MICRO-FRAISE **Z3** DE FINITION POUR COMPOSANT HORLOGER · **Z3** FINISHING MICRO-END MILL FOR WATCHMAKING COMPONENT · **Z3**-FINISH-MIKROFRÄSER FÜR UHRENKOMPONENTE

21161T-2 Version 04.11.2026

SWISS MADE

E25 UF	λ=32°-38° Y=10°	angle vif		l_1 1.5xD		λ2 λ1
ULTRAFINE GRADE HIGH-END GRADE WITH VERY HIGH HARDNESS AND TOUGHNESS FOR MICRO-MACHINING	VARIABLE HELIX ANGLES 32° - 38° AND CUTTING ANGLE 10°	SHARP EDGE	SIDE AND CENTER CUT	CUTTING EDGE LENGTH 1.5XD	IRREGULAR TOOTHING	VARIABLE HELIX ANGLES

MATERIAL COMPATIBILITY

●●● Excellent (3/3) ●●○ Good (2/3) ●○○ Possible (1/3) ○○○ Not recommended

Product material compatibility

CATEGORY	MATERIAL	SPECIFICATION	GRP	21161T-2
	Alloyed and non-alloyed steels Non-alloyed steels	Rm < 450 N/mm²	1a	●●● 3/3
		Rm 450–700 N/mm²	1b	●●● 3/3
		Rm 700–900 N/mm²	1c	●●● 3/3
		Rm > 1200 N/mm²	1d	●●● 3/3
	Stainless steels Stainless steels	Rm < 650 N/mm²	2a	●●● 3/3
		Rm 650–950 N/mm²	2b	●●● 3/3
		Rm > 950 N/mm²	2c	●●● 3/3
	Hardened steels Hardened steels	44–56 HRC	3a	●●● 3/3
		57–67 HRC	3b	●●○ 2/3
	Exotic materials Special alloys	< 32 HRC	4a	●●● 3/3
		> 32 HRC	4b	●●● 3/3
	Graphite Industrial graphite		5	●●○ 2/3
	Cast iron Grey / nodular cast iron	< 32 HRC	6a	●●○ 2/3
		> 32 HRC	6b	●●○ 2/3
	Titanium Titanium alloys	Rm < 600 N/mm²	7a	●●● 3/3
		600 < Rm N/mm²	7b	●●● 3/3
	Nickel alloys Inconel, Hastelloy	Rm < 1000 N/mm²	8a	●●● 3/3
		Rm > 1000 N/mm²	8b	●●● 3/3
	Copper, brass, bronze Copper-based	Rm < 850 N/mm²	9a	●●○ 2/3
		Rm > 850 N/mm²	9b	●●○ 2/3
	Aluminum Aluminum alloys	Si < 0.5%	10a	●○○ 1/3
		0.5% < Si < 5%	10b	●○○ 1/3
		Si > 5%	10c	●○○ 1/3
	Synthetic materials Engineering plastics	Thermoplastic	11a	○○○ 0/3
		Thermoset	11b	○○○ 0/3
	Composite materials Reinforced composites	Glass fiber / GFK	12a	●●○ 2/3
		Carbon fiber / KFK	12b	●●○ 2/3
	Precious metals Gold, platinum, silver	Gold	13a	●○○ 1/3
		Platinum	13b	●○○ 1/3

TECHNICAL DRAWING





21161

DIMENSIONS

NOMINAL DIMENSIONS	
D (0/- 0.02)	2 mm
d (h5)	3 mm
L	38 mm
l1	2.5 mm
l3	–
d3	–
R	–
e	–
Z	3
Chamfer K	-
w° collision angle	6.4°

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