SERVICE
For top customer satisfaction
The name SMS group stands for tailor-made metallurgical plants, machinery, and services. Applying innovative ideas and globally uniform standards, we join forces with our customers in the steel and NF metals industries to create all-new products – with pinpoint precision.

COMBINED FORCES, WORLDWIDE EFFICIENCY
SMS group is one of the leading global system suppliers of plants, machines and services along the entire metallurgical value chain. With a strong workforce of about 14,000 employees, we are able to present our customers with unique solutions, both technically and economically remarkable, to overcome any challenge.

In our complex world, safe and convenient infrastructures demand solutions in which steel, aluminum, and NF metals can demonstrate their wide range of applications.

WE TRANSFORM ... THE WORLD OF METALS
The plants, machines and services of SMS group provide its customers along the metallurgical process chain with outstanding solutions which help shape the global community.
With its developments and system solutions, Elotherm and IAS have set standards in induction technology for decades. The medium-sized internationally operating companies are part of the SMS group. As technology leaders, Elotherm and IAS combine all competences when it comes to induction.

- Induction heating of metals for forging, rolling and extruding
- Induction hardening and quench & temper
- Induction welding, annealing and special technology for tubes
- Continuous induction strip heating
- Induction kinetics
- Induction melting

**CUSTOMIZED SYSTEMATIC SOLUTIONS**

Elotherm’s and IAS’ technology is based on compatible modular plant components, which can be efficiently combined into individual configurations. This enables economic industrial heating solutions – irrespective of whether it is a single unit or a complete manufacturing line.
### LIFE TIME CYCLE

<table>
<thead>
<tr>
<th>Before acceptance</th>
<th>During production</th>
<th>5-10 years after installation</th>
<th>Decommissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erection</td>
<td>Customer Support</td>
<td>Innovation Assistance</td>
<td>Consulting</td>
</tr>
<tr>
<td>Commissioning</td>
<td>Trouble shooting</td>
<td>Converter Retrofit</td>
<td>Service for Used Machines</td>
</tr>
<tr>
<td>Training</td>
<td>Spares</td>
<td>Control System Upgrade</td>
<td></td>
</tr>
<tr>
<td>Process Support</td>
<td>Consignment Stocks</td>
<td>Overhaul of Machinery</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance and Inspection</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inductor Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repair</td>
<td></td>
</tr>
</tbody>
</table>
CORE COMPETENCES
All your benefits at a glance

CUSTOMER-ORIENTED ORGANIZATION
For the service area, Elotherm and IAS have created an organizational structure which optimally supports the customers. In addition, Elotherm and IAS provide a worldwide service network, which is continuously extended. Current locations are in Germany, France, USA, China, India, Brazil and Mexico. The result for the customers: highest availability and shortest reaction times.

SERVICE FROM MACHINE MANUFACTURER
The service customers of Elotherm and IAS benefit from an in-depth know-how of the machine manufacturer. The advantages:

- Rise in productivity
- Increase in plant availability
- Improvement in product quality
- Reduction in operational costs
- Securing of machine value
- New fields of application for existing facilities

ALL-INCLUSIVE SERVICE OFFER
Depending on customer needs, Elotherm and IAS provide customized services. Similar to the actual machines, the customer may choose an individual or several harmonized modules.

TECHNOLOGY LEADER WITH OUTSTANDING PROCESS COMPETENCE
- Experience spanning more than 75 years
- Innovative system partner for the automotive and supplier industry as well as the steel, rolling mill and pipe production industry
- More than 6000 systems worldwide in continuous operation for decades
- Sales and service around the globe
- Fast delivery by local manufacturing and stockkeeping facilities

INDIVIDUAL CUSTOMER CONFIGURATIONS
- High efficiency thanks to modularized systems
- Tailor-made manufacturing solutions

ENERGY-EFFICIENT, ECONOMIC INDUCTION
- Minimized energy consumption through intelligent technologies
- Sustainable and eco-friendly
- Quick change of production and increased productivity
- Low manufacturing costs
- Integrated effective power measurement for efficient quality control

IN-HOUSE INDUCTOR AND CONVERTER MANUFACTURING
- All competences under one roof
- Optimal technical interfaces to existing customer systems
- Individual design and layout to attain optimum results
- Innovative converter development with low and resource-saving energy demand

PRECISION IN PROCESSING
- All relevant certificates, e.g. VDA, DIN/ISO
- Continuous project and quality management from the initial enquiry through field service
ON-SITE SERVICE AND TRAINING

WHEREVER, WHENEVER YOU NEED IT

Our team of Service technicians is the only team that has been looking after SMS Elotherm and IAS machinery for more than 75 years now. No matter what component, what generation or what technology is involved: nobody knows Elotherm’s and IAS’ machines better than our Service technicians.

High-quality services from the original manufacturer are the best way of guaranteeing maximum availability of your plant. We know what we’re doing when it comes to your applications, whether it’s forging, hardening, metallurgy, tempering and welding, and our Service centers across the globe ensure the quickest response times.

- Plant installation and supervision
- Initial start-up and testing
- Preventive maintenance and advice on servicing issues
- Trouble shooting and on-site repairs
- Support throughout the process
- Process optimization
- Plant evaluation and improvement of plant efficiency
KNOW-HOW TRANSFER FROM YOUR OEM

Maintaining an edge in terms of know-how means you stay ahead of your competition - so use our specially customized training programs, tailor-made for your system.

The training course contents are geared primarily towards practical aspects that include direct trouble shooting and how to avoid downtimes. Our training courses teach your specialists how best to utilize the full functionality of your machine.

The courses are held both here at our headquarters in Remscheid (Germany) and directly at our customers' premises.

TRAINING

- Converter training
- Operator training
- Maintenance and trouble shooting training
- Process training
You are invited to join our Preventive Maintenance (PM) Incentive Program. Each system receiving a PM qualifies for a 12-month spare part discount of 5%.

Why Elotherm and IAS for OEM Preventive Maintenance?
- Maximum system up time
- Timely detection and prevention of downtime root cause faults
- Immediate cost reduction with OEM maintenance quality

When and how does the 5% discount go into effect?
- Immediately upon order placement, specifying the commission number for the system(s) to be serviced.
- The service must be scheduled and completed before the end of the year.

What is included?
- Spare parts
- Other services according to prior agreement

What is serviced under this PM program?
- Converter
- Power supplies
- Tooling

SECURE YOUR PRODUCTION CAPACITY

SMS Elotherm’s and IAS’ Preventive Maintenance Incentive Plan
PREVENTIVE MAINTENANCE

SCOPE OF SUPPLY

Please find below the typical scope of supply of a PM as carried out by SMS Elotherm and IAS for a heating system. Of course, the PM scope can be customized based on the Customer’s requirements.

**Converter by Elotherm of IAS**
- General visual inspection of the converter
- Function test of enclosure lighting, door/safety switches, and (if present) the frost monitor(s)
- Inspection and tightness checking of threaded fasteners in the power unit
- Inspection of the cooling system (condition of the hoses, leakage checks, sacrificial anode checks)
- Verification of input voltage and all converter supply voltages
- Checking the converter electronics (function tests, parameter checks, etc.)
- Check all thyristor/transistor control impulses
- Measure the specific idle values
- Check the converter output power under production conditions
- Check enclosure integrity (door seals, etc.)

**OSCILLATING CIRCUIT, CAPACITOR CABINET AND POWER UNITS**
- Visual inspection
- Check the cooling system for e.g. leak tightness
- Visual check of insulation
- Check and adjustment of temperature and flow control system (NTC)
- Check of capacitor and transformer switches (as far as accessible)
- Protection class: door seals etc.
- Cleaning of the cooling circuits

**TOOLING E.G. INDUCTORS/HEATING COILS/CRUCIBLE MELTING FURNACES**
- Visual check of the inductors
- Check of the cooling system incl. hoses and piping system
- Check of monitoring systems, if applicable
- Insulation test

**Discussion of findings and recommendations for improved system performance**
- Replacement parts
- Modifications (updates, revamps, etc.)
- Energy efficiency consultation (for example)

**PM documentation**
- Transmittal of the PM Report
- Next PM requirements
SUPPORT
Replacement parts & trouble shooting

ORIGINAL QUALITY
PLUS COMPETENCE
Whatever the problem is, you can rely on the support of experienced engineers at SMS Elotherm and IAS. Once the fault has been identified, you can be sure of warranted quality with original Elotherm and IAS replacement parts.

With our 75 years of experience, we have put together particularly cost-effective replacement part packages. Reap the benefits of a high level of availability. Our large spare parts stock, global Service network and intelligent CRM system ensure faults are eliminated in the shortest possible time.

SERVICES
- Hotline and emergency service
- Trouble shooting
- Customer and machine-specific original Elotherm replacement parts
- Replacement part solutions for obsolete components
- Optimal cost-benefit factor by smart spare parts packages
- Consignment stock
- Spare parts management
Inductors of Elotherm and IAS are combining highest precision and high efficiency with process reliability. As interface between machine and workpiece, surrounding round shape or line inductors are used.

IAS inductors for channel type furnaces are being used for melting and heating metals.

Calculation and simulation programs developed by Elotherm and IAS ensure application-specific implementation and proper dimensioning and thus a high level of process quality.

Induction tooling by Elotherm and IAS are ideally suited for various applications:

- Hardening systems
- Heating systems
- Crucible melting furnaces
- Channel type furnaces

Elotherm and IAS inductions systems feature long lasting, service friendly components as well as future-oriented developments from our own R&D facilities.

- Hardening inductors
- Heating inductors
- Inductors for channel type furnaces
- Coreless furnace inductor
- Induction billet heater
- Container heating systems
INDUCTORS AND COILS
Reliable maintenance and repair

TOP PERFORMANCE FOR COST REDUCTIONS

We have inductor and coil workshops all over the world with direct access to our state-of-the-art metallurgy laboratory.

With this know-how and the high-quality repairs performed to Elotherm original manufacturer specifications, we can attain a high level of repeatability for your processes.

We offer a quick turnaround time for all inductors repairs.

What’s more, our regular inspection and testing, maintenance and repairs mean you can noticeably reduce your process costs.

In order to better support your new projects our scope of services is enhanced by induction process development as well as hardening services.
Primary focus of our repairs is the quality, keeping a quick return of the tooling in mind. Repairs are executed according to the OEM specification achieving lifetimes for repaired inductors in the range of new inductors.

Professionally repaired inductors are considered technically new, using existing material.

As you might expect, our product range includes all required OEM wear parts e.g. high quality skid rails.
1. New converters
2. Converter retrofit
3. Control system upgrades
4. Overhaul of machinery
5. Energy efficiency
STAYING COMPETITIVE, AUTOMATICALLY

SMS Elotherm and IAS offer innovative revamps, upgrades and overhauls, not just for Elotherm and IAS systems but for machinery supplied by other manufacturers, too.

How do you benefit: your system is always technically up to date. You safeguard your spare parts supply, as out-of-date assemblies or component generations that are no longer available can be replaced in time.

All in all, your plant’s availability is increased, support and trouble shooting can be organized more efficiently and you save the costs of investing in a completely new plant.
MORE OUTPUT
Advanced Converter-technology for better efficiency

COMPETENCE FOR MORE PROFITABILITY
Converter, oscillating circuit, inductor – together they are the heart of each induction plant. These factors mainly determine the process reliability and the economy for the customer. Therefore, Elotherm and IAS have brought together all key components under one roof – from in-house development to in-plant manufacturing.

OPEN FOR THE FUTURE
Modular design and standardizations of the converters from Elotherm and IAS make sure that efficiency, durability and serviceability are achieved. For any application, the converters for LLC, series and parallel oscillating circuits provide an optimum power source. Frequencies of up to 600 kHz and an output of 4500 kW for each converter unit are realized by modern transistor circuits.

Elotherm and IAS converters stand out thanks to their modern digital control and a user-friendly operating concept. Very flexible interfaces enable a harmonic integration into process control systems and higher-level plant controls.
WELL-TIMED SWITCH TO A NEW GENERATION
Since 1970 SMS Elotherm has successfully developed several converter generations including 5 for standard applications. Our Service team continues to provide support for generation 3, 4 and 5. Moreover, we still offer a unique retrofit solution for older-generation converters.

Added to this is our know-how: we look at all aspects of your existing machinery and thereby meet all the conditions for continued smooth production after the upgrade. So you see, it pays off to make a switch at the right time. Your converter is made fit for the future. Your machine’s availability and capacity are increased and the operation of the machine remains unchanged.

- Condition inspection at the customer and analysis of need for modification
- Detailed development and design
- Manufacture and supply of an upgrade set including electronic assemblies, system cards and service components
- Installation and initial start-up with on-site testing
- Supply of updated drawings for documentation of actual conditions

CONVERTER REVAMP SERVICES
HIGHER IQ FOR YOUR MACHINE
If a control system is obsolete or fails, this may well lead to drastic production losses, as the availability of replacement parts is no longer guaranteed. That’s why a timely upgrade is essential.

Our engineers know Elotherm and IAS machinery better than anyone, and are therefore competent partners you can rely on. With us you benefit from the security of knowing that control system upgrades are performed quickly, smoothly and successfully. We ensure the control system meets all Elotherm and IAS standards. What’s more, a new control system offers you optimized ergonomics and state-of-the-art equipment features.

FAST AND EASY
Control System Upgrade to latest standards

- Condition inspection at the customer and analysis of need for modification
- Detailed development and design
- Manufacture and supply of an upgrade set
- Installation and initial start-up with on-site testing
- Supply of updated drawings for documentation of actual condition

CONTROL SYSTEM UPGRADE SERVICE
FIT FOR THE FUTURE
Machine overhaul to secure your investment

A SECURE FUTURE WITH MANAGEABLE INVESTMENT COSTS
Our team of Service technicians is the only team that has been looking after SMS Elotherm and IAS machinery for more than 75 years now. Nobody can provide you with a more precise, well-founded diagnosis of how to bring your machine back up to date, so that all process specifications, cycle times and availability requirements are met.

What’s more, it goes without saying that we ensure the machine is overhauled to the highest possible standards. Trust your equipment manufacturer.

- Initial assessment at site by Elotherm and IAS service technicians
- Report on actual condition and clarification of customer’s further requirements
- Detailed quotation for the overhaul
- Manufacture and supply of the maintenance set
- Standard electrical and mechanical components: bearings, V-blocks, pneumatic cylinders, motors, sensors
- Installation and on-site testing
- Documentation and/or drawings of the new machine condition

MACHINE OVERHAUL SERVICE
ENERGY EFFICIENCY
Highest Return of Investment

OPTIMIZED PROCESSES, REDUCED COSTS
We calculate in advance how much energy-saving potential your plant offers and how quickly the return on your investment will be. Our Service experts offer you professional advice and technical solutions that help you make substantial cost and energy savings.

As a plant manufacturer we possess detailed knowledge of what contribution the induction process, the inductor or the software can make in creating an energy-saving production process. We can show you how an energy-efficient process saves not only costs, but can mean less scale formation, for example, within an optimized temperature range – a real advantage in terms of subsequent processes, e.g., for forging.

ENERGY EFFICIENCY SERVICE

- Measuring and recording of current energy consumption
- Process optimization for maximum energy savings
- Calculation of energy-saving potential
- Development and manufacture of customer-specific, energy-saving inductors (incl. PLC software development)
- Installation, initial start-up and support with production provided by our Service technicians
FUTURE-PROOF EQUIPMENT, ECONOMIC MODERNIZATION

Induction mass heating systems can benefit from iZone technology, offering operators immediate cost savings. Real-world customer data demonstrate that replacing older, energy-inefficient systems with new iZone systems provides a short return on investment.

These multizone-controlled systems allow for an individual adaption of the heating process to customer’s production needs.

KEY FEATURES

- High energy efficiency through zone control
- Flexibly and exactly adapted heating processes
- Future oriented technology with integrated online expert system
- Meaningful cost reduction per workpiece
- Improved competitiveness
The information provided in this brochure contains a general description of the performance characteristics of the products concerned. The actual products may not always have these characteristics as described and, in particular, these may change as a result of further developments of the products. The provision of this information is not intended to have and will not have legal effect. An obligation to deliver products having particular characteristics shall only exist if expressly agreed in the terms of the contract.