FRAISE HÉMISPHÉRIQUE **Z4** MD E2 + EZI-ALPHA POUR MATÉRIAUX DIFFICILES · BALL NOSE ENDMILL **Z4** HM E2 + EZI-ALPHA FOR DIFFICULT MATERIALS · HALBRUND-FRÄSER **Z4** HM E2 + EZI-ALPHA FÜR HARTE WERKSTOFFE

21433A-10 Version 04.11.2026

SWISS MADE

E2	λ = 50° Y = -12°			l1 1.5xD	l3		
SUBMICRON GRAIN GRADE HIGH-SPEED MACHINING OF ABRASIVE MATERIALS	HELIX ANGLE 50° AND CUTTING ANGLE -12°	HEMISPHERICAL SHAPE	SIDE AND CENTER CUT	CUTTING EDGE LENGTH 1.5XD	CUTTING LENGTH	FITTING LENGTH STANDARD	IRREGULAR TOOTHING

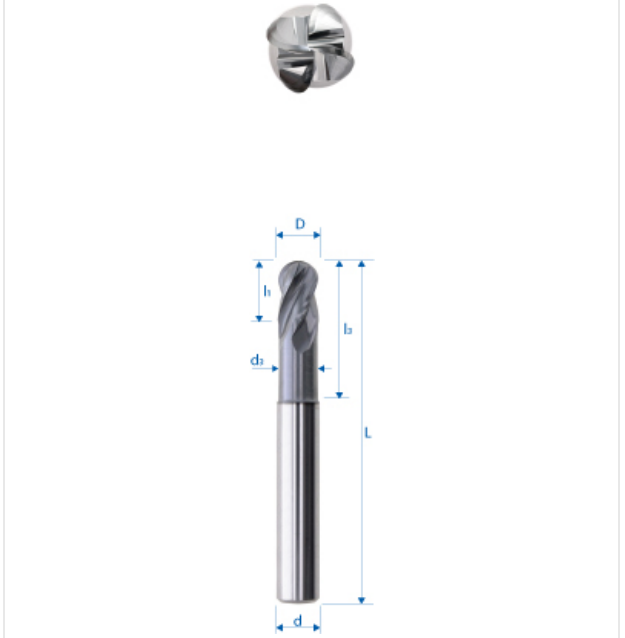
MATERIAL COMPATIBILITY

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

Product material compatibility

CATEGORY	MATERIAL	SPECIFICATION	GRP	21433A-10
	Alloyed and non-alloyed steels Non-alloyed steels	Rm < 450 N/mm²	1a	○○○ 0/3
		Rm 450–700 N/mm²	1b	○○○ 0/3
		Rm 700–900 N/mm²	1c	●○○ 1/3
		Rm > 1200 N/mm²	1d	●●● 3/3
	Stainless steels Stainless steels	Rm < 650 N/mm²	2a	●○○ 1/3
		Rm 650–950 N/mm²	2b	●○○ 1/3
		Rm > 950 N/mm²	2c	●●○ 2/3
	Hardened steels Hardened steels	44–56 HRC	3a	●●● 3/3
		57–67 HRC	3b	●●● 3/3
	Exotic materials Special alloys	< 32 HRC	4a	●●● 3/3
		> 32 HRC	4b	●●● 3/3
	Graphite Industrial graphite		5	○○○ 0/3
	Cast iron Grey / nodular cast iron	< 32 HRC	6a	●○○ 1/3
		> 32 HRC	6b	●○○ 1/3
	Titanium Titanium alloys	Rm < 600 N/mm²	7a	●○○ 1/3
		600 < Rm N/mm²	7b	●○○ 1/3
	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	○○○ 0/3
		Rm > 850 N/mm²	9b	○○○ 0/3
	Aluminum Aluminum alloys	Si < 0.5%	10a	○○○ 0/3
		0.5% < Si < 5%	10b	○○○ 0/3
		Si > 5%	10c	○○○ 0/3
	Synthetic materials Engineering plastics	Thermoplastic	11a	○○○ 0/3
		Thermoset	11b	○○○ 0/3
	Composite materials Reinforced composites	Glass fiber / GFK	12a	○○○ 0/3
		Carbon fiber / KFK	12b	○○○ 0/3
	Precious metals Gold, platinum, silver	Gold	13a	○○○ 0/3
		Platinum	13b	○○○ 0/3

TECHNICAL DRAWING



21433

DIMENSIONS

NOMINAL DIMENSIONS	
D (h10)	10 mm
d (h6)	10 mm
L	72 mm
l1	15 mm
l3	31 mm
d3	–
R	5 mm
e	–
Z	4
Chamfer K	-
w° collision angle	-

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