKOM safety heating conductor system (DBP 4239568), embedded in precisely milled grooves. Shock-, impact-, vibration-, and wear-resistant.
- Gold-coloured hard-anodized surface as standard. This ELKOM development makes the surface abrasion-resistant and easy to clean.
- State-of-the-art machine tools, i.e. we can offer the heating platens with bores, apertures, pressure air/ vacuum channels, welded attachments, recesses, or with complete surface treatment.



Technical data:

Standard sizes:	200 x 200 mm - 4000 x 2000 mm Larger surfaces in one piece available
Heating power:	up to 50 kW/m ² depending on plate size
Voltage:	230/400 Volt Any special voltage available
Working temperature:	up to 250 °C
Compressive strength:	up to 1200 N/cm ² max.
Other voltages and performances available on request	

DUAL SYSTEM HEATING PLATEN

Combines the benefits of the electrical heating platen with those of the liquid medium platen in a single system

- The liquid medium system is based on the patented ELKOM ÖKOTHERM® platen system. It is maintenance-free, non-corrosive and suitable for water- as well as oil filling.
- In high-temperature applications or in highly stressed presses a thermal oil filling with an additional pump can be connected. The outcome: a very high temperature accuracy.
- The perfect solution for membrane presses, vacuum presses, forming presses and punch presses.
- Temperature-stable large area heating systems for the tool- and plastics industries.
- Gold-coloured hard-anodized surface as standard. This ELKOM development makes the surface abrasion-resistant and easy to clean.



Technical data:

Standard sizes:	200 x 200 mm - 4000 x 2000 mm Larger surfaces in one piece available
Heating power:	up to 50 kW/m ² depending on plate size
Voltage:	230/400 Volt Any special voltage available
Working temperature:	up to 250 °C
Compressive strength:	up to 1200 N/cm ² max.
Other voltages and performances available on request	



ÖKOTHERM® (patented)

Liquid-medium heating and cooling platen

- Patented structure: copper pipes with good thermal conductivity, embedded in heat-conducting aluminium profiles – another successful ELKOM idea.
- Best possible temperature constancy: the precise surface temperature is achieved by means of a constantly circulating medium.
- Flexible: The ÖKOTHERM® SYSTEM can be used in heating- as well as in cooling processes.
- Gold-coloured hard-anodized surface as standard. This innovative ELKOM development makes the surface abrasion-resistant and easy to clean.
- Best quality: corrosion- and wear-resistant through exclusive use of non-ferrous metals

The smart alternative: The ÖKOTHERM®-SYSTEM

Innovative development: The patented ÖKOTHERM® platens represent a high-quality alternative to conventional electrical heating platens.

The idea, the function

A special pump conducts heated water or thermal oil under pressure at high velocity through the pipes of the ÖKOTHERM® platens. Only the thermal energy being extracted from the cold pressed product is compensated here.

Technical data:

Standard sizes:	200 x 200 mm - 4000 x 2000 mm, larger surfaces in one piece available
Temperatures:	with pressure water up to 150 °C, with thermal oil up to 250 °C
Compressive strength:	up to 1200 N/cm ² max., depending on the temperature applied

Sustainability is part of the ELKOM philosophy

The development of thermoforming technology

Thermoforming systems

ELKOM is a pioneer in the field of thermoforming technology for plastics (thermoplastics), polyurethane and composites. From pre-heating systems to vacuum presses and thermal transfer systems to Multitherm systems: ELKOM developments play a key role in the plastic industry.

One of the first

Already in the early 1980s, when thermoforming technology for solid surfaces was still in its infancy, ELKOM developed complex pre-heating systems to make solid surfaces and other materials thermoelastically deformable.



Serial quality

In the 1990s the development was forced because the manufacturers and the materials industry required professional machinery. ELKOM developed its MIKUTHERM pre-heating system and the VAKUTHERM membrane press.

Industrial manufacturing techniques were applied for the first time (monitored heating cycles – monitored cooling under vacuum), guaranteeing constant quality in the work pieces. ELKOM developments have always played a pivotal role.

A patent with benefits

The MULTITHERM technology was first presented in 2002. This patented and hence exclusive ELKOM technology represents the “all-in-one” solution in one machine. In addition to its excellent price-performance ratio it offers the user unbeatable advantages and individual modifications.

MIKUTHERM-JUNIOR pre-heating device

The simple pre-heating system for the trade and on the building site



- Top and bottom industrial heating platen made of 12 mm-thick aluminium plate with uniform temperature distribution for tempering the materials on both sides (prevents discolouration and warpage)
- High-quality insulation on both sides
- Easy to open and close with insulated handholds
- Electronic temperature control
- Temperature range continuously variable up to 200 °C
- Ready for operation in only 15 minutes
- Anodized, wear-resistant surfaces
- Portable – can also be used on the building site

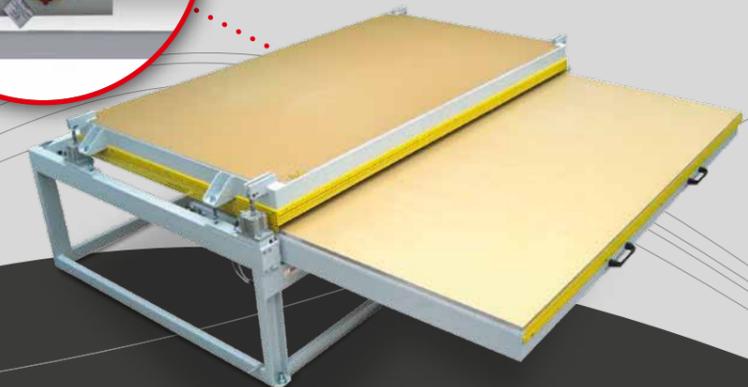
MIKUTHERM-OPTIMAL pre-heating station

Pre-heating system for serial production and continuous operation

- Top and bottom industrial heating platen made of 18 mm-thick solid aluminium to guarantee constant temperatures
- Smooth-running drawer with ball bearing guides
- The upper platen moves up and down with pneumatic cylinders
- Material thickening only takes a few seconds, hence no risk of pressure marks or discolouration on the valuable material
- Central control cabinet with main switch, energy-saving individual digital controllers for each heating platen for up to 200 °C
- Solid steel design



- No work between hot platens and considerably increased safety compared to conventional hinged-lid devices. No segmentation of heating platens, hence smooth, plane surfaces and precise temperature distribution at all times.



“Patented and exclusive
ELKOM technology since 2002”

Standard sizes:

1200 x 300 mm	Heating power	3200 Watt
1400 x 300 mm	Heating power	3500 Watt
1600 x 300 mm	Heating power	4300 Watt
1800 x 300 mm	Heating power	4800 Watt
2000 x 300 mm	Heating power	5300 Watt
2200 x 300 mm	Heating power	5800 Watt
Voltage		400 Volt

Other sizes/voltages/performances available on request

Technical data:

Sizes:	1100 x 1100 mm - 3800 x 1100 mm
Worktop height/table:	850 mm
Connected load:	6,4 - 30 kW (depending on the size)
Voltage:	400/690 Volt 3-phased
Temperature:	0 - 200 °C continuously variable
Material thicknesses:	up to 25 mm as standard (up to 100 mm available on request)

Other sizes/voltages/performances available on request

VAKUTHERM quality vacuum press

The high-quality vacuum press for industry

- Solid steel design with a high load-bearing capacity – also suitable for moulds and tools made of steel or aluminium
- Vacuum worktop made of solid aluminium as standard
- Integrated high-performance vacuum pump with vacuum tank
- Central control unit for vacuum pump, vacuum valve, main switch, and control signal lamps
- Double-welded torsion-free vacuum frame made of aluminium profiles, insulated handholds on all sides, gas springs for easy opening and closing; sturdy, solid steel hinges at the back (adjustable)
- Membranes available in various designs: silicone membrane for thermoforming 2 or 3 mm thick, transparent or coloured, natural rubber membrane or volume membrane



ELKOM vacuum worktop (heatable and coolable)

- The entire vacuum worktop is heatable and coolable. We offer various solutions, depending on the desired manufacturing size.
- Integrated heating- or cooling medium connections for metal machining tools according to customer specifications.

ELKOM volume membrane for processing tall components

- Optional feature for forming components of up to 1000 mm in height. Fast integration in existing ELKOM vacuum frames or quick-change frame systems possible.
- Grey silicone membrane, 3 mm thick; temperature-resistant up to 220 °C, elongation up to 600 %.

ELKOM heating hood

The perfect add-on option for heating tall components and parts to be moulded

- Solid and optionally insulated steel design
- The heat output is calculated based on and adapted to customer requirements.
- The electric temperature control is integrated in existing control systems or can be adjusted separately by means of digital temperature controls.



Technical data:

Standard sizes:	1000 x 1000 mm - 3750 x 1300 mm
Vacuum pump:	dry running or oil-lubricated
Voltage:	230/400 Volt as standard, 50 - 60 Hz

Other sizes/voltages/performances available on request

MULTITHERM® AUTOMATIC (patented)

High-performance thermoforming machine for industrial applications

- High performance, small footprint: The unique patented concept has proved itself with leading fabricators of solid surfaces and acrylic worldwide. It is a logical further development of the MULTITHERM® BASIC version.
- Extremely solid and strong steel weldment as a basis for the entire pre-heating and forming technology
- Pre-heating device with top and bottom ELKOM 18 mm-thick industrial heating platen (contact heat) to guarantee constant temperatures.
- Easy and centralized operation of all functions of the pre-heating device (incl. automatic, PLC-controlled extendible and retractable drawer) shortens work processes.
- Clearly arranged control of vacuum settings
- Additional features such as automatic opening and closing of the vacuum frame, vacuum apertures for additional sensor connections within the vacuum, or interfaces for implementing the system in your process control etc. are also available on request.
- MULTITHERM® AUTOMATIC is well suited for individual moulding and serial production of thermoplastics and composites, acrylic glass, and laminations such as leather and textiles.



Technical data:

Standard sizes:	1300 x 1100 mm - 3800 x 1300 mm
Vacuum pump:	dry running or oil-lubricated
Heating power:	12,5 to 35,5 kW (depending on the size)
Voltage:	230/400 Volt 3-phased

Other sizes/voltages/performances available on request

The concentrated power of innovation lies in our customized special solutions

CUSTOMIZED SPECIAL SOLUTIONS

Our individual range for the composite industry

- Vertical and horizontal heating- and press lines of up to 30 metres length and a precision of +/- 1 °C.
- Integrated heating platen solutions of every kind
- Aluminium weldments with/without heating and cooling in a complete system
- Precision feeding systems and mould carrier systems in any size
- MULTITHERM® thermoforming machines for all thermoplastic materials and composites
- Pre-heating tables for gear parts, moulds, etc.
- Lab heating- and lab cooling tables with and without covering hood. Integrated interfaces according to customer specifications

▶▶▶ For detailed information please visit our website: www.elkom.de



Cooling trolley
movable

Round heating table
for use in PU casting technology



Vacuum heating table
with heatable hood

Electrical special heating platen
for mould carrier heating



Special heating table
with heating surface adjustable
on one side



ELKOM**Elektroheizplattentechnik GmbH**

Postfach 100336
32503 Bad Oeynhausen
Oberbecksener Str. 80
32547 Bad Oeynhausen
Fon +49 5731 77 82 0
Fax +49 5731 77 82 12
E-Mail elkom@elkom.de
Website www.elkom.de

ELKOM - North America, Inc.

680 Madison Avenue
Manalapan, NJ 07726
Fon +01 732 786 04 90
Fax +01 732 786 04 91
E-Mail elkominfo@joosusa.com
Website www.elkomusa.com

ELKOM UK Ltd.**CD UK Ltd Machinery Division**

Wakefield House
Gildersome Spur
Morley, Leeds, LS27 7JZ
Fon +44 113 201 22 40
Fax +44 113 253 07 17
E-Mail elkomuk@cdukltd.co.uk
Website www.elkomuk.com



EXPERTISE IN HEATING PLATEN TECHNOLOGY + SERVICE