

Innovative Tube Processing from a Single Source

WAFIOS showcases cutting-edge tube bending technologies at Blechexpo

At the 2023 edition of Blechexpo, the international trade fair for sheet metal working, WAFIOS will be highlighting its expertise in tube processing. Hailing from Reutlingen, Germany, the company will be using its booth to showcase the full range of what it can do in this area: solutions for large tubes and small tubes, tube end processing, software, and a variety of processing technologies. Simply put, its visit to the event will be dedicated to everything relating to tube end forming and tube bending.

For some years now, WAFIOS' portfolio has included the TWISTER² series – a high-end tube bending solution based on an integrated robot. What makes the solution so special is the WAFIOS WPS 3.2 EasyWay programming system, which provides a common user interface that both the bending device and the robot can use. Bending and handling tasks can be set up easily without the need for expertise in using robots, enabling operating staff to create three-dimensional tube geometries with flexibility and efficiency. The Blechexpo booth will exhibit a TWISTER² 25 cell for tubes with a diameter of up to 25.4 mm or comparable profile cross-sections. One example of the machinery system's applications is hose/tube combinations with attachment parts – something often required in hydraulic systems and air conditioning technology. The TWISTER² series currently encompasses five sizes, covering tube diameters of up to 35 mm.

Tube bending solution for delicate parts

Small, delicate tube bending parts are required for many products – such as cannulas used in medical technology or coaxial cable connections found in high-frequency technology. This is exactly where the new BMZ 6 comes in. Also being showcased at the WAFIOS booth, it is the smallest machine in the proven BMZ series for tubes measuring 0.5 to 6 mm in diameter. Its hallmark is an exceptionally compact design that takes up hardly any space at all.

The modular structure of the BMZ 6 enables it to combine a range of processes including bending, winding, and coiling in

order to bring highly complex part geometries to life. With the EasyRobot, a fully integrated handling robot, additional processing steps such as forming can be added easily using the machine's programming interface. Like other WAFIOS technology, this range was developed with easy, intuitive operation firmly in mind. This means the BMZ machines can be used universally and set up to accommodate new parts in hardly any time at all. Convenient 3D simulations make it possible to perform quick feasibility analyses and determine cycle times. Software add-ons from the **iQ family** also deliver enhanced performance and boost quality even further.

The third machine that WAFIOS Tube Automation GmbH will be exhibiting at its booth is the RU12-Compact for tube end forming – a highly space-saving option that features one or two forming tools. Workpieces are clamped horizontally using either a standard holding fixture from the RU series or application-specific holding fixtures. The concept is highly accessible for handling and feeding systems, making it easy to perform fully automated operation. An electrical tube stop is available as an option, enabling reproducible alignment of tubes in clamping jaws and ensuring consistently high quality and repeatability during both manual and automated part feeding.

Intelligent software for tube processing

Tube processing can be added to the list of areas in which intelligent software packages are playing an increasingly prominent role, primarily in order to simplify operation and boost quality and cost-efficiency. WAFIOS' major contribution in this case is the WPS 3.2 EasyWay programming system, available in all of the company's CNC tube bending machines. This guides the user through everything from the initial feasibility analysis at an external workstation right through to the final process of producing the parts. The system offers features including CAD data conversion and flawless importing of geometry data.

A new addition is isometric programming, which makes it possible to produce a 3D drawing of a tube part in just a few clicks – including simple length and angle dimensioning directly on the geometry. There is an increasing range of **iQ** functions available to enhance the WPS system, including the ability to

automate the setup process using an appropriate wizard in which the bending process is simulated according to the set machine parameters and visualized in 3D in order to rule out collisions. The software also automatically optimizes the program sequence, making it possible to reduce reject rates even before production begins. Additionally, operating staff have the ability to determine the bending process speed that is best for maximizing output.

A strong partner in tube processing

WAFIOS' machine and software portfolio for tube processing has proven its worth in companies the world over. A major part of this success is the customized approach that the tube specialists in Reutlingen take to their projects. "We can equip our customers with a tailored solution if they request one – regardless of whether they're working with just one machine or an entire production line. We also make sure that everything merges seamlessly with the existing environment from both a technical and financial perspective," says Christoph Röhm, Head of Technical Sales – Tube Bending Machinery at WAFIOS. Customers do not just benefit from the machine itself and feasibility studies for their bent parts, however – they also enjoy comprehensive process consultation, if not an outright process development service. "We have our own tube tool development processes to refer to and a fleet of machines for creating samples, so we can provide evidence of a part's feasibility in advance of a customer making their decision," adds Christoph Röhm. This approach also covers the appropriate automation and digitalization concept with IoT. Additionally, WAFIOS' services address the hot topic of energy management in machines, with tools for creating more sustainability in production available if required. In summary, the customer receives everything they need for tube processing from a single source.



WAFIOS at Blechexpo 2023 in Stuttgart: hall 3, booth 3408

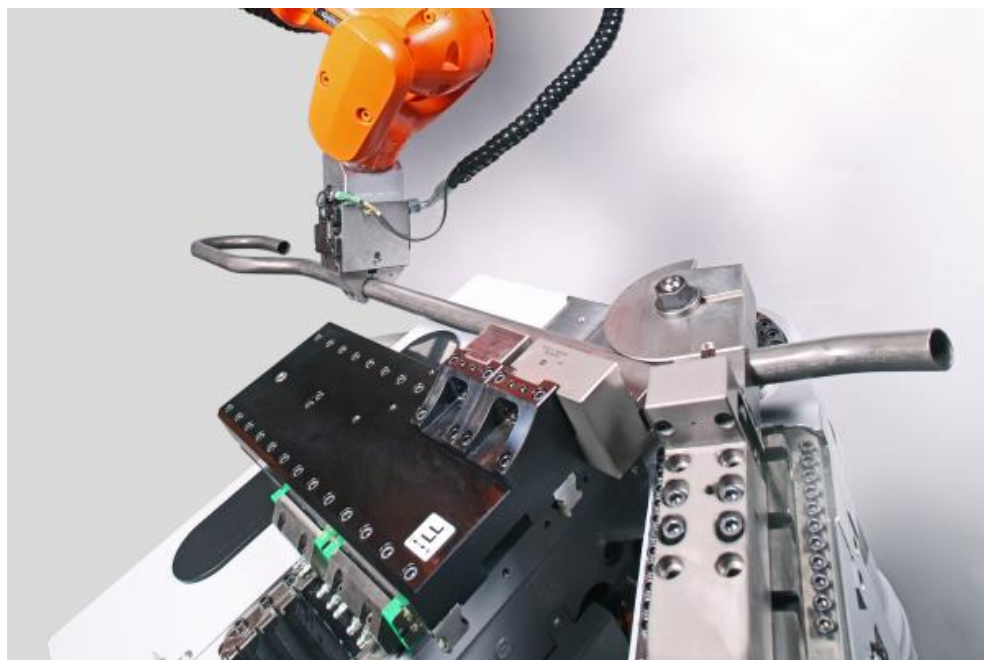


Fig. 1: TWISTER² 25 RL tube bending center



Fig. 2: BMZ 6 CNC tube bending machine

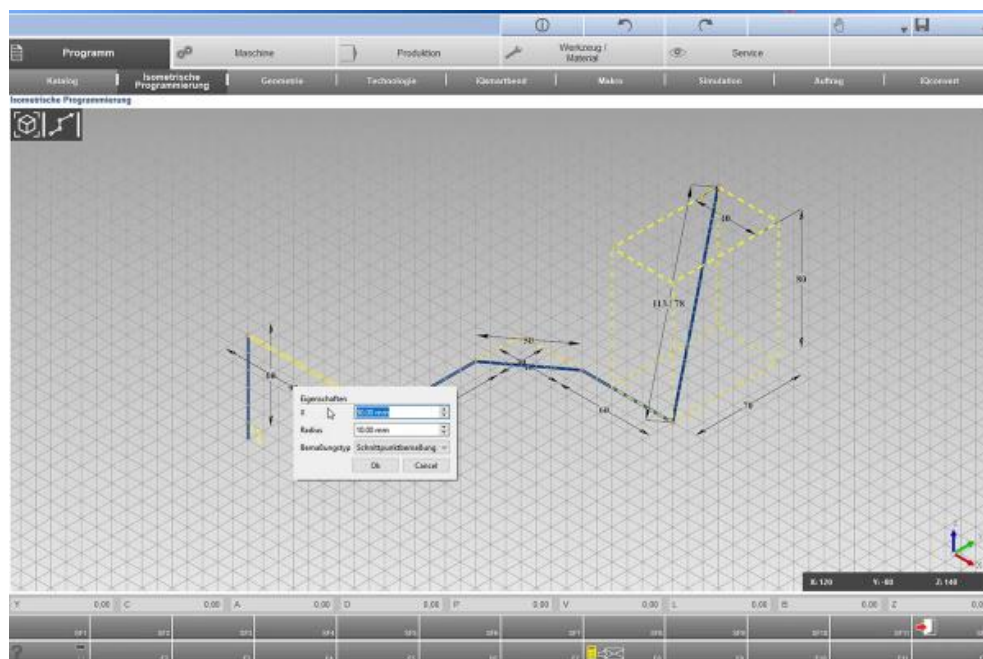


Fig. 3: Isometric programming



Fig. 4: RU12-Compact tube forming machine



Fig. 5: Christoph Röhm, Head of Technical Sales – Tube Bending Machinery, next to a tube bending machine