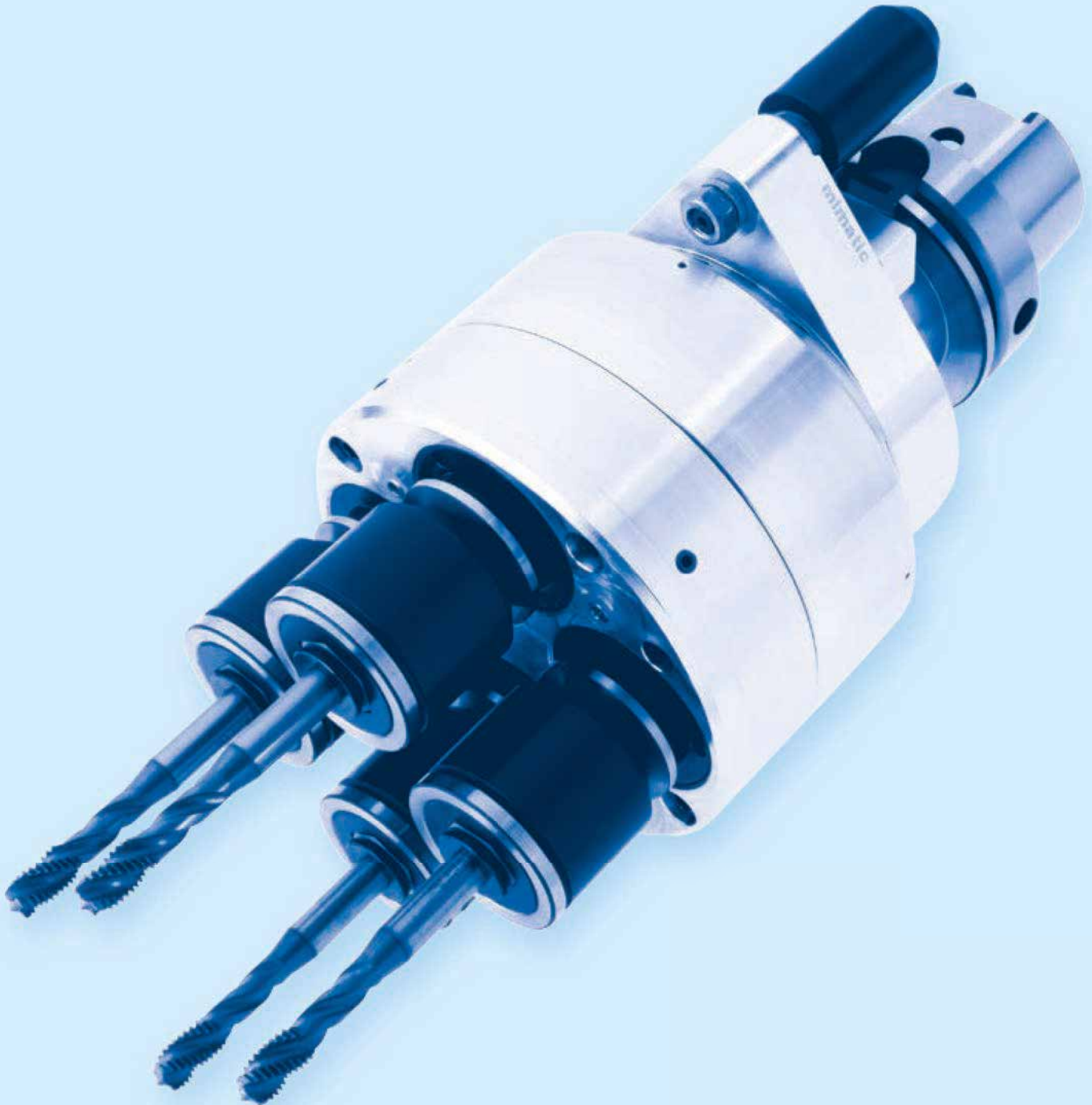


Multi-Spindle Technology



mimatic[®] Multi Spindle Technology Increases Your Productivity

The multi spindle technology is characterized by the rule that almost no working issue resembles the other one. Our strength lies in our ability to prepare individual solutions for each of these cases.

Our multi spindle units for the multiple's processing are rationalized by drilling operations (workpiece-specific drill hole-patterns) in mass production for middle and high lot sizes. With the help of a multi spindle unit, multiple holes can be worked at the same time.

The fixed multi spindle units are usable for drilling, thread cutting, countersinking, reaming and for multi spindle milling. Many tool interfaces such as mimatic[®] mi, HSK, collets, etc. are possible.

Our customers are mainly the automotive industry and machine tool manufacturers (HSC milling machines-, CNC machining centers-, special- and transfer machine manufacturer).





All Multi Spindle Units Increase Efficiency:

- Multiple processing of two and more holes in one processing step
- thereby substantial reduction of the processing time per individual part = reduction of pieces costs, extension of manufacturing capacity, lowering of the turnaround times.

Advantages:

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> ■ Smallest downtimes owing to established mimatic® quality ■ Adjustment to most diverse customer needs ■ Usable for drilling, thread cutting, countersinking, reaming and milling ■ Processing of workpieces with close tolerances due to robust and stable prestressed spindle bearings | <ul style="list-style-type: none"> ■ Tool spindles (cartouches) easy and fast exchangeable ■ Individual gear ratios are available for each spindle ■ High torque rates ■ Cooling of the complete unit by a cooling plate ■ Lubrication of the drill head over oil-air mixture ■ Protection of the tool spindles by locking air | <ul style="list-style-type: none"> ■ All spur gears are helical, hardened and polished allow high RPM's at very low vibrations ■ Sealing over friction-optimized seal rings ■ Seats of the seal rings on the arbor are coated ■ Short delivery times ■ High service readiness ■ Completely developed, designed and manufactured in Germany. |
|---|--|---|

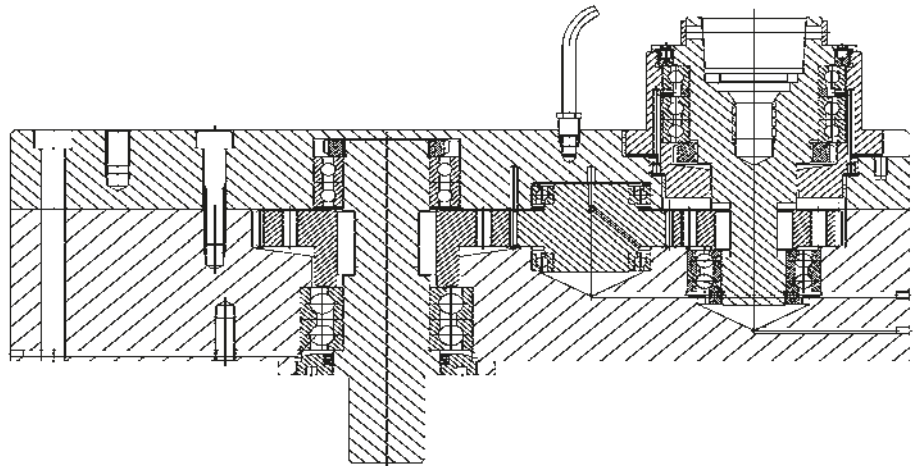


Structure of Our mimatic[®] Multi Spindle Units

Tools from most modern materials such as tungsten carbide, cermet or diamond make ever higher demands in reference to rigidity, concentricity and RPM against the machining spindles. Our multi spindle units fulfill this requirement in a high level.

All Details at One View:

- Housing material from steel or high-strength aluminum
- All rotary parts recompensed or hardened and polished
- Spur gears are helical, hardened and polished
- Spindles with internal coolant
- RPM up to 15.000
- The tool holding fixtures are fixed in prestressed precision spindle bearings free from backlash, rigidly supported and have a very exact concentricity
- Accurate spindle arrangement (spindle distance ± 0.01 mm) to guarantee continuous workpiece quality
- mimatic[®] mi-, HSK -, Komet ABS -, Weldon-, Whistle Notch- or ER collet spindles
- Manufacturing of the machine connection individually for each manufacturer and each kind of machine
- Realization of maximum rigidity on the one hand and smallest weight as possible on the other hand
- Thread drilling heads with pitch adjustment by axial compensation or individual RPM of each spindle.





The following Machines can be modernized with our Multi Spindle Units:

- Machining centers
- Milling machines
- Transfer machines
- Rotary transfer machines

The size and form of the drilling head individually per drill hole-pattern and within the limitations of your machine.

