

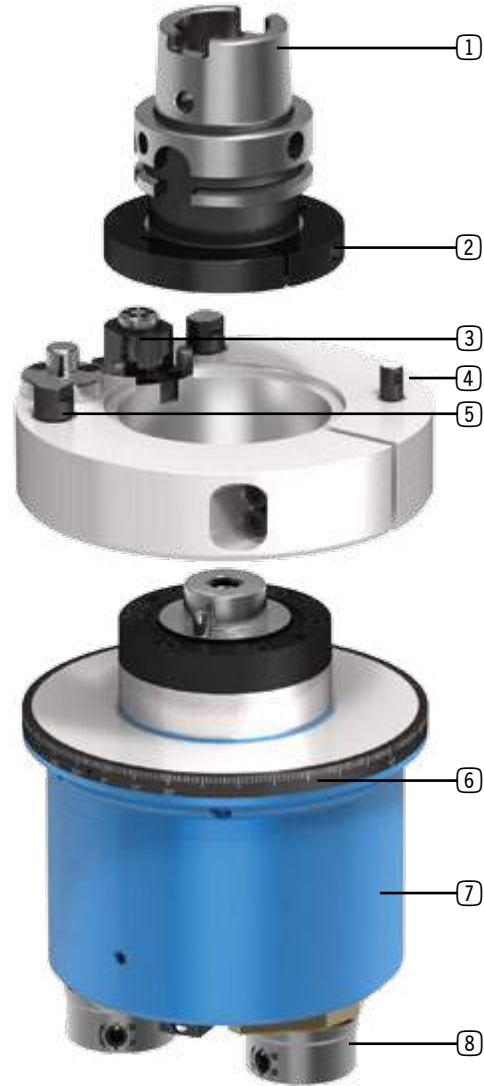
INTERCHANGEABLE MULTI-SPINDLE HEADS SYSTEM DESIGN

SYSTEM DESIGN

Requirements

Machine type

Machining center
Turning/milling center



Replacing the angle head



Individual machining drilling pattern



Desired tool holder

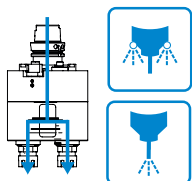


Required torque



Optional: Equipment variations

COOLANT FEED



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ADDITIONAL SUPPORT



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STOP BLOCK



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BENZ I.COM



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C-AXIS FUNCTIONALITY



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Components

1 Drive cone / machine interface

- For holding the angle head in the machine
- All common drive cones available
- Special connections in accordance with specification



SK
DIN 69871



MAS BT



CAT



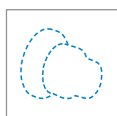
HSK
DIN 69893



Coromant
Capto®



KM™



Other

2 Locking disc

- Secures the precise angle position of the drive cone in relation to the torque support arm, in combination with the locking sleeve and locking pin

3 Interlock

- The drive cone interlock - together with the locking disc - prevents the drive from rotating without equipment inserted. This enables precise placement in the tool change magazine. When switching out the multi-spindle head in the machine, the interlock is activated by the stop block and the drive is released

4 Torque support arm

- Secures the multi-spindle head to prevent it from rotating during processing by fixing it to the machine spindle
- Generally adapted to the specific machine type
- Alternatively: Standard torque support arms from BENZ

5 Support points

- Additional support points provide maximum stability and accuracy during processing

6 360° graduated collar (optional)

- For manual, continuously variable rotation of the multi-spindle head into a desired operating angle
- Fixing using clamping screws

7 Drill head

- Material design matched to the application (high-strength aluminum for minimal exchange weight, steel/cast iron for maximum stiffness)
- High-performance gearbox with hardened and ground gears for maximum power transmission

8 Tool holder/clamping system

- For holding the tool
- Design based on customer specification
- Central coolant outlet possible through the spindles or coolant nozzles. Coolant pressure of up to 100 bar. Dry running possible



BENZ
Solidfix®



BENZ
Nanofix®



Collet



HSK



Cutter arbor



Weldon

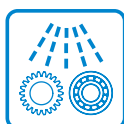


Whistle
Notch



KM™

GEARBOX LUBRICATION



TESTING EQUIPMENT



Additional equipment variations:

- ▶ Integrated pivoting and movement devices
- ▶ Threaded spindles with lead screw (optionally as sleeve unit)
- ▶ Tool guide/centering
- ▶ etc.

INTERCHANGEABLE MULTI-SPINDLE HEADS IMPLEMENTED SOLUTIONS

Typical applications for interchangeable multi-spindle heads

2

Interchangeable / Multi-spindle heads



Multi-spindle angle head

For brake caliper machining in the automotive industry



4-spindle head

For heavy-duty cutting. The gearboxes in use feature a power partition.



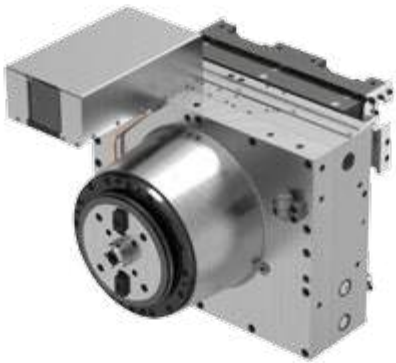
Multi-spindle head

With 5 spindles for steering gear. The head features an oil mist lubrication system, making it ideal for continuous (24/7) use.



Multi-spindle head

With interchangeable drill guide plate



Planetary milling cassette
For heavy-duty cutting. With automatic testing equipment.



Angle multi-spindle head
With 2 spindles



Multi-spindle head
For step machining (drilling and threading)



Angle multi-spindle head
With external cooling using coolant nozzles.
Tool holder: BENZ Solidfix® (modular quick-change system)

INTERCHANGEABLE MULTI-SPINDLE HEADS IMPLEMENTED SOLUTIONS

Typical applications for interchangeable multi-spindle heads



Multi-spindle head

For brake caliper machining. Gearbox lubrication using oil mist for continuous use (24/7).



Multi-spindle head

With oil mist lubrication



6-spindle multi-spindle head

With internal coolant infeed



Multi-spindle head

with integrated extraction and drill guide