

WAFIOS AG
Silberburgstrasse 5
72764 Reutlingen
Germany

Contact: Andreas Hoster
Tel. +49 7121 146 309
E-mail: a.hoster@wafios.de
Internet: www.wafios.com

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New Highly Flexible and Efficient Production Cell – CNC Tube Bending Center BMZ 52 for the Production of Two and Three Dimensional Bent Parts from Tube or Bar

Just in time for the Tube in Düsseldorf, WAFIOS AG presents the BMZ 52: a new CNC tube bending center for tubes in the small diameter range – steel up to 18mm or aluminum up to 21mm – which is especially effective in multi-shift and unmanned applications thanks to the functional working modes.

Designed for the production of complex bent parts out of cut-to-length and end-treated tubes and bar, the machine has 8 CNC axes available in the standard set-up which can be optionally upgraded to have up to 14 axes depending on the equipment and degree of automation. The fully-electric tube bending center is maintenance friendly, reliable, secure and is distinguished by a very high availability.

The goal of the new design was to provide users a resource which unites the highest possible flexibility with respect to the bending process and producible parts but also in regard to the degree of automation. And all of that working under the premise of high bending speeds and consistent quality.

The newly designed bending head with a pivoting support enables a high degree of automation right up to fully operative production cells with loading and unloading functionality. Parallel to that, an electro-pneumatic regulated, flexibly positionable part conveyor (loading unit) has been integrated as standard. The loading unit makes it possible to stack the finished part and load the next at the same time. There is also the optional possibility of linking to robots either for integration into a production line or for additional handling operations on the machine. The bending head pivots and allows both right and left hand bending operations via mechanical conversion, whereby the modular concept provides the option for right and left handed bending in a single handling.

The double-mounted guide bars in conjunction with the rigid and stable tool mount are the guarantee for highest precision during the bending operation. Characteristic curves defined and stored in the control software for tool programming and online simulations ensure the highest possible security and repeatability in everyday production and, not least, increase the availability of the equipment significantly.

Extremely high bending speeds due to interpolated axes reduce the machine's side-times. Highly dynamic actuators, the ability to load and unload concurrently, programming parallel to production, as well as simple and repeatable tool changes all add up to a very high degree of availability and productivity.

A very high degree of freedom is available to bending processes on the WAFIOS BMZ 52 which represents a very wide range of producible parts. Contributing also to the diversity of parts are tools for mandrel-free bending with bend-in-bend contours,

combined rotary draw and free-form bending, the three-jaw-collet system which can support end-treated tubes and other features.

The new programming software which is to come installed with all new WAFIOS and MEWAG tube bending machines is integrated into the design. The features of this system are, among others, user guided control, simulation options, graphic support of programming, hierarchical user levels (programming levels), clear text programming of lengths/angles/coordinates and interfaces for peripheral equipment.

With the BMZ 52 WAFIOS situates a tube bending machine with the greatest possible flexibility and a high degree of automation on the market. This premiere machine unites in one functional design perfect machine handling with extraordinary production output and quality.



Fig. 1 WAFIOS BMZ 52



Fig. 2 BMZ 52 Bending Head



Fig. 3 BMZ 52 Loading Unit



Fig. 4 WAFIOS WPS 3.1 Easy Way