

New ACS1000/ACS2500/ACS3000

Achieving long, stable tool life and high efficiency in a variety of machining applications for stainless steel and exotic alloys



(ACS2500)
(ACS3000)



New	ACS1000	P	M	K	N	S	H
	ACS2500	P	M	K	N	S	H
	ACS3000	P	M	K	N	S	H

PVD coating

with excellent wear and chipping resistance **ABSOTECH**

■ Coating Features

Ultra-fine Grained B Additive

- New AlTiBN coating, with an ultra-fine coating structure, achieves high strength and toughness
- Outstanding balance of chipping and wear resistance

Cross Section of Cutting Edge Coating TEM Image

High Adhesion Strength

Significantly improved coating adhesion has more than twice the chipping resistance of conventional coatings

Applicable Grades: ACS1000, ACS2500, ACS3000

■ Characteristic Values

Work Material	Grade	Hardness (HRA)	TRS (GPa)	Coating type	Coating Thickness (μm)	Features	Old Grade
	ACS1000	91.6	3.8	Absotech	3	<ul style="list-style-type: none"> • For high-efficiency machining of exotic alloys • High-hardness carbide substrate coupled with a chipping-resistant coating provides long, stable tool life in high-speed, high-efficiency machining 	—
	ACS2500	90.8	4.2	Absotech	3	<ul style="list-style-type: none"> • First recommendation for titanium alloy applications • Carbide substrate with excellent wear and adhesion resistance, coupled with a chipping-resistant coating, balances excellent wear and fracture resistance 	ACM200
	ACS3000	89.8	3.4	Absotech	3	<ul style="list-style-type: none"> • Suitable for a wide range of exotic alloy machining applications • Realises superb stability due to a high-toughness carbide substrate with a highly chipping-resistant coating 	ACM300

New ACS1000/ACS2500/ACS3000

■ Features of ACS1000/ACS2500/ACS3000

ACS1000 For high-efficiency machining of stainless steel and exotic alloys

Carbide substrate with excellent wear resistance, coupled with a chipping-resistant coating, provides long and stable tool life in high-speed machining applications

ACS2500 First recommended grade for titanium alloy machining

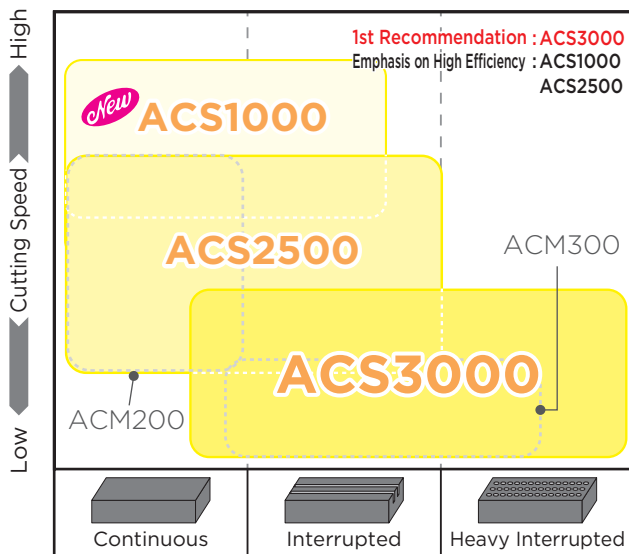
Carbide substrate with excellent adhesion resistance, coupled with a chipping-resistant coating, provides outstanding performance, especially in machining titanium alloys

ACS3000 First recommended grade for machining of heat-resistant alloys and stainless steel

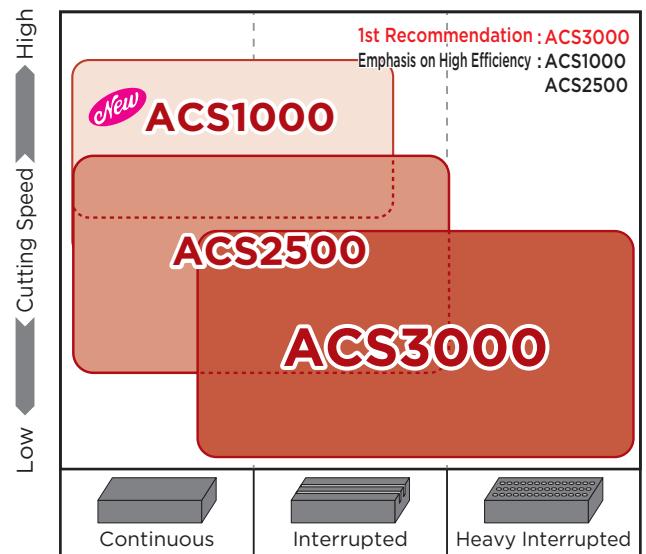
Realises superb stability in machining due to a high-toughness carbide substrate with a highly chipping-resistant coating

■ Application Range

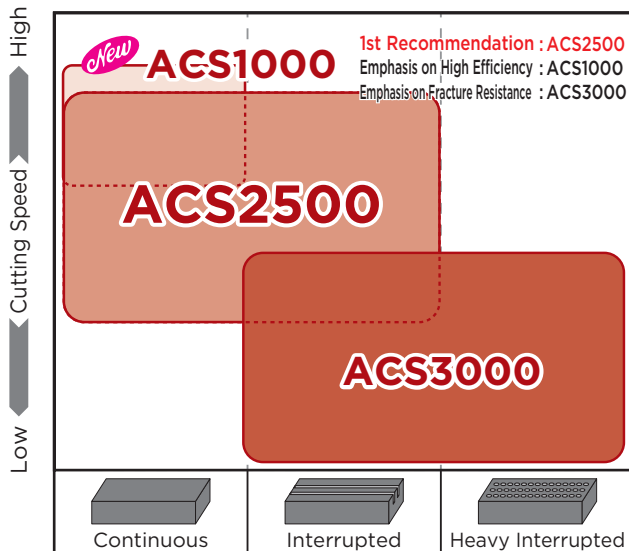
M Stainless Steel



S Heat-resistant Alloys, Hard-to-Cut Stainless Steel



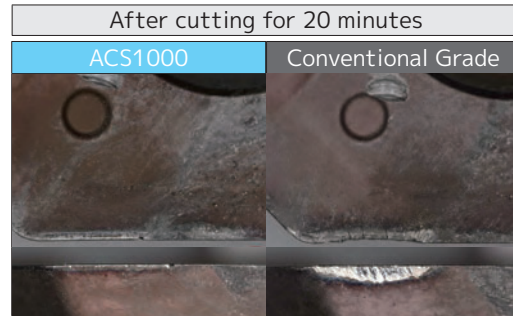
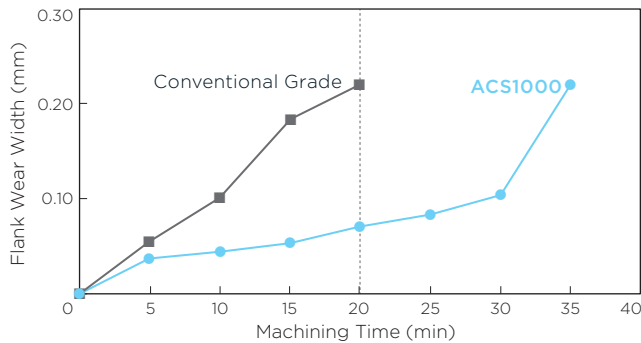
S Titanium Alloy



■ Cutting Performance

● ACS1000 Wear Resistance Performance (Stainless Steel SUS304)

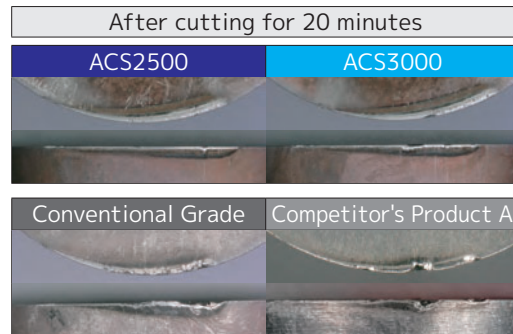
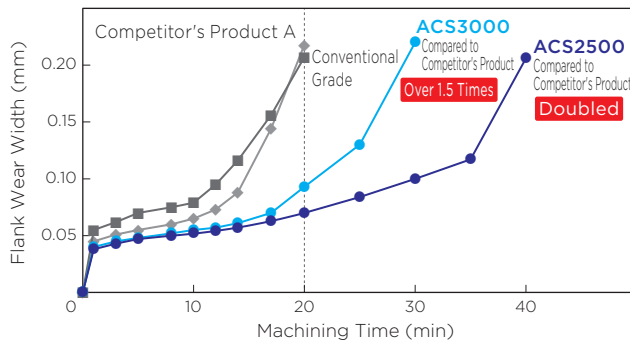
Superb wear resistance with 1.8 times longer tool life than conventional grade



Work Material: SUS304 Cutter: WGX 13160R Insert: SEMT13T3AGSR-G
Cutting Conditions: $v_c = 200\text{m/min}$, $f_z = 0.15\text{mm/t}$, $a_p = 2.0\text{mm}$, $a_e = 30\text{mm}$, Dry

● ACS2500 Wear Resistance Performance (Titanium Alloy Ti-6Al-4V)

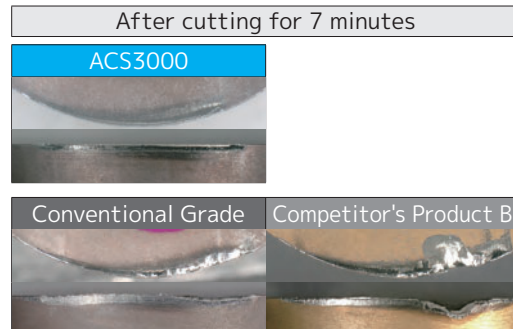
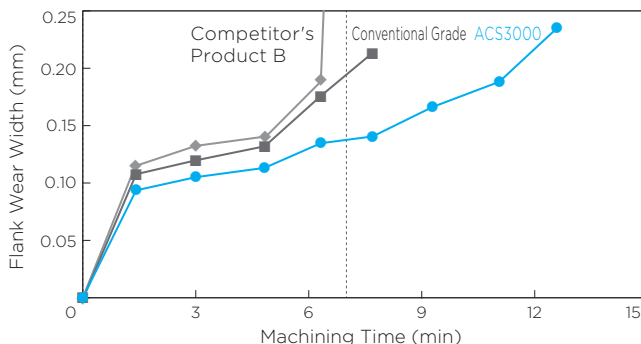
Superb wear resistance with 1.5 times longer tool life than conventional grades and competitor's products



Machine: Vertical Machining Centre BT40 Work Material: Ti-6Al-4V Cutter: RSE 1205ORS05 Insert: RPHT1204M0EN-G
Cutting Conditions: $v_c = 70\text{m/min}$, $f_z = 0.25\text{mm/t}$, $a_p = 2.0\text{mm}$, $a_e = 30\text{mm}$, Wet

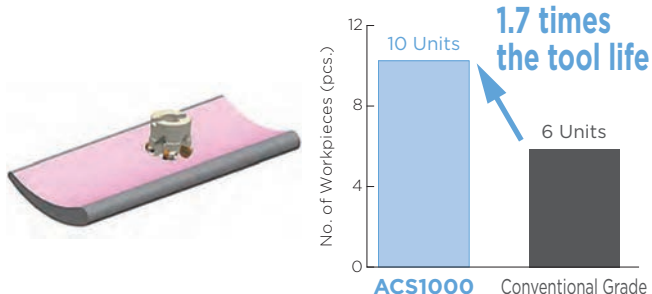
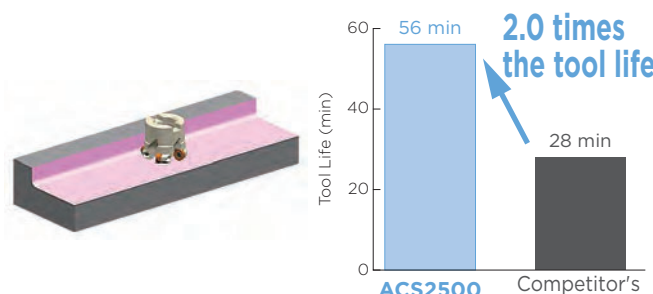
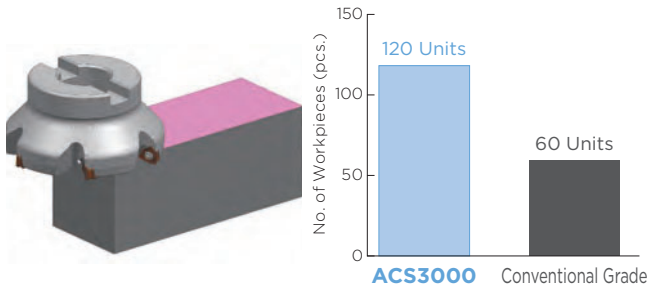
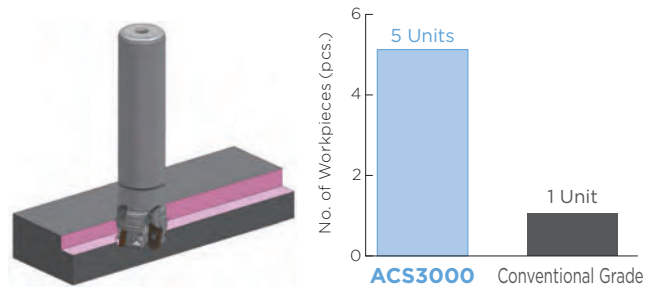
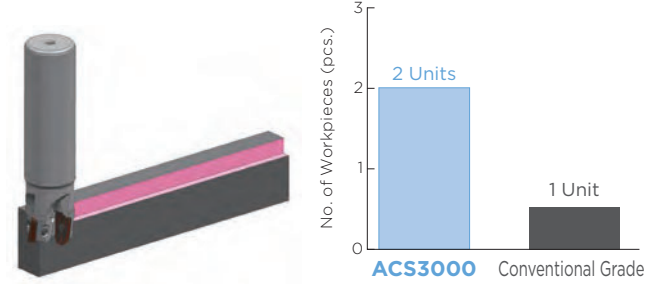
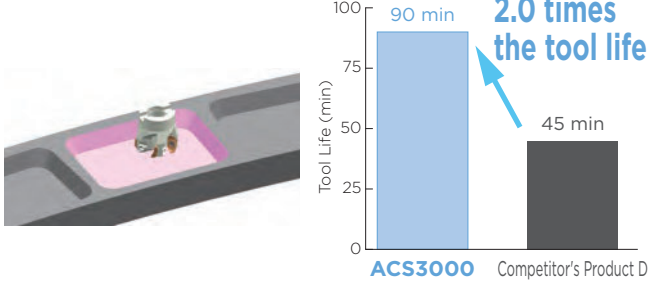
● ACS3000 Wear Resistance Performance (Inconel 718)

Superb wear resistance with 1.5 times longer tool life than conventional grades and competitor's products



Work Material: Inconel 718 (44HRC) Cutter: RSE 1205ORS05 Insert: PRHT1204M0EN-G
Cutting Conditions: $v_c = 40\text{m/min}$, $f_z = 0.25\text{mm/t}$, $a_p = 2.0\text{mm}$, Wet

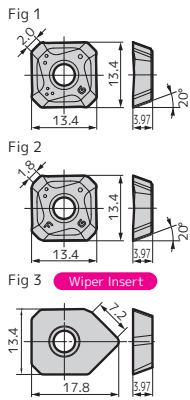
■ Application Examples

<p>Precipitation Hardened Stainless Steel Turbine Blade M</p> <p>Suppresses wear for 1.7x longer tool life</p>  <p>ACS1000 Conventional Grade</p>	<p>Titanium Alloy Ti-6Al-4V Aerospace Component S</p> <p>Suppresses chipping for 2.0x longer tool life</p>  <p>ACS2500 Competitor's Product C</p>
<p>Cutter: RSXF 12050RS Insert: RDET1204M0EN-G (ACS1000) Cutting Conditions: $v_c = 107\text{m/min}$, $f_z = 0.2\text{mm/t}$, $a_p = 1.6\text{mm}$ Dry</p>	<p>Cutter: RSE 12050RS05 Insert: RPHT1204M0EN-G (ACS2500) Cutting Conditions: $v_c = 60\text{m/min}$, $f_z = 0.30\text{mm/t}$, $a_p = 3.0\text{mm}$ Wet</p>
<p>Duplex Stainless Steel Pipe Component M</p> <p>Suppresses boundary fractures for 2.0x longer tool life</p>  <p>ACS3000 Conventional Grade</p>	<p>Hastelloy Semiconductor Equipment Component S</p> <p>Suppresses chipping for 5.0x longer tool life</p>  <p>ACS3000 Conventional Grade</p>
<p>Cutter: RSX 16100R Insert: RDET1606M0EN-G (ACS3000) Cutting Conditions: $v_c = 62\text{m/min}$, $f_z = 0.15\text{mm/t}$, $a_p = 0.2\text{mm}$ Dry</p>	<p>Cutter: WEZ 11016E02 Insert: AOMT11T308PEER-G (ACS3000) Cutting Conditions: $v_c = 35\text{m/min}$, $f_z = 0.08\text{mm/t}$, $a_p = 1.0\text{mm}$ Wet</p>
<p>Inconel 718 Aerospace Component S</p> <p>Suppresses chipping for 2.0x longer tool life</p>  <p>ACS3000 Conventional Grade</p>	<p>Titanium Alloy Ti-6Al-4V Aerospace Component S</p> <p>Suppresses adhesion for 2.0x longer tool life</p>  <p>ACS3000 Competitor's Product D</p>
<p>Cutter: DMSL 06020E03 Insert: LNMT06T3ZNER-G (ACS3000) Cutting Conditions: $v_c = 35\text{m/min}$, $f_z = 0.73\text{mm/t}$, $a_p = 0.5\text{mm}$ Wet</p>	<p>Cutter: WSE 16050RS05L Insert: XOMT160540PEER-E (ACS3000) Cutting Conditions: $v_c = 50\text{m/min}$, $f_z = 0.12\text{mm/t}$, $a_p = 4.0\text{mm}$ Wet</p>

SEC-WaveMill WGX series

Dimensions (mm)

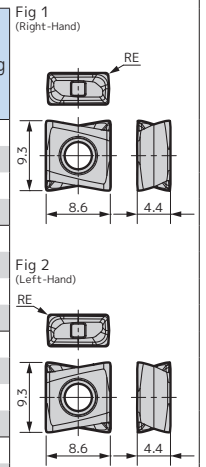
Process	High-speed/Light Cutting				
	Medium Cutting				
	Roughing				
Cat. No.		ACS1000	ACS2500	ACS3000	Fig
SEET 13T3AGSR-L		●	●	●	1
SEET 13T3AGSR-G		●	●	●	1
SEMT 13T3AGSR-L		○	○	○	1
SEMT 13T3AGSR-G		●	●	●	1
SEMT 13T3AGSR-H		○	●	●	1
SEMT 13T3AGSR-FG		●	●	●	2
XEEW 13T3AGER-WR					3



SEC-Sumi Dual Mill TSX series / TSXR series

Dimensions (mm)

Process	High-speed/Light Cutting				Corner Radius RE	Fig
	Medium Cutting					
	Roughing					
Cat. No.		ACS1000	ACS2500	ACS3000		
LNEX 080404PNER-L					0.4	1
LNEX 080408PNER-L					0.8	1
LNEX 080412PNER-L					1.2	1
LNEX 080416PNER-L					1.6	1
LNEX 080404PNER-G					0.4	1
LNEX 080408PNER-G		○	○		0.8	1
LNEX 080412PNER-G					1.2	1
LNEX 080416PNER-G					1.6	1
LNEX 080404PNEL-G					0.4	2
LNEX 080408PNEL-G					0.8	2

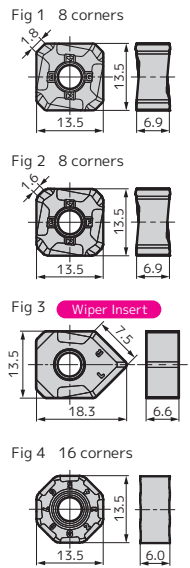


Dimensions (mm)

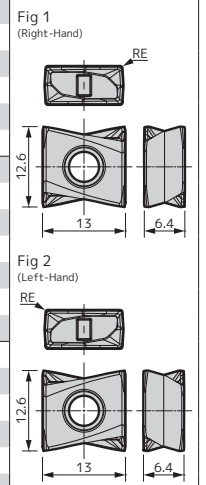
SEC-Sumi Dual Mill DGC series

Dimensions (mm)

Process	High-speed/Light Cutting				
	Medium Cutting				
	Roughing				
Cat. No.		ACS1000	ACS2500	ACS3000	Fig
SNMT 13T6ANER-L					1
SNMT 13T6ANER-G		○	○		1
SNMT 13T6ANER-H					1
SNMT 13T6ANER-FL					2
SNMT 13T6ANER-FG		○	○		2
SNET 13T6ANER-L					1
SNET 13T6ANER-G		○	○		1
SNET 13T6ANER-FL					2
SNET 13T6ANER-FG					2
XNEU 13T6ANER-W					3
ONMT 05T6ANER-L					4
ONMT 05T6ANER-G		○	○		4
ONET 05T6ANER-L					4
ONET 05T6ANER-G					4

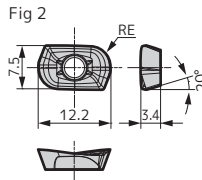
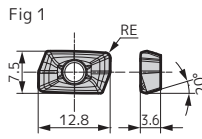


Process	High-speed/Light Cutting				Corner Radius RE	Fig
	Medium Cutting					
	Roughing					
Cat. No.		ACS1000	ACS2500	ACS3000		
LNEX 130604PNER-L					0.4	1
LNEX 130608PNER-L					0.8	1
LNEX 130612PNER-L					1.2	1
LNEX 130616PNER-L					1.6	1
LNEX 130620PNER-L					2.0	1
LNEX 130624PNER-L					2.4	1
LNEX 130632PNER-L					3.2	1
LNEX 130604PNER-G					0.4	1
LNEX 130608PNER-G		○	○		0.8	1
LNEX 130612PNER-G					1.2	1
LNEX 130616PNER-G					1.6	1
LNEX 130620PNER-G					2.0	1
LNEX 130624PNER-G					2.4	1
LNEX 130632PNER-G					3.2	1
LNEX 130604PNER-H					0.4	1
LNEX 130608PNER-H					0.8	1
LNEX 130612PNER-H					1.2	1
LNEX 130616PNER-H					1.6	1
LNEX 130620PNER-H					2.0	1
LNEX 130624PNER-H					2.4	1
LNEX 130632PNER-H					3.2	1
LNEX 130604PNEL-G					0.4	2
LNEX 130608PNEL-G					0.8	2



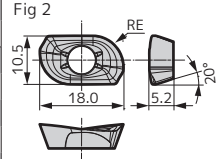
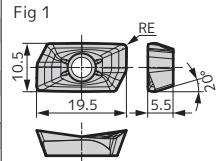
SEC-WaveMill WEZ series / WEZR series Dimensions (mm)

Process	High-speed/Light Cutting			Corner Radius RE	Fig
	Medium Cutting				
	Roughing				
Cat. No.	ACS1000	ACS2500	ACS3000		
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)

Process	High-speed/Light Cutting			Corner Radius RE	Fig
	Medium Cutting				
	Roughing				
Cat. No.	ACS1000	ACS2500	ACS3000		
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 (new product/expanded item) ○ mark: Planned stock (Feb 2025) Blank: Made-to-order item

SEC-WaveMill WFX series

Dimensions (mm)

Process	High-speed/Light Cutting			Corner Radius RE	Fig
	Medium Cutting				
	Roughing				
Cat. No.	ACS1000	ACS2500	ACS3000		
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
XOEW 080308PZTR-W				—	2

SEC-Sumi Dual Mill DFC series

Dimensions (mm)

Process	High-speed/Light Cutting			Corner Radius RE	Fig
	Medium Cutting				
	Roughing				
Cat. No.	ACS1000	ACS2500	ACS3000		
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

Dimensions (mm)

Process	High-speed/Light Cutting			Corner Radius RE	Fig
	Medium Cutting				
	Roughing				
Cat. No.	ACS1000	ACS2500	ACS3000		
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
XOEW 120408PDTR-W				—	2

SEC-Sumi Dual Mill DMSL series

Dimensions (mm)

Process	High-speed/Light Cutting			Corner Radius RE	Fig
	Medium Cutting				
	Roughing				
Cat. No.	ACS1000	ACS2500	ACS3000		
LNMU 06T3ZNER-L	○	●	●	1.0	1
LNMU 06T3ZNER-G	●	●	●	1.0	1
LNMU 06T3ZNER-H	○	●	●	1.0	1

SEC-Sumi Dual Mill DMSW series

Dimensions (mm)

Process	High-speed/Light Cutting			Corner Radius RE	Fig
	Medium Cutting				
	Roughing				
Cat. No.	ACS1000	ACS2500	ACS3000		
WNMU 0807ZNER-L	○	●	●	1.6	1
WNMU 0807ZNER-G	●	●	●	1.6	1
WNMU 0807ZNER-H	○	●	●	1.6	1



New ACS1000/ACS2500/ACS3000

SEC-Wave Radius Mill RSE series Dimensions (mm)

Process	High-speed/Light Cutting	M	S	Fig
	Medium Cutting	M	S	
	Roughing	M	S	
Cat. No.	ACS1000	ACS2500	ACS3000	
RPHT 10T3MOEN-G	○	●	●	1
RPMT 10T3MOEN-G	○	●	●	2
RDMT 10T3MOEN-G	○	●	●	3

Fig 1 4 corners

Fig 2 8 corners

Fig 3 8 corners

SEC-WaveMill WSE series Dimensions (mm)

Process	High-speed/Light Cutting	M	S	Corner Radius RE	Fig
	Medium Cutting	M	S		
	Roughing	M	S		
Cat. No.	ACS1000	ACS2500	ACS3000		
XOMT 160508PEER-E		●	●	0.8	1
XOMT 160512PEER-E		●	●	1.2	1
XOMT 160516PEER-E		●	●	1.6	1
XOMT 160520PEER-E		●	●	2	1
XOMT 160530PEER-E		●	●	3	1
XOMT 160540PEER-E		●	●	4	1
XOMT 160550PEER-E		●	●	5	2
XOMT 160560PEER-E		●	●	6	2
XOMT 160564PEER-E		●	●	6.35	2
XOMT 160564PEER-E		●	●	6.35	2

Fig 1

Fig 2

Dimensions (mm)

Process	High-speed/Light Cutting	M	S	Fig
	Medium Cutting	M	S	
	Roughing	M	S	
Cat. No.	ACS1000	ACS2500	ACS3000	
RPHT 1204MOEN-G	●	●	●	1
RPMT 1204MOEN-G	●	●	●	2
RDMT 1204MOEN-G	●	●	●	3

Fig 1 4 corners

Fig 2 8 corners

Fig 3 8 corners



SEC-Wave Radius Mill RSX series

Dimensions (mm)

Process	High-speed/Light Cutting			Cat. No.	Inscribed Circle IC	Corner Radius RE	Thickness S	Applicable Cutter	Fig
	Medium Cutting								
	Roughing								
	ACS1000	ACS2500	ACS3000						
	●	●	○	RDET 0803MOEN-G	8	4	3.18	RSX(F)08000ES/M type	1
	○	○	●	RDET 10T3MOEN-G	10	5	3.97	RSX(F)10000RS/ES/M type	1
	●	●	○	RDET 1204MOEN-G	12	6	4.76	RSX(F)12000RS/ES/M type	2
	○	○	●	RDET 1606MOEN-G	16	8	6.5		2
	○	○	○	RDET 2006MOEN-G	20	10	6.5		2
				RDET 0803MOEN-H	8	4	3.18	RSX(F)08000ES/M type	1
				RDET 10T3MOEN-H	10	5	3.97	RSX(F)08000ES/M type	1
				RDET 1204MOEN-H	12	6	4.76	RSX(F)12000RS/ES/M type	2
				RDET 1606MOEN-H	16	8	6.5		2
				RDET 2006MOEN-H	20	10	6.5		2

Fig 1 4 corners

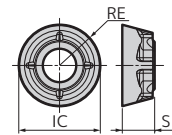
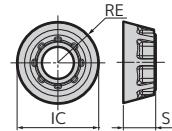


Fig 2 8 corners



● Cross Section of Cutting Edge



G type



H type

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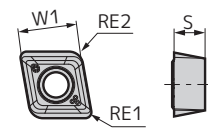


SumiDrill WDX series

Dimensions (mm)

Process	High-speed/Light Cutting			Cat. No.	Width W1	Thickness S	Corner Radius RE1	Corner Radius RE2	Applicable Holder	Fig
	Medium Cutting									
	Roughing									
	ACS1000	ACS2500	ACS3000							
	○	○	○	WDXT 042004-M	4.2	2.0	0.4	0.8	WDX130D○S20~WDX150D○S20	1
				WDXT 052504-M	5.0	2.5	0.4	1.0	WDX155D○S20~WDX180D○S25	1
				WDXT 063006-M	6.0	3.0	0.6	1.4	WDX185D○S25~WDX225D○S25	1
				WDXT 073506-M	7.5	3.5	0.6	1.6	WDX230D○S25~WDX285D○S32	1
				WDXT 094008-M	9.6	4.0	0.8	2.4	WDX290D○S32~WDX360D○S40	1
				WDXT 125012-M	12.4	5.0	1.2	3.2	WDX370D○S40~WDX450D○S40	1

Fig 1

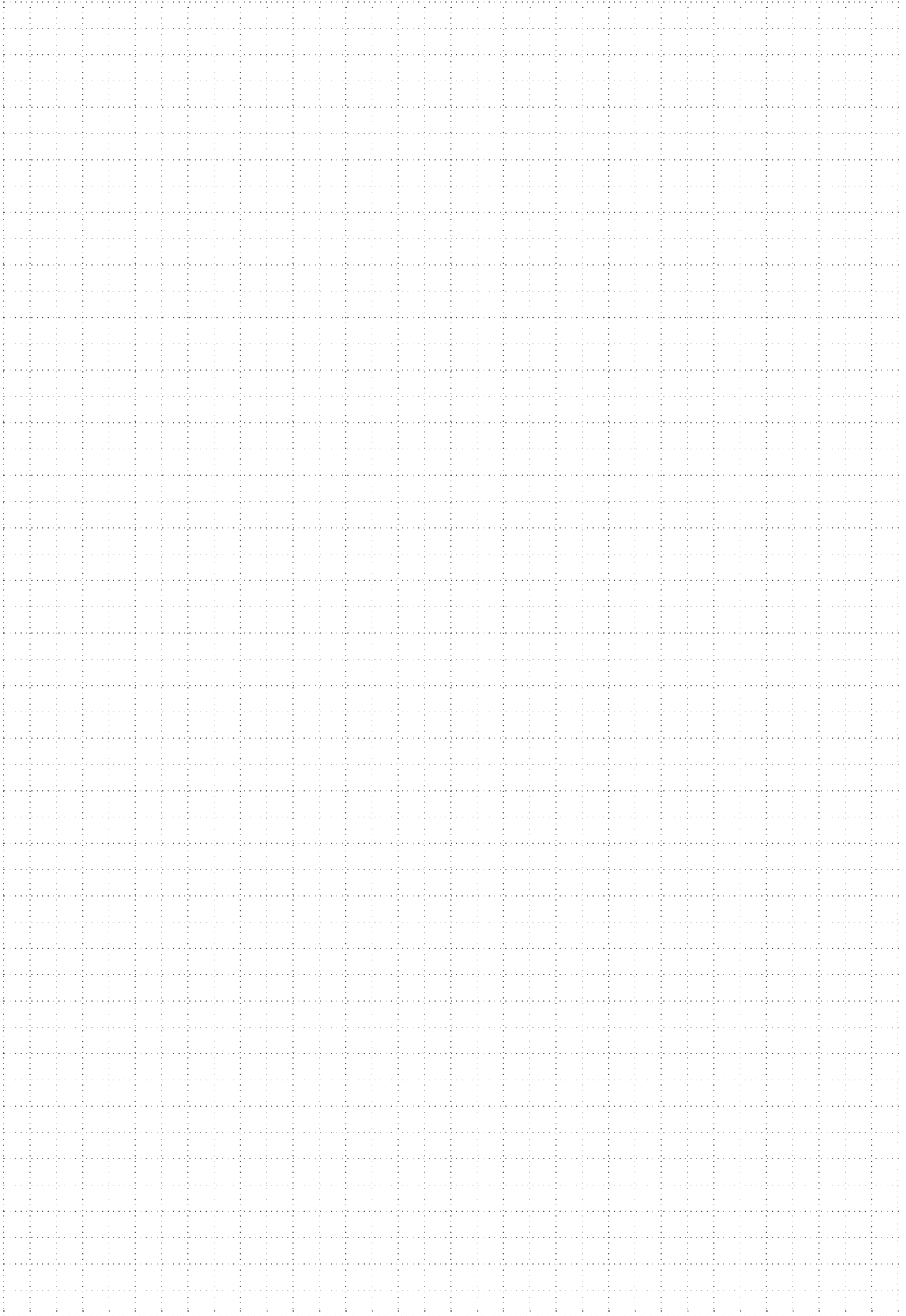


M type: Dedicated for Stainless Steel

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MEMO





- 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.

< SAFETY NOTES >

- 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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