

5-axis milling/turning  
machining centres

C

# HELLER



HELLER solutions: **Knowing how it's done.**

# Complete machining in HELLER quality

Powerful milling is a matter of course for HELLER machining centres. If the turning machining strategy is added, conventional milling dimensions are soon forgotten. The net result from turning, milling and HELLER's expertise in machine construction is our C series 5-axis milling/turning machining centre – unique in terms of output, reliability and resilience.



All information available at:  
[www.heller.biz/en/c](http://www.heller.biz/en/c)





#### Key facts

- \_ universal 5-axis milling-turning machining centres with the fifth axis in the tool and a DDT (Direct Drive Turning) rotary table
- \_ powerful combination of milling and turning by one machine for optimised flexibility (Combined Processing)
- \_ flexible in use for powerful 5-sided and simultaneous 5-axis machining, as well as turning with positioned rotary axes
- \_ spindle units with swivel head or tilting head kinematics
- \_ robust machine design, combined with powerful, high-torque spindle technology
- \_ part costs optimised by reducing the number of clamping positions and complete machining in one set-up
- \_ can be used for a wide range of different parts and materials
- \_ machines with pallet changer (CP) are optimal for series production
- \_ machines with table loading (CT) for workshop-based production and small batch sizes
- \_ easy to automate with workpiece or pallet automation

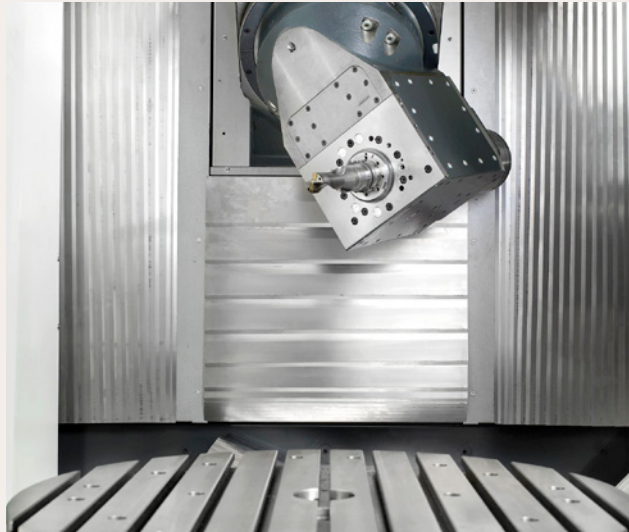
# At a glance



## Machine concept

Both the machine concept and the entire process design of the C series are the result of a comprehensive simulation process. For you, this means: reliable productivity and precision in two fully-fledged production processes.

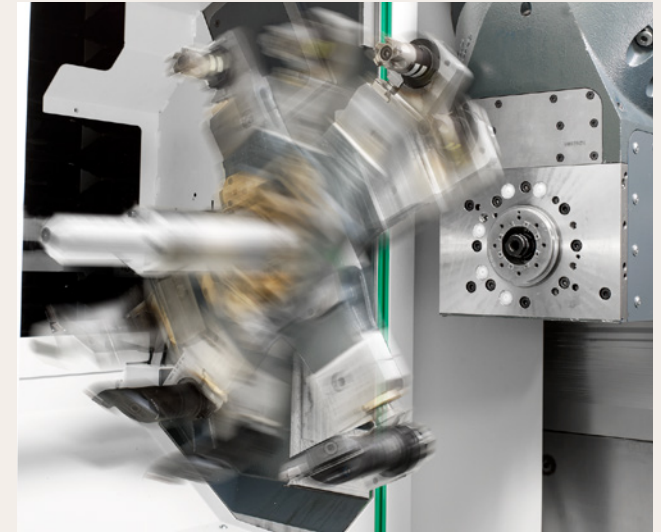
- \_ universal 5-axis machining centres with fifth axis in the tool for milling and turning [Combined Processing]
- \_ horizontal basic machine alignment, the table traverses in the Z-direction
- \_ machine bed and topology-optimised columns from cast iron for maximum stability in the force flow
- \_ maximum precision thanks to linear roll guides and direct, absolute measurement systems [glass scales] with high feed forces
- \_ high-torque, directly-driven NC-rotary feed tables for turning at high speeds and a high dynamic



## Machining units

The requirements for a spindle in milling/turning machining centres could not be more different. Milling in full operation on the one hand, vertical, horizontal and positioned turning on the other. For our C series, we have found a solution that allows you to reliably convert power and torque into action.

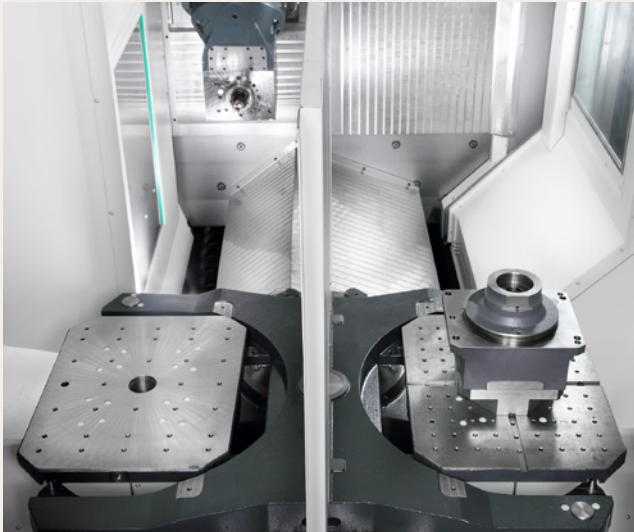
- \_ spindle units with two kinematic variants for the fifth axis in the tool
- \_ swivel head kinematics for maximum performance in operation
- \_ tilting head kinematics with large swivel range for maximum flexibility with complex workpiece geometries
- \_ tool shank HSK-T for maximum precision during turning
- \_ maximum stability during turning operations with integrated tool locking



## Tool management

Complete machining with one milling/turning machining centre significantly reduces the part costs. However, combined processing presents a challenge for the tool management system: An extensive range of milling and turning tools must be available and loaded precisely and safely in the process. No problem for the C series.

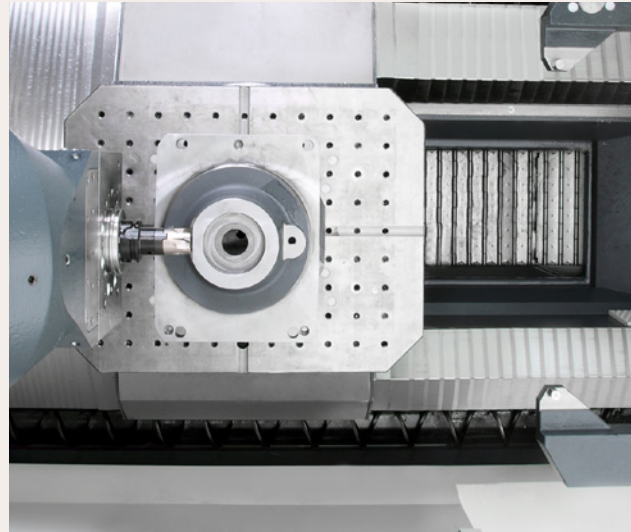
- \_ chain-type magazines with up to 240 places for CP 4000 [HSK-T 63] or up to 150 places for machines with HSK-T 100
- \_ rigid tool holder mounted on both sides of a double chain for optimised traversing dynamics
- \_ rack-type magazines with 409 places for CP 4000 [HSK-T 63] or up to 425 places for machines with HSK-T 100
- \_ tool changer with two NC-axes and high dynamic for short chip-to-chip times



## Workpiece management

The C series can of course be configured exactly to your requirements. As a workshop machine with large work area, ideally suited for single part production or as a production machine with pallet changer and the corresponding automation solution for series production.

- \_ pallet changer [CP] with lift/swivel principle and a total payload of up to 8 t
- \_ table loading [CT] with three-part door for optimised workpiece handling and access to the work area
- \_ NC-rotary feed table as a directly-driven rotary table at high speeds and integrated imbalance detection during machining
- \_ infinitely rotating, manual workpiece setting station, lockable at 90° indexing with foot unlocking [CP]
- \_ optionally with media interface for hydraulic workpiece clamping



## Supply and disposal

Fast and precise chip disposal plays a key role for milling and turning in a single set-up. Because chips in the work area impair precision. The C series was designed to transport chips exactly where they belong: in the chip container.

- \_ central media supply area at the rear
- \_ coolant units [optional] with paper band filter technology or vacuum rotation filter technology with high tank volume
- \_ internal 50 bar coolant supply [70 bar optional] and with 7 programmable pressure stages
- \_ work area shower with numerous adjustable nozzles flushes the workpiece and the fixture
- \_ free chip fall and central chip conveyor for quick disposal to the rear [CP 4000]
- \_ chip disposal with spiral conveyors to the rear to a transverse conveyor [sizes 6000 - 10000]



## Operation, maintenance and control

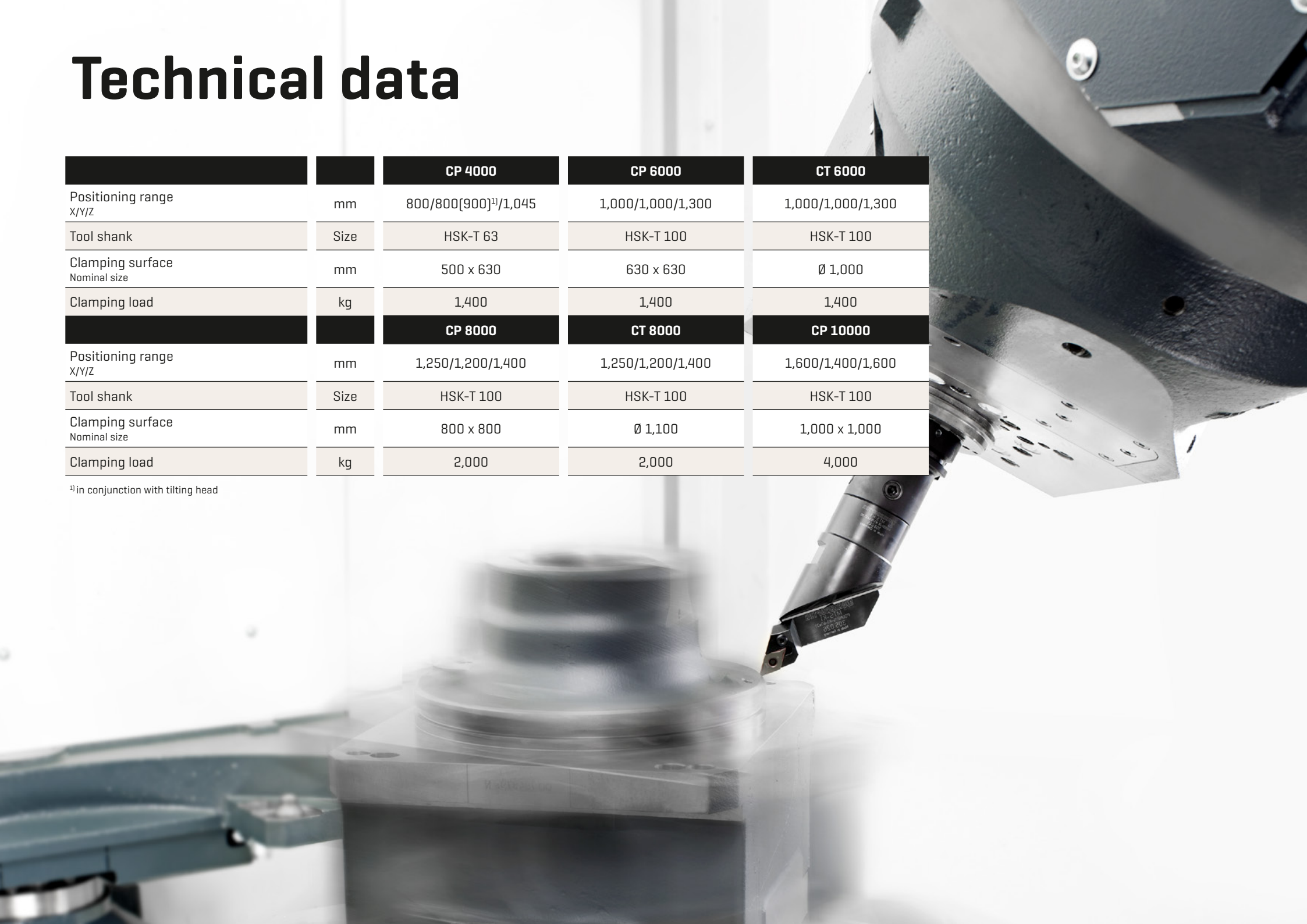
No matter whether on the workpiece setting station, during tool setting, programming or maintenance – your comfort and safety and, above all, the productivity of your manufacturing facility is paramount at all times.

- \_ clear operating concept and good accessibility to all work areas
- \_ smooth-running doors [3-part for table loading] and optimally arranged controls
- \_ supply units and maintenance points concentrated at just a few locations
- \_ all maintenance-relevant components can be accessed quickly and easily
- \_ state-of-the-art Siemens SINUMERIK 840D sl machine controller with full turning functionality and cycle support for effective Combined Processing
- \_ HELLER Operation Interface and main operating unit in console design as standard for machines with table loading

# Technical data

|                                  |      | CP 4000                           | CP 6000           | CT 6000           |
|----------------------------------|------|-----------------------------------|-------------------|-------------------|
| Positioning range<br>x/y/z       | mm   | 800/800[900] <sup>1)</sup> /1,045 | 1,000/1,000/1,300 | 1,000/1,000/1,300 |
| Tool shank                       | Size | HSK-T 63                          | HSK-T 100         | HSK-T 100         |
| Clamping surface<br>Nominal size | mm   | 500 x 630                         | 630 x 630         | Ø 1,000           |
| Clamping load                    | kg   | 1,400                             | 1,400             | 1,400             |
|                                  |      | CP 8000                           | CT 8000           | CP 10000          |
| Positioning range<br>x/y/z       | mm   | 1,250/1,200/1,400                 | 1,250/1,200/1,400 | 1,600/1,400/1,600 |
| Tool shank                       | Size | HSK-T 100                         | HSK-T 100         | HSK-T 100         |
| Clamping surface<br>Nominal size | mm   | 800 x 800                         | Ø 1,100           | 1,000 x 1,000     |
| Clamping load                    | kg   | 2,000                             | 2,000             | 4,000             |

<sup>1)</sup> in conjunction with tilting head



# Productivity over the full spectrum



## 4-axis machining centres

# H

Tailor-made off the peg: Flexibly configurable 4-axis machining centres with unbeatable productivity for unique capacity



## 5-axis machining centres

# HF

Productivity in 5 axes: 5-axis machining centres with the fifth axis in the workpiece for dynamic and productive machining



## 5-axis machining centres

# F

The benchmark in 5 axes: 5-sided and simultaneous 5-axis machining with the fifth axis in the tool



## 5-axis milling/turning machining centres

# C

Complete machining at its best: Combined milling/turning jobs on one machine



## Flexible manufacturing systems

Highly-productive series production of light duty to heavy duty automotive components





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Porto Alegre, Sorocaba ⚙️

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