Kreß GmbH
Sondermaschinenbau

We build machines the like of which the world has never seen

Company Profile

Contract Manufacturing
Automotive Devices
Special Machines

The UHV components, special machines and devices from Kreß are unique: They are produced to the highest level of quality in accordance with individual requirements from industry and research and delivered ready for installation.

Company

Family business with passion
Kreß GmbH was founded in 1998 and since 2004 has its headquarters in Biebergemünd-Wirtheim. The company has been successfully led into the 2nd generation by Wolfgang Kreß and his son Andreas Kreß. Quality, reliability and taking an active part in dealing with customers and in projects denote the very essence of Kreß. We follow this concept both externally and internally.

This is apparent from the longstanding cooperation with customers as well as the longstanding company loyalty of our 22 first-class, trained and motivated employees. They are primarily specialist workers, master craftsmen, engineers and physicists. Their loyalty to the company is of genuine value. In the end, extensive experience, established processes and short paths are the key for projects to run smoothly.

Progressive in technology - open-minded in thought
Despite these conservative values, in practice, progressive technology and open-minded thought are paramount. Regular investment in the modernisation of our machinery or the expansion of the production areas are just as important, as well as pragmatic approaches in projects. These characteristics are appreciated by Kreß customers. And have been for more than 15 years.

We make ideas into special machines
In our engineering department we design all necessary components in CAD. A development team allows design and manufacturing knowledge to flow together. In this way, we can ensure that a special machine not only fulfils all the requirements in terms of function and quality. Due to the fact that we continually check and optimise the purchase of third party components, procurement, logistics and feasibility in production, in the end, the result is special machines with a high degree of efficiency.

Usually, the UHV components, special machines and devices are integrated into existing systems and plants by Kreß. We therefore integrate pneumatic systems, sensor technology and measuring technology into the design and ensure communication capability with the customers' existing control electronics. In this way, our extensive experience in the most varied areas of application and conventional systems of plant automation are incorporated together.

We operate a quality management system in the design department which is certified in accordance with ISO 9001 : 2008. We work with the following systems:

3 positions (mechanical design) / Solid Edge and ProEngineer
1 position (electrical engineering) WSCAD for PLC systems S7-1200, S7-1500 and LOGO

Products and Services

The most modern test facilities as well as a certified quality management system ensure that, from design through to commissioning, the end result is special machines with high-class German workmanship.

At Kreß, engineering means: Small, flexible teams from the applications, design, production and assembly departments bring their own ideas and experiences. Short paths and rapid feedback within the project team help to keep up the pace in the development process. In production modern machines and plants for CNC turning and CNC milling ensure the required quality and precision. Highly trained employees and welders who are certified for various processes are also a contributory factor. 3D measurements of workpieces and Helium leak test on UHV components support the development process and in production they help to ensure quality and proper operation.

The range of products:

- Automotive Devices
- CAD Design
- Contract Manufacturing
- Special Machines
- Particle Accelerators
- UHV-Technology

The range of services offered by Kreß GmbH includes:

- CNC milling
- CNC turning
- Conventional milling
- Conventional turning
- Welding of different materials such as Aluminium / VA / Titanium / ST material in accordance with MIG-MAG, WIG, E and autogenous
- Assembly
- 3D measurement
- Helium leak test
- 3D-CAD design with Solid Edge and Pro/Engineer
- Electrical design with WSCAD for PLC systems S7-1200, S7-1500 and LOGO

Testing technology equipment

3D measurement:

Romer mobile measuring arm for measuring volumes with ø up to 2500 mm
This measuring arm enables precise measurement of a workpiece. When doing this the 3D model produced from the design will be read into the computer of the measuring arm and the measuring points on the workpiece are scanned. The computer for the measuring arm then determines the exact dimensional deviation between the target values of the 3D model and the target values of the workpiece. All measurements are documented in a detailed measurement log.

2D measurement:

TESA micro-hite plus M600
This digital measuring device can measure lengths up to 615 mm and has a measuring accuracy of less than 3µm. Through the modular concept, length measurements can be taken in the form of external, internal, height, depth and distance measurements on geometric elements with flat, plane-parallel and circular cylindrical surfaces in one or two coordinate directions.

Helium leak test:

Pfeiffer Vacuum SmartTest HLT 560, booster pump Pfeiffer Vacuum DUO 008
The detection rate for vacuum leaks is 5×10^{-12} mbar l/s. The HLT 560 He leak tester has an internal rotary vane pump and an He test leak for calibration. For leak detection on recipients with larger volumes an additional rotary vane pump with a pumping speed of 8 m^3/h is used. For leak testing on smaller volume parts devices are used which have been specially developed by us.

Kreß GmbH
Sondermaschinenbau

Automotive Devices

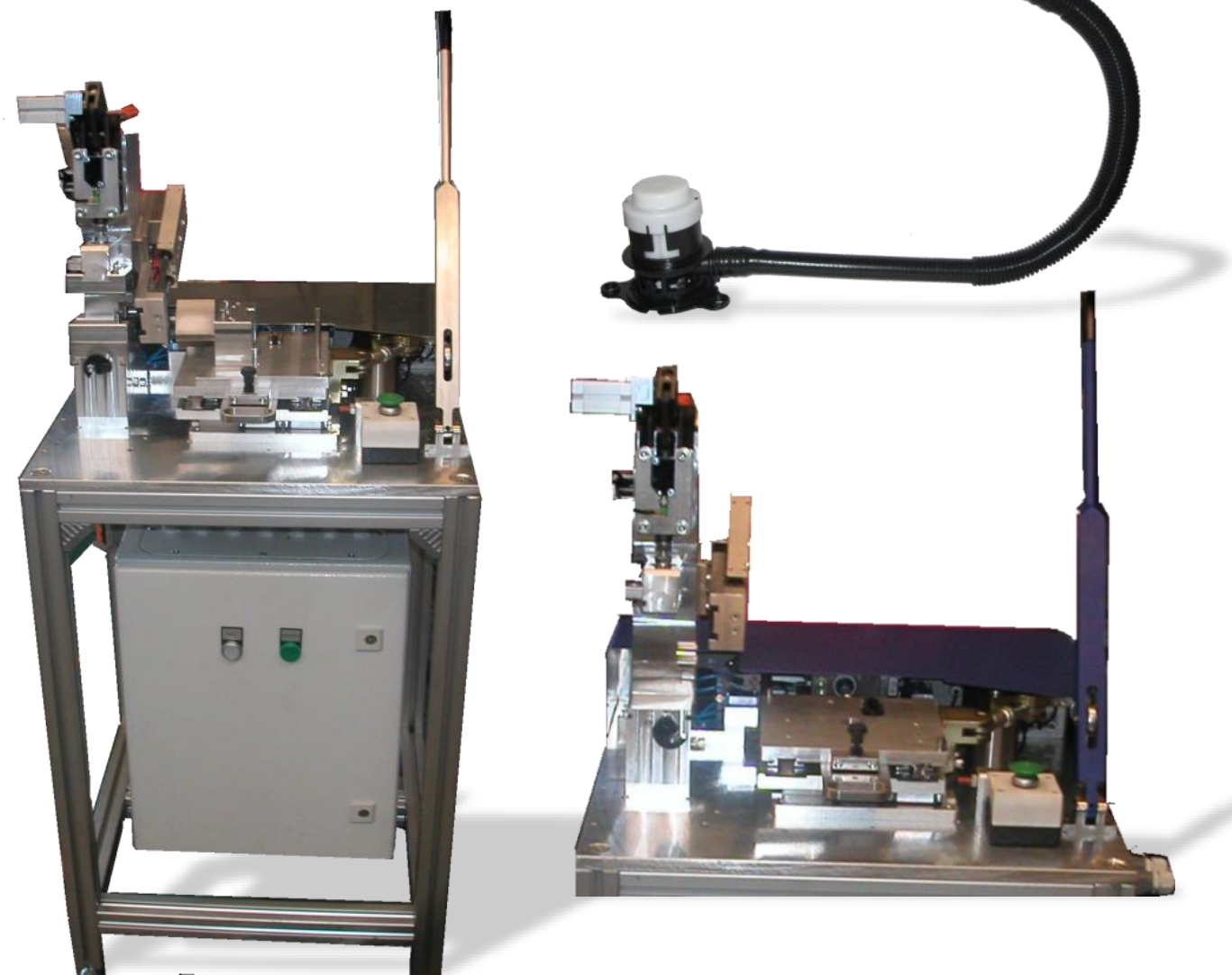
Manual insertion device

Manual insertion device for sliding connectors, valves or other connection elements onto cables. Any plugs or other components can be pushed into formed cables, pipes and hoses made from various materials. During assembly the necessary attachments such as damping elements or brackets can be checked, fitted or pressed, such as for example lug clamps.

It is possible to network with several plants to with the requirements of a specified production process.

The possible cycle times are below 10 seconds per assembly step It is possible to machine pipes with a diameter between 6 and 30 mm (other diameters on request).

Benefits
It is possible to convert to other geometries in under 60 seconds, without the use of tools.
Only fully assembled cables can be removed.
Request for components and elements to avoid confusion



Kreß GmbH
Sondermaschinenbau

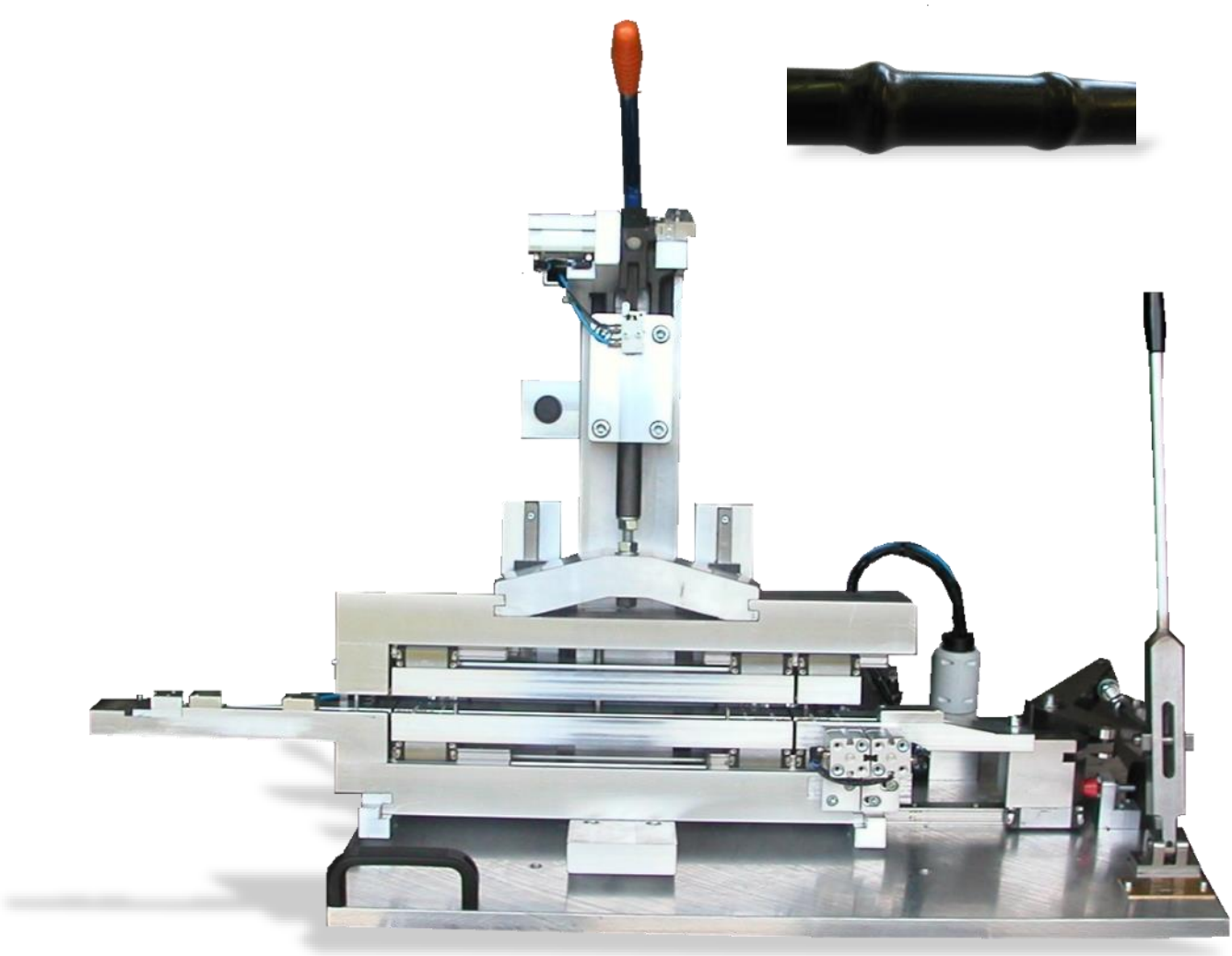
Automotive Devices

Manual flanging device

Device for applying flanges to pipes. The flanges are, for example, for axial fixing of support elements in vehicles. You can apply up to 3 flanges in one working step using the flanging device. The diameter of the pipes can be between 5 and 16 mm. For each flanging process, the flanges applied are identically rounded and uniform. The diameters required can be adjusted individually.

Data

- Cycle time below 10 seconds for a flanging procedure.
- Multiple flanges can be manufactured in one operation.
- It is possible to switch to different pipe diameters without the need for tools
- Robust and durable design of the device
- Saving resources for tool management



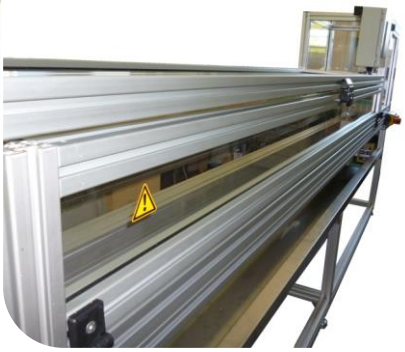
Kreß GmbH
Sondermaschinenbau

Automotive Devices

Automatic flanging device with feed

Fully automated device for fitting flanges to pipes. The flanges are, for example, for axial fixing of support elements in vehicles. Flanges can be shaped onto straight pipes at different spacings with the fully automated flanging device. Flanges for different types of pipes can be programmed. Through this it is possible to convert to a different pipe without any major loss of time. The supply of pipes can occur by hand, as cut bar material in a storage container or from a coil. When supplying pipes from a coil the pipe will be cut inside the machine. The machine can check and recognise pipe colour and pipe diameter, which means that there is no chance of the incorrect primary material being used.

The diameter of the pipes can be between 5 and 16 mm. For each flanging process, the flanges applied are identically rounded and uniform. The flange spacings required can be adjusted individually. The flanges are measured in the plant and tested for dimensional tolerance.



Data

- Cycle time depends on the length of the pipe and the number of flanges
- Multiple flanges can be manufactured in one operation
- It is possible to switch to different pipe diameters without the need for tools
- Robust and durable design of the device
- Saving resources for tool management
- No scrap through incorrect primary material
- Checking the flange diameter
- Manual feed, as bar material from a storage container or from a coil

Kreß GmbH
Sondermaschinenbau

Automotive Devices

Mandrels

In all vehicles there are different cooling water hoses, hydraulic hoses and air hoses.

These hoses are formed with a mandrel out of steel or stainless steel. Using the specifications from the customer, a shaped mandrel is manufactured and this mandrel has exactly the same dimensions as the shaped hose to be produced. The hoses to be shaped are pushed onto this mandrel and then sucked onto the shaped mandrel using vacuum pressure.

Kreß GmbH
Sondermaschinenbau

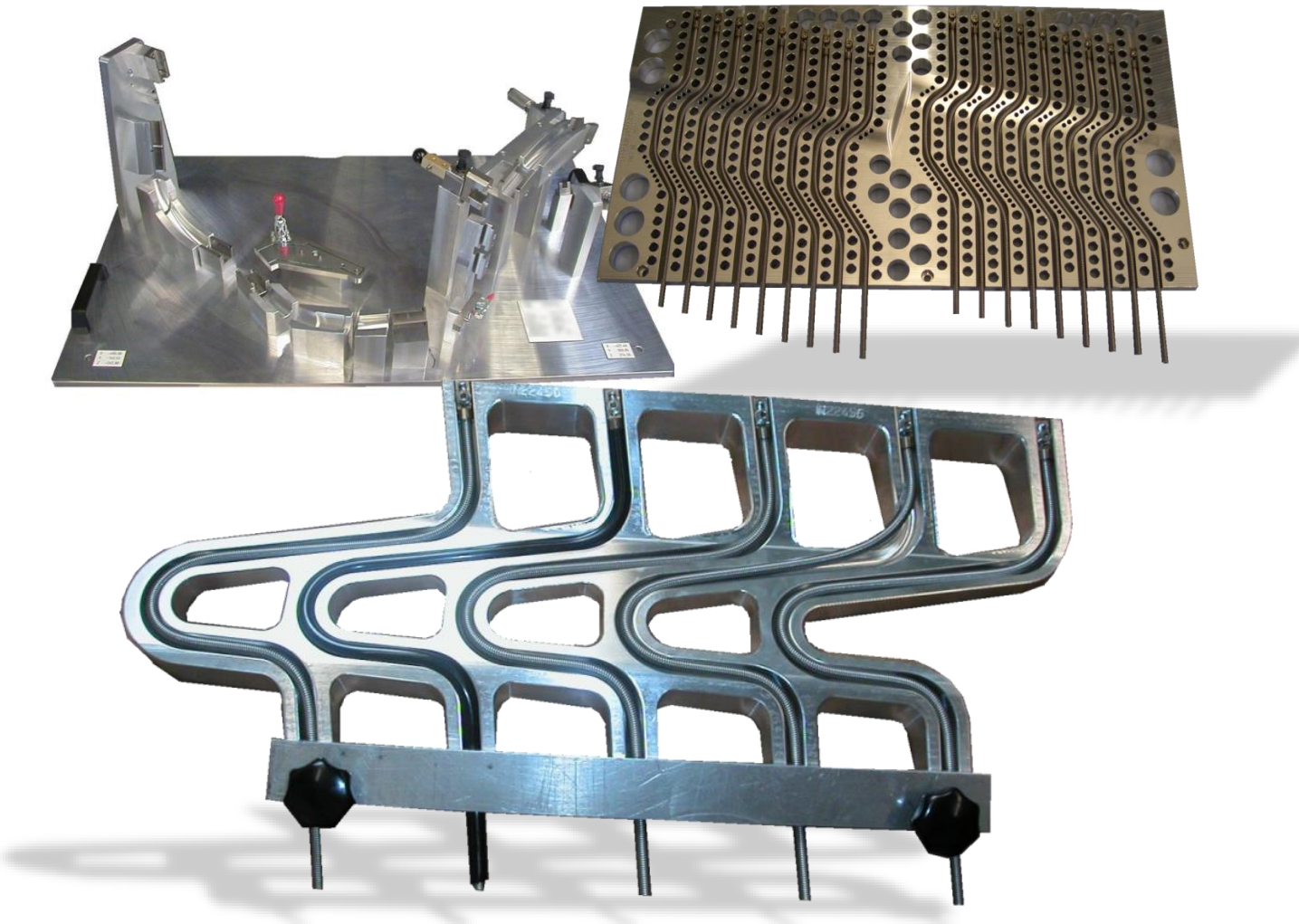
Automotive Devices

Test gauges

Gauges are used for testing the geometry of pipes, hoses and other components for the automotive industry.

The test gauges shown here allow the testing of fully assembled cables. Depending on the requirement, the gauges can be made of aluminium, plastic or other materials.

In accordance with our customers' specifications we create a 3D model for each gauge required. After production, which requires the highest level of accuracy, we measure the gauges and the measuring data is recorded. A 3D measuring arm with special software is used for this precise measurement. During the measuring process, the measurements are compared immediately with the target values of the 3D CAD models of the gauge. At the end of the measuring process a detailed measuring record is issued and shows whether all measurements are within the tolerance zone.



Kreß GmbH
Sondermaschinenbau

Automotive Devices

Assembly bench

The assembly bench consists of an aluminium base frame. The height of the bench can be adjusted electrically and is fitted with workplace lighting. Storage compartments and shelves can be fitted over the work area.

This shows the basic concept for the assembly benches. So further assembly stations can be installed with assembly aids, query points and tool positions.

Kreß GmbH
Sondermaschinenbau

Special Machines

Handling system with adhesive dispensing unit for bonding films

The design of these special machines was created in our design department, in close cooperation with our customers. Due to the complexity of this handling system, close cooperation with the customer is absolutely essential, so that the knowledge required for the production process can flow directly into the design.

The system consists of a 3D axis system, a precise adhesive dispensing unit and vacuum plates. The process control unit was programmed and optimised by us in accordance with the customers' specifications.

Kreß GmbH
Sondermaschinenbau

Special Machines

Pressure test bench for cables

Pressure test bench for pressure testing cables. The cables are made from plastic, rubber, metal or a combination of these. Pressure testing can be carried out both with vacuum pressure or also positive pressure to 40 bar. It is possible to use water, air or Helium as the test medium.

The parts are inserted and fixed by hand. Pressure testing, pressure loss and flow testing can be carried out. Evaluation is carried out using a test unit.

The cables which are tested and are OK can be printed where required. Component specific text or a data matrix code can be printed on the item. An inkjet printer is used for the printing process.

Data

- It is possible to carry out pressure testing up to 40 bar.
- Printing on the test pieces which are OK
- Compact design of the test bench

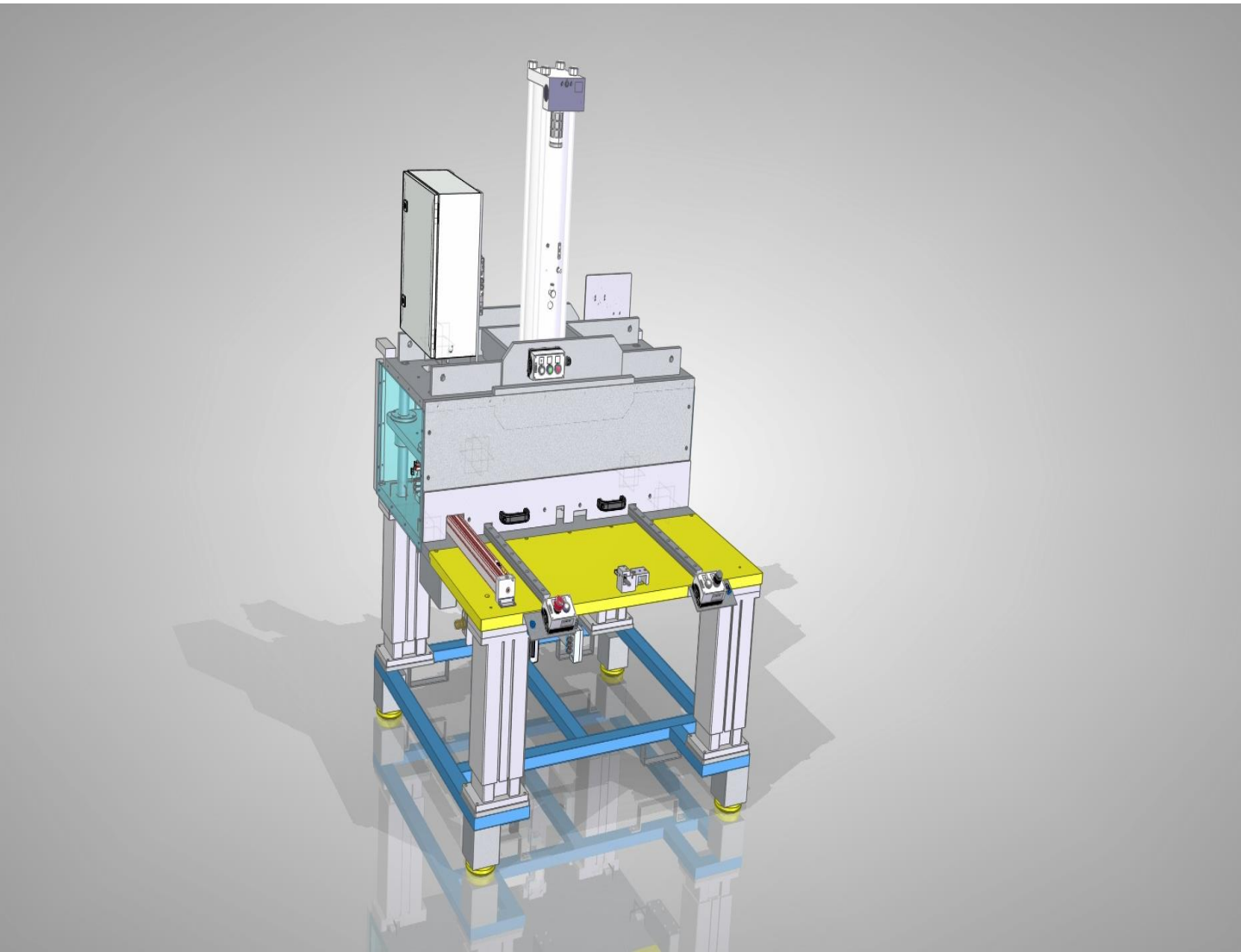
Kreß GmbH
Sondermaschinenbau

Special Machines

Press with vacuum unit

These special machines were developed with our customers and are used to press films of different sizes. The films are fixed on vacuum plates for the pressing process. The maximum pressing force is 300 kN. The force and duration of the pressure can be preset using a control unit. Multiple presses are also possible.

The dimensions of the working surface are 1000 x 500 mm.



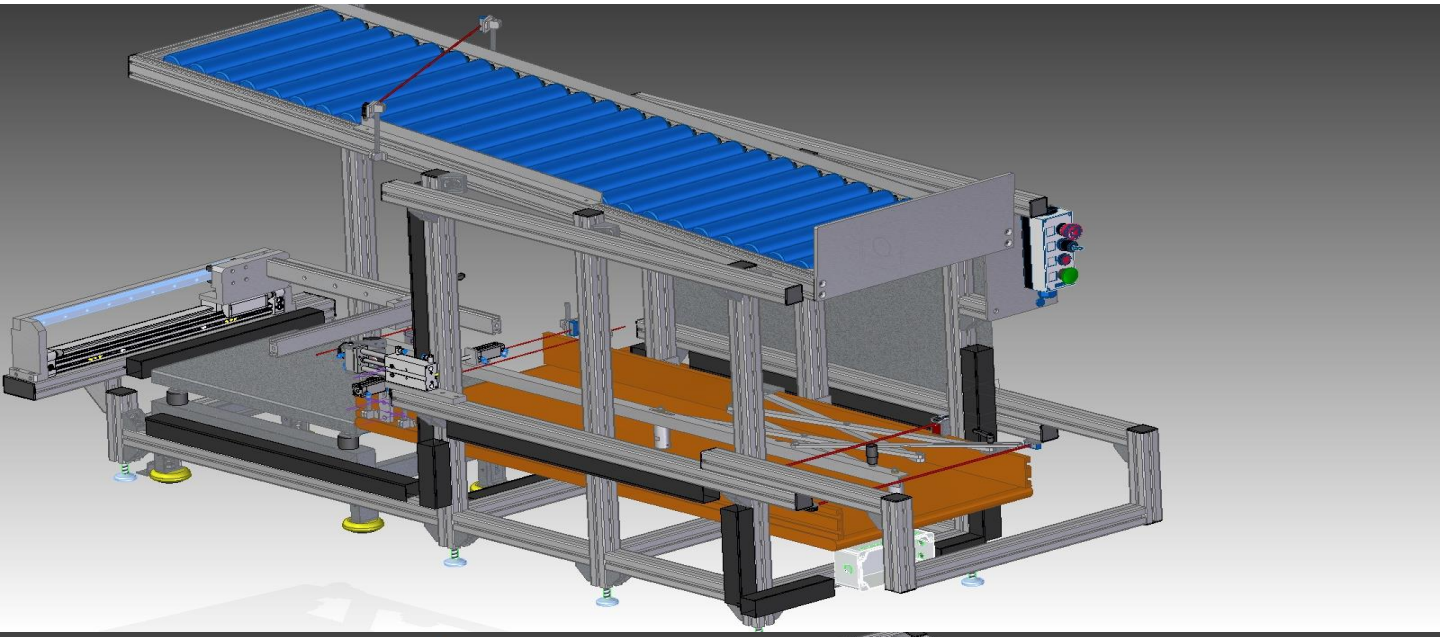
Kreß GmbH
Sondermaschinenbau

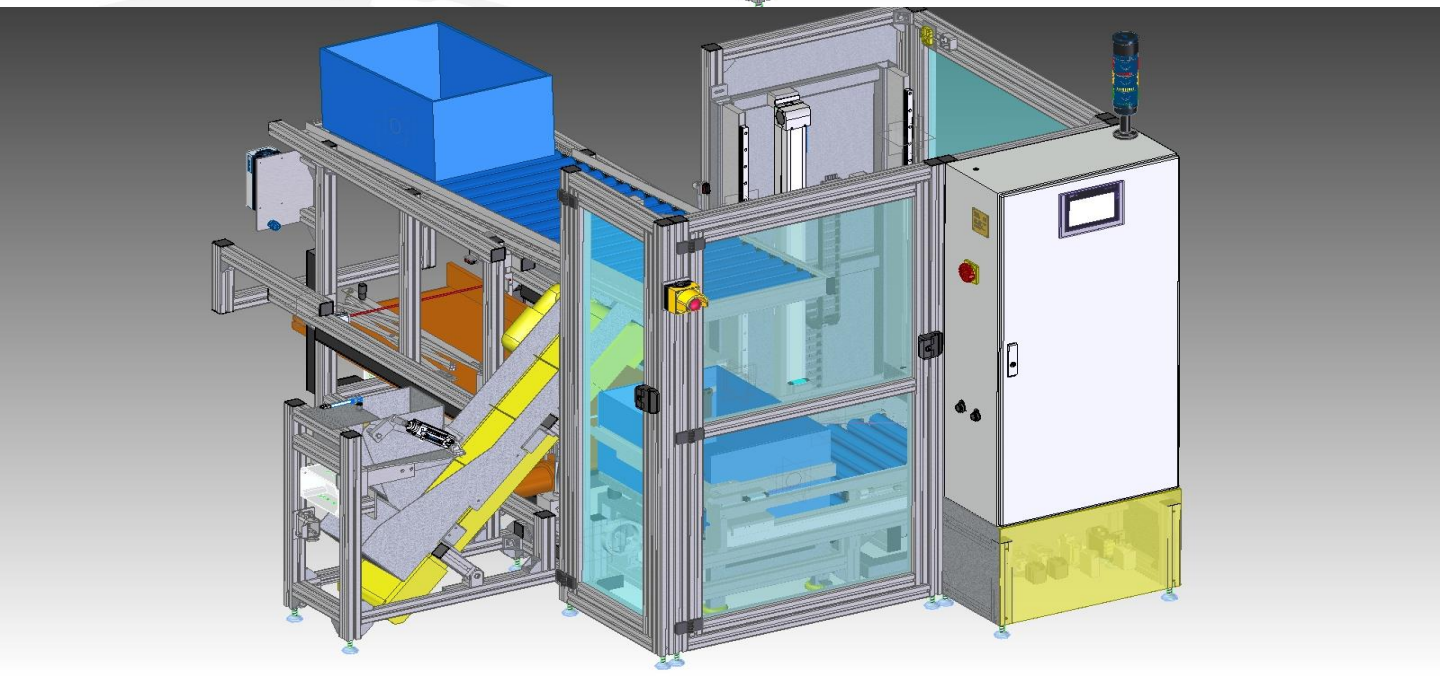
Special Machines

Feed unit

These special machines were developed with our customers and are used to feed and separate packaging units. The plant was fitted onto an existing machine.

The feed unit is filled with packaging units of different sizes and dimensions. When doing this, the quantity can be adjusted as necessary. Detection of the packaging unit is automatic.





Kreß GmbH
Sondermaschinenbau

Contract Manufacturing

Examples of contract manufacturing

Fig. 1 Milling part made of aluminium with surface treatment.
Fig. 2 Welded part made of aluminium, thin-walled pipe with a wall thickness of 0.5 mm
Fig. 3 Turned part made of titanium, conically tapered, holes arranged on the lateral surface
Fig. 4 Cam discs with gearing, design, construction and production at our premises.
Fig. 5 Rotary milled part: Electrode holder made of copper
Fig. 6 Parts carrier made of plastic, production in accordance with the customers' drawing
Fig. 7 Workpiece carrier made of aluminium, production in accordance with the customers' drawing
Fig. 8 Cylinder housing for lifting cylinder of the suspension unit
Fig. 9. 3-D milled part of a thin-walled shaped half mould, made of stainless steel

Kreß GmbH
Sondermaschinenbau

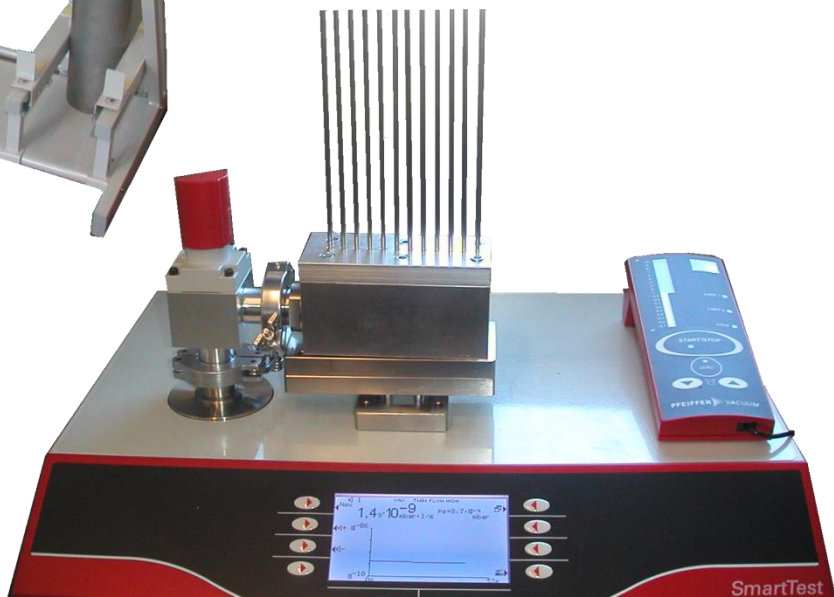
Contract Manufacturing

He leak test

We offer you He leak detection on individual components or volume parts. The results with all measurements are summarised in a measurement log.

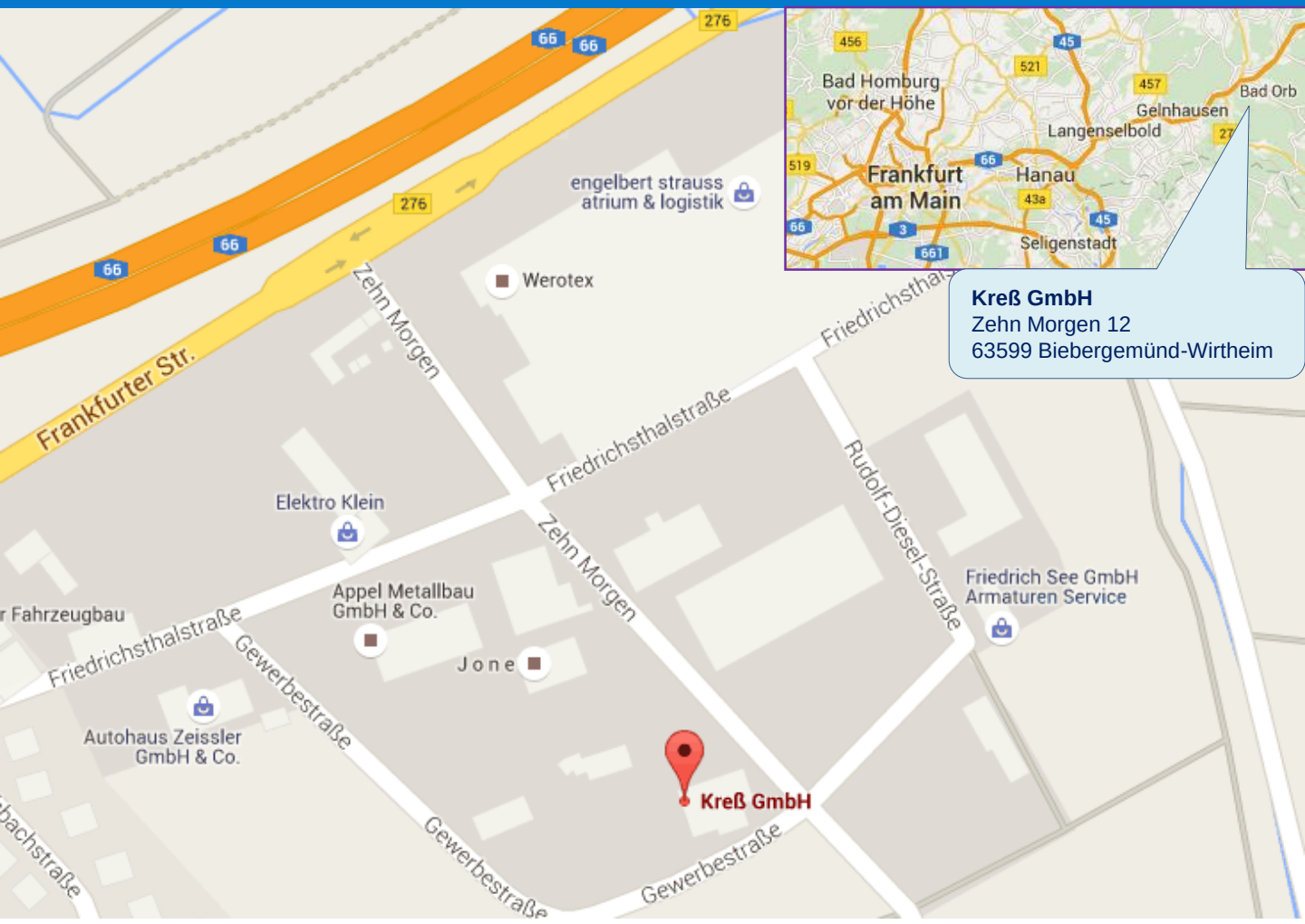
The brackets and adapters needed for the He leak test are custom made for your test pieces in our production department.

Data
He leak tester: Pfeiffer Vacuum HLT 560 SmartTest including SmartTest software for computer analysis



Kreß GmbH
Sondermaschinenbau

How to find us



Contact:

- *Special machines*
- *Automotive devices*
- *Contract manufacturing*

Andreas Kreß
Direct Line: +49 06050 90987-13
Email: a.kress@kress-gmbh.de
Web: www.kress-gmbh.de