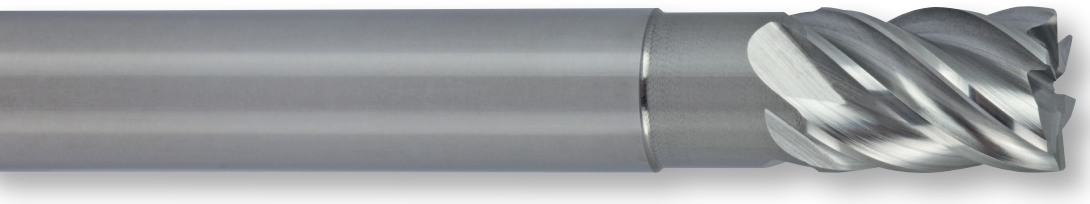
INTRODUCING

Cut & Form End Mills

NEW tool technology enables simultaneous cutting and polishing



New EMUGE Cut & Form solid carbide finishing end mills feature a patented tool geometry that performs two functions – cutting and polishing in one operation, generating significant manufacturing time and cost savings!

Advantages:

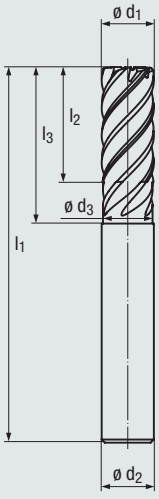
- Enables the production of polished surfaces in a single milling operation with surface grades of N1-N3
- No rework of workpiece required
- **Significant reduction of manufacturing costs**

Types of tools:

- Cutting diameter 6-12 mm
- Stub and standard lengths

Applications:

- High performance tool for finishing operations only
- Trimming visible 2D contoured surfaces in non-ferrous materials; wrought aluminum alloys, copper and copper alloys
- Production of design surfaces in medical technology, jewelry industry, food and electronics sector



DIN 6527 – Stub length

ø d_1 h5	l_2	l_3	l_1	ø d_3	ø d_2 h5	Chamfer	Flutes	Tool No.
6	10	16	54	5.8	6	0.12	3	**2506.006**
8	12	20	58	7.7	8	0.12	3	**2506.008**
10	14	24	66	9.5	10	0.20	3	**2506.010**
12	16	26	73	11.5	12	0.20	3	**2506.012**

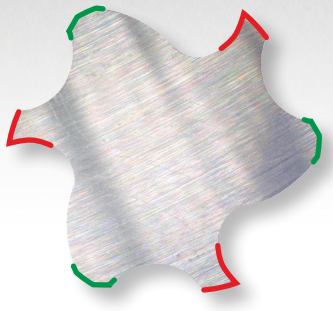
DIN 6527 – Standard length

ø d_1 h5	l_2	l_3	l_1	ø d_3	ø d_2 h5	Chamfer	Flutes	Tool No.
6	13	20	57	5.8	6	0.12	3	**2507.006**
8	19	25	63	7.7	8	0.12	3	**2507.008**
10	22	30	72	9.5	10	0.20	3	**2507.010**
12	26	35	83	11.5	12	0.20	3	**2507.012**

For the purpose of calculating the feed rate, multiply by 3 flutes

Mirrored surface finishes

Unique, patented tool geometry:



Combination of 3 cutting edges with 3 burnishing edges for smoothing and compacting the material.

Exclusive to Emuge.

Learn more at www.emuge.com

EMUGE
HIGH PERFORMANCE TOOLS

Cut & Form End Mills

for cutting and polishing in one operation

Significant
reduction of time & manufacturing costs

Applications – Materials			Hardness Range			Material Examples
			HRC	BHN	N/mm²	
N		**Non ferrous materials**				
		Aluminium alloys				
	1.1	Aluminium wrought alloys		≤ 60	≤ 200	7075
	1.2			≤ 105	≤ 350	6061-T6 / 2024-T4
	1.3			≤ 165	≤ 550	
	1.4	Aluminium cast alloys Si ≤ 7%				
	1.5	Aluminium cast alloys 7% < Si ≤ 12%				
	1.6	Aluminium cast alloys 12% < Si ≤ 17%				
		Copper alloys				
	2.1	Pure copper, low-alloyed copper		≤ 120	≤ 400	
	2.2	Copper-zinc alloys (brass, long-chipping)		≤ 165	≤ 550	
	2.3	Copper-zinc alloys (brass, short-chipping)		≤ 165	≤ 550	
	2.4	Copper-aluminium alloys (alu bronze, long-chipping)		≤ 235	≤ 800	
	2.5	Copper-tin alloys (tin bronze, long-chipping)		≤ 205	≤ 700	
	2.6	Copper-tin alloys (tin bronze, short-chipping)		≤ 120	≤ 400	
	2.7	Special copper alloys		≤ 180	≤ 600	
	2.8		≤ 44	≤ 415	≤ 1400	
		Magnesium alloys				
	3.1	Magnesium wrought alloys		≤ 150	≤ 500	
	3.2	Magnesium cast alloys		≤ 150	≤ 500	
		Synthetics				
	4.1	Duroplastics (short-chipping)				
	4.2	Thermoplastics (long-chipping)				
	4.3	Fibre-reinforced synthetics (fibre content ≤ 30%)				
	4.4	Fibre-reinforced synthetics (fibre content > 30%)				
		Special materials				
	5.1	Graphite				
	5.2	Tungsten-copper alloys				
	5.3	Composite materials				

The cutting data must be adapted to the material to be machined taking into consideration the clamping of tool and workpiece as well as the natural vibration frequency of component and spindle. For the purpose of calculating the feed rate, multiply by 3 flutes. Contact Emuge for more information.

Application Example

Material:	6061
Tool:	2507.010
Surface roughness:	R_a = 0.08 µm / R_z = 0.46 µm
Surface roughness grade:	N2
Coolant:	Emulsion
Cutting speed v_c:	1000 sfm

Speed n:	10000 rpm
Feed per tooth f_z:	.001"
Feed speed v_f:	28 ipm
Axial depth of cut a_p:	.750"
Radial depth of cut a_e:	.004"

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