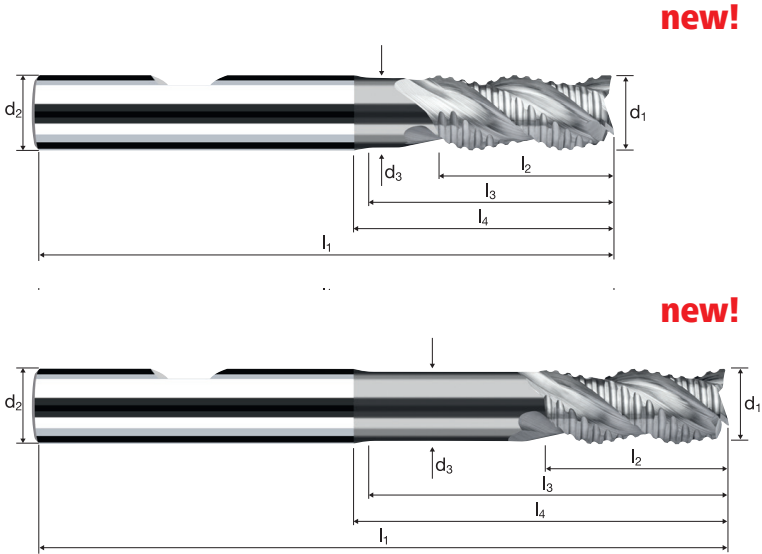
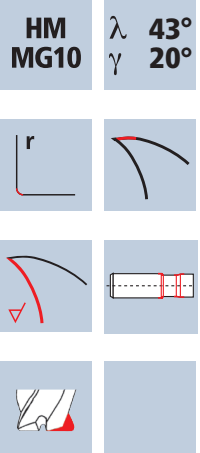


Cylindrical/Square end mills

Profiled, normal version, short neck  
Profiled, medium version, neck



Performance **P**

$l_2=2.2 \times d_1$   
 $l_3=3.0 \times d_1$

$l_2=2.2 \times d_1$   
 $l_3=4.5 \times d_1$

Roughing      Finishing

ReTool®



Example: Order-N°.										Article-N°.		ø-Code	
										8663		300	
Ø	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	r	z				
Code	e8	h5											
300	6.00	6.00	5.50	57	13.50	18.00	19.85	0.100	3			●	
391	8.00	8.00	7.40	63	18.00	24.00	26.37	0.150	3			●	
450	10.00	10.00	9.20	74	22.00	30.00	33.01	0.200	3			●	
501	12.00	12.00	11.00	85	27.00	36.00	39.71	0.200	3			●	
610	16.00	16.00	15.00	102	36.00	48.00	52.27	0.200	3			●	
682	20.00	20.00	19.00	115	44.00	60.00	64.77	0.250	3			●	

Example: Order-N°.										Article-N°.		ø-Code	
										8673		300	
Ø	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	r	z				
Code	e8	h5											
300	6.00	6.00	5.50	65	13.50	27.00	28.85	0.100	3			●	
391	8.00	8.00	7.40	76	18.00	36.00	38.37	0.150	3			●	
450	10.00	10.00	9.20	90	22.00	45.00	48.01	0.200	3			●	
501	12.00	12.00	11.00	105	27.00	54.00	57.71	0.200	3			●	
610	16.00	16.00	15.00	125	36.00	72.00	76.27	0.200	3			●	
682	20.00	20.00	19.00	145	44.00	90.00	94.77	0.250	3			●	

Further information can be found in our High-performance milling tools catalog.

passion  
for precision

fraisa



FRAISA ReTool® Services –  
CO<sub>2</sub>NSEQUENT

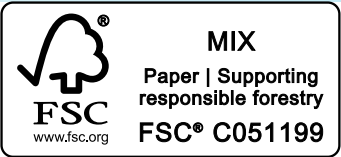
Aluminum roughing –  
economical and efficient

Living the circular economy for precision tools: By using the FRAISA ReTool® Services, you extend the life cycle of your cylindrical end mill and at the same time reduce your ecological footprint.

Discover our  
FRAISA ReTool® Services:



- ▶ **FRAISA ReTool®:** Reconditioning of used tools achieving guaranteed 100% of a new tool's performance
- ▶ **FRAISA ReTool®Blue:** Closed raw material cycle through Tool2Tool recycling: Tools become tools
- ▶ **FRAISA ReTool®Green:** Buying used tools, reconditioning and then reselling them at attractive conditions



Here, you will be provided  
with further information  
on the FRAISA Group.

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Available online

FRAISA  
ToolExpert®



# Innovative roughing profile for the highest **productivity and process reliability**

Productive newcomer in the performance class: FRAISA presents an extremely economical and productive solution for aluminum machining. Like all tools in this class, the new roughing cutter impresses with a remarkable performance regarding the volume machined per unit of time.

Our engineers have optimized the tool technologies to the essentials during development. Thanks to a new roughing profile, especially developed for aluminum machining, the tool can be used with process reliability in all High

## The advantages

► **Higher productivity** and performance

► **Strong price-performance ratio** through optimized technologies

► **Less stress on the spindle** due to extreme ease of cutting

Performance Cutting applications. A clean chip removal is guaranteed by a robust and very smooth cutting edge.

When using the new FRAISA roughing tool, you benefit from the safe and efficient aluminum machining with low force and energy consumption. In addition, you can look forward to an optimal price-performance ratio and an increase in your productivity.

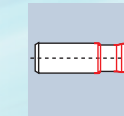


Discover our  
**aluminum  
roughing.**



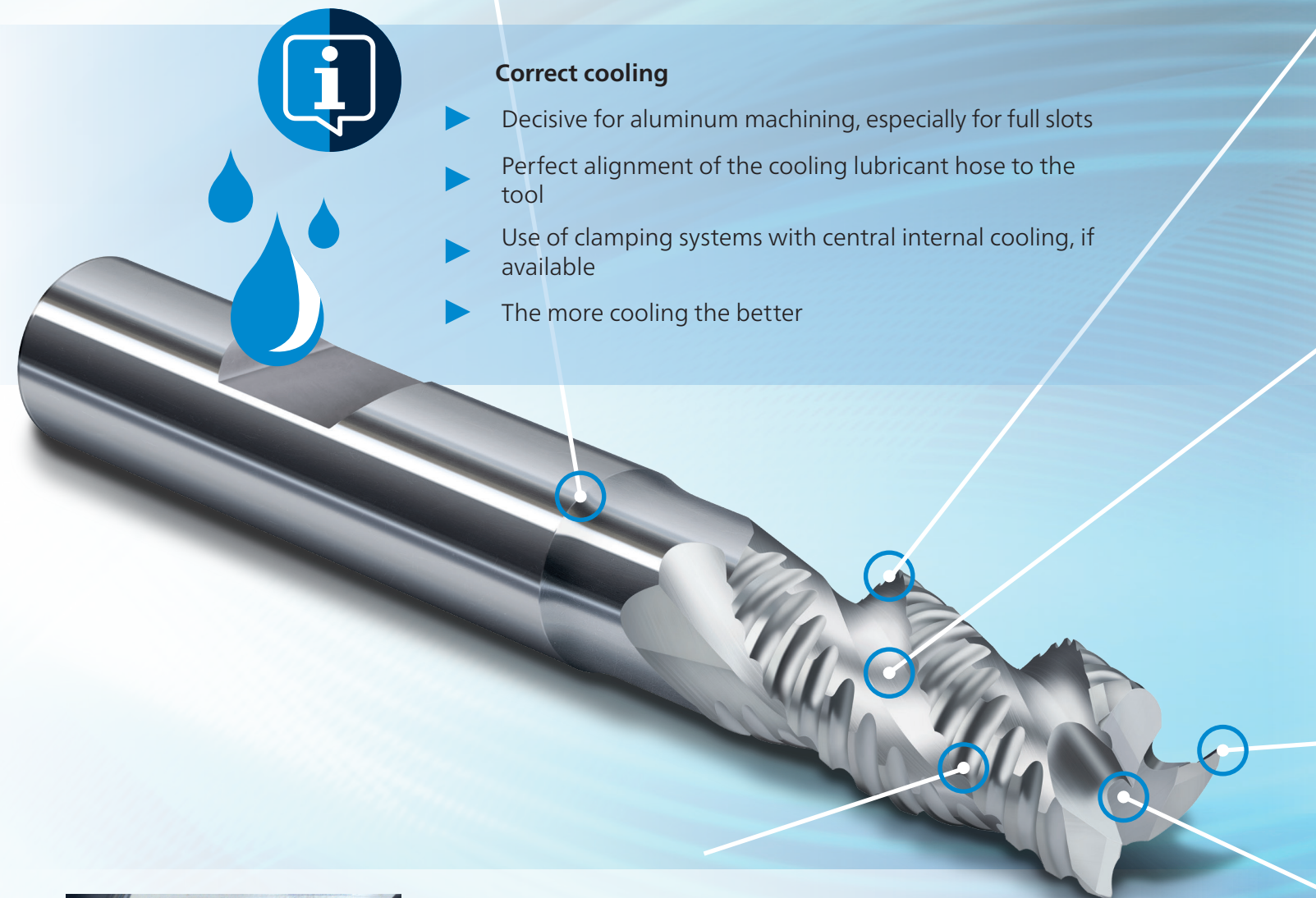
### Smooth transitions

- ✓ Improved tool rigidity and therefore less radial deflection
- ✓ Minimal step formation with several infeed depths
- ✓ Higher mechanical load and therefore improved performance



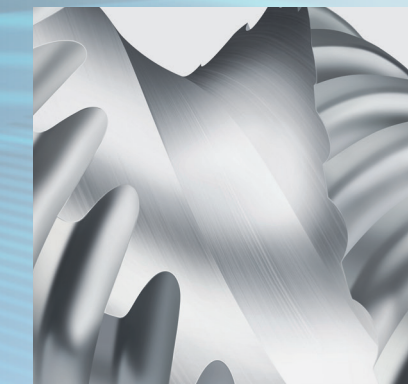
### New roughing profile

- ✓ Specially developed for aluminum machining
- ✓ Higher process reliability due to better chip removal, especially regarding full slots



### Correct cooling

- Decisive for aluminum machining, especially for full slots
- Perfect alignment of the cooling lubricant hose to the tool
- Use of clamping systems with central internal cooling, if available
- The more cooling the better



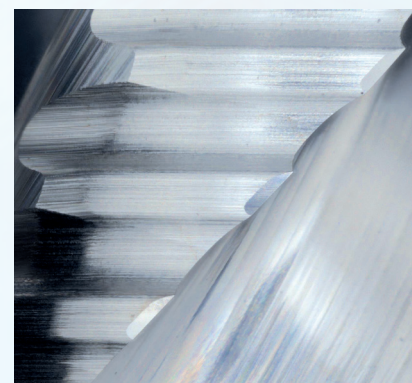
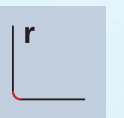
### High-gloss technology

- ✓ High gloss-ground cutting surface as well as flutes
- ✓ Reduction in adhesion tendency
- ✓ Increase in tool life and performance



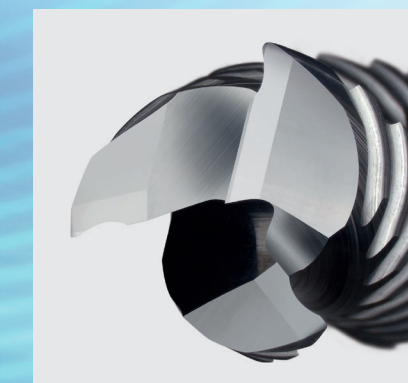
### Corner radius with partially polished blade

- ✓ Specification of the radii sizes for every diameter in the catalog
- ✓ Reinforcement of the exposed cutting corner through a partially polished blade
- ✓ Absorption of high cutting forces



### Supporting chamfer

- ✓ Support of the tools in radial and axial direction
- ✓ Reduced vibrations and higher performance
- ✓ Better surface qualities due to better running smoothness



### Economically optimized edge

- ✓ Axial penetration possible by center cutting edge
- ✓ Optimized grinding technology for the best price-performance ratio