




SMART FOUNDRY

The Industry 4.0 Foundry



Our Vision

- Our competitive lead in technology optimizes our customers' production process.

Our Mission

- We produce components, systems and equipment for the optimization of manufacturing processes.
- We want to understand the processes used by our customers.
- We are a strongly diversified global player.
- We aim for the top position in all markets we participate.
- We are a family based enterprise with tradition and values.
- We include our employees in the decision making processes.
- We strive for a reasonable return on and increase of the equity capital.

Kurtz Ersa SMART FOUNDRY

Shaping the future together!



Graziano Sammati
Managing Director
Kurtz Eisenguss GmbH & Co. KG

Since 1852, Hasloch has been the site of an iron foundry – an important core competence in the owner-run family company Kurtz Ersa which can look back on a tradition spanning over 235 years.

“Our technological lead optimises the manufacturing processes of our customers.” In order to live up to this vision in the future too, Kurtz Ersa has invested in the SMART FOUNDRY, and thus impressively pledged its commitment to Hasloch as a business location.

With 120 highly-qualified staff, Kurtz Eisenguss GmbH & Co. KG, as a 100% subsidiary of the Kurtz Ersa Corporation, operates what is probably the world’s most modern hand moulding foundry: sustainable, future-proof, efficient. Only in this way can the most wide-ranging of complex customer requirements be catered into the future. Something we do at a unique technological level, inter alia, with the newly-designed material flow, computer-aided logistics system, clocked line production and SAP-integrated business processes.

In both our external and internal dealings we place emphasis on an open and respectful dialogue which we wish to continue promoting and expanding with you, our customers, suppliers and partners. Because even in the era of Iron Casting 4.0, communication and expertise are still the basis for success. Good luck!

Your Graziano Sammati
Managing Director







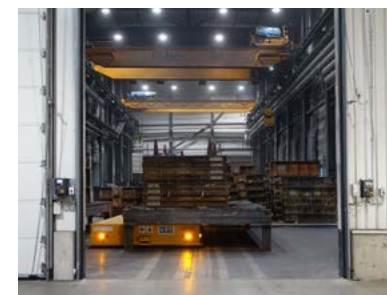
Separate cast house, detached from other production processes



Automatic transport logistics with unmanned floor conveyors



System-controlled cooling house with ventilation and exhaust air extraction system and heat recovery



System-controlled pouring hall for controlled pouring with optimised sand regeneration

Kurtz Ersa SMART FOUNDRY

The most modern foundry for the most successful companies

With modern, future-proof technology, Kurtz Eisenguss GmbH & Co. KG is committed to Germany as a business location. This decision is important for many of our customers too, meaning as it does that high-quality cast iron continues to be available and accessible in the heart of Europe – with considerably increased productivity and quality and with environmental technology which offers long-term security for the future. Are you ready for the iron casting of the 21st century?

We cooperate with well-known customers from a wide range of sectors: from sophisticated mechanical engineering to drive engineering, construction site equipment and building material machines, printing machines, press manufacture, power engineering, vehicle construction, medical technology, manufacture of internal combustion engines, railway vehicle manufacturing and wind turbine construction and vacuum engineering.

Customer benefits of SMART FOUNDRY:

- SAP integration of customers and business partners in the business processes
- Increased delivery reliability for greater planning dependability
- Environmental protection secured long-term, e.g. with heat recovery systems for exhaust air from dust extraction plants



Extract from our client list





Mechanical engineering



Shipbuilding



Railway vehicle manufacturing



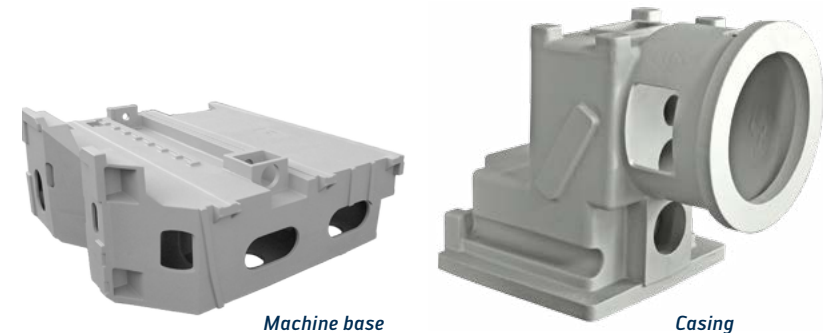
Wind turbine construction

Kurtz Ersa SMART FOUNDRY 20,000 t of finished castings ... and still rising!

Our product range is very extensive – from gear parts such as planetary carriers, torque plates and casings to machine parts such as machine beds or machine bases and pressure-tight parts such as pump housings or, for example, cable drums which are used in hoisting technology.

The process steps in the parts manufacturing are permanently supervised and documented by our quality management system and are subject to constant monitoring, culminating in additional non-destructive ultrasonic flaw detection.

The use of spectral analysis, thermal analysis, ultrasound, hardness and crack testing as well as dye penetration processes and metallographic and metallurgical material tests constantly ensure the highest quality for our customers' cast iron parts.



Machine base

Casing

Key Data SMART FOUNDRY

- Max. part dimensions: 3,000 mm x 5,000 mm
- Part weights: 150 kg to 8,000 kg
- Materials: EN-GJL-150 to -300
EN-GJS-400 to -800
Solid solution strengthened GJS (high Si alloy)
DIN EN 1564 compliant ADI materials
- Capacity: 20,000 tonnes per year

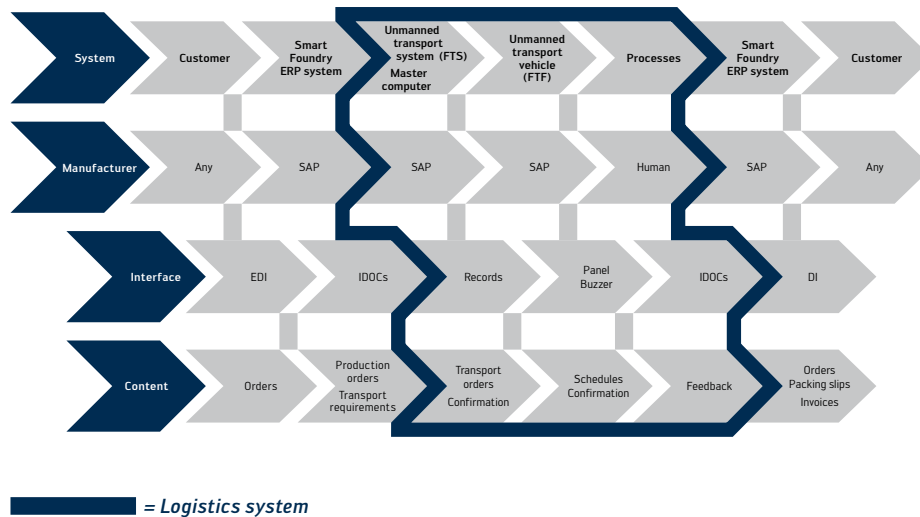


Mitfahren verboten!



MARIE

FK 16
FK 17
FK 18



All the processes are centrally monitored at the control station

Kurtz Ersa SMART FOUNDRY Automated logistics processes – Industry 4.0 live

The SMART FOUNDRY with the SAP-aided production concept, parcelled production areas and the unmanned, universally mobile transport system permits a flexible process chain, in which manual manufacturing steps and the automated logistics system can be ideally combined.

The result: simple handling of complex manufacturing processes, continuous monitoring of the systems and manufacturing processes via the central control station, ideal processing times. If you too value these factors, we really should talk!

Visualisation of the individual stations of the unmanned transport system



Work orders are electronically sent to the production line. Display of the incoming and outgoing work orders at each workplace

L 001		L 001	
04:00	25.02	05:03	25.02
05:03	1951195	05:03	1951211
05:03	1951195	05:03	1951211
06:30	25.02	06:06	25.02
06:30	1951217	06:06	1951206
06:30	1951217	06:06	1951206
09:02	25.02	06:59	25.02
09:02	1951221	06:59	1951206
09:02	1951221	06:59	1951206
11:48	26.02	06:03	26.02
11:48	1951204	06:03	1951206
11:48	1951204	06:03	1951206
17:10	26.02	19:31	26.02
17:10	1951203	19:31	1951215
17:10	1951203	19:31	1951215
18:48	26.02	23:28	26.02
18:48	1951206	23:28	1951222
18:48	1951206	23:28	1951222



Kurtz Ersa SMART FOUNDRY

The new standard when it comes to the environment

With separated production processes, the climate in the individual departments is significantly improved as the emissions can be much better extracted when similar activities are grouped in one place.

The unmanned transport systems work electrically and therefore emission-free and meet a high safety standard – therefore offering clear benefits compared to manually operated vehicles.

Each manufacturing segment can draw on the necessary quantity of raw materials and supplies, cores, casting iron and fresh air – all without manual labour.

The SMART FOUNDRY has made it possible to double productivity in manufacturing and at the same time vastly improve the quality of the workplace: The harmful effects on the health of staff have been considerably reduced, the climatic conditions improved and the crowding and heat stress minimised.

In short: SMART FOUNDRY is geared to top products for our customers and ideal working conditions for our foundrymen.

Intensive and separate extraction in the magnesium treatment

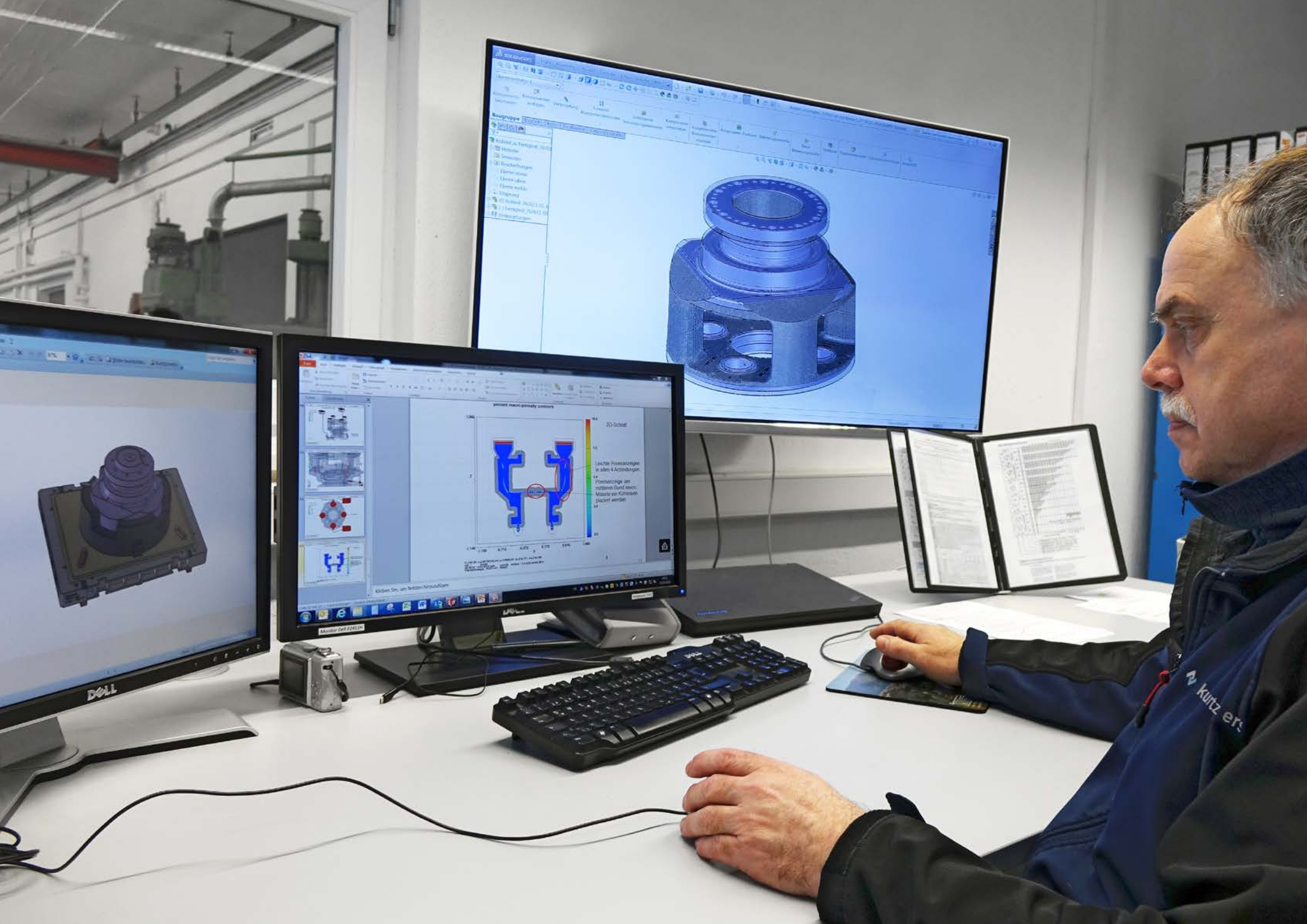


Latest heat recovery plant



The most modern filter systems for air quality control







Certified quality in the Kurtz Ers Corporation

Kurtz Ers SMART FOUNDRY

Know-how – quality – adherence to delivery dates

In the corporate guidelines of the Kurtz Ers Corporation, product quality is defined as a significant component of the company policy. Our products impress with high quality. Only in this way can we be a reliable partner for the customer. Quality assurance is therefore a central issue in all the companies.

Through continuous improvement processes, we constantly work on enhancing the internal cooperation, the products, the processes and the efficiency. The implementation of these quality principles is achieved, among other things through our integrated,

all-encompassing quality management system based on the DIN EN ISO 9001 : 2008 certification.

Furthermore, our primary focus is on customer satisfaction. This involves product quality, adherence to delivery dates, appropriate product prices, communication, competence and reliability. We therefore maintain our own modelmaking which can offer you support in the design of your cast iron parts. This is facilitated by modern CAD programmes. The simulation of casting and solidification processes is also among the service we can offer you.

At Kurtz Ers, all the processes are defined and subject to constant, continuous and transparent performance measurement systems for:

- Production
- Quality
- Processes
- Customer satisfaction
- Markets
- Costs
- Sales

Certifications

- TÜV Certification Pressure Equipment Directive 97/23/EG
- Germanischer Lloyd
- Lloyd's Register
- Energy Management ISO 50001:2004
- Environmental Management ISO 14001:2004
- Health and Safety Management OHSAS 18001
- Quality Management DIN EN ISO 9001:2008
- ABS Certification





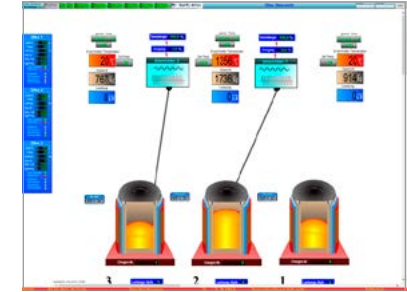
Mono-material feedstock



Thermal analysis of the molten mass



Temperature monitoring of the molten mass



Constant monitoring of the furnace and the refractory material

Kurtz Ersa SMART FOUNDRY

The meltshop – leaving nothing to chance

With our casting experience and expertise, we produce more than 60 different iron casting materials. Our feedstock is stored dry and clean in mono-grade form, and is fed into the furnaces through chutes.

Constant monitoring of the processes through spectral analysis, thermal analysis and constant temperature monitoring ensures the highest quality.



Recasting the magnesium-treated molten mass into the casting ladle

Kurtz Ersa SMART FOUNDRY

Hand moulding – ready-to-pour moulds at a system-controlled pace

System-controlled hand-moulding in forms clocked in accordance with the pull-push principle. Thanks to the use of a mobile cold resin-furan sand mixer, box sizes of 700 x 700 mm to

5,000 x 3,500 mm can be used. In the next process step, the moulds are prepared for casting. The associated cores are automatically supplied as well.



Staff at work filling the mould for a machine base. Here, compacting the sand and applying the casting system are particularly important.

Unmanned transport system at work transporting the moulds to the next process step





Kurtz Ersa SMART FOUNDRY

Experienced foundrymen,
ideal working conditions and
a new cast house



In the new foundry, a new ventilation and exhaust air extraction system creates ideal workplace conditions. The casting process is separated from the other production processes and housed in a separate hall. As a result of the management and clocking of production, highest-quality melts are punctually produced and made available.

Using chain hoists, the melt is cast via transport ladles from safe positions, taking analyses and temperature into account.

*Highly qualified
staff casting a
6 t planetary carrier*







Part treatment



Priming in the company's own paint shop

Kurtz Ersa SMART FOUNDRY

Controlled cooling and controlled removal from the mould

Following the system-controlled cooling of the cast iron parts in the cooling hall, the mould boxes are automatically transported to the unpacking hall. This is equipped with a ventilation and waste air extraction system. Thanks to the attached regeneration plant and the leading-edge technology, the removal of dust from used sand is significantly better, and the sand values are considerably improved. A development which is equally positive for staff and the environment and which also means security for the future.

In the following processes, the cast iron parts are blasted, cleaned and subjected to different test processes depending on customer wishes. They are then primed in the company's own paint shop, before moving to the dispatch hall, ready for delivery or collection.



*Clean, dry
and fast dispatch*

Metal Components in the Kurtz Ersa Corporation

A consistent supplier concept for your requirements

The large variety of products manufactured, production technologies in use and areas of business mark Kurtz Ersa as a corporation with large technological potential and a multitude of possibilities for raising synergy effects. It is the common goal of the group's members to play a major role in their market and to be a technologically leading manufacturer in their fields.

We offer our customers the certainty that, with Kurtz Ersa, they have chosen an internationally oriented partner who understands the needs and practices of the global market.

We have repeatedly set new standards in technology with our products. Our willingness to take new venues has enabled us to meet specific requests of our customers, but it also enables us to optimise our performance and competitiveness.

Kurtz Ersa's business areas have grown historically. Due to our long corporate tradition, we are accustomed to early develop and integrate new technologies, new markets and new production methods. The processes used by Kurtz Ersa include, amongst others, casting, welding and soldering, cutting and forming, machining operations, galvanic- and surface treatment, heat treatment, measuring- and test technology as

well as software generation. At Kurtz Ersa, production technologies are a dynamic process.

We are close to our customers. Our extensive product range covers most of our customers' requirements. In addition, we offer equipment designed and manufactured to a customer's specific requirements.

Castings

- Design services
- Grey cast-iron
- Nodular cast iron

Surface treatment

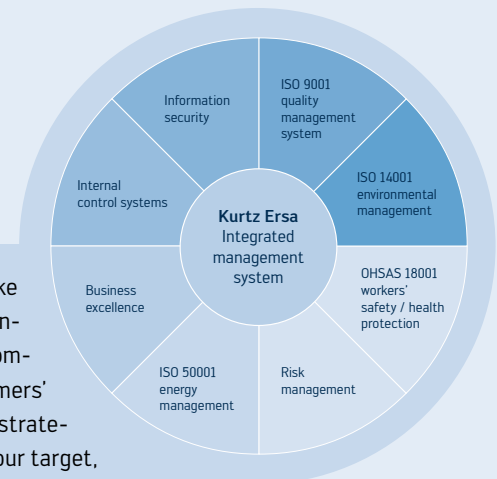
- Powder coating
- Painting
- Electroplating
- Laser marking
- Screen printing

Machining

- CNC drilling, milling, turning
- Planing
- Measuring

Sheet metal technology

- Sheet metal technology
- Design services
- Laser cutting
- Punching/nibbling
- Bending
- Welded constructions
- Assembly



Rightfully, our customers expect that we take the extra step, and that is why we have an understanding of quality not permitting any compromises. Permanently monitoring our customers' expectations and matching these to our own strategic objectives defines our target. To achieve our target, we build on integrated quality management as our guiding principle, on comprehensive internal and external certifications as well as on competent, quality-conscious employees.

*The root of our company:
The historical forge hammer mill in Hasloch is still operating; today it is an industrial landmark.*



Fine Traditions and a Bright Future

Sustainability is an integral part of our corporate culture

Our first production plant – a forge hammer mill, which started to produce in 1779 – was operated with water power. This historical industrial landmark is maintained as a visual symbol of a sustainable corporate development.

Sustainability is an integral part of Kurtz Ersa's corporate culture, in our product development and manufacturing processes. In this way we want to contribute our share to sustainably improve the living conditions on our planet Earth.

The base for the processes' systematic control is our management system. For this reason, we have incorporated

the sustainability aspect into this management system, thereby creating the basis so that all our employees are included as well in their daily actions.

The sustainability aspect in our own diverse manufacturing processes is closely monitored with improvements being mandated regularly. Internal and external audits ensure the success of this process.

In the development cycle of our own products, the improvement potential regarding the use of resources is defined already in the equipment specification.

At Kurtz Ersa, the concept of sustainability is taken seriously.



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