INTERCHANGEABLE MULTI-SPINDLE HEADS
SYSTEM DESIGN

Requirements

Machine type
Machining center
Turning/milling center

Replacing the angle head
Desired tool holder

Individual machining drilling pattern
Required torque

Optional: Equipment variations

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ADDITIONAL SUPPORT
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STOP BLOCK
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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

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

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

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