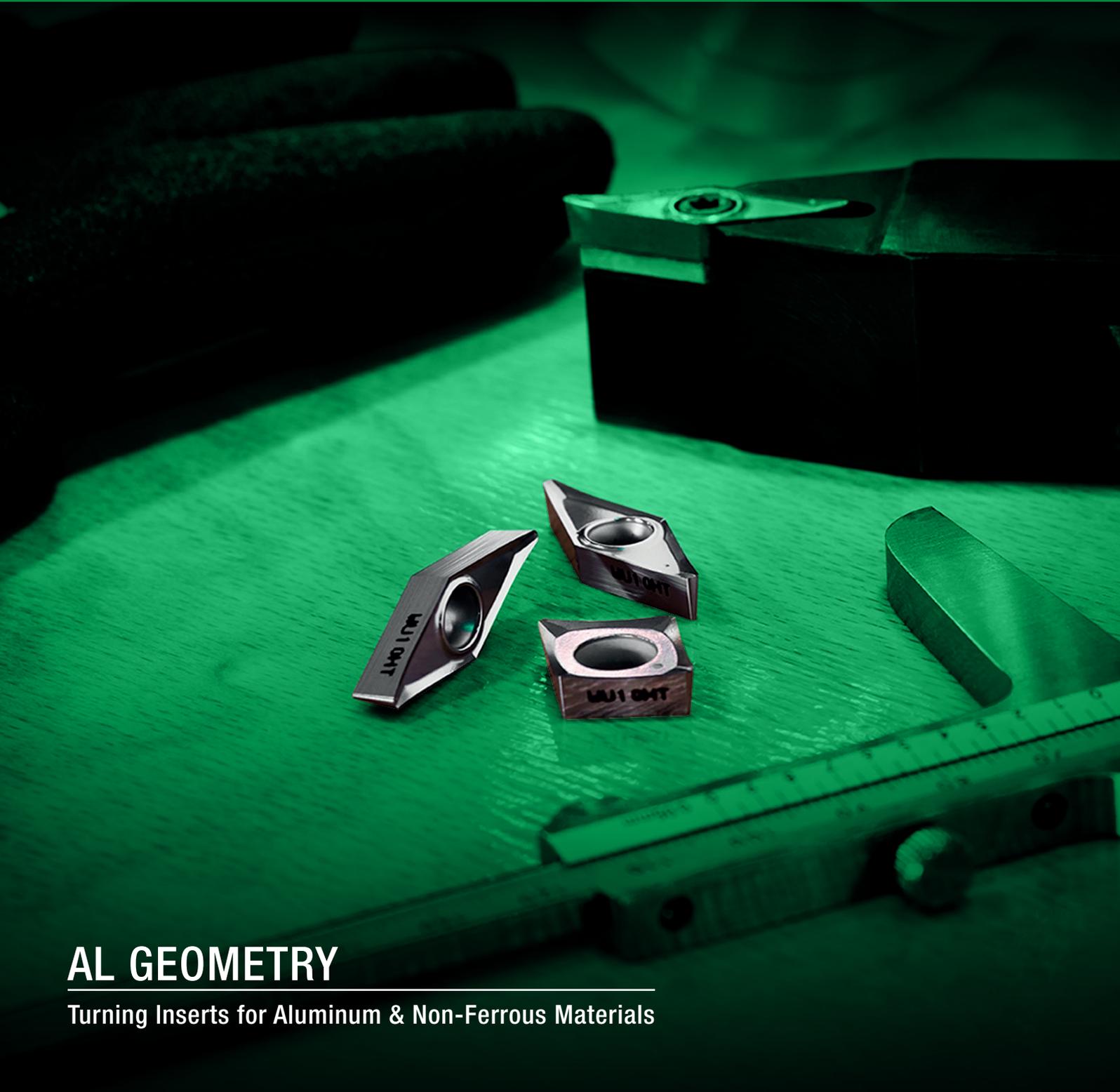


VERSATILE PERFORMANCE



AL GEOMETRY

Turning Inserts for Aluminum & Non-Ferrous Materials

WIDIA 

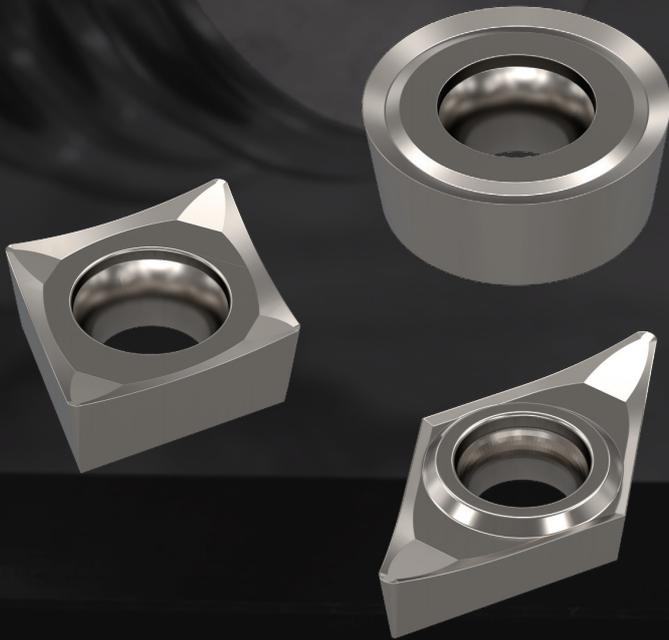
AL GEOMETRY



VERSATILE PERFORMANCE

AL Geometry is versatile, reliable, and affordable. This insert geometry commands outstanding chip control in medium to finish aluminum turning operations for customers seeking repeatable tooling performance at an affordable price.





Popular Styles & Sizes Include:

CCGT: 6,35–12,90mm

DCGT: 6,35–11,63mm

TCGT: 6,35–16,51mm

VBGT: 9,53–16,61mm

Inserts for Non-Ferrous Turning Applications

- Polished rake surface for smoother chip flow.
- Positive, sharp cutting edge for enhanced tooling performance.
- Capable of turning, facing, chamfering, profiling, and boring.

AL Geometry

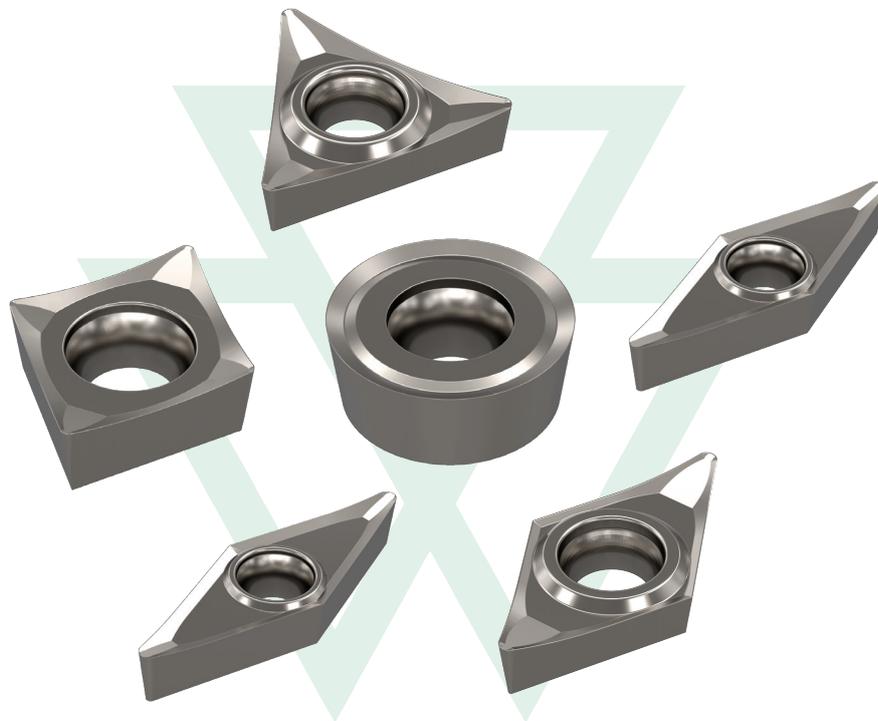
Universal Turning Inserts for Aluminum and Non-Ferrous Materials

Features and Benefits:

- Available in an uncoated carbide grade, WU10HT™, and an AlTiN PVD-coated grade, WU05PT™.
- Designed to perform on aluminum and non-ferrous materials.
- Polished rake surface for smoother chip flow.
- Positive, sharp cutting edge for enhanced tooling performance.
- Capable of turning, facing, chamfering, profiling, and boring.

Materials

N



Versatile

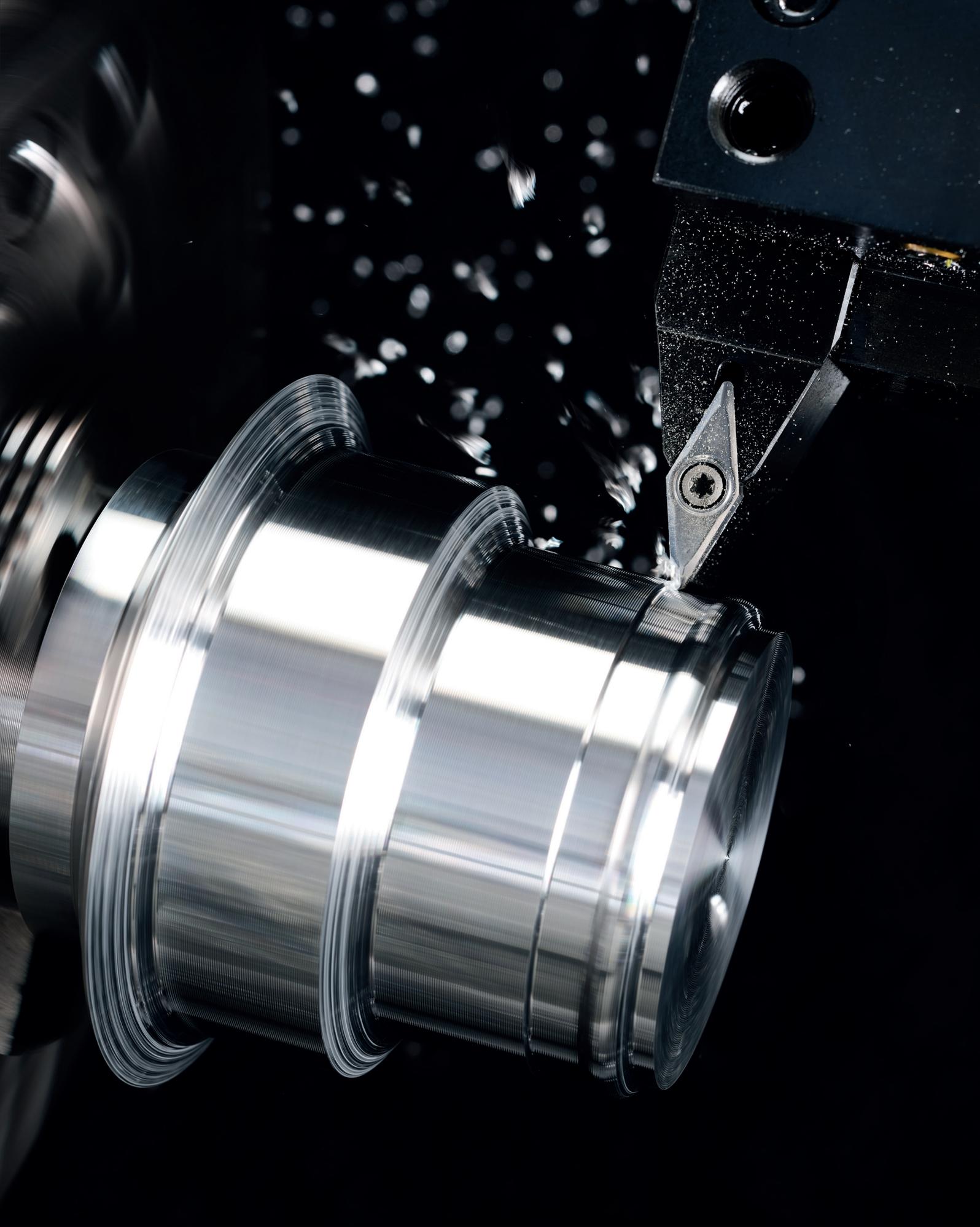
Various grades and styles enable machining optionality.

Reliable

Polished surface and positive rake angle improve set-up times and tool life.

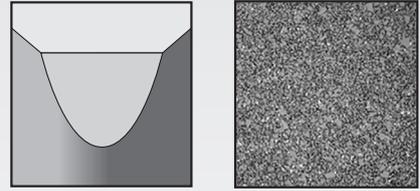
Affordable

Insert versatility and reliable performance value offered at competitive prices.

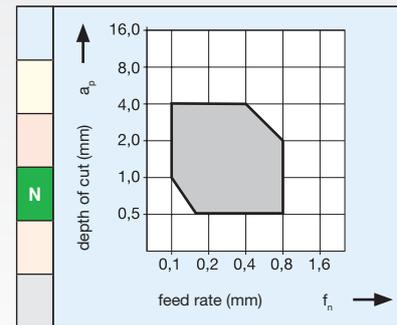


WU10HT™/WU05PT • Grade Information

A hard, unalloyed, low-binder content with fine-grained carbide. WU10HT/WU05PT are wear-resistant, uncoated carbide grades for machining of aluminum and other non-ferrous materials.



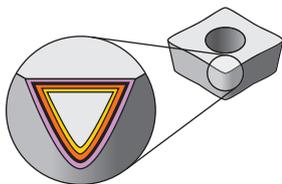
WU10HT/WU05PT



For cost-effective machining of aluminum, non-ferrous metals, and plastics. Extremely sharp cutting edges result in optimum part finishes with low cutting forces and short chips.

		Geometry
Conditions		AL
Lightly Interrupted Cut		WU10HT/WU05PT
Varying Depth of Cut		WU10HT/WU05PT
Smooth Cut		WU10HT/WU05PT

Grades and Grade Descriptions



Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

Coating	Grade Description	wear resistance ← → toughness									
		05	10	15	20	25	30	35	40	45	
WU10HT HW-N10	Uncoated carbide. Highly wear-resistant microfine substrate. Suitable for finish turning applications in aluminum and all types of non-ferrous materials, stainless steel, and high-temp alloys with suitable edge preparation. Mainly applied in continuous cuts.										
		M									
		N									
		S									
WU05PT HC-N05	Coated carbide. PVD AlTiN-coated grade with microfine substrate and highly wear-resistant coating. Suitable for finish turning in aluminum and other non-ferrous materials and also steels, stainless steel, and high-temp alloys with reliability in continuous cuts with suitable edge preparation.	P									
		M									
		K									
		N									
		S									

CUTTING SPEED RECOMMENDATION • N • INCH

Low-Silicon Aluminum Alloys (hypoeutectic <12,2% Si) and Magnesium Alloys

material group	grade	Speed – m/min (SFM)										Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	1250 (4000)	1500 (4800)	1750 (5600)	2000 (6400)	2250 (7200)	2500 (8000)	m/min	SFM
N1	WU10HT™	◇										488	1597

Low-Silicon Aluminum Alloys (hypoeutectic <12,2% Si) and Magnesium Alloys

material group	grade	Speed – m/min (SFM)										Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	1250 (4000)	1500 (4800)	1750 (5600)	2000 (6400)	2250 (7200)	2500 (8000)	m/min	SFM
N2	WU10HT	◇										488	1597

High-Silicon Aluminum Alloys (hypereutectic >12,2% Si) and Magnesium Alloys

material group	grade	Speed – m/min (SFM)										Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	1250 (4000)	1500 (4800)	1750 (5600)	2000 (6400)	2250 (7200)	2500 (8000)	m/min	SFM
N3	WU10HT	◇										488	1597
	WU05PT	◇										550	1800

Copper-, Brass-, Zinc-Based on a Machinability Index Range of 70–100

material group	grade	Speed – m/min (SFM)				Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N4	WU10HT	◇				259	847
	WU05PT	◇				275	900

Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass, and Glass

material group	grade	Speed – m/min (SFM)				Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	m/min
N5	WU10HT	◇				170	550
	WU05PT	◇				170	550

Carbon and Graphite Composites: Brush Alloys, Kevlar, and Graphite (280–400 HB) (30–43 HRC)

material group	grade	Speed – m/min (SFM)				Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	m/min
N6	WU05PT	◇				200	650

MMCs (Aluminum-Based Metal Matrix Composites)

material group	grade	Speed – m/min (SFM)				Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N7	WU10HT	◇				180	589

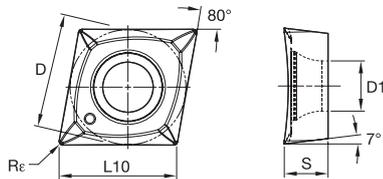
Tin Alloys, Cast: ASTM 823, Alloys 1, 2, 3, 11

material group	grade	Speed – m/min (SFM)				Starting Conditions	
		250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N8	WU05PT	◇				215	700

High-Performance Inserts for Machining Aluminum

Step ID: 190775765
Module Number: Module Name: Web Name: CCGT-AL • Inserts for Aluminum

CCGT-AL • Inserts for Aluminum

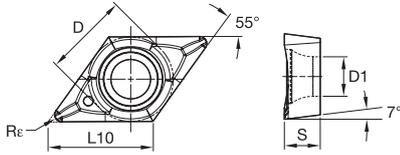


- first choice
- alternate choice

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N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
S	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		WU10HT	WU05PT
		mm	in	mm	in	mm	in	mm	in	mm	in		
CCGT060202AL	CCGT21505AL	6,35	1/4	6,45	.254	2,38	3/32	0,2	.008	2,80	.110	6846528	6968709
CCGT060204AL	CCGT2151AL	6,35	1/4	6,47	.255	2,38	3/32	0,4	.016	2,79	.110	6846529	6968709
CCGT060208AL	CCGT2152AL	6,35	1/4	6,45	.254	2,38	3/32	0,8	.031	2,80	.110	6846530	6968710
CCGT09T302AL	CCGT32505AL	9,53	3/8	9,67	.381	3,97	5/32	0,2	.008	4,40	.173	6846581	6968751
CCGT09T304AL	CCGT3251AL	9,53	3/8	9,67	.381	3,97	5/32	0,4	.016	4,40	.173	6846582	6968751
CCGT09T308AL	CCGT3252AL	9,53	3/8	9,67	.381	3,97	5/32	0,8	.031	4,40	.173	6846583	6968752
CCGT120402AL	CCGT4305AL	12,70	1/2	12,90	.508	4,76	3/16	0,2	.008	5,50	.217	6846584	6968753
CCGT120404AL	CCGT431AL	12,70	1/2	12,90	.508	4,76	3/16	0,4	.016	5,50	.217	6846585	6968753
CCGT120408AL	CCGT432AL	12,70	1/2	12,90	.508	4,76	3/16	0,8	.031	5,50	.217	6846586	6968754

DCGT-AL • Inserts for Aluminum

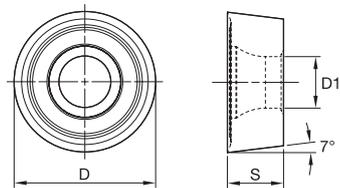


- first choice
- alternate choice

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

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		WU10HT	WU05PT
		mm	in	mm	in	mm	in	mm	in	mm	in		
DCGT070202AL	DCGT21505AL	6,35	1/4	7,75	.305	2,38	3/32	0,2	.008	2,90	.114	6846587	6968755
DCGT070204AL	DCGT2151AL	6,35	1/4	7,75	.305	2,38	3/32	0,4	.016	2,90	.114	6846598	6968755
DCGT11T302AL	DCGT32505AL	9,53	3/8	11,63	.458	3,97	5/32	0,2	.008	4,40	.173	6846589	6968756
DCGT11T304AL	DCGT3251AL	9,53	3/8	11,59	.457	3,97	5/32	0,4	.016	4,40	.173	6846590	6968756
DCGT11T308AL	DCGT3252AL	9,53	3/8	11,63	.458	3,97	5/32	0,8	.031	4,40	.173	6846591	6968757

RCGT-AL • Inserts for Aluminum



- first choice
- alternate choice

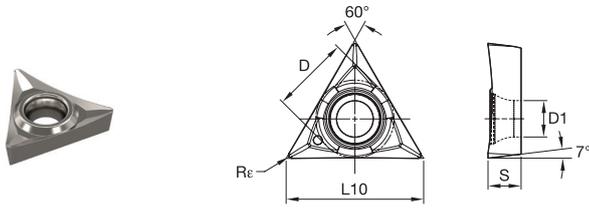
P	■	■	○
M	■	■	○
K	■	■	○
N	■	●	●
S	■	○	○
H	■	■	○

ISO catalog number	ANSI catalog number	D		S		D1		WU10HT	WU05PT
		mm	in	mm	in	mm	in		
RCGT0803M0AL	RCGT0803M0AL	8,00	.315	3,18	1/8	3,40	.134	6846592	6968758
RCGT1204M0AL	RCGT1204M0AL	12,00	.4724	4,76	3/16	4,40	.173	6846592	6968758

High-Performance Inserts for Machining Aluminum

Step ID: 190775764
 Module Number: Module Name: Web Name: TCGT-AL • Inserts for Aluminum

TCGT-AL • Inserts for Aluminum

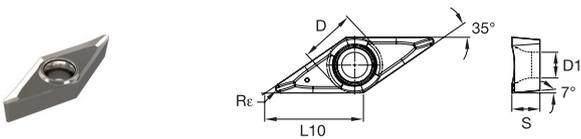


- first choice
- alternate choice

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ISO catalog number	ANSI catalog number	D		L10		S		Re		D1		WU10HT	WU05PT
		mm	in	mm	in	mm	in	mm	in	mm	in		
TCGT110204AL	TCGT2151AL	6,35	1/4	11,00	.433	2,38	3/32	0,4	.016	2,80	.110	6846593	6968759
TCGT16T304AL	TCGT3251AL	9,53	3/8	16,51	.650	3,97	5/32	0,4	.016	4,40	.173	6846594	6968760
TCGT16T308AL	TCGT3252AL	9,53	3/8	16,50	.650	3,97	5/32	0,8	.031	4,40	.173	6846595	6968761

VCGT-AL • Inserts for Aluminum

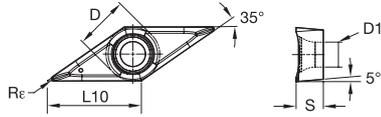


- first choice
- alternate choice

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S	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ISO catalog number	ANSI catalog number	D		L10		S		Re		D1		WU10HT	WU05PT
		mm	in	mm	in	mm	in	mm	in	mm	in		
VCGT160404AL	VCGT331AL	9,53	3/8	16,61	.654	4,76	3/16	0,4	.031	4,40	.173	6968762	6968763
VCGT160408AL	VCGT332AL	9,53	3/8	16,61	.654	4,76	3/16	0,8	.031	4,40	.173	6968763	6968763

VBGT-AL • Inserts for Aluminum



- first choice
- alternate choice

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ISO catalog number	ANSI catalog number	D		L10		S		Rr		D1		WU10HT	WU05PT
		mm	in	mm	in	mm	in	mm	in	mm	in		
VBGT160404AL	VBGT331AL	9,53	3/8	16,61	.654	4,76	3/16	0,4	.016	4,40	.173	6846596	I
VBGT160408AL	VBGT332AL	9,53	3/8	16,46	.648	4,76	3/16	0,8	.031	4,40	.173	6846597	I

AL GEOMETRY

TURNING INSERTS FOR ALUMINUM & NON-FERROUS MATERIALS

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