

100 YEARS OF MANUFACTURING TECHNOLOGY INSIGHT

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5-6 JULY 2017

INSIDE TOOLING & WORKHOLDING SUPPLEMENT



Production perfected

German firm Suchanke GmbH is a specialist in the manufacture of printing and embossing rollers made from materials such as St52, C45 and 42CrMo4, as well as Hastelloy 4893 and 4856. Emco Group turning technology supports its activities

Boasting some 35 years' experience in this field, the company first made the transition from manual turning to CNC in 1997, with a further major transition in 2011 aided by Emco Group technology (02392 637100), when the company installed its first Emco Maxxturn 110 x 2500 MY turning machine (maximum turning diameter 680 mm, swing of 820 mm, length 2.56 m). With news about the new CNC turning machine with milling options spreading to Suchanke's customers, it was just two years later that the company

added a further two similar machines to its capacity, another Maxxturn 110 x 2500 MY and a Maxxturn 110 x 3500 MY (turning length 3.56 m). Compared to the conventional turning machine that was used before, the Maxxturn 110 MY machines perform four times more efficiently on certain parts, the company reports.

Explains Ingo Suchanke, who since 2007 has been assisting his father, Gerd, as a managing director: "In 1981, my father started with the orders from a single customer who has been commissioning us

with the manufacturing of printing and embossing rollers. The company has been convinced by our quality work for decades now, so that it is still one of our high revenue business partners. Today, we have expanded our range of technologies and, hence, also the solutions for our customers. The same applies to our clientele, our production area, our team of employees and, last but not least, our equipment, with modern machines. We have become more independent and more future-proof."

MORE THAN BELIEVED POSSIBLE

And talking about the impact of the initial Emco machine, he adds: "Everyday practice has shown us the many possibilities of the machine and taught us how to use them. We realised that we can do far more with this machine than with the traditional turning machines – and also far more than expected. We were able to offer an expanded, more differentiated service profile, received enquiries that were more demanding from both a technical and an economic point of view, and have won new customers – from the furniture and automotive industry, for instance."

Describing the company's product and activities in more detail, Suchanke says: "Rollers for the production of embossed

High grade alloy steel drive shafts with a diameter of 250 mm and a length of 2,500 mm are processed complete, using a Maxxturn 110





An embossing roller made of high grade alloy steel and having a diameter of 250 mm and length of 2,500 mm is completely processed by a Maxxturn 110 unit

wallpapers, vehicle interior, wooden structures and other materials with profiled surfaces are our core competence. However, the pattern on the turned metal part falls within the responsibility of the designers and engravers. To ensure that these turned parts run with as little vibrations as possible and hence flawlessly, precision is always one of the main requirements. Until now we have always done well by exceeding these requirements, instead of just executing the order specifications. Our rollers produced with high precision can also be re-engineered and re-used with a new engraving.”

Cylindrical rollers must match the material to be embossed, the mechanical forces acting on it, as well as influences

such as temperature, lifespan specifications or rotational speed. Most orders are custom products, with batches greater than 70 the exception.

Using the two Maxxturn 110 x 2500 MY machines and/or the Maxxturn 110 x 3500 MY, Suchanke can machine parts of up to 3,500 mm in length and 620 mm in diameter. Says Ingo Suchanke: “Most of the ‘long’ turned parts to be machined by us have diameters between 50 and 450 mm, whilst chuck parts may have a diameter of up to 670 mm. The diameter of longer turned parts depends on the design of the part. With the self-centring steady-rests, we support components with a diameter of up to 350 mm.” Parts usually weigh around 1,500 kg, although those of 2,500 kg can be handled. A key feature in the company’s products are deep holes, which can be up to 850 mm deep and subject to a diameter tolerance of only 20 micron.

A typical turned part, an embossing roller, is produced in several operations. Explains Suchanke: “The material is sawn from semi-finished material and then turned on the CNC machine. Our conventional turning machine is still used for that as well. The cones are made with one of the machines. After that, the tubes and cones are joined, retracted and welded. In one of the following manufacturing steps, the thermally joined part is processed using one of our Maxxturn machines. The process is completed by grinding the part to the final dimension.”

And if external processes are required, such as stress relief heat treatment of some parts, subsequent processing is then performed in-house, with the company assuming overall responsibility for quality assurance.

In conclusion, the joint managing director says: “Our Emco machine tool partners always comply with their commitments. The processing quality, efficiency and availability have satisfied us to such an extent that we would opt for Emco again, anytime. There is only one thing we would do differently today: we would order the machines with glass scale. Our equipment provides us with a sound foundation and ensures that we are well prepared for the future.”

Maxxturn 110 product manager Gianni Palazzetti adds: “The Maxxturn machines offer the possibility of virtual, offline processing operation simulations and tooth system creations. As soon as our users from Rheinfelden express a need or interest, we will of course support them. If Suchanke plans to incorporate larger, longer and heavier parts into their product range, Emco could offer the new Hyperturn 200 Powermill machine: turned parts in lengths of up to 6 m, featuring a weight of 6 tons and a turning diameter of up to 1 m can be processed with this machine.

“For this purpose, the Hyperturn 200 Powermill users are provided with a main spindle drive power of 84 kW and steady-rests featuring diameters of up to 510 mm.” ■

The boring bar with vibration absorption (diameter of 60 mm, length of 700 mm) is mounted at the circumference of the turret disc (12-position block tool mounting is possible)

