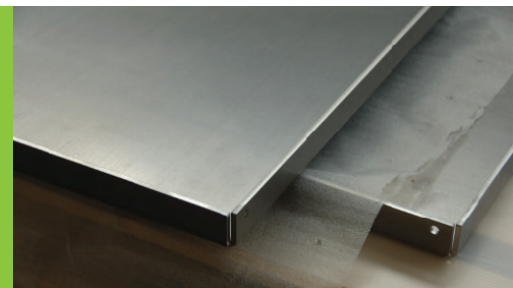


Folding machines simplify automation

QUADRUS Metalltechnik GmbH chooses folding machine from Schröder



User

QUADRUS Metalltechnik GmbH, founded in 1998 by two brothers in Schmidgaden operates as a classic contract manufacturer. Their customer base is in the agricultural machinery construction, trailer construction, machine construction, plant- and vehicle construction and are located regionally. The core competence of QUADRUS lays in the production technologies of fully automated laser cutting 24/7, punching / nibbling, sawing / cutting, surface treatment, welding (hand/robot/laser) and forming. In these fields, QUADRUS has positioned themselves as a customer-oriented innovator with very high technological know-how. Around 280 employees process approximately 1,100 tons of sheet metal and 200 tons of profiles every month on a production site that covers more than 20,000 square meters (www.quadrus.de).

Success

Coming from the field of welding technology for agricultural machinery, the contract manufacturer QUADRUS Metalltechnik until now only worked with press brakes. Having received new orders for sheet metal with thicknesses below 8 mm and the due to the desire for extensive automation, a new folding machine has been acquired a few month ago. The Schröder MAK 4 Evolution UD with Advanced Handling System (AHS) allows efficient operation and lean partial automation of the folding process.

Used machine

MAK 4 Evolution UD

- Folding machine up to 8 mm sheet thickness (400 N/mm²)
- Maximum working length 5,040 mm
- Clamping pressure clamping beam 120 tons
- Automatic bending process with Advanced Handling System (AHS)
- Tool changing portal with hydraulic tool clamping (8 axis in total)
- Graphic control POS 3000
- Machin length at Quadrus: 4,000 mm x 5.0 mm

Ergonomics and automation: Sheet metal folding has „natural“ advantages

Bending large sheets on press brakes require either 2 to 3 operators or a very big robot. Here the folding technology shows „natural“ advantages: At QUADRUS one operator places the large sheet metal on the machine table using a lifting crane with vacuum grippers. He can easily position the sheets for the bending process, which then happens fully automated: The sheet gets aligned by a video system; the lean AHS unit with suction plates fixes the sheet and moves it to the folding beam. Forward, backward and rotation – all movements are precisely performed and optically controlled by the AHS. The MAK 4 Evolution UD works with the Up-and-Down technique. The folding beam can bend both ways, from bottom to top and from top to bottom. Thus, there is no need to turn over the sheets. This is how the work piece is bent, even the finest radii are possible using the so-called radius step bending function. Backlash-free planetary gears for power transmission and embedded lead screws ensure high bending forces with very low wear and maintenance. The MAK 4 Evolution UD achieves a positioning accuracy of 0.1 millimeters or rather 0.1 degrees across all axes.

„Advice and support leave nothing to be desired. CEO Franz Schröder as well as the whole team of Schröder took their time, some details were completely adapted to our wishes. After one year of operation we can say that the investment into the Schröder MAK 4 Evolution UD really paid off.“

Hans Maier
Operations manager at Quadrus

The fully integrated tool changer allows automatic tool changing. The operation of the machine is done with Schroder's own graphic controller, the POS 3000. Bending programs can get loaded directly from CAD/CAM systems or as DXF files from higher-level production systems or they can get created and modified directly at the machine. Also fully integrated into the software of the MAK 4 Evolution UD is the AHS handling system. Whereas Robots used on press brakes often have to get integrated separately and need complex synchronization with the processes in the machine.

Extensive evaluation

„After a demonstration at the exhibition, our choice was made. Now we started with the evaluation.“, says Hans Maier. For this purpose, sheets with exact specifications were sent to the Schröder factory in Wessobrunn, Bavaria. Then the finished work pieces were inspected on site. „Advice and support leave nothing to be desired. CEO Franz Schröder as well as the whole Schröder team took their time, some details were completely adapted to our wishes.“ This includes laterally mounted roller gates at the machine. They replace light barriers that function as safety barriers to keeping the minimum distance when running the machine. QUADRUS was afraid that these light barriers would react too sensitively and lead to unnecessary productions stops. The idea for the roller gates came from the Schröder team. They were implemented cost-neutrally and have proven themselves very well at the QUADRUS factory.

One year of positive experience

„After one year of operation we can say that the investment in the Schröder MAK 4 Evolution UD really paid off. We were able to expand our range of products in the forming technology and achieve higher precision as well as flexibility. This is very helpful for our typical batch sizes of up to 50 pieces. Ergonomics and the degree of automation convinced us: Thanks to the AHS and the lifting crane with vacuum gripper, one single operator can handle everything,“ says Hans Maier with satisfaction.



The Schröder Group consists of Hans Schröder Maschinenbau GmbH, which is located in Wessobrunn, Germany, SCHRÖDER-FASTI Technologie GmbH, located in Wermelskirchen, Germany and the SMU GmbH, located in Leinburg-Weißenbrunn.

Founded in 1949, Hans Schröder Maschinenbau GmbH unifies traditional and modern approaches in machine building: Successfully managed as a quality and customer-oriented, family-owned company, Hans Schröder Maschinenbau is specialized in the development of modern machine concepts for bending and cutting sheet metal.

The successful integration of the Fasti Company in 2006 and its worldwide presence make the Schröder Group one of today's leading providers of machines for bending, cutting, beading, flanging, and circular bending all types of sheet metal. The company's precision machines range from proven solutions for craftsmen to innovative, high-performance machines for automatic industrial production processes. 2021 the Schröder Group was expanded by the tool manufacturer SMU GmbH. Overall, the Schröder Group currently employs more than 300 people at various locations at home and abroad.

SCHRÖDER
GROUP

Hans Schröder Maschinenbau GmbH
Feuchten 2 | 82405 Wessobrunn-Forst
Deutschland
T +49 8809 9220-0
F +49 8809 9220-700
E info@schroedergroup.eu
www.schroedergroup.eu