

5-AXIS HEADS

YOUR BENEFITS AT A GLANCE



Design Type

- + high power density for demanding machining tasks
- + precise simultaneous machining thanks to a rigid design
- + wide swivel ranges and high swivel speeds
- + high torque on the A- and C-axes
- + efficient cooling (internal or external) for extended tool life and process reliability
- + suitable for machining metals, wood, and lightweight materials
- + compact and robust design



Flexibility

- + vavailability of various tool interfaces (e.g., HSK-A63, HSK-F63, HSK-E80)
- + wide range of interfaces for machine integration
- + modular design
- + extensive expertise based on in-house developed system components (e.g., rotary indexers, motor spindles, NC-axis bearings)



Cost efficiency

- + cost-optimized design without compromising performance
- + price advantages driven by high production volumes for major customers

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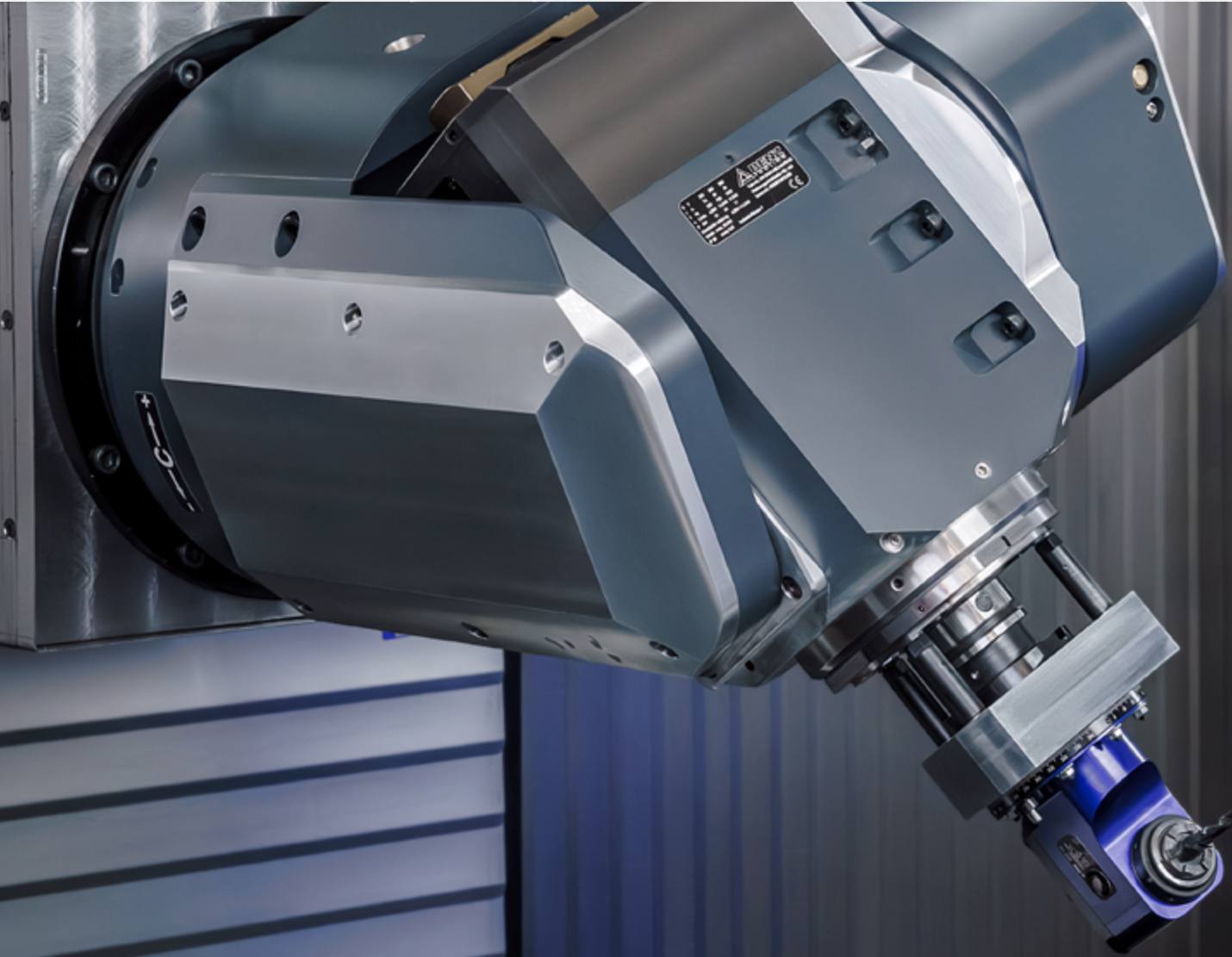
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SYS5Axis-F-EN-26-08

5-AXIS TECHNOLOGY

Heart of every modern machine tool

Tooling technology



Thanks to the BENZ 5-axis heads, we achieve the highest precision with maxed-out dynamics. The power density of these heads plays a crucial role, especially during large-scale casting operations. The compact design and high rigidity ensure that we can deliver consistent quality even during long machining cycles.



HELLER

Sebastian Knaus, Technical Manager,
August Wenzler Maschinenbau GmbH

learn more



MAXIMUM POWER DENSITY FOR DEMANDING APPLICATIONS

5-AXIS HEADS: HEART OF THE MACHINE TOOL

5-axis heads are the heart of every modern machine tool and play a key role in determining the precision and performance of the machining process.

Thanks to the simultaneous control of five axes, these machining centers offer maximum flexibility, as even complex workpieces can be machined efficiently and precisely in a single setup.



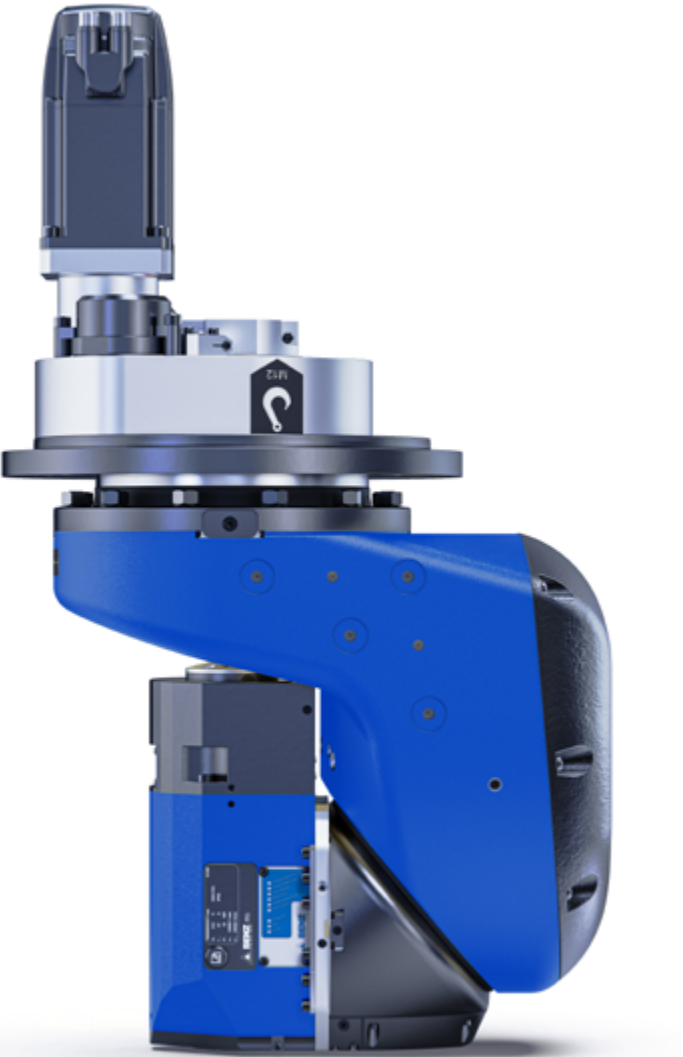
BENZ Tooling 5-axis heads in a WH 10000 5-axis machining center from August Wenzler Maschinenbau GmbH, a company of the HELLER Group. The fourth and fifth axes are housed in the 5-axis head, allowing both units to operate with a high degree of freedom of movement. The combination of machine kinematics and tooling technology enables precise, simultaneous machining of even complex, large-format structural components (megacastings) that would be difficult to access using conventional machine designs.

PRECISION AND FLEXIBILITY FROM PRECISION TO HEAVY-DUTY MACHINING

DESIGN AND INTEGRATED FEATURES

Innovative cooling concepts and a **well-thought-out design** ensure consistently high process reliability and excellent machining results.

An **integrated position measurement system** precisely detects the exact position and movement of machine components. The collected data is transmitted directly to the machine control system. This enables the entire system to operate with a **high level of precision and reliability**.



1 E-Interface

- fast and reliable integration of additional units
- intelligent transmission of power, control signals, and identification data
- flexible integration of technologies such as ultrasonic cutting, laser cutting, and more

2 IO-Link signal transmission

- centralized communication of all signal and status data to the machine control system
- continuous condition monitoring of temperature, speed, and vibration
- real-time display of error messages and maintenance requirements

3 Angular contact roller bearings

- innovative bearing design for maximum rigidity and stability throughout all axis movements
- high machining accuracy of the machine
- full performance and precise results even under heavy loads

4 Rotary joint with slip ring technology

- compact design with up to 6 power channels and 36 signal channels
- continuous transmission of electrical signals, pneumatic and hydraulic media, and coolant circuits during rotation
- reliable protection against cable breaks and media leaks

STANDARD UNITS 5-AXIS TECHNOLOGY

TECHNICAL DATA



	FK-09-HSK63F	FK-12-HSK63F	FK-15-HSK63F
Power S1 (S6)	9 KW (12 KW)	12 KW (15 KW)	15 KW (19 KW)
Maximum speed	24.000 rpm	24.000 rpm	24.000 rpm
Standstill torque	160 Nm	400 Nm	340 Nm
Options		IDZ E-cut	
Design	cardanic	cardanic	cartesian



	FK-24-HSK63A	FK-35-HSK80E
Power S1 (S6)	24 KW (32 KW)	35 KW (43 KW)
Maximum speed	20.000 rpm	12.000 rpm
Standstill torque	500 Nm	900 Nm
Options	IDZ	
Design	cartesian	cartesian

Custom-engineered solutions

These products represent just a small selection of what we can do.

We'll create your individual 5-axis solution – flexible, high-performance, and without compromise.

Challenge us!

