

AUTOMATED IMPLANT PRODUCTION IN JUST-IN-TIME MODE

from left to right Peter Scheuble, Production Engineering Manager Plates, David Saladin, Engineer/Operator, Laurent Fleisch, Engineer/Operator, Roger Hänggi, Production Engineer, all from Medartis AG, and on the far right Gerd Messmer, Managing Director Hermle (Switzerland) AG.

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PRECISION IN FIXATION

Manufacturing order-related high precision implants within 24 hours: the Swiss company Medartis AG uses machining centres and robot systems from Hermle.

The Swiss company Medartis AG has been developing and marketing titanium screws and plates for osteosynthesis in the skull and the extremities since 1997. The company employs over 500 people worldwide – around 230 at its headquarters in Basel alone. This is

where the expert focuses on close cooperation between design and production in order to meet the high demands placed on the prototyping and manufacture of metal implants. "Our engineers construct the samples from which the prototypes are made. The Milling and Turning departments are already fully integrated," explains Peter Scheuble, Deputy Production Manager in Basel. Once the application tests have been successfully completed, series production takes place on CNC milling and turning machining centres – sometimes unmanned in up to three shifts. "In the demanding segment of 5-axis simultaneous machining, we rely primarily on high-performance machining centres from Hermle, which we have additionally equipped with robot systems for fully automatic operation," adds Scheuble.

GREATER STABILITY AND PRECISION

Confidence in Hermle technology is based on experience with the first machine from Gosheim, which Medartis bought in 2001 for prototype construction. Further machining centres, including types C 30 U and C 12 U from Hermle, followed. "We place huge accuracy demands on tolerances. The Hermle machines designed for multi-axis machining proved to be significantly more stable and precise than competitive products that we had previously used," explains Roger Hänggi, Production Engineer in the Plate Production department at Medartis AG.

FLEXIBLE AND UNIVERSAL

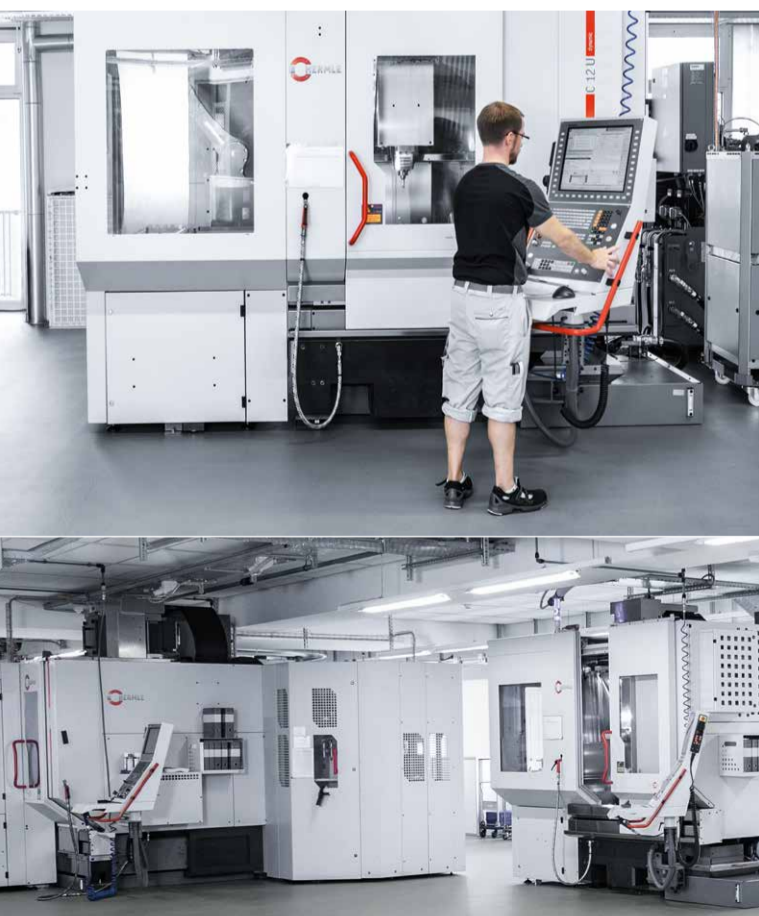
The Swiss company also opted for Hermle when recently adding to its machinery portfolio. On the one hand, these machining centres can be used universally and, on the other, they are employed at Medartis primarily for machining entire families of parts. The large number of different implants can be produced both on the C 30 U machining centres and on the 5-axis machining centres C 12 U thanks to the RS 05 robot system with automated workpiece handling. Despite their compact design, the traverse paths are so large that even complex geometries can be machined. To cover current and future implant demands, the machines are equipped with



A workpiece pallet designed by Medartis with multiple holding fixtures for supplying titanium blanks or holding finished parts with fully automated robot handling.

ZM 35 additional magazines, so that a total of 71 tools are available per machine. Since the machining centres are equipped identically with regard to the tool spindle, control and tool holding fixture, RS 05 robot systems and other features, it is possible to manufacture any implant with a high level of flexibility on each machine.

"We mill complex implants on the C 12 U machining centres, for example, and we always have enough torque to do this." Peter Scheuble concludes by saying: "The machines work very reliably, are and remain highly accurate even with increasing age, offer good accessibility and, in relation to our requirements, exhibit optimum interference contour behaviour." Finally, he also praised the Hermle service, which convinced the Swiss company in general due to its outstanding readiness of service and quality.



top Medartis AG mills titanium plates for osteosynthesis on Hermle machining centres. bottom One of two flexible machining centres based on a 5-axis machining centre C 12 U with ZM 35 additional magazine and on the left the RS 05 robot system.