

New Generation of Coated Carbide Grades for Milling

XCU2500/XCK2000

Revolutionary new coating realizes amazingly long tool life



ABSOTECH



XCU2500 **P** **M** **K** **N** **S** **H**
XCK2000 **P** **M** **K** **N** **S** **H**

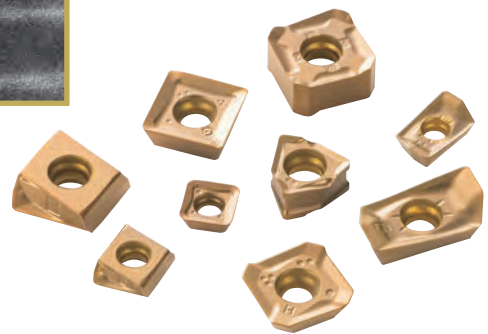
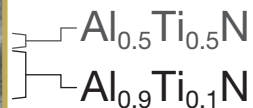
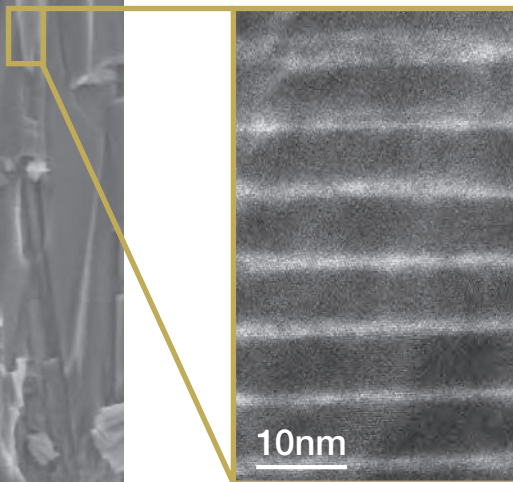
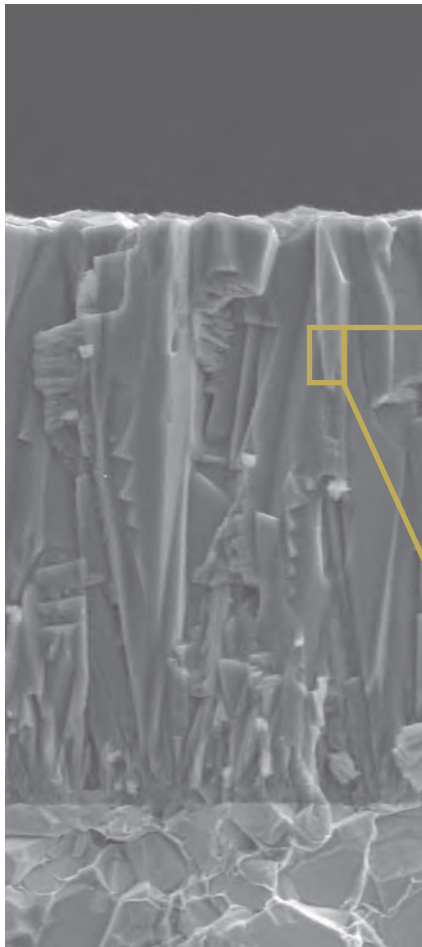
Introducing the revolutionary coating **ABSOTECH X** with both wear and fracture resistance

■ Coating Features

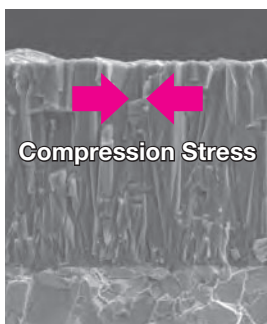
- Pure cubic crystal AlTiN with high Al content **World's first***

Amazing Wear Resistance

With proprietary structural control technology, differently composed layers of AlTiN are stacked at the nanometre level. With a high-Al composition containing over 80% Al on average, it also maintains a cubic crystalline structure to achieve excellent thermal resistance and high hardness.

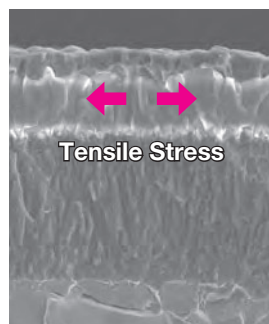


- Special Surface Treatment **Proprietary Technology**



Compression Stress

ABSOTECH X



Tensile Stress

Conventional Tool

Excellent Thermal Crack and Fracture Resistance

Proprietary surface treatment introduces high compression stress to the coating, suppressing the development of cracks.

*As of 2020

■ Features of XCU2500/XCK2000

XCU2500 General-purpose Grades

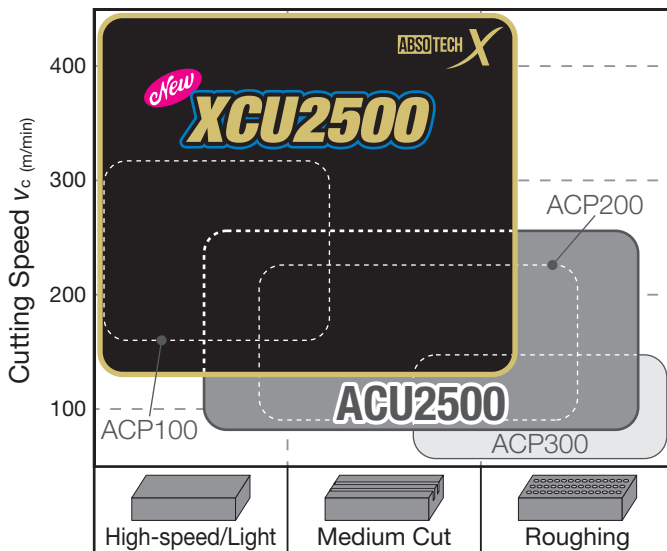
The application of Absotech™ X to a tough carbide substrate with well-balanced hardness and toughness enables superb performance in a wide range of cutting speeds on work materials such as steel, cast iron, and stainless steel.

XCK2000 Cast Iron Machining Grades

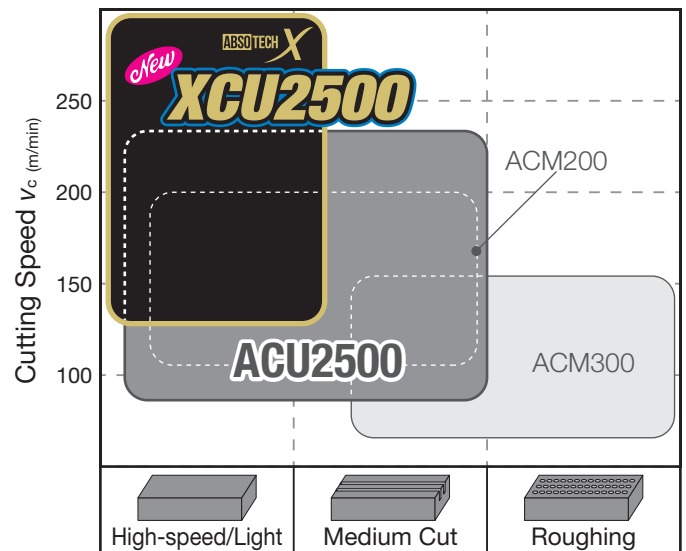
The application of Absotech™ X to a high-hardness carbide substrate realizes amazing long tool life in high-speed cast iron machining.

■ Application Range

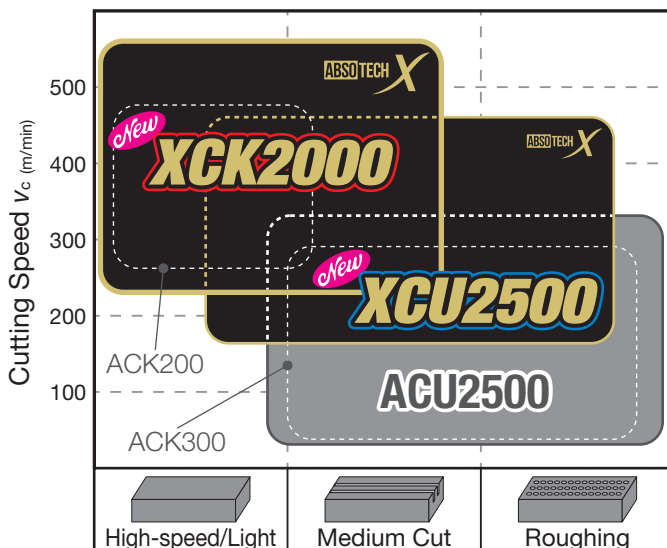
P Steel



M Stainless Steel



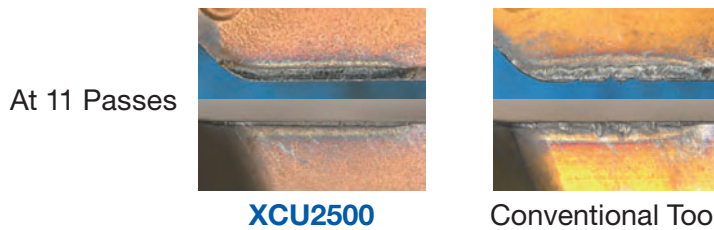
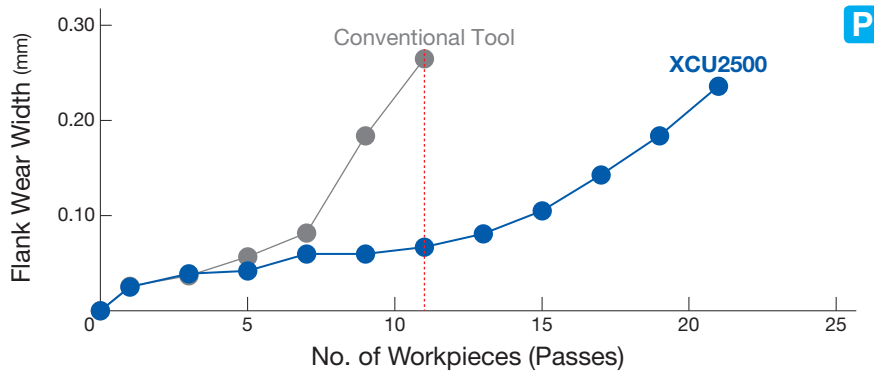
K Cast Iron



■ Cutting Performance

● XCU2500 Wear Resistance (Steel; Dry Machining)

Superb thermal and wear resistance is achieved with a high-hardness, high-Al content AlTiN coating for twice the conventional tool life with XCU2500 in high-speed dry machining of steel

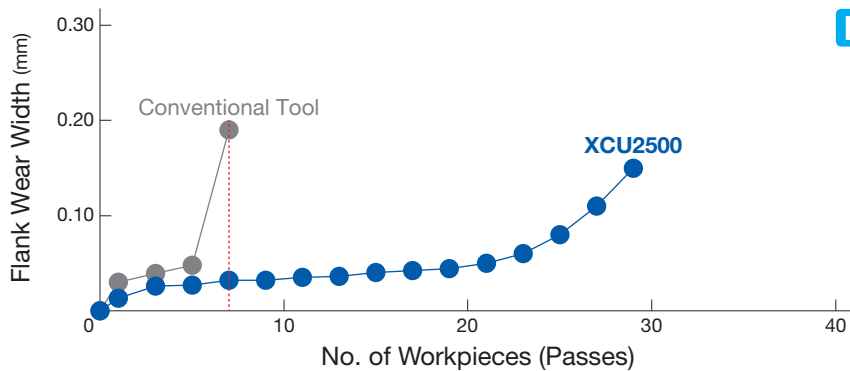


Work Material: Alloy Steel Machining (SCM435 Block Material)
 Tool: WGX13160R, Insert: SEET13T3AGSR-G
 Cutting Conditions: $v_c = 350\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = 2.0\text{mm}$, $a_e = 80\text{mm}$ Dry

● XCU2500 Wear Resistance (Steel; Wet Machining)

Superb thermal crack resistance is achieved by combining a high-compression stress coating and a tough substrate

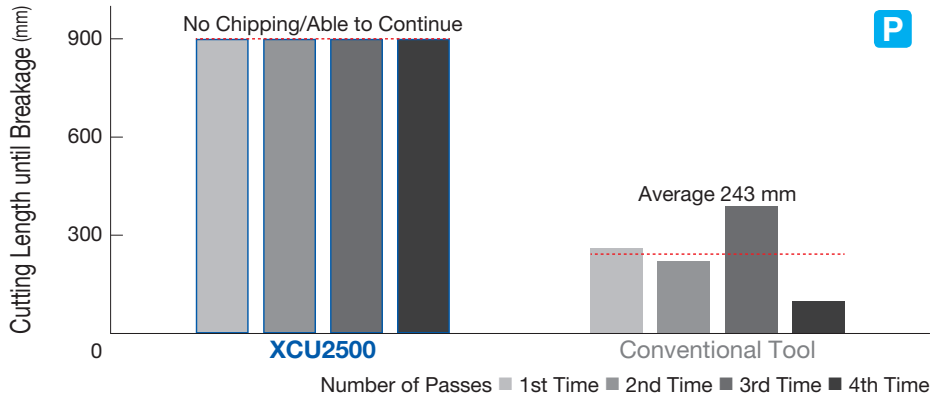
for four times the conventional tool life with XCU2500 in wet machining of steel



Work Material: Alloy Steel Machining (SCM435 Block Material)
 Tool: WGX13160R, Insert: SEET13T3AGSR-G
 Cutting Conditions: $v_c = 250\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = 2.0\text{mm}$, $a_e = 80\text{mm}$ Wet

● XCU2500 Fracture Resistance (Steel; Heavy Interrupted Dry Machining)

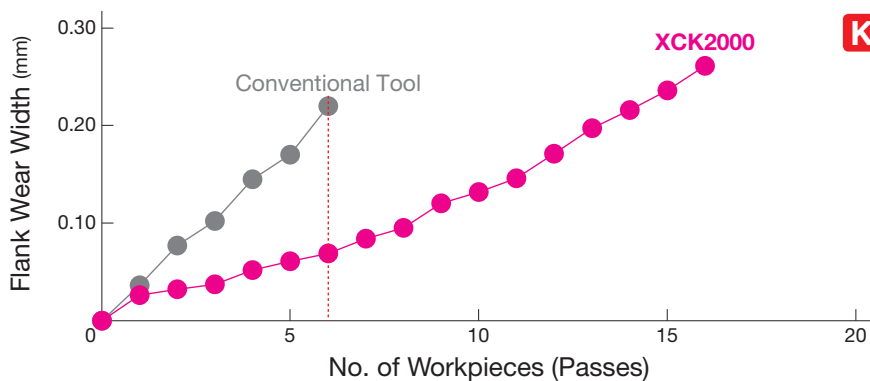
XCU2500 achieves three times or more the conventional fracture resistance in heavy interrupted cutting through the introduction of high compression stress to the coating layer



Work Material: Carbon Steel Heavy Interrupted Cutting (S50C Block Material with Holes)
 Tool: WGX13160R, Insert: SEET13T3AGSR-G
 Cutting Conditions: $v_c = 200\text{m/min}$, $f_z = 0.4\text{mm/t}$, $a_p = 2.0\text{mm}$, $a_e = 150\text{mm}$ Dry

● XCK2000 Wear Resistance (Ductile Cast Iron; Dry Machining)

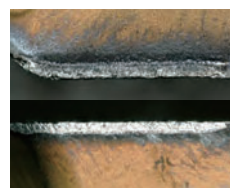
Superb wear resistance is achieved with a high-hardness AlTiN coating **for three times the conventional tool life with XCK2000 in dry machining of cast iron**



At 7 Passes



XCK2000



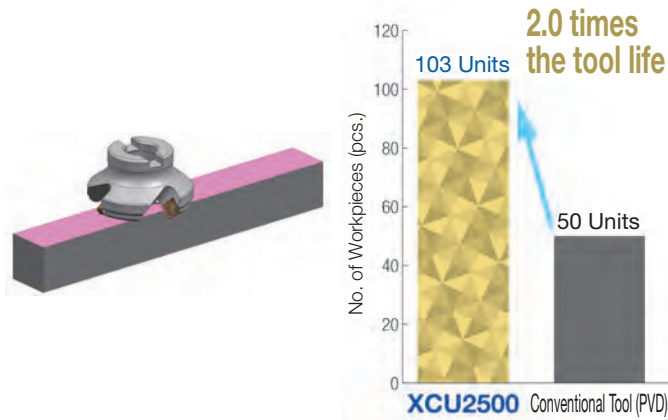
Conventional Tool

Work Material: Ductile Cast Iron Machining (FCD700 Block Material)
 Tool: WGX13160R, Insert: SEET13T3AGSR-G
 Cutting Conditions: $v_c = 200\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = 2.0\text{mm}$, $a_e = 80\text{mm}$ Dry

Application Examples of XCU2500

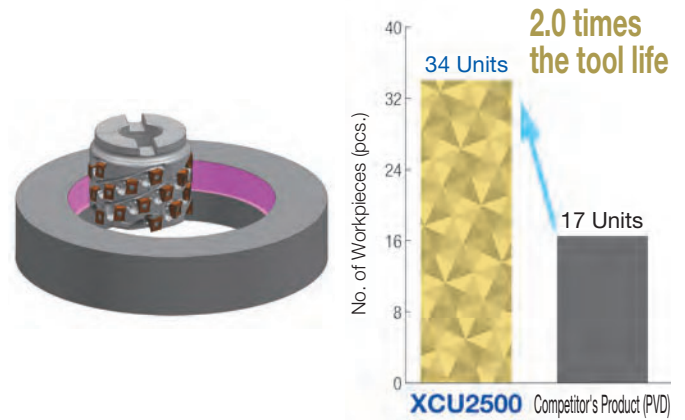
XCU2500 realizes superb long tool life in machining of steel, cast iron, and stainless steel

P Suppresses wear for 2.0x longer tool life



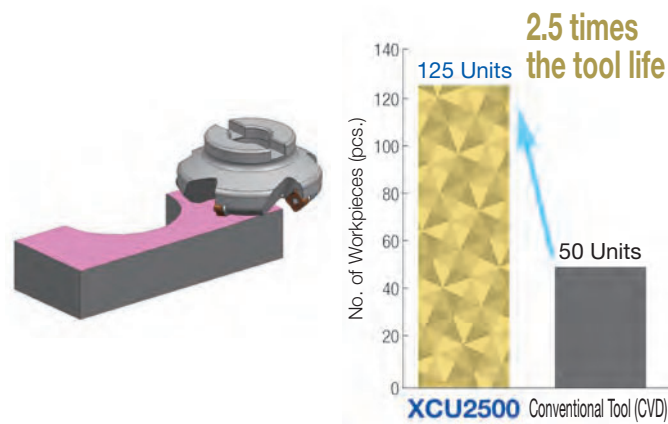
Work Material: Automotive Parts (SWCHB, Boron Steel)
 Tool: WGX13080RS, Insert: SEMT13T3AGSR-G
 Cutting Conditions: $v_c = 332\text{m/min}$, $f_z = 0.15\text{mm/t}$, $a_p = 0.50\text{mm}$, $a_e = 4\text{mm}$ Dry

P Suppresses wear and chipping for 2.0x longer tool life



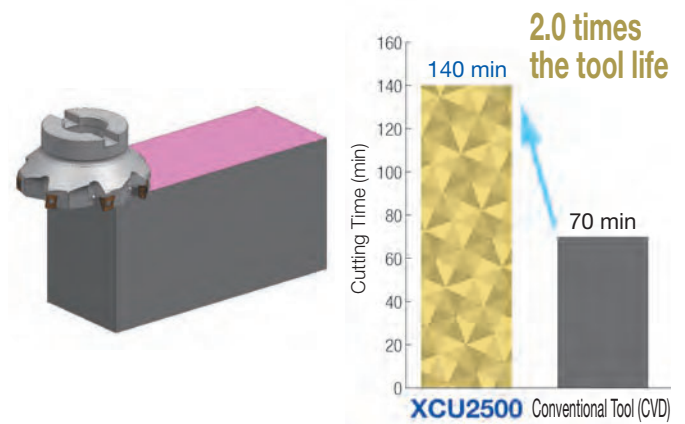
Work Material: Housing (SCMn2, Manganese Steel)
 Tool: TSXR13100RS, Insert: LNE130608PNER-H
 Cutting Conditions: $v_c = 132\text{m/min}$, $f_z = 0.1\text{mm/t}$, $a_p = 30\text{mm}$, $a_e = 5.0\text{mm}$ Dry

P Suppresses wear and chipping for 2.5x longer tool life



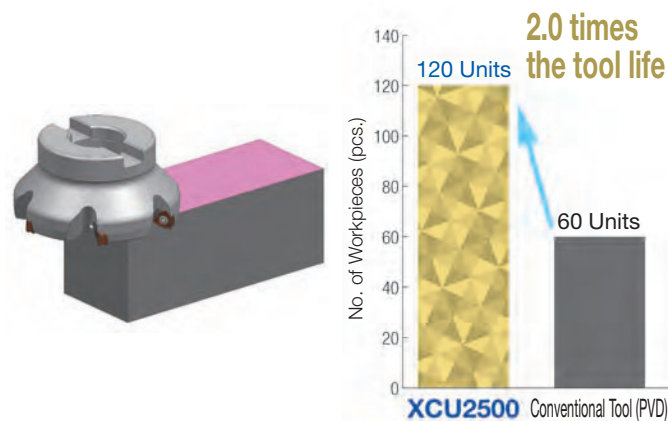
Work Material: Bearing Cap (FCD450)
 Tool: DGC13100RS, Insert: SNMT13T6ANER-G
 Cutting Conditions: $v_c = 240\text{m/min}$, $f_z = 0.30\text{mm/t}$, $a_p = 1.20\text{mm}$ Dry

P Suppresses chipping for 2.0x longer tool life



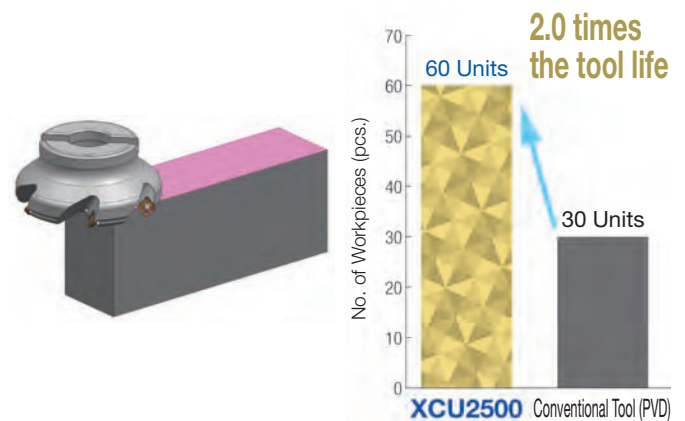
Work Material: Hydraulic Valve (FC250)
 Tool: TSX13125RS, Insert: LNE130608PNER-G
 Cutting Conditions: $v_c = 350\text{m/min}$, $f_z = 0.25\text{mm/t}$, $a_p = 3.50\text{mm}$ Dry

P K Suppresses wear for 2.0x longer tool life



Work Material: Bearing Cover (FC250/FCD450/SC450 Mixed)
 Tool: DFC09100RS, Insert: XNMU060604PNER-G
 Cutting Conditions: $v_c = 236\text{m/min}$, $f_z = 0.12\text{mm/t}$, $a_p = 3.00\text{mm}$ Dry

M Suppresses adhesion for 2.0x longer tool life

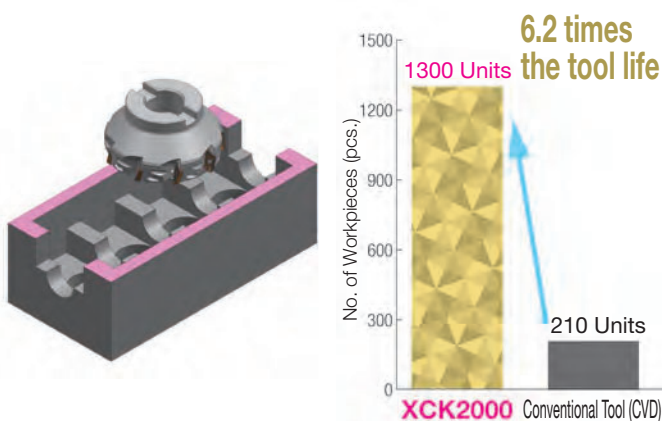


Work Material: Machine Parts (SUS304)
 Tool: WGX13125RS, Insert: SEET13T3AGSR-G
 Cutting Conditions: $v_c = 250\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = 2.0$ to 3.0mm Dry

Application Examples of XCK2000

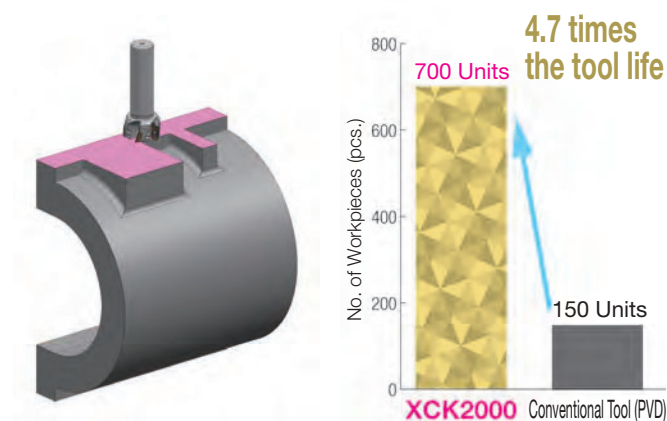
XCK2000 realizes amazing long tool life in machining of cast iron

K Suppresses chipping for 6.2x longer tool life



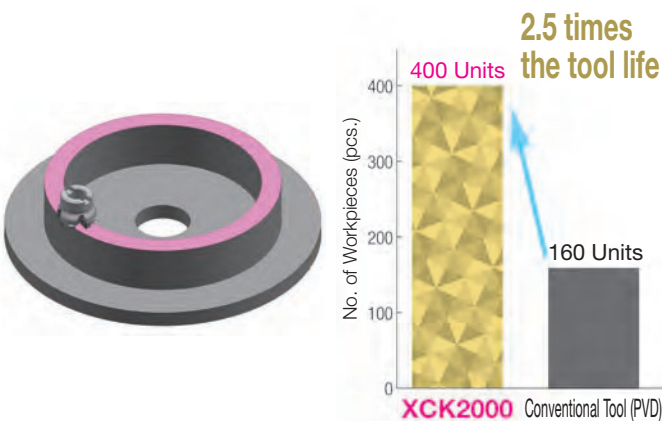
Work Material: Cylinder Block (FC250)
 Tool: WEZ17125RS09, Insert: AOMT170508PEER-G
 Cutting Conditions: $v_c = 300\text{m/min}$, $f_z = 0.26\text{mm/t}$, $a_p = 2.00\text{mm}$ Dry

K Suppresses wear for 4.7x longer tool life



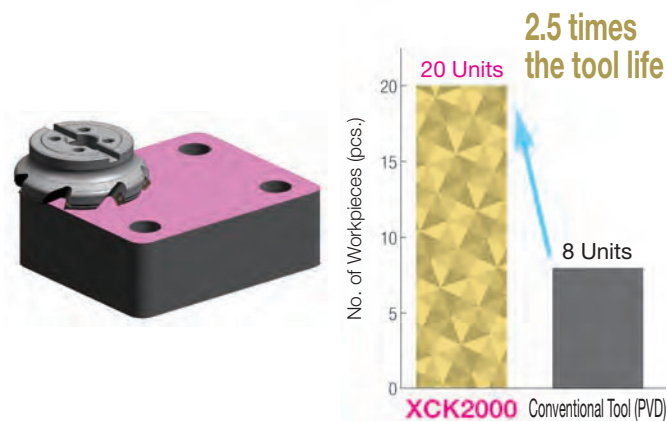
Work Material: Cylinder Block (FC250)
 Tool: WEZ17050E05, Insert: AOMT170508PEER-G
 Cutting Conditions: $v_c = 188\text{m/min}$, $f_z = 0.15\text{mm/t}$, $a_p = 1.00\text{mm}$ Wet

K Suppresses wear/chipping for 2.5x longer tool life



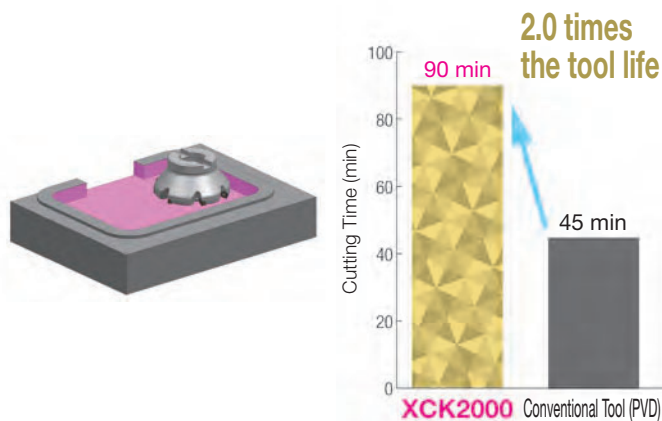
Work Material: Flywheel Housing (FC250)
 Tool: DFC09050RS, Insert: XNMU060608PNER-G
 Cutting Conditions: $v_c = 250\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = 1.5\text{mm}$ Dry

K Suppresses wear for 2.5x longer tool life



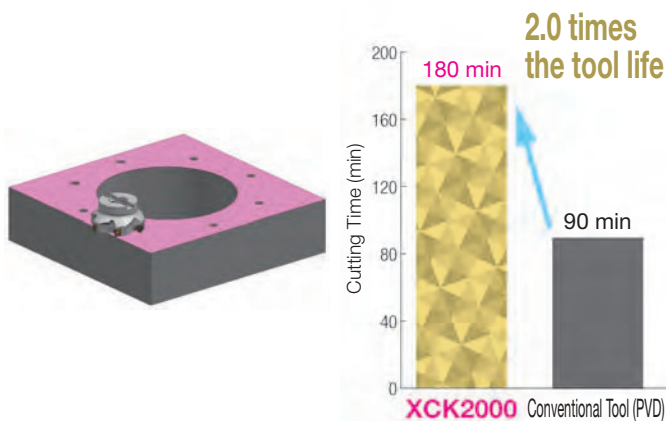
Work Material: Hydraulic Parts (FCD450)
 Tool: WGX13160RS, Insert: SEET13T3AGSR-G
 Cutting Conditions: $v_c = 250\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = 1.5\text{mm}$ Dry

K Suppresses wear for 2.0x longer tool life



Work Material: Housing Pilot (FCD450)
 Tool: DFC09125RS, Insert: XNMU060608PNER-G
 Cutting Conditions: $v_c = 163\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = \text{Up to } 3.0\text{mm}$ Wet

K Suppresses wear for 2.0x longer tool life



Work Material: Machine Parts (FCD500)
 Tool: TSX13100RS, Insert: LNEX130608PNER-G
 Cutting Conditions: $v_c = 170\text{m/min}$, $f_z = 0.23\text{mm/t}$, $a_p = \text{Up to } 2.00\text{mm}$ Wet

Next-Generation Coated Carbide Grades for Milling

XCU2500/XCK2000

SEC-WaveMill WGX Series Dimensions (mm)

Applications	High-speed/Light		K	Fig 1
	General-purpose		K	
	Roughing			
		XCU2500	XCK2000	Fig 2
Cat. No.				
SEET 13T3AGSR-L	●	●	1	Fig 3 Wiper Insert
SEET 13T3AGSR-G	●	●	1	
SEMT 13T3AGSR-L	●	●	1	
SEMT 13T3AGSR-G	●	●	1	
SEMT 13T3AGSR-H	●	●	1	
SEMT 13T3AGSR-FG	●	●	2	
XEEW 13T3AGER-WR	●	●	3	

SEC-Sumi Dual Mill DGC Series Dimensions (mm)

Applications	High-speed/Light		K	Fig 1
	General-purpose		K	
	Roughing			
		XCU2500	XCK2000	Fig 2
Cat. No.				
SNMT 13T6ANER-L	●	●	1	Fig 3 Wiper Insert
SNMT 13T6ANER-G	●	●	1	
SNMT 13T6ANER-H	●	●	1	
SNMT 13T6ANER-FL			2	
SNMT 13T6ANER-FG	●	●	2	
SNET 13T6ANER-L			1	Fig 4
SNET 13T6ANER-G			1	
SNET 13T6ANER-FL			2	
SNET 13T6ANER-FG			2	
XNEU 13T6ANEN-W	●	●	3	
ONMT 05T6ANER-L			4	
ONMT 05T6ANER-G	●	●	4	
ONET 05T6ANER-L			4	
ONET 05T6ANER-G			4	

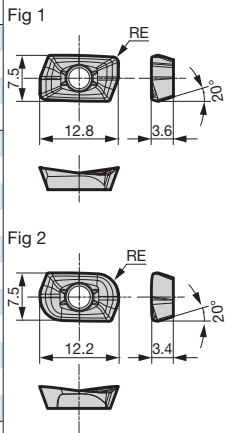
● mark: Standard stocked item Blank: Made-to-order item

Next-Generation Coated Carbide Grades for Milling
XCU2500/XCK2000

SEC-WaveMill WEZ Series

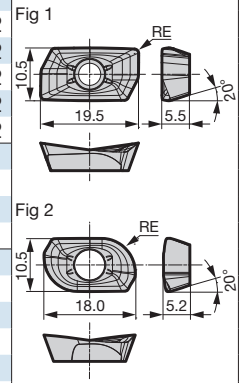
Dimensions (mm)

Applications	High-speed/Light	K		Nose Radius RE	Fig
	General-purpose	KP	KM		
	Roughing	KP	KM		
Cat. No.	XCU2500	XCK2000			
AOMT 11T302PEER-G				0.2	1
AOMT 11T304PEER-G	●	●		0.4	1
AOMT 11T305PEER-G				0.5	1
AOMT 11T308PEER-G	●	●		0.8	1
AOMT 11T310PEER-G				1.0	1
AOMT 11T312PEER-G				1.2	1
AOMT 11T316PEER-G				1.6	1
AOMT 11T320PEER-G				2.0	1
AOMT 11T324PEER-G				2.4	1
AOMT 11T330PEER-G				3.0	2
AOMT 11T332PEER-G				3.2	2
AOMT 11T304PEER-H	●	●		0.4	1
AOMT 11T308PEER-H	●	●		0.8	1
AOMT 11T312PEER-H				1.2	1
AOMT 11T316PEER-H				1.6	1
AOET 11T302PEER-F				0.2	1
AOET 11T304PEER-F				0.4	1
AOET 11T305PEER-F				0.5	1
AOET 11T308PEER-F				0.8	1
AOET 11T310PEER-F				1.0	1
AOET 11T312PEER-F				1.2	1
AOET 11T316PEER-F				1.6	1
AOET 11T320PEER-F				2.0	1
AOET 11T324PEER-F				2.4	1
AOET 11T330PEER-F				3.0	2
AOET 11T332PEER-F				3.2	2
AOET 11T302PEER-P16				0.2	1
AOET 11T304PEER-P16				0.4	1
AOET 11T305PEER-P16				0.5	1
AOET 11T308PEER-P16				0.8	1
AOET 11T310PEER-P16				1.0	1
AOET 11T312PEER-P16				1.2	1
AOET 11T302PEER-P20				0.2	1
AOET 11T304PEER-P20				0.4	1
AOET 11T305PEER-P20				0.5	1
AOET 11T308PEER-P20				0.8	1
AOET 11T310PEER-P20				1.0	1
AOET 11T312PEER-P20				1.2	1
AOET 11T302PEER-P25				0.2	1
AOET 11T304PEER-P25				0.4	1
AOET 11T305PEER-P25				0.5	1
AOET 11T308PEER-P25				0.8	1
AOET 11T310PEER-P25				1.0	1
AOET 11T312PEER-P25				1.2	1



Dimensions (mm)

Applications	High-speed/Light	K		Nose Radius RE	Fig
	General-purpose	KP	KM		
	Roughing	KP	KM		
Cat. No.	XCU2500	XCK2000			
AOMT 170502PEER-L				0.2	1
AOMT 170504PEER-L	●	●		0.4	1
AOMT 170508PEER-L	●	●		0.8	1
AOMT 170512PEER-L				1.2	1
AOMT 170516PEER-L				1.6	1
AOMT 170502PEER-G				0.2	1
AOMT 170504PEER-G	●	●		0.4	1
AOMT 170505PEER-G				0.5	1
AOMT 170508PEER-G	●	●		0.8	1
AOMT 170510PEER-G				1.0	1
AOMT 170512PEER-G				1.2	1
AOMT 170516PEER-G				1.6	1
AOMT 170520PEER-G				2.0	1
AOMT 170524PEER-G				2.4	1
AOMT 170530PEER-G				3.0	2
AOMT 170532PEER-G				3.2	2
AOMT 170540PEER-G				4.0	2
AOMT 170550PEER-G				5.0	2
AOMT 170564PEER-G				6.4	2
AOMT 170504PEER-H	●	●		0.4	1
AOMT 170508PEER-H	●	●		0.8	1
AOMT 170512PEER-H				1.2	1
AOMT 170516PEER-H				1.6	1
AOET 170502PEER-F				0.2	1
AOET 170504PEER-F				0.4	1
AOET 170505PEER-F				0.5	1
AOET 170508PEER-F				0.8	1
AOET 170510PEER-F				1.0	1
AOET 170512PEER-F				1.2	1
AOET 170516PEER-F				1.6	1
AOET 170520PEER-F				2.0	1
AOET 170524PEER-F				2.4	1
AOET 170530PEER-F				3.0	2
AOET 170532PEER-F				3.2	2
AOET 170540PEER-F				4.0	2
AOET 170550PEER-F				5.0	2
AOET 170564PEER-F				6.4	2
AOET 170502PEER-P25				0.2	1
AOET 170504PEER-P25				0.4	1
AOET 170505PEER-P25				0.5	1
AOET 170508PEER-P25				0.8	1
AOET 170510PEER-P25				1.0	1
AOET 170512PEER-P25				1.2	1
AOET 170502PEER-P32				0.2	1
AOET 170504PEER-P32				0.4	1
AOET 170505PEER-P32				0.5	1
AOET 170508PEER-P32				0.8	1
AOET 170510PEER-P32				1.0	1
AOET 170512PEER-P32				1.2	1



● mark: Standard stocked item Blank: Made-to-order item

Next-Generation Coated Carbide Grades for Milling

XCU2500/XCK2000

SEC-WaveMill WFX Series

Dimensions (mm)

Applications	High-speed/Light			Nose Radius RE	Fig
	General-purpose				
	Roughing				
Cat. No.	XCU2500	XCK2000			
SOMT 080304PZER-L	●	●		0.4	1
SOMT 080308PZER-L	●	●		0.8	1
SOMT 080304PZER-G	●	●		0.4	1
SOMT 080308PZER-G	●	●		0.8	1
SOMT 080312PZER-G				1.2	1
SOMT 080308PZER-H	●	●		0.8	1
SOMT 080312PZER-H				1.2	1
SOET 080304PZER-G				0.4	1
SOET 080308PZER-G				0.8	1
SOET 080312PZER-G				1.2	1

Dimensions (mm)

Applications	High-speed/Light			Nose Radius RE	Fig
	General-purpose				
	Roughing				
Cat. No.	XCU2500	XCK2000			
SOMT 120408PDER-L	●	●		0.8	1
SOMT 120404PDER-G	●	●		0.4	1
SOMT 120408PDER-G	●	●		0.8	1
SOMT 120412PDER-G				1.2	1
SOMT 120416PDER-G				1.6	1
SOMT 120408PDER-H	●	●		0.8	1

SEC-Sumi Dual Mill DFC Series

Dimensions (mm)

Applications	High-speed/Light			Nose Radius RE	Fig
	General-purpose				
	Roughing				
Cat. No.	XCU2500	XCK2000			
XNMU 060604PNER-L	●	●		0.4	1
XNMU 060608PNER-L	●	●		0.8	1
XNMU 060604PNER-G	●	●		0.4	1
XNMU 060608PNER-G	●	●		0.8	1
XNMU 060612PNER-G				1.2	1
XNMU 060616PNER-G				1.6	1
XNMU 060604PNER-GS				0.4	1
XNMU 060608PNER-GS	●	●		0.8	1
XNMU 060612PNER-GS				1.2	1
XNMU 060616PNER-GS				1.6	1
XNMU 060608PNER-H	●	●		0.8	1
XNMU 060612PNER-H				1.2	1
XNMU 060616PNER-H				1.6	1

● mark: Standard stocked item Blank: Made-to-order item

Sumitomo Electric Cutting Tools Official Apps for iOS/Android



Cutting calculation app
SumiTool Calculator



Grade & chipbreaker comparison app
SumiTool Converter



< SAFETY NOTES >



• Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.

• Please handle with care as this product has sharp edges.
• Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.

• When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

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