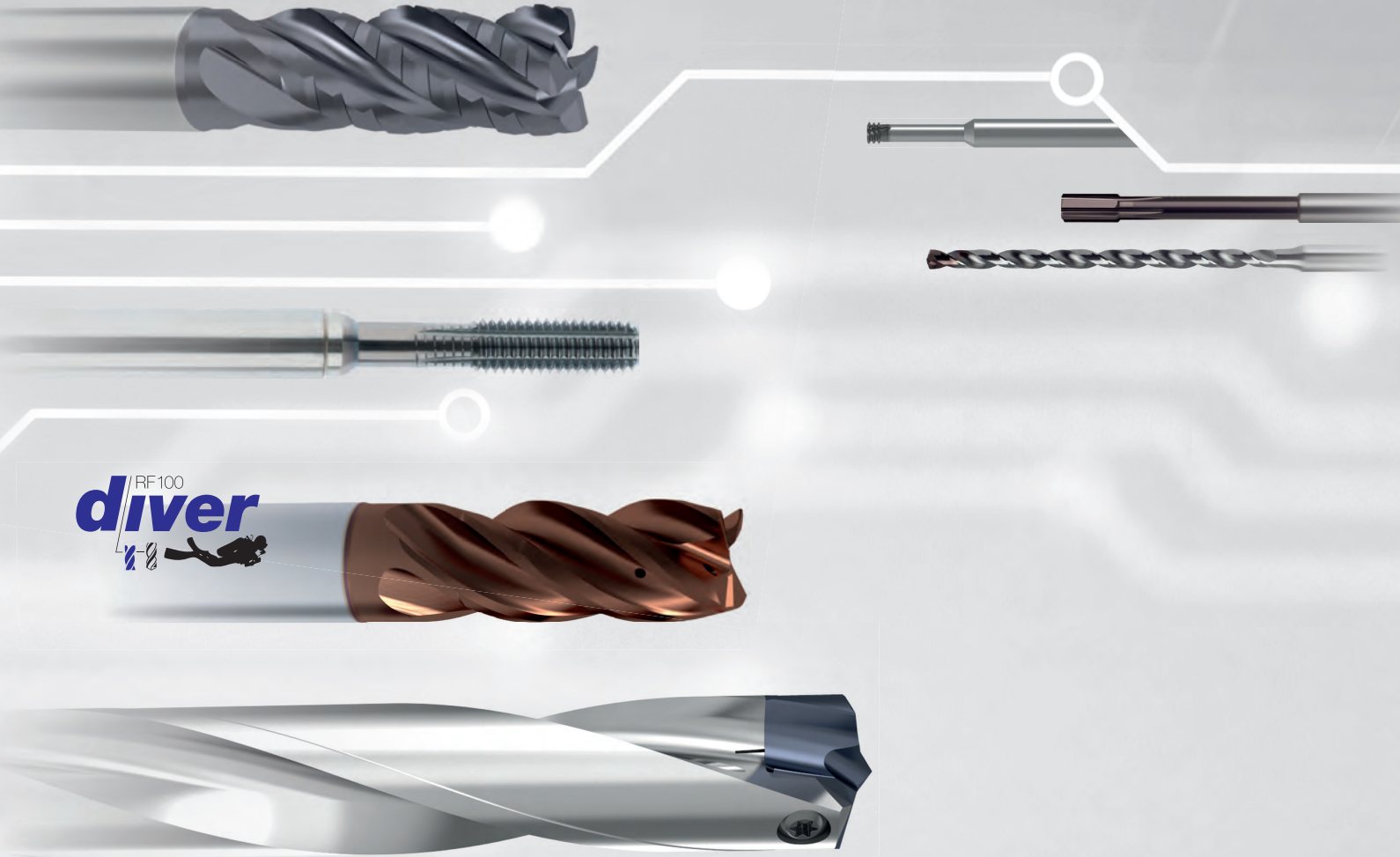


GUHRING



INNOVATIONS

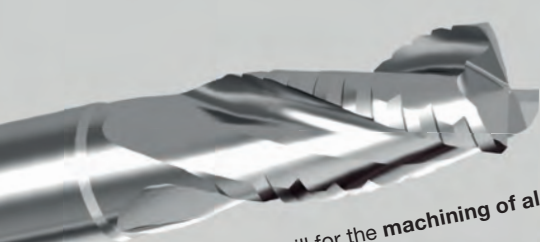
2017/2018

Ratio® high-performance roughing cutter with flat knuckle-type teeth

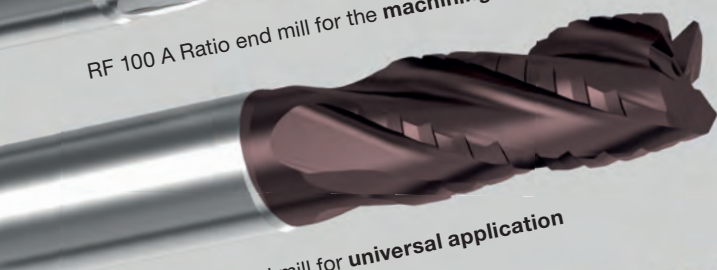
60 % longer tool life

The optimised roughing geometry with asymmetrical knuckles reduces the cutting pressure in comparison to smooth cutting milling cutters. Larger flutes guarantee optimal chip evacuation. The result is a smooth rough-finish surface. By utilising the entire cutting edge length and increased metal removal rate is achieved. Tool life also scores with an increase of up to 60% by comparison to similar tools on the market.

RATIO®



RF 100 A Ratio end mill for the **machining of aluminium**



RF 100 U Ratio end mill for **universal application**



RF 100 VA Ratio end mill for the **machining of aluminium**



Overview of advantages

- // increased metal removal rate by utilising the entire cutting edge length
- // up to 60% longer tool life with high process reliability
- // ideal for less powerful machines and unstable clamping



Further information can be found in the product brochure.



RF 100 DIVER – extended programme and internal cooling

Simply plunge

Since the introduction on the market in 2014 the demand for the universal milling tool has not diminished. Therefore, Guhring is extending its portfolio of Ratio milling cutters. As well as larger product range, there is also a geometric innovation: Internal cooling optimised for drilling and milling. Where as drilling tools rely on axial coolant ducts and milling tools on radial coolant ducts, RF 100 Diver offers both in order to optimise cooling and protection to the face and diameter when drilling and plunging. This ensures up to 40% longer tool life.

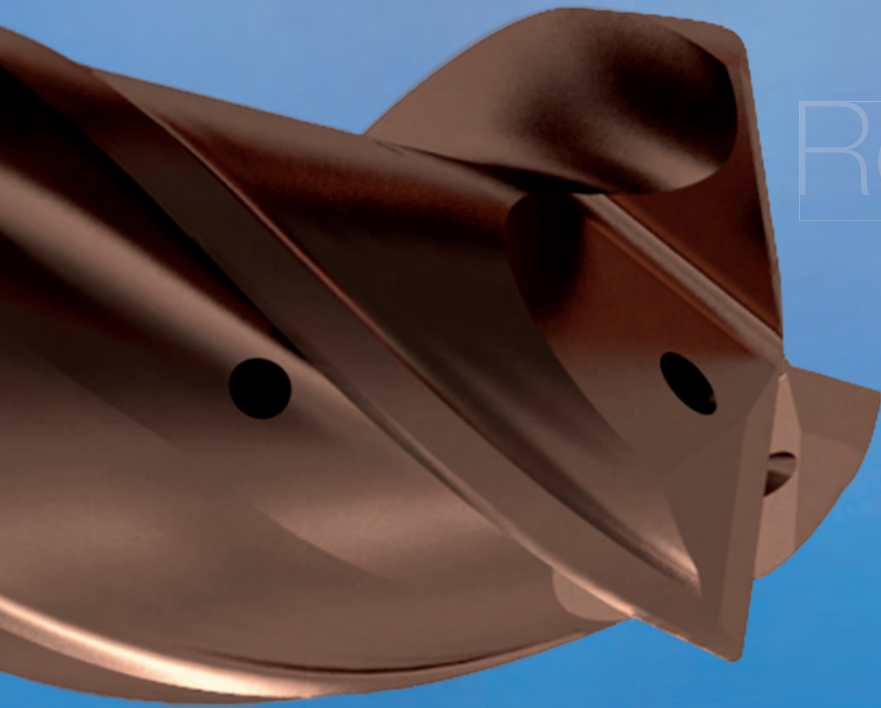


Further information can be found in the product brochure.

RF 100 *diver*

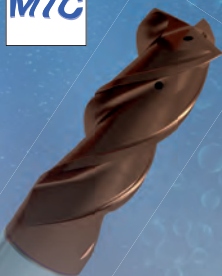


Drilling
Ramping
Roughing
Finishing
Slotting



For any application
the optimal Diver – **now even more choice**

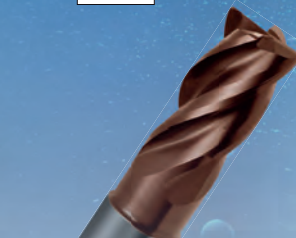
MTC



3-fluted

- ▶ for less powerful machines & clamping conditions
- ▶ for turning machines & driven tools
- ▶ specially for slotting with smaller milling cutter diameters
- ▶ now also available with internal cooling

HPC



4-fluted, short

- ▶ for more stability with slotting
- ▶ up to 25% higher feed rate
- ▶ reduced deflection

HPC

HSC



4-fluted

- ▶ for stable machines & clamping conditions
- ▶ high-performance milling with maximum cutting speeds
- ▶ now also available with internal cooling

Micro-precision **drilling tools**

Micro-precision **threading tools**



MICRO-PRECISION TOOLS

Extremely small, ultra precise

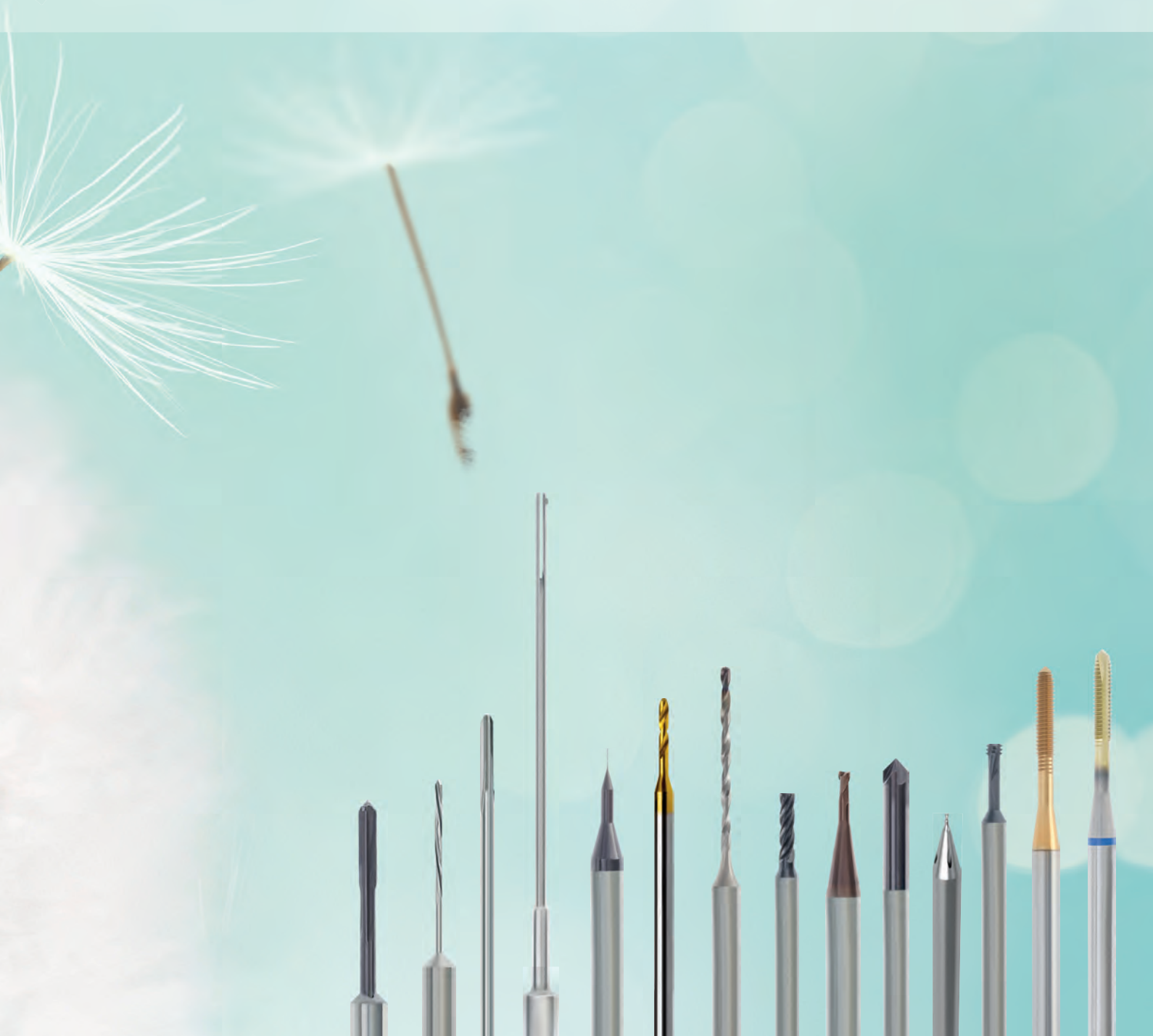
Miniaturisation is gaining importance in many industries from electronical engineering, automotive, medical technology to mechanical engineering. The smaller components become the higher the demands on precision, repeatability and economic efficiency of the process. Especially in micro-precision machining the requirements are enormous. High carbide quality, closer tolerances and ensuring process reliable cooling are absolutely necessary commencing with the blank stage.

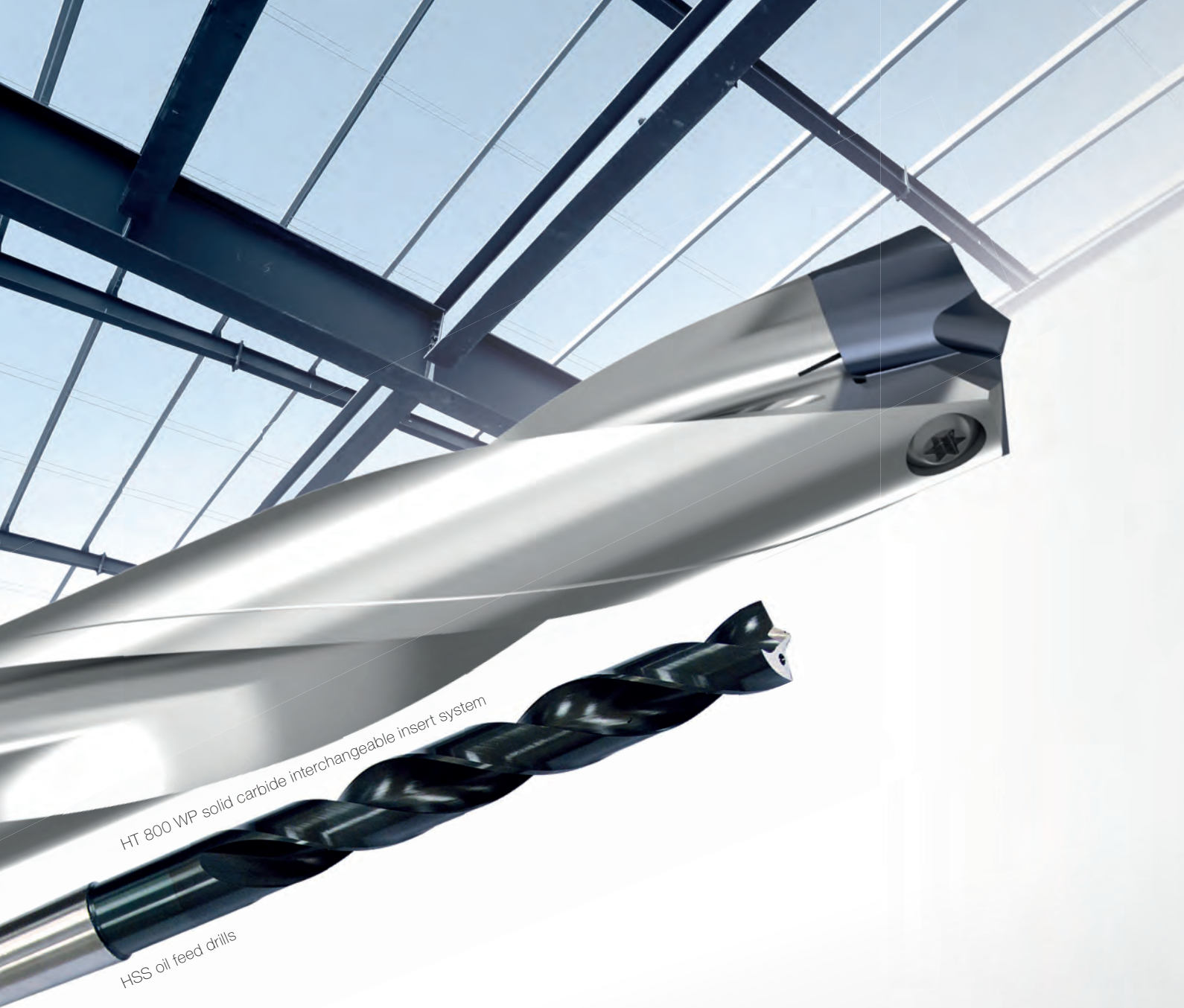


Further information can be found in the product brochure.

Micro-precision **reamers**

Micro-precision **milling tools**





HT 800 WP solid carbide interchangeable insert system

HSS oil feed drills

Drilling tools for the machining of **steel girders**

Steel girders for various metal constructions are generally prepared for assembly on special drilling and sawing plants. The clamping conditions on these machines are often unstable. Drilling tools must take this into account. The adapted tool geometry ensures a smooth drilling performance.

With the HSS oil feed drill and the HT 800 carbide drill, Guhring provides optimal solutions for the machining of steel girders, they have excellent self-centring characteristics and offer a smooth drilling performance.



Further information can be
found in the product brochure.

GROOVING SYSTEMS

New clamping holders for sliding heads
& modular holders

Extended product portfolio

With its new grooving systems Guhring is extending the product portfolio with stationary tools for turning operations.

In addition to the world-wide most comprehensive range of rotary cutting tools the company is complementing it in the field of turning and grooving tools. For the AMB in Stuttgart Guhring started with the introduction of three grooving systems: Systems 104 and 106 for boring out, grooving, axial grooving, threading and broaching as well as system 305, a three-fold interchangeable indexable insert for external and internal machining. Now new clamping holders for sliding heads as well as modular holders have been added to the programme.

Furthermore, the scope of cutting insert diameters, radii and length dimensions has been extended. Entirely new to the programme with system 305 is an indexable insert with sintered rake geometry. Whether for small and medium batch sizes or for customer specific special solutions in series production: High level of in-house production – from carbide production to in-house coating, development and design as well as customer service by product specialists – make Guhring's grooving systems unique.



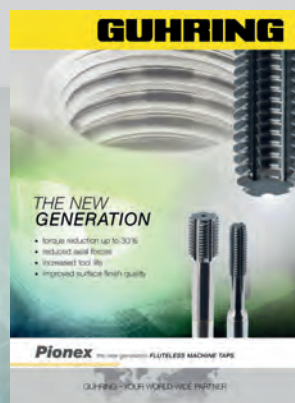
Further information can be
found in the product brochure.



Pionex

new FLUTELESS TAP generation

Up to 30% less torque is possible with the new generation of fluteless taps. An optimised polygon shape modifies the contact surface between tool and workpiece. A special surface finish treatment in combination with Guhring's established TiCN-coating also ensures high wear resistance. The lubricating effect in the forming lead area has been clearly improved thanks to optimised oil grooves. As a whole the optimisations result in longer tool life and improved surface finish quality.

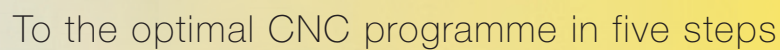


Further information can be found in the product brochure.



for thread milling cutters and drill thread milling cutters

"CNC Guhro Thread Mill" is available free-of-charge.
Simply download it from our homepage www.guehring.de.



1. Specify the thread data
select from all current thread standards
2. Select the material
you are always referred to the optimal parameters
3. Select the tool
technical data, drawing, machining time and video simplify selection
4. Record CNC data
enter required milling strategy and parameters
5. Receive CNC programme with code and data sheet
programming data (Sinumerik, Haidenhain, Fanuc, Philips, Mazatrol or Hurco) are imported and automatically recognised



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