

5-axis
machining centres

HF



HELLER

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

Productivity in 5 axes

The new HF: a second generation providing increased productivity and precision

The 5-axis machining centres from the HF series are optimally equipped to meet the exacting requirements of modern production processes. Enabling 5-sided and simultaneous 5-axis machining, they allow you to handle many different tasks on a single machine. Highly productive and flexible, with easy operation and maintenance, available with pallet changer or table loading.

The second generation of the HF series provides numerous optimisations, including new spindle units with increased performance and the advantages of the HELLER zero-spindle system for minimised life cycle costs. Moreover, the option of a second drive in the Z-axis allows for even more universal application, including single-part production. In combination with the proven HELLER DNA of productivity, precision and reliability, they guarantee you increased performance, precision and flexibility for the production of your workpieces.



All information available at:
www.heller.biz/en/hf

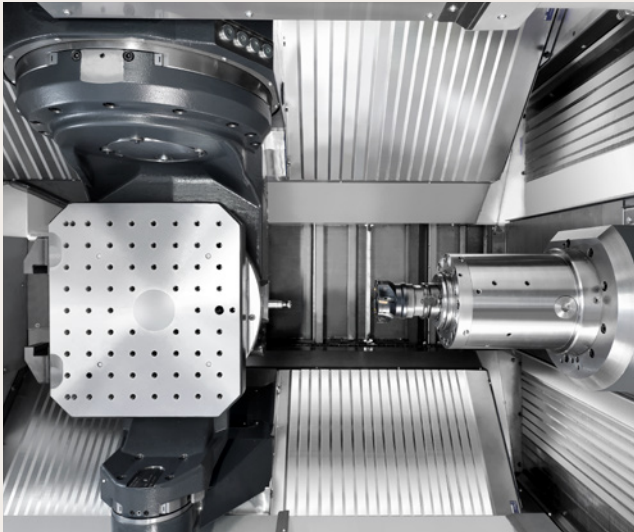




Key facts

- _ horizontal 5-axis machining centres with pallet changer or table loading
- _ swivelling NC rotary table with counter bearing and AB kinematics with highly dynamic torque drives as standard
- _ Mill-Turn: combination of milling and turning [option for HF 5500]
- _ 3 equipment packages: Power, Speed and Pro
- _ short chip-to-chip times thanks to quick NC-tool changer and highest axis speed with equipment packages Speed and Pro [option]
- _ 5-axis machining with optimised performance: simultaneous [option] and with positioned rotary axes
- _ spindles "Made by HELLER" with either HSK-A 63 or HSK-A 100
- _ Gantry-drive in Z-axis [option]
- _ reduced distance from spindle to centre of table
- _ optimum accessibility for simple operation and maintenance
- _ easy to automate with workpiece or pallet automation

At a glance



Machine concept

The HF series is the perfect combination of apparent contrasts – stiffness and dynamics. The basis is the rigid machine bed. Highly precise and fast machining cycles guarantee the unique machine structure of the HF.

- _ dynamic 5-axis kinematics with 5th axis in the workpiece
- _ horizontal spindle with lean spindle neck for perfect reach into the workpiece
- _ rigid cast iron machine bed in combination with weight-optimised machine columns from steel
- _ swivelling NC rotary table with counter bearing for optimum force flow and compact design
- _ Mill-Turn: DDT (Direct Drive Turning) rotary table, spindle with lock, NC turning cycles, balancing and in addition tool holding fixture HSK-T (option for HF 5500)
- _ Gantry-drive in Z-axis (option)
- _ direct, absolute measuring systems for the highest positioning accuracy



Machining units

5-axis machining requires all components of a machining centre to deliver a top performance. The spindle must be particularly efficient: highly flexible, with torque characteristic curve adapted for the task in hand and suitable for a range of materials. We offer seven spindle variants so you can choose the best one for your requirements.

- _ robust spindle units "Made by HELLER" with HSK-A 63 or HSK-A 100
- _ 7 spindles to choose from, with the new Dynamic Cutting spindles perfect for universal use
- _ maximum performance in operation with compact overall dimensions and robustly dimensioned spindle bearing
- _ HELLER zero-spindle system for spindle replacement with no complex calibration required
- _ optional: HELLER facing slide system, attachment head support (MSK) and torque support



Tool management

If you have to work with a broad range of tools and respond flexibly to new production requirements, the HF series is just right for you. Powerful tool magazines and a precise high-speed tool changer for optimum chip-to-chip times guarantee you constantly short non-productive times.

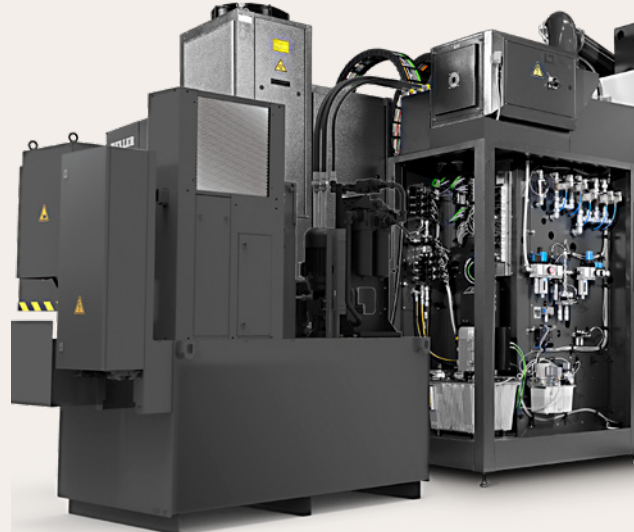
- _ chain-type magazines with up to 240 places [HSK-A 63] or 150 places [HSK-A 100]
- _ always precise tool provision during machining through traverse attachment between chain and tool changer
- _ rack-type magazines with 375 places [HSK-A 63] or up to 405 places [HSK-A 100]
- _ high-speed tool changer with two fast NC-axes for short chip-to-chip times



Workpiece management

Whether with pallet changer or as table loading – the HF series is best prepared for both machining concepts. Various table sizes or pallet dimensions and numerous options to suit different sizes. So you can configure the machine to suit your specific requirements.

- _ robust pallet changer with lift/swivel principle optimised for series production
- _ table loading ideal for single part production
- _ swivelling NC rotary table with counter bearing, directly driven A- and B-axis drives for quick positioning and excellent dynamic for 5-axis machining
- _ directly-driven DDT rotary table for turning at high speeds [option Mill-Turn for HF 5500]
- _ manually rotating workpiece setting station, lockable at 90° indexing with foot unlocking
- _ optionally with media interface for hydraulic workpiece clamping [80 / 200 bar]



Supply and disposal

Thermal stability is one of the decisive factors for reliable and highly-precise machining processes. The heat input into the machine structure and workpiece as a result of hot chips can impair accuracy. Our aim is therefore: Fastest-possible chip disposal and coolant supply directly through the spindle.

- _ central media supply area at the rear
- _ coolant units [optional] with paper band filter or reversible flow filter for optimum flushing and cooling of the workpiece
- _ internal coolant supply through the spindle with high flushing performance and 50 bar [70 bar as an option]
- _ integrated work area shower with individually adjustable nozzles
- _ free chip fall below the spindle and quick disposal from the work area to the rear with central, wide chip conveyor



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 with optimised accessibility to all work areas
- _ robust, practical touch controls, optimally arranged for ergonomic operations
- _ supply units and maintenance points concentrated at just a few locations
- _ Siemens SINUMERIK 840D sl machine controller with the very latest features and options for 5-axis machining
- _ HELLER Operation Interface with 4-way split screen, clearly-arranged control screens and practical auxiliary functions
- _ main operating unit in console design with 24" multi-touch screen

Technical data

		HF 3500		HF 5500	
Positioning range X/Y/Z	mm	710/750/710		900/950/930	
Tool shank	Size	HSK-A 63	[HSK-A 100]	HSK-A 63	[HSK-A 100]
Clamping surface Nominal size	mm	400 x 500	Ø 630 [Ø 710] ¹⁾	500 x 630	Ø 810 [Ø 880] ¹⁾
Clamping load Power [Speed] [Pro]	kg	550 [550] [650]	550 [550] [650]	750	750

¹⁾ clamping plate
[] = optional values



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

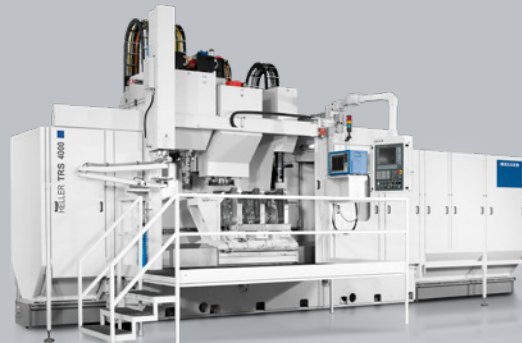
C

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





Americas	
Brazil	Belo Horizonte, Joinville, Porto Alegre, Sorocaba ⚙️
Mexico	Querétaro
USA	Troy ⚙️

Europe	
Germany	Goslar, Hattingen, Nuremberg, Nürtingen ⚙️, Rosenheim, Salem
England	Redditch ⚙️
France	Paris
Italy	Verona
Poland	Poznan
Russia	Moscow
Slovakia	Vráble
Spain	Barcelona
Sweden	Värnamo
Switzerland	Appenzell

Asia	
China	Beijing, Changzhou ⚙️, Jinan, Shanghai
India	Pune
Singapore	Singapore
Thailand	Bangkok

⚙️ Production ● Sales and Service

Gebr. Heller Maschinenfabrik GmbH
 Gebrüder-Heller-Straße 15
 72622 Nürtingen, Germany
 info@heller.biz
 www.heller.biz

This brochure is intended exclusively for advertising purposes. It does not constitute an integral part of a contract, a guarantee or an offer. We reserve the right to make interim modifications to technical data, specifications or equipment and we do not accept any liability for errors and misprints. The illustrations used may contain options subject to a surcharge.
 © 06.2022 Gebr. Heller Maschinenfabrik GmbH