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Always up to date

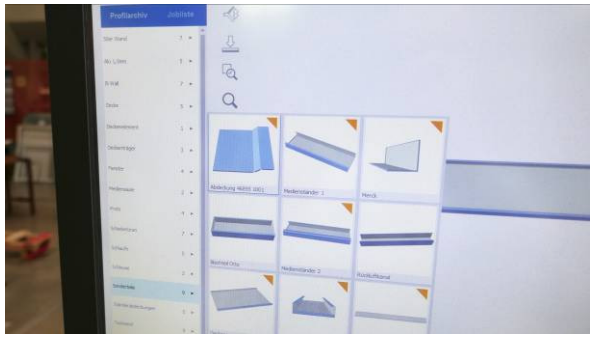
The RAS XLTbend at Clean-tek with UpDown metal folding technology produces panels for the clean room and hospital technology. Clean-tek is specialized in clean room solutions tailored to individual customer requirements, and therefore maximum production flexibility is required. Fast programming, quick set-up and quick and easy workpiece handling are basic requirements for a bending system. Clean-tek in addition appreciates the special highlights of the RAS UpDown folding solution.

Clean rooms are used in sensitive areas such as medical environment, biotechnology or pharmaceutical manufacturing. They can also be found in semiconductor manufacturing, where particles in the micrometer range would already disrupt the manufacturing process of circuit boards. Decades of experience and the highest manufacturing quality characterize the production of clean room components at Clean-tek.

Each clean room is unique. Despite the modular design, there are the highest demands on the accuracy to each individual part so that it fits to the total assembly. Making this work, bending accuracy is an essential requirement.

The variety of material types is great: mild steel, stainless steel, galvanized steel and color-coated sheets are available in a colorful mix, depending on the design of the clean room and the visual requests of the customers. The material thickness used for the sandwich wall and ceiling panels is usually 1 mm. Due to the part sizes, which can reach up to 4000 mm long and 1200 mm wide, the folding technology is perfectly suitable. The metal blank always rests on the table surface of the gauging system, which is equipped with ball rollers. The kink-sensitive sheets can be placed, moved, rotated and removed on the machine's gauging system by a single person. This speeds up the work sequence and reduces unit costs.

Due to the variety of different sheet dimensions, production batch sizes are small. Head of design Michael Roy explains: "We have stored the most important geometries of our panels in the machine software and usually only change the length and width of these components.

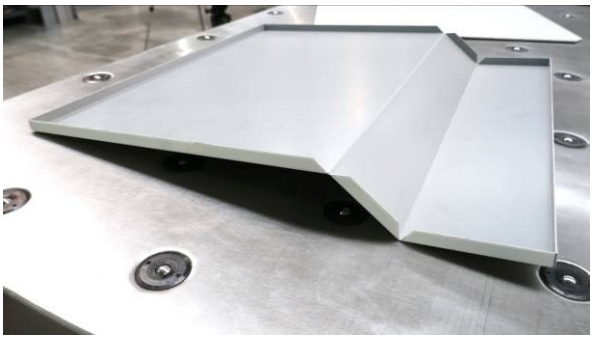


The software then immediately adjusts the entire motion sequence of the machine to the new di-

mensions. Programming therefore only applies to special part geometries. The Bendex software programs such parts with a single mouse click."

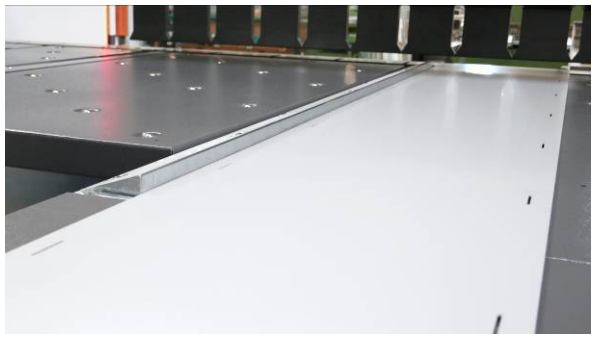
Speed is also required when tooling up the machine. Clean-tek only needs a single tool geometry configuration for all their parts. The simple relocation of tool segments makes the machine ready for the next component in less than a minute. The software automatically calculates the tool set-up sequence and shows the operator step by step which tools are used at which position. This of course, also applies to situations in which multiple tool stations need to be set up along the working length of the machine.

Managing Director Frank Bergbauer emphasizes an important issue: "It is becoming increasingly difficult to find motivated staff in the highly industrialized Stuttgart area. The RAS XLTbend is so easy to use that even semi-skilled employees can produce very precise bent parts after just a brief introduction."



At Clean-tek, the machine is operated almost exclusively from the gauging system side. However, it is also possible running small and narrow parts from the folding beam side. A special machine highlight is the Virtual Navigator (ViN). It consists of an arm that is mounted on the upper beam and moves along the working length of the machine. A laser line shows the operator the loading position of the part in each program step. The software calculates this position automatically, taking into account the position of the stop fingers and the tool positions. The operator pulls the blank to the stop fingers and slides it sideways according to the laser line indication. The lateral alignment thus matches exactly with the tool stations set up at the front.

Working from the center of the machine also contributes to the precision of the bent parts. A central stop finger extension increases the standard stop dimensions from 1550 mm to more than 4000 mm. The center working orientation creates an even force curve in the bend, leads to extremely straight bends and reduces the stress on the machine. An additional squaring arm close to the center of the machine simplifies gauging of long and narrow parts.



After the blank is aligned, the next highlight is employed. Suction cups in front of each stop finger unit hold the component on the stop fingers. When moving the stop fingers towards of the bending line, the suckers guarantee that the sheet does not move away from the stop fingers. After a bending sequence has been completed, the suction cups pull the sheet back to the operator, making it easy to remove the bent part. With to the unique suction cups, the machine can perform subsequent up and down bends one after the other and without operator intervention.

Machine operator Michael Reinwarth smiles: "When we received the XLTbend shortly before the turn of the year, I was very happy about my 'big Christmas present' and immediately decorated it with a loop. But at the beginning the machine software wasn't able bringing the bent part back and I always had to bend very far over the tables. This function was included in the next release. We realized that with every new software update the machine becomes more versatile and comfortable to use."

Managing Director Frank Bergbauer concludes: "We have many years of experience with metal bending and folding technologies. With the XLTbend, our employees felt comfortable from the very beginning. By running subsequent up and down bends all automatic our cycle times are now 20 to 30 percent faster."

Clean-tek Reinraumtechnik GmbH + Co. KG
www.clean-tek.de