

Metal furniture production in perfection

Schröder folding centre for the swiss company USM U. Schärer Söhne AG



User

The modular furniture system Haller that is sold globally by USM U. Schärer Söhne AG since almost 50 years, it is a design classic. The modular system for metal furniture is the embodiment for high standard office design and flexibility in space usage but has also become established more and more in the private sector during the recent years. The whole production takes place in Münsingen near Bern. In 2011, one of the main machines important for production needed to be replaced, when USM took the opportunity to install a high quality automation centre for sheet metal processing. (www.usm.com)

Success

The Schröder folding centre at USM consists of an infeed section in which a Kuka-robot lifts metal sheets with a pneumatic device from the palette. Afterwards, he passes them over to a gripping device placed at the extension of the back gauge table. A manipulator aligns the sheets for a precise bending. The SPB Evolution UD, equipped with an automated tool changing system in the heart of the folding centre, has been extended by a special press installation and produces 500 to 600 components of highest quality per shift.

Used machine

- Swivel folding machine SPB Evolution UD installed in an automated folding centre
 - robotic arm for sheet feeding
 - manipulator and camera systems for placement and precise measurement
 - automatic tool changer
 - Up- and Down folding beam
 - additional installation for presses
 - Schröder control software POS 3000
 - manual removal with visual inspection
 - surface treated clamping-, bottom-, and folding beam tools (material strengths 1 100 N/mm²)

USM was searching for a substitute for a central arcfolding machine. André Gerber, COO stated: „We'd already agreed on a cooperation with another manufacturer when we visited the stand of Schröder Group on the fair Euroblech in 2008. When my colleagues and me reported on our requirements and the new machine we had been surprised by the statement that it would not work out that way. That was contradictory to what the other manufacturer told us and caused us to rethink the whole case once again and indeed, the required closing of folds did not prove satisfactory with the initial solution.“

Folding centre with a press brake installation

The solution for the manufacturer of design metal furniture was an automated folding centre that is based on the SPB Evolution UD. Thanks to the Up-and-Down folding beam, this high standard swivel folding machine is able to tackle folds and counter folds in one single processing step. A Kuka robot using a pneumatic device is responsible for the automatic feeding of metal sheets. A manipulator controlled by high-precision camera systems aligns the sheets in the machine. The SPB Evo-

lution UD equipped with an automatic tool changer is executing the folding program defined in the control software POS 3000. If there's a work piece with fold over, the integrated press comes into operation. The removal of the work piece takes place manually: The visual inspection ensures that only parts with unblemished surface come into the powder coating. A solid service also secures the ability to supply during the whole installation of the folding centre: Test runs and acceptance of the machine at the Schröder plant in Wessobrunn-Forst had been used for the production. Thus, buffers of USM components had been build up that bridged the time needed for the installation of the folding centre at USM.

„The folding centre constructed by Hans Schröder Maschinenbau according to our requirements, is characterized by a consistent and extreme precision. The components thus are fully meeting our high quality standards.“

Peter Bigler,
head of sheet metal processing

Reliable and precise

The control software POS 3000 developed by Schröder impressed Peter Bigler, head of sheet metal processing at USM: In order to program a new product we only need ten minutes or less. The folding centre proved to be versatilely applicable and the broad spectrum of parts could be increased. Angled shelves and extension shelves that formerly required special processing steps for the final bending, now can be produced in one pass. Perforated metal sheets for the USM Haller acoustic elements can be fold even more precisely. Despite continual use of the machine, it is working with extremely low wear: In more than three years of operation none of the surface treated tools needed to be replaced.



Schröder Group

The Schröder Group consists of Hans Schröder Maschinenbau GmbH, located in Wessobrunn, Germany, and SCHRÖDER-FASTI Technologie GmbH, located in Wermelskirchen, Germany.

Founded in 1949, Hans Schröder Maschinenbau GmbH combines traditional and modern aspects in mechanical engineering. Successfully managed as a quality and customer-oriented family company, Hans Schröder Maschinenbau specialises in the development of modern machine concepts for folding and cutting sheet metal.

Thanks to the 2006 integration of the Fasti Company and its workshops and a global presence, the Schröder Group is now a leading provider of machines for folding, cutting, crimping, beading, and circular folding sheets of all kinds. The diversity of the range of precision machines ranges from proven solutions for trade to innovative, high-performance machines for automated industrial production. The Schröder Group now employs more than 240 workers at various domestic and international locations.

SCHRÖDER
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