PROVEN SOLUTIONS I ALWAYS AVAILABLE

ALL-STAR

AMERICAS | VOL 1

TURNING

WIDIA™

ALL-STAR

WIDIA™

The All-Star Program reinforces the core qualities of the WIDIA™ diamond — providing proven solutions that are easy to find and always available.

With All-Star, customers can benefit from product reliability and quick delivery to increase machine utilization.

ALL-STAR

ALL-STAR

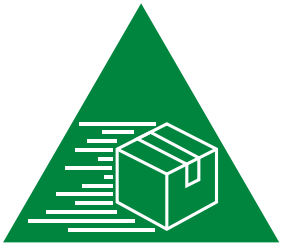
PROVEN SOLUTIONS

Products included in the All-Star program were chosen based on their proven performance and popularity. These industry-leading solutions combine versatility and productivity to deliver savings.

EASY TO FIND

It is easy to recommend All-Star on-the-go or in the shop while using tools like the NOVO™ tool advisor or the Machining Central app. To view All-Star products on widia.com, use the All-Star filter.

Available to download in the app store!



ALWAYS AVAILABLE

All-Star products are held to the highest availability standards. This means products that are flagged as All-Star feature same-day shipping for all orders received before 6pm EST.

TO SEE ALL PRODUCTS LINES, VISIT OUR DIGITAL RESOURCES

WIDIA NOVO™ Application
Download to your desktop or tablet:
widia.com/novo

WIDIA™ Machining Central Mobile App
Download for iOS or Android:
widia.com/en/featured/WidiaMobileApp

WIDIA™

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TURNING

HIGH-PERFORMANCE INSERTS

Pages E4–E33

WIDIA™ Victory™ Inserts

SPECIALTY TURNING

Pages E4, E34–E35

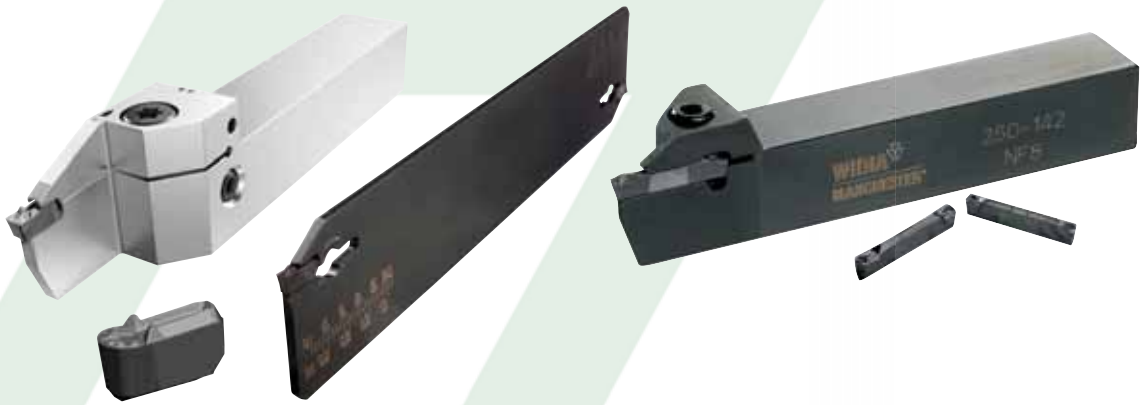
Small-Hole Boring • Positive Inserts

ALL-STAR

GROOVING AND CUT-OFF

Pages E36–E52

WGC
WMT™



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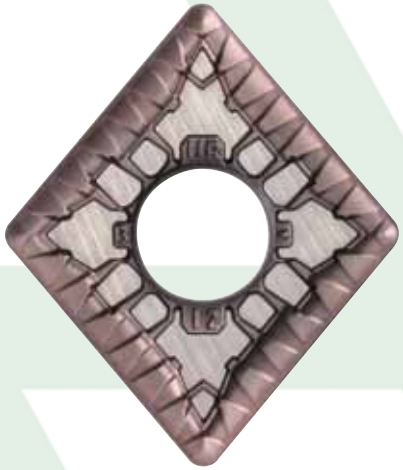
HIGH-PERFORMANCE INS & SPECIALTY TURNING

HIGH-PERFORMANCE INSERTS • WIDIA™ VICTORY™

Pages E6–E33

A complete high-performance turning portfolio.



SPECIALTY TURNING

Pages E34–E35

WIDIA micro-boring bars provide accurate holemaking tooling in small diameters.

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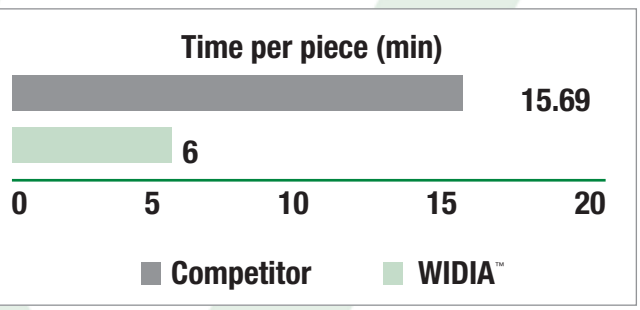
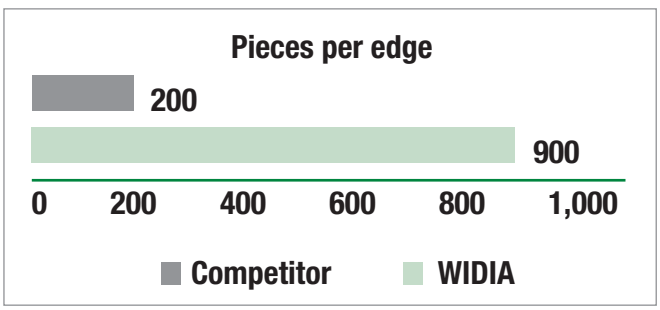
AUTOMOTIVE

Breaks and Steering Success Story:
Victory™ — RH Chipbreaker

Engine Block Success Story:
Victory Grade WK15CT





	COMPETITOR	WIDIA
Tool	–	CNMG434RH
Grade	–	WP15CT
Cutting Speed Vc	60.96 m/min (200 sfm)	39.62 m/min (130 sfm)
Feet per tooth f	0.102 mm (0.004")	0.203 mm (0.008")
Depth of cut ap	1.016 mm (0.04")	0.889 mm (0.035")
Length of cut L	101.6 mm (4")	
Number of passes	4	2
Coolant	Dry	
Time per piece	15.69	6.02

	COMPETITOR	WIDIA
Tool	–	SCMT3252
Grade	–	WK15CT
Cutting Speed Vc	152.4 m/min (500 sfm)	
Feet per tooth f	0.254 mm (0.01")	
Depth of cut ap	1.905 mm (0.075")	
Length of cut L	50.8 mm (2")	
Number of passes	1	
Coolant	External Cutting Oil	
Time per piece	200	900

Victory™ Turning

Victory turning inserts provide excellent tool life with superior surface finish in rough and finish turning of all types of workpiece materials.

Materials:

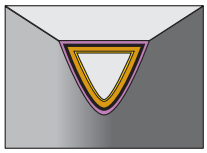
P M K N S

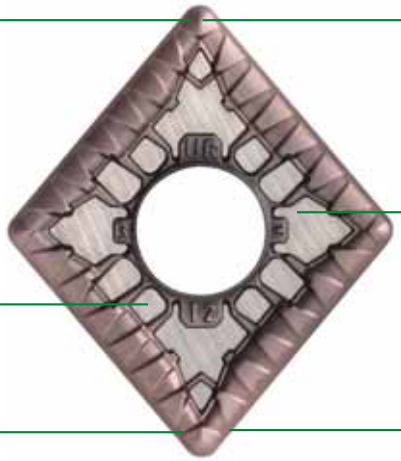
- Reduced cycle times: high speed and feed capabilities.
- Long tool life: new multilayer coating provides better wear resistance.
- Proven seating: smooth and secure seating surface.
- Specifically engineered multilayer coating and chip groove geometries provide high-speed capability with effective chipbreaking for finishing to roughing operations.

Post-coat treatment
- Improves edge toughness.
- Long, predictable tool life.
- Reduces depth-of-cut notching.
- Wide range of applications.

New geometry identification system.

MT-CVD/CVD–TiN-TiCN-Al_2O_3-ZrCN



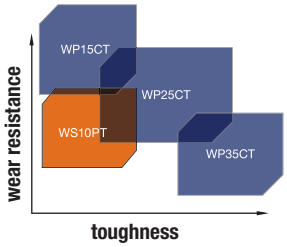


Improved edge toughness
- Provides smooth outer surface to reduce forces, friction, and workpiece sticking.

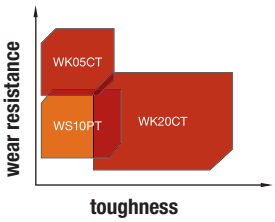
Post-coat grinding
- Provides secure seating surface.

Alpha alumina layer
- Provides coating integrity at elevated speeds.
- Higher productivity and dependability at high cutting temperatures.

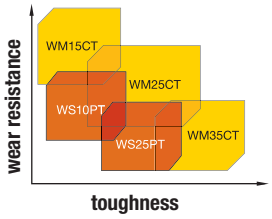
Victory Toughness/Wear Resistance



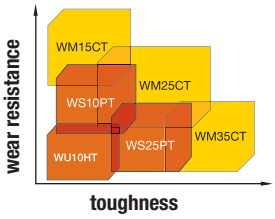
WP Grades for Steel
- Three grades and seven primary geometries for use in roughing to finishing operations.
- Increase cutting speed and/or feed rate to gain productivity.



WK Grades for Cast Iron
- Two grades to cover all of your cast iron turning operations.
- Very good balance of wear resistance and toughness for long predictable tool life. Flat top geometry for machining cast iron. For finishing to roughing applications.

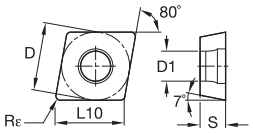


WM Grades for Stainless Steel
- Three grades across 12 geometries for use in roughing to finishing operations.
- Increase cutting speed and/or feed rate by up to 30% over similar competitive grades.



WS Grades for High-Temp Alloys
- Two grades for use in roughing to finishing operations.
- Very good wear resistance for longer tool life.
- One uncoated grade for use in titanium.

CCMT-FP



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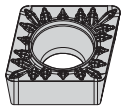
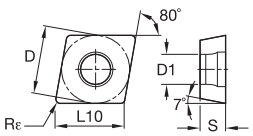
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT	WM25CT	WK20CT	WS25PT
CCMT060204FP	CCMT2151FP	6,35	1/4	6,45	.254	2,38	3/32	0,4	1/64	2,80	.110	4169858	4170141	4168779	-	5684340
CCMT09T302FP	CCMT32505FP	9,53	3/8	9,67	.381	3,97	5/32	0,2	.008	4,40	.173	-	4170293	-	-	-
CCMT09T304FP	CCMT3251FP	9,53	3/8	9,67	.381	3,97	5/32	0,4	1/64	4,40	.173	4169860	4170294	-	-	5684343
CCMT09T308FP	CCMT3252FP	9,53	3/8	9,67	.381	3,97	5/32	0,8	1/32	4,40	.173	-	4170295	-	4170085	-

CCMT-MP





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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WM25CT	WK20CT
CCMT060204MP	CCMT2151MP	6,35	1/4	6,45	.254	2,38	3/32	0,4	1/64	2,80	.110	4170217	-	-
CCMT09T304MP	CCMT3251MP	9,53	3/8	9,67	.381	3,97	5/32	0,4	1/64	4,40	.173	4170218	4168907	-
CCMT09T308MP	CCMT3252MP	9,53	3/8	9,67	.381	3,97	5/32	0,8	1/32	4,40	.173	4170219	4168908	-
CCMT120408MP	CCMT432MP	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,50	.217	-	-	4170240

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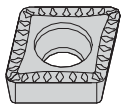
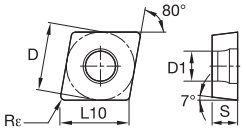
CCMT-MU





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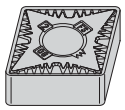
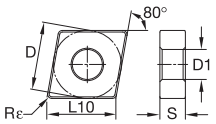
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT	WM25CT	WS25PT
CCMT09T304MU	CCMT3251MU	9,53	3/8	9,67	.381	3,97	5/32	0,4	1/64	4,40	.173	-	-	5623427	5623426
CCMT09T308MU	CCMT3252MU	9,53	3/8	9,67	.381	3,97	5/32	0,8	1/32	4,40	.173	5623434	5623436	5623435	5623437
CCMT120408MU	CCMT432MU	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,50	.217	-	-	5623442	-

CNGG-FS





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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT
CNGG120402FS	CNGG4305FS	12,70	1/2	12,90	.508	4,76	3/16	0,2	.008	5,16	.203	5548575

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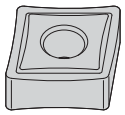
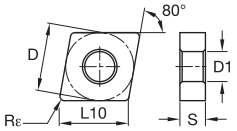
CNGP





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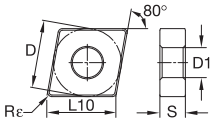
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT	WU10HT
CNGP120401	CNGP430	12,70	1/2	12,90	.508	4,76	3/16	0,1	.004	5,16	.203	5549137	-
CNGP120402	CNGP4305	12,70	1/2	12,90	.508	4,76	3/16	0,2	.008	5,16	.203	5549138	-
CNGP120404	CNGP431	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	5549139	5549207
CNGP120408	CNGP432	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	5549190	-

CNMA



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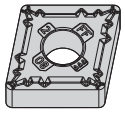
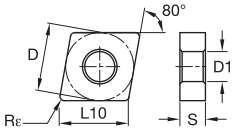
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WK20CT
CNMA120408	CNMA432	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	4171864
CNMA120412	CNMA433	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203	4171865

CNMG-FF





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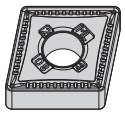
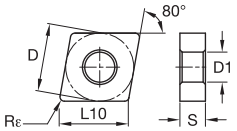
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT
CNMG120404FF	CNMG431FF	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	4171025

CNMG-ML





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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT
CNMG120404ML	CNMG431ML	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	4171059	-
CNMG120408ML	CNMG432ML	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	4171060	4170459

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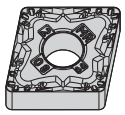
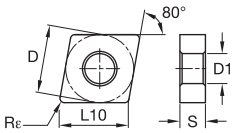
CNMG-MR





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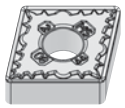
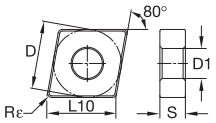
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT	WP35CT	WM25CT
CNMG120404MR	CNMG431MR	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	-	4170546	-	-
CNMG120408MR	CNMG432MR	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	4171131	4170547	4170044	4172955
CNMG120412MR	CNMG433MR	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203	4171132	4170548	-	-
CNMG190612MR	CNMG643MR	19,05	3/4	19,34	.762	6,35	1/4	1,2	3/64	7,93	.313	-	4170552	-	-
CNMG190616MR	CNMG644MR	19,05	3/4	19,34	.762	6,35	1/4	1,6	1/16	7,93	.313	-	-	-	4172962

CNMG-MS



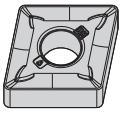


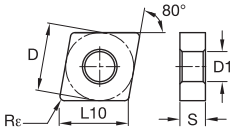
● first choice
○ alternate choice

P	○	○	○
M	●	●	●
K	○	○	
N	○	○	○
S	●	●	●
H			

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT	WS25PT	WU10HT
CNMG120404MS	CNMG431MS	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	5908742	5908743	-
CNMG120408MS	CNMG432MS	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	5908745	5908746	5908747
CNMG160608MS	CNMG542MS	15,88	5/8	16,12	.635	6,35	1/4	0,8	1/32	6,35	.250	-	5908755	-

CNMG-RH



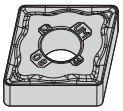


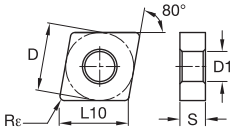
● first choice
○ alternate choice

P	●	●	○	○
M		○	●	
K	○			●
N				
S			○	
H				

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WP35CT	WM25CT	WK20CT
CNMG120408RH	CNMG432RH	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	4171504	5684356	4173035	4171903
CNMG120412RH	CNMG433RH	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203	4171505	-	-	4171904
CNMG160608RH	CNMG542RH	15,88	5/8	16,12	.635	6,35	1/4	0,8	1/32	6,35	.250	-	-	-	4171906
CNMG160616RH	CNMG544RH	15,88	5/8	16,12	.635	6,35	1/4	1,6	1/16	6,35	.250	-	-	-	4171908

CNMG-UM





● first choice
○ alternate choice

P	●	○	○
M		●	●
K	○		
N			
S		○	
H			

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WM25CT	WM35CT
CNMG120404UM	CNMG431UM	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	-	4172380	-
CNMG120408UM	CNMG432UM	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	5645219	4172381	4172411

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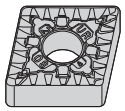
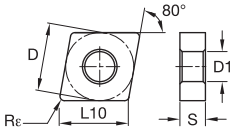
CNMG-UR



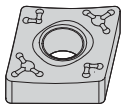


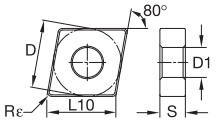
● first choice
○ alternate choice

P		●	●	○	○	○	○												
M			○	●	●	●	●												
K		○					○												
N							○												
S				○		●	●												
H																			

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WP35CT	WM25CT	WM35CT	WS10PT	WS25PT
CNMG120404UR	CNMG431UR	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	4170500	-	-	-	-	-
CNMG120408UR	CNMG432UR	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	4170501	4169960	4169445	4169480	5301400	5301402
CNMG120412UR	CNMG433UR	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203	-	-	4169446	-	-	-

CNMM-65





● first choice
○ alternate choice

P		●	
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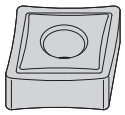
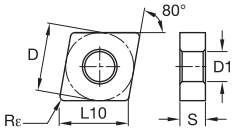
H			

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT
CNMM16061665	CNMM54465	15,88	5/8	16,12	.635	6,35	1/4	1,6	1/16	6,35	.250	5698373

CNMP





● first choice
○ alternate choice

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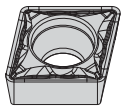
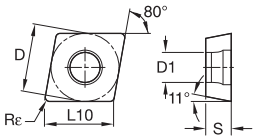
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT	WS10PT	WS25PT
CNMP120404	CNMP431	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203	4173552	4172439	-
CNMP120408	CNMP432	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203	4173653	4172440	4172614
CNMP190612	CNMP643	19,05	3/4	19,34	.762	6,35	1/4	1,2	3/64	7,93	.313	-	4172483	-

CPMT-FP





● first choice
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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT
CPMT060204FP	CPMT2151FP	6,35	1/4	6,45	.254	2,38	3/32	0,4	1/64	2,80	.110	4170326
CPMT09T308FP	CPMT3252FP	9,53	3/8	9,67	.381	3,97	5/32	0,8	1/32	4,40	.173	4170329

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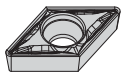
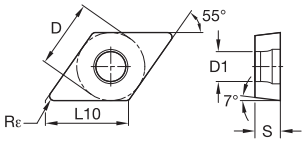
DCMT-FP





● first choice
○ alternate choice

P	●	●
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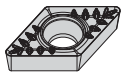
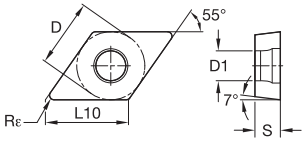
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT
DCMT070204FP	DCMT2151FP	6,35	1/4	7,75	.305	2,38	3/32	0,4	1/64	2,80	.110	-	4170300
DCMT11T304FP	DCMT3251FP	9,53	3/8	11,63	.458	3,97	5/32	0,4	1/64	4,40	.173	4169997	4170303
DCMT11T308FP	DCMT3252FP	9,53	3/8	11,63	.458	3,97	5/32	0,8	1/32	4,40	.173	4169998	-

DCMT-MP





● first choice
○ alternate choice

P	●	●
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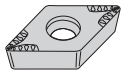
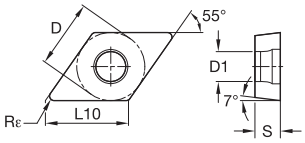
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT
DCMT11T308MP	DCMT3252MP	9,53	3/8	11,63	.458	3,97	5/32	0,8	1/32	4,40	.173	-	4170224
DCMT11T312MP	DCMT3253MP	9,53	3/8	11,63	.458	3,97	5/32	1,2	3/64	4,40	.173	4170213	-

DCMT-MU



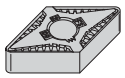


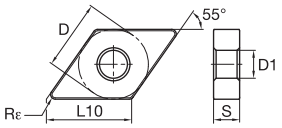
● first choice
○ alternate choice

P	●	○
M		●
K	○	○
N		○
S		●
H		

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WS10PT
DCMT11T308MU	DCMT3252MU	9,52	3/8	11,63	.458	3,97	.156	0,8	.0315	4,40	.173	5623600	5623601

DNGG-FS





● first choice
○ alternate choice

P	○
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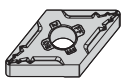
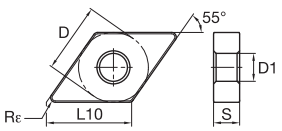
H	

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT
DNGG150402FS	DNGG4305FS	12,70	1/2	15,50	.610	4,76	3/16	0,2	.008	5,16	.203	5548673

DNMG-FF





● first choice
○ alternate choice

P	●
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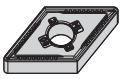
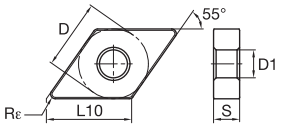
H	

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT
DNMG150404FF	DNMG431FF	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	4171030

DNMG-ML





● first choice
○ alternate choice

P	●	●
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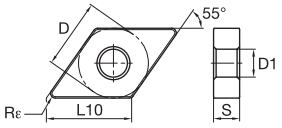
K	○	○
N		
S		
H		

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT
DNMG150404ML	DNMG431ML	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	4171065	4170483
DNMG150408ML	DNMG432ML	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203	4171066	4170484

DNMG-MR



● first choice
○ alternate choice

P	●	●	●
M			○
K	○	○	
N			
S			
H			

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT	WP35CT
DNMG150404MR	DNMG431MR	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	-	4170565	-
DNMG150408MR	DNMG432MR	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203	4171141	4170566	4170052

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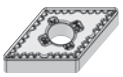
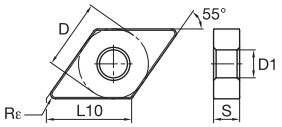
DNMG-MS



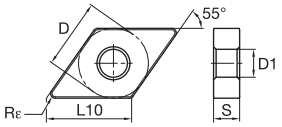


● first choice
○ alternate choice

P	○ ○
M	● ●
K	○ ○
N	○ ○
S	● ●
H	

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT	WS25PT
DNMG150404MS	DNMG431MS	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	5908782	-
DNMG150408MS	DNMG432MS	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203	5908785	5908787

DNMG-UF



● first choice
○ alternate choice

P	○
M	●
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S	○
H	

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT
DNMG150404UF	DNMG431UF	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	4169384

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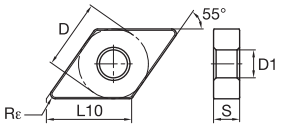
DNMG-UM



● first choice
○ alternate choice

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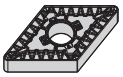
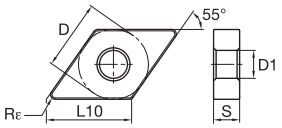
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT
DNMG150408UM	DNMG432UM	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203	4172387

DNMG-UR





● first choice
○ alternate choice

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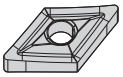
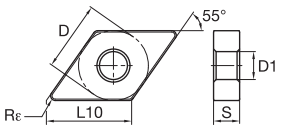
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WM25CT	WS25PT
DNMG150408UR	DNMG432UR	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203	4170511	4169454	5579271

DNMP





● first choice
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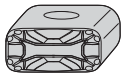
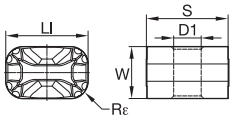
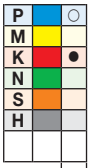
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT
DNMP150404	DNMP431	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	4172484

LNUX-13



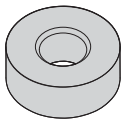


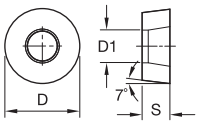
● first choice
○ alternate choice



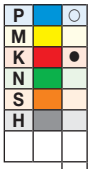
ISO catalog number	ANSI catalog number	W mm	W in	LI mm	LI in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WK20CT
LNUX30194013	LNUX30194013	12,00	.472	30,00	1.181	19,05	3/4	4,0	5/32	6,35	.250	4170968

RNMA



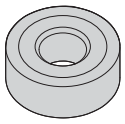


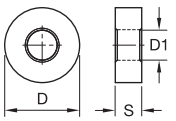
● first choice
○ alternate choice



ISO catalog number	ANSI catalog number	D mm	D in	S mm	S in	D1 mm	D1 in	WK20CT
RNMA120400	RNMA43	12,70	1/2	4,76	3/16	5,16	.203	4171881

RNMG-RH

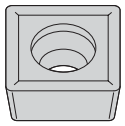


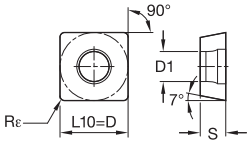


● first choice
○ alternate choice

ISO catalog number	ANSI catalog number	D mm	D in	S mm	S in	D1 mm	D1 in	WP25CT
RNMG190600RH	RNMG64RH	19,05	3/4	6,35	1/4	7,93	.313	4171532

SCMT





● first choice
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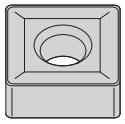
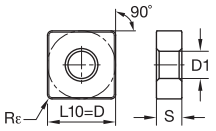
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP35CT
SCMT150512	SCMT5353	15,88	5/8	15,88	.625	5,56	7/32	1,2	3/64	5,50	.217	6128308

SNMG





● first choice
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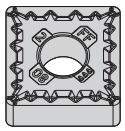
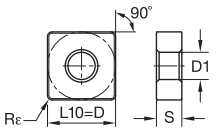
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP35CT
SNMG250924	SNMG866	25,40	1	25,40	1.000	9,53	3/8	2,4	3/32	9,12	.359	5091303

SNMG-FF





● first choice
○ alternate choice

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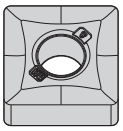
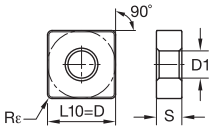
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT
SNMG090308FF	SNMG322FF	9,53	3/8	9,53	.375	3,18	1/8	0,8	1/32	3,81	.150	4171046

SNMG-RH





● first choice
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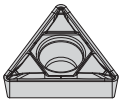
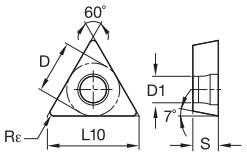
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP35CT	WK20CT
SNMG120412RH	SNMG433RH	12,70	1/2	12,70	.500	4,76	3/16	1,2	3/64	5,16	.203	4170999	-	-
SNMG150612RH	SNMG543RH	15,88	5/8	15,88	.625	6,35	1/4	1,2	3/64	6,35	.250	-	-	4171922
SNMG190612RH	SNMG643RH	19,05	3/4	19,05	.750	6,35	1/4	1,2	3/64	7,93	.313	-	4171722	-

TCMT-FP





● first choice
○ alternate choice

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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WM25CT
TCMT110202FP	TCMT21505FP	6,35	1/4	11,00	.433	2,38	3/32	0,2	.008	2,90	.114	-	4168800
TCMT220408FP	TCMT432FP	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,50	.217	4170317	-

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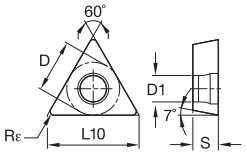
TCMT-MP



● first choice
○ alternate choice

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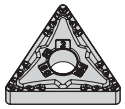
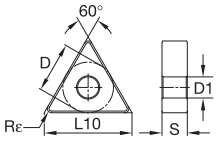
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT
TCMT16T308MP	TCMT3252MP	9,53	3/8	16,50	.650	3,97	5/32	0,8	1/32	4,40	.173	4168919

TNMG-MR





● first choice
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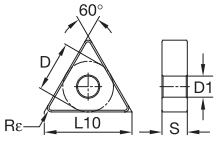
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WP35CT
TNMG220408MR	TNMG432MR	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203	4170577	4170063

TNMG-MS



● first choice
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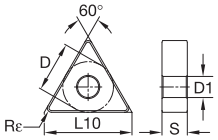
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS25PT
TNMG220408MS	TNMG432MS	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203	5908937

TNMG-RH



● first choice
○ alternate choice

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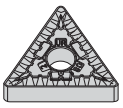
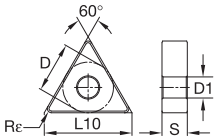
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT
TNMG220412RH	TNMG433RH	12,70	1/2	22,00	.866	4,76	3/16	1,2	3/64	5,16	.203	4171010

TNMG-UR





● first choice
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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT
TNMG160408UR	TNMG332UR	9,53	3/8	16,50	.650	4,76	3/16	0,8	1/32	3,81	.150	4171115

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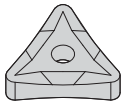
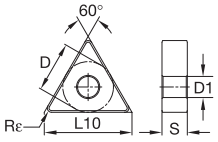
TNMP





● first choice
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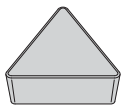
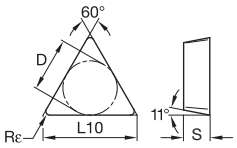
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT	WS10PT	WS25PT
TNMP160404	TNMP331	9,53	3/8	16,50	.650	4,76	3/16	0,4	1/64	3,81	.150	4173670	-	-
TNMP220404	TNMP431	12,70	1/2	22,00	.866	4,76	3/16	0,4	1/64	5,16	.203	-	4172494	-
TNMP220408	TNMP432	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203	-	-	4172625

TPGN/TPG





● first choice
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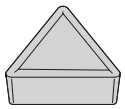
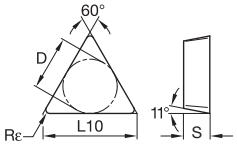
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	WK20CT
TPGN160308	TPG322	9,53	3/8	16,50	.650	3,18	1/8	0,8	1/32	4170953

TPMR





● first choice
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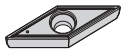
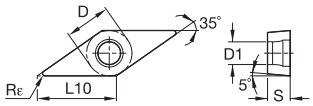
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	WP15CT	WP35CT
TPMR160304	TPMR321	9,53	3/8	16,50	.650	3,18	1/8	0,4	1/64	4170861	-
TPMR160308	TPMR322	9,53	3/8	16,50	.650	3,18	1/8	0,8	1/32	-	4170787

VBMT





● first choice
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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP35CT
VBMT160408	VBMT332	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	4,40	.173	4170808

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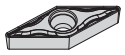
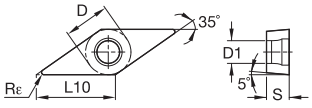
VBMT-FP





● first choice
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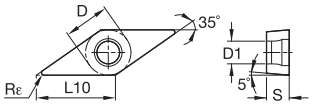
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT
VBMT160408FP	VBMT332FP	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	4,40	.173	4168811

VBMT-MP



● first choice
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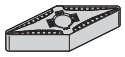
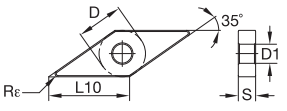
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WM25CT
VBMT160404MP	VBMT331MP	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	4,40	.173	4170235	4168921

VNGG-FS





● first choice
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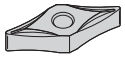
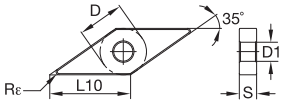
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT
VNGG160404FS	VNGG331FS	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	3,81	.150	5548685

VNGP





● first choice
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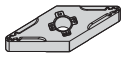
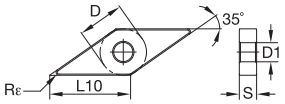
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT
VNGP160402	VNGP3305	9,53	3/8	16,61	.654	4,76	3/16	0,2	.008	3,81	.150	5549196

VNMG-FF





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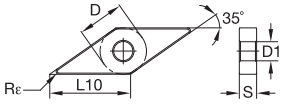
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT
VNMG160404FF	VNMG331FF	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	3,81	.150	4171053

VNMG-ML



● first choice
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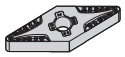
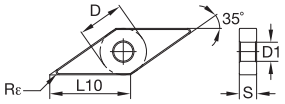
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT
VNMG160404ML	VNMG331ML	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	3,81	.150	4171079	4170495

VNMG-MR





● first choice
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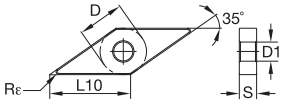
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT
VNMG160408MR	VNMG332MR	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150	4170580

VNMG-MS



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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT	WS25PT
VNMG160408MS	VNMG332MS	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150	5908947	-
VNMG220404MS	VNMG431MS	12,70	1/2	22,14	.872	4,76	3/16	0,4	1/64	5,16	.203	5908950	5908961
VNMG220408MS	VNMG432MS	12,70	1/2	22,14	.872	4,76	3/16	0,8	1/32	5,16	.203	-	5908964

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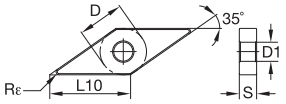
VNMG-RH



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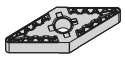
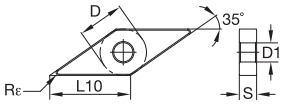
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT
VNMG160408RH	VNMG332RH	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150	-	4171550
VNMG220408RH	VNMG432RH	12,70	1/2	22,14	.872	4,76	3/16	0,8	1/32	5,16	.203	-	4171551
VNMG220412RH	VNMG433RH	12,70	1/2	22,14	.872	4,76	3/16	1,2	3/64	5,16	.203	4171017	-

VNMG-UR





● first choice
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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT	WK20CT
VNMG160408UR	VNMG332UR	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150	4169473	-
VNMG160412UR	VNMG333UR	9,53	3/8	16,61	.654	4,76	3/16	1,2	3/64	3,81	.150	-	4171450

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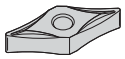
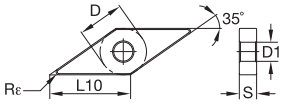
VNMP





● first choice
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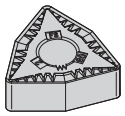
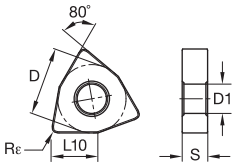
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT
VNMP160404	VNMP331	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	3,81	.150	4172497

WNGG-FS





● first choice
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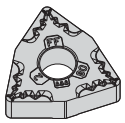
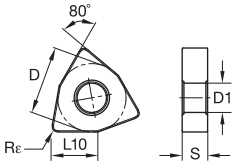
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WS10PT
WNGG080408FS	WNGG432FS	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203	5548688

WNMG-FF





● first choice
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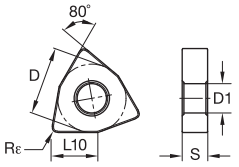
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT
WNMG080408FF	WNMG432FF	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203	4171058

WNMG-MR



● first choice
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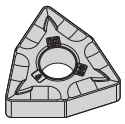
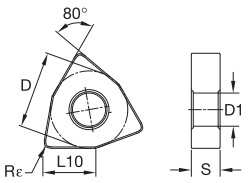
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT
WNMG080408MR	WNMG432MR	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203	4170581

WNMG-RH





● first choice
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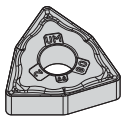
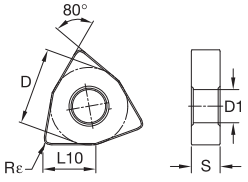
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP15CT	WP25CT	WK20CT
WNMG080408RH	WNMG432RH	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203	4171019	4171554	4171932

WNMG-UM





● first choice
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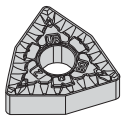
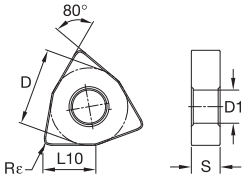
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WM25CT
WNMG080408UM	WNMG432UM	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203	4172407

WNMG-UR





● first choice
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ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WP25CT	WP35CT	WM25CT	WM35CT
WNMG080408UR	WNMG432UR	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203	4170533	4170040	4169476	4169509

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HOLDERS AND CLAMP STYLES

D-Style Clamping

- Used for negative style inserts.
- Clamp assembly contains clamp, screw, and retaining ring.
- Quick insert indexing.
- Ensures insert repeatability and seating.
- Reduced chatter and extended tool life.

P-Style Clamping

- Lever-type clamping system for negative indexable inserts.
- No interference to chip flow.
- Fast insert changes.

P-style available in metric sizes only.

S-Style Clamping

- Screw clamping system for positive indexable inserts.
- Compact design for high reliability and cost efficiency.
- Carbide shim for additional tool protection.

C-Style Clamping

- Height-adjustable clamp permits use of additional chipbreakers.
- Universal clamping system for positive and negative flat top inserts.
- Robust engineering makes it easy to handle.
- Carbide shim for extra tool protection.

To view our holder offering visit NOVO or widia.com.

Specialty Turning

WIDIA™ micro-boring bars provide accurate holemaking tooling in diameters as small as .157" (4mm). These economical indexable inserts are available in both steel and carbide shanks and are stocked in both metric and inch sizes. Ideal for a wide range of applications including precision micro-boring.

Materials:

P K

80° Diamond Insert Boring Bars

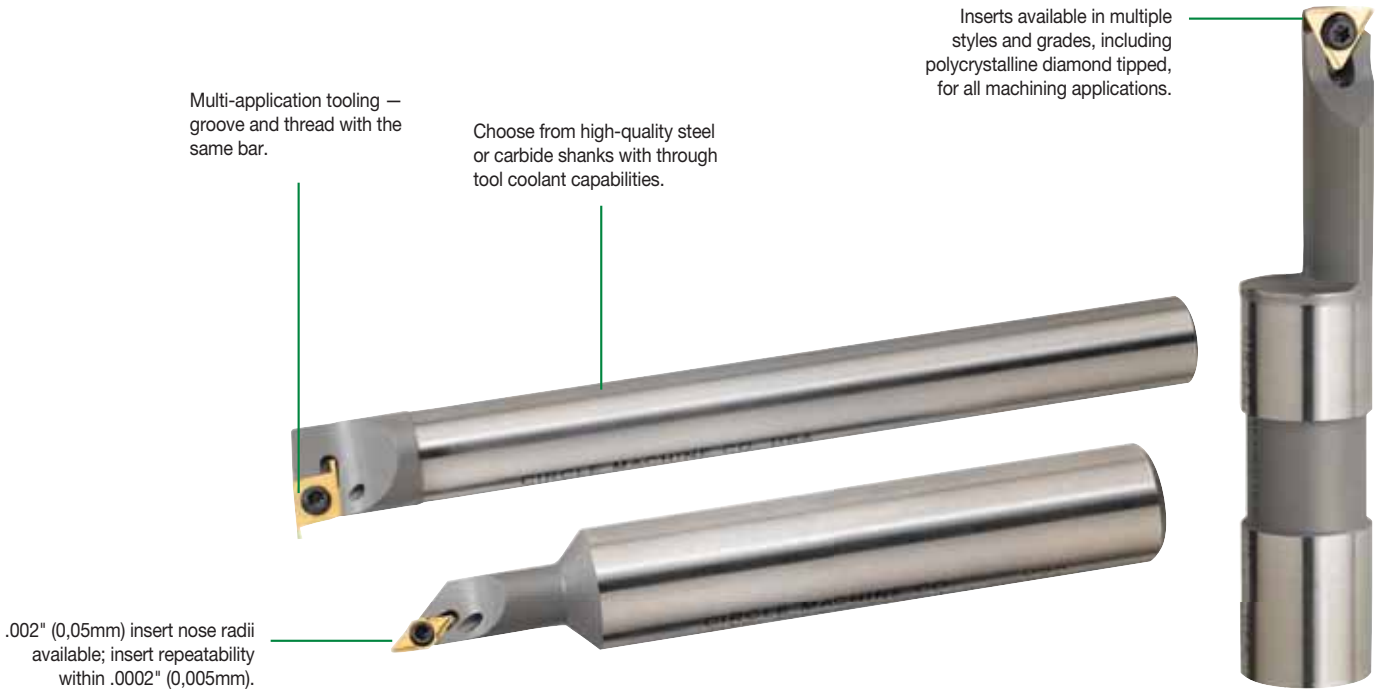
- Available in shanks as small as .157" (4mm) to bore >.180" (4,57mm) diameter.
- Positive rake geometry for free cutting action and better surface finishes.
- Superior, unobstructed chip evacuation.
- Stocked in multiple grades to bore a wide range of materials.

Threading and Grooving Boring Bars

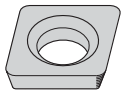
- Easy insert changes for threading and grooving.
- Thread down to a 48 TP, 1,3mm TP (pitch).
- Thread and groove capabilities to an inside bore diameter of .272" (6,91mm).

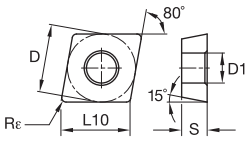
Triangle Insert Boring Bars

- Designed for less obstruction and greater chip evacuation.
- Positive rake geometry to bore holes >.275" (6,98mm) diameter.
- Stocked in all grades, including diamond-tipped and borazon-tipped styles.
- Stocked in shanks as small as .24" (6mm) for .28" (7,06mm) minimum bore diameter.



CDHB





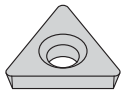
● first choice
○ alternate choice

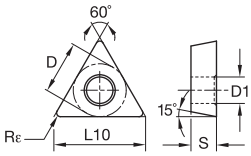
P	○
M	
K	●
N	
S	
H	

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WK20CT
CDHBS4T002	CDHB120605	3,97	5/32	4,03	.159	1,02	.040	0,2	.007	2,13	.084	2830870

NOTE: To view the complete offering of small-part boring tools visit our digital resources page at widia.com.

TDHB





● first choice
○ alternate choice

P	○
M	
K	●
N	
S	
H	

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	WK20CT
TDHB07S102	TDHB130805	4,06	.160	7,04	.277	1,19	3/64	0,2	.007	2,41	.095	2828763

NOTE: To view the complete offering of small-part boring tools visit our digital resources page at widia.com.

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GROOVING & CUT-OFF

WGC

Pages E38–E43

The most versatile tool in the market in grooving, profiling, and cut-off operations.

WMT™

Pages E44–E52

The WMT platform is the economical and reliable option for all your grooving, cut-off, turning, and profiling applications.

ALL-STAR

AUTOMOTIVE

Gears

Cylinder Housing

Brakes and Steering

TRANSPORTATION

WIDIA™ manufactures tools to meet application needs in steel, cast iron, and aluminum automotive components.

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WGC

WGC is the first choice and most versatile tool for grooving profiling and cut-off operations.

Grooving:

- First choice for external grooving applications in most workpiece materials.
- Through coolant capability and efficient coolant delivery for enhanced productivity.
- Available in integral and modular style toolholders.
- Groove width 0.0787–0.394" (2–10mm).

Cut-Off:

- Specially engineered chip breakers for effective parting/cut-off, and deep grooving.
- Positive geometry for lower forces.
- Secure seating offers greatest stability.
- Groove width: 0.055–0.315" (1.4–8mm).

Profiling:

- Full radius chipbreakers for multidirectional turning and generating complex profiles.
- Rigid design ensures smooth surface finish.
- Groove width: 0.118–0.315" (3–8mm).

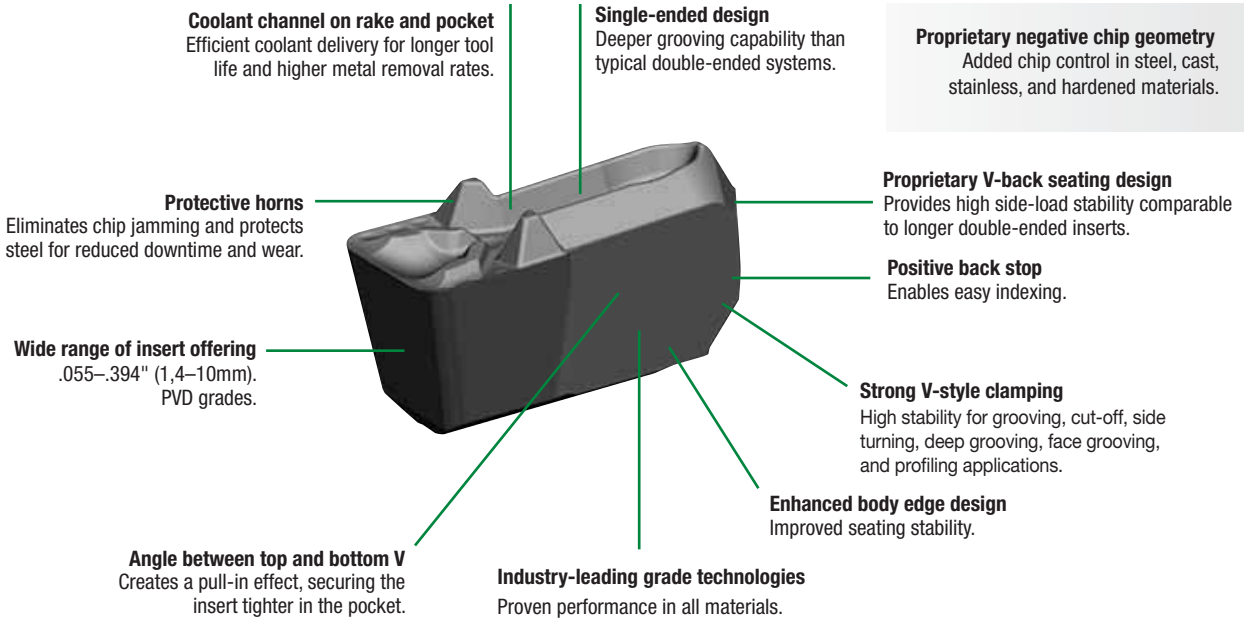
4 BENEFITS IN 1

VERSATILE
GROOVING, PROFILING, AND CUT-OFF OPERATIONS

SIMPLE
EASY TO SELECT AND APPLY

STABLE
TRIPLE-V SEATING FOR SECURE CLAMPING

PRODUCTIVE
LOW CUTTING FORCES IN THROUGH COOLANT FOR BETTER CHIP EVACUATION



Grooving Precision Molded


P M N S
PT-Positive Rake


P M K H
PN-Negative Rake

Cut-Off Precision Molded


P M N S
F-Fine


P K
M-Medium


P M
R-Rough

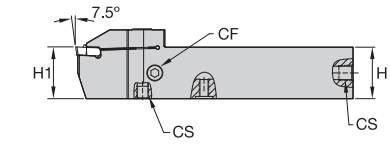
Profiling Precision Molded

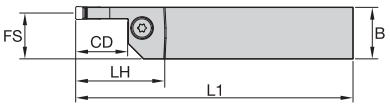

P M N S
PR-Full Radius

NOTE: Use the NOVO™ software to select appropriate tooholder and insert.

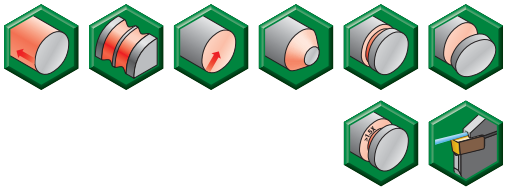
Integral Straight • Inch

Left hand





Left hand



order number	catalog number	SSC	CD	H1	H	B	H2	L1	FS	LH	CF	CS
right hand												
6461925	**WGCSMR160326C**	3	1.02	1.000	1.000	1.000	1.39	6.00	.94	1.85	G1/8-28	G1/8-28
6461943	**WGCSMR160526C**	5	1.02	1.000	1.000	1.000	1.40	6.00	.91	1.85	G 1/8	G 1/8
6461949	**WGCSMR160626C**	6	1.02	1.000	1.000	1.000	1.40	6.00	.89	1.85	G 1/8	G 1/8
6461957	**WGCSMR160826C**	8	1.02	1.000	1.000	1.000	1.40	6.00	.86	1.93	G 1/8	G 1/8
left hand												
6461980	**WGCSML160626C**	6	1.02	1.000	1.000	1.000	1.40	6.00	.89	1.85	G1/8-28	G1/8-28

NOTE: SSC = Pocket Seat Reference. To correspond with the SSC on the insert.

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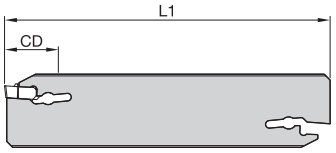
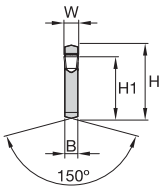
Double-Ended Cut-Off Blade

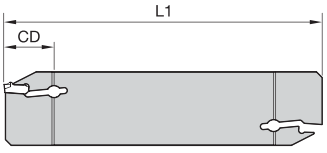
Straight



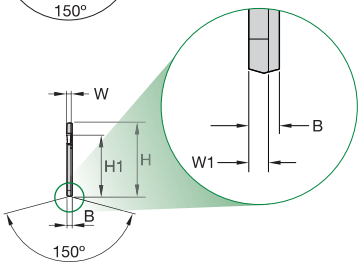
Straight



Reinforced



Reinforced



order number	catalog number	SSC	H	W	W1	H1	L1	B	CD
neutral hand									
6499212	**WGCBSN26J0230**	2	26	2,0	—	21,5	110	1,65	30
6499215	**WGCBSN32M0350**	3	32	3,0	—	25,1	150	2,40	50
6499216	**WGCBSN26J0440**	4	26	4,0	—	21,5	110	3,40	40
6499217	**WGCBSN32M0450**	4	32	4,0	—	25,1	150	3,40	50

NOTE: SSC = Pocket Seat Reference. To correspond with the SSC on the insert.

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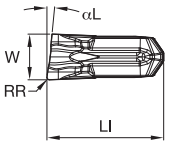
Cut-Off Inserts • F Precision Molded • Metric

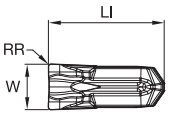

Left Hand


Neutral

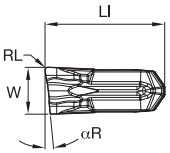

Right Hand



Left Hand



Neutral



Right Hand

● first choice
○ alternate choice

P	●
M	●
K	○
N	○
S	●
H	

catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	LI mm	LI in	αR	αL	RR mm	RR in	RL mm	RL in	WU25PT
WC020M02N00F02	2	2,00	.079	0,050	.002	9,00	.353	—	—	0,20	.008	0,20	.008	**6470548**
WC030M03N00F02	3	3,00	.118	0,075	.003	9,60	.378	—	—	0,20	.008	0,20	.008	**6470561**
WC030M03R06F02	3	3,00	.118	0,075	.003	9,60	.378	6	—	—	—	—	—	**6470562**
WC040M04N00F02	4	4,00	.157	0,075	.003	10,19	.401	—	—	0,20	.008	0,20	.008	**6470564**

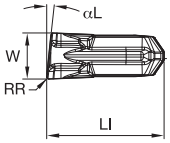
NOTE: SSC = To correspond with the SSC on the toolholder.

Cut-Off Inserts • M Precision Molded • Metric

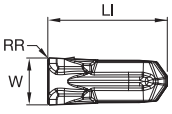

Left Hand


Neutral

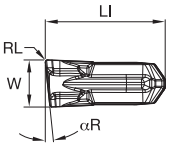

Right Hand



Left Hand



Neutral



Right Hand

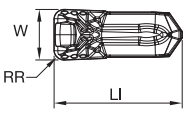
● first choice
○ alternate choice

P	●
M	●
K	○
N	○
S	●
H	

catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	LI mm	LI in	αR	αL	RR mm	RR in	RL mm	RL in	WU25PT
WC030M03N00M02	3	3,00	.118	0,075	.003	9,60	.378	—	—	0,20	.008	0,20	.008	**6461865**

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving Inserts • PT Precision Molded • Metric



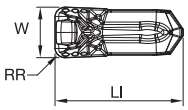
● first choice
○ alternate choice

P	●
M	●
K	○
N	○
S	●
H	

catalog number	SSC	W mm	W in	W tol ± mm	W tol ± in	LI mm	LI in	RR mm	RR in	WU25PT
WG0312M03U02PT	3	3,13	.123	0,075	.003	9,60	.378	0,20	.008	**6461736**

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving Inserts • PT Precision Molded • Inch



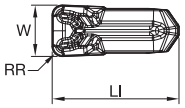
● first choice
○ alternate choice

P		●
M		●
K		○
N		○
S		●
H		

		W		W tol ±		RR		LI		
catalog number	SSC	mm	in	mm	in	mm	in	mm	in	WU25PT
WG130I03U1PT	3	3,30	.130	0,075	.003	0,40	.016	9,60	.378	6470487
WG130I03U05PT	3	3,30	.130	0,075	.003	0,20	.008	9,60	.378	6470486

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving Inserts • PN Precision Molded • Metric



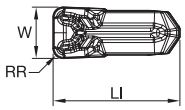
● first choice
○ alternate choice

P		●
M		●
K		○
N		○
S		●
H		

		W		W tol ±		RR		LI		
catalog number	SSC	mm	in	mm	in	mm	in	mm	in	WU25PT
WG0312M03U02PN	3	3,13	.123	0,075	.003	0,20	.008	9,60	.378	6471042
WG0812M08U08PN	8	8,13	.320	0,075	.003	0,80	.031	17,46	.687	6471050
WG1012M10U12PN	10	10,13	.399	0,075	.003	1,20	.047	20,75	.817	6471064

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving Inserts • PN Precision Molded • Inch



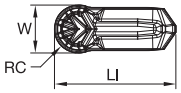
● first choice
○ alternate choice

P		●
M		●
K		○
N		○
S		●
H		

		W		W tol ±		RR		LI		
catalog number	SSC	mm	in	mm	in	mm	in	mm	in	WU25PT
WG125I03U1PN	3	3,18	.125	0,075	.003	0,40	.016	9,60	.378	6470834

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving Inserts • PR Full Radius Precision Ground • Metric



● first choice
○ alternate choice

P		●
M		●
K		○
N		○
S		●
H		

		W		W tol ±		RC		LI		
catalog number	SSC	mm	in	mm	in	mm	in	mm	in	WU25PT
WR0500M05P00PC	5	5,00	.197	0,025	.001	2,50	.098	12,18	.480	6470470

NOTE: SSC = To correspond with the SSC on the toolholder.

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WMT™

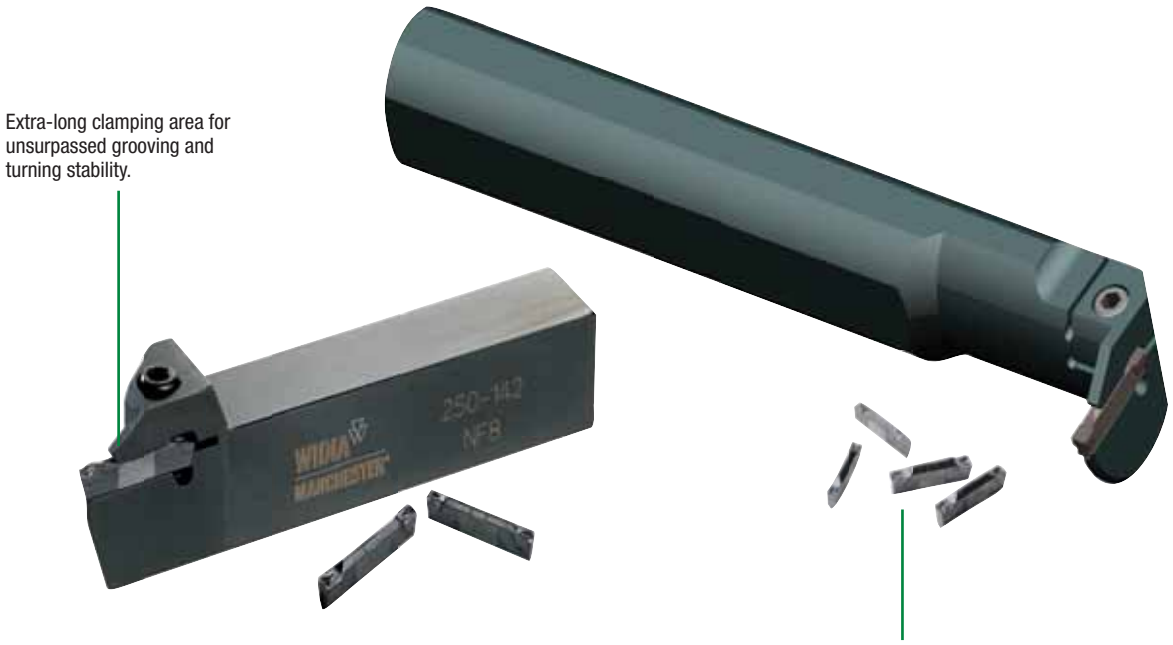
The most advanced turning, grooving, cut-off, and profiling system. WMT provides a complete line of grooving geometries and an extensive grade selection to meet the most demanding application requirements.

Rigid Clamping with Advanced Chip Control

- Specifically designed to increase speeds and feeds.
- Excellent geometry for even your most demanding deep grooving applications.
- The WMT system enables heavy stock removal of turning applications.

WMT Toolholders

- Outstanding system rigidity and clamping capabilities.
- Guarantees fast cycle times and limited turret indexes.
- Precise insert positioning for accurate machining.
- Double-V shape aiding in operator-friendly insert indexing and optimum insert positioning.
- Choice of integral modular holders.



CM Cut-Off Medium

P M K N S H

CM-W Cut-Off Medium with Wiper

P M K N S H

PT Plunge, Groove, and Turn Inserts

P M K N S H

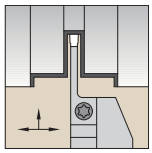
PC Grooving and Profiling Inserts

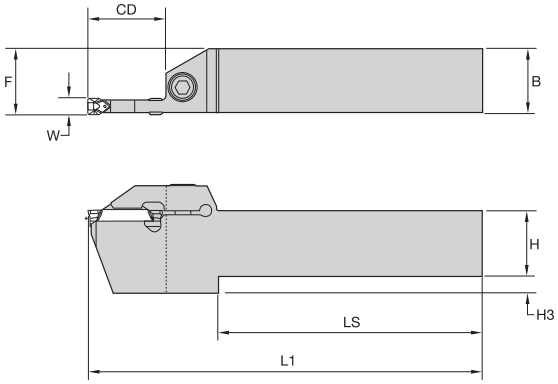
P M K N S H

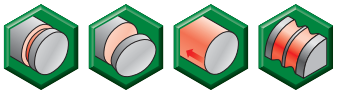
PH Plunge, Groove, and Turn Inserts

P M K N S H

Integral Toolholders • Metric







Right Hand Tool

order number	catalog number	SSC	W	H	B	CD	F	H3	L1	LS
right hand										
3650481	**WMTSR2525M322**	3	3,00	25,0	25,0	22	25,0	—	150	110
left hand										
3650488	**WMTSL2525M525**	5	5,00	25,0	25,0	25	25,0	—	150	104

NOTE: SSC = To correspond with the SSC on the insert.

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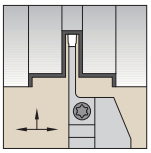
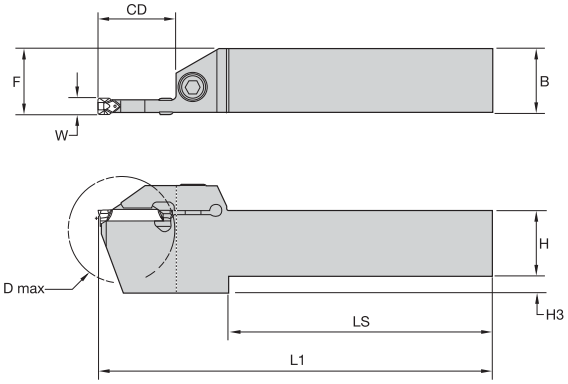
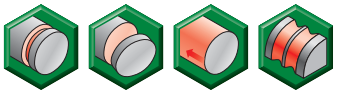
Integral Toolholders • Inch





Right Hand Tool



order number	catalog number	SSC	W	H	B	CD	D max	F	H3	L1	LS
right hand											
3655892	**WMTCR82B062**	2B	.094	.500	.500	—	1.250	.500	.190	4.500	3.310
3655934	**WMTSR122B042**	2B	.094	.750	.750	.420	—	.750	—	5.000	3.695
3655896	**WMTSR122B075**	2B	.094	.750	.750	.750	—	.750	.250	5.000	3.500
3539156	**WMTSR162B042**	2B	.094	1.000	1.000	.420	—	1.000	—	6.000	4.700
3655936	**WMTSR162B075**	2B	.094	1.000	1.000	.750	—	1.000	—	6.000	4.500
3655900	**WMTSR103087**	3	.125	.625	.625	.875	—	.624	.250	5.000	3.375
3655906	**WMTSR123044**	3	.125	.750	.750	.440	—	.750	—	5.000	3.695
3655908	**WMTSR123087**	3	.125	.750	.750	.875	—	.750	.250	5.000	3.355
3655916	**WMTSR163044**	3	.125	1.000	1.000	.440	—	1.000	—	6.000	4.695
3655918	**WMTSR163087**	3	.125	1.000	1.000	.875	—	1.000	—	6.000	4.375
3655920	**WMTSR164087**	4	.156	1.000	1.000	.875	—	1.000	—	6.000	4.375
3655912	**WMTSR125100**	5	.188	.750	.750	1.000	—	.750	.250	5.500	3.655
3655924	**WMTSR165100**	5	.188	1.000	1.000	1.000	—	1.000	—	6.000	4.175
3655928	**WMTSR166100**	6	.250	1.000	1.000	1.000	—	1.002	—	6.000	4.174
left hand											
3655945	**WMTSL122065**	2	.079	.750	.750	.650	—	.750	—	5.000	3.680
3655895	**WMTSL102B075**	2B	.094	.625	.625	.750	—	.625	.250	5.000	3.500
3655909	**WMTSL123087**	3	.125	.750	.750	.875	—	.750	.250	5.000	3.355
3655919	**WMTSL163087**	3	.125	1.000	1.000	.875	—	1.000	—	6.000	4.375
3655929	**WMTSL166100**	6	.250	1.000	1.000	1.000	—	1.004	—	6.000	4.174

NOTE: SSC = To correspond with the SSC on the insert.

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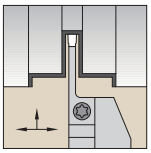
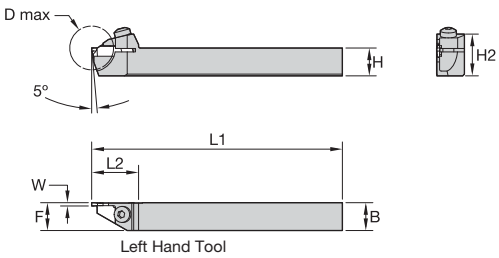
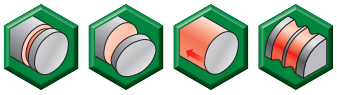
Integral Toolholders for Swiss-Style Machines • Inch





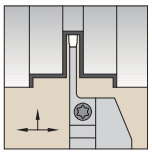
Left Hand Tool



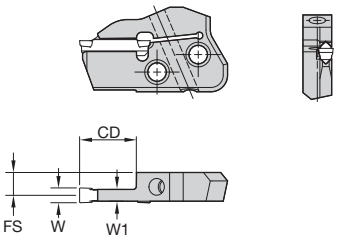
order number	catalog number	SSC	W	H	B	D max	F	H2	L1	L2
right hand										
3656133	**WMTCR101051**	1	.059	.625	.625	1.024	.626	.925	5.000	.952
3656141	**WMTCR082039**	2	.079	.500	.500	.787	.500	.750	4.500	.843
left hand										
3656101	**WMTCL081039**	1	.059	.500	.500	.787	.500	.750	4.500	.842
3656142	**WMTCL082039**	2	.079	.500	.500	.787	.500	.750	4.500	.843
3656144	**WMTCL102051**	2	.079	.625	.625	1.024	.625	.925	5.000	.953
3656146	**WMTCL122051**	2	.079	.750	.750	1.024	.750	1.050	5.000	.953

NOTE: Insert exterior edge in line with toolholder edge for .375" and .500" shank toolholders.
SSC = To correspond with the SSC on the insert.

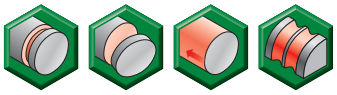
Modular Toolholders • Metric




Right Hand Blade



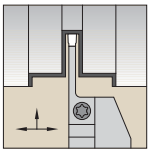
Right Hand Blade

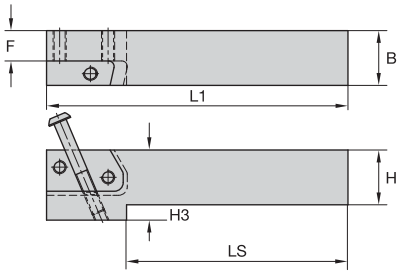


			CD		W		FS		W1	
order number	catalog number	SSC	mm	in	mm	in	mm	in	mm	in
right hand										
5359130	**WMTWGMR319S**	3	19,00	.748	3,00	.118	10,38	.409	2,54	.100
5359131	**WMTWGMR419S**	4	19,00	.748	4,00	.157	10,00	.394	3,30	.130
5359132	**WMTWGMR522S**	5	22,00	.866	5,00	.197	9,82	.387	3,66	.144
5359133	**WMTWGMR622S**	6	22,00	.866	6,00	.236	9,26	.365	4,78	.188
left hand										
5359123	**WMTWGML319S**	3	19,00	.748	3,00	.118	10,38	.409	2,54	.100
5359125	**WMTWGML522S**	5	22,00	.866	5,00	.197	9,82	.387	3,66	.144
5359126	**WMTWGML622S**	6	22,00	.866	6,00	.236	9,26	.365	4,78	.188

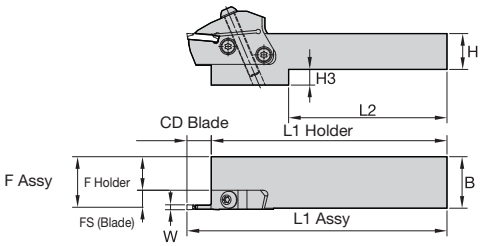
NOTE: Blade and clamp screw torque equals 71–88 in. lbs. (8–10 Nm).
SSC = To correspond with the SSC on the insert.

Modular Toolholders • Straight Mount • Inch





Right Hand Tool Pictured
2 Blade Screws Required



F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

order number	catalog number	H	B	L1	LS	F	H3
right hand							
5349621	**WGMSR12**	.75	.75	4.30	2.75	.31	.49
5349622	**WGMSR16**	1.00	1.00	5.05	3.86	.56	.24
5349624	**WGMSR20**	1.25	1.25	5.05	—	.81	—
left hand							
5349620	**WGMSL16**	1.00	1.00	5.05	3.86	.56	.24
5349623	**WGMSL20**	1.25	1.25	5.05	—	.81	—

NOTE: Use the larger seat size toolholder for optimal performance.
Blade screws and clamp screw included with holder.

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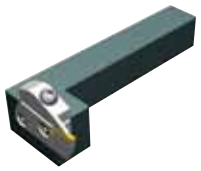
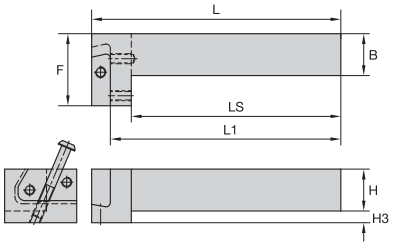
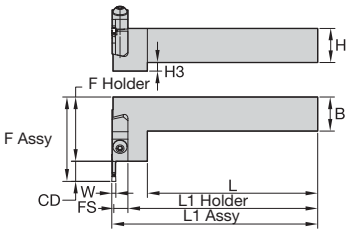
Modular Toolholders • End Mount • Inch





Right Hand Tool

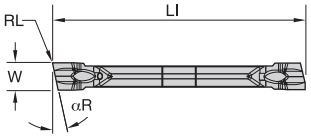


F Assy = F (Holder) + CD (Blade)

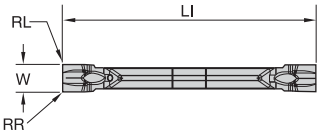
L1 Assy = L1 (Holder) + FS (Blade) + W/2

order number	catalog number	H	B	L	L1	LS	F	H3
right hand								
5515022	**WGMER2050**	1.25	1.25	5.96	5.53	4.96	1.70	—
left hand								
5514976	**WGMEL16**	1.00	1.00	5.96	5.53	4.96	1.70	.24
5515023	**WGMEL2050**	1.25	1.25	5.96	5.53	4.96	1.70	—

Cut-Off Inserts • WMT-CM



Right Hand



Neutral
RR = RL on Neutral Inserts

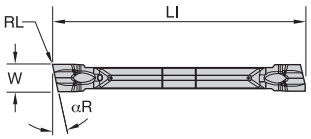
● first choice
○ alternate choice

P		○
M		●
K		○
N		●
S		●
H		

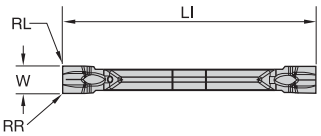
catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	αR	hand	WU25PT
WMTC015N00CM08	1	1,50	.059	0,08	.003	19,30	.760	—	N - Neutral	4169668
WMTC020N00CM08	2	2,00	.079	0,08	.003	19,21	.756	—	N - Neutral	4169673
WMTC094N00CM13	2B	2,39	.094	0,13	.005	22,32	.879	—	N - Neutral	4169576
WMTC030N00CM17	3	3,00	.118	0,17	.007	25,40	1.000	—	N - Neutral	4169682
WMTC125N00CM17	3	3,17	.125	0,17	.007	25,41	1.000	—	N - Neutral	4169582
WMTC020R12CM08	2	2,00	.079	0,08	.003	19,26	.758	12	R - Right	4169678
WMTC030R05CM17	3	3,00	.118	0,17	.007	25,40	1.000	5	R - Right	4169684
WMTC125R05CM17	3	3,17	.125	0,17	.007	25,40	1.000	5	R - Right	4169664
WMTC125R12CM17	3	3,18	.125	0,17	.007	25,40	1.000	12	R - Right	4169666

NOTE: SSC = To correspond with the SSC on the toolholder.

Cut-Off Inserts with Wiper • WMT-CM-W



Right Hand



Neutral
RR = RL on Neutral Inserts

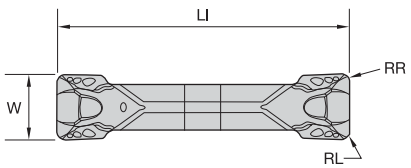
● first choice
○ alternate choice

P		○
M		●
K		○
N		●
S		●
H		

catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	αR	hand	WU25PT
WMTC094N00CMW13	2B	2,39	.094	0,13	.005	22,32	.879	—	N - Neutral	4169577
WMTC030N00CMW17	3	3,00	.118	0,17	.007	25,40	1.000	—	N - Neutral	4169683
WMTC125N00CMW17	3	3,18	.125	0,17	.007	25,41	1.000	—	N - Neutral	4169663
WMTC040N00CMW17	4	4,00	.157	0,17	.007	25,40	1.000	—	N - Neutral	4169693
WMTC030R05CMW17	3	3,00	.118	0,17	.007	25,40	1.000	5	R - Right	4169685
WMTC125R05CMW17	3	3,17	.125	0,17	.007	25,41	1.000	5	R - Right	4169665
WMTC125R12CMW17	3	3,17	.125	0,17	.007	25,41	1.000	12	R - Right	4169667

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving and Turning Inserts • WMT-U-PT • Molded



RR = RL

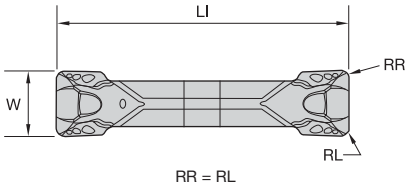
● first choice
○ alternate choice

P	●	●
M		
K	●	●
N		
S		
H		

catalog number	SSC	W mm	W in	RR mm	RR in	LI mm	LI in	WP10CT	WP25CT
WMTS305M3U03PT	3	3,13	.123	0,31	.012	25,81	1.016	–	4169557
WMTS405M4U06PT	4	4,13	.163	0,61	.024	25,53	1.005	4169562	–
WMTS605M6U03PT	6	6,13	.241	0,30	.012	28,76	1.320	4169568	–
WMTS605M6U06PT	6	6,13	.241	0,59	.023	28,76	1.320	4169570	–

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving and Turning Inserts • WMT-P-PT • Precision



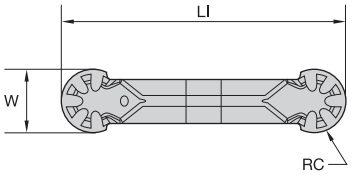
● first choice
○ alternate choice

P		○	○
M		●	●
K		○	○
N		●	●
S		●	●
H		○	

		W		RR		LI			
catalog number	SSC	mm	in	mm	in	mm	in	WU10PT	WU25PT
WMTS200M2P02PT	2	2,00	.079	0,15	.006	19,10	.752	**4116129**	**–**
WMTS094I2BP04PT	2B	2,38	.094	0,38	.015	22,14	.872	**–**	**4118584**
WMTS300M3P03PT	3	3,00	.118	0,31	.012	25,65	1.010	**–**	**4113564**
WMTS125I3P03PT	3	3,17	.125	0,23	.009	25,40	1.000	**4118585**	**4118586**
WMTS125I3P08PT	3	3,17	.125	0,76	.030	25,40	1.000	**–**	**4118588**
WMTS188I5P03PT	5	4,76	.188	0,26	.010	28,63	1.127	**–**	**4118590**
WMTS188I5P08PT	5	4,77	.188	0,76	.030	28,63	1.127	**4118591**	**–**
WMTS250I6P08PT	6	6,34	.250	0,76	.030	28,63	1.127	**4118595**	**4118596**
WMTS250I6P03PT	6	6,35	.250	0,25	.010	28,63	1.127	**–**	**4118594**
WMTS800M8P06PT	8	8,00	.315	0,61	.024	28,57	1.125	**–**	**4117258**
WMTS800M8P15PT	8	8,00	.315	1,50	.059	28,57	1.125	**–**	**4117260**

NOTE: SSC = To correspond with the SSC on the toolholder.

Plunge and Contour Inserts • WMT-U-PC • Molded



● first choice
○ alternate choice

P		●	○
M			●
K		●	○
N			●
S			●
H			

		W		RC		LI			
catalog number	SSC	mm	in	mm	in	mm	in	WP10CT	WU25PT
WMTR305M3UPC	3	3,13	.123	1,53	.060	25,53	1.005	**4170174**	**4170173**
WMTR505M5UPC	5	5,13	.202	2,53	.099	29,01	1.142	**4170184**	**–**

NOTE: SSC = To correspond with the SSC on the toolholder.

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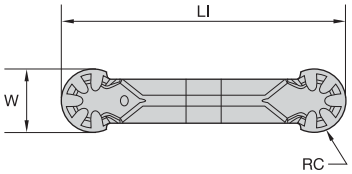
Plunge and Contour Inserts • WMT-P-PC • Precision



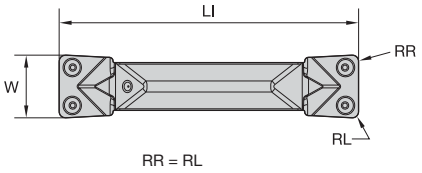
● first choice
○ alternate choice

P	○	○
M	●	●
K	○	○
N	●	●
S	●	●
H	○	

		W		RC		LI			
catalog number	SSC	mm	in	mm	in	mm	in	WU10PT	WU25PT
WMTR300M3PPC	3	3,00	.118	1,50	.059	25,40	1.000	4170170	4170171
WMTR188I5PPC	5	4,78	.188	2,39	.094	28,65	1.128	4170119	4170120
WMTR600M6PPC	6	6,00	.236	3,00	.118	28,65	1.128	–	4170186
WMTR250I6PPC	6	6,36	.250	3,18	.125	29,01	1.142	4170121	4170122

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving and Turning Inserts • WMT-U-PH • Molded



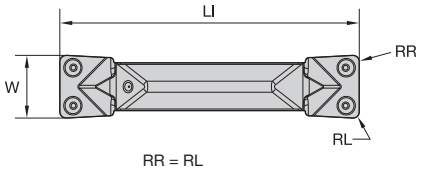
● first choice
○ alternate choice

P	○
M	●
K	○
N	●
S	●
H	○

		W		RR		LI		
catalog number	SSC	mm	in	mm	in	mm	in	WU10PT
WMTS605M6U06PH	6	6,13	.241	0,60	.024	28,76	1.320	5346406

NOTE: SSC = To correspond with the SSC on the toolholder.

Grooving and Turning Inserts • WMT-P-PH • Precision



● first choice
○ alternate choice

P	○	○
M	●	●
K	○	○
N	●	●
S	●	●
H	○	

		W		RR		LI			
catalog number	SSC	mm	in	mm	in	mm	in	WU10PT	WU25PT
WMTS125I3P03PH	3	3,18	.125	0,25	.010	25,40	1.000	5345914	5291300
WMTS125I3P08PH	3	3,18	.125	0,75	.030	25,40	1.000	5345915	5331093
WMTS188I5P03PH	5	4,77	.188	0,25	.010	28,63	1.127	5345980	5331095
WMTS188I5P08PH	5	4,77	.188	0,75	.030	28,63	1.127	5345981	5331097
WMTS500M5P06PH	5	5,00	.197	0,60	.024	28,63	1.127	–	5346428
WMTS250I6P08PH	6	6,32	.249	0,75	.030	28,63	1.127	5345984	5327621
WMTS250I6P03PH	6	6,35	.250	0,25	.010	28,63	1.127	5345983	5327620
WMTS312I8P03PH	8	7,92	.312	0,25	.010	28,57	1.125	–	5345986
WMTS312I8P08PH	8	7,92	.312	0,75	.030	28,57	1.125	5345987	–

NOTE: SSC = To correspond with the SSC on the toolholder.

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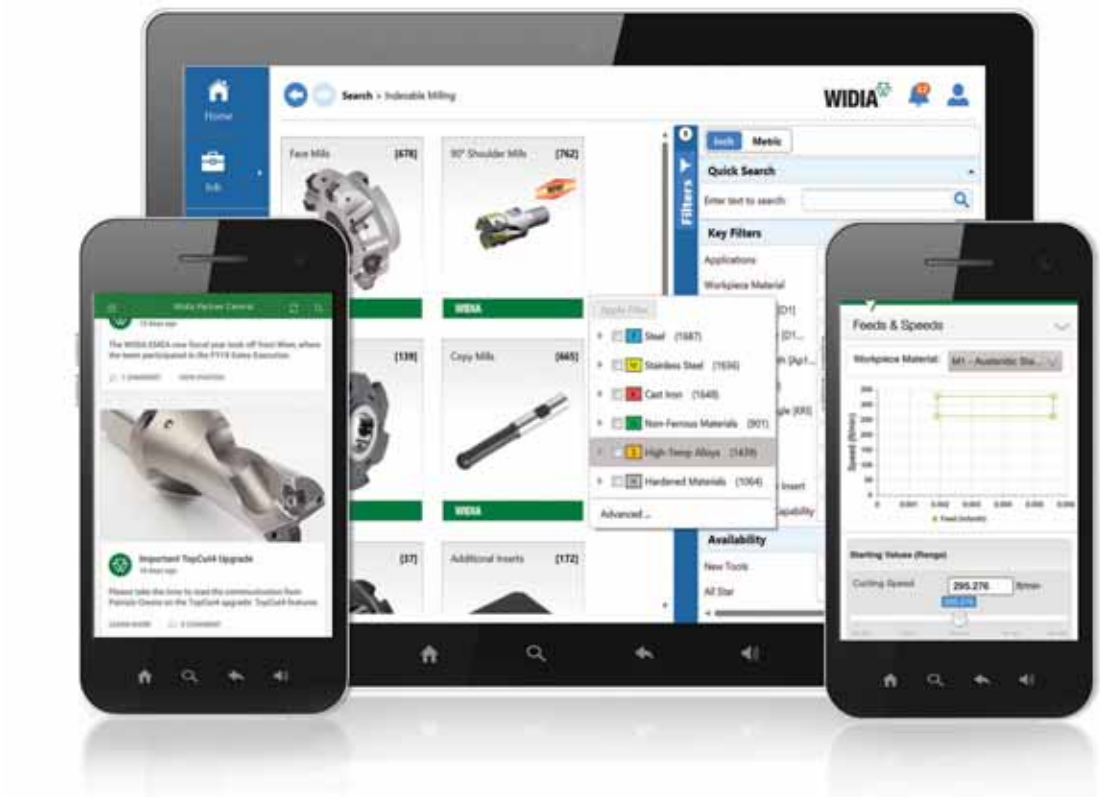

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Turning Icons

	Through Coolant: Grooving		Turning		Profiling		Facing		Face Grooving
	Chamfering		Grooving		Cut-Off		O.D. Deep Grooving		

ANSI

P Steel	K Cast Iron	S High-Temp Alloys
M Stainless Steel	N Non-Ferrous	H Hardened Materials

material group	description	content	tensile strength RM (MPa)*	hardness (HB)	hardness (HRC)	material number
P0	Low-Carbon Steels, Long Chipping	C <0,25%	<530	<125	–	A36, 1008, 1010, 1018 through 1029; 1108, 1117
P1	Low-Carbon Steels, Short Chipping, Free Machining	C <0,25%	<530	<125	–	10L18, 1200 Series, 1213, 12L14
P2	Medium- and High-Carbon Steels	C >0,25%	>530	<220	<25	1035, 1045, 10L45, 1050, 10L50, 1080, 1137, 1144, 11L44, 1525, 1545, 1572
P3	Alloy Steels and Tool Steels	C >0,25%	600–850	<330	<35	1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T
P4	Alloy Steels and Tool Steels	C >0,25%	850–1400	340–450	35–48	1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T
P5	Ferritic, Martensitic, and PH Stainless Steels	–	600–900	<330	<35	15–5 PH, 13–8 PH, 17–4 PH, 400 and 500 Series
P6	High-Strength Ferritic, Martensitic, and PH Stainless Steels	–	900–1350	350–450	35–48	15–5 PH, 13–8 PH, 17–4 PH, 400 and 500 Series
M1	Austenitic Stainless Steel	–	<600	130–200	–	200 Series, 301, 302, 304, 304L, 309
M2	High-Strength Austenitic Stainless and Cast Stainless Steels	–	600–800	150–230	<25	310, 316, 316L, 321, 347, 384 ASTM Cast XM-1, XM-5, XM-7, XM-21
M3	Duplex Stainless Steel	–	<800	135–275	<30	323, 329, F55, 2205, S329000
K1	Grey Cast Iron	–	125–500	120–290	<32	class 20, 25, 30, 35, 40, 45, 50, 55, 60, G1800, G3000, G3500, G4000
K2	Low- and Medium-Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI)	–	<600	130–260	<28	60-40-18, 65-45-12, 80-55-06, SAE J434:D4018, D4512, D5506, ASTM A47: Grade 32510, 35018, SAE J158: Grade M3210, M4504, M5003, M5503, M7002, ASTMA842: Grade 250, 300, 350, 400, 450
K3	High-Strength Ductile Irons and Austempered Ductile Iron (ADI)	–	>600	180–350	<43	ASTM A536:100-70-03, 120-90-02, SAE J434: D7003, SAE J158: Grade M8501AST A897: 125-80-10, 150-100-7, 175-125-4, 200-150-1, 230-185
N1	Wrought Aluminum	–	–	–	–	2025, 5050, 7050, 1000, 2017
N2	Low-Silicon Aluminum Alloys and Magnesium Alloys	Si <12,2%	–	–	–	2024, 6061, 7075
N3	High-Silicon Aluminum Alloys and Magnesium Alloys	Si >12,2%	–	–	–	–
N4	Copper-, Brass-, Zinc-Based on Machinability Index Range of 70–100	–	–	–	–	C81500
N5	Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass	–	–	–	–	–
N6	Carbon, Graphite Composites, CFRP	–	–	–	–	Graphite, CFK, CFRP
N7	Metal Matrix Composites (MMC)	–	–	–	–	C63000
S1	Iron-Based, Heat-Resistant Alloys	–	500–1200	160–260	25–48	A-286, INCOLOY® 800 Series, A608, A567, Discaloy™, INVAR®, N-155, 16-25-6, 19-9 DL; Cast: ASTM A-297, A-351, A-567, A-608
S2	Cobalt-Based, Heat-Resistant Alloys	–	1000–1450	250–450	25–48	Haynes® 25 (L605), Haynes 188, J-1570, Stellite, AiResist 213; Cast: AiResist 13, Haynes 21, MAR-M302, MAR-M509, NASA Co-W-Re, WI-52
S3	Nickel-Based, Heat-Resistant Alloys	–	600–1700	160–450	<48	Astroloy™, Hastelloy® B/C/ C-276 /X, INCONEL® 600 and 700 Series, IN102, INCOLOY 900 Series, Rene 41, Waspalloy®, Monel®, K-500, MAR-M20, NIMONIC®, UDIMET®
S4	Titanium and Titanium Alloys	–	900–1600	300–400	33–48	Pure: Ti 98.8, Ti 98.9,Ti 99.9; Alloyed: Ti 5Al-2.5Sn, Ti6Al-4V, Ti6Al-2Sn-4Zr-2Mo, Ti-3Al-8V-6Cr-4Mo-4Zr, Ti-10V-2Fe-3Al, Ti-13V-11Cr-3Al
H1	Hardened Materials	–	–	–	44–48	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H2	Hardened Materials	–	–	–	48–55	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H3	Hardened Materials	–	–	–	56–60	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H4	Hardened Materials	–	–	–	>60	Tool Steel H10, H11, H13, D2, D3, 4340, P20

DIN

P Steel	K Cast Iron	S High-Temp Alloys
M Stainless Steel	N Non-Ferrous	H Hardened Materials

material group	description	content	tensile strength RM (MPa)*	hardness (HB)	hardness (HRC)	material number
P0	Low-Carbon Steels, Long Chipping	C <0,25%	<530	<125	–	–
P1	Low-Carbon Steels, Short Chipping, Free Machining	C <0,25%	<530	<125	–	C15, Ck22, ST37-2, S235JR, 9SMnPb28, GS38
P2	Medium- and High-Carbon Steels	C >0,25%	>530	<220	<25	ST52, S355JR, C35, GS60, Cf53
P3	Alloy Steels and Tool Steels	C >0,25%	600–850	<330	<35	16MnCr5, Ck45, 21CrMoV5-7, 38SMn28
P4	Alloy Steels and Tool Steels	C >0,25%	850–1400	340–450	35–48	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P5	Ferritic, Martensitic, and PH Stainless Steels	–	600–900	<330	<35	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P6	High-Strength Ferritic, Martensitic, and PH Stainless Steels	–	900–1350	350–450	35–48	X102CrMo17, G-X120Cr29
M1	Austenitic Stainless Steel	–	<600	130–200	–	X5CrNi 18 10, X2CrNiMo 17 13 2, G-X25CrNiSi18 9, X15CrNiSi 20 12
M2	High-Strength Austenitic Stainless and Cast Stainless Steels	–	600–800	150–230	<25	X2CrNiMo 13 4, X5NiCr 32 21, X5CrNiNb 18 10, G-X15CrNi 25-20
M3	Duplex Stainless Steel	–	<800	135–275	<30	X8CrNiMo27 5, X2CrNiMoN22 5 3, X20CrNiSi25 4, G-X40CrNiSi27 4
K1	Gray Cast Iron	–	125–500	120–290	<32	GG15, GG25, GG30, GG40, GTW40
K2	Low- and Medium-Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI)	–	<600	130–260	<28	GGG40, GTS35
K3	High-Strength Ductile Irons and Austempered Ductile Iron (ADI)	–	>600	180–350	<43	GGG60, GTW55, GTS65
N1	Wrought Aluminum	–	–	–	–	AlMg1, Al99.5, AlCuMg1, AlCuBiPb, AlMgSi1, ALMg-SiPb
N2	Low-Silicon Aluminum Alloys and Magnesium Alloys	Si <12,2%	–	–	–	GAlSiCu4, GDAlSi10Mg
N3	High-Silicon Aluminum Alloys and Magnesium Alloys	Si >12,2%	–	–	–	G-ALSi12, G-AlSi17Cu4, G-AlSi21CuNiMg
N4	Copper-, Brass-, Zinc-Based on Machinability Index Range of 70–100	–	–	–	–	CuZn40, Ms60, G-CuSn5ZnPb, CuZn37, CuSi3Mn
N5	Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass	–	–	–	–	Lexan®, Hostalen™, Polystyrol, Makralon®
N6	Carbon, Graphite Composites, CFRP	–	–	–	–	CFK, GFK
N7	Metal Matrix Composites (MMC)	–	–	–	–	–
S1	Iron-Based, Heat-Resistant Alloys	–	500–1200	160–260	25–48	X1NiCrMoCu32 28 7, X12NiCrSi36 16, X5NiCrAlTi31 20, X40CoCrNi20 20
S2	Cobalt-Based, Heat-Resistant Alloys	–	1000–1450	250–450	25–48	Haynes® 188, Stellite® 6,21,31
S3	Nickel-Based, Heat-Resistant Alloys	–	600–1700	160–450	<48	INCONEL® 690, INCONEL 625, Hastelloy®, Nimonic® 75
S4	Titanium and Titanium Alloys	–	900–1600	300–400	33–48	Ti1, TiAl5Sn2, TiAl6V4, TiAl4Mo4Sn2
H1	Hardened Materials	–	–	–	44–48	GX260NiCr42, GX330NiCr42, GX300CrNiSi952, GX300CrMo153, Hardox® 400
H2	Hardened Materials	–	–	–	48–55	–
H3	Hardened Materials	–	–	–	56–60	–
H4	Hardened Materials	–	–	–	>60	–

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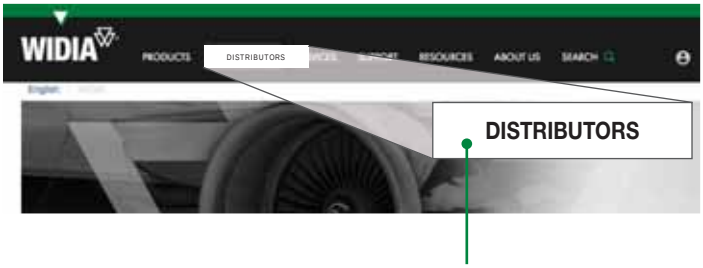

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IMPORTANT SAFETY INSTRUCTIONS: READ BEFORE USING THE TOOLS IN THIS CATALOG

METALCUTTING SAFETY

Projectile and Fragmentation Hazards

Modern metalcutting operations involve high spindle and cutter speeds and high temperatures and cutting forces. Hot metal chips may fly off the workpiece during metalcutting. Although cutting tools are designed and manufactured to withstand high cutting forces and temperatures, they can sometimes fragment, particularly if they are subjected to over-stress, severe impact, or other abuse.

To avoid injury:

- Always wear appropriate personal protective equipment, including safety goggles, when operating metalcutting machines or working nearby.
- Always make sure all machine guards are in place.

Breathing and Skin Contact Hazards

Grinding carbide or other advanced cutting tool materials produces dust or mist containing metallic particles. Breathing this dust or mist — especially over an extended period — can cause temporary or permanent lung disease or make existing medical conditions worse. Contact with this dust or mist can irritate eyes, skin, and mucous membranes and may make existing skin conditions worse.

To avoid injury:

- Always wear breathing protection and safety goggles when grinding.
- Provide ventilation control and collect and properly dispose of dust, mist, or sludge from grinding.
- Avoid skin contact with dust or mist.

For more information, read the applicable Material Safety Data Sheet provided by WIDIA and consult General Industry Safety and Health Regulations, Part 1910, Title 29 of the Code of Federal Regulations.

These safety instructions are general guidelines. Many variables affect machining operations. It is impossible to cover every specific situation. The technical information included in this catalog and recommendations on machining practices may not apply to your particular operation.

For more information, consult the WIDIA Metalcutting Safety booklet, available free from WIDIA at +1 724 539 5747 or fax +1 724 539 5439. For specific product safety and environmental questions, contact our Corporate Environmental Health and Safety Office at +1 724 539 5066 or fax +1 724 539 5372.

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