

intouch

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of EAO GmbH.*

Precise. Efficient. Safe. In every situation.

Editorial

Dear customers and partners

The main theme of this current issue of intouch is the industrial machinery industry and the challenges it presents for us as HMI developers and manufacturers. Mechanical engineering is a fascinating and wide-ranging field and even though this sector is rarely the focus of public interest, it can sometimes be extremely spectacular. The modern workplace would be unthinkable without the proper machinery and the expectations we have of the machines we use can be summed up simply: they must be precise, efficient and safe.

One central aspect as far as safety is concerned is how their functions are controlled by people, which brings us to HMI. EAO is committed to creating the ideal interface and to ensure we can convey people's commands to machinery precisely, efficiently and safely.

The industrial machinery industry has always been of paramount importance for EAO and forms the main focus of our interest this year. With this issue of intouch, we would like to invite our readers on a trip around the world of mechanical engineering: read about the experiences of our customers and get to know our new developments, for example in our Series 82.

Enjoy the read!

*Till Wiczorek
Head of Product Application Marketing*

We make no compromises when it comes to keeping people safe.

The growing complexity of industrial machinery of every kind is creating increased safety demands in respect of its operation. EAO is committed to meeting the challenge of satisfying these demands.

Meticulous attention to every detail of planning, together with stringent testing and laboratory methodologies ensure an ideal and safe basis on which to create our reliable HMI Components and Systems for the mechanical engineering industry. A variety of certificates bear testimony to this expertise. Whenever it is a question of people's safety, we make no compromises.

EAO analyses technical requirements, operating environments and ergonomic and commercial demands to ensure that users and technology work together in perfect harmony. This results in top-quality interactive products and solutions that afford the ultimate in functionality and ease of use.

Safety at work, precision, efficiency and security are important key drivers in our Machinery target market. Automation technology enables simple, monotonous and even dangerous activities to be taken over by machines, whose accuracy, speed and reliability are far greater than can be achieved by human



beings. The latter's role is then transferred from production to the planning and controlling of processes and the operation, control and monitoring of machinery, together with its maintenance. Nevertheless, employees will still remain at the centre of interactions in the future, too. They will continually expand their know-how and increasingly evolve from being machine operators to become cooperative controllers and designers who can contribute their experience to relevant processes on an on-going basis.

**EAO Machinery solutions:
Systems. Functions. Series.**

In order to offer machine manufacturers the maximum benefit and to reduce the complexity of their task as much as possible, EAO undertakes the planning and production of system solutions that can be developed right up to the plug-and-play level.

Based on the functions required, EAO offers its customers consultancy services and solutions that meet their specifications and expectations in full.

We have been successfully demonstrating our expertise day in day out for decades. By optimising interfaces, cutting costs and enhancing quality in the development and production of HMI Components and System solutions, we generate genuine added value.

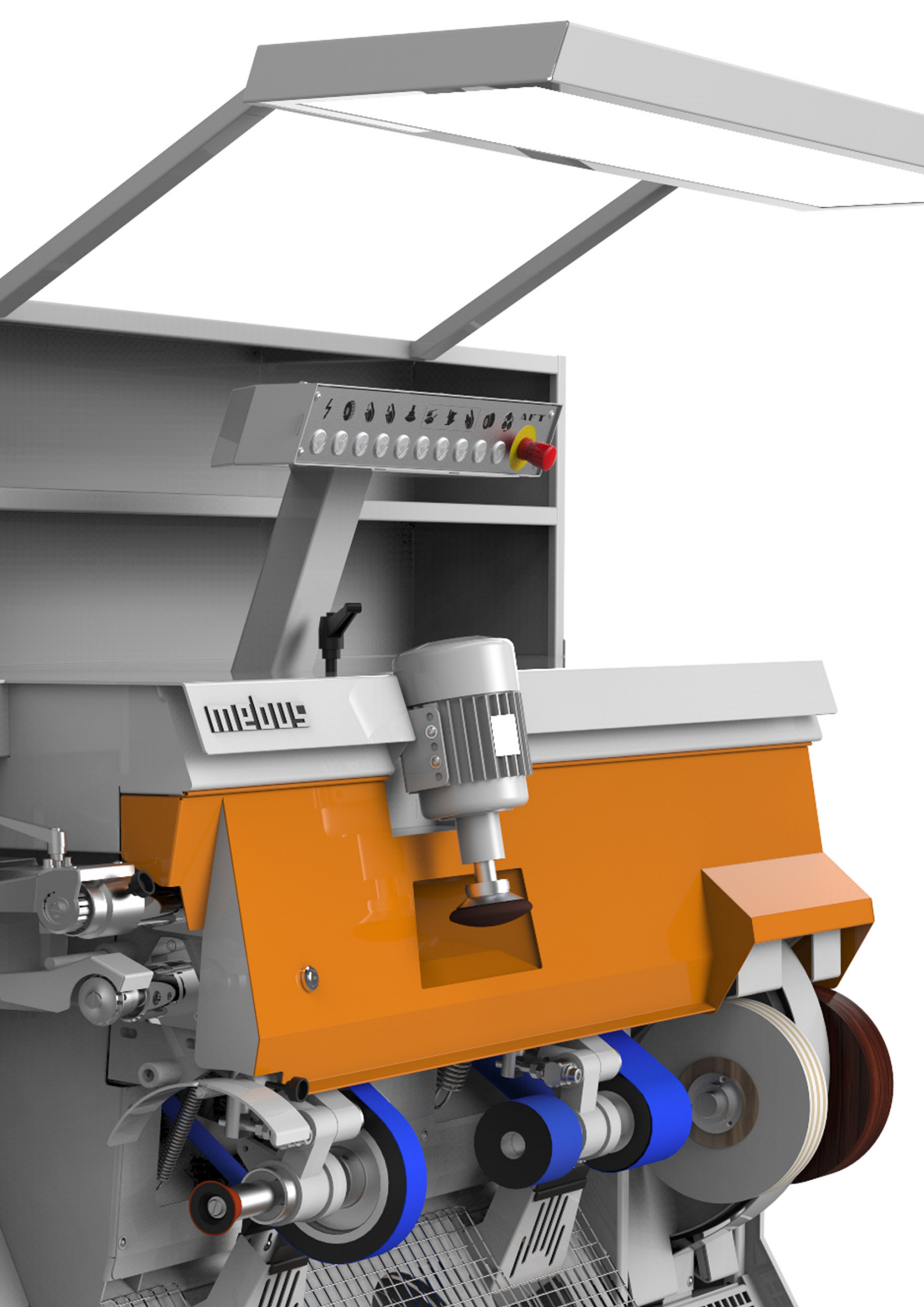
David Kramer
Head of Corporate Communications



CNC controlled lathe.

International trade fairs 2015

TRAKO	
Danzig, Poland	22. – 25. 09. 2015
Elektrotechnik	
Utrecht, Netherlands	29.09. – 02. 10. 2015
Easy Fairs	
Stockholm, Sweden	23. – 24. 11. 2015
SPS/IPC/Drives	
Nuremberg, Germany	24. – 26. 11. 2015
EDS Summit	
Las Vegas, USA	10. – 13. 05. 2016
IMTS	
Chicago, USA	12. – 17. 09. 2016



“M1600” grinding and polishing machines from AFT with Series 84 bi-colour LED illumination.

AFT International opts for bi-colour LEDs from EAO.

Polishing, keying, grinding, stretching, pressing and bonding. Machines for shoe repair and orthopaedic appliance manufacture perform these functions with a high level of precision.
AFT International GmbH is one of the leading manufacturers of machinery for this area.

The AFT product programme includes a host of machines, accessories and materials for orthopaedic applications. AFT offers its customers a full service ranging from planning, through commissioning machinery, up to provision of appropriate materials. Leading suppliers profit from the company's more than 100 years of experience in the orthopaedic sector.

At its headquarters in Wuppertal (Germany), some 100 dedicated employees are involved in the construction and production of innovative new machinery. For the latest generation of compact and easy-to-operate grinding and polishing machines for shoe repair, AFT needed an intuitive operating concept that was both modern and safe. The company decided in favour of Series 84 from EAO with central dot illumination provided by bi-colour LEDs.

Each pushbutton has an unambiguous pictogram showing a machine function. The change in colour from red to green shows the operator which unit is active at any given moment. The

buttons of Series 84 also have a pulse function, which additionally enhances operating safety. In this way, all the functions are switched “OFF” in the event of a power outage, so that no unit is activated automatically when the power comes back on again. In addition, Series 84 provides the latest in machine design thanks to its virtually flush front construction.

Further arguments in favour of Series 84 were the low back panel depth and the use of a PCB assembly that can be simply snapped onto the rear of the front plate. PCB mounted clips fix to the back of each switch actuator – there is no need for mounting studs – and this reduces assembly costs.

In EAO, AFT has found a dependable partner whose expert advice, innovative, intuitive and reliable products and solutions, together with its global service make it the ideal answer for AFT.

Norbert Backhaus
Marketing Manager



Tasks to execute
Stop the machine
Open/close the door
Operate the systems

Environmental conditions
Temperature
Light and darkness
Humidity

All your senses and faculties
Language
Habits
Feel

Human needs
User-friendliness
Intuitiveness
Look and Feel

The operator's perspective.

HMI – keeping people in mind.

“Appropriate considerations of HMI design and top-quality components are of fundamental importance for the health of those operating machinery” finds a European report on the mechanical engineering sector.

Progress in mechanical engineering is synonymous with increased automation. Precision, speed, efficiency, miniaturisation and network connectivity represent the keys to success here. Requirements in the industrial sector, however, are becoming more and more complex, which leads to greater safety demands regarding the operation of machinery.

The European Agency for Safety and Health at Work makes this clear in its report on the mechanical engineering industry: “The high proportion of employees working with machines or computers means that proper design of the HMI (Human Machine Interface) is essential. Poor design of HMI can give rise to occupational diseases, such as stress or musculoskeletal disor-

ders, as well as to occupational accidents. The potential cost to an employer due to reduced productivity, damaged reputation or users’ dissatisfaction is clear.” For this reason, the proper design of both equipment and workplace are of the utmost importance.

New HMI Component technology

Over the years, HMI Component technology has undergone considerable changes in order to meet the increasingly specialised demands of the mechanical engineering industry. Today’s highly developed HMI Components are precisely manufactured products in high-grade plastics, metals and strictly calibrated springs that meet exacting design specifications with very close tolerances. Like luxury watches, they

are engineered to have the high level of performance, haptic properties and appearance that are needed to ensure a long and reliable service life.

Many products are nowadays of modular construction and consist of components that can be assembled quickly. This flexible and configurable approach makes it possible for a product range to include a wealth of different variations. EAO products are very simple to configure and are intended for modular assembly. This makes them the ideal choice for demanding applications in a wide range of industrial areas.

Should customers have more specific requirements, EAO is also able to adapt HMI Components to their individual specifications by:

- Modifying the shape and size of buttons and front bezels
- Adding tactile operating surface structures and coatings
- Laser engraving or printing text/symbols on lenses, marking plates or film inserts
- Adding coloured illumination and animated effects
- Changing the voltage range and including protective circuits
- Fitting customer-specific cabling, wiring harnesses and plug-in terminals

EAO does far more than merely manufacture individual operating elements. As a solution-driven partner, we can offer the option of technically and mechanically customising existing HMI Components to meet our customers' specific requirements. From simple operating elements right up to sophisticated HMI Systems, from volume production through to logistics – EAO offers the entire range of HMI services.

Mixed technology solutions

EAO designs custom-tailored HMI Systems that offer innovative technology, intuitive operations and dependable functions. As specialists in this kind of mixed technology solution, we are able to call on extensive experience – from the initial

concept, through manufacture, right up to logistics – and thus create enormous added value for our customers.

High quality plays a pivotal role in the manufacture of efficient HMI Systems (HMIS) that can meet the wide-ranging demands of the market. The outstanding quality of the EAO product range and the variety and flexibility of its components ensure that the requirements for efficient HMIS are met in full.



HMI System panel.

Standards

Standards are the most important stipulations governing HMI and HMIS construction. The requirements laid down in the general and industry-specific criteria determine properties, methods of functioning and design. It is vital that standards are complied with if approval in a particular market segment is to be obtained. Although standards mean greater precision, efficiency and safety for the end-user, for the design engineer they can quickly become a web of rules that impact on the creative process. Therefore a sound understanding of industrial standards can have an extremely positive effect on design, production and delivery times.

The above is an extract from our technical article “HMI – keeping people in mind.” The full text can be found at www.eao.com/downloads.

Benjamin Brumec
Product Application Manager



EAO optimises its Series 82 for low voltages and currents.

EAO optimises its Series 82 for low voltages.

Gold-plated silver contacts make it possible to use the market-leading pushbutton for low voltages.

With a gold version of its Series 82, EAO has further optimised the use of its market-leading pushbutton. The EAO Series 82 provides attractive vandal-resistant pushbuttons for use in harsh environments, which are ideal for applications in industry, public areas and facility management. In addition, Series 82 offers more than one million cycles of operation thus ensuring an above-average lifespan.

The newly developed gold-plated silver contacts used in our Series 82 make reliable switching of low voltages and currents possible from 5VDC/10 mA.

EAO, your expert partner for Human Machine Interfaces (HMIs), also supplies the new gold version of its Series 82 with momentary or maintained action and with or without LED illumination. For illumination, the customer can choose between central dot and ring versions. The innovative pushbuttons with their sturdy



Long term aging test of Series 82. Long service life: More than 1 million cycles of operation.

housings in stainless steel, brass or anodised aluminium comply with both IK10 and IP67 standards and are available in a variety of attractively designed vandal-resistant options.

Clear benefits of using Series 82:

- Gold-plated silver contacts available for low voltages and currents
- Vandal-resistant: impact resistant to IK10, front protection up to IP67
- Optional illumination and laser markings
- Excellent tactile feedback
- Long service life: > 1 million cycles of operation
- Approvals: CE, CB, UL, C UL, CCC

Marco Bigli
Product Application Manager

Evolution of Series 82

June 2012

Mounting cut-out 19mm

June 2013

Mounting cut-out 16mm and 22mm
Aluminum housing (natural anodised)

September 2013

Screw terminals (for all mounting cut-outs)

October 2014

Flexible laser markings

April 2015

Gold-plated silver contacts
for low voltages



Murrplastik Medizintechnik GmbH is EAO's first preferred supplier.



Murrplastik uses ultra-modern machinery to manufacture top-quality injection-moulded components.

Murrplastik becomes EAO preferred supplier.

EAO's "Preferred Supplier Programme" is aimed at strategically developing partnerships with favoured suppliers. *In this context, 20 November 2014 saw the first agreement signed with Murrplastik.*

It also marked the start of EAO's "Preferred Supplier Programme", which strategically develops partnerships with favoured suppliers.

Both parties benefit from the agreement. In addition to increase quality, supplier concentration and security of supply for EAO, preferred suppliers are the first to be considered when orders are placed. An agreement of this kind also forms a sound basis of future joint developments – the start of a solid partnership.

EAO looks forward to working closely with Murrplastik Medizintechnik GmbH. There are plans for further preferred partners to follow over the course of the coming months and years.

Murrplastik Medizintechnik GmbH

Originally established in 1994, Murrplastik Medizintechnik GmbH in Falkenstein (Germany) is a leading developer and manufacturer of demanding individual components and complete

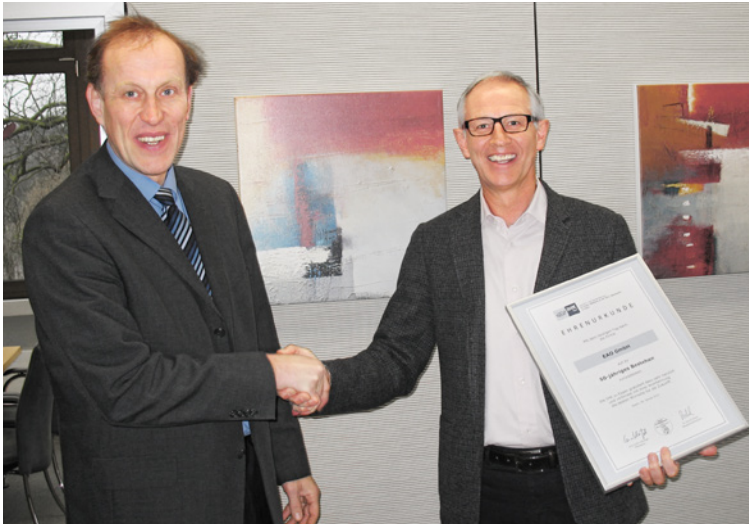
systems that are injection-moulded in top-quality plastics for use in the pharmaceutical and medical technology sectors.

The company has many years of experience in the development of medical products. Using ultra-modern machinery and equipment, some 75 highly trained employees collaborate closely with customers to create optimal solutions to meet their individual requirements. Regular investments made in this machinery ensure that the company remains at the cutting edge of technology.

Murrplastik is also an ideal partner for EAO when it comes to manufacturing extremely accurate top-quality injection moulding tools.

Further details can be found at www.murrplastik-medizintechnik.eu

Urs Rohrer
Head of Strategic Purchasing HMIC



Guido Zakrzewski (left) of IHK Ruhr presents Manfred Sweekhorst with a certificate for the 50th anniversary of EAO GmbH, Essen.

IHK Ruhr honours 50-year anniversary of EAO GmbH.

Guido Zakrzewski, deputy general manager of IHK Ruhr, presented Manfred Sweekhorst, CEO of EAO GmbH, with a certificate commemorating the company's 50th anniversary.

Jubilee for EAO GmbH (Deutschland) – 50 years of expert partnership in Essen

EAO GmbH was established on 1 February 1965 as the German sales company of EAO AG. As expert partners to the industrial sector in Germany, Austria, Poland, Czech Republic and Slovakia some 50 employees in Essen provide advice for the industrial machinery industry, makers of vehicles for urban public transport, manufacturers of agricultural and construction equipment and customers from other areas of industry.

As CEO Manfred Sweekhorst explained: “From the very beginning, we have oriented our strategic objectives towards selected markets, such as transportation, and in this way have ensured our on-going growth. I foresee us continuing to develop successfully in the future, too.” In his presentation speech, Guido Zakrzewski emphasised the importance of medium-sized companies in Essen as both employers and drivers of innovation.

Norbert Backhaus
Marketing Manager



IHK certificate for the 50th anniversary of EAO GmbH, Essen.

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