CT 6000 mill/turning centre:  
**Machine enabling highly productive turning now available in table design**

**With batch sizes decreasing, achieving cost reductions and increased productivity whilst shortening delivery times requires increasingly leaner manufacturing processes. For some time now, mill/turning centres have been providing a solution to achieve these goals. HELLER has responded to these new requirements with a machine evolved from the company's modular system. Model CT 6000 is the first size-6000 machine from the C series mill/turning centre range available in table design.**

A prerequisite for performing combined milling and turning operations on a machining centre is the availability of standard solutions at minimum time and cost expenditure. That is why combined processes have been on HELLER's agenda for quite some time now. As such, the technical pre-requisites, e.g. the high-speed rotary table, spindle growth compensation and spindle locking, ensuring torsional stiffness and high repeatability, already existed. The 5-axis machining centres from the C series with turning function providing high cutting capacities have become first choice for users requiring short cycle times, increased product and machining quality or flexibility. Following customer requests and in-house development efforts, machining centre model CP 6000 (equipped with pallet changer) has now been remodelled to offer manual table loading, resulting in model CT 6000. 5-axis machining centre model CT 6000, which HELLER will be presenting to the public for the first time at CIMT 2015 in Beijing, features an HSK100 spindle taper and a Power Cutting Universal spindle with 60kW drive power, a maximum speed of up to 8,000rpm and 1,146Nm torqueplus a work area of 1,000mm x 1,000mm x 1,300mm (X, Y, Z). These dimensions enable milling of workpieces with a diameter of up to 1,000mm, a height of 1,200mm in a single setup, whilst a high-speed rotary table offering up to 500rpm rotational speed ensures high process dependability and productivity for turning operations. Model CT 6000 provides outstanding cost-effectiveness when the emphasis is on cubic features and rotation-symmetrical components with a length-to-diameter ratio of below 1 and the focus is on high process dependability, automation and high accuracy.

**Exceptional efficiency for horizontal and vertical operations**

The capacity to enable economic machining at high chip removal rates and any spatial position is the standard expected from HELLER machining centres. 5-axis machining centre model CT 6000 achieves this high level of productivity with the specially developed and extremely stiff PCU swivel head geometry. To increase torque and form fit, the spindle is equipped with optional spindle locking. For turning operations, the machine uses a fifth axis provided by the tool. Highly efficient vertical and horizontal turning operations of outer and inner contours are possible using the C axis and optional A and B axis.

The CT 6000 is equipped with Siemens Sinumerik 840 Dsl control enabling the user to switch between turning and milling operations or to perform demanding mill/turning operations, whilst providing highly precise control of speed and acceleration and variable adjustment in terms of precision and surface finish. The control is also exceptionally well suited for machining of sculptured surfaces.

For the machining of rotation-symmetrical components, HELLER placed special emphasis on safety in terms of balancing and high repeatability of centric clamping. For this purpose, the company developed a function for identifying imbalances on the workpiece or rotary table. It uses internal drive signals for detecting even the slightest imbalances without the need for additional sensors and is operated via sophisticated user interface. For the use of turning tools, the machine is equipped with a standard tool measurement function using tactile sensors. Additionally the measuring system also provides the optical functionality of a laser system.

In response to permanent demands for machining of rotation-symmetrical components on machining centres, HELLER decided to develop a specific solution for turning operations. The CT 6000 provides significant time savings with a condensed manufacturing process, resulting in reduced loading, transport and idle times, including times required for overall handling and workpiece clamping. These time and cost savings also apply to machining times. Potential users will benefit from the fact that all this can now be achieved at high cutting capacity.

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