

# GUHRING



## HSS Specialists

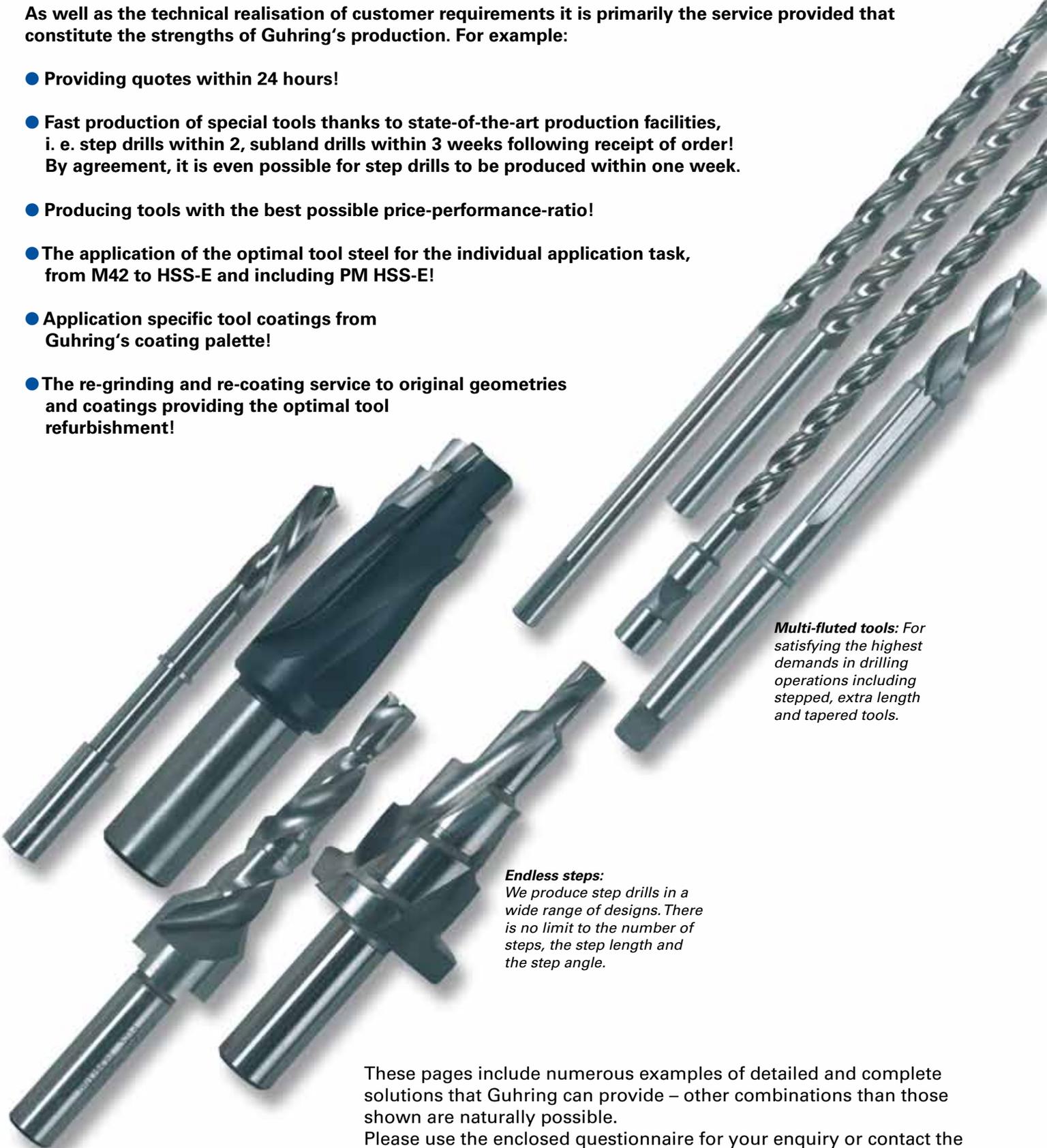
Special design high speed steel drills  
for special machining tasks



**G**uhring 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!

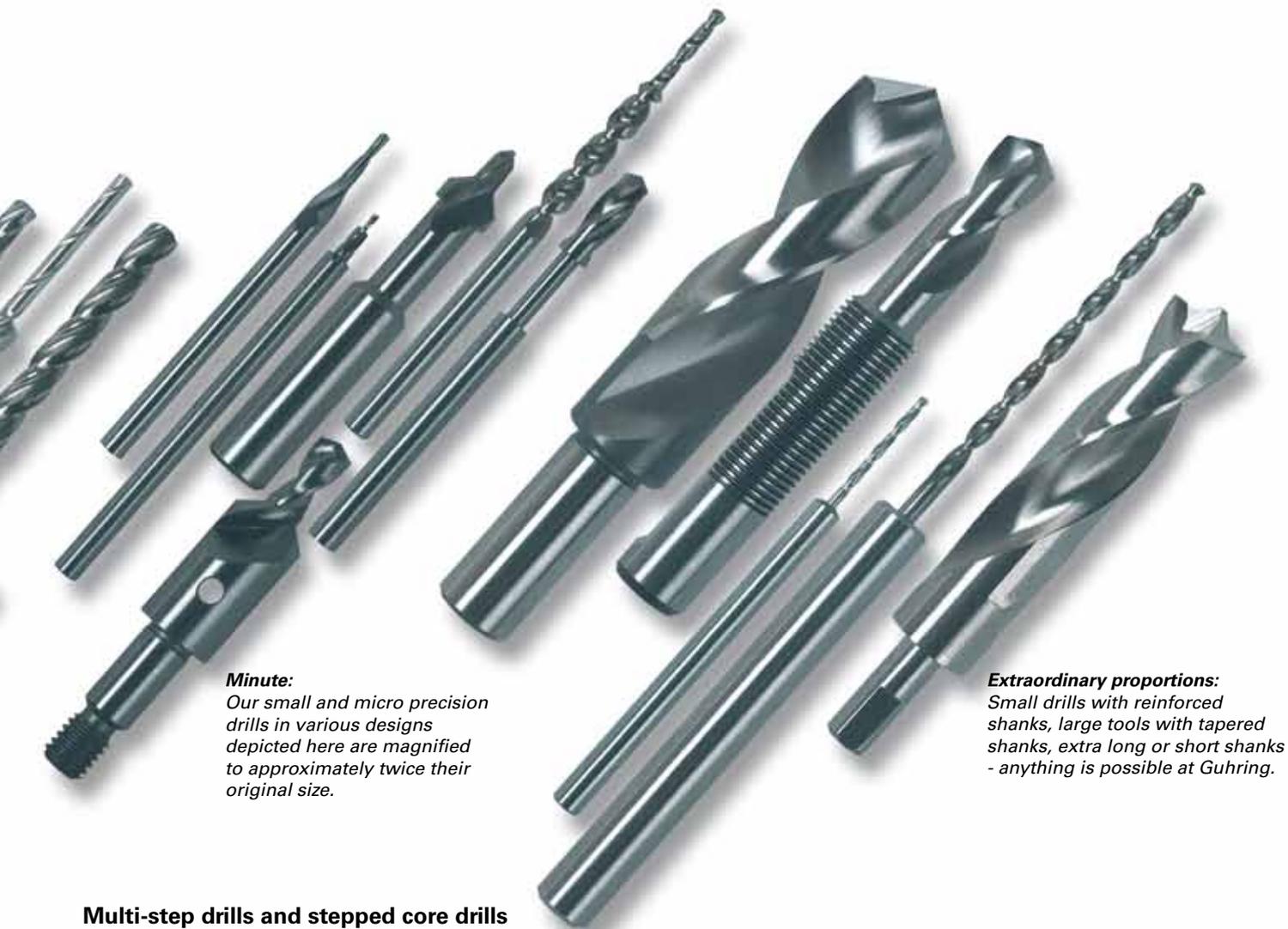


**Multi-fluted tools:** For satisfying the highest demands in drilling operations including stepped, extra length and tapered tools.

**Endless steps:**  
We produce step drills in a wide range of designs. There is no limit to the number of steps, the step length and the step angle.

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.

# Special program, near limitless



#### **Minute:**

*Our small and micro precision drills in various designs depicted here are magnified to approximately twice their original size.*

#### **Extraordinary proportions:**

*Small drills with reinforced shanks, large tools with tapered shanks, extra long or short shanks - anything is possible at Guhring.*

#### **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.

# possibilities...

## 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.



### Special internal cooling:

Additional coolant exits in the flutes improve chip evacuation. The coolant delivery at the shank is designed exclusively to customer specifications.

### Made-to-measure point geometry:

Providing the optimal point geometry for the customer's specific application is not a problem at Guhring. Special drills receive the perfect point grind.

### Center drills:

A speciality of Guhring's high speed steel production.

### Double margins:

For especially alignment accurate holes.

### Hollow drills:

Multi-fluted for special applications in steel and railtrack fabrication.

### Counterbores and countersinks:

Optimally adapted for the countersink to be produced.



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## 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  without flat  with flat  
 parallel straight shank  Morse taper  Other: \_\_\_\_\_

**Number of steps:**  without  with \_\_\_\_\_ steps

**Total length:** \_\_\_\_\_ mm **Step length:** \_\_\_\_\_ mm

**Step diameter:** d<sub>1</sub> \_\_\_\_\_ mm, d<sub>2</sub> \_\_\_\_\_ mm, d<sub>3</sub> \_\_\_\_\_ mm  
d<sub>4</sub> \_\_\_\_\_ mm, d<sub>5</sub> \_\_\_\_\_ mm, d<sub>6</sub> \_\_\_\_\_ mm

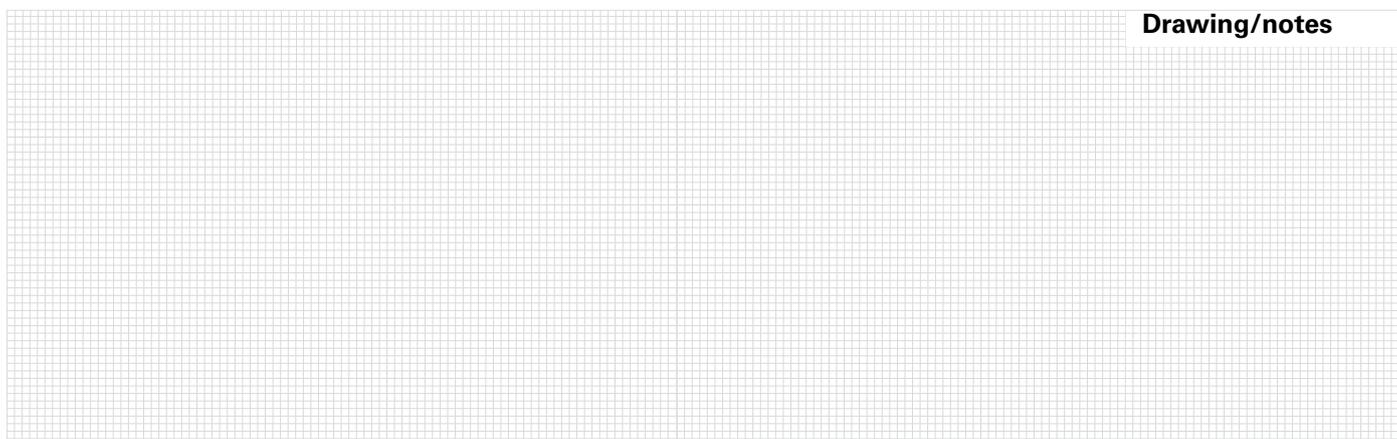
**Point geometry:**  Relieved cone  For grey cast iron  Centre point  
 Facet point grind  Other: \_\_\_\_\_

**Special point grind, form:**  A  B  C  w/out  Other: \_\_\_\_\_

**Coating:**  without  nitrided  steam tempered  
 TiN  TiAlN  TiCN  
 FIRE  MolyGlide

**Spiral:**  RH  LH

**Quantity required:** \_\_\_\_\_ tools

Drawing/notes


Company: \_\_\_\_\_

Telephone/fax: \_\_\_\_\_

Contact name: \_\_\_\_\_

Company stamp:

Signature:

**Drilling**



**Tapping/thread milling/fluteless tapping**



**Reaming**



**Countersinking/de-burring**



**Milling**



**PCD/PCB**



**Modular tooling systems**



**Special tooling solutions**



**Tool restoration service**



# GUHRING

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