

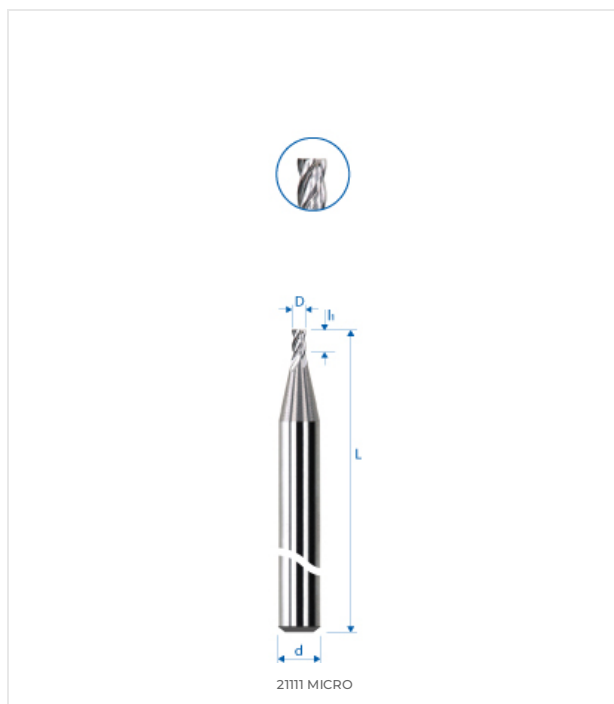


## MATERIAL COMPATIBILITY

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

MATERIAL	SPECIFICATION	GRP	21111-1.8
<b>Alloyed and non-alloyed steels</b> <small>Non-alloyed steels</small>	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> <small>Stainless steels</small>	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> <small>Hardened steels</small>	44–56 HRC	3a	○○○
	57–67 HRC	3b	○○○
<b>Exotic materials</b> <small>Special alloys</small>	< 32 HRC	4a	○○○
	> 32 HRC	4b	○○○
<b>Graphite</b> <small>Industrial graphite</small>		5	●○○
<b>Cast iron</b> <small>Grey / nodular cast iron</small>	< 32 HRC	6a	○○○
	> 32 HRC	6b	○○○
<b>Titanium</b> <small>Titanium alloys</small>	Rm < 600 N/mm <sup>2</sup>	7a	●●○
	600 < Rm N/mm <sup>2</sup>	7b	●●○
<b>Nickel alloys</b> <small>Inconel, Hastelloy</small>	Rm < 1000 N/mm <sup>2</sup>	8a	○○○
	Rm > 1000 N/mm <sup>2</sup>	8b	○○○
<b>Copper, brass, bronze</b> <small>Copper-based</small>	Rm < 850 N/mm <sup>2</sup>	9a	●●●
	Rm > 850 N/mm <sup>2</sup>	9b	●●●
<b>Aluminum</b> <small>Aluminum alloys</small>	Si < 0.5%	10a	●●○
	0.5% < Si < 5%	10b	●●○
	Si > 5%	10c	○○○
<b>Synthetic materials</b> <small>Engineering plastics</small>	Thermoplastic	11a	●●○
	Thermoset	11b	●●○
<b>Composite materials</b> <small>Reinforced composites</small>	Glass fiber / GFK	12a	●○○
	Carbon fiber / KFK	12b	●○○
<b>Precious metals</b> <small>Gold, platinum, silver</small>	Gold	13a	●●○
	Platinum	13b	○○○

## TECHNICAL DRAWING



## DIMENSIONS

NOMINAL DIMENSIONS	
D (0 / -0.01)	1.8 mm
d (h5)	3 mm
L	38 mm
l1	2.8 mm
l3	–
d3	–
R	–
e	–
Z	4
Chamfer K	–
w° collision	6.6°

