Machine tools – the market demands shorter delivery periods

The machine tools industry is in for difficult times in Germany. High labour costs and tremendous pricing pressure have to be offset by higher productivity, faster delivery and more precise manufacturing. ”This is only possible by consistently making use of state-of-the-art technologies”, explains Horst Schmedthenke, the managing director at SWB Schmedthenke Werkzeugbau GmbH.
The equipment used by this Gütersloh-based company includes the latest 5-axis CNC milling machining centres with a machining area of up to 5,000 x 2,800 mm. There is also a 3D Tebis Viewer available at each machine and at the manual workstations for visualising the design data. Networking even extends to the workbench, giving employees direct access to the design data. Workpieces are now clearly displayed in 3D on-screen, signalling the end for design drawings in paper form.
”When it comes to using new materials, customers are rather more conservative,” remarks Jörg Schmedthenke. But he also knows that this is not always the case. They are making a new tool for a manufacturer of household appliances, to produce the front panel of a washing machine. The tool must be capable of machining coil-coating plate to its finished form. In a variation to the designated materials, SWB proposed that the customer use Toolox, a new type of tool steel from SSAB, in some of the critical positions.
Trials run in-house showed that very thin-walled components and tool elements with small land widths are easier to make with Toolox than with other tool steels. This applies, for example, to the highly filigree strippers in the tool.

The properties of the tool also make it eminently suitable for polishing and etching. A good surface finish was particularly important for the blank holders in the punching tool, which were made from Toolox.

Tool steel – breathing space when deadlines are pressing

The Toolox material from SSAB Oxelösund comes from a totally new generation of tool steels. Toolox 44 is the world's hardest "ready-made" tool steel. But this hard and dimensionally stable steel is also easy to machine. The steel is supplied hardened and annealed to 45 HRC and despite this hardness is readily machinable, with high dimensional stability.
The hardness of Toolox 33 (300 HB) matches that of mat. no 1.2311/2312/2738 mod., but machinability is up to 20% better and it is far tougher. In short, it is an all-round steel with great flexibility.
Both Toolox grades have ESR properties.
As well as the significant technical merits, Jörg Schmedthenke sees another important advantage for his customers: ”Tool manufacturing times are noticeably reduced, as there is no hardening or subsequent re-machining necessary.”
The company currently employs a good 60 people and the production area covers more than 3,000 m². Two Mitutoyo CNC measuring machines are on hand, as are several hydraulic presses of varying capacities. Powerful hydraulic presses of up to 16,000 kN are used not only for experimental purposes but also as production presses for small batches of up to 3,000 units per month. Orders from the USA, Singapore or Eastern Europe and projects on a scale of several million euro prove that SWB have got their corporate philosophy right.

Higher precision yet shorter delivery times – new materials give toolmakers real alternatives in difficult times.