

MICRO-FRAISE Z3 · MICRO-ENDMILL Z3 · MICRO-FRÄSER Z3



21049A-2.0 Version 10.09.2026



**E25
UF**

ULTRAFINE
GRADE HIGH-
END GRADE
WITH VERY
HIGH HARDNESS
AND
TOUGHNESS FOR
MICRO-
MACHINING

$\lambda=30^{\circ}\text{--}35^{\circ}$
 $\gamma=8^{\circ}$

VARIABLE HELIX
ANGLES 30° -
35° AND
CUTTING ANGLE
8°

$D/40$
45°

CHAMFER AT 45°
/ HEIGHT D/40

SIDE AND
CENTER CUT

l_1
1.5xD

CUTTING EDGE
LENGTH 1.5xD

l_3
12xD

CUTTING
LENGTH 12xD

FITTING LENGTH
EXTRALONG

IRREGULAR
TOOTHINGS

λ_2
 λ_1

VARIABLE HELIX
ANGLES

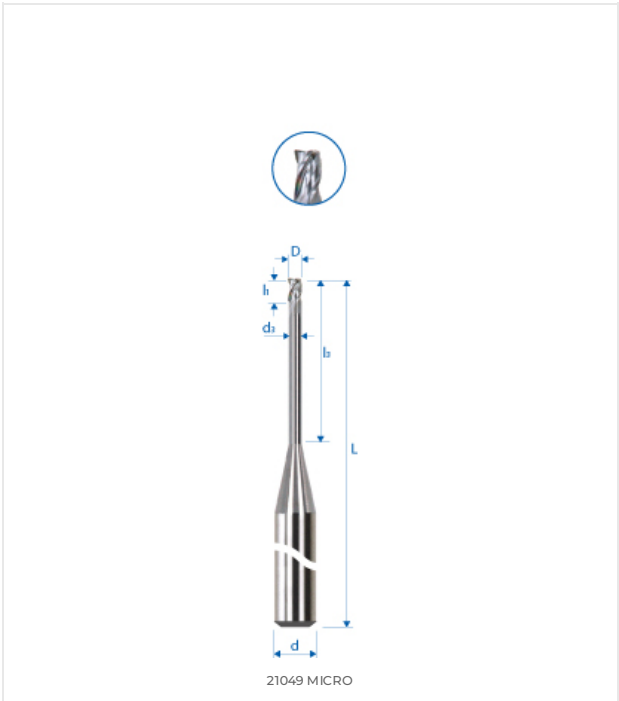
MATERIAL COMPATIBILITY

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

Product material compatibility

CATEGORY	MATERIAL	SPECIFICATION	GRP	21049A-2.0
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	●●○ 2/3
		57–67 HRC	3b	●●○ 2/3
Exotic materials	Special alloys	< 32 HRC	4a	●●○ 2/3
		> 32 HRC	4b	●●○ 2/3
Graphite	Industrial graphite		5	●●○ 2/3
Cast iron	Grey / nodular cast iron	< 32 HRC	6a	●●● 3/3
		> 32 HRC	6b	●●● 3/3
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	●○○ 1/3
		Rm > 850 N/mm²	9b	●○○ 1/3
Aluminum	Aluminum alloys	Si < 0.5%	10a	●○○ 1/3
		0.5% < Si < 5%	10b	●○○ 1/3
		Si > 5%	10c	●●○ 2/3
Synthetic materials	Engineering plastics	Thermoplastic	11a	○○○ 0/3
		Thermoset	11b	○○○ 0/3
Composite materials	Reinforced composites	Glass fiber / GFK	12a	●○○ 1/3
		Carbon fiber / KFK	12b	●○○ 1/3
Precious metals	Gold, platinum, silver	Gold	13a	●●○ 2/3
		Platinum	13b	●○○ 1/3

TECHNICAL DRAWING



DIMENSIONS

NOMINAL DIMENSIONS	
D (0 / -0.01)	2 mm
d (h5)	3 mm
L	50 mm
l1	3 mm
l3	24 mm
d3	–
R	–
e	–
Z	3
Chamfer K	0.05
w° collision angle	1.1°



E-SHOP / EZI CUT



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