

# FRAISE-HÉMISPHERIQUE Z3 · BALL-NOSE-ENDMILL Z3 · HALBRUND-FRÄSER Z3



21422-12

Version 21.06.2026

SWISS MADE

E2

E2 HIGH PRECISION  
TOOL MATERIAL

$\lambda=35^{\circ}\text{-}38^{\circ}$   
 $\gamma=10^{\circ}$

CUTTING ANGLES  $\lambda$  35-  
38°  $\gamma$  10°



HEMISPHERICAL U-  
GROOVE TOOL



DUAL DIRECTION  
HELICAL DRILL BIT

$l_1$   
2.2xD

2.2XD DEPTH FOR  
TOOLS



STANDARD TOOL WEAR  
INDICATOR

## MATERIAL COMPATIBILITY

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

MATERIAL	SPECIFICATION	GRP	21422-12
<b>Alloyed and non-alloyed steels</b> Non-alloyed steels	Rm < 450 N/mm <sup>2</sup>	1a	●○○
	Rm 450–700 N/mm <sup>2</sup>	1b	○○○
	Rm 700–900 N/mm <sup>2</sup>	1c	○○○
	Rm > 1200 N/mm <sup>2</sup>	1d	○○○
<b>Stainless steels</b> Stainless steels	Rm < 650 N/mm <sup>2</sup>	2a	○○○
	Rm 650–950 N/mm <sup>2</sup>	2b	○○○
	Rm > 950 N/mm <sup>2</sup>	2c	○○○
<b>Hardened steels</b> Hardened steels	44–56 HRC	3a	○○○
	57–67 HRC	3b	○○○
<b>Exotic materials</b> Special alloys	< 32 HRC	4a	○○○
	> 32 HRC	4b	○○○
<b>Graphite</b> Industrial graphite		5	●○○
<b>Cast iron</b> Grey / nodular cast iron	< 32 HRC	6a	○○○
	> 32 HRC	6b	○○○
<b>Titanium</b> Titanium alloys	Rm < 600 N/mm <sup>2</sup>	7a	●○○
	600 < Rm N/mm <sup>2</sup>	7b	●○○
<b>Nickel alloys</b> Inconel, Hastelloy	Rm < 1000 N/mm <sup>2</sup>	8a	○○○
	Rm > 1000 N/mm <sup>2</sup>	8b	○○○
<b>Copper, brass, bronze</b> Copper-based	Rm < 850 N/mm <sup>2</sup>	9a	●●●
	Rm > 850 N/mm <sup>2</sup>	9b	●●●
<b>Aluminum</b> Aluminum alloys	Si < 0.5%	10a	●●●
	0.5% < Si < 5%	10b	●●●
	Si > 5%	10c	○○○
<b>Synthetic materials</b> Engineering plastics	Thermoplastic	11a	●●○
	Thermoset	11b	●●○
<b>Composite materials</b> Reinforced composites	Glass fiber / GFK	12a	●○○
	Carbon fiber / KFK	12b	●○○
<b>Precious metals</b> Gold, platinum, silver	Gold	13a	●●○
	Platinum	13b	○○○

## TECHNICAL DRAWING



## DIMENSIONS

NOMINAL DIMENSIONS	
D (0 / -0.01)	12 mm
d (h5)	12 mm
L	83 mm
l1	26 mm
l3	–
d3	–
R	6 mm
e	–
Z	3
Chamfer K	–
w° collision	–



E-SHOP / EZI CUT  
eskenazi.ch/eshop/21422-12

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