



Partners in power





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From the raw materials up to a turbine blade that is ready for installation

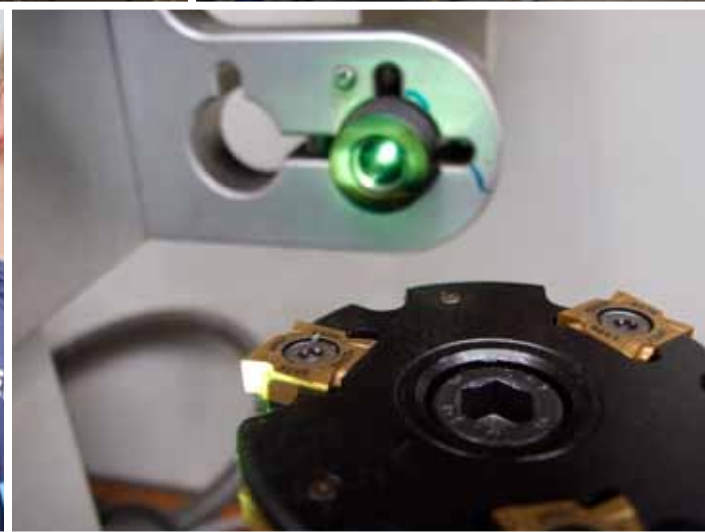
Precision, reliability, technical competence and technological leadership are always the key factors for success in the manufacture of complex components for turbine production. In addition to experience with metal cutting and machining processes and the use of the very latest CNC technology, what really matters when it comes to superlative results is top quality throughout. The collaboration with our parent company, Walzwerke Einsal GmbH, with its many years of experience in the production of highly heat resisting special steels for the manufacture of turbine blades, makes Energietechnik Einsal into a unique “one-stop shop” with a seamless quality control system. Right from the raw materials up to the finished, machined turbine blade that is ready for installation.



This unique combination of various forms of know-how transforms ETE into your “partner in power”. Our status as a medium-sized company with no corporate affiliation in connection with our financial solidity guarantees a maximum degree of flexibility – both in the handling of large projects and also for small production runs down to individual components. This flexibility has made ETE into one of the leading independent makers of turbine blades and in our capacity as a partner we enjoy the confidence and trust of all the leading companies in turbine construction.

50 years »up to date«





100% customer satisfaction

50 years

Production at Energietechnik Einsal GmbH is based on more than 50 years of experience in the cutting of high-strength materials for the manufacture of turbine blades. In addition to the use of creep resistant and martensitic and ferritic steels we also have the corresponding knowledge in the machining of titanium and nickel-base alloys.

Today our production section utilizes the very latest 4- and 5-axis CNC machining centres that put us in a position where we can create any possible conceivable blade form. Our machines are operated directly by experienced employees who have been trained in the use of the latest programs. Thanks to this know-how, in connection with our seamless maintenance concept and a commitment to the modernisation and optimisation of the existing facilities means that you can confidently rely on high process security, unconditional delivery on time and prices that are in line with the usual ones in this market. Our goal is always 100% customer satisfaction. We are simply not satisfied with anything less.



List of technology

Capacities

CNC - milling centers

- 1 x Liechti g-mill 550 twin
- 2 x Starrag HX-155/15 + 5 axis
- 3 x Starrag SX -051 B + 5 axis
- 1 x Huron EXC 5 -axis
- 1 x Hermle C40 dynamic 5 axis
- 3 x Deckel Maho DMU 80P 5 - axis
- 1 x CWK 400 + 4-axis
- 1 x CWK 500 + 4-axis
- 2 x Wanderer Alpha 400 - 4 axis
- 2 x Correa CF 22 horizontal bed-type milling machine 4 - axis
- 1 x Heller PFH 3 horizontal bed-type milling machine 4-axis

CNC - milling machines

- 1 x Heller PFH 3 horizontal bed-type milling machine 4-axes
- 1 x Hermle UWF 900 W universal milling machine

Other

- 1 x Kasto CNC - high power sawing machine
- 1 x Nill & Ritz CNC - label and sinking machine

planar surface grinding machine

- 1 x ELB SW 6 VA II
- 1 x ELB Perfekt BD10 SPS

grinding machines

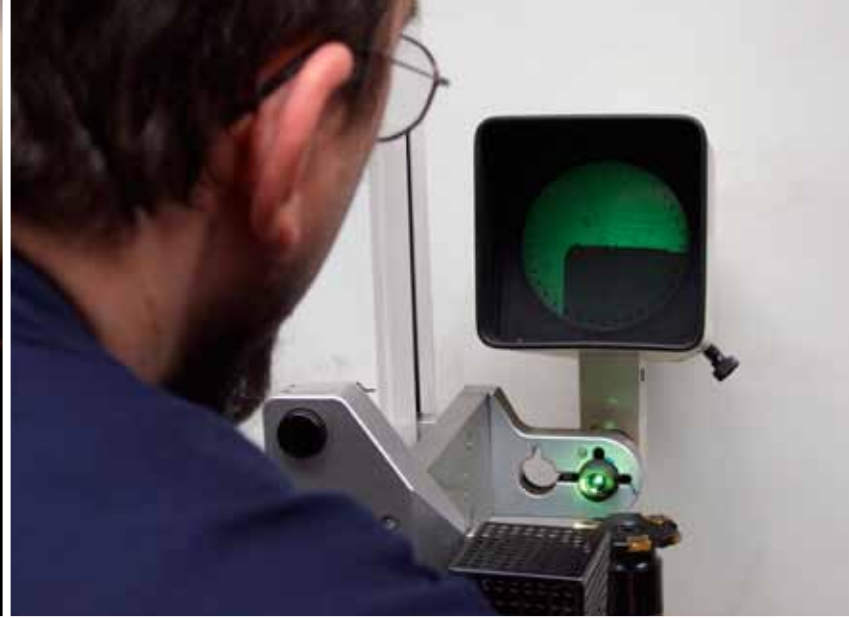
- Fa. Löser & Fa. Stahl

quality assurance

- 2 x Zeiss UMC 850 CNC - measuring machine system software Calypso
- 1 x Borwn & Sharp Reflex 454 measuring machine
- 1 x Karl Deutsch Magnet - magnetic flew detector Deutromat UWE 900
- 1 x Spectrotest JR Prüfsystem
- 1 x roughness measuring machine and others

Reverse Engineering



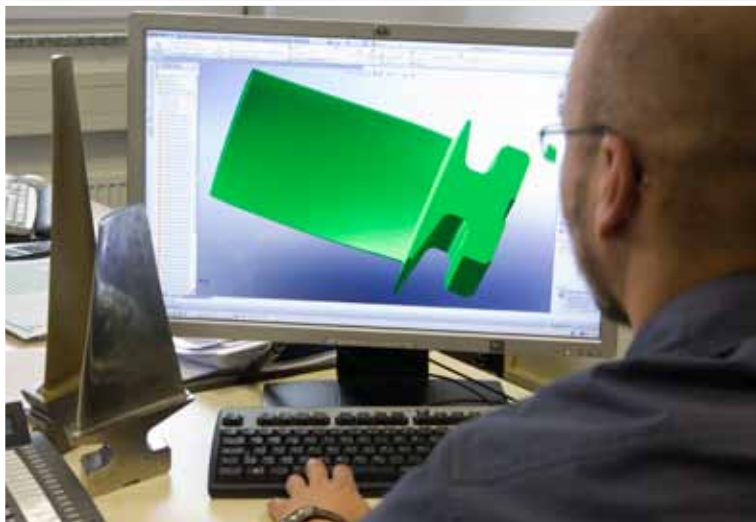


Reconstructing and optimising

Reverse Engineering

The production of steam turbine and compressor blades has a great deal to do with experience and a feeling for the materials and the function. The very latest versions of the leading CAD and CAM programs are used in the design of the components and in determining the relevant optimum production process. But the legendary ETE quality first has a chance to show itself through the know-how of our engineers in our design department.

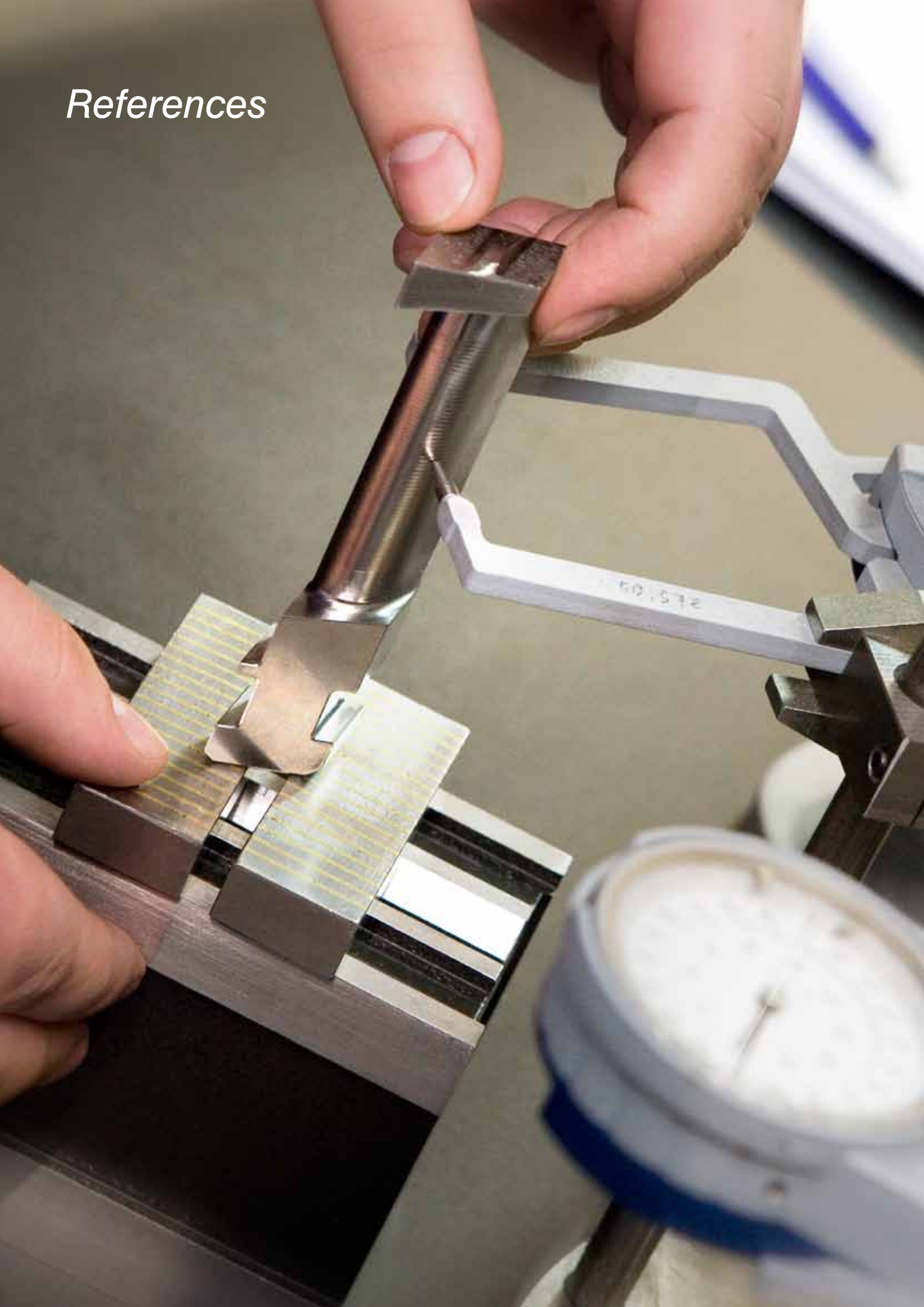
We are in a position to be able to process efficiently all types of customer data. Starting from the



classical component drawing, through to sets of coordinates up to the reconstruction and optimisation of complete turbine blade sets on the basis of sample blades, including any measurements that need to be carried out at the construction site.

Speak to us. Our experienced staff are already ready to help you in all kinds of ways.

References





Constant quality inspires confidence

References

A high level of machine availability and the technical know-how of the staff are the prerequisites for delivering high quality and offering the best possible process security.

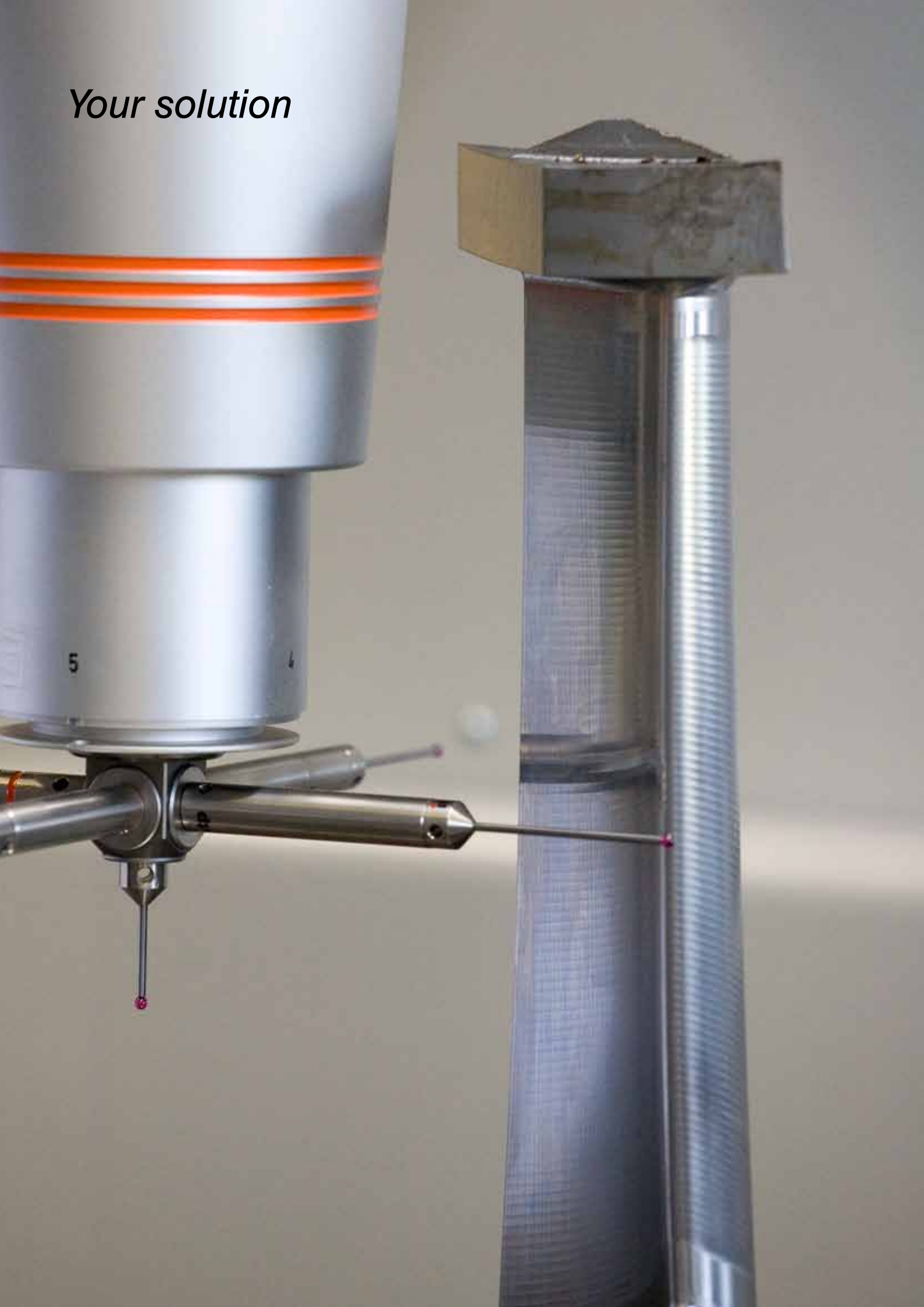
The quality that is produced is documented and checked by seamless quality testing throughout the production process right from the beginning. From the raw materials up to the documentation of the finished parts that is structured to meet your wishes. The basis of our quality management system is DIN ISO 9001:2008.

Quality and reliability inspire confidence and trust. Our reference customers include, among others:

- **Siemens Energy**
- **Alstom Power**
- **Ansaldo Energia**
- **EON**
- **RWE**
- **BHEL**
- **Mapna (TUGA)**
- **Voith Sulzer**
- **MAN Turbo**

and many others.

Your solution



made in Germany





Certified quality
made in Germany





Energietechnik Einsal GmbH

Am Kuffholz 2 · 93138 Lappersdorf

Telefon: +49 941 83046-0 · Telefax: +49 941 83046-26/27

eMail: info@et-einsal.de · www.et-einsal.de

