

# GUHRING

## INNOVATIVE CLEARANCE DESIGN

- **Greater cooling efficiency** at the drill cutting lips and outer corners
- Ideal for drilling when subjected to high thermal stresses
- Clear **tool life optimisation**



FLUID-structure

**FLUID-structure** laser generated clearance modification

GUHRING - YOUR WORLDWIDE PARTNER

# Tool life optimisation thanks to **MODIFIED CLEARANCE DESIGN**

- Special solution
- for drill types RT 100 HF + RT 100 VA
- for  $\varnothing$  3.0 - 16.0 mm

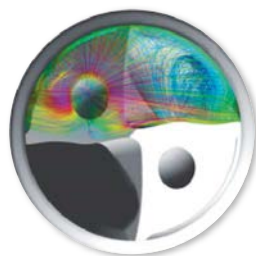
With drilling operations a high quantity of cooling lubrication (CL) does not always lead to the desired result as it must be supplied to the target location. For this laser machining of drilling tools offers innovative design possibilities.

The cross-section of the coolant ducts and their position within the clearance constitute important factors for influencing the cooling lubrication during the drilling operation. Furthermore, structures within the clearance as well as adjacent surface areas can influence the flow behaviour of the cooling lubrication. Thanks to a laser generated clearance modification, the so-called **fluid structure**, the cooling medium can be guided and aimed at the most stressed areas, the cutting lip and the outer corners of the drill, thus enabling greater cooling efficiency. The reduced thermal stress slows wear development and increases tool life.

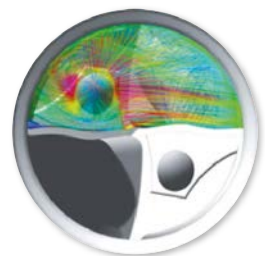
Tools with fluid structure are especially suitable for materials under high thermal stresses. This is the case in stainless steels, titanium-alloys and nickel based alloys. Their properties cause extreme thermo-mechanical stresses and therefore considerably limit tool life as well as productivity. A targeted manipulation of the cooling lubrication flow offers considerable potential benefits for optimising such machining operations.



## Optimised FLOW VELOCITY



RT 100 HF  
conventional clearance design



RT 100 HF Fluid  
modified clearance design  
with fluid structure

