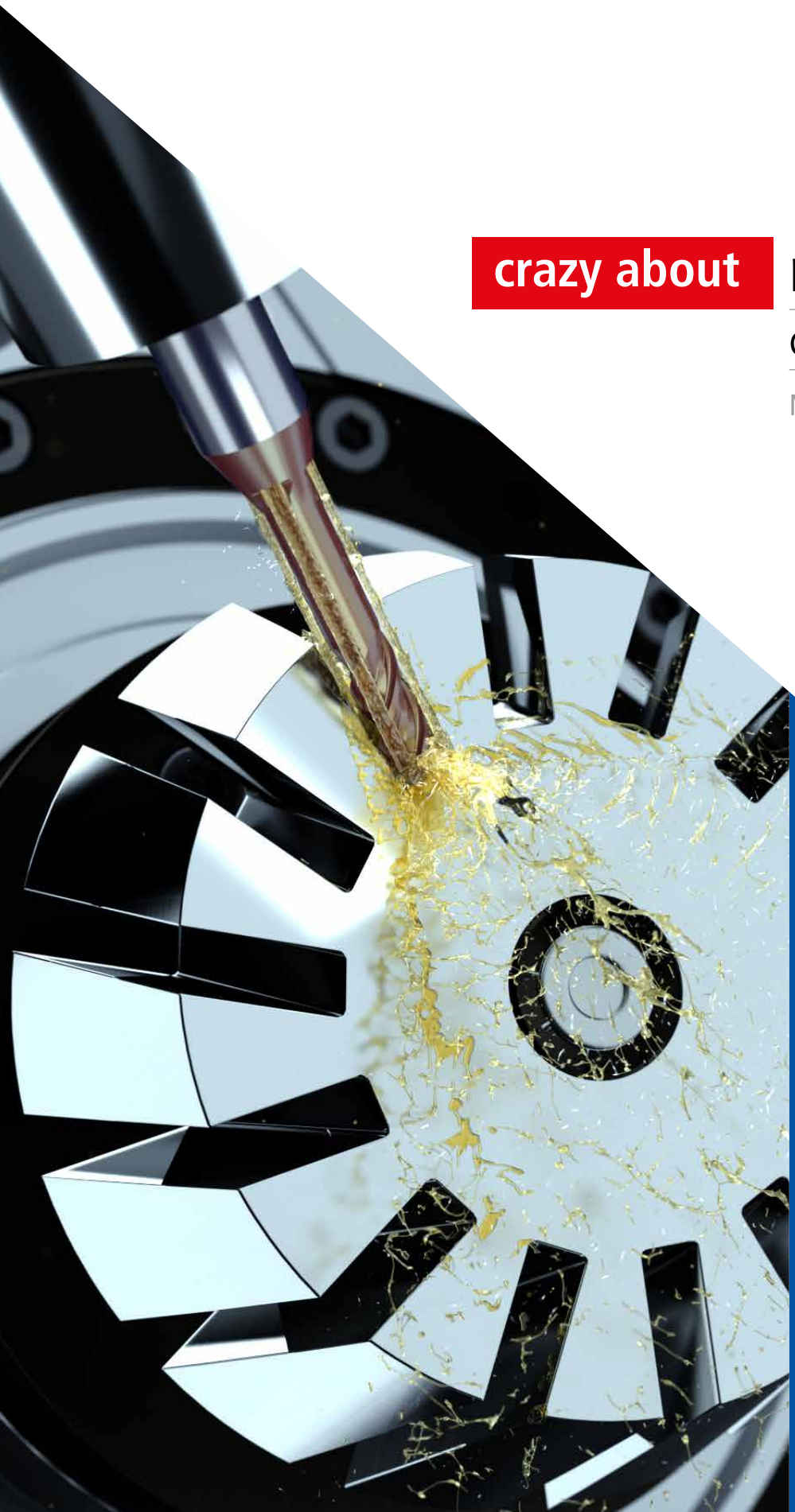
MIKRON TOOL



crazy about milling

CRAZYMILL COOL P&S

NEW: CORNER RADIUS

NEW CrazyMill Cool P&S Corner Radius - Z3

PLUNGE AND SLOT ENDMILL WITH CORNER RADIUS

Micro-grain carbide
Developed to achieve all requirements in terms of mechanical properties as perfect hardness-toughness ratio

High-performance coating
eXedur SNP coating is heat and wear resistant and guarantees optimum chip flushing

New corner radius geometry
Endmill with corner radius in multiple dimensions

Diameter range and length
d = .039" - .315" (1 mm - 8 mm);
Type A - 2.5 x d / Type C - 5 x d

Integrated cooling
Constant and massive cooling of the cutting edges

Special end face geometry
Developed for plunging perpendicularly into the material and slot, pocket, side milling in minimal spaces

NEW

CRAZYMILL™ by Mikron Tool Cool

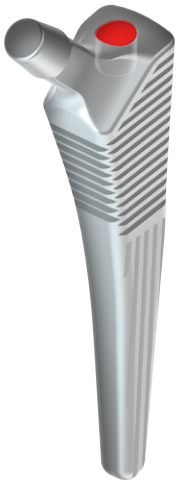
Mikron Tool expands the CrazyMill Cool P&S family, developed for roughing and finishing operations. The new endmill is used for applications where a rounded corner is required. The new design of the cutting edges permits to machine many materials, with emphasis on stainless steels, titanium, CoCr alloys and super alloys. Due to its special features it can plunge perpendicularly into the material and is well adapted for milling of slots, pockets and sides in minimal spaces.

Advantages

- **SHORT MACHINING TIME** | **Highest chip removal rate**
- **LONG TOOL LIFE** | **Thanks to efficient and patented cooling**
- **EXCELLENT SURFACE QUALITY** | **Ra ≤ 20 µin (0.5 µm)**
- **PERFECT CHIP CONTROL** | **Thanks to specific geometry and greater coolant flow**

Discover it!

NEW P&S in medical applications



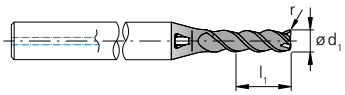
COMPONENT
Hip stem

MATERIAL
TiAl6V4-ELI / 3.7165 / ASTM F136

MACHINING
Helical interpolation and side milling of a flat hole

- Hole depth = **.197" |** 5 mm
- Hole diameter = **.205" |** 5.2 mm

TOOL
Mikron Tool - CrazyMill Cool P&S Corner radius - Type A



DATA	MIKRON TOOL	COMPETITOR
Tool type	CrazyMill Cool P&S Corner radius - Carbide - Coated - Integrated cooling	Conventional corner radius endmill - Carbide - Coated - External cooling
Item number	2.CMC42.A3Z3.400.1	-
Tool features	d_1 = **.157" |** 4 mm l_1 = **2.5 x d** r = **.020" |** 0.5 mm FL = **3 flutes**	d_1 = **.157" |** 4 mm l_1 = **3.75 x d** r = **.020" |** 0.5 mm FL = **3 flutes**
Cutting data	Helical interpolation v_c = **394 SFM |** 120 m/min f_z = **.0005" |** 0.013 mm a_p = **.039" |** 1.0 mm a_e = **.099" |** 2.52 mm α = **15°** Q = **.057 in³/min |** 0.94 cm³/min Δt = **13.2 s** Finishing v_c = **394 SFM |** 120 m/min f_z = **.0009" |** 0.022 mm a_p = **.197" |** 5 mm a_e = **.0031" |** 0.08 mm Q = **.018 in³/min |** 0.29 cm³/min Δt = **1.3 s**	Helical interpolation v_c = **171 SFM |** 52 m/min f_z = **.0010" |** 0.026 mm a_p = **.008" |** 0.2 mm a_e = **.099" |** 2.52 mm α = **3.5°** Q = **.010 in³/min |** 0.17 cm³/min Δt = **1 min 10 s** Finishing v_c = **312 SFM |** 95 m/min f_z = **.0024" |** 0.060 mm a_p = **.197" |** 5 mm a_e = **.0031" |** 0.08 mm Q = **.033 in³/min |** 0.54 cm³/min Δt = **0.7 s**

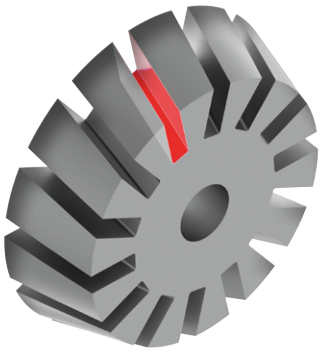
■ **Results:**

	CrazyMill Cool P&S Corner radius		Conventional corner radius endmill
Chip removal rate Q	Q = **.057 in³/min |** 0.94 cm³/min	**5.5 x**	Q = **.010 in³/min |** 0.17 cm³/min
Total cycle time	15 s	**5 x**	1 min 11 s

The combination of the newly developed cutting geometry and the patented integrated cooling system allows to achieve higher speed and depth a_p, as well as the pitch angle α. The result is a higher chip removal rate and a cycle time reduction of 5 times compared to a conventional corner radius tool.

Reduction of cycle time per part: 56 s

NEW P&S in aerospace



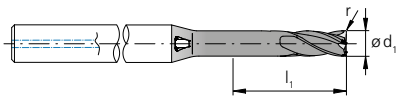
COMPONENT
Turbine rotor

MATERIAL
X12Cr13 / 1.4006 / AISI 410

MACHINING
Roughing and finishing of 14 slots

- Slot depth = **.394" |** 10 mm
- Slot length = **.787" |** 20 mm
- Slot width = **.150" |** 3.8 mm

TOOL
Mikron Tool - CrazyMill Cool P&S Corner radius - Type C



DATA	MIKRON TOOL	COMPETITOR
Tool type	CrazyMill Cool P&S Corner radius - Carbide - Coated - Integrated cooling	Conventional corner radius endmill - Carbide - Coated - External cooling
Item number	2.CMC42.C3Z3.370.1	-
Tool features	d_1 = **.146" |** 3.7 mm l_1 = **5 x d** r = **.020" |** 0.5 mm Z = **3 teeth**	d_1 = **.118" |** 3.0 mm l_1 = **3 x d** r = **.012" |** 0.3 mm Z = **3 teeth**
Cutting data	Roughing v_c = **623 SFM |** 190 m/min f_z = **.0110" |** 0.028 mm a_p = **.073" |** 1.85 mm a_e = **.146" |** 3.7 mm Q = **.574 in³/min |** 9.4 cm³/min Δt = **1 min 13 s** Finishing v_c = **705 SFM |** 215 m/min f_z = **.0009" |** 0.023 mm a_p = **.197" |** 5 mm a_e = **.0020" |** 0.05 mm Q = **.018 in³/min |** 0.3 cm³/min Δt = **52 s**	Roughing v_c = **144 SFM** 44 m/min f_z = **.0059" |** 0.015 mm a_p = **.030" |** 0.77 mm a_e = **.118" |** 3 mm Q = **.031 in³/min |** 0.5 cm³/min Δt = **16 min 42 s** Semi-finishing v_c = **266 SFM |** 81 m/min f_z = **.0013" |** 0.032 mm a_p = **.030" |** 0.77 mm a_e = **.013" |** 0.34 mm Q = **.013 in³/min |** 0.22 cm³/min Δt = **8 min 45 s** Finishing v_c = **345 SFM |** 105 m/min f_z = **.0021" |** 0.052 mm a_p = **.197" |** 5 mm a_e = **.0024" |** 0.06 mm Q = **.031 in³/min |** 0.5 cm³/min Δt = **39 s**

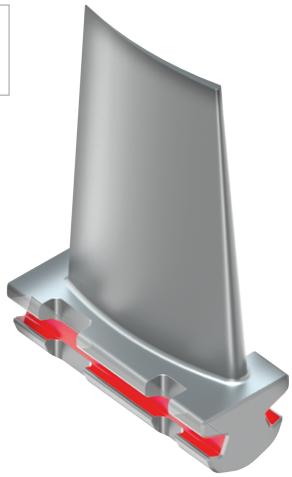
■ **Results:**

	CrazyMill Cool P&S Corner radius		Conventional corner radius endmill
Chip removal rate Q	Q = **.574 in³/min |** 9.4 cm³/min	**19 x**	Q = **.031 in³/min |** 0.5 cm³/min
Total cycle time	2 min 5 s	**12 x**	26 min 6 s

The combination of the newly developed cutting geometry and the patented integrated cooling system allows to achieve higher speed and depth a_p, as well as the pitch angle α. The result is a higher chip removal rate and a cycle time reduction of 12 times compared to a conventional corner radius tool.

Reduction of cycle time per part: 24 min

NEW P&S in other applications



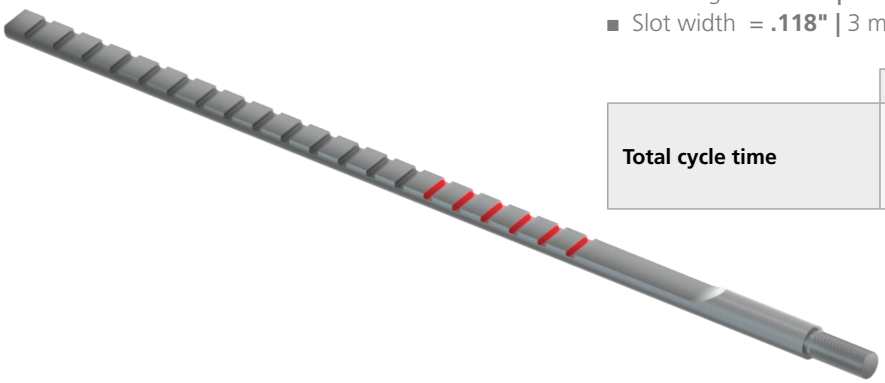
3. Turbine blade

Material: X5NiCrTi26-15 / 1.4943 / Incoloy A-286

Machining: Roughing and finishing slotting

- Slot depth = **.181" |** 4.6 mm
- Slot length = **.394" |** 10 mm
- Slot width = **.102" |** 2.6 mm

	Mikron Tool	Competitor
Total cycle time	16 s **15 x**	4 min 8 s



4. Transmission system

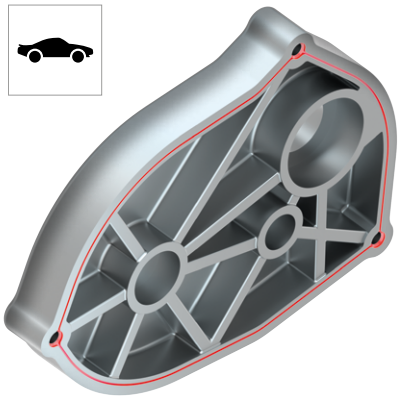
Material: X40CrMoV5-1 / 1.2344 / AISI H13

Machining: Roughing 20 slots (batch 100 pcs)

- Slot depth = **.059" |** 1.5 mm
- Slot length = **.394" |** 10 mm
- Slot width = **.118" |** 3 mm

	Mikron Tool	Competitor
Total cycle time	15 min **3 x**	45 min 30 s

NEW



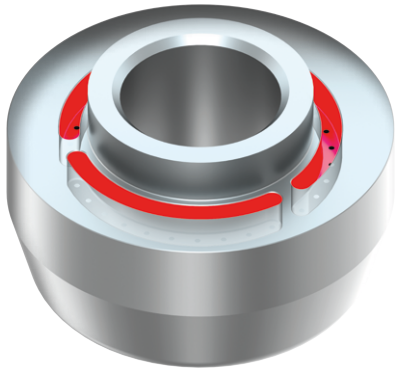
5. Gear box cover

Material: GGG60 / 0.7060 / ASTM 80-60-03

Machining: Linear ramp and slot milling of gasket seat

- Slot depth = **.079" |** 2 mm
- Slot length = **31.5" |** 800 mm
- Slot width = **.079" |** 2 mm

	Mikron Tool		Competitor
Total cycle time	1 min 45 s	**2 x**	3 min 10 s



6. Paint atomizer

Material: TiAl6V4-ELI / 3.7165 / ASTM F136

Machining: Plunging, roughing and finishing slotting

- Slot depth = **.315" |** 8 mm
- Slot length = **8.3" |** 210 mm
- Slot width = **.205" |** 5.2 mm

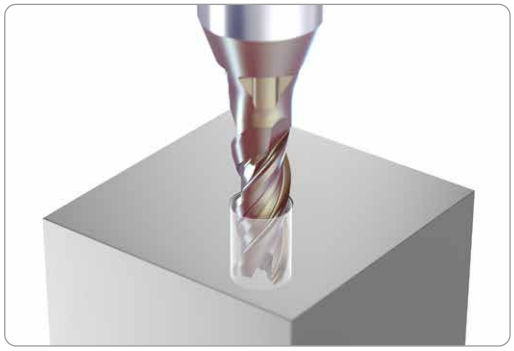
	Mikron Tool		Competitor
Total cycle time	2 min 10 s	**2 x**	3 min 56 s

CRAZYMILL by Mikron Tool Cool

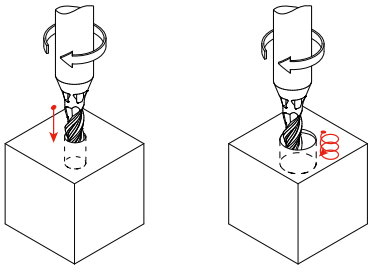
NEW One tool for many applications

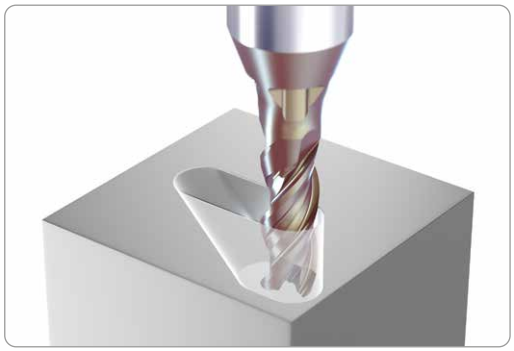
MILLING PROCESS

CrazyMill Cool P&S Corner radius for:

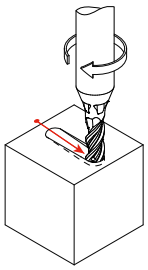


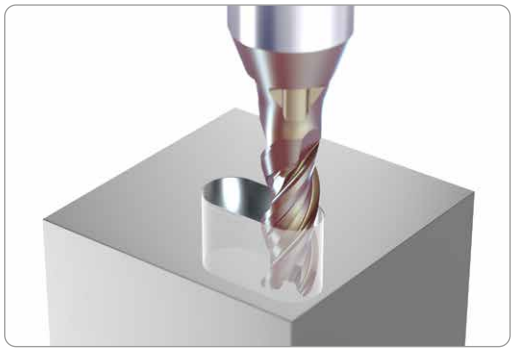
1. Plunge milling
Direct or with helical interpolation



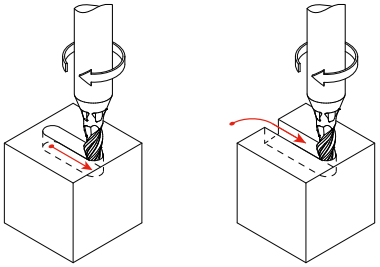


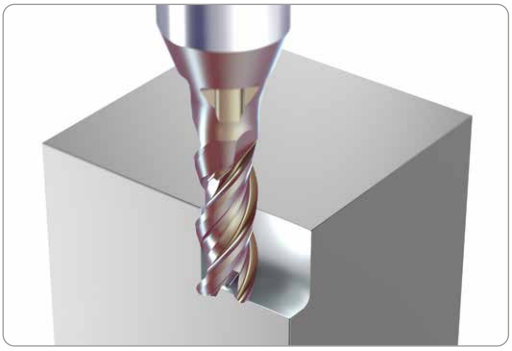
2. Linear ramping
Angle depending on material





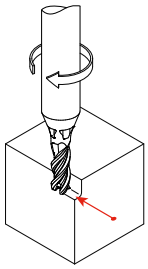
3. Slot milling
Pockets or through slots

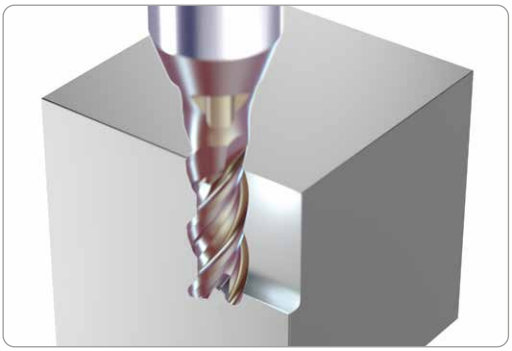




4. Side milling - Semi-finishing

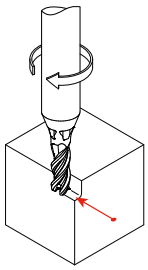
a_p = 1 - 2 x d





5. Side milling - Finishing

a_p = 2.5 x d - Type A / a_p = 2 x d - Type C



CRAZYMILL by Mikron Tool Cool

NEW Highest performance in smallest dimensions

PLUNGE AND SLOT ENDMILL WITH INTEGRATED COOLING

With CrazyMill Cool P&S Corner radius Mikron Tool expands its range of milling cutters for difficult-to-machine materials. The new endmill is used for applications where a rounded corner is required. The three flute CrazyMill Cool P&S Corner radius allows perpendicular plunging with subsequent milling into solid material. It is available with integrated cooling, in the diameter range from .039" to .315" (1 mm to 8 mm) and for maximal milling depth of 5 x d.

- CrazyMill Cool P&S Corner radius, type A – milling depth 2.5 x d, cutting length 2.5 x d, through shaft cooling, Z = 3
- CrazyMill Cool P&S Corner radius, type C – milling depth 5 x d, cutting length 2 x d, through shaft cooling, Z = 3

2.5 x d

Type A

- Coated
- Integrated cooling

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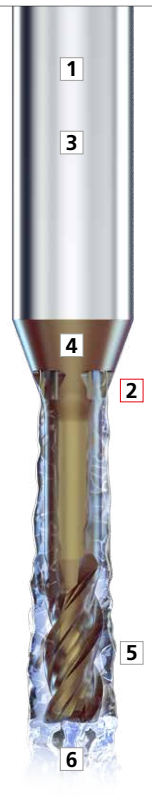
5 x d

Type C

- Coated
- Integrated cooling



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NEW

1 | SHANK
The robust carbide shank guarantees stable and vibration-free milling. A high degree of precision and excellent surface quality is achieved.

2 | INTEGRATED COOLING – PATENTED
The integrated cooling channels guarantee constant and maximal cooling of the cutting edges and optimal chip removal. The result is higher cutting speed and depth as well as improved surface quality.

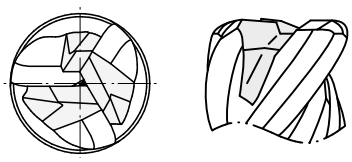
3 | CARBIDE
The specially developed micro-grain carbide meets all requirements in terms of mechanical properties.

4 | COATING
The high-performance eXedur SNP coating is heat and wear resistant, prevents material build-up on cutting edges and guarantees optimum chip flushing. The result is long tool life.

5 | FLUTE GEOMETRY
The specially designed flutes provide high stability and sufficient space for perfect chip evacuation.

6 | GEOMETRY OF THE END FACE
The specially designed expanded chip collection section in the end face guarantees good chip evacuation when plunging. A correction in the web prevents edge breakout, reduces the penetration force and increases tool life.

End face geometry - 3 Flutes

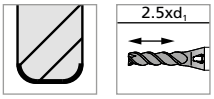


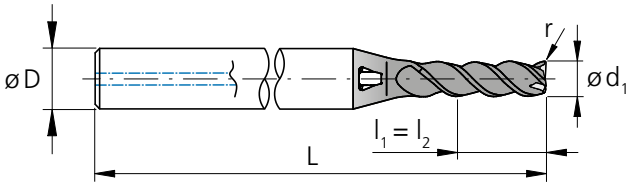
CRAZYMILL by Mikron Tool Cool

NEW Type A - 2.5 x d - Corner radius - Z3

MILLING WITH INTEGRATED COOLING

P&S - Corner radius





l_1 = Effective length
l_2 = Cutting length

d_1 [inch]	d_1 [inch]	d_1 [mm]	l_1 [inch]	l_1 [mm]	l_2 [mm]	D (h6) [mm]	L [inch]	L [mm]	r [inch]	r [mm]	Item number	Availability
	.039	1.0	.098	2.50	2.50	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.100.1	■
	.039	1.0	.098	2.50	2.50	4	1.57	40	.0079	0.20	2.CMC42.A3Z3.100.1	■
	.043	1.1	.108	2.75	2.75	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.110.1	■
	.043	1.1	.108	2.75	2.75	4	1.57	40	.0079	0.20	2.CMC42.A3Z3.110.1	■
	.047	1.2	.118	3.00	3.00	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.120.1	■
	.047	1.2	.118	3.00	3.00	4	1.57	40	.0079	0.20	2.CMC42.A3Z3.120.1	■
	.051	1.3	.128	3.25	3.25	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.130.1	■
	.051	1.3	.128	3.25	3.25	4	1.57	40	.0079	0.20	2.CMC42.A3Z3.130.1	■
	.055	1.4	.138	3.50	3.50	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.140.1	■
	.055	1.4	.138	3.50	3.50	4	1.57	40	.0079	0.20	2.CMC42.A3Z3.140.1	■
	.059	1.5	.148	3.75	3.75	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.150.1	■
	.059	1.5	.148	3.75	3.75	4	1.57	40	.0118	0.30	2.CMC42.A3Z3.150.1	■
1/16	.0625	1.587	.157	3.97	3.97	4	1.57	40	.0050	0.127	2.CMC.PSRA2Z3.F116	■
1/16	.0625	1.587	.157	3.97	3.97	4	1.57	40	.0100	0.254	2.CMC.PSRA3Z3.F116	■
	.063	1.6	.157	4.00	4.00	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.160.1	■
	.063	1.6	.157	4.00	4.00	4	1.57	40	.0118	0.30	2.CMC42.A3Z3.160.1	■
	.067	1.7	.167	4.25	4.25	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.170.1	■
	.067	1.7	.167	4.25	4.25	4	1.57	40	.0118	0.30	2.CMC42.A3Z3.170.1	■
	.071	1.8	.177	4.50	4.50	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.180.1	■
	.071	1.8	.177	4.50	4.50	4	1.57	40	.0118	0.30	2.CMC42.A3Z3.180.1	■
	.075	1.9	.187	4.75	4.75	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.190.1	■
	.075	1.9	.187	4.75	4.75	4	1.57	40	.0118	0.30	2.CMC42.A3Z3.190.1	■
	.079	2.0	.197	5.00	5.00	4	1.57	40	.0039	0.10	2.CMC42.A2Z3.200.1	■
	.079	2.0	.197	5.00	5.00	4	1.57	40	.0079	0.20	2.CMC42.A3Z3.200.1	■
	.079	2.0	.197	5.00	5.00	4	1.57	40	.0197	0.50	2.CMC42.A4Z3.200.1	■
	.083	2.1	.207	5.25	5.25	4	1.57	40	.0079	0.20	2.CMC42.A2Z3.210.1	■
	.083	2.1	.207	5.25	5.25	4	1.57	40	.0197	0.50	2.CMC42.A3Z3.210.1	■
	.087	2.2	.217	5.50	5.50	4	1.57	40	.0079	0.20	2.CMC42.A2Z3.220.1	■
	.087	2.2	.217	5.50	5.50	4	1.57	40	.0197	0.50	2.CMC42.A3Z3.220.1	■
	.091	2.3	.226	5.75	5.75	4	1.57	40	.0079	0.20	2.CMC42.A2Z3.230.1	■
	.091	2.3	.226	5.75	5.75	4	1.57	40	.0197	0.50	2.CMC42.A3Z3.230.1	■
3/32	.0937	2.381	.236	5.95	5.95	4	1.57	40	.0050	0.127	2.CMC.PSRA2Z3.F332	■
3/32	.0937	2.381	.236	5.95	5.95	4	1.57	40	.0100	0.254	2.CMC.PSRA3Z3.F332	■
3/32	.0937	2.381	.236	5.95	5.95	4	1.57	40	.0150	0.381	2.CMC.PSRA4Z3.F332	■
	.094	2.4	.236	6.00	6.00	4	1.57	40	.0079	0.20	2.CMC42.A2Z3.240.1	■
	.094	2.4	.236	6.00	6.00	4	1.57	40	.0197	0.50	2.CMC42.A3Z3.240.1	■
	.098	2.5	.246	6.25	6.25	6	1.97	50	.0079	0.20	2.CMC42.A2Z3.250.1	■
	.098	2.5	.246	6.25	6.25	6	1.97	50	.0197	0.50	2.CMC42.A3Z3.250.1	■
	.102	2.6	.256	6.50	6.50	6	1.97	50	.0079	0.20	2.CMC42.A2Z3.260.1	■
	.102	2.6	.256	6.50	6.50	6	1.97	50	.0197	0.50	2.CMC42.A3Z3.260.1	■
	.106	2.7	.266	6.75	6.75	6	1.97	50	.0079	0.20	2.CMC42.A2Z3.270.1	■
	.106	2.7	.266	6.75	6.75	6	1.97	50	.0197	0.50	2.CMC42.A3Z3.270.1	■

■ Stock item

Carbide | Z3 | 42° | eXedur SNP

Ø d_1	**.004" - .118"** (0.1 - 3.0 mm)		**.122" - .236"** (3.1 - 6.0 mm)		**.240" - .315"** (6.1 - 8.0 mm)		r	**.004" - .060"** (0.1 - 1.524 mm)		
Tolerance	**- .00055"** **- .00110"**	- 0.014 mm - 0.028 mm	**- .00079"** **- .00150"**	- 0.020 mm - 0.038 mm	**- .00098"** **- .00185"**	- 0.025 mm - 0.047 mm	Tolerance	**± .0020 · r mm**	± 0.05 · r mm	

d_1 [inch]	d_1 [inch]	d_1 [mm]	l_1 [inch]	l_1 [mm]	l_2 [mm]	D (h6) [mm]	L [inch]	L [mm]	r [inch]	r [mm]	Item number	Availability
	.110	2.8	**.276**	7.00	7.00	6.00	**1.97**	50	**.0079**	0.20	2.CMC42.A2Z3.280.1	■
	.110	2.8	**.276**	7.00	7.00	6.00	**1.97**	50	**.0197**	0.50	2.CMC42.A3Z3.280.1	■
	.114	2.9	**.285**	7.25	7.25	6.00	**1.97**	50	**.0079**	0.20	2.CMC42.A2Z3.290.1	■
	.114	2.9	**.285**	7.25	7.25	6.00	**1.97**	50	**.0197**	0.50	2.CMC42.A3Z3.290.1	■
	.118	3.0	**.295**	7.50	7.50	6.00	**1.97**	50	**.0079**	0.20	2.CMC42.A2Z3.300.1	■
	.118	3.0	**.295**	7.50	7.50	6.00	**1.97**	50	**.0197**	0.50	2.CMC42.A3Z3.300.1	■
	.122	3.1	**.305**	7.75	7.75	6.00	**1.97**	50	**.0079**	0.20	2.CMC42.A2Z3.310.1	■
	.122	3.1	**.305**	7.75	7.75	6.00	**1.97**	50	**.0197**	0.50	2.CMC42.A3Z3.310.1	■
1/8	**.1250**	3.175	**.325**	7.94	7.94	6.00	**1.97**	50	**.0100**	0.254	2.CMC.PSRA2Z3.F18	■
1/8	**.1250**	3.175	**.325**	7.94	7.94	6.00	**1.97**	50	**.0150**	0.381	2.CMC.PSRA3Z3.F18	■
	.130	3.3	**.325**	8.25	8.25	6.00	**1.97**	50	**.0079**	0.20	2.CMC42.A2Z3.330.1	■
	.130	3.3	**.325**	8.25	8.25	6.00	**1.97**	50	**.0197**	0.50	2.CMC42.A3Z3.330.1	■
	.146	3.7	**.364**	9.25	9.25	6.00	**1.97**	50	**.0079**	0.20	2.CMC42.A2Z3.370.1	■
	.146	3.7	**.364**	9.25	9.25	6.00	**1.97**	50	**.0197**	0.50	2.CMC42.A3Z3.370.1	■
5/32	**.1562**	3.968	**.394**	9.92	9.92	6.00	**1.97**	50	**.0100**	0.254	2.CMC.PSRA2Z3.F532	■
5/32	**.1562**	3.968	**.394**	9.92	9.92	6.00	**1.97**	50	**.0150**	0.381	2.CMC.PSRA3Z3.F532	■
	.157	4.0	**.394**	10.00	10.00	6.00	**1.97**	50	**.0079**	0.20	2.CMC42.A2Z3.400.1	■
	.157	4.0	**.394**	10.00	10.00	6.00	**1.97**	50	**.0197**	0.50	2.CMC42.A3Z3.400.1	■
	.169	4.3	**.423**	10.75	10.75	8.00	**2.36**	60	**.0079**	0.20	2.CMC42.A2Z3.430.1	■
	.169	4.3	**.423**	10.75	10.75	8.00	**2.36**	60	**.0197**	0.50	2.CMC42.A3Z3.430.1	■
	.185	4.7	**.463**	11.75	11.75	8.00	**2.36**	60	**.0079**	0.20	2.CMC42.A2Z3.470.1	■
	.185	4.7	**.463**	11.75	11.75	8.00	**2.36**	60	**.0197**	0.50	2.CMC42.A3Z3.470.1	■
3/16	**.1875**	4.762	**.472**	11.91	11.91	8.00	**2.36**	60	**.0100**	0.254	2.CMC.PSRA2Z3.F316	■
3/16	**.1875**	4.762	**.472**	11.91	11.91	8.00	**2.36**	60	**.0150**	0.381	2.CMC.PSRA3Z3.F316	■
	.189	4.8	**.472**	12.00	12.00	8.00	**2.36**	60	**.0079**	0.20	2.CMC42.A2Z3.480.1	■
	.189	4.8	**.472**	12.00	12.00	8.00	**2.36**	60	**.0197**	0.50	2.CMC42.A3Z3.480.1	■
	.197	5.0	**.492**	12.50	12.50	8.00	**2.36**	60	**.0079**	0.20	2.CMC42.A2Z3.500.1	■
	.197	5.0	**.492**	12.50	12.50	8.00	**2.36**	60	**.0197**	0.50	2.CMC42.A3Z3.500.1	■
	.209	5.3	**.522**	13.25	13.25	10.00	**2.56**	65	**.0079**	0.20	2.CMC42.A2Z3.530.1	■
	.209	5.3	**.522**	13.25	13.25	10.00	**2.56**	65	**.0197**	0.50	2.CMC42.A3Z3.530.1	■
7/32	**.2189**	5.560	**.561**	13.90	13.90	10.00	**2.56**	65	**.0150**	0.381	2.CMC.PSRA2Z3.F732	■
7/32	**.2189**	5.560	**.561**	13.90	13.90	10.00	**2.56**	65	**.0300**	0.762	2.CMC.PSRA3Z3.F732	■
	.224	5.7	**.561**	14.25	14.25	10.00	**2.56**	65	**.0079**	0.20	2.CMC42.A2Z3.570.1	■
	.224	5.7	**.561**	14.25	14.25	10.00	**2.56**	65	**.0197**	0.50	2.CMC42.A3Z3.570.1	■
	.236	6.0	**.591**	15.00	15.00	10.00	**2.56**	65	**.0079**	0.20	2.CMC42.A2Z3.600.1	■
	.236	6.0	**.591**	15.00	15.00	10.00	**2.56**	65	**.0197**	0.50	2.CMC42.A3Z3.600.1	■
	.236	6.0	**.591**	15.00	15.00	10.00	**2.56**	65	**.0394**	1.00	2.CMC42.A4Z3.600.1	■
1/4	**.2500**	6.350	**.625**	15.88	15.88	10.00	**2.56**	65	**.0150**	0.381	2.CMC.PSRA2Z3.F14	■
1/4	**.2500**	6.350	**.625**	15.88	15.88	10.00	**2.56**	65	**.0300**	0.762	2.CMC.PSRA3Z3.F14	■
1/4	**.2500**	6.350	**.625**	15.88	15.88	10.00	**2.56**	65	**.0600**	1.524	2.CMC.PSRA4Z3.F14	■
	.315	8.0	**.787**	20.00	20.00	12.00	**2.76**	70	**.0079**	0.20	2.CMC42.A2Z3.800.1	■
	.315	8.0	**.787**	20.00	20.00	12.00	**2.76**	70	**.0197**	0.50	2.CMC42.A3Z3.800.1	■
	.315	8.0	**.787**	20.00	20.00	12.00	**2.76**	70	**.0591**	1.50	2.CMC42.A4Z3.800.1	■

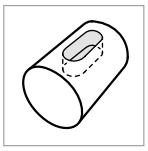
■ Stock item

CRAZYMILL by Mikron Tool Cool

NEW Type A - Keyways - Plunge - Slot milling

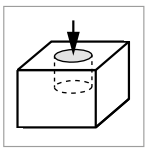
MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Keyway slot milling



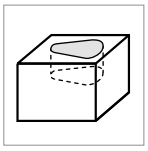
- $f_{z,p}$: for plunge milling
- $f_{z,s}$: for slot milling

Plunge milling

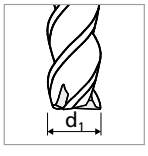


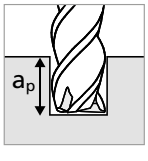
- $f_{z,p}$: for plunge milling

Slot milling



- $f_{z,p}$: for plunge milling
- $f_{z,s}$: for slot milling





Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	$f_{z,p}$	$f_{z,s}$	a_p
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	100 **328**	0.0013 **.00005**	0.0046 **.00018**	1xd1
		1.0401	C15	AISI 1015				
		1.1191	C45E/CK45	AISI 1045				
		1.0044	S275JR	AISI 1020				
		1.0715	11SMn30	AISI 1215				
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	100 **328**	0.0014 **.00006**	0.0049 **.00019**	1xd1
		1.7131	16MnCr5	AISI 5115				
		1.3505	100Cr6	AISI 52100				
		1.7225	42CrMo4	AISI 4140				
		1.2842	90MnCrV8	AISI O2				
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	100 **328**	0.0012 **.00005**	0.0042 **.00017**	0.5xd1
		1.2436	X210CrW12	AISI D4/D6				
		1.3343	HS6-5-2C	AISI M2 / UNS T11302				
		1.3355	HS18-0-1	AISI T1 / UNS T12001				
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	100 **328**	0.0010 **.00004**	0.0035 **.00014**	1xd1
		1.4105	X6CrMoS17	AISI 430F				
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	100 **328**	0.0010 **.00004**	0.0035 **.00014**	0.5xd1
		1.4112	X90CrMoV18	AISI 440B				
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	100 **328**	0.0010 **.00004**	0.0035 **.00014**	0.5xd1
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH				
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	100 **328**	0.0010 **.00004**	0.0035 **.00014**	1xd1
		1.4435	X2CrNiMo18-14-3	AISI 316L				
		1.4441	X2CrNiMo18-15-3	AISI 316LM				
		1.4539	X1NiCrMoCu25-20-5	AISI 904L				
K	Cast iron	0.6020	GG20	ASTM 30	100 **328**	0.0013 **.00005**	0.0042 **.00017**	1xd1
		0.6030	GG30	ASTM 40B				
		0.7040	GGG40	ASTM 60-40-18				
		0.7060	GGG60	ASTM 80-60-03				
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	100 **328**	0.0012 **.00005**	0.0100 **.00039**	1xd1
		3.4365	AlZnMgCu1.5	ASTM 7075				
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	100 **328**	0.0012 **.00005**	0.0100 **.00039**	1xd1
		3.2381	GD-AlSi10Mg	UNS A03590				
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	100 **328**	0.0012 **.00005**	0.0100 **.00039**	1xd1
		2.0065	Cu-ETP / CW004A	UNS C11000				
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	100 **328**	0.0012 **.00005**	0.0100 **.00039**	1xd1
		2.0360	CuZn40 CW509L	UNS C28000				
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	100 **328**	0.0012 **.00005**	0.0100 **.00039**	1xd1
		2.1020	CuSn6	UNS C51900				
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	100 **328**	0.0012 **.00005**	0.0100 **.00039**	1xd1
		2.0960	CuAl9Mn2	UNS C63200				
S_1	Super alloys	2.4856		Inconel 625	40 **131**	0.0010 **.00004**	0.0035 **.00014**	0.25xd1
		2.4668		Inconel 718				
		2.4617	NiMo28	Hastelloy B-2				
		2.4665	NiCr22Fe18Mo	Hastelloy X				
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	80 **262**	0.0010 **.00004**	0.0032 **.00012**	0.25xd1
		3.7065	Gr.4	ASTM B348 / F68				
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	80 **262**	0.0010 **.00004**	0.0032 **.00012**	0.25xd1
		9.9367	TiAl6Nb7	ASTM F1295				
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	60 **197**	0.0010 **.00004**	0.0035 **.00014**	0.5xd1
			CrCoMo28	ASTM F1537				
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1				
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2				

v_c [m/min] | **[SFM]** a_p [mm] | **[inch]**
$f_{z,p}$ [mm] | **[IPT]** $f_{z,s}$ [mm] | **[IPT]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

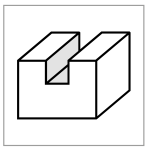
P ●	N ●	S3 ●
M ●	S1 ●	H1 ⊠
K ●	S2 ●	H2 ⊠

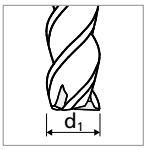
Ød1																							
1/16" 1.5 mm | **.059"**				**3/32"** 2.0 mm | **.079"**				**1/8"** 3.0 mm | **.118"**				**5/32"** 4.0 mm | **.157"**				**3/16" - 7/32"** 5.0 mm | **.197"**				**1/4"** 6.0 mm - 8.0 mm|**.236" - .315"**			
v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p
120 **394**	0.0020 **.00008**	0.0065 **.00026**	1xd1	120 **394**	0.0026 **.00010**	0.0091 **.00036**	1xd1	140 **459**	0.004 **.00014**	0.013 **.00051**	1xd1	140 **459**	0.005 **.00020**	0.020 **.00077**	1xd1	150 **492**	0.005 **.00020**	0.026 **.00102**	1xd1	160 **525**	0.006 **.00024**	0.033 **.00128**	1xd1
120 **394**	0.0021 **.00008**	0.0070 **.00028**	1xd1	120 **394**	0.0028 **.00011**	0.0098 **.00039**	1xd1	140 **459**	0.004 **.00014**	0.014 **.00055**	1xd1	140 **459**	0.005 **.00020**	0.021 **.00083**	1xd1	150 **492**	0.006 **.00022**	0.027 **.00106**	1xd1	160 **525**	0.006 **.00024**	0.034 **.00133**	1xd1
120 **394**	0.0018 **.00007**	0.0060 **.00024**	0.5xd1	120 **394**	0.0024 **.00009**	0.0084 **.00033**	0.5xd1	140 **459**	0.003 **.00012**	0.012 **.00047**	0.5xd1	140 **459**	0.004 **.00016**	0.017 **.00068**	0.5xd1	150 **492**	0.004 **.00016**	0.022 **.00087**	0.5xd1	160 **525**	0.005 **.00020**	0.028 **.00108**	0.5xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	1xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	1xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	1xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	1xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	1xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	1xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	0.5xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	0.5xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	0.5xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	0.5xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	0.5xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	0.5xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	0.5xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	0.5xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	0.5xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	0.5xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	0.5xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	0.5xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	1xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	1xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	1xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	1xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	1xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	1xd1
120 **394**	0.0019 **.00007**	0.0060 **.00024**	1xd1	120 **394**	0.0024 **.00009**	0.0084 **.00033**	1xd1	140 **459**	0.004 **.00014**	0.012 **.00047**	1xd1	140 **459**	0.004 **.00016**	0.017 **.00068**	1xd1	150 **492**	0.005 **.00019**	0.022 **.00087**	1xd1	160 **525**	0.005 **.00020**	0.028 **.00108**	1xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	1xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	1xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	1xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	1xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	1xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	1xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	1xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	1xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	1xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	1xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	1xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	1xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	1xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	1xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	1xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	1xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	1xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	1xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	1xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	1xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	1xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	1xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	1xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	1xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	1xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	1xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	1xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	1xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	1xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	1xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	1xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	1xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	1xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	1xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	1xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	1xd1
40 **131**	0.0015 **.00006**	0.0050 **.00020**	0.25xd1	50 **164**	0.0020 **.00008**	0.0070 **.00028**	0.25xd1	50 **164**	0.003 **.00012**	0.010 **.00039**	0.25xd1	60 **197**	0.004 **.00016**	0.014 **.00053**	0.25xd1	80 **262**	0.004 **.00016**	0.018 **.00071**	0.25xd1	80 **262**	0.005 **.00020**	0.021 **.00084**	0.25xd1
90 **295**	0.0014 **.00005**	0.0045 **.00018**	0.25xd1	100 **328**	0.0018 **.00007**	0.0063 **.00025**	0.25xd1	110 **361**	0.003 **.00012**	0.010 **.00039**	0.25xd1	120 **394**	0.004 **.00016**	0.013 **.00050**	0.25xd1	120 **394**	0.004 **.00016**	0.016 **.00064**	0.25xd1	120 **394**	0.005 **.00020**	0.019 **.00075**	0.25xd1
90 **295**	0.0014 **.00005**	0.0045 **.00018**	0.25xd1	100 **328**	0.0018 **.00007**	0.0063 **.00025**	0.25xd1	110 **361**	0.003 **.00012**	0.010 **.00039**	0.25xd1	120 **394**	0.004 **.00016**	0.013 **.00050**	0.25xd1	120 **394**	0.004 **.00016**	0.016 **.00064**	0.25xd1	120 **394**	0.005 **.00020**	0.019 **.00075**	0.25xd1
60 **197**	0.0015 **.00006**	0.0050 **.00020**	0.5xd1	80 **262**	0.0020 **.00008**	0.0070 **.00028**	0.5xd1	80 **262**	0.003 **.00012**	0.010 **.00039**	0.5xd1	100 **328**	0.004 **.00016**	0.014 **.00053**	0.5xd1	100 **328**	0.004 **.00016**	0.018 **.00071**	0.5xd1	120 **394**	0.005 **.00020**	0.021 **.00084**	0.5xd1

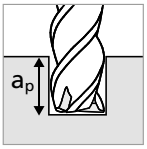
NEW Type A - Milling of through slots

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Through slot milling







Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	f_z	a_p
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	140 **459**	0.009 **.00035**	1xd1
		1.0401	C15	AISI 1015			
		1.1191	C45E/CK45	AISI 1045			
		1.0044	S275JR	AISI 1020			
		1.0715	11SMn30	AISI 1215			
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	140 **459**	0.008 **.00032**	1xd1
		1.7131	16MnCr5	AISI 5115			
		1.3505	100Cr6	AISI 52100			
		1.7225	42CrMo4	AISI 4140			
		1.2842	90MnCrV8	AISI O2			
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	140 **459**	0.006 **.00024**	0.5xd1
		1.2436	X210CrW12	AISI D4/D6			
		1.3343	HS6-5-2C	AISI M2 / UNS T11302			
		1.3355	HS18-0-1	AISI T1 / UNS T12001			
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	140 **459**	0.009 **.00035**	1xd1
		1.4105	X6CrMoS17	AISI 430F			
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	140 **459**	0.009 **.00035**	1xd1
		1.4112	X90CrMoV18	AISI 440B			
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	140 **459**	0.009 **.00035**	1xd1
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH			
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	140 **459**	0.007 **.00028**	1xd1
		1.4435	X2CrNiMo18-14-3	AISI 316L			
		1.4441	X2CrNiMo18-15-3	AISI 316LM			
		1.4539	X1NiCrMoCu25-20-5	AISI 904L			
K	Cast iron	0.6020	GG20	ASTM 30	120 **394**	0.007 **.00028**	1xd1
		0.6030	GG30	ASTM 40B			
		0.7040	GGG40	ASTM 60-40-18			
		0.7060	GGG60	ASTM 80-60-03			
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	140 **459**	0.010 **.00039**	1xd1
		3.4365	AlZnMgCu1.5	ASTM 7075			
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	140 **459**	0.010 **.00039**	1xd1
		3.2381	GD-AlSi10Mg	UNS A03590			
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	140 **459**	0.012 **.00047**	1xd1
		2.0065	Cu-ETP / CW004A	UNS C11000			
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	140 **459**	0.012 **.00047**	1xd1
		2.0360	CuZn40 CW509L	UNS C28000			
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	140 **459**	0.012 **.00047**	1xd1
		2.1020	CuSn6	UNS C51900			
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	140 **459**	0.011 **.00043**	1xd1
		2.0960	CuAl9Mn2	UNS C63200			
S_1	Super alloys	2.4856		Inconel 625	80 **262**	0.005 **.00020**	0.5xd1
		2.4668		Inconel 718			
		2.4617	NiMo28	Hastelloy B-2			
		2.4665	NiCr22Fe18Mo	Hastelloy X			
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	100 **328**	0.009 **.00035**	0.5xd1
		3.7065	Gr.4	ASTM B348 / F68			
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	100 **328**	0.009 **.00035**	0.5xd1
		9.9367	TiAl6Nb7	ASTM F1295			
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	80 **262**	0.005 **.00020**	0.5xd1
			CrCoMo28	ASTM F1537			
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1			
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2			

v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**
a_p [mm] | **[inch]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P ●	N ●	S_3 ●
M ●	S_1 ●	H_1 ⊠
K ●	S_2 ●	H_2 ⊠

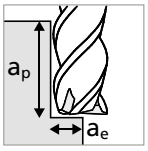
Ød1																	
1/16" 1.5 mm | **.059"**			**3/32"** 2.0 mm | **.079"**			**1/8"** 3.0 mm | **.118"**			**5/32"** 4.0 mm | **.157"**			**3/16" - 7/32"** 5.0 mm | **.197"**			**1/4"** 6.0 mm - 8.0 mm|**.236" - .315"**		
v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p
180 **591**	0.015 **.00059**	1xd1	200 **656**	0.020 **.00079**	1xd1	220 **722**	0.029 **.00114**	1xd1	230 **755**	0.031 **.00122**	1xd1	240 **787**	0.031 **.00122**	1xd1	260 **853**	0.032 **.00126**	1xd1
180 **591**	0.013 **.00051**	1xd1	200 **656**	0.019 **.00075**	1xd1	220 **722**	0.028 **.00110**	1xd1	230 **755**	0.029 **.00114**	1xd1	240 **787**	0.030 **.00118**	1xd1	260 **853**	0.031 **.00122**	1xd1
180 **591**	0.012 **.00047**	0.5xd1	200 **656**	0.017 **.00067**	0.5xd1	220 **722**	0.025 **.00098**	0.5xd1	230 **755**	0.026 **.00102**	0.5xd1	240 **787**	0.026 **.00102**	0.5xd1	260 **853**	0.027 **.00106**	0.5xd1
180 **591**	0.015 **.00059**	1xd1	200 **656**	0.020 **.00079**	1xd1	220 **722**	0.028 **.00110**	1xd1	230 **755**	0.029 **.00114**	1xd1	240 **787**	0.030 **.00118**	1xd1	260 **853**	0.031 **.00122**	1xd1
180 **591**	0.013 **.00051**	1xd1	200 **656**	0.019 **.00075**	1xd1	220 **722**	0.027 **.00106**	1xd1	230 **755**	0.028 **.00110**	1xd1	240 **787**	0.029 **.00114**	1xd1	260 **853**	0.029 **.00114**	1xd1
180 **591**	0.013 **.00051**	1xd1	200 **656**	0.019 **.00075**	1xd1	220 **722**	0.027 **.00106**	1xd1	230 **755**	0.028 **.00110**	1xd1	240 **787**	0.029 **.00114**	1xd1	260 **853**	0.029 **.00114**	1xd1
180 **591**	0.011 **.00043**	1xd1	200 **656**	0.017 **.00067**	1xd1	220 **722**	0.025 **.00098**	1xd1	230 **755**	0.027 **.00106**	1xd1	240 **787**	0.027 **.00106**	1xd1	260 **853**	0.028 **.00110**	1xd1
140 **459**	0.015 **.00059**	1xd1	160 **525**	0.017 **.00067**	1xd1	180 **591**	0.025 **.00098**	1xd1	200 **656**	0.031 **.00122**	1xd1	200 **656**	0.031 **.00122**	1xd1	200 **656**	0.032 **.00126**	1xd1
180 **591**	0.016 **.00063**	1xd1	200 **656**	0.021 **.00083**	1xd1	220 **722**	0.034 **.00134**	1xd1	260 **853**	0.035 **.00139**	1xd1	300 **984**	0.036 **.00142**	1xd1	340 **1115**	0.037 **.00146**	1xd1
180 **591**	0.016 **.00063**	1xd1	200 **656**	0.021 **.00083**	1xd1	220 **722**	0.032 **.00126**	1xd1	260 **853**	0.034 **.00134**	1xd1	300 **984**	0.034 **.00134**	1xd1	340 **1115**	0.036 **.00142**	1xd1
180 **591**	0.016 **.00063**	1xd1	200 **656**	0.021 **.00083**	1xd1	220 **722**	0.034 **.00134**	1xd1	260 **853**	0.035 **.00139**	1xd1	300 **984**	0.036 **.00142**	1xd1	340 **1115**	0.037 **.00146**	1xd1
180 **591**	0.016 **.00063**	1xd1	200 **656**	0.021 **.00083**	1xd1	220 **722**	0.034 **.00134**	1xd1	260 **853**	0.035 **.00139**	1xd1	300 **984**	0.036 **.00142**	1xd1	340 **1115**	0.037 **.00146**	1xd1
180 **591**	0.016 **.00063**	1xd1	200 **656**	0.021 **.00083**	1xd1	220 **722**	0.034 **.00134**	1xd1	260 **853**	0.035 **.00139**	1xd1	300 **984**	0.036 **.00142**	1xd1	340 **1115**	0.037 **.00146**	1xd1
180 **591**	0.016 **.00063**	1xd1	200 **656**	0.021 **.00083**	1xd1	220 **722**	0.034 **.00134**	1xd1	260 **853**	0.035 **.00139**	1xd1	300 **984**	0.036 **.00142**	1xd1	340 **1115**	0.037 **.00146**	1xd1
80 **262**	0.006 **.00024**	0.5xd1	100 **328**	0.007 **.00028**	0.5xd1	100 **328**	0.010 **.00039**	0.5xd1	120 **394**	0.013 **.00051**	0.5xd1	120 **394**	0.013 **.00051**	0.5xd1	120 **394**	0.013 **.00051**	0.5xd1
100 **328**	0.012 **.00047**	0.5xd1	120 **394**	0.017 **.00067**	0.5xd1	120 **394**	0.027 **.00106**	0.5xd1	140 **459**	0.027 **.00106**	0.5xd1	140 **459**	0.027 **.00106**	0.5xd1	140 **459**	0.028 **.00110**	0.5xd1
100 **328**	0.012 **.00047**	0.5xd1	120 **394**	0.017 **.00067**	0.5xd1	120 **394**	0.027 **.00106**	0.5xd1	140 **459**	0.027 **.00106**	0.5xd1	140 **459**	0.027 **.00106**	0.5xd1	140 **459**	0.028 **.00110**	0.5xd1
80 **262**	0.006 **.00024**	0.5xd1	100 **328**	0.007 **.00028**	0.5xd1	100 **328**	0.010 **.00039**	0.5xd1	120 **394**	0.013 **.00051**	0.5xd1	120 **394**	0.013 **.00051**	0.5xd1	120 **394**	0.013 **.00051**	0.5xd1

CRAZYMILL by Mikron Tool Cool

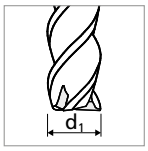
NEW Type A - Side milling - Semi-finishing

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Semi-finishing



- $a_p = 1 \times d_1 - 2 \times d_1$
- $a_e = 0.2 \times d_1$



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	f_z
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	140 **459**	0.013 **.00051**
		1.0401	C15	AISI 1015		
		1.1191	C45E/CK45	AISI 1045		
		1.0044	S275JR	AISI 1020		
		1.0715	11SMn30	AISI 1215		
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	140 **459**	0.012 **.00047**
		1.7131	16MnCr5	AISI 5115		
		1.3505	100Cr6	AISI 52100		
		1.7225	42CrMo4	AISI 4140		
		1.2842	90MnCrV8	AISI O2		
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	140 **459**	0.009 **.00035**
		1.2436	X210CrW12	AISI D4/D6		
		1.3343	HS6-5-2C	AISI M2 / UNS T11302		
		1.3355	HS18-0-1	AISI T1 / UNS T12001		
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	140 **459**	0.014 **.00055**
		1.4105	X6CrMoS17	AISI 430F		
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	140 **459**	0.013 **.00051**
		1.4112	X90CrMoV18	AISI 440B		
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	140 **459**	0.013 **.00051**
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH		
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	140 **459**	0.010 **.00039**
		1.4435	X2CrNiMo18-14-3	AISI 316L		
		1.4441	X2CrNiMo18-15-3	AISI 316LM		
		1.4539	X1NiCrMoCu25-20-5	AISI 904L		
K	Cast iron	0.6020	GG20	ASTM 30	120 **394**	0.009 **.00035**
		0.6030	GG30	ASTM 40B		
		0.7040	GGG40	ASTM 60-40-18		
		0.7060	GGG60	ASTM 80-60-03		
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	140 **459**	0.015 **.00059**
		3.4365	AlZnMgCu1.5	ASTM 7075		
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	140 **459**	0.015 **.00059**
		3.2381	GD-AlSi10Mg	UNS A03590		
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	140 **459**	0.017 **.00067**
		2.0065	Cu-ETP / CW004A	UNS C11000		
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	140 **459**	0.017 **.00067**
		2.0360	CuZn40 CW509L	UNS C28000		
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	140 **459**	0.017 **.00067**
		2.1020	CuSn6	UNS C51900		
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	140 **459**	0.015 **.00059**
		2.0960	CuAl9Mn2	UNS C63200		
S_1	Super alloys	2.4856		Inconel 625	80 **262**	0.006 **.00024**
		2.4668		Inconel 718		
		2.4617	NiMo28	Hastelloy B-2		
		2.4665	NiCr22Fe18Mo	Hastelloy X		
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	120 **394**	0.014 **.00054**
		3.7065	Gr.4	ASTM B348 / F68		
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	120 **394**	0.014 **.00054**
		9.9367	TiAl6Nb7	ASTM F1295		
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	80 **262**	0.006 **.00024**
			CrCoMo28	ASTM F1537		
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1		
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2		

v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P ●	N ●	S_3 ●
M ●	S_1 ●	H_1 ⊠
K ●	S_2 ●	H_2 ⊠

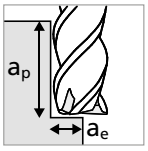
Ød1	1/16" 1.5 mm | **.059"**		3/32" 2.0 mm | **.079"**		1/8" 3.0 mm | **.118"**		5/32" 4.0 mm | **.157"**		3/16" - 7/32" 5.0 mm | **.197"**		1/4" 6.0 mm | **.236"**		8.0 mm | **.315"**	
	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
	200 **656**	0.020 **.00079**	220 **722**	0.029 **.00114**	240 **787**	0.037 **.00146**	260 **853**	0.040 **.00158**	260 **853**	0.040 **.00158**	260 **853**	0.043 **.00169**	260 **853**	0.051 **.00169**
	200 **656**	0.019 **.00075**	220 **722**	0.027 **.00106**	240 **787**	0.035 **.00138**	260 **853**	0.038 **.00150**	260 **853**	0.038 **.00150**	260 **853**	0.041 **.00161**	260 **853**	0.049 **.00193**
	200 **656**	0.017 **.00067**	220 **722**	0.026 **.00102**	240 **787**	0.032 **.00126**	260 **853**	0.034 **.00134**	260 **853**	0.034 **.00134**	260 **853**	0.036 **.00141**	260 **853**	0.043 **.00169**
	200 **656**	0.020 **.00079**	220 **722**	0.029 **.00114**	240 **787**	0.035 **.00138**	260 **853**	0.038 **.00150**	260 **853**	0.038 **.00150**	260 **853**	0.041 **.00161**	260 **853**	0.046 **.00161**
	200 **656**	0.019 **.00075**	220 **722**	0.027 **.00106**	240 **787**	0.035 **.00138**	260 **853**	0.037 **.00146**	260 **853**	0.037 **.00146**	260 **853**	0.039 **.00154**	260 **853**	0.045 **.00177**
	200 **656**	0.019 **.00075**	220 **722**	0.027 **.00106**	240 **787**	0.035 **.00138**	260 **853**	0.037 **.00146**	260 **853**	0.037 **.00146**	260 **853**	0.039 **.00154**	260 **853**	0.045 **.00177**
	200 **656**	0.014 **.00055**	220 **722**	0.026 **.00102**	240 **787**	0.032 **.00126**	260 **853**	0.035 **.00138**	260 **853**	0.035 **.00138**	260 **853**	0.037 **.00146**	260 **853**	0.043 **.00146**
	140 **459**	0.020 **.00079**	160 **525**	0.024 **.00095**	180 **591**	0.034 **.00134**	200 **656**	0.040 **.00158**	200 **656**	0.042 **.00165**	200 **656**	0.044 **.00173**	200 **656**	0.052 **.00173**
	200 **656**	0.022 **.00087**	220 **722**	0.031 **.00122**	240 **787**	0.046 **.00181**	260 **853**	0.048 **.00189**	260 **853**	0.048 **.00189**	260 **853**	0.051 **.00201**	260 **853**	0.063 **.00248**
	200 **656**	0.022 **.00087**	220 **722**	0.031 **.00122**	240 **787**	0.046 **.00181**	260 **853**	0.048 **.00189**	260 **853**	0.048 **.00189**	260 **853**	0.051 **.00201**	260 **853**	0.063 **.00248**
	200 **656**	0.022 **.00087**	220 **722**	0.031 **.00122**	240 **787**	0.046 **.00181**	260 **853**	0.048 **.00189**	260 **853**	0.048 **.00189**	260 **853**	0.051 **.00201**	260 **853**	0.063 **.00248**
	200 **656**	0.022 **.00087**	220 **722**	0.031 **.00122**	240 **787**	0.046 **.00181**	260 **853**	0.048 **.00189**	260 **853**	0.048 **.00189**	260 **853**	0.051 **.00201**	260 **853**	0.063 **.00248**
	200 **656**	0.022 **.00087**	220 **722**	0.031 **.00122**	240 **787**	0.046 **.00181**	260 **853**	0.048 **.00189**	260 **853**	0.048 **.00189**	260 **853**	0.051 **.00201**	260 **853**	0.063 **.00248**
	200 **656**	0.022 **.00087**	220 **722**	0.031 **.00122**	240 **787**	0.046 **.00181**	260 **853**	0.048 **.00189**	260 **853**	0.048 **.00189**	260 **853**	0.051 **.00201**	260 **853**	0.063 **.00248**
	100 **328**	0.008 **.00032**	100 **328**	0.009 **.00035**	100 **328**	0.012 **.00047**	120 **394**	0.016 **.00063**	120 **394**	0.016 **.00063**	120 **394**	0.017 **.00067**	120 **394**	0.018 **.00071**
	120 **394**	0.017 **.00067**	130 **427**	0.024 **.00095**	130 **427**	0.032 **.00126**	150 **492**	0.035 **.00138**	150 **492**	0.035 **.00138**	150 **492**	0.037 **.00146**	150 **492**	0.040 **.00146**
	120 **394**	0.017 **.00067**	130 **427**	0.024 **.00095**	130 **427**	0.032 **.00126**	150 **492**	0.035 **.00138**	150 **492**	0.035 **.00138**	150 **492**	0.037 **.00146**	150 **492**	0.040 **.00146**
	100 **328**	0.008 **.00032**	100 **328**	0.009 **.00035**	100 **328**	0.012 **.00047**	120 **394**	0.016 **.00063**	120 **394**	0.016 **.00063**	120 **394**	0.017 **.00067**	120 **394**	0.018 **.00071**

CRAZYMILL by Mikron Tool Cool

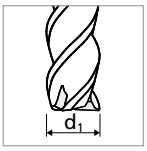
NEW Type A - Side milling - Finishing

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Finishing



- $a_p = 2.5 \times d_1$
- $a_e = 0.05 - 0.10 \times d_1$



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	f_z
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	130 **425**	0.008 **.00032**
		1.0401	C15	AISI 1015		
		1.1191	C45E/CK45	AISI 1045		
		1.0044	S275JR	AISI 1020		
		1.0715	11SMn30	AISI 1215		
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	130 **425**	0.007 **.00028**
		1.7131	16MnCr5	AISI 5115		
		1.3505	100Cr6	AISI 52100		
		1.7225	42CrMo4	AISI 4140		
		1.2842	90MnCrV8	AISI O2		
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	130 **425**	0.006 **.00024**
		1.2436	X210CrW12	AISI D4/D6		
		1.3343	HS6-5-2C	AISI M2 / UNS T11302		
		1.3355	HS18-0-1	AISI T1 / UNS T12001		
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	130 **425**	0.008 **.00032**
		1.4105	X6CrMoS17	AISI 430F		
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	130 **425**	0.008 **.00032**
		1.4112	X90CrMoV18	AISI 440B		
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	130 **425**	0.008 **.00032**
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH		
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	130 **425**	0.006 **.00024**
		1.4435	X2CrNiMo18-14-3	AISI 316L		
		1.4441	X2CrNiMo18-15-3	AISI 316LM		
		1.4539	X1NiCrMoCu25-20-5	AISI 904L		
K	Cast iron	0.6020	GG20	ASTM 30	110 **361**	0.006 **.00024**
		0.6030	GG30	ASTM 40B		
		0.7040	GGG40	ASTM 60-40-18		
		0.7060	GGG60	ASTM 80-60-03		
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	130 **425**	0.009 **.00035**
		3.4365	AlZnMgCu1.5	ASTM 7075		
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	130 **425**	0.009 **.00035**
		3.2381	GD-AlSi10Mg	UNS A03590		
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	130 **425**	0.010 **.00039**
		2.0065	Cu-ETP / CW004A	UNS C11000		
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	130 **425**	0.010 **.00039**
		2.0360	CuZn40 CW509L	UNS C28000		
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	130 **425**	0.010 **.00039**
		2.1020	CuSn6	UNS C51900		
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	130 **425**	0.009 **.00035**
		2.0960	CuAl9Mn2	UNS C63200		
S_1	Super alloys	2.4856		Inconel 625	110 **361**	0.004 **.00016**
		2.4668		Inconel 718		
		2.4617	NiMo28	Hastelloy B-2		
		2.4665	NiCr22Fe18Mo	Hastelloy X		
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	110 **361**	0.008 **.00032**
		3.7065	Gr.4	ASTM B348 / F68		
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	110 **361**	0.008 **.00032**
		9.9367	TiAl6Nb7	ASTM F1295		
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	110 **361**	0.004 **.00016**
			CrCoMo28	ASTM F1537		
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1		
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2		

v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P ●	N ●	S_3 ●
M ●	S_1 ●	H_1 ⊠
K ●	S_2 ●	H_2 ⊠

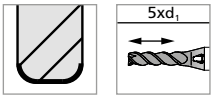
1/16" 1.5 mm | **.059"**		3/32" 2.0 mm | **.079"**		1/8" 3.0 mm | **.118"**		Ød1 5/32" 4.0 mm | **.157"**		3/16" - 7/32" 5.0 mm | **.197"**		1/4" 6.0 mm | **.236"**		8.0 mm | **.315"**	
v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
180 **591**	0.012 **.00047**	200 **656**	0.017 **.00067**	210 **688**	0.023 **.000091**	220 **772**	0.025 **.00098**	220 **772**	0.028 **.00110**	220 **772**	0.033 **.00130**	220 **772**	0.042 **.00165**
180 **591**	0.011 **.00043**	200 **656**	0.016 **.00063**	210 **688**	0.022 **.00087**	220 **772**	0.024 **.00095**	220 **772**	0.026 **.00102**	220 **772**	0.029 **.00114**	220 **772**	0.038 **.00150**
180 **591**	0.010 **.00039**	200 **656**	0.015 **.00059**	210 **688**	0.020 **.00079**	220 **772**	0.021 **.00083**	220 **772**	0.023 **.00091**	220 **772**	0.025 **.00098**	220 **772**	0.034 **.00134**
180 **591**	0.012 **.00047**	200 **656**	0.017 **.00067**	210 **688**	0.022 **.00087**	220 **772**	0.024 **.00095**	220 **772**	0.026 **.00102**	220 **772**	0.029 **.00114**	220 **772**	0.036 **.00142**
180 **591**	0.011 **.00043**	200 **656**	0.016 **.00063**	210 **688**	0.022 **.00087**	220 **772**	0.023 **.00091**	220 **772**	0.025 **.00098**	220 **772**	0.028 **.00110**	220 **772**	0.037 **.00146**
180 **591**	0.011 **.00043**	200 **656**	0.016 **.00063**	210 **688**	0.022 **.00087**	220 **772**	0.023 **.00091**	220 **772**	0.025 **.00098**	220 **772**	0.028 **.00110**	220 **772**	0.037 **.00146**
180 **591**	0.008 **.00032**	200 **656**	0.015 **.00059**	210 **688**	0.020 **.00079**	220 **772**	0.022 **.00087**	220 **772**	0.024 **.00095**	220 **772**	0.026 **.00102**	220 **772**	0.035 **.00138**
130 **427**	0.012 **.00047**	150 **492**	0.014 **.00055**	160 **525**	0.022 **.00087**	170 **558**	0.025 **.00098**	170 **558**	0.029 **.00114**	170 **558**	0.031 **.00122**	200 **656**	0.040 **.00157**
180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
120 **394**	0.005 **.00020**	130 **427**	0.005 **.00020**	130 **427**	0.008 **.00032**	140 **459**	0.010 **.00039**	140 **459**	0.011 **.00043**	150 **492**	0.012 **.00047**	160 **525**	0.021 **.00083**
120 **394**	0.010 **.00039**	130 **427**	0.014 **.00055**	130 **427**	0.020 **.00079**	140 **459**	0.022 **.00087**	150 **492**	0.024 **.00095**	150 **492**	0.026 **.00102**	160 **525**	0.035 **.00138**
120 **394**	0.010 **.00039**	130 **427**	0.014 **.00055**	130 **427**	0.020 **.00079**	140 **459**	0.022 **.00087**	150 **492**	0.024 **.00095**	150 **492**	0.026 **.00102**	160 **525**	0.035 **.00138**
120 **394**	0.005 **.00020**	130 **427**	0.005 **.00020**	130 **427**	0.008 **.00032**	140 **459**	0.010 **.00039**	140 **459**	0.011 **.00043**	150 **492**	0.012 **.00047**	160 **525**	0.021 **.00083**

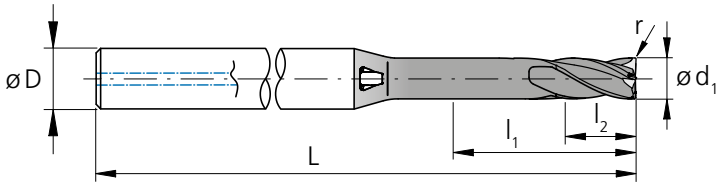
CRAZYMILL by Mikron Tool Cool

NEW Type C - 5 x d - Corner radius - Z3

MILLING WITH INTEGRATED COOLING

P&S - Corner radius





l_1 = Effective length
l_2 = Cutting length

d_1 [inch]	d_1 [inch]	d_1 [mm]	l_1 [inch]	l_1 [mm]	l_2 [mm]	D (h6) [mm]	L [inch]	L [mm]	r [inch]	r [mm]	Item number	Availability
	.039	1.0	.197	5.00	2.00	4	1.57	40	.0039	0.10	2.CMC42.C2Z3.100.1	■
	.039	1.0	.197	5.00	2.00	4	1.57	40	.0079	0.20	2.CMC42.C3Z3.100.1	■
	.043	1.1	.217	5.50	2.20	4	1.57	40	.0039	0.10	2.CMC42.C2Z3.110.1	■
	.043	1.1	.217	5.50	2.20	4	1.57	40	.0079	0.20	2.CMC42.C3Z3.110.1	■
	.047	1.2	.236	6.00	2.40	4	1.57	40	.0039	0.10	2.CMC42.C2Z3.120.1	■
	.047	1.2	.236	6.00	2.40	4	1.57	40	.0079	0.20	2.CMC42.C3Z3.120.1	■
	.051	1.3	.256	6.50	2.60	4	1.57	40	.0039	0.10	2.CMC42.C2Z3.130.1	■
	.051	1.3	.256	6.50	2.60	4	1.57	40	.0079	0.20	2.CMC42.C3Z3.130.1	■
	.055	1.4	.276	7.00	2.80	4	1.57	40	.0039	0.10	2.CMC42.C2Z3.140.1	■
	.055	1.4	.276	7.00	2.80	4	1.57	40	.0079	0.20	2.CMC42.C3Z3.140.1	■
	.059	1.5	.295	7.50	3.00	4	1.57	40	.0039	0.10	2.CMC42.C2Z3.150.1	■
	.059	1.5	.295	7.50	3.00	4	1.57	40	.0118	0.30	2.CMC42.C3Z3.150.1	■
1/16	.0625	1.587	.312	7.94	3.17	4	1.77	45	.0050	0.127	2.CMC.PSRC2Z3.F116	■
1/16	.0625	1.587	.312	7.94	3.17	4	1.77	45	.0100	0.254	2.CMC.PSRC3Z3.F116	■
	.063	1.6	.315	8.00	3.20	4	1.77	45	.0039	0.10	2.CMC42.C2Z3.160.1	■
	.063	1.6	.315	8.00	3.20	4	1.77	45	.0118	0.30	2.CMC42.C3Z3.160.1	■
	.067	1.7	.335	8.50	3.40	4	1.77	45	.0039	0.10	2.CMC42.C2Z3.170.1	■
	.067	1.7	.335	8.50	3.40	4	1.77	45	.0118	0.30	2.CMC42.C3Z3.170.1	■
	.071	1.8	.354	9.00	3.60	4	1.77	45	.0039	0.10	2.CMC42.C2Z3.180.1	■
	.071	1.8	.354	9.00	3.60	4	1.77	45	.0118	0.30	2.CMC42.C3Z3.180.1	■
	.075	1.9	.374	9.50	3.80	4	1.73	44	.0039	0.10	2.CMC42.C2Z3.190.1	■
	.075	1.9	.374	9.50	3.80	4	1.73	44	.0118	0.30	2.CMC42.C3Z3.190.1	■
	.079	2.0	.394	10.00	4.00	4	1.73	44	.0039	0.10	2.CMC42.C2Z3.200.1	■
	.079	2.0	.394	10.00	4.00	4	1.73	44	.0079	0.20	2.CMC42.C3Z3.200.1	■
	.079	2.0	.394	10.00	4.00	4	1.73	44	.0197	0.50	2.CMC42.C4Z3.200.1	■
	.083	2.1	.413	10.50	4.20	4	1.73	44	.0079	0.20	2.CMC42.C2Z3.210.1	■
	.083	2.1	.413	10.50	4.20	4	1.73	44	.0197	0.50	2.CMC42.C3Z3.210.1	■
	.087	2.2	.433	11.00	4.40	4	1.73	44	.0079	0.20	2.CMC42.C2Z3.220.1	■
	.087	2.2	.433	11.00	4.40	4	1.73	44	.0197	0.50	2.CMC42.C3Z3.220.1	■
	.091	2.3	.453	11.50	4.60	4	1.73	44	.0079	0.20	2.CMC42.C2Z3.230.1	■
	.091	2.3	.453	11.50	4.60	4	1.73	44	.0197	0.50	2.CMC42.C3Z3.230.1	■
3/32	.0937	2.381	.469	11.91	4.76	4	1.73	44	.0050	0.127	2.CMC.PSRC2Z3.F332	■
3/32	.0937	2.381	.469	11.91	4.76	4	1.73	44	.0100	0.254	2.CMC.PSRC3Z3.F332	■
3/32	.0937	2.381	.469	11.91	4.76	4	1.73	44	.0150	0.381	2.CMC.PSRC4Z3.F332	■
	.094	2.4	.472	12.00	4.80	4	1.73	44	.0079	0.20	2.CMC42.C2Z3.240.1	■
	.094	2.4	.472	12.00	4.80	4	1.73	44	.0197	0.50	2.CMC42.C3Z3.240.1	■
	.098	2.5	.492	12.50	5.00	6	2.17	55	.0079	0.20	2.CMC42.C2Z3.250.1	■
	.098	2.5	.492	12.50	5.00	6	2.17	55	.0197	0.50	2.CMC42.C3Z3.250.1	■
	.102	2.6	.512	13.00	5.20	6	2.17	55	.0079	0.20	2.CMC42.C2Z3.260.1	■
	.102	2.6	.512	13.00	5.20	6	2.17	55	.0197	0.50	2.CMC42.C3Z3.260.1	■
	.106	2.7	.531	13.50	5.40	6	2.17	55	.0079	0.20	2.CMC42.C2Z3.270.1	■
	.106	2.7	.531	13.50	5.40	6	2.17	55	.0197	0.50	2.CMC42.C3Z3.270.1	■

■ Stock item

Carbide | Z3 | 42° | eXedur SNP

Ø d_1	.004" - .118" (0.1 - 3.0 mm)		.122" - .236" (3.1 - 6.0 mm)		.240" - .315" (6.1 - 8.0 mm)	
Tolerance	- .00055" - .00110"	- 0.014 mm - 0.028 mm	- .00079" - .00150"	- 0.020 mm - 0.038 mm	- .00098" - .00185"	- 0.025 mm - 0.047 mm

r	.004" - .060" (0.1 - 1.524 mm)	
Tolerance	± .0020 · r mm	± 0.05 · r mm

d_1 [inch]	d_1 [inch]	d_1 [mm]	l_1 [inch]	l_1 [mm]	l_2 [mm]	D (h6) [mm]	L [inch]	L [mm]	r [inch]	r [mm]	Item number	Availability
	.110	2.8	.551	14.00	5.60	6	2.17	55	.0079	0.20	2.CMC42.C2Z3.280.1	■
	.110	2.8	.551	14.00	5.60	6	2.17	55	.0197	0.50	2.CMC42.C3Z3.280.1	■
	.114	2.9	.571	14.50	5.80	6	2.17	55	.0079	0.20	2.CMC42.C2Z3.290.1	■
	.114	2.9	.571	14.50	5.80	6	2.17	55	.0197	0.50	2.CMC42.C3Z3.290.1	■
	.118	3.0	.591	15.00	6.00	6	2.17	55	.0079	0.20	2.CMC42.C2Z3.300.1	■
	.118	3.0	.591	15.00	6.00	6	2.17	55	.0197	0.50	2.CMC42.C3Z3.300.1	■
	.122	3.1	.610	15.50	6.20	6	2.36	60	.0079	0.20	2.CMC42.C2Z3.310.1	■
	.122	3.1	.610	15.50	6.20	6	2.36	60	.0197	0.50	2.CMC42.C3Z3.310.1	■
1/8	.1250	3.175	.625	15.88	6.35	6	2.36	60	.0100	0.254	2.CMC.PSRC2Z3.F18	■
1/8	.1250	3.175	.625	15.88	6.35	6	2.36	60	.0150	0.381	2.CMC.PSRC3Z3.F18	■
	.130	3.3	.650	16.50	6.60	6	2.36	60	.0079	0.20	2.CMC42.C2Z3.330.1	■
	.130	3.3	.650	16.50	6.60	6	2.36	60	.0197	0.50	2.CMC42.C3Z3.330.1	■
	.146	3.7	.728	18.50	7.40	6	2.36	60	.0079	0.20	2.CMC42.C2Z3.370.1	■
	.146	3.7	.728	18.50	7.40	6	2.36	60	.0197	0.50	2.CMC42.C3Z3.370.1	■
5/32	.1562	3.968	.781	19.84	7.94	6	2.36	60	.0100	0.254	2.CMC.PSRC2Z3.F532	■
5/32	.1562	3.968	.781	19.84	7.94	6	2.36	60	.0150	0.381	2.CMC.PSRC3Z3.F532	■
	.157	4.0	.787	20.00	8.00	6	2.36	60	.0079	0.20	2.CMC42.C2Z3.400.1	■
	.157	4.0	.787	20.00	8.00	6	2.36	60	.0197	0.50	2.CMC42.C3Z3.400.1	■
	.169	4.3	.846	21.50	8.60	8	2.76	70	.0079	0.20	2.CMC42.C2Z3.430.1	■
	.169	4.3	.846	21.50	8.60	8	2.76	70	.0197	0.50	2.CMC42.C3Z3.430.1	■
	.185	4.7	.925	23.50	9.40	8	2.76	70	.0079	0.20	2.CMC42.C2Z3.470.1	■
	.185	4.7	.925	23.50	9.40	8	2.76	70	.0197	0.50	2.CMC42.C3Z3.470.1	■
3/16	.1875	4.762	.937	23.81	9.52	8	2.76	70	.0100	0.254	2.CMC.PSRC2Z3.F316	■
3/16	.1875	4.762	.937	23.81	9.52	8	2.76	70	.0150	0.381	2.CMC.PSRC3Z3.F316	■
	.189	4.8	.945	24.00	9.60	8	2.76	70	.0079	0.20	2.CMC42.C2Z3.480.1	■
	.189	4.8	.945	24.00	9.60	8	2.76	70	.0197	0.50	2.CMC42.C3Z3.480.1	■
	.197	5.0	.984	25.00	10.00	8	2.76	70	.0079	0.20	2.CMC42.C2Z3.500.1	■
	.197	5.0	.984	25.00	10.00	8	2.76	70	.0197	0.50	2.CMC42.C3Z3.500.1	■
	.209	5.3	1.04	26.50	10.60	10	2.76	70	.0079	0.20	2.CMC42.C2Z3.530.1	■
	.209	5.3	1.04	26.50	10.60	10	2.76	70	.0197	0.50	2.CMC42.C3Z3.530.1	■
7/32	.2189	5.560	1.09	27.80	11.12	10	2.76	70	.0150	0.381	2.CMC.PSRC2Z3.F732	■
7/32	.2189	5.560	1.09	27.80	11.12	10	2.76	70	.0300	0.762	2.CMC.PSRC3Z3.F732	■
	.224	5.7	1.12	28.50	11.40	10	2.76	70	.0079	0.20	2.CMC42.C2Z3.570.1	■
	.224	5.7	1.12	28.50	11.40	10	2.76	70	.0197	0.50	2.CMC42.C3Z3.570.1	■
	.236	6.0	1.18	30.00	12.00	10	2.76	70	.0079	0.20	2.CMC42.C2Z3.600.1	■
	.236	6.0	1.18	30.00	12.00	10	2.76	70	.0197	0.50	2.CMC42.C3Z3.600.1	■
	.236	6.0	1.18	30.00	12.00	10	2.76	70	.0394	1.00	2.CMC42.C4Z3.600.1	■
1/4	.2500	6.350	1.25	31.75	12.70	10	2.76	70	.0150	0.381	2.CMC.PSRC2Z3.F14	■
1/4	.2500	6.350	1.25	31.75	12.70	10	2.76	70	.0300	0.762	2.CMC.PSRC3Z3.F14	■
/4	.2500	6.350	1.25	31.75	12.70	10	2.76	70	.0600	1.524	2.CMC.PSRC4Z3.F14	■
	.315	8.0	1.57	40.00	16.00	12	3.54	90	.0079	0.20	2.CMC42.C2Z3.800.1	■
	.315	8.0	1.57	40.00	16.00	12	3.54	90	.0197	0.50	2.CMC42.C3Z3.800.1	■
	.315	8.0	1.57	40.00	16.00	12	3.54	90	.0591	1.50	2.CMC42.C4Z3.800.1	■

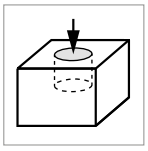
■ Stock item

CRAZYMILL by Mikron Tool Cool

NEW Type C - Plunge - Slot milling

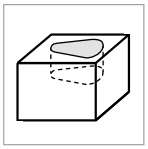
MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Plunge milling

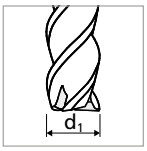


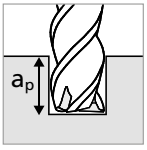
■ $f_{z,p}$: for plunge milling

Slot milling



■ $f_{z,p}$: for plunge milling
■ $f_{z,s}$: for slot milling





Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	$f_{z,p}$	$f_{z,s}$	a_p
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	100 **328**	0.0013 **.00005**	0.0046 **.00018**	0.5xd1
		1.0401	C15	AISI 1015				
		1.1191	C45E/CK45	AISI 1045				
		1.0044	S275JR	AISI 1020				
		1.0715	11SMn30	AISI 1215				
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	100 **328**	0.0014 **.00006**	0.0049 **.00019**	0.5xd1
		1.7131	16MnCr5	AISI 5115				
		1.3505	100Cr6	AISI 52100				
		1.7225	42CrMo4	AISI 4140				
		1.2842	90MnCrV8	AISI O2				
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	100 **328**	0.0012 **.00005**	0.0042 **.00017**	0.25xd1
		1.2436	X210CrW12	AISI D4/D6				
		1.3343	HS6-5-2C	AISI M2 / UNS T11302				
		1.3355	HS18-0-1	AISI T1 / UNS T12001				
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	100 **328**	0.0010 **.00004**	0.0035 **.00014**	0.5xd1
		1.4105	X6CrMoS17	AISI 430F				
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	100 **328**	0.0010 **.00004**	0.0035 **.00014**	0.25xd1
		1.4112	X90CrMoV18	AISI 440B				
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	100 **328**	0.0010 **.00004**	0.0035 **.00014**	0.25xd1
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH				
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	100 **328**	0.0010 **.00004**	0.0035 **.00014**	0.5xd1
		1.4435	X2CrNiMo18-14-3	AISI 316L				
		1.4441	X2CrNiMo18-15-3	AISI 316LM				
		1.4539	X1NiCrMoCu25-20-5	AISI 904L				
K	Cast iron	0.6020	GG20	ASTM 30	100 **328**	0.0013 **.00005**	0.0042 **.00017**	0.5xd1
		0.6030	GG30	ASTM 40B				
		0.7040	GGG40	ASTM 60-40-18				
		0.7060	GGG60	ASTM 80-60-03				
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	100 **328**	0.0012 **.00005**	0.0100 **.00039**	0.5xd1
		3.4365	AlZnMgCu1.5	ASTM 7075				
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	100 **328**	0.0012 **.00005**	0.0100 **.00039**	0.5xd1
		3.2381	GD-AlSi10Mg	UNS A03590				
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	100 **328**	0.0012 **.00005**	0.0100 **.00039**	0.5xd1
		2.0065	Cu-ETP / CW004A	UNS C11000				
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	100 **328**	0.0012 **.00005**	0.0100 **.00039**	0.5xd1
		2.0360	CuZn40 CW509L	UNS C28000				
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	100 **328**	0.0012 **.00005**	0.0100 **.00039**	0.5xd1
		2.1020	CuSn6	UNS C51900				
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	100 **328**	0.0012 **.00005**	0.0100 **.00039**	0.5xd1
		2.0960	CuAl9Mn2	UNS C63200				
S_1	Super alloys	2.4856		Inconel 625	40 **131**	0.0010 **.00004**	0.0035 **.00014**	0.25xd1
		2.4668		Inconel 718				
		2.4617	NiMo28	Hastelloy B-2				
		2.4665	NiCr22Fe18Mo	Hastelloy X				
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	80 **262**	0.0010 **.00004**	0.0032 **.00012**	0.25xd1
		3.7065	Gr.4	ASTM B348 / F68				
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	80 **262**	0.0010 **.00004**	0.0032 **.00012**	0.25xd1
		9.9367	TiAl6Nb7	ASTM F1295				
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	60 **197**	0.0010 **.00004**	0.0035 **.00014**	0.25xd1
			CrCoMo28	ASTM F1537				
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1				
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2				

v_c [m/min] | **[SFM]** a_p [mm] | **[inch]**
$f_{z,p}$ [mm] | **[IPT]** $f_{z,s}$ [mm] | **[IPT]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P ●	N ●	S_3 ●
M ●	S_1 ●	H_1 ⊠
K ●	S_2 ●	H_2 ⊠

Ød₁

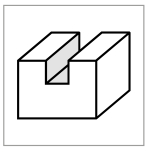
1/16" 1.5 mm | .059"				3/32" 2.0 mm | .079"				1/8" 3.0 mm | .118"				5/32" 4.0 mm | .157"				3/16" - 7/32" 5.0 mm | .197"				1/4" 6.0 mm - 8.0 mm | .236" - .315"			
v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p	v_c	$f_{z,p}$	$f_{z,s}$	a_p
120 **394**	0.0020 **.00008**	0.0065 **.00026**	0.5xd1	120 **394**	0.0026 **.00010**	0.0091 **.00036**	0.5xd1	140 **459**	0.004 **.00014**	0.013 **.00051**	0.5xd1	140 **459**	0.005 **.00020**	0.020 **.00077**	0.5xd1	150 **492**	0.005 **.00020**	0.026 **.00102**	0.5xd1	160 **525**	0.006 **.00024**	0.033 **.00128**	0.5xd1
120 **394**	0.0021 **.00008**	0.0070 **.00028**	0.5xd1	120 **394**	0.0028 **.00011**	0.0098 **.00039**	0.5xd1	140 **459**	0.004 **.00014**	0.014 **.00055**	0.5xd1	140 **459**	0.005 **.00020**	0.021 **.00083**	0.5xd1	150 **492**	0.006 **.00022**	0.027 **.00106**	0.5xd1	160 **525**	0.006 **.00024**	0.034 **.00133**	0.5xd1
120 **394**	0.0018 **.00007**	0.0060 **.00024**	0.25xd1	120 **394**	0.0024 **.00009**	0.0084 **.00033**	0.25xd1	140 **459**	0.003 **.00012**	0.012 **.00047**	0.25xd1	140 **459**	0.004 **.00016**	0.017 **.00068**	0.25xd1	150 **492**	0.004 **.00016**	0.022 **.00087**	0.25xd1	160 **525**	0.005 **.00020**	0.028 **.00108**	0.25xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	0.5xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	0.5xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	0.5xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	0.5xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	0.5xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	0.5xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	0.25xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	0.25xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	0.25xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	0.25xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	0.25xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	0.25xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	0.25xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	0.25xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	0.25xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	0.25xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	0.25xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	0.25xd1
120 **394**	0.0015 **.00006**	0.0050 **.00020**	0.5xd1	120 **394**	0.0020 **.00008**	0.0070 **.00028**	0.5xd1	140 **459**	0.003 **.00012**	0.010 **.00039**	0.5xd1	140 **459**	0.004 **.00016**	0.015 **.00059**	0.5xd1	150 **492**	0.004 **.00016**	0.020 **.00079**	0.5xd1	160 **525**	0.005 **.00020**	0.025 **.00098**	0.5xd1
120 **394**	0.0019 **.00007**	0.0060 **.00024**	0.5xd1	120 **394**	0.0024 **.00009**	0.0084 **.00033**	0.5xd1	140 **459**	0.004 **.00014**	0.012 **.00047**	0.5xd1	140 **459**	0.004 **.00016**	0.017 **.00068**	0.5xd1	150 **492**	0.005 **.00019**	0.022 **.00087**	0.5xd1	160 **525**	0.005 **.00020**	0.028 **.00108**	0.5xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	0.5xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	0.5xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	0.5xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	0.5xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	0.5xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	0.5xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	0.5xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	0.5xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	0.5xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	0.5xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	0.5xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	0.5xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	0.5xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	0.5xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	0.5xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	0.5xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	0.5xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	0.5xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	0.5xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	0.5xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	0.5xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	0.5xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	0.5xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	0.5xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	0.5xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	0.5xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	0.5xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	0.5xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	0.5xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	0.5xd1
120 **394**	0.0018 **.00007**	0.0160 **.00063**	0.5xd1	120 **394**	0.0024 **.00009**	0.0210 **.00083**	0.5xd1	150 **492**	0.004 **.00014**	0.034 **.00134**	0.5xd1	160 **525**	0.004 **.00016**	0.035 **.00138**	0.5xd1	170 **558**	0.005 **.00019**	0.036 **.00142**	0.5xd1	180 **591**	0.005 **.00020**	0.037 **.00146**	0.5xd1
40 **131**	0.0015 **.00006**	0.0050 **.00020**	0.25xd1	50 **164**	0.0020 **.00008**	0.0070 **.00028**	0.25xd1	50 **164**	0.003 **.00012**	0.010 **.00039**	0.25xd1	60 **197**	0.004 **.00016**	0.014 **.00053**	0.25xd1	80 **262**	0.004 **.00016**	0.018 **.00071**	0.25xd1	80 **262**	0.005 **.00020**	0.021 **.00084**	0.25xd1
90 **295**	0.0014 **.00005**	0.0045 **.00018**	0.25xd1	100 **328**	0.0018 **.00007**	0.0063 **.00025**	0.25xd1	110 **361**	0.003 **.00012**	0.010 **.00039**	0.25xd1	120 **394**	0.004 **.00016**	0.013 **.00050**	0.25xd1	120 **394**	0.004 **.00016**	0.016 **.00064**	0.25xd1	120 **394**	0.005 **.00020**	0.019 **.00075**	0.25xd1
90 **295**	0.0014 **.00005**	0.0045 **.00018**	0.25xd1	100 **328**	0.0018 **.00007**	0.0063 **.00025**	0.25xd1	110 **361**	0.003 **.00012**	0.010 **.00039**	0.25xd1	120 **394**	0.004 **.00016**	0.013 **.00050**	0.25xd1	120 **394**	0.004 **.00016**	0.016 **.00064**	0.25xd1	120 **394**	0.005 **.00020**	0.019 **.00075**	0.25xd1
60 **197**	0.0015 **.00006**	0.0050 **.00020**	0.25xd1	80 **262**	0.0020 **.00008**	0.0070 **.00028**	0.25xd1	80 **262**	0.003 **.00012**	0.010 **.00039**	0.25xd1	100 **328**	0.004 **.00016**	0.014 **.00053**	0.25xd1	100 **328**	0.004 **.00016**	0.018 **.00071**	0.25xd1	120 **394**	0.005 **.00020**	0.021 **.00084**	0.25xd1

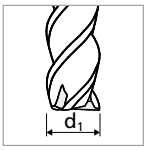
CRAZYMILL by Mikron Tool Cool

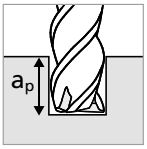
NEW Type C - Milling of through slots

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Through slot milling







Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	f_z	a_p
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	120 **394**	0.009 **.00035**	0.5xd1
		1.0401	C15	AISI 1015			
		1.1191	C45E/CK45	AISI 1045			
		1.0044	S275JR	AISI 1020			
		1.0715	11SMn30	AISI 1215			
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	120 **394**	0.008 **.00032**	0.5xd1
		1.7131	16MnCr5	AISI 5115			
		1.3505	100Cr6	AISI 52100			
		1.7225	42CrMo4	AISI 4140			
		1.2842	90MnCrV8	AISI O2			
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	120 **394**	0.006 **.00024**	0.25xd1
		1.2436	X210CrW12	AISI D4/D6			
		1.3343	HS6-5-2C	AISI M2 / UNS T11302			
		1.3355	HS18-0-1	AISI T1 / UNS T12001			
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	120 **394**	0.009 **.00035**	0.5xd1
		1.4105	X6CrMoS17	AISI 430F			
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	120 **394**	0.009 **.00035**	0.5xd1
		1.4112	X90CrMoV18	AISI 440B			
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	120 **394**	0.009 **.00035**	0.5xd1
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH			
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	120 **394**	0.007 **.00028**	0.5xd1
		1.4435	X2CrNiMo18-14-3	AISI 316L			
		1.4441	X2CrNiMo18-15-3	AISI 316LM			
		1.4539	X1NiCrMoCu25-20-5	AISI 904L			
K	Cast iron	0.6020	GG20	ASTM 30	100 **328**	0.007 **.00028**	0.5xd1
		0.6030	GG30	ASTM 40B			
		0.7040	GGG40	ASTM 60-40-18			
		0.7060	GGG60	ASTM 80-60-03			
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	170 **558**	0.010 **.00039**	0.5xd1
		3.4365	AlZnMgCu1.5	ASTM 7075			
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	170 **558**	0.010 **.00039**	0.5xd1
		3.2381	GD-AlSi10Mg	UNS A03590			
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	170 **558**	0.012 **.00047**	0.5xd1
		2.0065	Cu-ETP / CW004A	UNS C11000			
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	170 **558**	0.012 **.00047**	0.5xd1
		2.0360	CuZn40 CW509L	UNS C28000			
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	170 **558**	0.012 **.00047**	0.5xd1
		2.1020	CuSn6	UNS C51900			
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	170 **558**	0.011 **.00043**	0.5xd1
		2.0960	CuAl9Mn2	UNS C63200			
S_1	Super alloys	2.4856		Inconel 625	80 **262**	0.005 **.00020**	0.25xd1
		2.4668		Inconel 718			
		2.4617	NiMo28	Hastelloy B-2			
		2.4665	NiCr22Fe18Mo	Hastelloy X			
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	80 **262**	0.009 **.00035**	0.25xd1
		3.7065	Gr.4	ASTM B348 / F68			
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	80 **262**	0.009 **.00035**	0.25xd1
		9.9367	TiAl6Nb7	ASTM F1295			
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	80 **262**	0.005 **.00020**	0.25xd1
			CrCoMo28	ASTM F1537			
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1			
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2			

v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**
a_p[mm] | **[inch]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P ●	N ●	S_3 ●
M ●	S_1 ●	H_1 ⊠
K ●	S_2 ●	H_2 ⊠

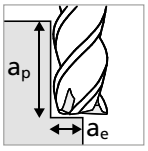
	Ød1																	
	1/16" 1.5 mm | **.059"**			**3/32"** 2.0 mm | **.079"**			**1/8"** 3.0 mm | **.118"**			**5/32"** 4.0 mm | **.157"**			**3/16" - 7/32"** 5.0 mm | **.197"**			**1/4"** 6.0 mm - 8.0 mm|**.236" - .315"**		
	v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p	v_c	f_z	a_p
	140 **459**	0.015 **.00059**	0.5xd1	160 **525**	0.020 **.00079**	0.5xd1	180 **591**	0.029 **.00114**	0.5xd1	200 **656**	0.031 **.00122**	0.5xd1	200 **656**	0.031 **.00122**	0.5xd1	220 **722**	0.032 **.00126**	0.5xd1
	140 **459**	0.013 **.00051**	0.5xd1	160 **525**	0.019 **.00075**	0.5xd1	180 **591**	0.028 **.00110**	0.5xd1	200 **656**	0.029 **.00114**	0.5xd1	200 **656**	0.030 **.00118**	0.5xd1	220 **722**	0.031 **.00122**	0.5xd1
	140 **459**	0.012 **.00047**	0.25xd1	160 **525**	0.017 **.00067**	0.25xd1	180 **591**	0.025 **.00098**	0.25xd1	200 **656**	0.026 **.00102**	0.25xd1	200 **656**	0.026 **.00102**	0.25xd1	220 **722**	0.027 **.00106**	0.25xd1
	140 **459**	0.015 **.00059**	0.5xd1	160 **525**	0.020 **.00079**	0.5xd1	180 **591**	0.028 **.00110**	0.5xd1	200 **656**	0.029 **.00114**	0.5xd1	200 **656**	0.030 **.00118**	0.5xd1	220 **722**	0.031 **.00122**	0.5xd1
	140 **459**	0.013 **.00051**	0.5xd1	160 **525**	0.019 **.00075**	0.5xd1	180 **591**	0.027 **.00106**	0.5xd1	200 **656**	0.028 **.00110**	0.5xd1	200 **656**	0.029 **.00114**	0.5xd1	220 **722**	0.029 **.00114**	0.5xd1
	140 **459**	0.013 **.00051**	0.5xd1	160 **525**	0.019 **.00075**	0.5xd1	180 **591**	0.027 **.00106**	0.5xd1	200 **656**	0.028 **.00110**	0.5xd1	200 **656**	0.029 **.00114**	0.5xd1	220 **722**	0.029 **.00114**	0.5xd1
	140 **459**	0.011 **.00043**	0.5xd1	160 **525**	0.017 **.00067**	0.5xd1	180 **591**	0.025 **.00098**	0.5xd1	200 **656**	0.027 **.00106**	0.5xd1	200 **656**	0.027 **.00106**	0.5xd1	220 **722**	0.028 **.00110**	0.5xd1
	120 **394**	0.015 **.00059**	0.5xd1	140 **459**	0.017 **.00067**	0.5xd1	160 **525**	0.025 **.00098**	0.5xd1	180 **591**	0.031 **.00122**	0.5xd1	200 **656**	0.031 **.00122**	0.5xd1	200 **656**	0.032 **.00126**	0.5xd1
	190 **623**	0.016 **.00063**	0.5xd1	210 **689**	0.021 **.00083**	0.5xd1	230 **755**	0.034 **.00134**	0.5xd1	250 **820**	0.035 **.00139**	0.5xd1	250 **820**	0.036 **.00142**	0.5xd1	270 **886**	0.037 **.00146**	0.5xd1
	190 **623**	0.016 **.00063**	0.5xd1	210 **689**	0.021 **.00083**	0.5xd1	230 **755**	0.032 **.00126**	0.5xd1	250 **820**	0.034 **.00134**	0.5xd1	250 **820**	0.034 **.00134**	0.5xd1	270 **886**	0.036 **.00142**	0.5xd1
	190 **623**	0.016 **.00063**	0.5xd1	210 **689**	0.021 **.00083**	0.5xd1	230 **755**	0.034 **.00134**	0.5xd1	250 **820**	0.035 **.00139**	0.5xd1	250 **820**	0.036 **.00142**	0.5xd1	270 **886**	0.037 **.00146**	0.5xd1
	190 **623**	0.016 **.00063**	0.5xd1	210 **689**	0.021 **.00083**	0.5xd1	230 **755**	0.034 **.00134**	0.5xd1	250 **820**	0.035 **.00139**	0.5xd1	250 **820**	0.036 **.00142**	0.5xd1	270 **886**	0.037 **.00146**	0.5xd1
	190 **623**	0.016 **.00063**	0.5xd1	210 **689**	0.021 **.00083**	0.5xd1	230 **755**	0.034 **.00134**	0.5xd1	250 **820**	0.035 **.00139**	0.5xd1	250 **820**	0.036 **.00142**	0.5xd1	270 **886**	0.037 **.00146**	0.5xd1
	190 **623**	0.016 **.00063**	0.5xd1	210 **689**	0.021 **.00083**	0.5xd1	230 **755**	0.034 **.00134**	0.5xd1	250 **820**	0.035 **.00139**	0.5xd1	250 **820**	0.036 **.00142**	0.5xd1	270 **886**	0.037 **.00146**	0.5xd1
	80 **262**	0.006 **.00024**	0.25xd1	100 **328**	0.007 **.00028**	0.25xd1	100 **328**	0.010 **.00039**	0.25xd1	120 **394**	0.013 **.00051**	0.25xd1	120 **394**	0.013 **.00051**	0.25xd1	120 **394**	0.013 **.00051**	0.25xd1
	80 **262**	0.012 **.00047**	0.25xd1	100 **328**	0.017 **.00067**	0.25xd1	100 **328**	0.027 **.00106**	0.25xd1	120 **394**	0.027 **.00106**	0.25xd1	120 **394**	0.027 **.00106**	0.25xd1	140 **459**	0.028 **.00110**	0.25xd1
	80 **262**	0.012 **.00047**	0.25xd1	100 **328**	0.017 **.00067**	0.25xd1	100 **328**	0.027 **.00106**	0.25xd1	120 **394**	0.027 **.00106**	0.25xd1	120 **394**	0.027 **.00106**	0.25xd1	140 **459**	0.028 **.00110**	0.25xd1
	80 **262**	0.006 **.00024**	0.25xd1	100 **328**	0.007 **.00028**	0.25xd1	100 **328**	0.010 **.00039**	0.25xd1	120 **394**	0.013 **.00051**	0.25xd1	120 **394**	0.013 **.00051**	0.25xd1	120 **394**	0.013 **.00051**	0.25xd1

CRAZYMILL by Mikron Tool Cool

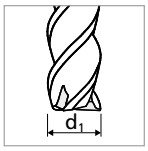
NEW Type C - Side milling - Semi-finishing

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Semi-finishing



- $a_p = 1 \times d_1 - 2 \times d_1$
- $a_e = 0.1 \times d_1$



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	f_z
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	120 **394**	0.017 **.00067**
		1.0401	C15	AISI 1015		
		1.1191	C45E/CK45	AISI 1045		
		1.0044	S275JR	AISI 1020		
		1.0715	11SMn30	AISI 1215		
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	120 **394**	0.016 **.00063**
		1.7131	16MnCr5	AISI 5115		
		1.3505	100Cr6	AISI 52100		
		1.7225	42CrMo4	AISI 4140		
		1.2842	90MnCrV8	AISI O2		
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	120 **394**	0.012 **.00035**
		1.2436	X210CrW12	AISI D4/D6		
		1.3343	HS6-5-2C	AISI M2 / UNS T11302		
		1.3355	HS18-0-1	AISI T1 / UNS T12001		
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	120 **394**	0.018 **.00055**
		1.4105	X6CrMoS17	AISI 430F		
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	120 **394**	0.017 **.00067**
		1.4112	X90CrMoV18	AISI 440B		
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	120 **394**	0.017 **.00067**
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH		
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	120 **394**	0.013 **.00039**
		1.4435	X2CrNiMo18-14-3	AISI 316L		
		1.4441	X2CrNiMo18-15-3	AISI 316LM		
		1.4539	X1NiCrMoCu25-20-5	AISI 904L		
K	Cast iron	0.6020	GG20	ASTM 30	100 **328**	0.012 **.00035**
		0.6030	GG30	ASTM 40B		
		0.7040	GGG40	ASTM 60-40-18		
		0.7060	GGG60	ASTM 80-60-03		
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	170 **558**	0.020 **.00059**
		3.4365	AlZnMgCu1.5	ASTM 7075		
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	170 **558**	0.020 **.00059**
		3.2381	GD-AlSi10Mg	UNS A03590		
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	170 **558**	0.022 **.00087**
		2.0065	Cu-ETP / CW004A	UNS C11000		
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	170 **558**	0.022 **.00087**
		2.0360	CuZn40 CW509L	UNS C28000		
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	170 **558**	0.022 **.00087**
		2.1020	CuSn6	UNS C51900		
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	170 **558**	0.020 **.00059**
		2.0960	CuAl9Mn2	UNS C63200		
S_1	Super alloys	2.4856		Inconel 625	100 **328**	0.008 **.00032**
		2.4668		Inconel 718		
		2.4617	NiMo28	Hastelloy B-2		
		2.4665	NiCr22Fe18Mo	Hastelloy X		
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	100 **328**	0.018 **.00071**
		3.7065	Gr.4	ASTM B348 / F68		
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	100 **328**	0.018 **.00071**
		9.9367	TiAl6Nb7	ASTM F1295		
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	100 **328**	0.008 **.00032**
			CrCoMo28	ASTM F1537		
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1		
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2		

v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P ●	N ●	S_3 ●
M ●	S_1 ●	H_1 ⊠
K ●	S_2 ●	H_2 ⊠

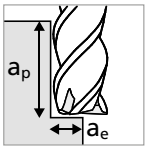
	Ød1 1/16" 1.5 mm | **.059"**		3/32" 2.0 mm | **.079"**		1/8" 3.0 mm | **.118"**		5/32" 4.0 mm | **.157"**		3/16" - 7/32" 5.0 mm | **.197"**		1/4" 6.0 mm | **.236"**		8.0 mm | **.315"**	
	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
	140 **459**	0.026 **.00079**	160 **525**	0.038 **.00150**	180 **591**	0.048 **.00146**	200 **656**	0.050 **.00197**	220 **722**	0.052 **.00205**	220 **722**	0.056 **.00169**	220 **722**	0.068 **.00268**
	140 **459**	0.025 **.00075**	160 **525**	0.036 **.00106**	180 **591**	0.044 **.00138**	200 **656**	0.048 **.00150**	220 **722**	0.050 **.00150**	220 **722**	0.054 **.00213**	220 **722**	0.066 **.00260**
	140 **459**	0.022 **.00087**	160 **525**	0.035 **.00102**	180 **591**	0.042 **.00165**	200 **656**	0.043 **.00134**	220 **722**	0.045 **.00134**	220 **722**	0.048 **.00189**	220 **722**	0.058 **.00228**
	140 **459**	0.026 **.00079**	160 **525**	0.038 **.00150**	180 **591**	0.046 **.00138**	200 **656**	0.048 **.00150**	220 **722**	0.050 **.00150**	220 **722**	0.055 **.00161**	220 **722**	0.062 **.00244**
	140 **459**	0.025 **.00075**	160 **525**	0.036 **.00106**	180 **591**	0.044 **.00138**	200 **656**	0.046 **.00146**	220 **722**	0.048 **.00146**	220 **722**	0.052 **.00205**	220 **722**	0.060 **.00236**
	140 **459**	0.025 **.00075**	160 **525**	0.036 **.00106**	180 **591**	0.044 **.00138**	200 **656**	0.046 **.00146**	220 **722**	0.048 **.00146**	220 **722**	0.052 **.00205**	220 **722**	0.060 **.00236**
	140 **459**	0.016 **.00055**	160 **525**	0.034 **.00102**	180 **591**	0.042 **.00165**	200 **656**	0.044 **.00138**	220 **722**	0.046 **.00138**	220 **722**	0.049 **.00146**	220 **722**	0.058 **.00228**
	120 **394**	0.026 **.00079**	140 **459**	0.032 **.00095**	160 **525**	0.043 **.00134**	180 **591**	0.054 **.00213**	200 **656**	0.056 **.00165**	200 **656**	0.058 **.00173**	200 **656**	0.070 **.00276**
	190 **623**	0.029 **.00114**	210 **689**	0.040 **.00122**	230 **755**	0.060 **.00181**	250 **820**	0.062 **.00244**	270 **886**	0.064 **.00252**	270 **886**	0.068 **.00268**	270 **886**	0.084 **.00331**
	190 **623**	0.029 **.00114**	210 **689**	0.040 **.00122**	230 **755**	0.060 **.00181**	250 **820**	0.062 **.00244**	270 **886**	0.064 **.00252**	270 **886**	0.068 **.00268**	270 **886**	0.084 **.00331**
	190 **623**	0.029 **.00114**	210 **689**	0.040 **.00122**	230 **755**	0.060 **.00181**	250 **820**	0.062 **.00244**	270 **886**	0.064 **.00252**	270 **886**	0.068 **.00268**	270 **886**	0.084 **.00331**
	190 **623**	0.029 **.00114**	210 **689**	0.040 **.00122**	230 **755**	0.060 **.00181**	250 **820**	0.062 **.00244**	270 **886**	0.064 **.00252**	270 **886**	0.068 **.00268**	270 **886**	0.084 **.00331**
	190 **623**	0.029 **.00114**	210 **689**	0.040 **.00122**	230 **755**	0.060 **.00181**	250 **820**	0.062 **.00244**	270 **886**	0.064 **.00252**	270 **886**	0.068 **.00268**	270 **886**	0.084 **.00331**
	190 **623**	0.029 **.00114**	210 **689**	0.040 **.00122**	230 **755**	0.060 **.00181**	250 **820**	0.062 **.00244**	270 **886**	0.064 **.00252**	270 **886**	0.068 **.00268**	270 **886**	0.084 **.00331**
	100 **328**	0.010 **.00032**	120 **394**	0.012 **.00035**	120 **394**	0.016 **.00063**	140 **459**	0.018 **.00071**	160 **525**	0.020 **.00079**	160 **525**	0.022 **.00087**	160 **525**	0.024 **.00094**
	100 **328**	0.022 **.00087**	120 **394**	0.032 **.00095**	120 **394**	0.042 **.00165**	140 **459**	0.044 **.00138**	160 **525**	0.046 **.00138**	160 **525**	0.048 **.00146**	160 **525**	0.054 **.00213**
	100 **328**	0.022 **.00087**	120 **394**	0.032 **.00095**	120 **394**	0.042 **.00165**	140 **459**	0.044 **.00138**	160 **525**	0.046 **.00138**	160 **525**	0.048 **.00146**	160 **525**	0.054 **.00213**
	100 **328**	0.010 **.00032**	120 **394**	0.012 **.00035**	120 **394**	0.016 **.00063**	140 **459**	0.018 **.00071**	160 **525**	0.020 **.00079**	160 **525**	0.022 **.00087**	160 **525**	0.024 **.00094**

CRAZYMILL by Mikron Tool Cool

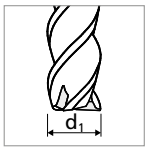
NEW Type C - Side milling - Finishing

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Finishing



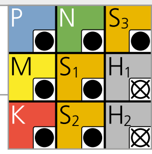
- $a_p = 2 \times d_1$
- $a_e = 0.02 - 0.05 \times d_1$



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039" v_c	f_z
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	130 **425**	0.008 **.00032**
		1.0401	C15	AISI 1015		
		1.1191	C45E/CK45	AISI 1045		
		1.0044	S275JR	AISI 1020		
		1.0715	11SMn30	AISI 1215		
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	130 **425**	0.007 **.00028**
		1.7131	16MnCr5	AISI 5115		
		1.3505	100Cr6	AISI 52100		
		1.7225	42CrMo4	AISI 4140		
		1.2842	90MnCrV8	AISI O2		
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	130 **425**	0.006 **.00024**
		1.2436	X210CrW12	AISI D4/D6		
		1.3343	HS6-5-2C	AISI M2 / UNS T11302		
		1.3355	HS18-0-1	AISI T1 / UNS T12001		
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	130 **425**	0.008 **.00032**
		1.4105	X6CrMoS17	AISI 430F		
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	130 **425**	0.008 **.00032**
		1.4112	X90CrMoV18	AISI 440B		
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	130 **425**	0.008 **.00032**
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH		
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	130 **425**	0.006 **.00024**
		1.4435	X2CrNiMo18-14-3	AISI 316L		
		1.4441	X2CrNiMo18-15-3	AISI 316LM		
		1.4539	X1NiCrMoCu25-20-5	AISI 904L		
K	Cast iron	0.6020	GG20	ASTM 30	110 **361**	0.006 **.00024**
		0.6030	GG30	ASTM 40B		
		0.7040	GGG40	ASTM 60-40-18		
		0.7060	GGG60	ASTM 80-60-03		
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	130 **425**	0.009 **.00035**
		3.4365	AlZnMgCu1.5	ASTM 7075		
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	130 **425**	0.009 **.00035**
		3.2381	GD-AlSi10Mg	UNS A03590		
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	130 **425**	0.010 **.00039**
		2.0065	Cu-ETP / CW004A	UNS C11000		
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	130 **425**	0.010 **.00039**
		2.0360	CuZn40 CW509L	UNS C28000		
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	130 **425**	0.010 **.00039**
		2.1020	CuSn6	UNS C51900		
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	130 **425**	0.009 **.00035**
		2.0960	CuAl9Mn2	UNS C63200		
S_1	Super alloys	2.4856		Inconel 625	110 **361**	0.004 **.00016**
		2.4668		Inconel 718		
		2.4617	NiMo28	Hastelloy B-2		
		2.4665	NiCr22Fe18Mo	Hastelloy X		
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	110 **361**	0.008 **.00032**
		3.7065	Gr.4	ASTM B348 / F68		
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	110 **361**	0.008 **.00032**
		9.9367	TiAl6Nb7	ASTM F1295		
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	110 **361**	0.004 **.00016**
			CrCoMo28	ASTM F1537		
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1		
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2		

v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended



	1/16" 1.5 mm | **.059"**		**3/32"** 2.0 mm | **.079"**		**1/8"** 3.0 mm | **.118"**		**Ød1** **5/32"** 4.0 mm | **.157"**		**3/16" - 7/32"** 5.0 mm | **.197"**		**1/4"** 6.0 mm | **.236"**		8.0 mm | **.315"**	
	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
	180 **591**	0.012 **.00047**	200 **656**	0.017 **.00067**	210 **688**	0.023 **.000091**	220 **772**	0.025 **.00098**	220 **772**	0.028 **.00110**	220 **772**	0.033 **.00130**	220 **772**	0.042 **.00165**
	180 **591**	0.011 **.00043**	200 **656**	0.016 **.00063**	210 **688**	0.022 **.00087**	220 **772**	0.024 **.00095**	220 **772**	0.026 **.00102**	220 **772**	0.029 **.00114**	220 **772**	0.038 **.00150**
	180 **591**	0.010 **.00039**	200 **656**	0.015 **.00059**	210 **688**	0.020 **.00079**	220 **772**	0.021 **.00083**	220 **772**	0.023 **.00091**	220 **772**	0.025 **.00098**	220 **772**	0.034 **.00134**
	180 **591**	0.012 **.00047**	200 **656**	0.017 **.00067**	210 **688**	0.022 **.00087**	220 **772**	0.024 **.00095**	220 **772**	0.026 **.00102**	220 **772**	0.029 **.00114**	220 **772**	0.036 **.00142**
	180 **591**	0.011 **.00043**	200 **656**	0.016 **.00063**	210 **688**	0.022 **.00087**	220 **772**	0.023 **.00091**	220 **772**	0.025 **.00098**	220 **772**	0.028 **.00110**	220 **772**	0.037 **.00146**
	180 **591**	0.011 **.00043**	200 **656**	0.016 **.00063**	210 **688**	0.022 **.00087**	220 **772**	0.023 **.00091**	220 **772**	0.025 **.00098**	220 **772**	0.028 **.00110**	220 **772**	0.037 **.00146**
	180 **591**	0.008 **.00032**	200 **656**	0.015 **.00059**	210 **688**	0.020 **.00079**	220 **772**	0.022 **.00087**	220 **772**	0.024 **.00095**	220 **772**	0.026 **.00102**	220 **772**	0.035 **.00138**
	130 **425**	0.012 **.00047**	150 **492**	0.014 **.00055**	160 **525**	0.022 **.00087**	170 **558**	0.025 **.00098**	170 **558**	0.029 **.00114**	170 **558**	0.031 **.00122**	200 **656**	0.040 **.00157**
	180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
	180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
	180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
	180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
	180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
	180 **591**	0.013 **.00051**	200 **656**	0.018 **.00071**	210 **688**	0.029 **.00114**	220 **772**	0.030 **.00118**	220 **772**	0.033 **.00130**	220 **772**	0.036 **.00142**	270 **886**	0.045 **.00177**
	120 **394**	0.005 **.00020**	130 **427**	0.005 **.00020**	130 **427**	0.008 **.00032**	140 **459**	0.010 **.00039**	140 **459**	0.011 **.00043**	150 **492**	0.012 **.00047**	160 **525**	0.021 **.00083**
	120 **394**	0.010 **.00039**	130 **427**	0.014 **.00055**	130 **427**	0.020 **.00079**	140 **459**	0.022 **.00087**	150 **492**	0.024 **.00095**	150 **492**	0.026 **.00102**	160 **525**	0.035 **.00138**
	120 **394**	0.010 **.00039**	130 **427**	0.014 **.00055**	150 **492**	0.020 **.00079**	140 **459**	0.022 **.00087**	150 **492**	0.024 **.00095**	150 **492**	0.026 **.00102**	160 **525**	0.035 **.00138**
	120 **394**	0.005 **.00020**	130 **427**	0.005 **.00020**	130 **427**	0.008 **.00032**	140 **459**	0.010 **.00039**	140 **459**	0.011 **.00043**	150 **492**	0.012 **.00047**	160 **525**	0.021 **.00083**

CRAZYMILL™ by Mikron Tool Cool

NEW Process

ACCURATE AND EFFICIENT MILLING

Coolant type, pressure and filtration

Coolant: for best results, Mikron Tool recommends the use of cutting oil as coolant. Alternatively, emulsion of 8% or more with EP-Additives (Extreme-Pressure-Additives) can be used as well.

Filter: the large cooling channels permit the use of a standard filter with filter quality of ≤ 0.05 mm.

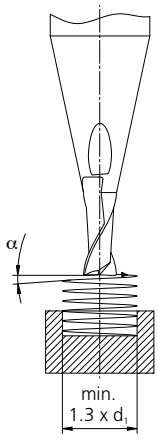
Coolant pressure: at least 15 bar coolant pressure is required to achieve reliable milling. High pressure is generally better for the cooling and flushing effect.

Revolution	[rpm]	≤ 10'000	> 10'000
Minimal pressure	[bar]	15	30
	[psi]	**218**	**435**

Tool holders

For optimal use of the tool, Mikron Tool recommends a shrink fit collet as per DIN 69871 or as an alternative a hydraulic tool holder. For additional information regarding tool holding refer to "Technical Information" in our main catalogue.

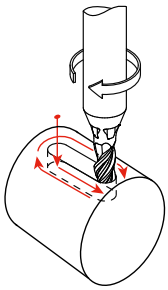
Maximum plunge angles in linear ramp or helical interpolation



	Material	α - Linear ramp	α - Helical interpolation
P	Unalloyed carbon steel	45°	47°
	Low alloyed steel	45°	47°
	High alloyed tool steel	27°	28°
M	Stainless steel ferritic	45°	47°
	Stainless steel martensitic	27°	28°
	Stainless steel martensitic - PH	27°	28°
	Stainless steel austenitic	45°	47°
K	Cast iron	45°	47°
N	Aluminium alloy wrought	45°	47°
	Aluminium alloy cast	45°	47°
	Copper	45°	47°
	Brass lead free	45°	47°
	Brass, Bronze Rm < 400 N/mm²	45°	47°
	Bronze Rm < 600 N/mm²	45°	47°
S_1	Super alloys	14°	15°
S_2	Titanium pure and titanium alloys	14°	15°
S_3	CrCo alloys	27°	28°

Milling process

A. Milling of keyways - only for type A

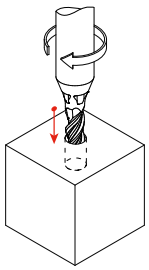


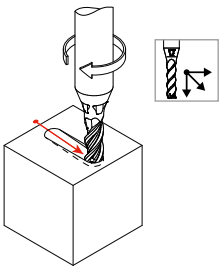
Mikron Tool recommends a maching process in 3 steps to guarantee the tolerance of the slot:

- **1. Plunge milling or plunging with a linear ramp**
- **2. Slot milling**
- **3. Side milling (finishing milling)**

Mikron Tool generally recommends the time and space saving plunge milling (vertical). As an alternative, plunging with a linear ramp is also possible.

1. Plunge milling or Linear ramp

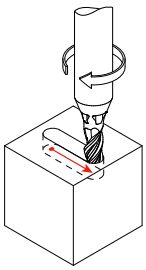




When plunge milling, an increase of the drilling diameter of approx. 0.05 mm respect to the tool diameter needs to be calculated. The maximum milling depth is 2.5 x d_1 ($a_{p,max}$ = 1 x d_1). For data regarding feed $\mathbf{f_{z,p}}$ refer to cutting data for plunge milling (page 16).

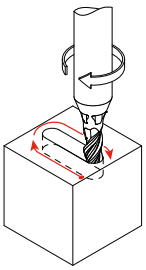
The maximum plunge angle α depends on the material and cannot be overcut (see table on the left).
For data regarding feed $\mathbf{f_{z,s}}$ refer to cutting data for keyway milling (page 16).

2. Slot milling



Attention: a finishing operation is provided after slot milling. For data regarding feed $\mathbf{f_{z,s}}$ refer to cutting data for slot milling (page 16). For the corresponding selection of tool (diameter) refer to the table "Tool selection" (page 38).

3. Side milling

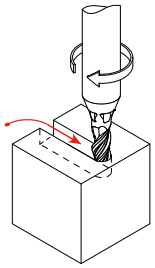


A finishing operation is necessary to reach the required tolerance and highest squareness.

CRAZYMILL by Mikron Tool Cool

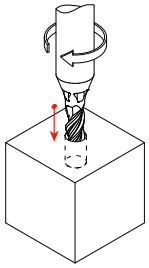
NEW Process

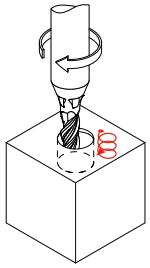
B. Milling of through slots



When milling through slots, the maximum cutting parameters can be applied. Refer to the cutting data page 18 / page 28.

C. Plunge milling

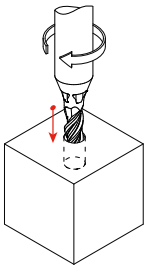




With CrazyMill Cool P&S, plunge milling (drilling) can be executed in two versions:

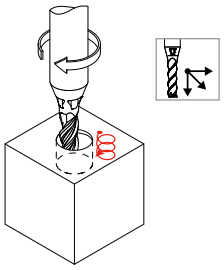
- **1. Direct plunge milling**
- **2. Plunging with helical interpolation**

1. Direct plunge milling



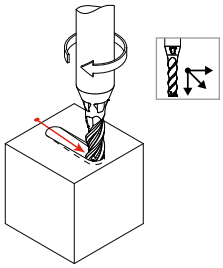
When plunge milling, an increase of the drilling diameter of approx. 0.05 mm respect to the tool diameter needs to be calculated. The maximum milling depth is 2.5 x d_1 - type A / 5 x d_1 - type C ($a_{p,max}$ = 1 x d_1). For data regarding feed $\mathbf{f_{z,p}}$ refer to cutting data for plunge milling (page 16 / page 26).

2. Plunging with helical interpolation



The maximum plunge angle α depends on the material and cannot be overcut (see table page 34). For data regarding feed $\mathbf{f_{z,s}}$ refer to cutting data for keyway milling (page 16 / page 26). Attention: the minimum diameter of the hole is $\mathbf{d_{hole} = 1.3 \times d_{tool}}$

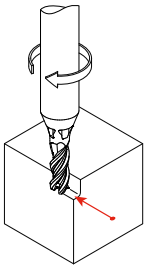
D. Linear ramp



The maximum plunge angle α depends on the material and cannot be overcut (see table page 34). For data regarding feed $\mathbf{f_{z,s}}$ refer to cutting data for keyway milling (page 16 / page 26).

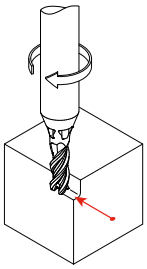
E. Side milling

Semi-finishing



Recommended cutting parameters:
v_c and f_z = as specified in the cutting data table
a_p = 1 - 2 x d
Type A: a_e = 0.2 x d
Type C: a_e = 0.1 x d

Finishing



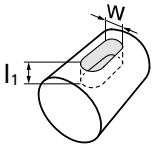
Recommended cutting parameters:
v_c and f_z = as specified in the cutting data table
Type A: a_p = 2.5 x d; a_e = 0.05 – 0.10 x d depending on required surface quality
Type C: a_p = 2 x d; a_e = 0.02 – 0.05 x d depending on required surface quality

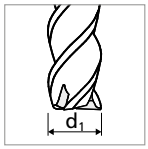
CRAZYMILL™ by Mikron Tool Cool

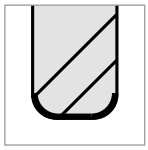
NEW Process CrazyMill Cool P&S - Type A

THE RIGHT TOOL FOR KEYWAY SLOTTING

Tool selection







w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,max}$ [inch]	$l_{1,max}$ [mm]	r [mm]	r [inch]	Item number
.043	1.1	.039	1.0	.098	2.50	0.10		2.CMC42.A2Z3.100.1
		.039	1.0	.098	2.50	0.20		2.CMC42.A3Z3.100.1
.047	1.2	.039	1.0	.098	2.50	0.10		2.CMC42.A2Z3.100.1
		.039	1.0	.098	2.50	0.20		2.CMC42.A3Z3.100.1
		.043	1.1	.108	2.75	0.10		2.CMC42.A2Z3.110.1
		.043	1.1	.108	2.75	0.20		2.CMC42.A3Z3.110.1
.051	1.3	.043	1.1	.108	2.75	0.10		2.CMC42.A2Z3.110.1
		.043	1.1	.108	2.75	0.20		2.CMC42.A3Z3.110.1
		.047	1.2	.118	3.00	0.10		2.CMC42.A2Z3.120.1
		.047	1.2	.118	3.00	0.20		2.CMC42.A3Z3.120.1
.055	1.4	.047	1.2	.118	3.00	0.10		2.CMC42.A2Z3.120.1
		.047	1.2	.118	3.00	0.20		2.CMC42.A3Z3.120.1
		.051	1.3	.128	3.25	0.10		2.CMC42.A2Z3.130.1
		.051	1.3	.128	3.25	0.20		2.CMC42.A3Z3.130.1
.059	1.5	.051	1.3	.128	3.25	0.10		2.CMC42.A2Z3.130.1
		.051	1.3	.128	3.25	0.20		2.CMC42.A3Z3.130.1
		.055	1.4	.138	3.50	0.10		2.CMC42.A2Z3.140.1
		.055	1.4	.138	3.50	0.20		2.CMC42.A3Z3.140.1
1/16	1.587	.055	1.4	.138	3.50	0.10		2.CMC42.A2Z3.140.1
		.055	1.4	.138	3.50	0.20		2.CMC42.A3Z3.140.1
		.059	1.5	.148	3.75	0.10		2.CMC42.A2Z3.150.1
		.059	1.5	.148	3.75	0.30		2.CMC42.A3Z3.150.1
.063	1.6	.055	1.4	.138	3.50	0.10		2.CMC42.A2Z3.140.1
		.055	1.4	.138	3.50	0.20		2.CMC42.A3Z3.140.1
		.059	1.5	.148	3.75	0.10		2.CMC42.A2Z3.150.1
		.059	1.5	.148	3.75	0.30		2.CMC42.A3Z3.150.1
.067	1.7	.059	1.5	.148	3.75	0.10		2.CMC42.A2Z3.150.1
		.059	1.5	.148	3.75	0.30		2.CMC42.A3Z3.150.1
		1/16	1.587	.156	3.97	0.127		2.CMC.PSRA2Z3.F116
		1/16	1.587	.156	3.97	0.254		2.CMC.PSRA3Z3.F116
		.063	1.6	.157	4.00	0.10		2.CMC42.A2Z3.160.1
		.063	1.6	.157	4.00	0.30		2.CMC42.A3Z3.160.1
.071	1.8	.059	1.5	.148	3.75	0.10		2.CMC42.A2Z3.150.1
		.059	1.5	.148	3.75	0.30		2.CMC42.A3Z3.150.1
		1/16	1.587	.156	3.97	0.127		2.CMC.PSRA2Z3.F116
		1/16	1.587	.156	3.97	0.254		2.CMC.PSRA3Z3.F116
		.063	1.6	.157	4.00	0.10		2.CMC42.A2Z3.160.1
		.063	1.6	.157	4.00	0.30		2.CMC42.A3Z3.160.1
.075	1.9	.063	1.6	.157	4.00	0.10		2.CMC42.A2Z3.160.1
		.063	1.6	.157	4.00	0.30		2.CMC42.A3Z3.160.1
		.067	1.7	.167	4.25	0.10		2.CMC42.A2Z3.170.1
		.067	1.7	.167	4.25	0.30		2.CMC42.A3Z3.170.1
.079	2.0	.067	1.7	.167	4.25	0.10		2.CMC42.A2Z3.170.1
		.067	1.7	.167	4.25	0.30		2.CMC42.A3Z3.170.1
		.071	1.8	.177	4.50	0.10		2.CMC42.A2Z3.180.1
		.071	1.8	.177	4.50	0.30		2.CMC42.A3Z3.180.1
.083	2.1	.071	1.8	.177	4.50	0.10		2.CMC42.A2Z3.180.1
		.071	1.8	.177	4.50	0.30		2.CMC42.A3Z3.180.1
		.075	1.9	.187	4.75	0.10		2.CMC42.A2Z3.190.1
		.075	1.9	.187	4.75	0.30		2.CMC42.A3Z3.190.1
.087	2.2	.075	1.9	.187	4.75	0.10		2.CMC42.A2Z3.190.1
		.075	1.9	.187	4.75	0.30		2.CMC42.A3Z3.190.1
		.079	2.0	.197	5.00	0.10		2.CMC42.A2Z3.200.1
		.079	2.0	.197	5.00	0.20		2.CMC42.A3Z3.200.1
		.079	2.0	.197	5.00	0.50		2.CMC42.A4Z3.200.1

w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,max}$ [inch]	$l_{1,max}$ [mm]	r [mm]	r [inch]	Item number
.091	2.3	.079	2.0	.197	5.00	0.10		2.CMC42.A2Z3.200.1
		.079	2.0	.197	5.00	0.20		2.CMC42.A3Z3.200.1
		.079	2.0	.197	5.00	0.50		2.CMC42.A4Z3.200.1
		.083	2.1	.207	5.25	0.20		2.CMC42.A2Z3.210.1
		.083	2.1	.207	5.25	0.50		2.CMC42.A3Z3.210.1
3/32	2.381	.079	2.0	.197	5.00	0.10		2.CMC42.A2Z3.200.1
		.079	2.0	.197	5.00	0.20		2.CMC42.A3Z3.200.1
		.079	2.0	.197	5.00	0.50		2.CMC42.A4Z3.200.1
		.083	2.1	.207	5.25	0.20		2.CMC42.A2Z3.210.1
		.083	2.1	.207	5.25	0.50		2.CMC42.A3Z3.210.1
		.087	2.2	.217	5.50	0.20		2.CMC42.A2Z3.220.1
		.087	2.2	.217	5.50	0.50		2.CMC42.A3Z3.220.1
.094	2.4	.079	2.0	.197	5.00	0.10		2.CMC42.A2Z3.200.1
		.079	2.0	.197	5.00	0.20		2.CMC42.A3Z3.200.1
		.079	2.0	.197	5.00	0.50		2.CMC42.A4Z3.200.1
		.083	2.1	.207	5.25	0.20		2.CMC42.A2Z3.210.1
		.083	2.1	.207	5.25	0.50		2.CMC42.A3Z3.210.1
		.087	2.2	.217	5.50	0.20		2.CMC42.A2Z3.220.1
		.087	2.2	.217	5.50	0.50		2.CMC42.A3Z3.220.1
.098	2.5	.083	2.1	.207	5.25	0.20		2.CMC42.A2Z3.210.1
		.083	2.1	.207	5.25	0.50		2.CMC42.A3Z3.210.1
		.087	2.2	.217	5.50	0.20		2.CMC42.A2Z3.220.1
		.087	2.2	.217	5.50	0.50		2.CMC42.A3Z3.220.1
		.091	2.3	.226	5.75	0.20		2.CMC42.A2Z3.230.1
		.091	2.3	.226	5.75	0.50		2.CMC42.A3Z3.230.1
.102	2.6	.087	2.2	.217	5.50	0.20		2.CMC42.A2Z3.220.1
		.087	2.2	.217	5.50	0.50		2.CMC42.A3Z3.220.1
		.091	2.3	.226	5.75	0.20		2.CMC42.A2Z3.230.1
		.091	2.3	.226	5.75	0.50		2.CMC42.A3Z3.230.1
		3/32	2.381	.234	5.95	0.127		2.CMC.PSRA2Z3.F332
		3/32	2.381	.234	5.95	0.254		2.CMC.PSRA3Z3.F332
		3/32	2.381	.234	5.95	0.381		2.CMC.PSRA4Z3.F332
		.094	2.4	.236	6.00	0.20		2.CMC42.A2Z3.240.1
		.094	2.4	.236	6.00	0.50		2.CMC42.A3Z3.240.1
.106	2.7	.091	2.3	.226	5.75	0.20		2.CMC42.A2Z3.230.1
		.091	2.3	.226	5.75	0.50		2.CMC42.A3Z3.230.1
		3/32	2.381	.234	5.95	0.127		2.CMC.PSRA2Z3.F332
		3/32	2.381	.234	5.95	0.254		2.CMC.PSRA3Z3.F332
		3/32	2.381	.234	5.95	0.381		2.CMC.PSRA4Z3.F332
		.094	2.4	.236	6.00	0.20		2.CMC42.A2Z3.240.1
		.094	2.4	.236	6.00	0.50		2.CMC42.A3Z3.240.1
		.098	2.5	.246	6.25	0.20		2.CMC42.A2Z3.250.1
		.098	2.5	.246	6.25	0.50		2.CMC42.A3Z3.250.1
.110	2.8	.094	2.4	.236	6.00	0.20		2.CMC42.A2Z3.240.1
		.094	2.4	.236	6.00	0.50		2.CMC42.A3Z3.240.1
		.098	2.5	.246	6.25	0.20		2.CMC42.A2Z3.250.1
		.098	2.5	.246	6.25	0.50		2.CMC42.A3Z3.250.1
		.102	2.6	.256	6.50	0.20		2.CMC42.A2Z3.260.1
		.102	2.6	.256	6.50	0.50		2.CMC42.A3Z3.260.1
.114	2.9	.098	2.5	.246	6.25	0.20		2.CMC42.A2Z3.250.1
		.098	2.5	.246	6.25	0.50		2.CMC42.A3Z3.250.1
		.102	2.6	.256	6.50	0.20		2.CMC42.A2Z3.260.1
		.102	2.6	.256	6.50	0.50		2.CMC42.A3Z3.260.1
		.106	2.7	.266	6.75	0.20		2.CMC42.A2Z3.270.1
		.106	2.7	.266	6.75	0.50		2.CMC42.A3Z3.270.1

w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,\,max}$ [inch]	$l_{1,\,max}$ [mm]	r [mm]	r [inch]	Item number
.118	3.0	.102	2.6	.256	6.50	0.20		2.CMC42.A2Z3.260.1
		.102	2.6	.256	6.50	0.50		2.CMC42.A3Z3.260.1
		.106	2.7	.266	6.75	0.20		2.CMC42.A2Z3.270.1
		.106	2.7	.266	6.75	0.50		2.CMC42.A3Z3.270.1
		.110	2.8	.276	7.00	0.20		2.CMC42.A2Z3.280.1
		.110	2.8	.276	7.00	0.50		2.CMC42.A3Z3.280.1
.122	3.1	.102	2.6	.256	6.50	0.20		2.CMC42.A2Z3.260.1
		.102	2.6	.256	6.50	0.50		2.CMC42.A3Z3.260.1
		.106	2.7	.266	6.75	0.20		2.CMC42.A2Z3.270.1
		.106	2.7	.266	6.75	0.50		2.CMC42.A3Z3.270.1
		.110	2.8	.276	7.00	0.20		2.CMC42.A2Z3.280.1
		.110	2.8	.276	7.00	0.50		2.CMC42.A3Z3.280.1
		.114	2.9	.285	7.25	0.20		2.CMC42.A2Z3.290.1
		.114	2.9	.285	7.25	0.50		2.CMC42.A3Z3.290.1
1/8	3.175	.106	2.7	.266	6.75	0.20		2.CMC42.A2Z3.270.1
		.106	2.7	.266	6.75	0.50		2.CMC42.A3Z3.270.1
		.110	2.8	.276	7.00	0.20		2.CMC42.A2Z3.280.1
		.110	2.8	.276	7.00	0.50		2.CMC42.A3Z3.280.1
		.114	2.9	.285	7.25	0.20		2.CMC42.A2Z3.290.1
		.114	2.9	.285	7.25	0.50		2.CMC42.A3Z3.290.1
.126	3.2	.106	2.7	.266	6.75	0.20		2.CMC42.A2Z3.270.1
		.106	2.7	.266	6.75	0.50		2.CMC42.A3Z3.270.1
		.110	2.8	.276	7.00	0.20		2.CMC42.A2Z3.280.1
		.110	2.8	.276	7.00	0.50		2.CMC42.A3Z3.280.1
		.114	2.9	.285	7.25	0.20		2.CMC42.A2Z3.290.1
		.114	2.9	.285	7.25	0.50		2.CMC42.A3Z3.290.1
		.118	3.0	.285	7.50	0.20		2.CMC42.A2Z3.300.1
		.118	3.0	.285	7.50	0.50		2.CMC42.A3Z3.300.1
.130	3.3	.110	2.8	.276	7.00	0.20		2.CMC42.A2Z3.280.1
		.110	2.8	.276	7.00	0.50		2.CMC42.A3Z3.280.1
		.114	2.9	.285	7.25	0.20		2.CMC42.A2Z3.290.1
		.114	2.9	.285	7.25	0.50		2.CMC42.A3Z3.290.1
		.118	3.0	.285	7.50	0.20		2.CMC42.A2Z3.300.1
		.118	3.0	.285	7.50	0.50		2.CMC42.A3Z3.300.1
		.122	3.1	.305	7.75	0.20		2.CMC42.A2Z3.310.1
		.122	3.1	.305	7.75	0.50		2.CMC42.A3Z3.310.1
.134	3.4	.114	2.9	.285	7.25	0.20		2.CMC42.A2Z3.290.1
		.114	2.9	.285	7.25	0.50		2.CMC42.A3Z3.290.1
		.118	3.0	.285	7.50	0.20		2.CMC42.A2Z3.300.1
		.118	3.0	.285	7.50	0.50		2.CMC42.A3Z3.300.1
		.122	3.1	.305	7.75	0.20		2.CMC42.A2Z3.310.1
		.122	3.1	.305	7.75	0.50		2.CMC42.A3Z3.310.1
.138	3.5	.118	3.0	.285	7.50	0.20		2.CMC42.A2Z3.300.1
		.118	3.0	.285	7.50	0.50		2.CMC42.A3Z3.300.1
		.122	3.1	.305	7.75	0.20		2.CMC42.A2Z3.310.1
		.122	3.1	.305	7.75	0.50		2.CMC42.A3Z3.310.1
		1/8	3.175	.313	7.94	0.254		2.CMC.PSRA2Z3.F18
		1/8	3.175	.313	7.94	0.381		2.CMC.PSRA3Z3.F18
		.130	3.3	.325	8.25	0.20		2.CMC42.A2Z3.330.1
		.130	3.3	.325	8.25	0.50		2.CMC42.A3Z3.330.1
.142	3.6	.118	3.0	.285	7.50	0.20		2.CMC42.A2Z3.300.1
		.118	3.0	.285	7.50	0.50		2.CMC42.A3Z3.300.1
		.122	3.1	.305	7.75	0.20		2.CMC42.A2Z3.310.1
		.122	3.1	.305	7.75	0.50		2.CMC42.A3Z3.310.1
		1/8	3.175	.313	7.94	0.254		2.CMC.PSRA2Z3.F18
		1/8	3.175	.313	7.94	0.381		2.CMC.PSRA3Z3.F18
		.130	3.3	.325	8.25	0.20		2.CMC42.A2Z3.330.1
		.130	3.3	.325	8.25	0.50		2.CMC42.A3Z3.330.1

w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,\,max}$ [inch]	$l_{1,\,max}$ [mm]	r [mm]	r [inch]	Item number
	3.7	.122	3.1	.305	7.75	0.20		2.CMC42.A2Z3.310.1
		.122	3.1	.305	7.75	0.50		2.CMC42.A3Z3.310.1
		1/8	3.175	.313	7.94	0.254		2.CMC.PSRA2Z3.F18
		1/8	3.175	.313	7.94	0.381		2.CMC.PSRA3Z3.F18
		.130	3.3	.325	8.25	0.20		2.CMC42.A2Z3.330.1
		.130	3.3	.325	8.25	0.50		2.CMC42.A3Z3.330.1
	3.8	.130	3.3	.325	8.25	0.20		2.CMC42.A2Z3.330.1
		.130	3.3	.325	8.25	0.50		2.CMC42.A3Z3.330.1
	3.9	.130	3.3	.325	8.25	0.20		2.CMC42.A2Z3.330.1
		.130	3.3	.325	8.25	0.50		2.CMC42.A3Z3.330.1
		.146	3.7	.364	9.25	0.20		2.CMC42.A2Z3.370.1
		.146	3.7	.364	9.25	0.50		2.CMC42.A3Z3.370.1
5/32	3.968	.130	3.3	.325	8.25	0.20		2.CMC42.A2Z3.330.1
		.130	3.3	.325	8.25	0.50		2.CMC42.A3Z3.330.1
		.146	3.7	.364	9.25	0.20		2.CMC42.A2Z3.370.1
		.146	3.7	.364	9.25	0.50		2.CMC42.A3Z3.370.1
	4.0	.146	3.7	.364	9.25	0.20		2.CMC42.A2Z3.370.1
		.146	3.7	.364	9.25	0.50		2.CMC42.A3Z3.370.1
	4.1	.146	3.7	.364	9.25	0.20		2.CMC42.A2Z3.370.1
		.146	3.7	.364	9.25	0.50		2.CMC42.A3Z3.370.1
	4.2	.146	3.7	.364	9.25	0.20		2.CMC42.A2Z3.370.1
		.146	3.7	.364	9.25	0.50		2.CMC42.A3Z3.370.1
		5/32	3.968	.391	9.92	0.254		2.CMC.PSRA2Z3.F532
		5/32	3.968	.391	9.92	0.381		2.CMC.PSRA3Z3.F532
		.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
	4.3	.146	3.7	.364	9.25	0.20		2.CMC42.A2Z3.370.1
		.146	3.7	.364	9.25	0.50		2.CMC42.A3Z3.370.1
		5/32	3.968	.391	9.92	0.254		2.CMC.PSRA2Z3.F532
		5/32	3.968	.391	9.92	0.381		2.CMC.PSRA3Z3.F532
		.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
	4.4	.146	3.7	.364	9.25	0.20		2.CMC42.A2Z3.370.1
		.146	3.7	.364	9.25	0.50		2.CMC42.A3Z3.370.1
		5/32	3.968	.391	9.92	0.254		2.CMC.PSRA2Z3.F532
		5/32	3.968	.391	9.92	0.381		2.CMC.PSRA3Z3.F532
		.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
	4.5	.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
		.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1
	4.6	.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
		.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1
	4.7	.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
		.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1
3/16	4.762	.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
		.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1
	4.8	.157	4.0	.394	10.00	0.20		2.CMC42.A2Z3.400.1
		.157	4.0	.394	10.00	0.50		2.CMC42.A3Z3.400.1
		.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1

CRAZYMILL by Mikron Tool Cool

NEW Process CrazyMill Cool P&S - Type A

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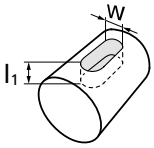
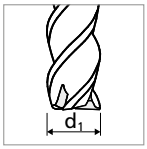
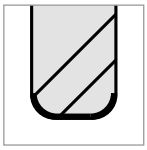
Tool selection







w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,max}$ [inch]	$l_{1,max}$ [mm]	r [mm]	r [inch]	Item number
.193	4.9	.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1
		.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
.197	5.0	.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1
		.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
.201	5.1	.169	4.3	.423	10.75	0.20		2.CMC42.A2Z3.430.1
		.169	4.3	.423	10.75	0.50		2.CMC42.A3Z3.430.1
		.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
.205	5.2	.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
		.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
.209	5.3	.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
		.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
.213	5.4	.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
		.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
.217	5.5	.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
		.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
		.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1

w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,max}$ [inch]	$l_{1,max}$ [mm]	r [mm]	r [inch]	Item number
7/32	5.560	.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
		.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
		.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1
.220	5.6	.185	4.7	.463	11.75	0.20		2.CMC42.A2Z3.470.1
		.185	4.7	.463	11.75	0.50		2.CMC42.A3Z3.470.1
		3/16	4.762	.469	11.91	0.254		2.CMC.PSRA2Z3.F316
		3/16	4.762	.469	11.91	0.381		2.CMC.PSRA3Z3.F316
		.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
		.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
		.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1
.224	5.7	.189	4.8	.472	12.00	0.20		2.CMC42.A2Z3.480.1
		.189	4.8	.472	12.00	0.50		2.CMC42.A3Z3.480.1
		.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
		.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1
.228	5.8	.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
		.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1
.232	5.9	.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
		.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1
		7/32	5.560	.547	13.90	0.381		2.CMC.PSRA2Z3.F732
		7/32	5.560	.547	13.90	0.762		2.CMC.PSRA3Z3.F732
		.224	5.7	.561	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	.561	14.25	0.50		2.CMC42.A3Z3.570.1
.236	6.0	.197	5.0	.492	12.50	0.20		2.CMC42.A2Z3.500.1
		.197	5.0	.492	12.50	0.50		2.CMC42.A3Z3.500.1
		.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1
		7/32	5.560	.547	13.90	0.381		2.CMC.PSRA2Z3.F732
		7/32	5.560	.547	13.90	0.762		2.CMC.PSRA3Z3.F732
		.224	5.7	.561	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	.561	14.25	0.50		2.CMC42.A3Z3.570.1
.240	6.1	.209	5.3	.522	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	.522	13.25	0.50		2.CMC42.A3Z3.530.1
		7/32	5.560	.547	13.90	0.381		2.CMC.PSRA2Z3.F732
		7/32	5.560	.547	13.90	0.762		2.CMC.PSRA3Z3.F732
		.224	5.7	.561	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	.561	14.25	0.50		2.CMC42.A3Z3.570.1

w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,\,max}$ [inch]	$l_{1,\,max}$ [mm]	r [mm]	r [inch]	Item number
		.209	5.3	**.522**	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	**.522**	13.25	0.50		2.CMC42.A3Z3.530.1
		7/32	5.560	**.547**	13.90	**0.381**		2.CMC.PSRA2Z3.F732
		7/32	5.560	**.547**	13.90	**0.762**		2.CMC.PSRA3Z3.F732
.244	6.2	**.224**	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
		.209	5.3	**.522**	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	**.522**	13.25	0.50		2.CMC42.A3Z3.530.1
		7/32	5.560	**.547**	13.90	**0.381**		2.CMC.PSRA2Z3.F732
		7/32	5.560	**.547**	13.90	**0.762**		2.CMC.PSRA3Z3.F732
.248	6.3	**.224**	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
		.209	5.3	**.522**	13.25	0.20		2.CMC42.A2Z3.530.1
		.209	5.3	**.522**	13.25	0.50		2.CMC42.A3Z3.530.1
		7/32	5.560	**.547**	13.90	**0.381**		2.CMC.PSRA2Z3.F732
		7/32	5.560	**.547**	13.90	**0.762**		2.CMC.PSRA3Z3.F732
1/4	6.350	**.224**	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
		.224	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
.252	6.4	**.236**	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
		.224	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
.256	6.5	**.236**	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
		.224	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
.260	6.6	**.236**	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
		1/4	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
		1/4	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		.224	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
.264	6.7	**.236**	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
		1/4	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
		1/4	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14

w slot [inch]	w slot [mm]	d_1 Tool [inch]	d_1 Tool [mm]	$l_{1,\,max}$ [inch]	$l_{1,\,max}$ [mm]	r [mm]	r [inch]	Item number
		.224	5.7	**.561**	14.25	0.20		2.CMC42.A2Z3.570.1
		.224	5.7	**.561**	14.25	0.50		2.CMC42.A3Z3.570.1
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
.268	6.8	**1/4**	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
		1/4	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
.272	6.9	**1/4**	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
		1/4	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
.276	7.0	**1/4**	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
		1/4	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
.280	7.1	**1/4**	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
		1/4	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		.236	6.0	**.591**	15.00	0.20		2.CMC42.A2Z3.600.1
		.236	6.0	**.591**	15.00	0.50		2.CMC42.A3Z3.600.1
		.236	6.0	**.591**	15.00	1.00		2.CMC42.A4Z3.600.1
.283	7.2	**1/4**	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
		1/4	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		1/4	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
.287	7.3	**1/4**	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		1/4	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
.291	7.4	**1/4**	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		1/4	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
.295	7.5	**1/4**	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
		1/4	6.350	**.625**	15.88	**0.381**		2.CMC.PSRA2Z3.F14
.299	7.6	**1/4**	6.350	**.625**	15.88	**0.762**		2.CMC.PSRA3Z3.F14
		1/4	6.350	**.625**	15.88	**1.524**		2.CMC.PSRA4Z3.F14
.323 - .378	8.2 - 9.6	**.315**	8.0	**.787**	20.00	0.20		2.CMC42.A2Z3.800.1
		.315	8.0	**.787**	20.00	0.50		2.CMC42.A3Z3.800.1
		.315	8.0	**.787**	20.00	1.50		2.CMC42.A4Z3.800.1

CRAZYMILL by Mikron Tool Cool

CrazyMill Cool P&S Square - Z3

ALREADY AVAILABLE: SQUARE VERSION

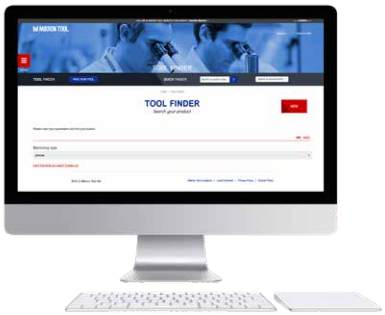
This product is well established on the market. Due to its special features, great customer benefits are guaranteed specially for difficult-to-machine materials such as stainless steels, titanium, CoCr alloys and super alloys. The design of the cutting edges permits to machine with the same advantages as with the corner radius version. This endmill can plunge perpendicularly into the material and is well adapted for milling of slots, pockets and sides in minimal spaces.

Advantages

- **SHORT MACHINING TIME** | Up to 5 times faster
- **LONG TOOL LIFE** | Up to 5 times longer
- **HIGH DEGREE OF PROCESS RELIABILITY** | Thanks to greater coolant flow
- **HIGH DEGREE OF PRECISION** | Thanks to specific cutting geometry

Item table, machining process and cutting data

For the square version, please refer to ToolBook 2020 on page 540 as well as on our website www.mikrontool.com for all details on item table, machining process and cutting data.



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