

Tube inspection equipment: EMW counts on TubelInspect S for prototyping

Two specialists

A specialist in the area of tube manufacturing-EMW from Türkenfeld, a small town close to Munich, uses this title with good reason. The medium-sized company has successfully developed from a classical metalwork shop to a modern, creative tube manufacturing workshop. Since summer 2006, EMW has applied AICON's optical tube measuring system TubelInspect S for measuring sample tubes and setting-up the bending machines. Since then, EMW has not only considerably saved time in Reverse Engineering but also significantly decreased the costs of materials. In addition, there is another quality of the system that makes it unique for Karl Eberl, owner of EMW: The measuring results of TubelInspect are completely independent from the user so that they are reliable and repeatable.



Innovator meets innovation

Karl Eberl does not belong to those company owners who prefer the classical way that may be particularly typical for the industry. Since he has founded his company in 1980, Karl Eberl has continuously tried to adapt his business to the market requirements and cope with any technical challenge. Innovative ideas are part of the corporate culture.

Thus, the company has managed to develop a clientele of more than 1,000 companies that regularly make use of EMW's know-how about special production tasks in the area of tube manufacturing. In the meantime, the customer structure has become much diversified: Apart from

the automotive and aerospace sector, it includes customers from varied international industrial plants.

According to the motto "customers need solutions", EMW accompanies the whole development from prototyping to small series, if desired by the customer. In doing so, EMW falls back on its existing tools and thus avoids unnecessary costs for the customer. Equally often, EMW produces bent tubes based on samples provided by the customers. The CAD or bending data of these samples are unknown.



"At this point, TubelInspect comes into play", says Karl Eberl. "For a long time, we have looked for tube inspection equipment that would help us to determine the bending data of sample tubes faster and to transfer them directly to the bending machines.

Until then, our skilled workers had to generate the data in the traditional way, which means manually. So we have analyzed the market of tube measuring systems. We have taken a closer look at different articulated arms, partly with laser probes. However, not a single system could persuade us. Then, fortunately, we have come across TubelInspect."

Fast set-up of bending machines



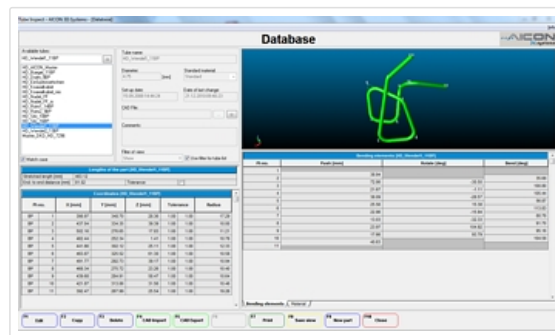
Tubelnspect, a non-contact measuring system, merely requires that the tube to be measured is placed in an optical measuring cell. Several high-resolution digital cameras accurately measure the tube's geometry in a few seconds. The bending data are reported in an easily understandable way and can directly be transmitted to the bending machines. EMW uses the measuring results to set-up their seven CNC Pulzer, Wafios and Herber bending machines. This procedure is enormously time saving for EMW compared to the manual generation of bending data. "The advantages are particularly easy to see when a sample tube possesses many bends.

Sometimes, we work with prototypes with more than 15 bends. If you are then supposed to find out the correct bending data by trying, it will take you a long time, even with expert knowledge", explains Markus Klass, production manager at EMW. "Now we can rely on solving the task with Tubelnspect S in just a few seconds."

Significant decrease of costs thanks to modern tube inspection equipment

Yet not only is the gain of time a decisive argument for the application of Tubelnspect S. The measuring system also especially pays off when expensive materials like stainless steel are processed. EMW is now in the position to determine the correct geometries of a sample tube and to set-up the bending machines with nearly no rejections. Thus EMW could decrease its costs of materials substantially. No matter if you deal with stainless steel, ordinary steel, aluminium, brass, bronze or copper, Tubelnspect stops at no material. "It measures everything you can bend", says Klass. Having set-up the bending machine once, EMW uses Tubelnspect S to conduct a 100% check for small series. Expensive gauges are no more necessary.

In all cases when Tubelnspect is applied, EMW alludes to a "perfect accuracy". Moreover, the company appreciates the fact that Tubelnspect produces user independent measuring results. Concluding, Eberl assures: "Our new tube inspection equipment is a sustainable investment in the future. This machine disposes of an enormous potential. Thus we feel well-prepared for all future challenges."



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*"AICON's measuring equipment
has pushed us far forward in the
area of quality assurance."*

Florian Windler, Serto AG, Aadorf
(Switzerland)

*"In comparison with a CMM,
the data acquisition with
Breuckmann's 3D scanning
system is extremely time effective,
enabling us to quickly obtain the
evaluated data."*

Jürgen Weber, Messtechnik Zollern
GmbH & Co. KG, Sigmaringen
(Germany)