WIDIA-HANITA™

A SOLID FOUNDATION **THE VARIMILL™ FAMILY**

The WIDIA-Hanita VariMill family continues to provide leading-edge solutions for some of the most advanced applications in the general engineering, aerospace, and defense industries. These industries require complex machining techniques in some of the most exotic materials.

VariMill I™ Line Expansion

NEW!

Series 4777
Series 47N7

This 4-flute geometry is designed with unequal flute spacing for plunging, slotting, and profiling at the highest possible feed rates for a wide range of materials.

NEW!

VariMill II™ Line Expansion

Series 5777
Series 577C
Series 57NC
Series 57N8

This 5-flute geometry is designed with unequal flute spacing for advanced milling jobs in a wide range of materials.

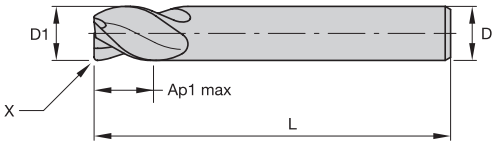
VariMill III™

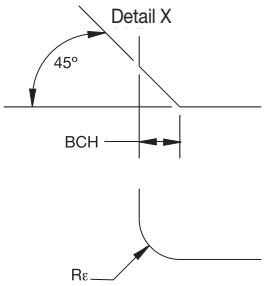
This 7-flute geometry is designed with unequal flute spacing and is designed to provide the highest Metal Removal Rates (MRR) and extended tool life in the most demanding materials in the aerospace industry.

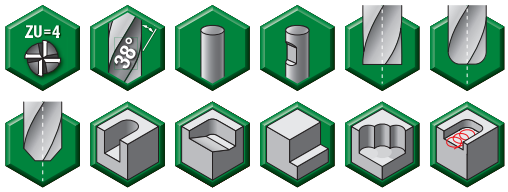
WIDIA™ HANITA™

widia.com

VariMill I™ • Series 4777 • Metric







● first choice
○ alternate choice

P		●
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WIDIA HANITA

catalogue number	D1	D	length of cut Ap1 max	length L	Rε	BCH	SS	WP15PE
477704001T	4,0	6	12,00	55	0,20	–	–	5576753
477704002T	4,0	6	12,00	55	–	0,40	–	5576751
4777040Z2T	4,0	6	12,00	55	–	–	–	5576754
477705002T	5,0	6	13,00	57	–	0,40	–	5576755
477705012T	5,0	6	13,00	57	0,20	–	–	5576757
4777050Z2T	5,0	6	13,00	57	–	–	–	5576758
477706002T	6,0	6	13,00	57	–	0,40	–	5576759
477706002W	6,0	6	13,00	57	–	0,40	W	5576760
477706012T	6,0	6	13,00	57	0,20	–	–	5576761
4777060R2TE	6,0	6	13,00	57	0,50	–	–	6471861
4777060R2TJ	6,0	6	13,00	57	1,00	–	–	6471862
4777060Z2T	6,0	6	13,00	57	–	–	–	5576762
477707003T	7,0	8	16,00	63	–	0,40	–	5576763
477707013T	7,0	8	16,00	63	0,20	–	–	5576765
4777070Z3T	7,0	8	16,00	63	–	–	–	5576766
477708003T	8,0	8	16,00	63	–	0,40	–	5576767
477708003W	8,0	8	16,00	63	–	0,40	W	5576768
477708013T	8,0	8	16,00	63	0,20	–	–	5576769
4777080R3TE	8,0	8	16,00	63	0,50	–	–	6471863
4777080R3TJ	8,0	8	16,00	63	1,00	–	–	6471864
4777080R3TK	8,0	8	16,00	63	1,50	–	–	6471865
4777080R3TM	8,0	8	16,00	63	2,00	–	–	6471866
4777080Z3T	8,0	8	16,00	63	–	–	–	5576770
477709004T	9,0	10	19,00	72	–	0,50	–	5576771
477709014T	9,0	10	19,00	72	0,20	–	–	5576773
4777090Z4T	9,0	10	19,00	72	–	–	–	5576774
477710004T	10,0	10	22,00	72	–	0,50	–	5576775
477710004W	10,0	10	22,00	72	–	0,50	W	5576776
477710024T	10,0	10	22,00	72	0,30	–	–	5576777
4777100R4TE	10,0	10	22,00	72	0,50	–	–	6471867
4777100R4TJ	10,0	10	22,00	72	1,00	–	–	6471868
4777100R4TK	10,0	10	22,00	72	1,50	–	–	6471869

VariMill I™ • Series 4777 • Metric

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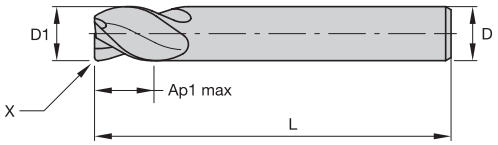

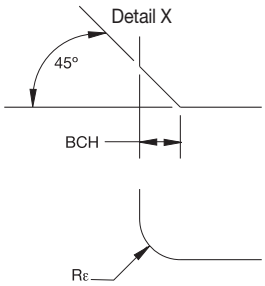

● first choice
○ alternate choice

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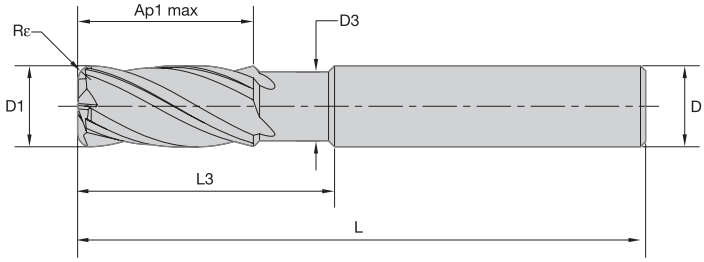
catalogue number	D1	D	length of cut Ap1 max	length L	Rε	BCH	SS	WP15PE
4777100R4TM	10,0	10	22,00	72	2,00	–	–	**6471870**
4777100R4TN	10,0	10	22,00	72	2,50	–	–	**6471871**
4777100Z4T	10,0	10	22,00	72	–	–	–	**5576778**
4777110Z5T	11,0	12	26,00	83	–	–	–	**5576779**
477712005T	12,0	12	26,00	83	–	0,50	–	**5576790**
477712005W	12,0	12	26,00	83	–	0,50	W	**5576791**
477712025T	12,0	12	26,00	83	0,30	–	–	**5576792**
4777120R5TE	12,0	12	26,00	83	0,50	–	–	**6471872**
4777120R5TJ	12,0	12	26,00	83	1,00	–	–	**6471873**
4777120R5TK	12,0	12	26,00	83	1,50	–	–	**6471874**
4777120R5TM	12,0	12	26,00	83	2,00	–	–	**6471875**
4777120R5TN	12,0	12	26,00	83	2,50	–	–	**6471876**
4777120R5TP	12,0	12	26,00	83	3,00	–	–	**6471877**
4777120Z5T	12,0	12	26,00	83	–	–	–	**5576793**
477714014W	14,0	14	26,00	83	–	0,50	W	**5576795**
477714015T	14,0	14	26,00	83	–	0,50	–	**5576794**
477716006T	16,0	16	32,00	92	–	0,50	–	**5576796**
477716006W	16,0	16	32,00	92	–	0,50	W	**5576797**
477716026T	16,0	16	32,00	92	0,30	–	–	**5576798**
4777160R6TJ	16,0	16	32,00	92	1,00	–	–	**6471878**
4777160R6TM	16,0	16	32,00	92	2,00	–	–	**6471879**
4777160R6TP	16,0	16	32,00	92	3,00	–	–	**6471880**
4777160R6TQ	16,0	16	32,00	92	4,00	–	–	**6471891**
4777160Z6T	16,0	16	32,00	92	–	–	–	**5576799**
477718018T	18,0	18	32,00	92	–	0,50	–	**5576810**
477720007T	20,0	20	38,00	104	–	0,50	–	**5576812**
477720007W	20,0	20	38,00	104	–	0,50	W	**5576813**
47772002T	20,0	20	38,00	104	0,30	–	–	**5576814**
4777200R7TP	20,0	20	38,00	104	3,00	–	–	**6471892**
477725008T	25,0	25	45,00	121	–	0,50	–	**5576816**
477725008W	25,0	25	45,00	121	–	0,50	W	**5576817**
4777250R8TR	25,0	25	45,00	121	5,00	–	–	**6471893**

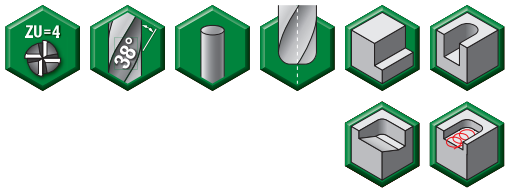
NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

VariMill I™ • Series 47N7 • Metric





● first choice
○ alternate choice

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WIDIA HANITA

catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	SS	WP15PE	TiAlN-LT
47N704002LT	4,0	6	3,60	12,00	16,00	55	0,40	–	–	3462450
47N704012LT	4,0	6	3,60	12,00	16,00	55	0,50	–	–	3462451
47N704022LT	4,0	6	3,60	12,00	16,00	55	1,00	–	–	3462453
47N705002LT	5,0	6	4,60	13,00	18,00	57	0,50	–	–	3462454
47N705012LT	5,0	6	4,60	13,00	18,00	57	1,00	–	–	3462455
47N706002LT	6,0	6	5,50	13,00	21,00	57	0,50	–	–	3462457
47N706012LT	6,0	6	5,50	13,00	21,00	57	1,00	–	–	3462459
47N706022LT	6,0	6	5,50	13,00	21,00	57	1,50	–	–	3462461
47N7060C2W	6,0	6	5,50	13,00	21,00	57	–	W	6522658	–
47N7060R2TK	6,0	6	5,50	13,00	21,00	57	1,50	–	6522659	–
47N708003LT	8,0	8	7,50	16,00	27,00	63	0,50	–	–	3462462
47N708013LT	8,0	8	7,50	16,00	27,00	63	1,00	–	–	3462464
47N708023LT	8,0	8	7,50	16,00	27,00	63	1,50	–	–	3462466
47N708033LT	8,0	8	7,50	16,00	27,00	63	2,00	–	–	3462467
47N7080C3W	8,0	8	7,50	16,00	27,00	63	–	W	6522660	–
47N7080R3TK	8,0	8	7,50	16,00	27,00	63	1,50	–	6522681	–
47N710004LT	10,0	10	9,50	22,00	32,00	72	0,50	–	–	3462468
47N710014LT	10,0	10	9,50	22,00	32,00	72	1,00	–	–	3462470
47N710024LT	10,0	10	9,50	22,00	32,00	72	1,50	–	–	3462472
47N710034LT	10,0	10	9,50	22,00	32,00	72	2,00	–	–	3462473
47N7100C4W	10,0	10	9,50	22,00	32,00	72	–	W	6522682	–
47N7100R4TK	10,0	10	9,50	22,00	32,00	72	1,50	–	6522683	–
47N712005LT	12,0	12	11,50	26,00	38,00	83	0,50	–	–	3462475
47N712015LT	12,0	12	11,50	26,00	38,00	83	1,00	–	–	3462477
47N712025LT	12,0	12	11,50	26,00	38,00	83	1,50	–	–	3462479
47N712035LT	12,0	12	11,50	26,00	38,00	83	2,00	–	–	3462480
47N712045LT	12,0	12	11,50	26,00	38,00	83	4,00	–	–	3462482
47N7120C5W	12,0	12	11,50	26,00	38,00	83	–	W	6522684	–
47N7120R5TK	12,0	12	11,50	26,00	38,00	83	1,50	–	6522685	–
47N7120R5TP	12,0	12	11,50	26,00	38,00	83	3,00	–	6522686	–
47N716006LT	16,0	16	15,00	32,00	44,00	92	1,00	–	–	3462484
47N716016LT	16,0	16	15,00	32,00	44,00	92	2,00	–	–	3462486

VariMill I™ • Series 47N7 • Metric

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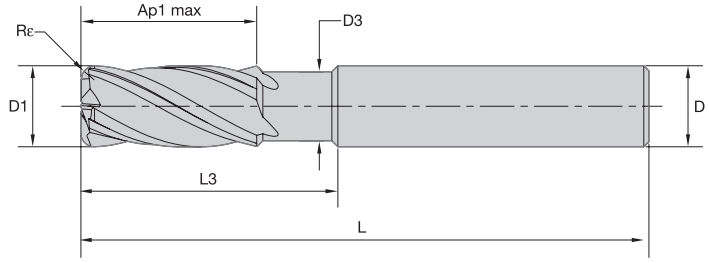

● first choice
○ alternate choice

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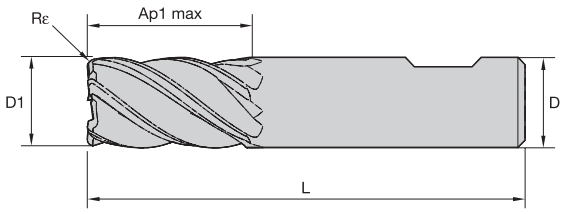
catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	SS	WP15PE	TiAlN-LT
47N716026LT	16,0	16	15,00	32,00	44,00	92	4,00	–	**–**	**3462488**
47N7160C6W	16,0	16	15,00	32,00	44,00	92	–	W	**6522687**	**–**
47N7160R6TE	16,0	16	15,00	32,00	44,00	92	0,50	–	**6522688**	**–**
47N7160R6TP	16,0	16	15,00	32,00	44,00	92	3,00	–	**6522689**	**–**
47N720007LT	20,0	20	19,00	38,00	55,00	104	1,00	–	**–**	**3462490**
47N720007MT	20,0	20	19,00	38,00	55,00	104	1,00	–	**3462491**	**–**
47N720017LT	20,0	20	19,00	38,00	55,00	104	2,00	–	**–**	**3462492**
47N7200C7W	20,0	20	19,00	38,00	55,00	104	–	W	**6522690**	**–**
47N7200R7TE	20,0	20	19,00	38,00	55,00	104	0,50	–	**6522701**	**–**
47N7200R7TP	20,0	20	19,00	38,00	55,00	104	3,00	–	**6522702**	**–**
47N7200R7TR	20,0	20	19,00	38,00	55,00	104	5,00	–	**6522703**	**–**

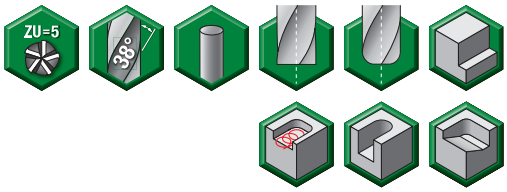
NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

VariMill II™ • Series 5777 • Metric





● first choice
○ alternate choice

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WIDIA HANITA

catalogue number	D1	D	length of cut Ap1 max	length L	Rε	SS	WP15PE
577704002MT	4,0	6	11,00	55	0,25	–	3524587
577704012MT	4,0	6	11,00	55	–	–	3524586
577705002MT	5,0	6	13,00	57	0,25	–	3524588
577706002ET	6,0	6	13,00	57	0,50	–	6525049
577706002JT	6,0	6	13,00	57	1,00	–	6525050
577706002MT	6,0	6	13,00	57	0,40	–	3524590
577706012MT	6,0	6	13,00	57	–	–	3524589
577708003JT	8,0	8	19,00	63	1,00	–	6525181
577708003KT	8,0	8	19,00	63	1,50	–	6525182
577708003MT	8,0	8	19,00	63	0,50	–	3524593
577708013MT	8,0	8	19,00	63	–	–	3524592
577710004JT	10,0	10	22,00	72	1,00	–	6525183
577710004KT	10,0	10	22,00	72	1,50	–	6525184
577710004MT	10,0	10	22,00	72	0,50	–	3524596
577710014MT	10,0	10	22,00	72	–	–	3524595
577712005MT	12,0	12	26,00	83	0,75	–	3524598
577712015ET	12,0	12	26,00	73	0,50	–	6525185
577712015JT	12,0	12	26,00	73	1,00	–	6525186
577712015KT	12,0	12	26,00	73	1,50	–	6525187
577712015MT	12,0	12	26,00	83	–	–	3524597
577712015NT	12,0	12	26,00	73	2,50	–	6525188
577716006JT	16,0	16	32,00	92	1,00	–	6525189
577716006MT	16,0	16	32,00	92	0,75	–	3524601
577716006MW	16,0	16	32,00	92	0,75	W	3524620

VariMill II™ • Series 5777 • Metric

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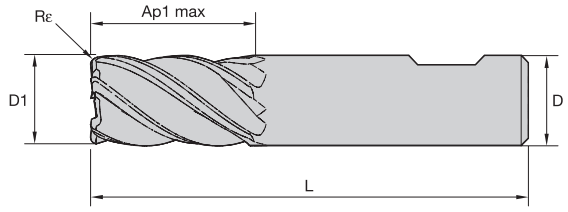

● first choice
○ alternate choice

P		●
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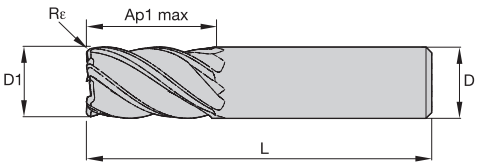
catalogue number	D1	D	length of cut Ap1 max	length L	Rε	SS	WP15PE
577716006PT	16,0	16	32,00	92	3,00	–	**6525190**
577716006QT	16,0	16	32,00	92	4,00	–	**6525201**
577716016MT	16,0	16	32,00	92	–	–	**3524600**
577720007MT	20,0	20	38,00	104	0,75	–	**3524605**
577720007PT	20,0	20	38,00	104	3,00	–	**6525202**
577720017MT	20,0	20	38,00	104	–	–	**3524603**
577725008MT	25,0	25	45,00	121	0,75	–	**3524606**
577725008RT	25,0	25	45,00	121	5,00	–	**6525203**

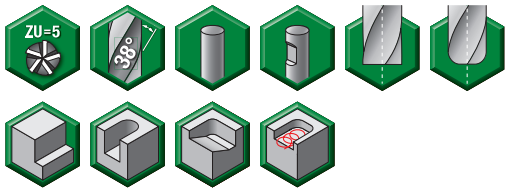
NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

VariMill II™ • Series 577C • Metric





● first choice
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P		●
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S		○
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WIDIA HANITA

catalogue number	D1	D	length of cut Ap1 max	length L	Rε	SS	WP15PE
577C04002T	4,0	6	11,00	55	0,25	–	5578866
577C04002W	4,0	6	11,00	55	0,25	W	5578867
577C04012T	4,0	6	11,00	55	–	–	5578868
577C05002T	5,0	6	13,00	57	0,25	–	5578990
577C05002W	5,0	6	13,00	57	0,25	W	5578991
577C050R2TE	5,0	6	13,00	57	0,50	–	6519448
577C06002T	6,0	6	13,00	57	0,40	–	5578992
577C06002W	6,0	6	13,00	57	0,40	W	5578993
577C06012T	6,0	6	13,00	57	–	–	5578994
577C060R2TE	6,0	6	13,00	57	0,50	–	6519449
577C060R2TJ	6,0	6	13,00	57	1,00	–	6519450
577C07003T	7,0	8	16,00	63	0,40	–	5578995
577C08003T	8,0	8	19,00	63	0,50	–	5578997
577C08003W	8,0	8	19,00	63	0,50	W	5578998
577C08013T	8,0	8	19,00	63	–	–	5578999
577C080R3TJ	8,0	8	19,00	63	1,00	–	6519481
577C080R3TK	8,0	8	19,00	63	1,50	–	6519482
577C09004T	9,0	10	19,00	72	0,50	–	5579021
577C10004MW	10,0	10	22,00	72	0,50	W	3881111
577C10004T	10,0	10	22,00	72	0,50	–	5579023
577C10004W	10,0	10	22,00	72	0,50	W	5579024
577C10014T	10,0	10	22,00	72	–	–	5579025
577C100R4TJ	10,0	10	22,00	72	1,00	–	6519483
577C100R4TK	10,0	10	22,00	72	1,50	–	6519484
577C100R4TM	10,0	10	22,00	72	2,00	–	6519485
577C12005MW	12,0	12	26,00	83	0,75	W	3881112
577C12005T	12,0	12	26,00	83	0,75	–	5579026
577C12005W	12,0	12	26,00	83	0,75	W	5579027
577C12015T	12,0	12	26,00	83	–	–	5579028
577C120R5TE	12,0	12	26,00	83	0,50	–	6519486
577C120R5TJ	12,0	12	26,00	83	1,00	–	6519487
577C120R5TK	12,0	12	26,00	83	1,50	–	6519488

VariMill II™ • Series 577C • Metric

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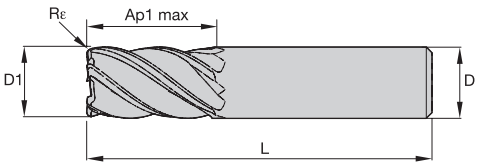

● first choice
○ alternate choice

P		●
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K		●
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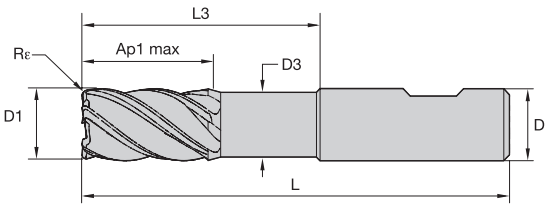
catalogue number	D1	D	length of cut Ap1 max	length L	Rε	SS	WP15PE
577C120R5TM	12,0	12	26,00	83	2,00	–	**6519489**
577C120R5TN	12,0	12	26,00	83	2,50	–	**6519490**
577C120R5TP	12,0	12	26,00	83	3,00	–	**6519491**
577C14004T	14,0	14	26,00	83	0,75	–	**5579029**
577C14004W	14,0	14	26,00	83	0,75	W	**5579040**
577C14014T	14,0	14	26,00	83	–	–	**5579041**
577C16006MW	16,0	16	32,00	92	0,75	W	**3881113**
577C16006T	16,0	16	32,00	92	0,75	–	**5579042**
577C16006W	16,0	16	32,00	92	0,75	W	**5579043**
577C16016T	16,0	16	32,00	92	–	–	**5579044**
577C160R6TE	16,0	16	32,00	92	0,50	–	**6519492**
577C160R6TJ	16,0	16	32,00	92	1,00	–	**6519493**
577C160R6TM	16,0	16	32,00	92	2,00	–	**6519497**
577C160R6TP	16,0	16	32,00	92	3,00	–	**6519499**
577C160R6TQ	16,0	16	32,00	92	4,00	–	**6519500**
577C18008T	18,0	18	32,00	92	0,75	–	**5579045**
577C20007T	20,0	20	38,00	104	0,75	–	**5579047**
577C20007W	20,0	20	38,00	104	0,75	W	**5579048**
577C20017T	20,0	20	38,00	104	–	–	**5579049**
577C200R7TJ	20,0	20	38,00	104	1,00	–	**6519501**
577C200R7TM	20,0	20	38,00	104	2,00	–	**6519502**
577C200R7TP	20,0	20	38,00	104	3,00	–	**6519503**
577C200R7TQ	20,0	20	38,00	104	4,00	–	**6519504**
577C200R7TR	20,0	20	38,00	104	5,00	–	**6519505**
577C25008T	25,0	25	45,00	121	0,75	–	**5579060**
577C25008W	25,0	25	45,00	121	0,75	W	**5579061**
577C250R8TM	25,0	25	45,00	121	2,00	–	**6519506**
577C250R8TP	25,0	25	45,00	121	3,00	–	**6519507**
577C250R8TQ	25,0	25	45,00	121	4,00	–	**6519508**
577C250R8TR	25,0	25	45,00	121	5,00	–	**6519509**

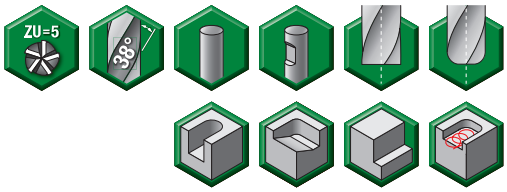
NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

VariMill II™ • Series 57NC • Metric





● first choice
○ alternate choice

P		●
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S		○
H		○

WIDIA HANITA

catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	SS	WS15PE
57NC06002T	6,0	6	5,64	13,00	18,00	63	–	–	5598906
57NC06022T	6,0	6	5,64	13,00	18,00	63	0,50	–	5598907
57NC06032T	6,0	6	5,64	13,00	18,00	63	1,00	–	5598909
57NC06042W	6,0	6	5,64	13,00	18,00	63	1,50	W	5599071
57NC060R2TK	6,0	6	5,64	13,00	17,82	63	1,50	–	6569491
57NC08003T	8,0	8	7,52	19,00	24,00	76	–	–	5599072
57NC08023T	8,0	8	7,52	19,00	24,00	76	0,50	–	5599073
57NC08023W	8,0	8	7,52	19,00	24,00	76	0,50	W	5599074
57NC08033T	8,0	8	7,52	19,00	24,00	76	1,00	–	5599075
57NC08033W	8,0	8	7,52	19,00	24,00	76	1,00	W	5599076
57NC08053W	8,0	8	7,52	19,00	24,00	76	2,00	W	5599077
57NC080R3TK	8,0	8	7,52	19,00	24,00	76	1,50	–	6569492
57NC080R3TM	8,0	8	7,52	19,00	24,00	76	2,00	–	6569493
57NC10004T	10,0	10	9,40	22,00	30,00	76	–	–	5599078
57NC10024T	10,0	10	9,40	22,00	30,00	76	0,50	–	5599079
57NC10024W	10,0	10	9,40	22,00	30,00	76	0,50	W	5599080
57NC10034T	10,0	10	9,40	22,00	30,00	76	1,00	–	5599081
57NC10034W	10,0	10	9,40	22,00	30,00	76	1,00	W	5599082
57NC10054T	10,0	10	9,40	22,00	30,00	76	2,00	–	5599083
57NC100R4TK	10,0	10	9,40	22,00	30,00	76	1,50	–	6569494
57NC12005T	12,0	12	11,28	26,00	36,00	83	–	–	5599085
57NC12025T	12,0	12	11,28	26,00	36,00	83	0,50	–	5599086
57NC12025W	12,0	12	11,28	26,00	36,00	83	0,50	W	5599087
57NC12035T	12,0	12	11,28	26,00	36,00	83	1,00	–	5599088
57NC12055T	12,0	12	11,28	26,00	36,00	83	2,00	–	5599090
57NC12055W	12,0	12	11,28	26,00	36,00	83	2,00	W	5599091
57NC120R5TK	12,0	12	11,28	26,00	36,00	83	1,50	–	6569495
57NC120R5TP	12,0	12	11,28	26,00	36,00	83	3,00	–	6569496
57NC16006T	16,0	16	15,04	32,00	48,00	100	–	–	5599092
57NC16026T	16,0	16	15,04	32,00	48,00	100	0,50	–	5599093
57NC16026W	16,0	16	15,04	32,00	48,00	100	0,50	W	5598905
57NC16036T	16,0	16	15,04	32,00	48,00	100	1,00	–	5599094

VariMill II™ • Series 57NC • Metric

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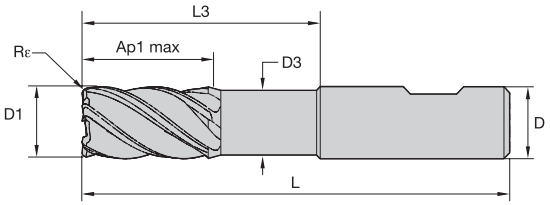

● first choice
○ alternate choice

P		●
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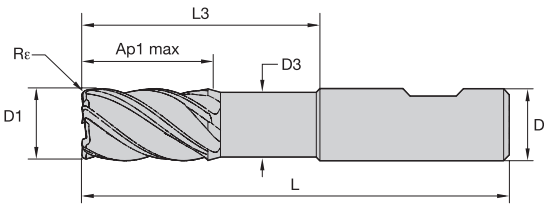
catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	SS	WS15PE
57NC16036W	16,0	16	15,04	32,00	48,00	100	1,00	W	**5599095**
57NC16056T	16,0	16	15,04	32,00	48,00	100	2,00	–	**5599096**
57NC16076T	16,0	16	15,04	32,00	48,00	100	3,00	–	**5599098**
57NC16076W	16,0	16	15,04	32,00	48,00	100	3,00	W	**5599099**
57NC160R6TQ	16,0	16	15,04	32,00	48,00	100	4,00	–	**6569497**
57NC20007T	20,0	20	18,80	38,00	60,00	115	–	–	**5599100**
57NC20027T	20,0	20	18,80	38,00	60,00	115	0,50	–	**5599101**
57NC20027W	20,0	20	18,80	38,00	60,00	115	0,50	W	**5599102**
57NC20037T	20,0	20	18,80	38,00	60,00	115	1,00	–	**5599103**
57NC20037W	20,0	20	18,80	38,00	60,00	115	1,00	W	**5599104**
57NC20057T	20,0	20	18,80	38,00	60,00	115	2,00	–	**5599105**
57NC20077T	20,0	20	18,80	38,00	60,00	115	3,00	–	**5599107**
57NC20077W	20,0	20	18,80	38,00	60,00	115	3,00	W	**5599108**
57NC20087T	20,0	20	18,80	38,00	60,00	115	4,00	–	**5599109**
57NC200R7TR	20,0	20	18,80	38,00	60,00	115	5,00	–	**6569498**
57NC25008T	25,0	25	23,50	45,00	75,00	135	–	–	**5599111**
57NC25028T	25,0	25	23,50	45,00	75,00	135	0,50	–	**5599112**
57NC25038T	25,0	25	23,50	45,00	75,00	135	1,00	–	**5599114**
57NC25038W	25,0	25	23,50	45,00	75,00	135	1,00	W	**5599115**
57NC25058T	25,0	25	23,50	45,00	75,00	135	2,00	–	**5599116**
57NC25078T	25,0	25	23,50	45,00	75,00	135	3,00	–	**5599118**
57NC25088T	25,0	25	23,50	45,00	75,00	135	4,00	–	**5599120**

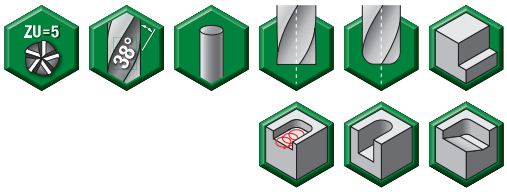
NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

VariMill II™ • Series 57N8 • Metric





● first choice
○ alternate choice

P		○
M		●
K		●
N		
S		●
H		○

WIDIA HANITA

catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	SS	WS15PE
57N806002MT	6,0	6	5,60	13,00	18,00	63	–	–	3524626
57N806022MT	6,0	6	5,60	13,00	18,00	63	0,50	–	3524627
57N8060R2MTG	6,0	6	5,64	13,00	18,00	63	0,75	–	6492821
57N808003MT	8,0	8	7,50	19,00	24,00	76	–	–	3524629
57N808023MT	8,0	8	7,50	19,00	24,00	76	0,50	–	3524631
57N8080R3MTG	8,0	8	7,52	19,00	24,00	76	0,75	–	6492822
57N8080R3MTK	8,0	8	7,52	19,00	24,00	76	1,50	–	6492825
57N810004MT	10,0	10	9,40	22,00	30,00	76	–	–	3524632
57N810024MT	10,0	10	9,40	22,00	30,00	76	0,50	–	3524643
57N810034MT	10,0	10	9,40	22,00	30,00	76	1,00	–	3524644
57N810054MT	10,0	10	9,40	22,00	30,00	76	2,00	–	3524645
57N8100R4MTG	10,0	10	9,40	22,00	30,00	76	0,75	–	6492823
57N8100R4MTK	10,0	10	9,40	22,00	30,00	76	1,50	–	6492826
57N812025MT	12,0	12	11,28	26,00	36,00	83	0,50	–	3524647
57N812035MT	12,0	12	11,28	26,00	36,00	83	1,00	–	3524648
57N812055MT	12,0	12	11,28	26,00	36,00	83	2,00	–	3524649
57N8120R5MTK	12,0	12	11,28	26,00	36,00	83	1,50	–	6492827
57N8120R5MTN	12,0	12	11,28	26,00	36,00	83	2,50	–	6492829
57N8120R5MTP	12,0	12	11,28	26,00	36,00	83	3,00	–	6492830
57N816006MT	16,0	16	15,05	32,00	48,00	100	–	–	3524650
57N816026MT	16,0	16	15,05	32,00	48,00	100	0,50	–	3524651
57N816026MW	16,0	16	15,05	32,00	48,00	100	0,50	W	3562867
57N816036MT	16,0	16	15,05	32,00	48,00	100	1,00	–	3524652
57N816076MT	16,0	16	15,05	32,00	48,00	100	3,00	–	3524654

VariMill II™ • Series 57N8 • Metric

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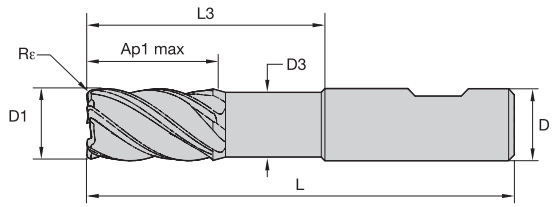

● first choice
○ alternate choice

P		○
M		●
K		●
N		
S		●
H		○

catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	SS	WS15PE
57N816076MW	16,0	16	15,05	32,00	48,00	100	3,00	W	**3524692**
57N8160R6MTQ	16,0	16	15,04	32,00	48,00	100	4,00	–	**6492832**
57N820027MW	20,0	20	18,80	38,00	60,00	115	0,50	W	**3524693**
57N8200R7MTJ	20,0	20	18,80	38,00	60,00	115	1,00	–	**6492824**
57N8200R7MTR	20,0	20	18,80	38,00	60,00	115	5,00	–	**6492833**
57N8250R8MTP	25,0	25	23,50	45,00	75,00	135	3,00	–	**6492831**
57N8250R8MTR	25,0	25	23,50	45,00	75,00	135	5,00	–	**6492834**

NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

Application Data • VariMill I™ • Series 4777 • Metric

Material Group		Side Milling (A) and Slotting (B)			WP15PE			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.										
		A		B	Cutting Speed — vc m/min				D1 — Diameter									
		ap	ae	ap	min		max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
P	0	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	1	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	–	190	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	–	160	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	–	150	fz	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	–	100	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	–	75	fz	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	–	115	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	–	70	fz	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	–	150	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	–	140	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	110	–	130	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	fz	0,013	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061
	3	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	4	1,5 x D	0,5 x D	1 x D	50	–	60	fz	0,016	0,021	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074	0,084
H	1	1,5 x D	0,5 x D	0,75 x D	80	–	140	fz	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameters.

Application Data • VariMill I • Series 47N7 • WP15PE • Metric

Material Group		Side Milling (A) and Slotting (B)			WP15PE			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.						
		A		B	Cutting Speed — vc m/min				D1 — Diameter					
		ap	ae	ap	min	–	max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	140	–	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	120	–	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,5 x D	0,5 x D	0,75 x D	90	–	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	5	1,5 x D	0,5 x D	1 x D	60	–	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	6	1,5 x D	0,5 x D	0,75 x D	50	–	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1,5 x D	0,5 x D	1 x D	90	–	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	1,5 x D	0,5 x D	1 x D	60	–	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1,5 x D	0,5 x D	1 x D	120	–	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	110	–	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	1,5 x D	0,5 x D	1 x D	100	–	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	fz	0,013	0,019	0,026	0,032	0,037	0,046	0,054
	3	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	4	1,5 x D	0,5 x D	1 x D	50	–	60	fz	0,016	0,026	0,037	0,045	0,052	0,064	0,074
H	1	1,5 x D	0,5 x D	0,75 x D	80	–	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameters.

Application Data • VariMill I™ • Series 47N7 • TIALN-LT • Metric

Material Group		Side Milling (A) and Slotting (B)			TiAlN			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.							
		A		B	Cutting Speed — vc m/min				D1 — Diameter						
		ap	ae	ap	min		max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	140	–	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	120	–	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,5 x D	0,5 x D	0,75 x D	90	–	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	5	1,5 x D	0,5 x D	1 x D	60	–	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	6	1,5 x D	0,5 x D	0,75 x D	50	–	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1,5 x D	0,5 x D	1 x D	90	–	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	1,5 x D	0,5 x D	1 x D	60	–	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1,5 x D	0,5 x D	1 x D	120	–	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	110	–	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	1,5 x D	0,5 x D	1 x D	100	–	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	fz	0,013	0,019	0,026	0,032	0,037	0,046	0,054
	3	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	4	1,5 x D	0,5 x D	1 x D	50	–	60	fz	0,016	0,026	0,037	0,045	0,052	0,064	0,074
H	1	1,5 x D	0,5 x D	0,75 x D	80	–	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameters.

Application Data • VariMill II™ • Series 5777 • Metric

Material Group		Side Milling (A) and Slotting (B)			WP15PE			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.							
		A		B	Cutting Speed — vc m/min				D1 — Diameter						
		ap	ae	ap	min		max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	–	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	–	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	–	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	–	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	–	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	–	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	–	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	–	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	–	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	–	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	fz	0,013	0,019	0,026	0,032	0,037	0,046	0,054	0,061
	3	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	4	1,5 x D	0,5 x D	1 x D	50	–	60	fz	0,016	0,026	0,037	0,045	0,052	0,064	0,074	0,084
H	1	1,5 x D	0,5 x D	0,75 x D	80	–	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on > 12mm diameters.

Application Data • VariMill II™ • Series 577C • Metric

Material Group		Side Milling (A) and Slotting (B)			WP15PE			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.								
		A		B	Cutting Speed — vc m/min				D1 — Diameter							
		ap	ae	ap	min		max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
P	0	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	1	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	–	190	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	–	160	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	–	150	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	–	100	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
M	1	1,5 x D	0,5 x D	1 x D	90	–	115	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	–	70	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	–	150	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	–	140	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	110	–	130	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061
	3	1,5 x D	0,3 x D	1 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	4	1,5 x D	0,5 x D	1 x D	50	–	60	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074	0,084
H	1	1,5 x D	0,5 x D	0,75 x D	80	–	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098
	2	1,5 x D	0,2 x D	0,5 x D	70	–	120	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071

Application Data • VariMill II • Series 57NC • Metric

Material Group		Side Milling (A) and Slotting (B)			WS15PE			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.								
		A		B	Cutting Speed — vc m/min				D1 — Diameter							
		ap	ae	ap	min		max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
P	5	1,5 x D	0,5 x D	1 x D	60	–	100	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	–	75	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	–	115	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	–	70	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	–	150	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	–	140	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	110	–	130	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061
	3	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	4	1,5 x D	0,5 x D	1 x D	50	–	60	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074	0,084
H	1	1,5 x D	0,5 x D	0,75 x D	80	–	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098
	2	1,5 x D	0,2 x D	0,5 x D	70	–	120	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameters.

Application Data • VariMill II™ • Series 57N8 • Metric

Material Group		Side Milling (A) and Slotting (B)			WS15PE			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.							
		A		B	Cutting Speed — vc m/min				D1 — Diameter						
		ap	ae	ap	min		max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	–	200	fz	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	–	190	fz	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	–	160	fz	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	–	150	fz	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	–	100	fz	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	–	75	fz	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	–	115	fz	0,036	0,050	0,061	0,007	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	–	70	fz	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	–	150	fz	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	–	130	fz	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	–	130	fz	0,029	0,040	0,048	0,056	0,070	0,081	0,091
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	fz	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	fz	0,019	0,026	0,032	0,037	0,046	0,054	0,061
	3	1,5 x D	0,5 x D	1 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	4	1,5 x D	0,5 x D	1 x D	50	–	60	fz	0,026	0,037	0,045	0,052	0,064	0,074	0,084
H	1	1,5 x D	0,5 x D	0,75 x D	80	–	140	fz	0,033	0,045	0,054	0,062	0,077	0,088	0,098

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on diameters >12mm diameters.

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55%
Radial engagement

WIDIA™ HANITA™

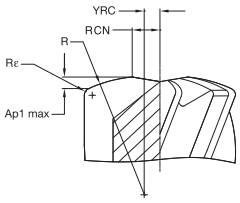
WIDIA™

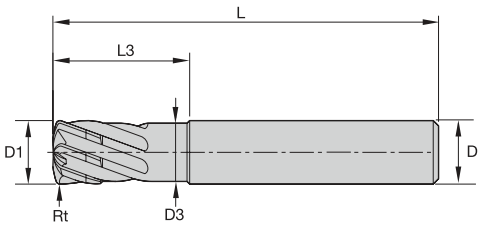
widia.com

X-Feed™

High-Performance Solid Carbide End Mills • High Feed

Series 70NS • Stainless Steel/High-Temp • Metric





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○ alternate choice

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WIDIA HANITA

catalogue number	D1	D	D3	L3	length L	Rε	Rt	AlTiN-MT
70NS06002	6,0	6	5,50	17,75	63	0,38	0,67	**6441882**
70NS08003	8,0	8	7,50	23,75	76	0,50	0,89	**6441883**
70NS10004	10,0	10	9,00	29,50	89	0,63	1,12	**6441884**
70NS12005	12,0	12	11,00	35,50	100	0,75	1,34	**6441885**
70NS16006	16,0	16	15,00	47,50	110	1,00	1,79	**6441886**
70NS20007	20,0	20	19,00	59,50	125	1,25	2,23	**6441887**
70NS25008	25,0	25	23,50	74,25	150	1,56	2,90	**6441888**

NOTE: YRC = distance from centre line to the crown of the R radius.
RCN = distance from centre line to the start of the cutting edge. This dimension can also help determine the minimum circle size when helical ramping.
R = the head radius size.
Rε = the shoulder radius or radius at the corner of the cutter.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

High-Performance Solid Carbide End Mills • High Feed

Programming Data

70NS Metric															
Geometrical Parameters									Ramping Guide for Circular and Linear Interpolation						
									Circular Interpolation		Linear Interpolation				
									Allowed Range of Hole Diameter		Calculated Length (mm) per Ramp Angle				
diameter	Ap1 max	Rfm	Rt	Rc	Xfm	Yfm	YD	Number			Ramp Angle (degree)				
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	flutes	Smallest	Largest	1	2	3	4	5
6	0,32	6	0,67	0,375	0,338	0,75	1,26	6	8,52	12	18,12	9,06	6,03	4,52	3,61
8	0,42	8	0,89	0,500	0,450	1,00	1,68	6	11,36	16	24,16	12,08	8,05	6,03	4,82
10	0,53	10	1,12	0,625	0,562	1,25	2,10	6	14,2	20	30,20	15,09	10,06	7,54	6,02
12	0,63	12	1,34	0,750	0,674	1,50	2,52	6	17,04	24	36,24	18,11	12,07	9,05	7,23
16	0,84	16	1,79	1,000	0,915	2,00	3,36	6	22,72	32	48,31	24,15	16,09	12,06	9,64
20	1,05	20	2,23	1,250	1,124	2,50	4,20	6	28,4	40	60,39	30,19	20,11	15,08	12,05
25	1,25	25	2,90	1,5625	1,405	3,1250	5,25	6	35,5	50	70,61	35,80	23,85	17,88	14,29
Recommended Feed											30%	30%	30%	30%	10%

Application Data • Series 70NS • Stainless Steel/High-Temp • Metric

Material Group		Profile Milling		AlTiN-MT			Recommended Feed Per Tooth (fz = mm/th) for 3D milling/profiling (A)						
		A		Cutting Speed – Vc m/min			D1 – Diameter						
		ap	ae	min		max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
M	1	0,05 x D	0,55 x D	90	–	115	fz	0,300	0,400	0,500	0,540	0,720	0,900	1,125
	2	0,05 x D	0,55 x D	60	–	80	fz	0,240	0,320	0,400	0,480	0,640	0,800	1,000
	3	0,05 x D	0,55 x D	60	–	70	fz	0,240	0,320	0,400	0,480	0,640	0,800	1,000
S	1	0,05 x D	0,55 x D	50	–	90	fz	0,270	0,360	0,450	0,500	0,650	0,800	1,000
	2	0,05 x D	0,55 x D	50	–	80	fz	0,240	0,320	0,400	0,480	0,600	0,700	0,900
	3	0,05 x D	0,55 x D	25	–	40	fz	0,180	0,240	0,300	0,350	0,430	0,500	0,600
	4	0,05 x D	0,55 x D	50	–	60	fz	0,210	0,280	0,350	0,420	0,560	0,700	0,875

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on diameters greater than 12mm.

4U50 & 4U80

AEROSPACE ROUGHING

AEROSPACE

4U50

Shallow pitch rougher.

4–6 flutes with variable spacing.

Short length of cut and 3 x D diameter neck length.

Stainless steel and high-temp alloys.

Centre cutting.

NEW!

4U80

Shallow pitch rougher.

4–6 flutes with variable spacing.

Regular length of cut.

Stainless steel and high-temp alloys.

Centre cutting.

NEW!

New Weldon® shank

WIDIA™ HANITA™

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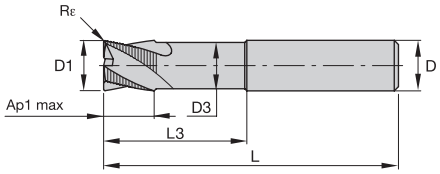
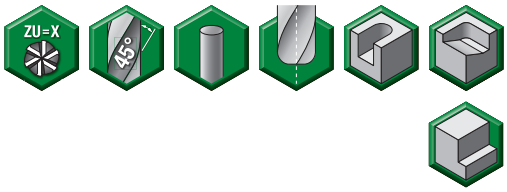
High-Performance Roughers

High-Performance Solid Carbide End Mills • Roughing

Series 4U50 • Metric





● first choice
○ alternate choice

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WIDIA HANITA

catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	ZU	WS15PE
4U50M060R2TC	6,0	6	5,64	6,00	18,00	57	0,30	4	**6431403**
4U50M080R3TC	8,0	8	7,52	8,00	24,00	63	0,30	4	**6431404**
4U50M100R4TE	10,0	10	9,40	10,00	30,00	72	0,50	4	**6431405**
4U50M120R5TE	12,0	12	11,28	12,00	36,00	83	0,50	4	**6431406**
4U50M160R6TE	16,0	16	15,04	16,00	48,00	92	0,50	6	**6431407**
4U50M200R7TG	20,0	20	18,80	20,00	60,00	104	1,00	6	**6431408**
4U50M250R8TG	25,0	25	23,50	25,00	75,00	121	1,00	6	**6431409**

End Mill Tolerances

D1	tolerance d11	D	tolerance h6 + / -
≤ 3	-0,020/-0,080	≤ 3	0/-0,006
> 3–6	-0,030/-0,105	> 3–6	0/-0,008
> 6–10	-0,040/-0,130	> 6–10	0/-0,009
> 10–18	-0,050/-0,160	> 10–18	0/-0,011
> 18–30	-0,065/-0,195	> 18–30	0/-0,013

Application Data • Series 4U50 • Metric

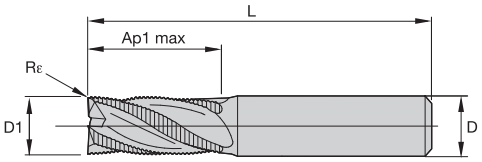
Material Group																
		Side Milling (A) and Slotting (B)			WS15PE			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.								
		A		B	Cutting Speed — Vc m/min				D1 — Diameter							
		ap	ae	ap	min		max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
M	1	0,8 x D	0,5 x D	0,75 x D	90	–	115	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	0,8 x D	0,4 x D	0,75 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	3	0,8 x D	0,4 x D	0,75 x D	60	–	70	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
S	1	0,8 x D	0,4 x D	0,75 x D	50	–	90	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	0,8 x D	0,25 x D	0,3 x D	25	–	40	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061
	3	0,8 x D	0,4 x D	0,75 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	4	0,8 x D	0,3 x D	0,3 x D	50	–	60	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074	0,084

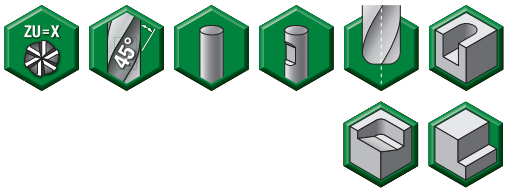
NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on diameters greater than 12mm.

High-Performance Roughers

High-Performance Solid Carbide End Mills • Roughing

Series 4U80 • Metric





● first choice
○ alternate choice

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			NEW!

WIDIA HANITA

catalogue number	D1	D	length of cut Ap1 max	length L	Rε	ZU	SS	WS15PE	AlTiN-MW
4U80M060R2TC	6,0	6	13,00	57	0,30	4	–	6431246	–
4U80M060R2WC	6,0	6	13,00	57	0,30	4	W	–	6652714
4U80M080R3TC	8,0	8	16,00	63	0,30	4	–	6431247	–
4U80M080R3WC	8,0	8	16,00	63	0,30	4	W	–	6652715
4U80M100R4TE	10,0	10	22,00	72	0,50	4	–	6431248	–
4U80M100R4WE	10,0	10	22,00	72	0,50	4	W	–	6652716
4U80M120R5TE	12,0	12	26,00	83	0,50	4	–	6431249	–
4U80M120R5WE	12,0	12	26,00	83	0,50	4	W	–	6652717
4U80M160R6TE	16,0	16	32,00	92	0,50	6	–	6431250	–
4U80M160R6WE	16,0	16	32,00	92	0,50	6	W	–	6652718
4U80M200R7TG	20,0	20	38,00	104	1,00	6	–	6431401	–
4U80M250R8TG	25,0	25	45,00	121	1,00	6	–	6431402	–

NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance d11	D	tolerance h6 + / -
≤ 3	-0,020/-0,080	≤ 3	0/-0,006
> 3–6	-0,030/-0,105	> 3–6	0/-0,008
> 6–10	-0,040/-0,130	> 6–10	0/-0,009
> 10–18	-0,050/-0,160	> 10–18	0/-0,011
> 18–30	-0,065/-0,195	> 18–30	0/-0,013

High-Performance Solid Carbide End Mills • Roughing

Application Data • Series 4U80 • Metric

Material Group																
		Side Milling (A) and Slotting (B)			WS15PE/ALTIN-MW			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.								
		A		B	Cutting Speed — Vc m/min				D1 — Diameter							
		ap	ae	ap	min		max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
M	1	1 x D	0,5 x D	0,75 x D	90	–	115	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1 x D	0,5 x D	0,75 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	3	1 x D	0,5 x D	0,75 x D	60	–	70	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
S	1	1 x D	0,3 x D	0,75 x D	50	–	90	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1 x D	0,3 x D	0,3 x D	25	–	40	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061
	3	1 x D	0,4 x D	0,75 x D	60	–	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	4	1 x D	0,4 x D	0,75 x D	50	–	60	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074	0,084

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on diameters greater than 12mm.

49N9 LINE EXPANSION

ALUMINIUM ROUGHING

AEROSPACE

GENERAL ENGINEERING

NEW!

49N9 Series

3-Flute, 40 degree helix.

Coarse cord style roughing profile.

Protective chamfer configuration.

Extended neck for long-reach applications.

Centre cutting.

Chamfered pitch.

WIDIA™ HANITA™

WIDIA™

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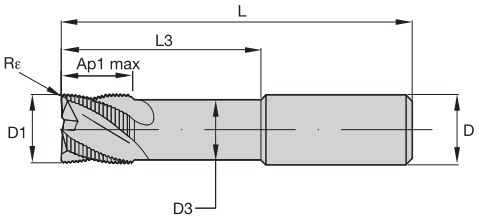
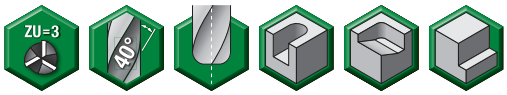
Series 49N9 • Metric





● first choice
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WIDIA HANITA

catalogue number	D1	D	D3	length of cut Ap1 max	L3	length L	Rε	UNCOATED
49N906002..	6,0	6	5,00	8,00	18,00	57	0,25	**2510324**
49N90601R2BT	6,0	6	5,00	13,00	18,00	57	0,25	**6590507**
49N908003..	8,0	8	7,00	10,00	24,00	63	0,25	**2510325**
49N90801R3BT	8,0	8	7,00	16,00	24,00	63	0,25	**6590508**
49N910004..	10,0	10	9,00	12,00	30,00	72	0,50	**2510326**
49N91001R4ET	10,0	10	9,00	22,00	30,00	72	0,50	**6590509**
49N912005..	12,0	12	11,00	15,00	36,00	83	0,50	**2510327**
49N91201R5ET	12,0	12	11,00	26,00	36,00	83	0,50	**6590510**
49N916006..	16,0	16	14,80	20,00	48,00	92	1,00	**2510328**
49N91601R6JT	16,0	16	14,80	32,00	48,00	92	1,00	**6590521**
49N920007..	20,0	20	18,70	24,00	60,00	104	1,00	**2510329**
49N92001R7JT	20,0	20	18,70	38,00	60,00	104	1,00	**6590522**

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

High-Performance Solid Carbide End Mills • Aluminium

Application Data • Series 49N9 • Metric

Material Group														
		Side Milling (A) and Slotting (B)			Uncoated			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.						
		A		B	Cutting Speed — vc m/min				D1 — Diameter						
		ap	ae	ap	min		max	mm	6,0	8,0	10,0	12,0	16,0	18,0	20,0
N	1	1 x D	0,5 x D	1 x D	500	–	2000	fz	0,072	0,096	0,120	0,144	0,192	0,216	0,240
	2	1 x D	0,5 x D	1 x D	500	–	1500	fz	0,065	0,086	0,108	0,130	0,173	0,194	0,216
	3	1 x D	0,5 x D	1 x D	500	–	1500	fz	0,050	0,067	0,084	0,101	0,134	0,151	0,168
	4	1 x D	0,5 x D	1 x D	400	–	750	fz	0,058	0,077	0,096	0,115	0,154	0,173	0,192
	5	1 x D	0,5 x D	1 x D	250	–	1000	fz	0,065	0,086	0,108	0,130	0,173	0,194	0,216

NOTE: For cutting aluminium with high silicon, TiCN coating is recommended.
Multiply ap for milling machine spindle with ceramic bearings by 0,5.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on diameters greater than 12mm.

D503 LINE EXPANSION

ZU=3 | 55° | DIN 6527

HIGH-PERFORMANCE FINISHING

GENERAL ENGINEERING

NEW!

Series D503, D513

3-flute, 45° helix.

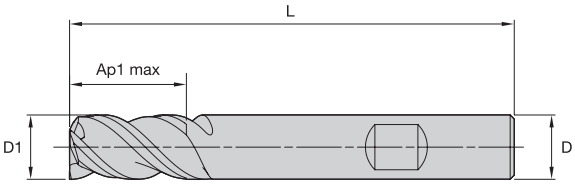
Centre cutting.

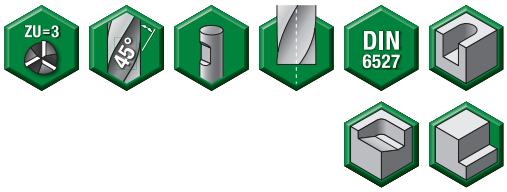
WIDIA™ HANITA™

WIDIA™

widia.com

Series D503 D513 • Metric





● first choice
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WIDIA HANITA

catalogue number	D1	D	length of cut Ap1 max	length L	SS	TIALN	TIALN-RW
D50302002RW	2,0	6	3,00	50	W	**1661574**	–
D503025C2W	2,5	6	3,00	50	W	**6613012**	–
D50303002RW	3,0	6	4,00	50	W	**1661578**	–
D503030C2W	3,0	6	4,00	50	W	**6613013**	–
D51303002RW	3,0	6	7,00	57	W	**1661680**	–
D513035C2W	3,5	6	7,00	57	W	**6613014**	–
D50304002RW	4,0	6	5,00	54	W	**1661583**	–
D503040C2W	4,0	6	5,00	54	W	**6613015**	–
D51304002RW	4,0	6	8,00	57	W	**1661684**	–
D50305002RW	5,0	6	6,00	54	W	–	**1661588**
D51305002RW	5,0	6	10,00	57	W	**1661688**	–
D50306002RW	6,0	6	7,00	54	W	**1661593**	–
D503060C2W	6,0	6	7,00	54	W	**6613016**	–
D51306002RW	6,0	6	10,00	57	W	**1661692**	–
D503080C3W	8,0	8	9,00	58	W	**6613017**	–
D50308003RW	8,0	8	9,00	58	W	**1661603**	–
D51308003RW	8,0	8	16,00	63	W	**1661701**	–
D503100C4W	10,0	10	11,00	66	W	**6613018**	–
D51310004RW	10,0	10	19,00	72	W	**1661710**	–
D503120C5W	12,0	12	12,00	73	W	**6613019**	–
D51312005RW	12,0	12	22,00	83	W	**1661715**	–
D51314014RW	14,0	14	22,00	83	W	–	**1661720**
D51316006RW	16,0	16	26,00	92	W	**1661725**	–

NOTE: SS = Shank Style
W = Weldon®

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/-0,006
> 3–6	-0,020/-0,038	> 3–6	0/-0,008
> 6–10	-0,025/-0,047	> 6–10	0/-0,009
> 10–18	-0,032/-0,059	> 10–18	0/-0,011
> 18–30	-0,040/-0,073	> 18–30	0/-0,013

Application Data • Series D503 • Metric

Material Group		Side Milling (A) and Slotting (B)			TiAlN			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.												
		A		B	Cutting Speed — vc m/min				D1 — Diameter											
		ap	ae	ap	min		max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	0	0,75 x D	0,4 x D	0,5 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	1	0,75 x D	0,4 x D	0,5 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	0,75 x D	0,4 x D	0,5 x D	140	–	190	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	0,75 x D	0,4 x D	0,5 x D	120	–	160	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	4	0,75 x D	0,4 x D	0,3 x D	90	–	150	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
	5	0,75 x D	0,4 x D	0,5 x D	60	–	100	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	6	0,75 x D	0,4 x D	0,3 x D	50	–	75	fz	0,008	0,012	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
M	1	0,75 x D	0,4 x D	0,5 x D	90	–	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	0,75 x D	0,4 x D	0,5 x D	60	–	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	3	0,75 x D	0,4 x D	0,5 x D	60	–	70	fz	0,008	0,012	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
K	1	0,75 x D	0,4 x D	0,5 x D	120	–	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	0,75 x D	0,4 x D	0,5 x D	110	–	140	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	3	0,75 x D	0,4 x D	0,5 x D	110	–	130	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
S	1	0,75 x D	0,4 x D	0,3 x D	50	–	90	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	0,75 x D	0,4 x D	0,3 x D	25	–	40	fz	0,006	0,009	0,013	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054
	3	0,75 x D	0,4 x D	0,3 x D	60	–	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	4	0,75 x D	0,4 x D	0,5 x D	50	–	60	fz	0,007	0,011	0,016	0,021	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074
H	1	0,75 x D	0,4 x D	0,3 x D	80	–	140	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on greater than 12mm diameters.

Application Data • Series D513 • Metric

Material Group		Side Milling (A) and Slotting (B)			TiAlN			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.												
		A		B	Cutting Speed — vc m/min				D1 — Diameter											
		ap	ae	ap	min		max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	0	1,25 x D	0,2 x D	0,25 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	1	1,25 x D	0,2 x D	0,25 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1,25 x D	0,2 x D	0,25 x D	140	–	190	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	1,25 x D	0,2 x D	0,25 x D	120	–	160	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	4	1,25 x D	0,2 x D	0,25 x D	90	–	150	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
	5	1,25 x D	0,2 x D	0,25 x D	60	–	100	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	6	1,25 x D	0,2 x D	0,25 x D	50	–	75	fz	0,008	0,012	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
M	1	1,25 x D	0,2 x D	0,25 x D	90	–	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	1,25 x D	0,2 x D	0,25 x D	60	–	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	3	1,25 x D	0,2 x D	0,25 x D	60	–	70	fz	0,008	0,012	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
K	1	1,25 x D	0,2 x D	0,25 x D	120	–	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1,25 x D	0,2 x D	0,25 x D	110	–	140	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	3	1,25 x D	0,2 x D	0,25 x D	110	–	130	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
S	1	1,25 x D	0,2 x D	0,25 x D	50	–	90	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	1,25 x D	0,2 x D	0,25 x D	25	–	40	fz	0,006	0,009	0,013	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054
	3	1,25 x D	0,2 x D	0,25 x D	60	–	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	4	1,25 x D	0,2 x D	0,25 x D	50	–	60	fz	0,007	0,011	0,016	0,021	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074
H	1	1,25 x D	0,2 X D	0,25 x D	80	–	140	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088

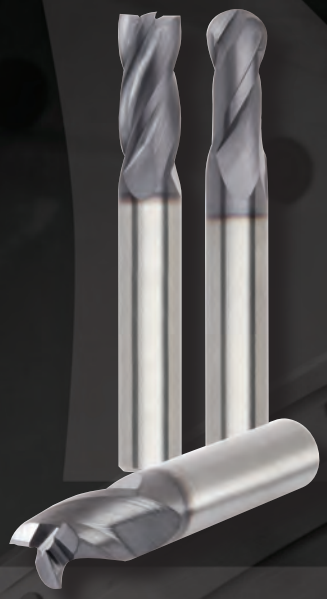
NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameters.

GP

4-FLUTE RADIUS END MILLS

THE EVOLUTION OF A SOLID CARBIDE END MILL REVOLUTION

GENERAL ENGINEERING



GP 4-Flute Radius End Mills

WIDIA-Hanita general purpose end mills offer plunging, slotting, and profiling for a wide range of materials and applications. Designed to provide high metal removal rates and excellent surface conditions at a value price. A wide range of diameters, lengths, and corner styles (such as chamfered, sharp edge, and ball nose) are available from stock.

Radius Series — 4004/4014/4024

- Centre cutting.
- Steel, stainless steel, and cast iron.
- Radius corner for extended tool life.
- Regular, long, and extra long length of cut.

The WIDIA-Hanita™ solid carbide end mill product lines have built a strong ongoing reputation of continuous development and diversification.

WIDIA™ HANITA™

WIDIA™

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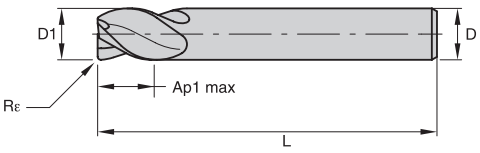
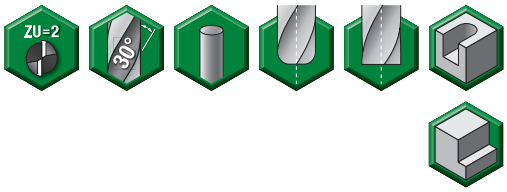
General Purpose Solid Carbide End Mills

General Purpose Solid Carbide End Mills • Roughing/Finishing

Series 4004 4014 4024 • Radius • Metric





● first choice
○ alternate choice

P		●
M		●
K		●
N		
S		
H		

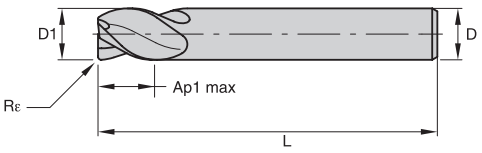
WIDIA HANITA

catalogue number	D1	D	length of cut Ap1 max	length L	Rε	TIALN
40040200T006R050	2,0	3	6,30	38	0,50	6337590
40040300T009R050	3,0	3	9,50	38	0,50	6337731
40040300T009R100	3,0	3	9,50	38	1,00	6337732
40140300T019R050	3,0	3	19,00	63	0,50	6337892
40240300T025R050	3,0	3	25,00	75	0,50	6338335
40040400T011R050	4,0	4	11,00	50	0,50	6337733
40040400T011R100	4,0	4	11,00	50	1,00	6337734
40140400T019R050	4,0	4	19,00	63	0,50	6337893
40140400T019R100	4,0	4	19,00	63	1,00	6337894
40240400T031R050	4,0	4	31,00	75	0,50	6338336
40240400T031R100	4,0	4	31,00	75	1,00	6338337
40040500T013R050	5,0	5	13,00	50	0,50	6337735
40140500T030R050	5,0	5	30,00	75	0,50	6337895
40140500T030R100	5,0	5	30,00	75	1,00	6337896
40040600T016R100	6,0	6	16,00	50	1,00	6337737
40040600T016R050	6,0	6	16,00	50	0,50	6337736
40140600T028R050	6,0	6	28,00	75	0,50	6337897
40140600T028R100	6,0	6	28,00	75	1,00	6337898
40240600T038R050	6,0	6	38,00	100	0,50	6338338
40240600T038R100	6,0	6	38,00	100	1,00	6338339
40040800T020R100	8,0	8	20,00	50	1,00	6337739
40040800T020R050	8,0	8	20,00	50	0,50	6337738
40140800T028R050	8,0	8	28,00	75	0,50	6337899
40140800T028R100	8,0	8	28,00	75	1,00	6337900
40240800T041R050	8,0	8	41,00	100	0,50	6338340
40240800T041R100	8,0	8	41,00	100	1,00	6338341
40041000T022R050	10,0	10	22,00	72	0,50	6337740
40041000T022R100	10,0	10	22,00	72	1,00	6337741
40141000T032R100	10,0	10	32,00	89	1,00	6337912
40141000T032R050	10,0	10	32,00	89	0,50	6337911
40241000T045R050	10,0	10	45,00	100	0,50	6338342
40241000T045R100	10,0	10	45,00	100	1,00	6338343

General Purpose Solid Carbide End Mills • Roughing/Finishing

Series 4004 4014 4024 • Radius • Metric

(continued)



● first choice
○ alternate choice

P		●
M		●
K		●
N		
S		
H		

catalogue number	D1	D	length of cut Ap1 max	length L	Rε	TIALN
40041200T025R100	12,0	12	25,00	89	1,00	**6337743**
40041200T025R050	12,0	12	25,00	89	0,50	**6337742**
40141200T045R050	12,0	12	45,00	100	0,50	**6337913**
40141200T045R100	12,0	12	45,00	100	1,00	**6337914**
40241200T075R050	12,0	12	75,00	150	0,50	**6338344**
40241200T075R100	12,0	12	75,00	150	1,00	**6338345**
40041600T032R100	16,0	16	32,00	92	1,00	**6337745**
40041600T032R050	16,0	16	32,00	92	0,50	**6337744**
40141600T056R100	16,0	16	56,00	110	1,00	**6337916**
40141600T056R050	16,0	16	56,00	110	0,50	**6337915**
40241600T075R050	16,0	16	75,00	150	0,50	**6338346**
40241600T075R100	16,0	16	75,00	150	1,00	**6338347**
40242000T075R050	20,0	20	75,00	150	0,50	**6338349**

NOTE: Refer to the NOVO™ app for the complete GP end mill offering.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3–6	-0,020/-0,038	> 3–6	0/0,008
> 6–10	-0,025/-0,047	> 6–10	0/0,009
> 10–18	-0,032/-0,059	> 10–18	0/0,011
> 18–30	-0,040/-0,073	> 18–30	0/0,013

General Purpose Solid Carbide End Mills

General Purpose Solid Carbide End Mills • Roughing/Finishing

Application Data • 4004 4014 4024 Series • TiAlN • Metric

Material Group																					
		Side Milling (A) and Slotting (B)			TiAlN			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.													
		A		B	Cutting Speed — Vc m/min				D1 — Diameter												
		ap	ae	ap	min		max	mm	1,0	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	0	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	1	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	Ap1 max	0,1 x D	0,5 x D	140	–	190	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	Ap1 max	0,1 x D	0,5 x D	120	–	160	fz	0,006	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	4	Ap1 max	0,1 x D	0,5 x D	90	–	150	fz	0,005	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
M	1	Ap1 max	0,1 x D	0,5 x D	90	–	115	fz	0,006	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	Ap1 max	0,1 x D	0,5 x D	60	–	80	fz	0,005	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
K	1	Ap1 max	0,1 x D	0,5 x D	120	–	150	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	Ap1 max	0,1 x D	0,5 x D	110	–	140	fz	0,006	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on greater than 12mm diameters.