SCHRÖDER GROUP

Efficient one-man solution

SIEGLE + EPPLE uses SPB Evolution UD with maximum configuration

User

The ventilation systems, the climatic technology and the clean-room technology from SIEGLE + EPPLE GmbH & Co. KG are in high demand within the automotive and the semi-conductor industry. The German plant engineering company processes up to 4000 tonnes of sheet metal per year. Order-related small batches that were composed according to size have been manufactured with a press brake equipped with highly expensive special tools. For big sheets an additional employee was needed. Large orders and order peaks made a folding machine necessary. (www.siegleundepple.de/en)

Success

With the folding machine SPB Evolution UD SIEGLE + EPPLE achieved significant efficiency gains. Blanks of every size can now be processed by only one employee. He gets supported by a pneumatic, freely moveable handling-unit, a special sheet turning device and a suction gauge – all bends on one side are performed automatically without further intervention. Thanks to the fast automatic tool changing system differently sized parts of one order can be processed one after the other without any problem.

Used machine

SPB Evolution UD

- Folding machine up to 3 mm sheet thickness
- 4000 mm working length
- Up-and-Down-folding beam
- Suction gauge
- Automatic tool changing system
- Special construction: blank turning device
- Pneumatic handling-unit
- Easier handling: inclined plane for completed cassettes
- Efficient manufacturing of very small batches
- Big parts are manageable by only one operator

A major order with peak loads led to capacity constraints so that SIEGLE + EPPLE urgently needed a new sheet metal folding solution. Hans Schröder Maschinenbau GmbH helped out shortly with the folding machine SPB as a rental machine with purchase option and set about to develop a tailor-made solution for the manufacturing of metal shells. Visible shells out of sheet metal screwed onto frames, are a constantly used solution for the wall construction of the air-conditioning and ventilation systems at SIEGLE + EPPLE. Although parts are always constructed in a similar way, the parts have different dimensions depending on the order. For the previously used press brake, changing tools was quite complex. An expensive specialized configuration was necessary for protecting the surface of the sheet from damages as the finished shells are used without any additional coating. However, folding machines are surface-gentle.

„What really impressed us: The answer to the question regarding speed of the offered solution was an exact calculation of the cycle time, that also took into consideration different processing steps such as loading, set-up of tools, bending and unloading." Albert Kling, Plant manager."

Albert Kling
Plant manager

Special construction

Main challenges were the territorial restrictions and the specific process requi rements. In order to get flat surfaces for the final products, on all screw holes, rim holes for countersunk screws are punched. The problem: When blanks get to the folding machine, the shaped structures point downwards. For the folding process therefore all sheets need to be turned around. Schröder developed the special construction of a blank turning device. This means that frames are integrated in the gauge table and lift up when the sheet needs to be turned. The frame lifts up the sheet and transfers it to the front frame. After having turned over the sheet, both frames are tilting back into the table. In order to prevent the screw sinkings on the blanks from damages durng the folding process, Schröder additionally delivered special clamping beam tools with appropriate cut-outs.

High degree of automation

At the manufacturer of air-conditioning systems SIEGLE + EPPLE the industrial folding machine SPB Evolution UD processes metal sheets with a working length of 4000 mm and up to 2,5 mm thickness (also stainless steel sheets). The machine gets programmed with the 3D touchscreen software control POS 3000 that has been developed in-house. The UD in SPB Evolution UD stands for Up-and-Down-folding beam. This means that the folding beam is also able to bend from the top to the bottom, so that counter folds can be made in one processing step without having to turn over the sheet. The manufacturer of air-conditioning systems was the first Schröder-customer who took advantage of the new automated tool changer for the SPB Evolution UD. Based on the specified folding program the system allows automatic setup changes and therefore arranges various tool stations alongside the clamping beam. The tool changer enables a quick changeover for small batches. As gauge option SIEGLE + EPPLE chose the comfortable gauge with suction cups and a folding beam positioned at a right angle and functioning as a front gauge feature.

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 bending 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.

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