

Supercut Roughers



New Innovative High Performance Roughing end-mills specifically designed for high volume machining applications.
Multi-Flute, semi-finish profile and center cutting.
Provide high metal removal rates in Slotting, Shouldering and Helical Plunging operations.

Features

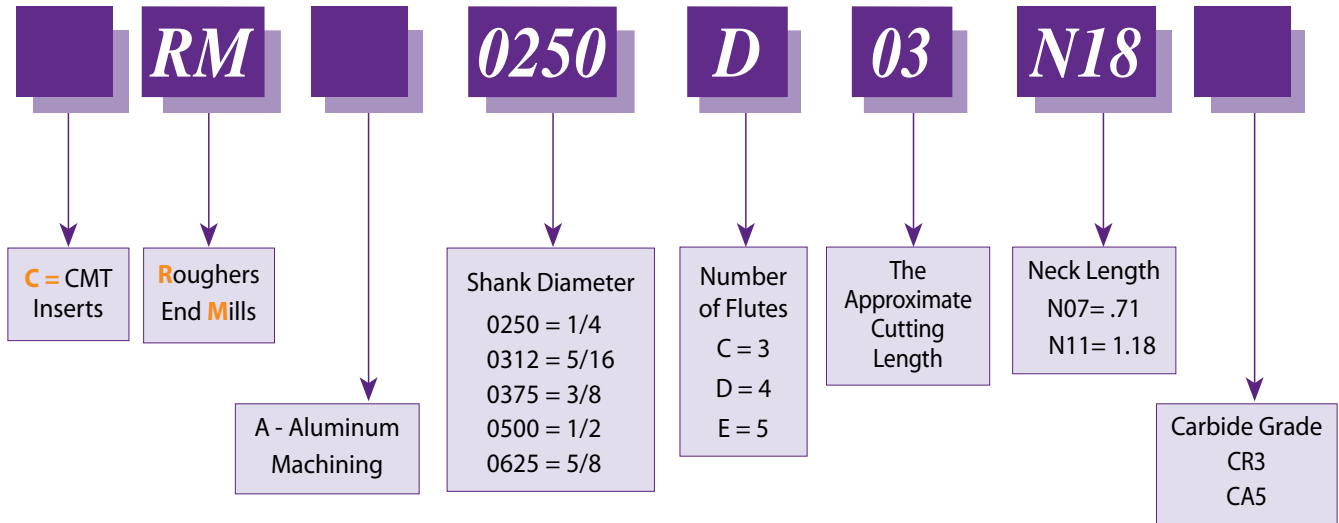
- High Performance Cutting (HPC)
- Extremely high material removal rate
- Innovative roughing geometry produces smaller chips
- Reinforced corner chamfer, promotes additional strength for longer tool life
- Low cutting forces
- Designed to machine difficult and abrasive materials

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.

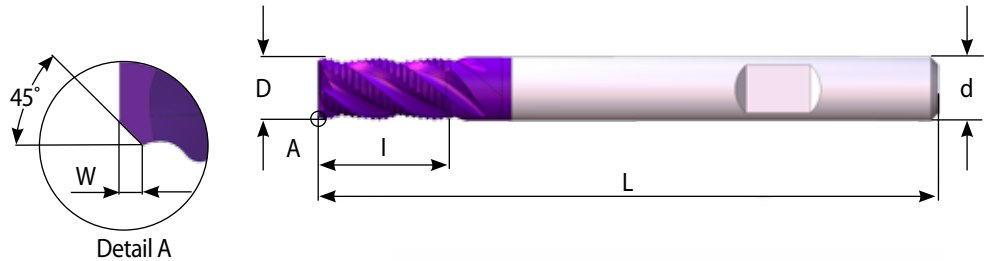
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Product Identification Ordering Codes



Solid Carbide Roughers

Short Design

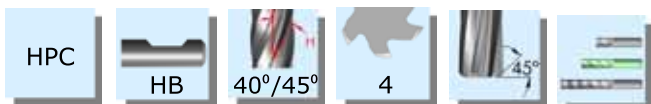


P	M	K	N	S	H
●	●	●	○	●	≤56 HRc

Ordering Code	d	D	W	No. of Flutes	I	L
RM 0250 C02	1/4	.118	.008	3	.20	2.5
RM 0250 C03	1/4	.157	.012	3	.35	2.5
RM 0250 D03	1/4	.197	.012	4	.39	2.5
RM 0250 D04	1/4	.250	.012	4	.39	2.5
RM 0312 D04	5/16	.312	.012	4	.47	2.5
RM 0375 D05	3/8	.375	.012	4	.55	3.0
RM 0500 D06	1/2	.500	.016	4	.63	3.5
RM 0625 E10	5/8	.625	.020	5	1.06	4.0

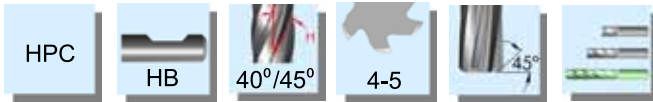
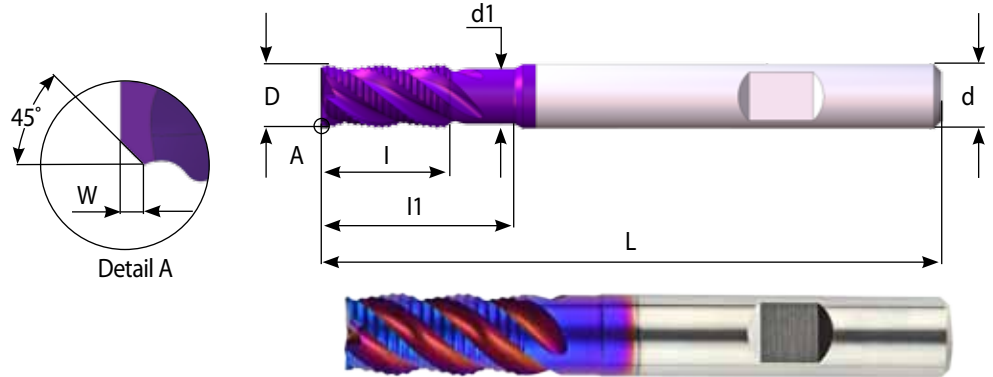
● First choice ○ Alternative

Long Design



Ordering Code	d	D	W	No. of Flutes	I	L
RM 0250 D06	1/4	.250	.012	4	.63	2.5
RM 0312 D06	5/16	.276	.012	4	.63	2.5
RM 0312 D07	5/16	.312	.012	4	.71	2.5
RM 0375 D08	3/8	.375	.012	4	.87	3.0
RM 0500 D10	1/2	.500	.016	4	1.02	3.5

Solid Carbide Roughers with Neck



P	M	K	N	S	H
●	●	●	○	●	≤56 HRc

Ordering Code	d	D	l	l1	d1	W	No. of Flutes	L
RM 0250 D05 N07	1/4	.250	.51	.71	.23	0.12	4	2.5
RM 0312 D06 N09	5/16	.312	.67	.94	.30	0.12	4	2.5
RM 0375 D08 N11	3/8	.375	.83	1.18	.38	0.12	4	3.0
RM 0500 D09 N14	1/2	.500	.98	1.42	.46	0.16	4	3.5
RM 0625 E13 N18	5/8	.625	1.30	1.89	.61	0.20	5	4.0

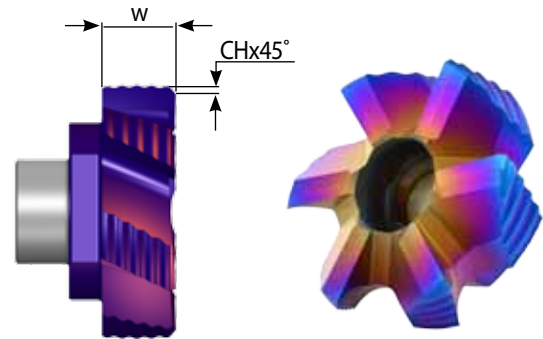
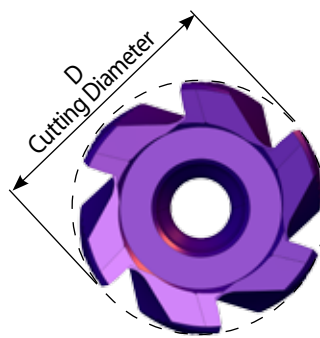
● First choice ○ Alternative

CMT Roughers

Indexable CMT roughers for excellent performance

- Solid and accurate clamping method enables full repeatability
- Working at high machining parameters
- Modular system using the standard CMT tool holders with various shank options
- Enables machining with large overhang

Carbide Grade: CR3



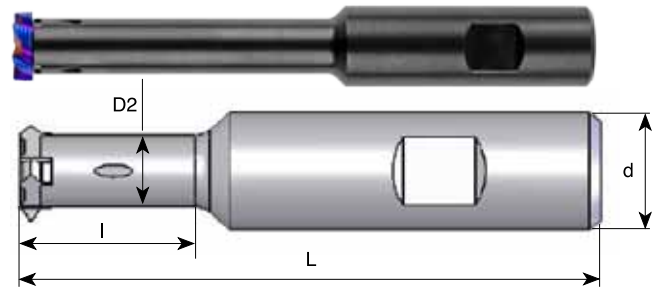
P	M	K	N	S	H
●	●	●	○	●	≤56 HRc

Insert Type	Ordering Code	D	No. of Flutes	W	CH
S20	CRM160 F W50	.63	6	.197	.016
S20	CRM170 F W50	.67	6	.197	.016
S20	CRM200 F W50	.79	6	.197	.016

● First choice ○ Alternative

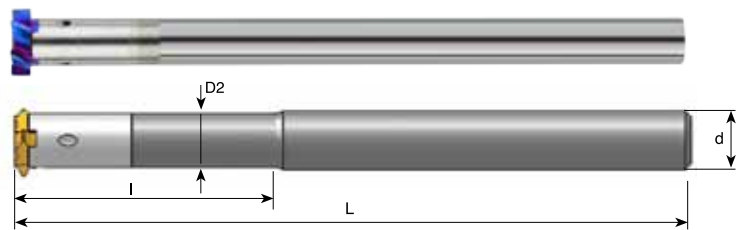
The CMT Roughers should be used with all the toolholders shown on page 318.

Steel Toolholders With internal coolant



Ordering Code	Insert Type	d	D2	I	L	Insert Screw	Torx Key
SRC 0625 H18	S20	.625	.54	1.89	4.0	S16	K16
SRC 0750 H18	S20	.750	.54	1.26	4.0	S16	K16
SRC 0750 J18	S20	.750	.54	1.89	4.5	S16	K16
SRC 0750 L18	S20	.750	.54	2.91	5.5	S16	K16

Carbide Shank Toolholder With internal coolant



Ordering Code	Insert type	d	D2	I	L	Insert Screw	Torx Key
CRC 0500 P18	S20	.500	.500	---	7.0	S16	K16

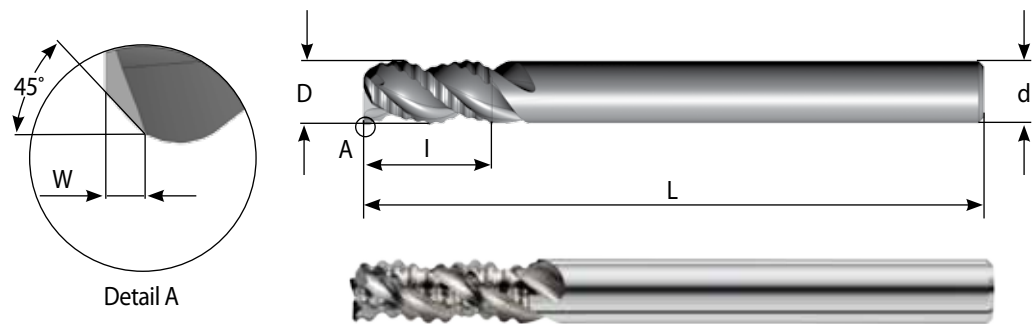
Solid Carbide Roughers- Aluminum Machining

Features

- High Performance Cutting (HPC)
- Optimal flute geometry delivers maximum metal removal rates and better chip evacuation
- Low cutting forces
- Reinforced corner chamfer, promotes additional strength for longer tool life
- Uncoated smooth polished surface finish

Carbide Grade: CA5

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



P	M	K	N	S	H
	○	○	●	○	

Ordering Code	d	D	W	No. of Flutes	I	L
RMA 0250 C03	1/4	.157	.012	3	.31	2.5
RMA 0250 C06	1/4	.250	.012	3	.63	2.5
RMA 0312 C07	5/16	.312	.012	3	.75	2.5
RMA 0375 C08	3/8	.375	.012	3	.87	3.0
RMA 0500 C10	1/2	.500	.016	3	1.02	3.5

● First choice ○ Alternative

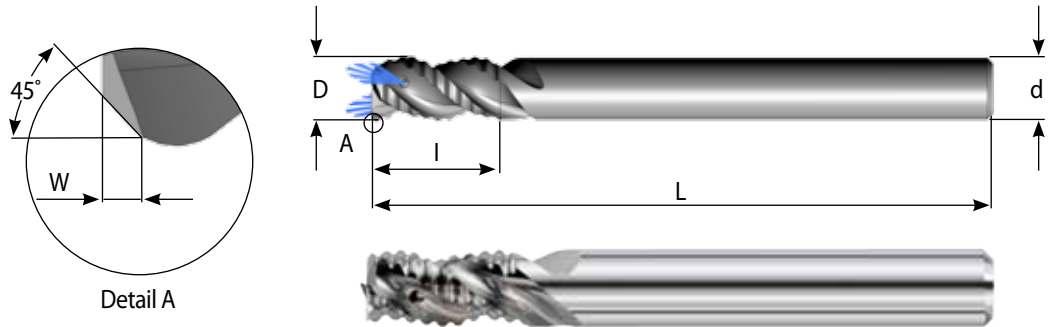
Solid Carbide Roughers - Aluminum Machining

with internal coolant through the flutes

Features

- High Performance Cutting (HPC)
- The coolant washes the chip out

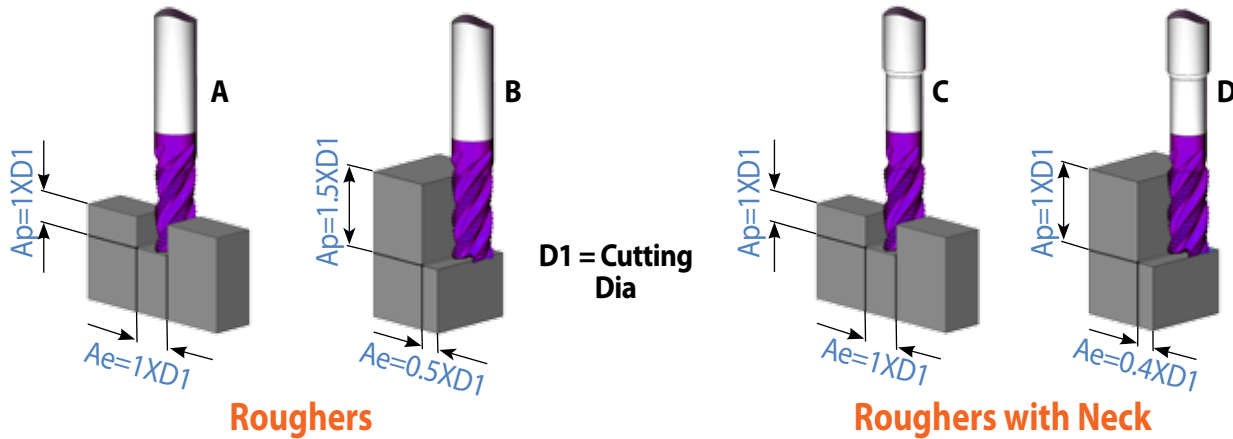
Carbide Grade: CA5



P	M	K	N	S	H
	○	○	●	○	

Ordering Code	d mm	D	W	No. of Flutes	I	L
RMA 0606 C16 Z	6	.236	.012	3	.63	2.3
RMA 0808 C19 Z	8	.315	.012	3	.75	2.5
RMA 1010 C22 Z	10	.394	.012	3	.87	2.9
RMA 1212 C26 Z	12	.472	.016	3	1.02	3.3

Cutting Conditions (solid end-mills and CMT)



Cutting Data

For hard or tough materials reduce the A_p by 20%-30%.
 Roughers with neck (C, D) can be used with same feed and speed as below.

ISO Standard	Materials Class	Vc ft/min	Fz inch/tooth Cutting Diameter			
			Ø.12 - Ø.16	Ø.20 - Ø.25	Ø.28 - Ø.38	Ø.50 - Ø.79
P	Low & Medium Carbon Steels <0.55%C	A: 390-590 B: 460-660	A: .0005-.0008 B: .0007-.0009	A: .0010-.0012 B: .0012-.0014	A: .0014-.0020 B: .0019-.0024	A: .0022-.0031 B: .0028-.0038
	High Carbon Steels ≥0.55%C	A: 360-520 B: 460-590	A: .0004-.0006 B: .0006-.0008	A: .0006-.0008 B: .0010-.0012	A: .0012-.0016 B: .0014-.0018	A: .0016-.0022 B: .0024-.0031
	Alloy Steels, Treated Steels	A: 330-460 B: 430-530	A: .0004-.0005 B: .0004-.0005	A: .0006-.0007 B: .0006-.0007	A: .0009-.0012 B: .0009-.0012	A: .0014-.0019 B: .0014-.0019
M	Stainless Steel-Free Cutting	A: 330-460 B: 430-490	A: .0004-.0005 B: .0005-.0006	A: .0006-.0007 B: .0008-.0009	A: .0009-.0012 B: .0013-.0016	A: .0014-.0019 B: .0019-.0025
	Stainless Steel-Austenitic	A: 230-330 B: 290-430	A: .0003-.0004 B: .0004-.0006	A: .0004-.0006 B: .0006-.0009	A: .0008-.0010 B: .0010-.0016	A: .0010-.0016 B: .0018-.0024
	Cast Steels	A: 390-530 B: 460-590	A: .0004-.0005 B: .0005-.0006	A: .0006-.0007 B: .0008-.0009	A: .0009-.0012 B: .0013-.0016	A: .0014-.0019 B: .0019-.0025
K	Cast Iron	A: 330-530 B: 460-590	A: .0005-.0008 B: .0007-.0009	A: .0010-.0012 B: .0012-.0014	A: .0014-.0020 B: .0019-.0024	A: .0022-.0031 B: .0028-.0038
N	Aluminum ≤12%Si, Copper	A: 590-820 B: 650-980	A: .0006-.0010 B: .0007-.0012	A: .0012-.0016 B: .0014-.0018	A: .0016-.0024 B: .0018-.0026	A: .0024-.0035 B: .0026-.0037
	Aluminum >12%Si	A: 330-650 B: 420-820	A: .0004-.0008 B: .0004-.0008	A: .0010-.0014 B: .0012-.0016	A: .0014-.0022 B: .0016-.0020	A: .0022-.0031 B: .0020-.0035
	Synthetics, Duroplastics, Thermoplastics	A: 590-820 B: 650-980	A: .0006-.0010 B: .0007-.0012	A: .0012-.0016 B: .0014-.0018	A: .0016-.0024 B: .0018-.0026	A: .0024-.0035 B: .0026-.0037
S	Nickel alloys, Titanium alloys	A: 160-230 B: 190-260	A: .0005-.0006 B: .0005-.0006	A: .0008-.0009 B: .0008-.0009	A: .0013-.0016 B: .0013-.0016	A: .0019-.0025 B: .0019-.0025
H	Hardened Steel 45-50 HRc	A: 160-230 B: 190-260	A: .0004-.0008 B: .0007-.0009	A: .0008-.0010 B: .0010-.0012	A: .0012-.0016 B: .0016-.0020	A: .0016-.0024 B: .0024-.0031
	Hardened Steel 51-56 HRc	A: 130-190 B: 160-230	A: .0004-.0006 B: .0006-.0008	A: .0006-.0010 B: .0008-.0012	A: .0008-.0014 B: .0010-.0016	A: .0012-.0022 B: .0014-.0026