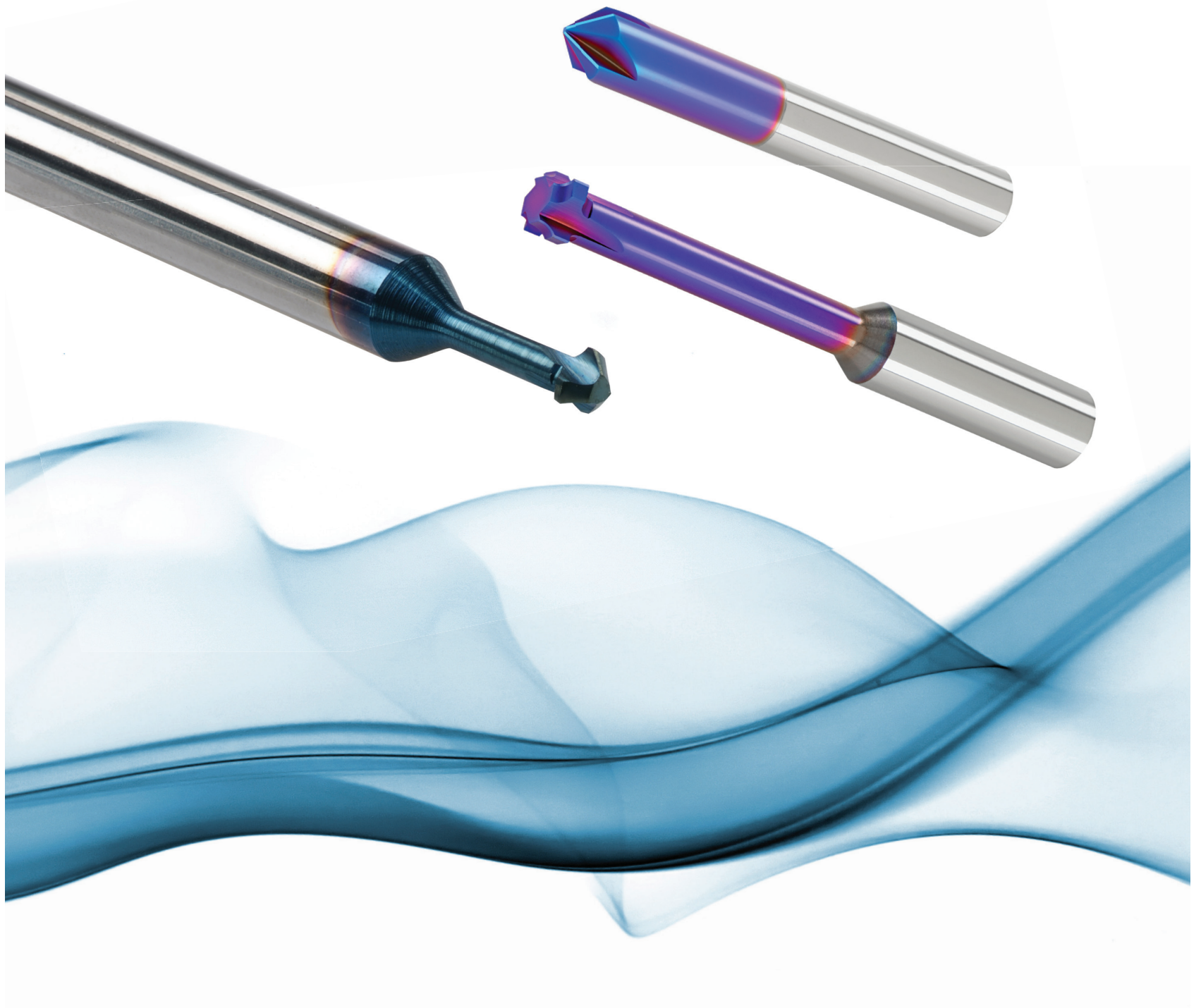


# Mini Chamfer and Countersink | B15

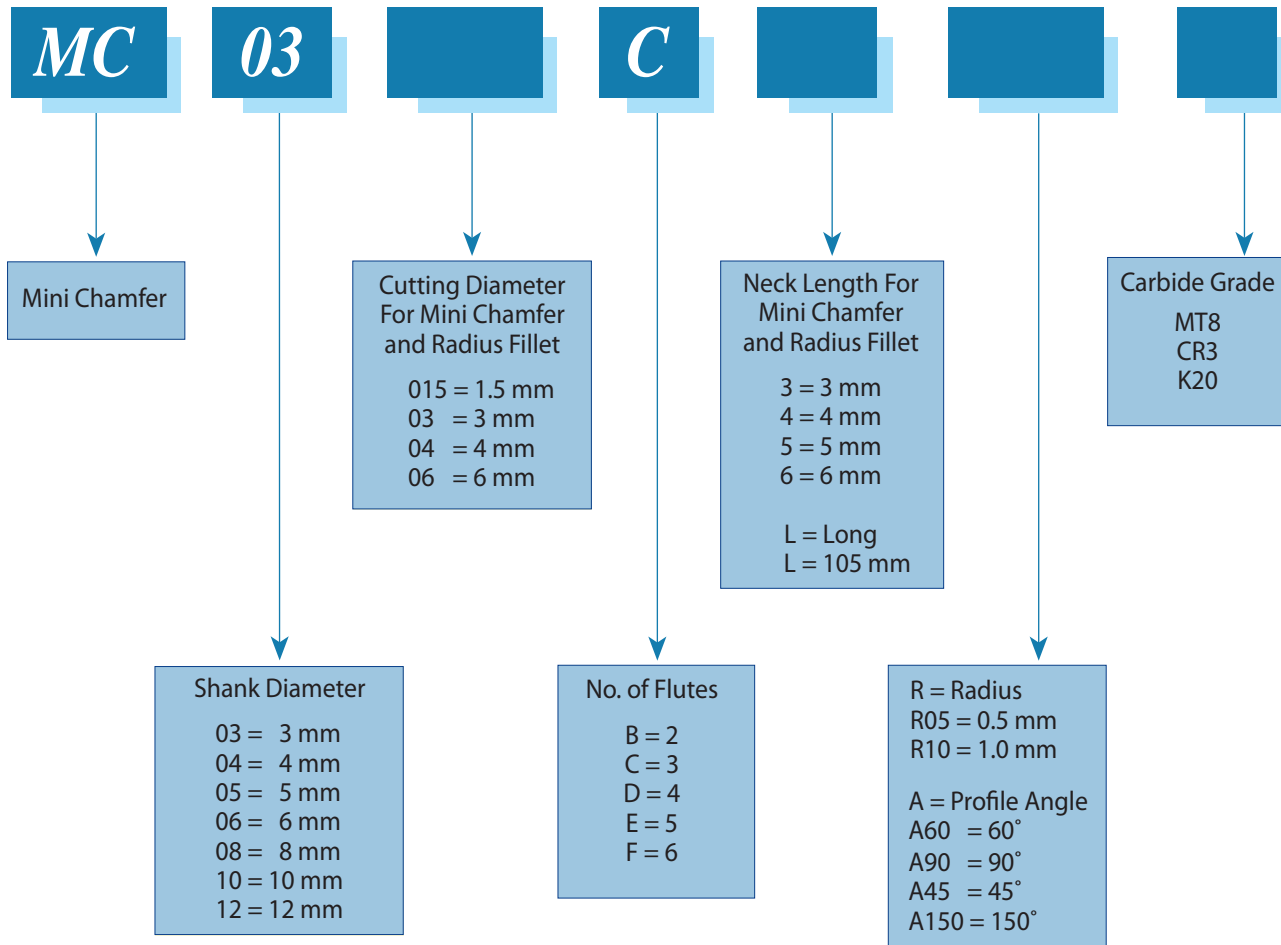


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## Product Identification

### Mini Chamfer, Solid Carbide Radius Fillet End-Mills and Countersink

#### Ordering Codes



## Mini Chamfer

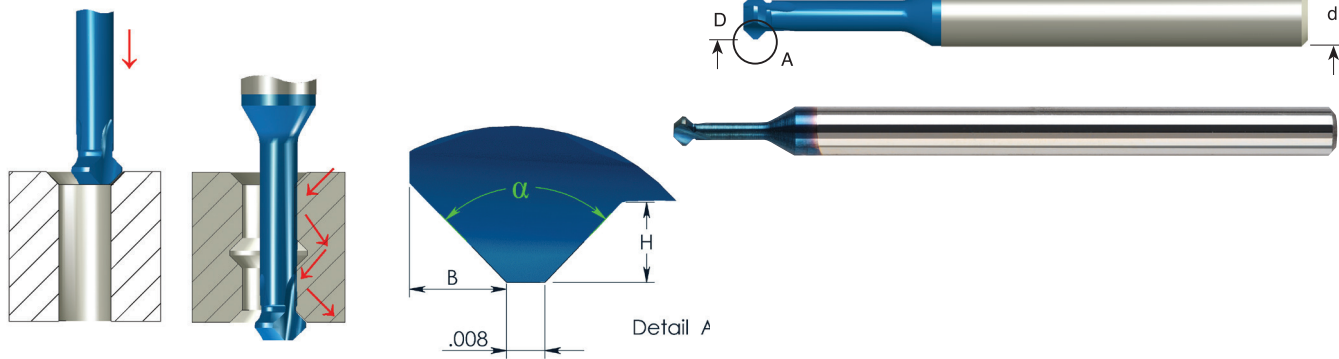
- Optimal for deburring, back chamfering and grooving.
- Double side cutting.
- Spiral flute allows smooth cutting action.

### Carbide grade: MT8

Sub-micron grade with advanced PVD triple coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, for high performance and normal machining condition. General purpose for all materials.

## Mini Chamfer

### Metric Shanks



90°

Ordering Code	d mm	D	I	H	B	$\alpha$	No. of Flutes	L
MC 03015 C3 A90	3	.059	.15	.012	.016	90°	3	1.5
MC 0302 C5 A90	3	.079	.20	.016	.020	90°	3	1.5
MC 03025 C6 A90	3	.098	.25	.020	.024	90°	3	1.5
MC 0303 C7 A90	3	.118	.30	.024	.028	90°	3	1.5
MC 04035 C9 A90	4	.138	.35	.028	.031	90°	3	2.0
MC 0404 C10 A90	4	.157	.39	.031	.035	90°	3	2.0
MC 05045 C11 A90	5	.177	.44	.039	.043	90°	3	2.0
MC 0505 C12 A90	5	.197	.49	.043	.047	90°	3	2.0
MC 06055 C13 A90	6	.217	.54	.047	.051	90°	3	2.0
MC 0606 C15 A90	6	.236	.59	.059	.063	90°	3	2.0

Order example: MC 0302 C5 A90 MT8

## Long Reach 90°

Ordering Code	d mm	D	I	H	B	α	No. of Flutes	L
MC 0303 C12 A90	3	.118	.47	.024	.028	90°	3	1.5
MC 04035 C14 A90	4	.138	.55	.028	.031	90°	3	2.0
MC 0404 C16 A90	4	.157	.63	.031	.035	90°	3	2.0
MC 0404 C16L A90	4	.157	.63	.031	.035	90°	3	4.1
MC 05045 C18 A90	5	.177	.71	.039	.043	90°	3	2.0
MC 0505 C20 A90	5	.197	.79	.043	.047	90°	3	2.0
MC 0505 C20L A90	5	.197	.79	.043	.047	90°	3	4.1
MC 06055 C22 A90	6	.217	.87	.047	.051	90°	3	2.3
MC 0606 C24 A90	6	.236	.94	.059	.063	90°	3	2.3
MC 0606 C24L A90	6	.236	.94	.059	.063	90°	3	4.1
MC 0808 D28 A90	8	.315	1.10	.063	.067	90°	4	2.5
MC 0808 D28L A90	8	.315	1.10	.063	.067	90°	4	4.1
MC 1010 E35 A90	10	.394	1.38	.071	.075	90°	5	2.9
MC 1212 F42 A90	12	.472	1.65	.083	.087	90°	6	3.3

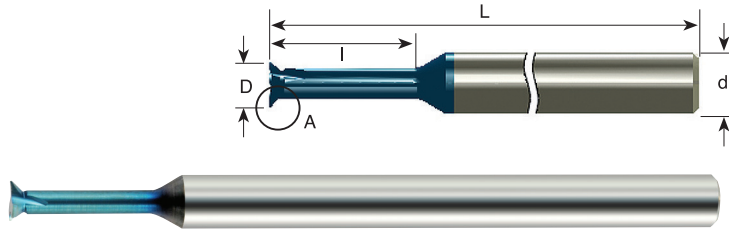
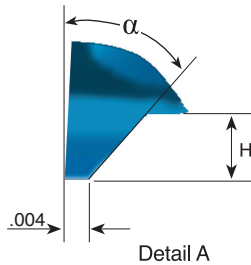
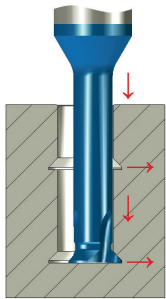
## 60°

Ordering Code	d mm	D	I	H	B	α	No. of Flutes	L
MC 0302 C5 A60	3	.079	.20	.016	.012	60°	3	1.5
MC 0303 C7 A60	3	.118	.30	.024	.012	60°	3	1.5
MC 04035 C9 A60	4	.138	.35	.028	.020	60°	3	2.0
MC 0404 C10 A60	4	.157	.39	.031	.020	60°	3	2.0
MC 05045 C11 A60	5	.177	.44	.039	.024	60°	3	2.0
MC 0505 C12 A60	5	.197	.49	.043	.028	60°	3	2.0

Order example: MC 04035 C9 A60 MT8

# Mini Chamfer

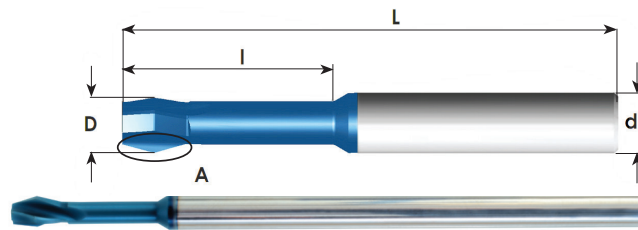
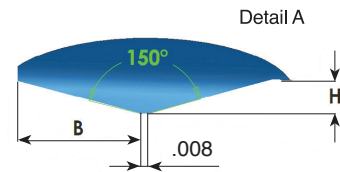
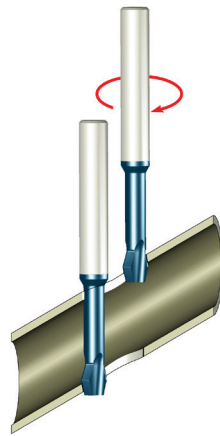
## Mini Chamfer Metric Shanks



## Dovetail 45°\*

Ordering Code	d mm	D	I	H	α	No. of Flutes	L
MC 03015 C4 A45	3	.059	.18	.012	45°	3	1.5
MC 0302 C6 A45	3	.079	.24	.016	45°	3	1.5
MC 03025 C7 A45	3	.098	.30	.020	45°	3	1.5
MC 0303 C12 A45	3	.118	.47	.024	45°	3	1.5
MC 04035 C14 A45	4	.138	.55	.028	45°	3	2.0
MC 0404 C16 A45	4	.157	.63	.031	45°	3	2.0
MC 05045 C18 A45	5	.177	.71	.039	45°	3	2.0
MC 0505 C20 A45	5	.197	.79	.043	45°	3	2.0
MC 06055 C22 A45	6	.217	.87	.047	45°	3	2.3
MC 0606 C24 A45	6	.236	.94	.059	45°	3	2.3

\* One side cutting



## 150°

Ordering Code	d mm	D	I	H	B	No. of Flutes	L
MC 0303 C12 A150	3	.118	.47	.024	.087	3	1.5
MC 0404 C16 A150	4	.157	.63	.031	.118	3	2.0
MC 0404 C16L A150	4	.157	.63	.031	.118	3	4.1
MC 0505 C20 A150	5	.197	.79	.039	.150	3	2.0
MC 0505 C20L A150	5	.197	.79	.039	.150	3	4.1
MC 0606 C24 A150	6	.236	.94	.039	.150	3	2.3
MC 0606 C24L A150	6	.236	.94	.039	.150	3	4.1
MC 0808 C28 A150	8	.315	1.10	.039	.150	3	2.5
MC 0808 C28L A150	8	.315	1.10	.039	.150	3	4.1

Order example: MC 0303 C12 A150 MT8

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## Solid Carbide radius fillet End-Mills

### Features

- Tools for different radius filleting
- Two, three and four flutes
- Cylindrical shank DIN6535-HA



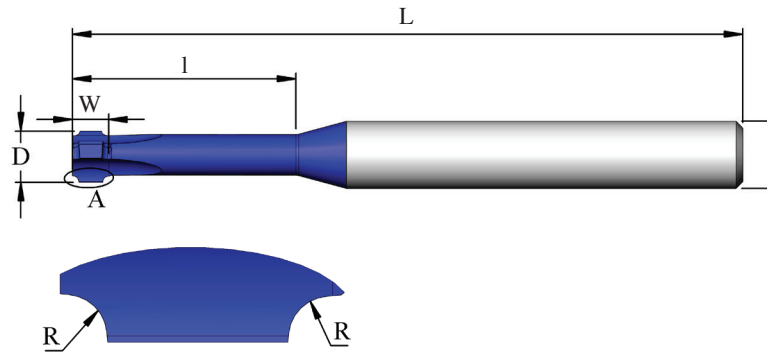
### Carbide grade: CR3

Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.

**A New Generation** of PVD Coating for High-Performance Cutting Applications.

# Mini Chamfer

## Solid Carbide radius fillet End-Mills



DETAIL A

Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤50 HRc

Ordering Code	d mm	D	l	R	W	No. of Flutes	L
<b>MC 0302 B8 R02</b>	3	.079	.31	.008	.06	2	1.5
<b>MC 03025 B9 R03</b>	3	.098	.35	.012	.06	2	1.5
<b>MC 03025 B10 R04</b>	3	.098	.39	.016	.08	2	1.5
<b>MC 0303 B12 R05</b>	3	.118	.47	.020	.09	2	1.5
<b>MC 0605 C20 R05</b>	6	.197	.79	.020	.10	3	2.2
<b>MC 0605 C25 R06</b>	6	.197	.98	.024	.11	3	2.2
<b>MC 0606 C30 R08</b>	6	.236	1.18	.031	.13	3	2.2
<b>MC 08065 C35 R10</b>	8	.256	1.38	.039	.15	3	2.5
<b>MC 08075 D35 R12</b>	8	.295	1.38	.047	.16	4	2.5
<b>MC 10085 D35 R15</b>	10	.335	1.38	.059	.19	4	2.8
<b>MC 1009 D35 R18</b>	10	.354	1.38	.071	.22	4	2.8
<b>MC 1010 D35 R20</b>	10	.394	1.38	.079	.24	4	2.8
<b>MC 1211 D35 R25</b>	12	.433	1.38	.098	.30	4	3.3
<b>MC 1212 D35 R30</b>	12	.472	1.38	.118	.33	4	3.3

Order example: MC 0303 B12 R05 CR3

● First choice    ○ Alternative

## Countersink Solid Carbide chamfering End-Mills

### Features

- Tools for 45° and 30° chamfering and deburring
- Four flutes
- Cylindrical shank DIN6535-HA (Weldon shank available upon request)

### Carbide grades

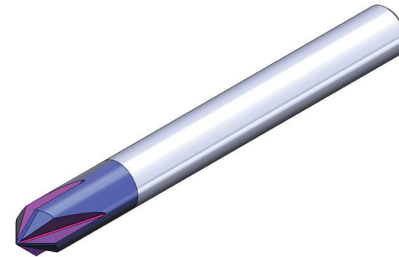
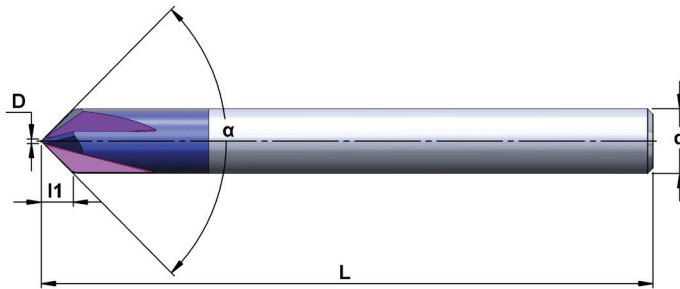
#### CR3

Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.

A **New Generation** of PVD Coating for High-Performance Cutting Applications

#### K20

Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium.



Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤58 HRc
K20			●	●	○	

Ordering Code	d mm	D	l1	L	No. of Flutes	α
MC03 D A60	3	.008	.09	1.5	4	60°
MC04 D A60	4	.012	.12	2.0		
MC05 D A60	5	.016	.15	2.0		
MC06 D A60	6	.020	.19	2.2		
MC08 D A60	8	.023	.25	2.5		
MC10 D A60	10	.031	.31	2.8		
MC12 D A60	12	.039	.37	3.3	4	90°
MC03 D A90	3	.008	.05	1.5		
MC04 D A90	4	.012	.07	2.0		
MC05 D A90	5	.016	.09	2.0		
MC06 D A90	6	.020	.10	2.2		
MC08 D A90	8	.023	.14	2.5		
MC10 D A90	10	.031	.18	2.8		
MC12 D A90	12	.039	.21	3.3		

Order example: MC04 D A90 K20

● First choice

○ Alternative

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## Technical Section

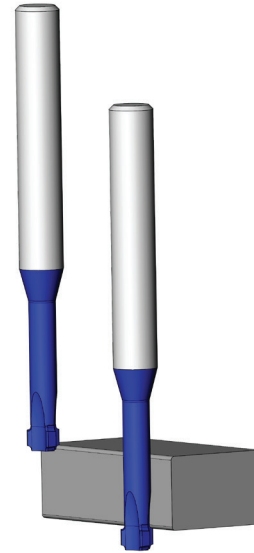
### Mini Chamfer Cutting Data

ISO Standard	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D												
			Ø.06	Ø.08	Ø.12	Ø.16	Ø.20	Ø.24	Ø.28	Ø.31	Ø.35	Ø.39	Ø.47	Ø.55	Ø.63
<b>P</b>	Low & Medium Carbon Steels < 0.55%C	200 - 390	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
	High Carbon Steels ≥0.55%C	200 - 390	.0008	.0014	.0017	.0022	.0025	.0028	.0033	.0036	.0039	.0039	.0044	.0047	.0050
	Alloy Steels, Treated Steels	160 - 260	.0008	.0011	.0014	.0014	.0017	.0019	.0019	.0022	.0025	.0028	.0033	.0036	.0039
<b>M</b>	Stainless Steel-Free Cutting	230 - 330	.0006	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0033	.0036
	Stainless Steel-Austenitic	200 - 300	.0006	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0033	.0036
	Cast Steels	230 - 300	.0008	.0011	.0014	.0014	.0017	.0019	.0019	.0022	.0025	.0028	.0033	.0036	.0039
<b>K</b>	Cast Iron	130 - 260	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
<b>N</b>	Aluminum ≤12%Si, Copper	330 - 660	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
	Aluminum >12%Si	200 - 460	.0008	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0036	.0037
	Synthetics, Duroplastics, Thermoplastics	160 - 660	.0025	.0030	.0033	.0039	.0044	.0050	.0052	.0052	.0052	.0052	.0052	.0055	.0055
<b>S</b>	Nickel Alloys, Titanium Alloys	70 - 130	.0008	.0008	.0011	.0011	.0014	.0017	.0017	.0017	.0019	.0019	.0019	.0022	.0022
<b>H</b>	Hardened Steel, 45-50 HRc	60-70	.0008	.0011	.0014	.0014	.0017	.0017	.0019	.0019	.0022	.0022	.0025	.0028	.0030



## Solid Carbide radius fillet End-Mills

Application example



### Cutting Data

ISO	Materials	Cutting speed Vc [SFM]	Fz [IPT] cutting diameter				
			Ø.004-Ø.008	Ø.012-Ø.016	Ø.24-Ø.31	Ø.39-Ø.47	Ø.63
<b>P</b>	Low & Medium Carbon Steels <0.55%C	200-230	.0004	.0005	.0006	.0008	.0012
	High Carbon Steels ≥0.55%C	130-200	.0004	.0005	.0006	.0008	.0012
	Alloy Steels, Treated Steels	100-130	.0004	.0005	.0005	.0007	.0010
<b>M</b>	Stainless Steel-Free Cutting	65-100	.0003	.0004	.0004	.0006	.0008
	Stainless Steel-Austenitic	65-100	.0003	.0004	.0004	.0006	.0008
	Cast Steels	65-100	.0003	.0004	.0004	.0006	.0008
<b>K</b>	Cast Iron	100-130	.0004	.0005	.0005	.0007	.0010
<b>N</b>	Aluminum ≤6%Si, Copper	230-330	.0005	.0005	.0006	.0008	.0012
	Aluminum >6%Si	300-490	.0005	.0005	.0006	.0008	.0012
	Synthetics, duroplastics, thermoplastics	330-490	.0006	.0010	.0012	.0016	.0020
<b>S</b>	Nickel alloys, Titanium alloys.	50-100	.0003	.0004	.0004	.0006	.0008
<b>H</b>	Hardened Steel, ≤50 HRc	65-130	.0003	.0004	.0005	.0007	.0010

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# Mini Chamfer

## Countersink

### Cutting Data

ISO	Materials Class	Cutting Speed Vc [SFM]	d mm	Feed fz [IPT]
<b>P</b>	Low & Medium Carbon Steels <0.55%C	390-790	Ø3-Ø4	.0016-.0024
	High Carbon Steels ≥0.55%C	260-590	Ø5-Ø6	.0020-.0028
	Alloy Steels, Treated Steels	160-390		
<b>M</b>	Stainless Steel-Free Cutting	230-330	Ø8	.0024-.0031
	Stainless Steel-Austenitic	200-460	Ø10	.0028-.0039
	Cast Steels	230-330		
<b>K</b>	Cast Iron	260-520	Ø12	.0031-.0059
<b>N</b>	Aluminum ≤6%Si, Copper	490-1640		
	Aluminum >6%Si	330-820		
	Synthetics, duroplastics, thermoplastics	260-660		
<b>S</b>	Nickel alloys, Titanium alloys.	100-30		
<b>H</b>	Hardened Steel, ≤50 HRc	200-230		
	Hardened Steel, 51≤58 HRc	160-200		



Kit KMC	Qty
MC 0303 C12 A90	1
MC 03025 C6 A90	1
MC 0404 C10 A90	1
MC 04035 C9 A90	1
MC 05045 C11 A90	1
MC 0606 C24 A90	1



## Special Solid Carbide Tools



As part of being a service-orientated company, Carmex produces specials according to customer's requirements. Special tools are supplied in short delivery times.

