

# RT 100 T ALU VARIO

Solid carbide spiral-fluted  
deep hole drills for machining  
Aluminium with conventional  
cooling with Si content < 7%  
and MQL

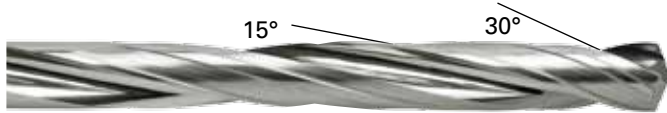
**Edition  
EMO 2013**

**EXCLUSIVELINE®**

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## RT 100 T ALU vario – Technical data and advantages

### Spiral flutes with 30°/15° rake angle and improved surface quality



The flute design with a rake angle of 30°/15° ensures good cutting in the front section (30°) and a shorter chip travel in the following section (15°). In addition, the high surface quality of the flute offers the chips low friction resistance. The RT 100 T ALU vario evacuates the optimally formed chips efficiently from deep holes without problem.

### Optimised cutting edge geometry for the machining of aluminium

The cutting edge geometry of the spiral-flute deep hole drill RT 100 T ALU vario is optimised to produce chips that can be evacuated from deep holes as easily as possible.



### Optimal also in 99.9% copper

The new flute and cutting edge design also offers best results in ultrapure copper:

- Ø 7 mm, drilling depth 30xD
- $v_c = 120$  m/min.
- $f = 0.7$  mm/U
- short chips
- safe chip evacuation

### Application example cylinderhead

A typical field of application for aluminium materials is the automotive industry and especially engine manufacture. When machining a cylinderhead the spiral-flute deep hole drill RT 100 T ALU vario's level of performance is impressive:

- drilling the main oil gallery
- Ø 6.98 mm, drilling depth 2 x 190 mm
- drilling from both sides
- material AlSi9
- MQL 2-channel 60 ml
- $v_c = 150$  m/min
- $v_f = 1600$  mm/min
- tool life: 3000 m



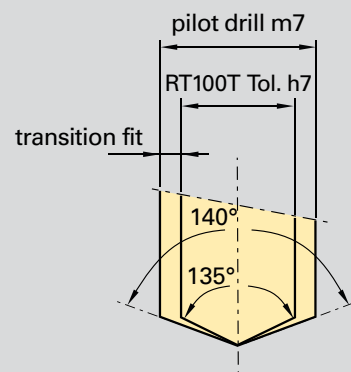
### The procedure for machining aluminium

To achieve optimal machining results in the production of deep holes with the RT 100 T ALU vario particularly when piloting on radii and/or uneven surface, we recommend the following machining steps:

1. Milling of flat, i. e. with Guhring Ratio end mill RF 100 U incl. centre cutting. The flat must be at right angles to the entry of the drilling operation.
2. Producing a cylindrical pilot hole (tolerance F9) with a minimum drilling depth of 2xD (up to 7xD). We recommend our Ratio drill RT 100 U. Thanks to its point angle of 140° and its Ø-tolerance m7 it is ideally suited for this machining step.
3. Entering the spiral-flute deep hole drill RT 100 T ALU vario in the pilot hole with a speed of appr. 300 rev./min and a feed rate of appr. 500 mm/min.
4. Setting the cooling lubricant pressure and speed.

5. Continuous drilling to full drilling depth without pecking cycle.

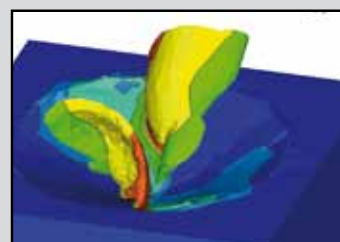
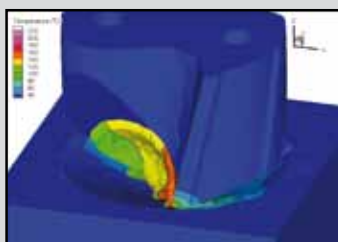
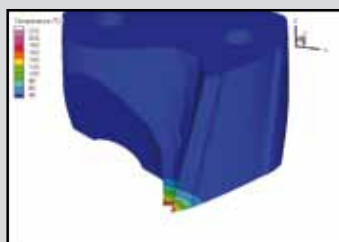
6. Upon reaching the drilling depth switch off speed and cooling lubricant, withdraw with rapid feed rate.



The special design of cutting edge geometry...

... provides optimally formed chips...

... and quick chip evacuation.



All deep hole drills must be guided during pilot drilling. Deep hole drills must never operate at full speed unsupported.

# EXCLUSIVE LINE®

## RT 100 T ALU vario – special tools for the wet machining < 7 % Si-content and MQL machining of aluminium

**GUHRING**

RT 100 T Alu vario  Inquiry  Order by fax: +49 74 31 17-21 279

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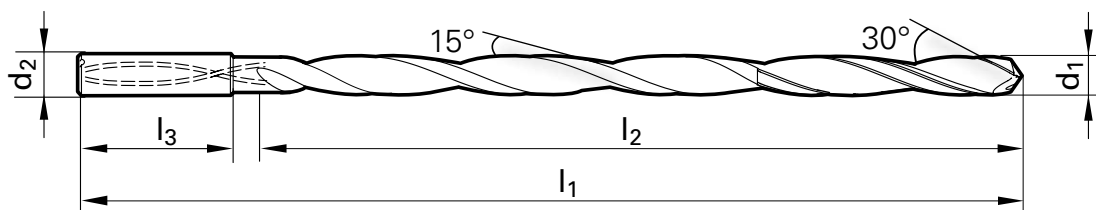
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repeat order: \_\_\_\_\_  first order  to attached drawing

Ø nom. 3.0 up to 14.0 mm  
max. drilling depth 30 x D, max. length 370 mm

**Attention: pilot hole required!**



Please enter data or dimensions. Required for either tool or workpiece.

<b>Tool</b>	Ø nom. d <sub>1</sub> (mm) h7	3.0...14.0 mm	
	Total length l <sub>1</sub> (mm)	max. 370 mm	
	Flute length l <sub>2</sub> (mm)		
	Shank length l <sub>3</sub> (mm)		
	Ø shank d <sub>2</sub> (mm) h6		
	Clamping (HA shank recommended)		

<b>Workpiece</b>	Aluminium	
	Description	
	Tolerance on Ø	
	Drilling depth	
	Surface finish	

<b>Machine</b>	Conv. machine tools / deep hole drilling machines	
	Vertical / horizontal	
	Soluble oil / MQL / neat oil	
	Pressure in bar (min. 40 bar)	
	Pilot hole	



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