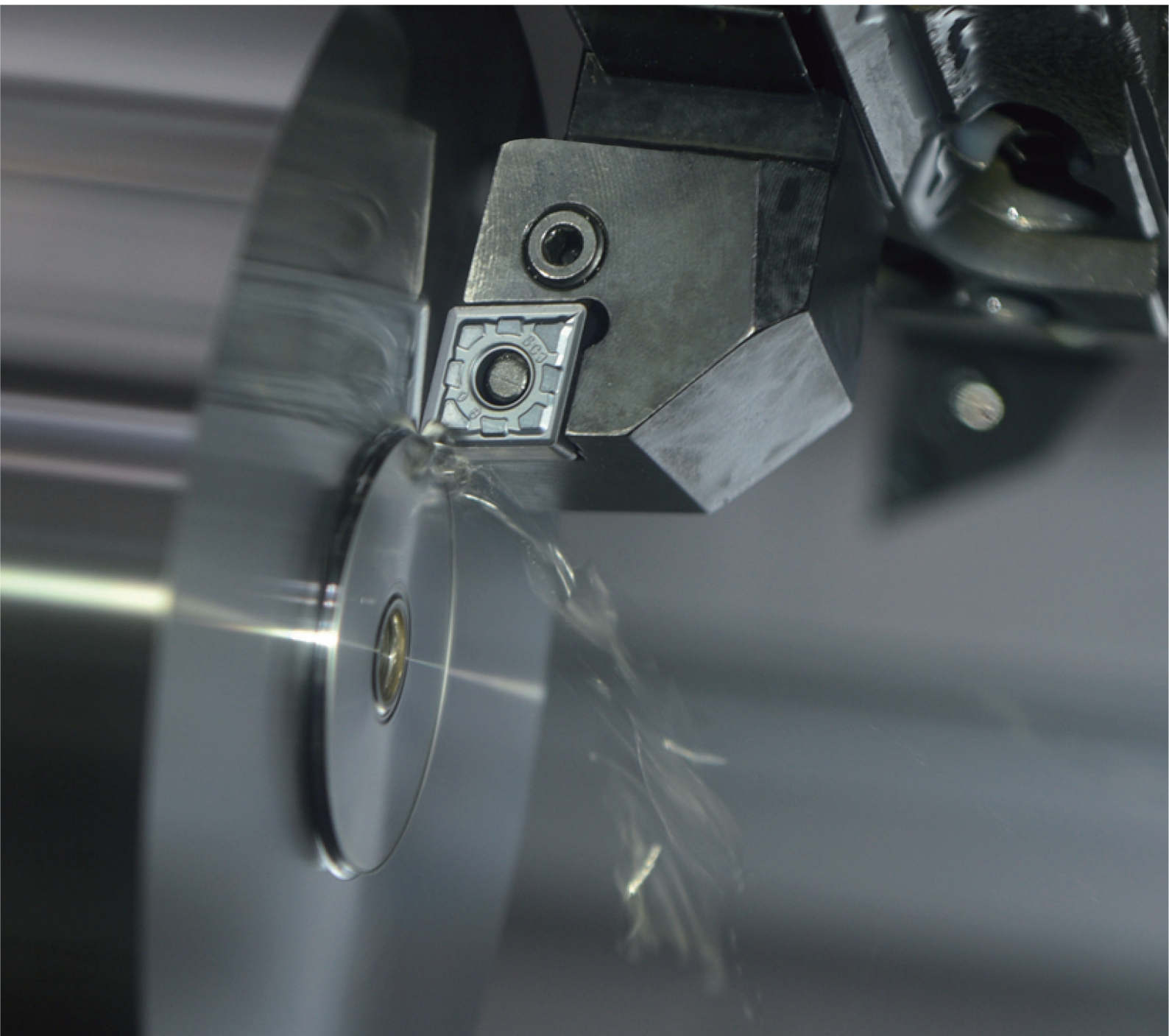


**NEW  
PRODUCT!**

# AP200U

**General machining grade**

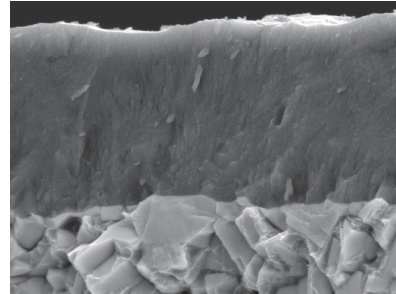
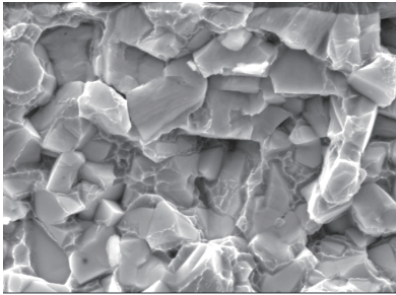
**Wide application for P/M/S and other materials**





### Grade Introduction

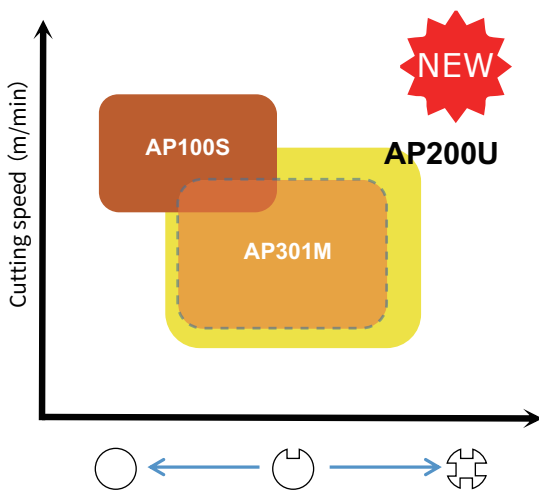
New PVD coating with new super-micro crystal carbide substrate can achieve stable machining, excellent performance in machining stainless steel, steel, heat-resistant alloy and other materials



- New super-micro crystal carbide substrate, even crystal organizations, good performance with high strength and anti-crack extension ability
- Excellent wear resistance and chipping resistance
- For continuous and interrupted turning

- New PVD coating, with high anti-oxidation, good wear resistance, high hot hardness, and stable tool life
- Suitable for machining stainless steel, steel and heat-resistant alloy

### Grade Application Range



Applications	Finishing			Roughing	
	P01	P10	P20	P30	P40
P			AP301M	AP200U	NEW
ISO	M01	M10	M20	M30	M40
M		AP100S	AP301M	AP200U	NEW
ISO	S01	S10	S20	S30	S40
S		AP100S	AP301M	AP200U	NEW


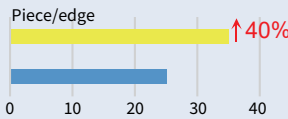



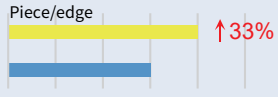
• Recommended cutting speed for different materials


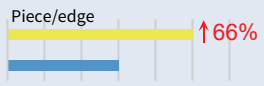
Material						AP200U			
ISO	Material classification			Brinell hardness (HB)	Tensile strength (N/mm <sup>2</sup> )	f (mm/rev)			
						0.1	0.3	0.5	
P	Unalloyed steel	C ≤ 0.25%	Annealed	125	428	220	210		
		0.25 < C ≤ 0.55%	Annealed	190	639	170	150		
		0.25 < C ≤ 0.55%	Heat-treated	210	708	140	120		
		C > 0.55%	Annealed	190	639	130	120		
		C > 0.55%	Heat-treated	300	1013				
		Free cutting steel (short-chip)	Annealed	220	745	190	170		
	Low-alloyed steel	Annealed			175	591	130	110	
		Heat-treated			300	1013			
		Heat-treated			380	1282			
		Heat-treated			430	1477			
	High-alloyed steel and high-alloyed tool steel	Annealed			200	675	120	80	
		Hardened and tempered			300	1013			
		Hardened and tempered			400	1361			
	Stainless steel	Ferritic/martensitic, annealed			200	675	145	130	105
		Martensitic, heat-treated			330	1114	105	85	75
M	Stainless steel	Austenitic, quench hardened		200	675	180	130	85	
		Austenitic, precipitation hardened (PH)		300	1013	105	90		
		Austenitic/ferritic, duplex		230	778	115	100	60	
S	Heat-resistant alloys	Fe based	Annealed	200	680	40	25		
			hardened	280	940	30	20		
		Ni or Co based	Annealed	250	840	30	25		
			hardened	350	1180	30	20		
			cast	320	1080	30	20		
		Titanium alloys	Pure Titanium			200	680		
	α and β alloys, hardened			375	1260				
	β alloys			410	1400				
	Tungsten alloys			300	1010				
	Molybdenum alloys			300	1010				

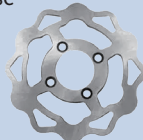
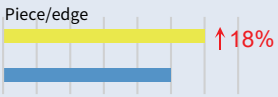


• **Success stories**

Insert	CNMG 120404E-MB2 AP200U
Workpiece	Pump cover 
Material	17-4
Operation	Finish face turning
Vc	40-220m/min
f	0.08mm/rev
ap	0.3mm
Coolant	Emulsion
Result	<p>Achteck  ↑40%</p> <p>Other company</p> <p>Tool life is <b>40%</b> longer than the other company</p>

Insert	CNMG 120412E-SC3 AP200U
Workpiece	Gourd shaped parts 
Material	316L
Operation	Rough external and face turning
Vc	120m/min
f	0.3mm/rev
ap	1.5mm
Coolant	Emulsion
Result	<p>Achteck  ↑33%</p> <p>Other company</p> <p>Time of changing tools is reduced, Turning efficiency is enhanced; Tool cost is decreased, Tool life is <b>33%</b> longer</p>

Insert	CCMT 120408E-PC2 AP200U
Workpiece	Flange 
Material	304
Operation	Finish external turning
Vc	150m/min
f	0.12mm/rev
ap	0.8mm
Coolant	Emulsion
Result	<p>Achteck  ↑66%</p> <p>Other company</p> <p>Time of changing tools is reduced, Turning efficiency is enhanced; Tool cost is decreased, Tool life is <b>66%</b> longer</p>

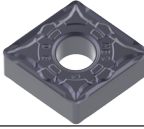
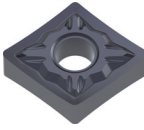
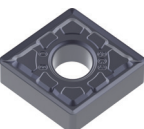
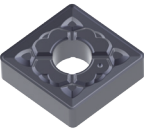
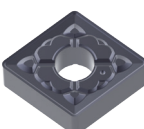
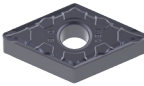
Insert	SCMT 120408E-PC2 AP200U
Workpiece	Brake disc 
Material	12Cr13
Operation	Finish face turning
Vc	145m/min
f	0.1mm/rev
ap	0.3mm
Coolant	Dry
Result	<p>Achteck  ↑18%</p> <p>Other company</p> <p>Tool life is <b>18%</b> longer than other company</p>



• **Overview of turning insert geometries**

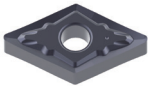
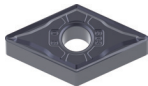
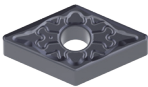
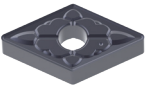

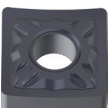
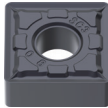
Applications		Chip breaker	Features	Chip breaking range	Cross section
Negative	Finishing	<b>MB2</b> 	1st choice for stainless steel finish turning. Zero edge width design, reduces cutting forces and built up edge, for better surface finish. Good chip breaking at low feeds and depth of cut.		
	Medium machining	<b>MC3</b> 	1st choice for stainless steel medium turning. Sharp edge design with reduced cutting forces, offers good chip breaking and chip evacuation results for a wide range of feeds and depths of cut.		
	Roughing	<b>MC4</b> 	Chip breaker for stainless steel and heat resistant alloy rough turning. Large chip breaker design offers good chip control, smooth chip evacuation, and high metal removal rates.		
	Light cutting	<b>SL3</b> 	Recommended for heat resistant alloy light turning. Suitable for heat resistant alloy, Ti-alloy. Sharp and wavy cutting edge can get good surface finish and good chip breaking results.		
	Medium machining	<b>SC3</b> 	1st choice for heat resistant alloy medium turning. Large rake angle and narrow edge width for smooth cutting action, suitable for soft steel turning as well.		
Positive	Finishing	<b>PB1</b> 	Recommended for steel and stainless finish turning. Positive rake angle designed to reduce built up edge and for better surface finish and longer tool life. Mainly used in steel turning and stainless steel turning.		
	Semi-finishing	<b>PC2</b> 	1st choice for steel and stainless steel semi-finish turning. The edge is designed smooth cutting. The sharp edge reduces built up edge and offers a wider chip breaking range.		
	Roughing	<b>KC2</b> 	Universal geometry for steel, stainless steel and cast iron medium and medium rough turning. Simple and durable chip breaker design, offers versatility.		

**◆ Negative insert list**

Insert	Product code	Size(mm)						Grade
		f	ap	d	l	s	r	AP200U
		(mm/rev)	(mm)	(mm)	(mm)	(mm)	(mm)	
	CNMG 120404E-MB2	0.05-0.15	0.26-3.2	12.7	12.9	4.76	0.4	●
	CNMG 120408E-MB2	0.10-0.30	0.52-3.2	12.7	12.9	4.76	0.8	●
	CNMG 120404E-SL3	0.12-0.25	0.60-3.0	12.7	12.9	4.76	0.4	●
	CNMG 120408E-SL3	0.15-0.30	0.80-3.0	12.7	12.9	4.76	0.8	●
	CNMG 120404E-SC3	0.08-0.22	0.40-4.3	12.7	12.9	4.76	0.4	●
	CNMG 120408E-SC3	0.15-0.44	0.80-4.3	12.7	12.9	4.76	0.8	●
	CNMG 120412E-SC3	0.23-0.66	1.20-4.3	12.7	12.9	4.76	1.2	●
	CNMG 160612E-SC3	0.23-0.66	1.20-5.3	15.875	16.11	6.35	1.2	●
	CNMG 160616E-SC3	0.30-0.88	1.60-5.3	15.875	16.11	6.35	1.6	●
	CNMG 190612E-SC3	0.23-0.66	1.20-6.4	19.05	19.3	6.35	1.2	●
	CNMG 190616E-SC3	0.30-0.88	1.60-6.4	19.05	19.3	6.35	1.6	●
	CNMG 120404E-MC3	0.08-0.22	0.32-4.3	12.7	12.9	4.76	0.4	●
	CNMG 120408E-MC3	0.15-0.44	0.64-4.3	12.7	12.9	4.76	0.8	●
	CNMG 120412E-MC3	0.23-0.66	0.96-4.3	12.7	12.9	4.76	1.2	●
	CNMG 120416E-MC3	0.30-0.88	1.28-4.3	12.7	12.9	4.76	1.6	○
	CNMG 160608E-MC3	0.15-0.44	0.64-5.3	15.875	16.1	6.35	0.8	●
	CNMG 160612E-MC3	0.23-0.66	0.96-5.3	15.875	16.1	6.35	1.2	○
	CNMG 190608E-MC3	0.15-0.44	0.64-6.4	19.05	19.3	6.35	0.8	●
	CNMG 190612E-MC3	0.23-0.66	0.96-6.4	19.05	19.3	6.35	1.2	●
	CNMG 120408E-MC4	0.20-0.60	1.20-6.4	12.7	12.9	4.76	0.8	●
	CNMG 120412E-MC4	0.30-0.90	1.80-6.4	12.7	12.9	4.76	1.2	●
	CNMG 160612E-MC4	0.30-0.90	1.80-8.1	15.875	16.1	6.35	1.2	●
	CNMG 160616E-MC4	0.40-1.20	2.40-8.1	15.875	16.1	6.35	1.6	○
	CNMG 190612E-MC4	0.30-0.90	1.80-9.7	19.05	19.3	6.35	1.2	●
	CNMG 190616E-MC4	0.40-1.20	2.40-9.7	19.05	19.3	6.35	1.6	●
	DNMG 150404E-MB2	0.05-0.15	0.26-2.9	12.7	15.5	4.76	0.4	●
	DNMG 150408E-MB2	0.10-0.30	0.52-2.9	12.7	15.5	4.76	0.8	●
	DNMG 150604E-MB2	0.05-0.15	0.26-2.9	12.7	15.5	6.35	0.4	●
	DNMG 150608E-MB2	0.10-0.30	0.52-2.9	12.7	15.5	6.35	0.8	●

● Stocked ○ Non-stocked

**• Negative insert list**

Insert	Product code	Size(mm)						Grade
		f	ap	d	l	s	r	AP200U
		(mm/rev)	(mm)	(mm)	(mm)	(mm)	(mm)	
	DNMG 110408E-SL3	0.12-0.30	0.80-2.5	9.525	11.62	4.76	0.8	○
	DNMG 150404E-SL3	0.12-0.25	0.60-2.5	12.7	15.5	4.76	0.4	○
	DNMG 150408E-SL3	0.12-0.30	0.80-2.5	12.7	15.5	4.76	0.8	●
	DNMG 150604E-SL3	0.12-0.25	0.60-2.5	12.7	15.5	6.35	0.4	○
	DNMG 150608E-SL3	0.12-0.30	0.80-2.5	12.7	15.5	6.35	0.8	●
	DNMG 150404E-SC3	0.08-0.22	0.40-3.9	12.7	15.5	4.76	0.4	●
	DNMG 150408E-SC3	0.15-0.44	0.80-3.9	12.7	15.5	4.76	0.8	●
	DNMG 150412E-SC3	0.23-0.66	1.20-3.9	12.7	15.5	4.76	1.2	●
	DNMG 150604E-SC3	0.08-0.22	0.40-3.9	12.7	15.5	6.35	0.4	●
	DNMG 150608E-SC3	0.15-0.44	0.80-3.9	12.7	15.5	6.35	0.8	●
	DNMG 150612E-SC3	0.23-0.66	1.20-3.9	12.7	15.5	6.35	1.2	●
	DNMG 110404E-MC3	0.08-0.22	0.32-2.9	9.525	11.62	4.76	0.4	●
	DNMG 110408E-MC3	0.15-0.44	0.64-2.9	9.525	11.62	4.76	0.8	●
	DNMG 150404E-MC3	0.08-0.22	0.32-3.9	12.7	15.5	4.76	0.4	●
	DNMG 150408E-MC3	0.15-0.44	0.64-3.9	12.7	15.5	4.76	0.8	●
	DNMG 150412E-MC3	0.23-0.66	0.96-3.9	12.7	15.5	4.76	1.2	●
	DNMG 150604E-MC3	0.08-0.22	0.32-3.9	12.7	15.5	4.76	0.4	●
	DNMG 150608E-MC3	0.15-0.44	0.64-3.9	12.7	15.5	6.35	0.8	●
	DNMG 150612E-MC3	0.23-0.66	0.96-3.9	12.7	15.5	6.35	1.2	●
	DNMG 150408E-MC4	0.20-0.60	1.20-5.4	12.7	15.5	4.76	0.8	●
	DNMG 150412E-MC4	0.30-0.90	1.80-5.4	12.7	15.5	4.76	1.2	○
	DNMG 150608E-MC4	0.20-0.60	1.20-5.4	12.7	15.5	6.35	0.8	●
	DNMG 150612E-MC4	0.30-0.90	1.80-5.4	12.7	15.5	6.35	1.2	●
	SNMG 120404E-MB2	0.05-0.15	0.26-3.2	12.7	12.7	4.76	0.4	●
	SNMG 120408E-MB2	0.10-0.30	0.52-3.2	12.7	12.7	4.76	0.8	●
	SNMG 120404E-SL3	0.12-0.25	0.60-3.0	12.7	12.7	4.76	0.4	○
	SNMG 120408E-SL3	0.15-0.30	0.80-3.0	12.7	12.7	4.76	0.8	●
	SNMG 120412E-SL3	0.18-0.35	1.00-3.0	12.7	12.7	4.76	1.2	●
	SNMG 120408E-SC3	0.15-0.44	0.80-4.2	12.7	12.7	4.76	0.8	●
	SNMG 120412E-SC3	0.23-0.66	1.20-4.2	12.7	12.7	4.76	1.2	●
	SNMG 150612E-SC3	0.23-0.66	1.20-5.2	15.875	15.875	6.35	1.2	●
	SNMG 150616E-SC3	0.30-0.88	1.60-5.2	15.875	15.875	6.35	1.6	○
	SNMG 190612E-SC3	0.23-0.66	1.20-6.3	19.05	19.05	6.35	1.2	●

● Stocked ○ Non-stocked



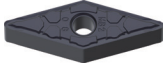
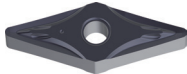
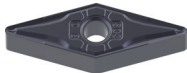
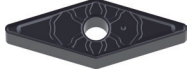
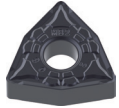
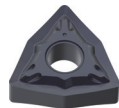
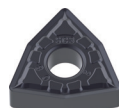


• **Negative insert list**

Insert	Product code	Size(mm)						Grade
		f	ap	d	l	s	r	AP200U
		(mm/rev)	(mm)	(mm)	(mm)	(mm)	(mm)	
	SNMG 120404E-MC3	0.08-0.22	0.32-4.2	12.7	12.7	4.76	0.4	●
	SNMG 120408E-MC3	0.15-0.44	0.64-4.2	12.7	12.7	4.76	0.8	●
	SNMG 120412E-MC3	0.23-0.66	0.96-4.2	12.7	12.7	4.76	1.2	●
	SNMG 150612E-MC3	0.23-0.66	0.96-5.2	15.875	15.875	6.35	1.2	●
	SNMG 150616E-MC3	0.30-0.88	1.28-5.2	15.875	15.875	6.35	1.6	●
	SNMG 190612E-MC3	0.23-0.66	0.96-6.3	19.05	19.05	6.35	1.2	●
	SNMG 190616E-MC3	0.30-0.88	1.28-6.3	19.05	19.05	6.35	1.6	●
	SNMG 120408E-MC4	0.20-0.60	1.20-6.4	12.7	12.7	4.76	0.8	●
	SNMG 120412E-MC4	0.30-0.90	1.80-6.4	12.7	12.7	4.76	1.2	●
	SNMG 150612E-MC4	0.30-0.90	1.80-7.9	15.875	15.875	6.35	1.2	●
	SNMG 150616E-MC4	0.40-1.20	2.40-7.9	15.875	15.875	6.35	1.6	●
	SNMG 190612E-MC4	0.30-0.90	1.80-9.5	19.05	19.05	6.35	1.2	●
	SNMG 190616E-MC4	0.40-1.20	2.40-9.5	19.05	19.05	6.35	1.6	●
	TNMG 160404E-MB2	0.05-0.15	0.26-3.1	9.525	16.5	4.76	0.4	●
	TNMG 160408E-MB2	0.10-0.30	0.52-3.1	9.525	16.5	4.76	0.8	●
	TNMG 160404E-SL3	0.12-0.25	0.60-3.0	9.525	16.5	4.76	0.4	●
	TNMG 160408E-SL3	0.15-0.30	0.80-3.0	9.525	16.5	4.76	0.8	●
	TNMG 160412E-SL3	0.18-0.30	1.00-3.0	9.525	16.5	4.76	1.2	●
	TNMG 160404E-SC3	0.08-0.22	0.40-4.1	9.525	16.5	4.76	0.4	●
	TNMG 160408E-SC3	0.15-0.44	0.80-4.1	9.525	16.5	4.76	0.8	●
	TNMG 160412E-SC3	0.23-0.66	1.20-4.1	9.525	16.5	4.76	1.2	●
	TNMG 160404E-MC3	0.08-0.22	0.32-4.1	9.525	16.5	4.76	0.4	●
	TNMG 160408E-MC3	0.15-0.44	0.64-4.1	9.525	16.5	4.76	0.8	●
	TNMG 160412E-MC3	0.23-0.66	0.96-4.1	9.525	16.5	4.76	1.2	●
	TNMG 220408E-MC3	0.15-0.44	0.64-4.9	15.875	22.0	4.76	0.8	●
	TNMG 220412E-MC3	0.23-0.66	0.96-4.9	15.875	22.0	4.76	1.2	●
	TNMG 160408E-MC4	0.20-0.60	1.20-5.8	9.525	16.5	4.76	0.8	●
	TNMG 160412E-MC4	0.30-0.90	1.80-5.8	9.525	16.5	4.76	1.2	○
	TNMG 220408E-MC4	0.20-0.60	1.20-6.6	12.7	22.0	4.76	0.8	○
	TNMG 220412E-MC4	0.30-0.90	1.80-6.6	12.7	22.0	4.76	1.2	○

● Stocked ○ Non-stocked

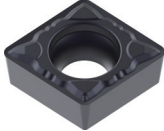
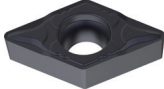
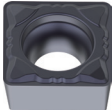
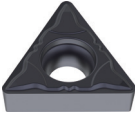
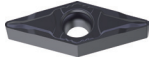
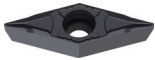


• **Negative insert list**

Insert	Product code	Size(mm)						Grade
		f	ap	d	l	s	r	AP200U
		(mm/rev)	(mm)	(mm)	(mm)	(mm)	(mm)	
	VNMG 160404E-MB2	0.05-0.15	0.05-0.15	0.26-2.1	16.5	4.76	0.4	●
	VNMG 160408E-MB2	0.10-0.30	0.10-0.30	0.52-2.1	16.5	4.76	0.8	●
	VNMG 160404E-SL3	0.10-0.20	0.10-0.20	0.60-2.5	16.5	4.76	0.4	●
	VNMG 160408E-SL3	0.12-0.25	0.12-0.25	0.80-2.5	16.5	4.76	0.8	●
	VNMG 160404E-SC3	0.08-0.22	0.08-0.22	0.40-3.3	16.5	4.76	0.4	●
	VNMG 160408E-SC3	0.15-0.44	0.15-0.44	0.80-3.3	16.5	4.76	0.8	●
	VNMG 160412E-SC3	0.23-0.66	0.23-0.66	1.20-3.3	16.5	4.76	1.2	●
	VNMG 160404E-MC3	0.08-0.22	0.08-0.22	0.32-3.3	16.5	4.76	0.4	●
	VNMG 160408E-MC3	0.15-0.44	0.15-0.44	0.64-3.3	16.5	4.76	0.8	●
	WNMG 080404E-MB2	0.05-0.15	0.05-0.15	0.26-2.2	8.7	4.76	0.4	●
	WNMG 080408E-MB2	0.10-0.30	0.10-0.30	0.52-2.2	8.7	4.76	0.8	○
	WNMG 060404E-SL3	0.12-0.25	0.12-0.25	0.60-2.5	6.52	4.76	0.4	○
	WNMG 060408E-SL3	0.15-0.25	0.15-0.25	0.80-2.5	6.52	4.76	0.8	●
	WNMG 080404E-SL3	0.12-0.25	0.12-0.25	0.60-3.0	8.7	4.76	0.4	●
	WNMG 080408E-SL3	0.15-0.25	0.15-0.25	0.80-3.0	8.7	4.76	0.8	●
	WNMG 080412E-SL3	0.18-0.30	0.18-0.30	1.00-3.0	8.7	4.76	1.2	●
	WNMG 080404E-SC3	0.08-0.22	0.08-0.22	0.40-2.9	8.7	4.76	0.4	●
	WNMG 080408E-SC3	0.15-0.44	0.15-0.44	0.80-2.9	8.7	4.76	0.8	●
	WNMG 080412E-SC3	0.23-0.66	0.23-0.66	1.20-2.9	8.7	4.76	1.2	●
	WNMG 060408E-MC3	0.15-0.44	0.15-0.44	0.64-2.1	6.52	4.76	0.8	●
	WNMG 060412E-MC3	0.23-0.66	0.23-0.66	0.96-2.1	6.52	4.76	1.2	●
	WNMG 080404E-MC3	0.08-0.22	0.08-0.22	0.32-2.9	8.7	4.76	0.4	●
	WNMG 080408E-MC3	0.15-0.44	0.15-0.44	0.64-2.9	8.7	4.76	0.8	○
	WNMG 080412E-MC3	0.23-0.66	0.23-0.66	0.96-2.9	8.7	4.76	1.2	○
	WNMG 060408E-MC4	0.20-0.60	0.20-0.60	1.20-3.3	6.52	4.76	0.8	●
	WNMG 060412E-MC4	0.30-0.90	0.30-0.90	1.80-3.3	6.52	4.76	1.2	●
	WNMG 080408E-MC4	0.20-0.60	0.20-0.60	1.20-4.3	8.7	4.76	0.8	○
	WNMG 080412E-MC4	0.30-0.90	0.30-0.90	1.80-4.3	8.7	4.76	1.2	○

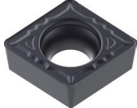
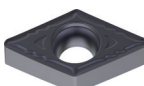
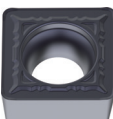
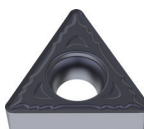
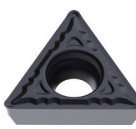
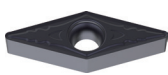
● Stocked ○ Non-stocked

**Positive insert list**

Insert	Product code	Size(mm)						Grade
		f	ap	d	l	s	r	AP200U
		(mm/rev)	(mm)	(mm)	(mm)	(mm)	(mm)	
	CCMT 060202E-PB1	0.02-0.07	0.15-1.6	6.35	6.45	2.38	0.2	●
	CCMT 060204E-PB1	0.04-0.14	0.30-1.6	6.35	6.45	2.38	0.4	●
	CCMT 060208E-PB1	0.09-0.28	0.60-1.6	6.35	6.45	2.38	0.8	●
	CCMT 09T302E-PB1	0.02-0.07	0.15-2.4	9.525	9.67	3.97	0.2	●
	CCMT 09T304E-PB1	0.04-0.14	0.30-2.4	9.525	9.67	3.97	0.4	●
	CCMT 09T308E-PB1	0.09-0.28	0.60-2.4	9.525	9.67	3.97	0.8	●
	DCMT 070202E-PB1	0.02-0.07	0.15-1.5	6.35	7.75	2.38	0.2	●
	DCMT 070204E-PB1	0.04-0.14	0.30-1.5	6.35	7.75	2.38	0.4	●
	DCMT 11T302E-PB1	0.02-0.07	0.15-2.3	9.525	11.62	3.97	0.2	●
	DCMT 11T304E-PB1	0.04-0.14	0.30-2.3	9.525	11.62	3.97	0.4	●
	DCMT 11T308E-PB1	0.09-0.28	0.60-2.3	9.525	11.62	3.97	0.8	●
	SCMT 09T304E-PB1	0.04-0.14	0.30-2.4	9.525	9.525	3.97	0.4	●
	SCMT 09T308E-PB1	0.09-0.28	0.60-2.4	9.525	9.525	3.97	0.8	●
	SCMT 120404E-PB1	0.04-0.14	0.30-3.2	12.7	12.7	4.76	0.4	○
	TCMT 090204E-PB1	0.04-0.14	0.30-1.9	5.56	9.63	2.38	0.4	●
	TCMT 110202E-PB1	0.02-0.07	0.15-2.2	6.35	11.0	2.38	0.2	●
	TCMT 110204E-PB1	0.04-0.14	0.30-2.2	6.35	11.0	2.38	0.4	●
	TCMT 110208E-PB1	0.09-0.28	0.60-2.2	6.35	11.0	2.38	0.8	●
	TCMT 16T304E-PB1	0.04-0.14	0.30-3.3	9.525	16.5	3.97	0.4	●
	TCMT 16T308E-PB1	0.09-0.28	0.60-3.3	9.525	16.5	3.97	0.8	●
	VBMT 110304E-PB1	0.04-0.14	0.30-1.4	6.35	11.07	3.18	0.4	●
	VBMT 110308E-PB1	0.09-0.28	0.60-1.4	6.35	11.07	3.18	0.8	●
	VBMT 160402E-PB1	0.02-0.07	0.15-2.1	9.525	16.61	4.76	0.2	●
	VBMT 160404E-PB1	0.04-0.14	0.30-2.1	9.525	16.61	4.76	0.4	●
	VBMT 160408E-PB1	0.09-0.28	0.60-2.1	9.525	16.61	4.76	0.8	●
	VCMT 160404E-PB1	0.04-0.14	0.30-2.1	9.525	16.61	4.76	0.4	○
	VCMT 160408E-PB1	0.09-0.28	0.60-2.1	9.525	16.61	4.76	0.8	○

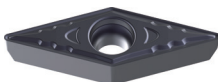
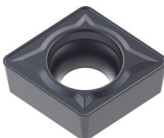
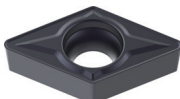

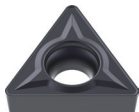
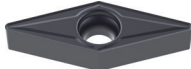
● Stocked ○ Non-stocked

**Positive insert list**

Insert	Product code	Size(mm)						Grade
		f	ap	d	l	s	r	AP200U
		(mm/rev)	(mm)	(mm)	(mm)	(mm)	(mm)	
	CCMT 060204E-PC2	0.05-0.16	0.35-1.9	6.35	6.45	2.38	0.4	●
	CCMT 060208E-PC2	0.10-0.32	0.70-1.9	6.35	6.45	2.38	0.8	●
	CCMT 09T304E-PC2	0.05-0.16	0.35-2.9	9.525	9.67	3.97	0.4	●
	CCMT 09T308E-PC2	0.10-0.32	0.70-2.9	9.525	9.67	3.97	0.8	●
	CCMT 09T312E-PC2	0.16-0.48	1.05-2.9	9.525	9.67	3.97	1.2	●
	CCMT 120404E-PC2	0.05-0.16	0.35-3.9	12.7	12.9	4.76	0.4	●
	CCMT 120408E-PC2	0.10-0.32	0.70-3.9	12.7	12.9	4.76	0.8	●
	CCMT 120412E-PC2	0.16-0.48	1.05-3.9	12.7	12.89	4.76	1.2	●
	DCMT 070204E-PC2	0.05-0.16	0.35-2.1	6.35	7.75	2.38	0.4	●
	DCMT 070208E-PC2	0.10-0.32	0.70-2.1	6.35	7.75	2.38	0.8	●
	DCMT 11T304E-PC2	0.05-0.16	0.35-3.1	9.525	11.62	3.97	0.4	●
	DCMT 11T308E-PC2	0.10-0.32	0.70-3.1	9.525	11.62	3.97	0.8	●
	DCMT 11T312E-PC2	0.16-0.48	1.05-3.1	9.525	11.62	3.97	1.2	○
	SCMT 09T304E-PC2	0.05-0.16	0.35-2.9	9.525	9.525	3.97	0.4	●
	SCMT 09T308E-PC2	0.10-0.32	0.70-2.9	9.525	9.525	3.97	0.8	●
	SCMT 120404E-PC2	0.05-0.16	0.35-3.8	12.7	12.7	4.76	0.4	●
	SCMT 120408E-PC2	0.10-0.32	0.70-3.8	12.7	12.7	4.76	0.8	●
	SCMT 120412E-PC2	0.16-0.48	1.05-3.8	12.7	12.7	4.76	1.2	○
	TCMT 090204E-PC2	0.05-0.16	0.35-2.6	5.56	9.63	2.38	0.4	●
	TCMT 090208E-PC2	0.10-0.32	0.70-2.6	5.56	9.63	2.38	0.8	●
	TCMT 110204E-PC2	0.05-0.16	0.35-3.0	6.35	11.0	2.38	0.4	●
	TCMT 110208E-PC2	0.10-0.32	0.70-3.0	6.35	11.0	2.38	0.8	●
	TCMT 16T304E-PC2	0.05-0.16	0.35-4.5	9.525	16.5	3.97	0.4	●
	TCMT 16T308E-PC2	0.10-0.32	0.70-4.5	9.525	16.5	3.97	0.8	●
	TCMT 16T312E-PC2	0.16-0.48	1.05-4.5	9.525	16.5	3.97	1.2	○
	TPMT 090204E-PC2	0.05-0.16	0.35-2.6	5.56	9.63	2.38	0.4	●
	TPMT 090208E-PC2	0.10-0.32	0.70-2.6	5.56	9.63	2.38	0.8	●
	TPMT 110304E-PC2	0.05-0.16	0.35-3.0	6.35	11.0	3.97	0.4	●
	TPMT 110308E-PC2	0.10-0.32	0.70-3.0	6.35	11.0	3.97	0.8	●
	VBMT 110304E-PC2	0.05-0.16	0.35-2.1	6.35	11.07	3.18	0.4	●
	VBMT 110308E-PC2	0.10-0.32	0.70-2.1	6.35	11.07	3.18	0.8	●
	VBMT 160404E-PC2	0.05-0.16	0.35-3.1	9.525	16.61	4.76	0.4	●
	VBMT 160408E-PC2	0.10-0.32	0.70-3.1	9.525	16.61	4.76	0.8	●
	VBMT 160412E-PC2	0.16-0.48	1.05-3.1	9.525	16.61	4.76	1.2	●

● Stocked ○ Non-stocked

**Positive insert list**

Insert	Product code	Size(mm)						Grade
		f	ap	d	l	s	r	AP200U
		(mm/rev)	(mm)	(mm)	(mm)	(mm)	(mm)	
	VCMT 110304E-PC2	0.05-0.16	0.35-2.1	6.35	11.07	3.18	0.4	●
	VCMT 110308E-PC2	0.10-0.32	0.70-2.1	6.35	11.07	3.18	0.8	●
	VCMT 160404E-PC2	0.05-0.16	0.35-3.1	9.525	16.6	4.76	0.4	●
	VCMT 160408E-PC2	0.10-0.32	0.70-3.1	9.525	16.6	4.76	0.8	●
	VCMT 160412E-PC2	0.16-0.48	1.05-3.1	9.525	16.6	4.76	1.2	●
	CCMT 060204E-KC2	0.06-0.18	0.40-2.1	6.35	6.45	2.38	0.4	●
	CCMT 060208E-KC2	0.12-0.36	0.80-2.1	6.35	6.45	2.38	0.8	○
	CCMT 09T304E-KC2	0.06-0.18	0.40-3.2	9.525	9.67	3.97	0.4	●
	CCMT 09T308E-KC2	0.12-0.36	0.80-3.2	9.525	9.67	3.97	0.8	●
	CCMT 120404E-KC2	0.06-0.18	0.40-4.3	12.7	12.9	4.76	0.4	○
	CCMT 120408E-KC2	0.12-0.36	0.80-4.3	12.7	12.9	4.76	0.8	●
	CCMT 120412E-KC2	0.18-0.54	1.20-4.3	12.7	12.9	4.76	1.2	○
	DCMT 070204E-KC2	0.06-0.18	0.40-2.3	6.35	7.75	2.38	0.4	○
	DCMT 070208E-KC2	0.12-0.36	0.80-2.3	6.35	7.75	2.38	0.8	○
	DCMT 11T304E-KC2	0.06-0.18	0.40-3.5	9.525	11.62	3.97	0.4	●
	DCMT 11T308E-KC2	0.12-0.36	0.80-3.5	9.525	11.62	3.97	0.8	●
	DCMT 11T312E-KC2	0.18-0.54	1.20-3.5	9.525	11.62	3.97	1.2	○
	SCMT 09T304E-KC2	0.06-0.18	0.40-3.1	9.525	9.525	3.97	0.4	○
	SCMT 09T308E-KC2	0.12-0.36	0.80-3.1	9.525	9.525	3.97	0.8	●
	SCMT 120404E-KC2	0.06-0.18	0.40-4.2	12.7	12.7	4.76	0.4	○
	SCMT 120408E-KC2	0.12-0.36	0.80-4.2	12.7	12.7	4.76	0.8	○
	SCMT 120412E-KC2	0.18-0.54	1.20-4.2	12.7	12.7	4.76	1.2	○
	TCMT 090204E-KC2	0.06-0.18	0.40-2.9	5.56	9.63	2.38	0.4	○
	TCMT 090208E-KC2	0.12-0.36	0.80-2.9	5.56	9.63	2.38	0.8	○
	TCMT 110204E-KC2	0.06-0.18	0.40-3.3	6.35	11.0	2.38	0.4	○
	TCMT 110208E-KC2	0.12-0.36	0.80-3.3	6.35	11.0	2.38	0.8	○
	TCMT 16T304E-KC2	0.06-0.18	0.40-4.9	9.525	16.5	3.97	0.4	○
	TCMT 16T308E-KC2	0.12-0.36	0.80-4.9	9.525	16.5	3.97	0.8	○
	TCMT 16T312E-KC2	0.18-0.54	1.20-4.9	9.525	16.5	3.97	1.2	○
	VBMT 160404E-KC2	0.06-0.18	0.40-3.3	9.525	16.607	4.76	0.4	○
	VBMT 160408E-KC2	0.12-0.36	0.80-3.3	9.525	16.607	4.76	0.8	○
	VBMT 160412E-KC2	0.18-0.54	1.20-3.3	9.525	16.607	4.76	1.2	○

● Stocked ○ Non-stocked