HSS Specialists

Special design high speed steel drills for special machining tasks
Guhring has been a specialist in drilling tools for more than a century. This not only applies to the broad spectrum of the standard tool range but even more so to the possibilities available in the special tool sector. Especially regarding high speed steel special drills there is really nothing that our tool specialists in the production in Albstadt are not able to achieve.

As well as the technical realisation of customer requirements it is primarily the service provided that constitute the strengths of Guhring’s production. For example:

- Providing quotes within 24 hours!
- Fast production of special tools thanks to state-of-the-art production facilities, i.e. step drills within 2, subland drills within 3 weeks following receipt of order! By agreement, it is even possible for step drills to be produced within one week.
- Producing tools with the best possible price-performance-ratio!
- The application of the optimal tool steel for the individual application task, from M42 to HSS-E and including PM HSS-E!
- Application specific tool coatings from Guhring’s coating palette!
- The re-grinding and re-coating service to original geometries and coatings providing the optimal tool refurbishment!

These pages include numerous examples of detailed and complete solutions that Guhring can provide – other combinations than those shown are naturally possible. Please use the enclosed questionnaire for your enquiry or contact the relevant sales department.
Guhring’s HSS special program, near limitless possibilities…

Multi-step drills and stepped core drills
Guhring produces multi-step drills and stepped core drills for complex machining tasks, optimally adapted to specific customer requirements. From the number of steps, the inclusion of a reaming step, the design with double margins to internal cooling – anything can be realised at Guhring!

Small and micro precision drills
Small drills from diameter 0.95 mm – including extra length designs - is a Guhring speciality. Furthermore, Guhring produces stepped tools from step diameter 0.5 mm for the production of extremely small stepped holes.

Hollow drills
For special applications in the steel and railtrack fabrication industries Guhring produces multi-fluted hollow drilling tools for the production of through holes. The advantage of hollow drills is a considerable reduction in the cutting forces and in the chip volume.

Counterbores and countersinks
Guhring predominantly produces single-fluted tools for the production of countersinks, however, it is also possible to produce multi-fluted tools to customer requirements. The cutting edge geometry of the tools is optimally adapted to the countersink required by the customer as well as the material to be machined.

Multi-fluted tools
Special machining tasks requiring tools with more than two cutting edges are no problem for Guhring’s high speed steel tool production. Guhring can produce multi-fluted tools such as core drills, reamers or taper pin drills for customer applications. Tools can be produced with steps or extra long as well as tapered – depending on customer requirements.

Center drills
Center drills tailor made for customer production. A single or multi-step design, to DIN or to customer specifications. From the cutting edge geometry to the shank design, tools are produced exactly to customer specifications.
NC drills
For the application on NC machines, Guhring produces NC drills to customer specifications. Precision and stability are the essential demands on these tools, and are considered by Guhring even for complex geometries thanks to cutting edge production techniques.

Point geometries
Special machining tasks require special drill point solutions. Guhring provides every conceivable point geometry to suit the customer’s application task, including a radius point grind as well as a center point or an absolutely flat 180° point. Even negative point angles can be produced.

Special dimensions
No drill is too large or too small, no ratio is too extreme. Guhring produces tools for customers in the most unusual of constellations. In the diameter range from 0.95 mm to 106.0 mm and up to a maximum total length of 1250 mm anything is possible. For example, extremely long in comparison to the drill diameter, very large or very small shanks.

Internal cooling
Optimised chip evacuation from the hole and a longer tool life – to name but two of the many advantages drilling tools with internal cooling have to offer. The customer requires a special solution for the coolant supply or the coolant exit? Guhring has the solution: additional coolant ducts exiting from the tool where required, such as in the flutes – not at the point, for example. Or lateral delivery via the shank, the drive flat or a special supply collar. Or straight shanks to DIN 1835.

Double margins
On request, Guhring can supply any drill with double margins, ensuring alignment accurate holes with good surface qualities and optimal support for the tool when exiting through holes.

Shank design
Generally, any type of shank design is possible: straight or taper shanks, short taper or multi-step shanks, shanks with internal or external threads or all types of clamping surfaces.
Fax enquiry / order
HSS special drills
simply copy, complete and fax...

| Tool material: | ☐ HSS ☐ HSS-E ☐ PM HSS-E ☐ M42 ☐ Other: __________ |
| Tool type:     | ☐ Drill ☐ Step drill ☐ Subland drills
|               | ☐ Core drills ☐ Countersinks ☐ Center drills |
| Internal cooling: | ☐ without ☐ with |
| Shank design:  | ☐ reinforced ☐ with flat |
|               | ☐ parallel straight shank ☐ Morse taper ☐ Other: __________ |
| Number of steps: | ☐ without ☐ with ____ steps |
| Total length:  | ____ mm |
| Step diameter: | d₁ ____ mm,   d₂ ____ mm,   d₃ ____ mm
|               | d₄ ____ mm,   d₅ ____ mm,   d₆ ____ mm |
| Point geometry: | ☐ Relieved cone ☐ For grey cast iron ☐ Centre point
|               | ☐ Facet point grind ☐ Other: __________ |
| Special point grind, form: | ☐ A ☐ B ☐ C ☐ w/out ☐ Other: __________ |
| Coating:       | ☐ without ☐ nitrided ☐ steam tempered
|               | ☐ S (TiN) ☐ A (TiAlN) ☐ C (TiCN)
|               | ☐ FIRE ☐ MolyGlide |
| Spiral:        | ☐ RH ☐ LH |
| Quantity required: | _____ tools |

Company: ____________________________  Company stamp: ____________________________
Telephone/fax: ____________________________  Signature: ____________________________
Our product range:

1. **Drilling Tools**
   *in High Speed Steel and Carbide*
   - Twist drills
   - Ratio drills
   - Micro-precision drills
   - Oil feed drills
   - Subland drills
   - Centre drills
   - Core drills
   - Gun drills
   - Drilling systems with interchangeable inserts

2. **Thread Cutting Tools**
   *in High Speed Steel and Carbide*
   - Machine taps and fluteless taps
   - Oil feed taps and oil feed fluteless taps
   - Circular fluteless taps
   - Hand taps
   - Thread milling cutters
   - Dies

3. **Milling Cutters**
   *in High Speed Steel and Carbide*
   - Ratio end mills
   - Slot drills
   - End mills
   - Radius profile cutters
   - Hard profile cutters
   - Diesinking cutters

4. **Reaming Tools**
   *in High Speed Steel and Carbide*
   - NC machine chucking reamers
   - Machine and machine chucking reamers
   - Taper pin reamers
   - Hand reamers

5. **Countersinking Tools**
   *in High Speed Steel and Carbide*
   - Countersinks, counterbores and spot facers
   - Short counterbores, back spot facers

6. **Cutting Tools**
   *in ultra-hard materials*
   - Cermet and ceramic tools
   - PCD- and PCB-tipped tools

7. **Coated Tools**
   - A-tools, TiAlN-coated
   - C-tools, TiCN-coated
   - F-tools, FIRE-coated (allround)
   - S-tools, TiN-coated (allround)
   - M-tools, MolyGlide-coated

8. **Modular Tooling Systems**
   - **Tooling system GM 300**
     - Tool holders, clamping systems and accessories to ISO 12164, DIN 69893 and DIN 69871 for transfer lines, machining and turning centres
   - **Flexible tooling system GE 100**
     - a tooling system for the combined machining operations facing, chamfering, boring, centering etc.
   - **Cartridge tooling system DP 200**
     - with indexable inserts for roughing and finishing operations in complex workpieces

9. **Special Tools**
   - to sketch or drawing, the more complex, the better

10. **Carbides**
    - for precision cutting tools

11. **Carbide Special Parts**
    - for the forming, machining and wear protection industry
    - Cold heading dies, ribbed rolls, dies, mandrels, drawing dies, gear cutters, etc.

12. **Hydro expansion chucks, Shrink fit chucks and systems**

13. **Tool Restoration Service**
    - Re-grinding, re-coating, tool management