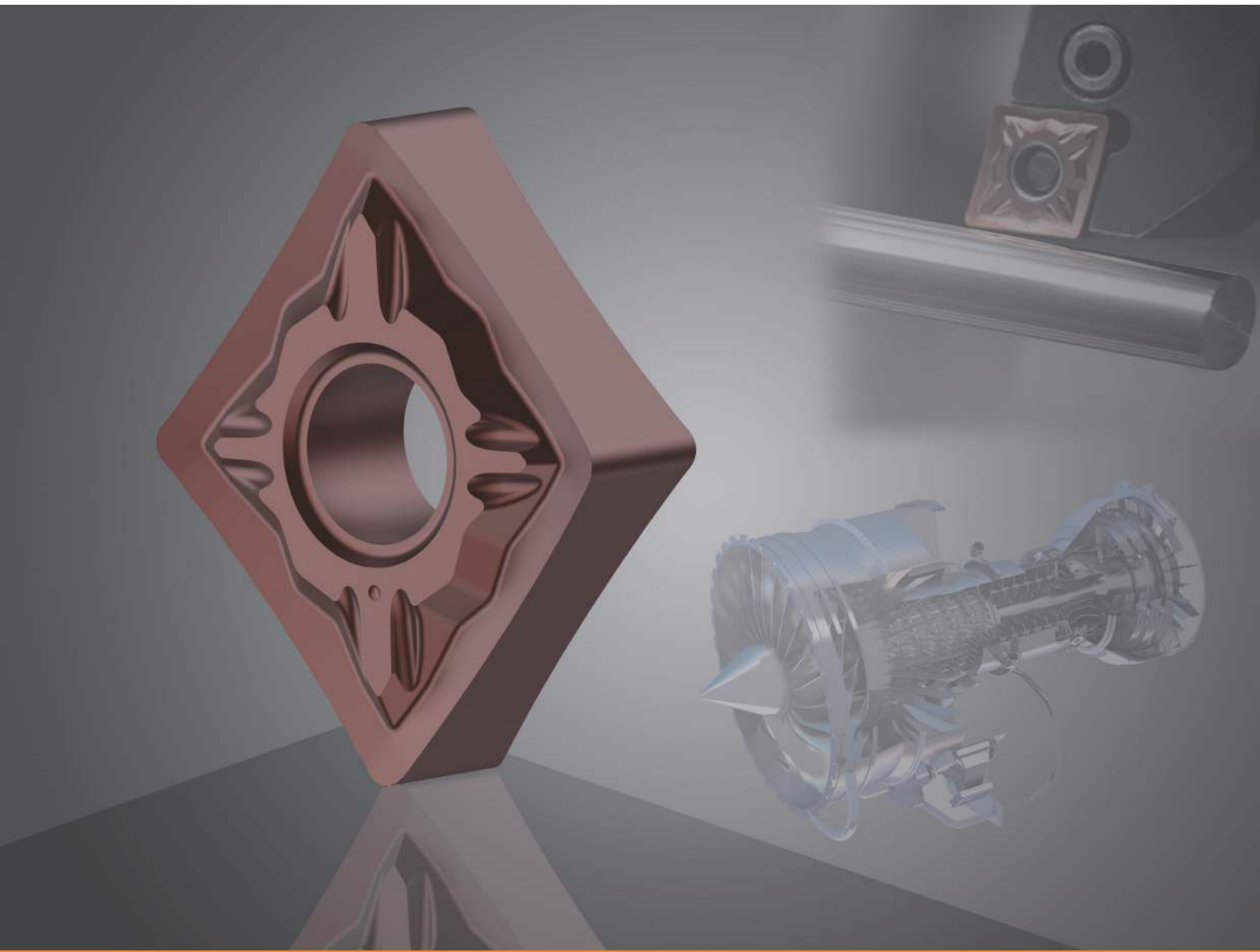
NEW
PRODUCT!

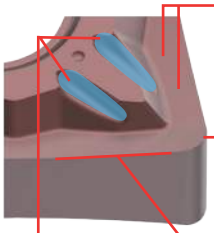
SL3

Geometry for heat resistant alloy turning

Super sharp cutting edge for low cutting speed



Geometry recommended for heat resistant alloy light turning



Big chip space good for chip evacuation

Sharp cutting edge offered low cutting force and excellent surface finish

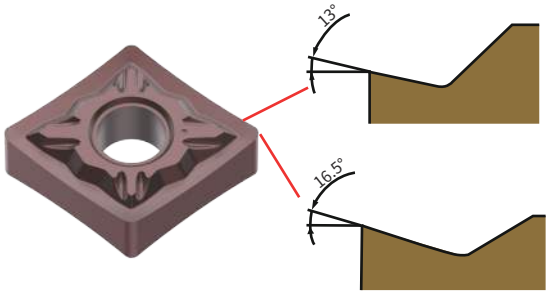
Smooth cutting edge is good for machining reliability at different cutting depth

Guiding slot is good for precise cooling

Application
- Low cutting force avoid vibration
- Especially suitable for long overhangs workpiece or with thin-wall

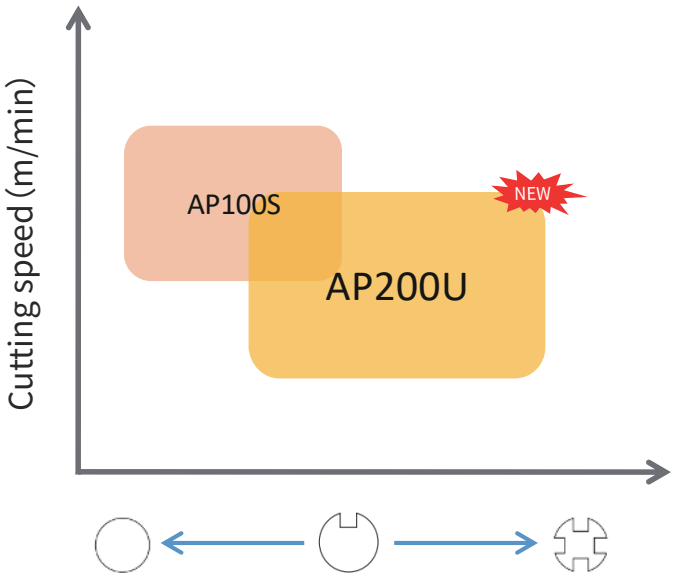
Main application
- ISO S: heat resistant alloy, nickel-based alloy
  For example: Inconel 718, Co-based alloy

Secondary application
- ISO P: Steel
- ISO M: Stainless steel
- ISO N: Non-ferrous metals



Advantages:
- Workpice without burrs
- Sharp cutting edge reduced the built-up edge
- Excellent chip control in sticky material material
- Low cutting force is good for machining stability
- Cooling directly at the cutting edge thanks to get guiding geometry

Combined with stainless steel grade AP200U and heat resistant alloy grade AP100S



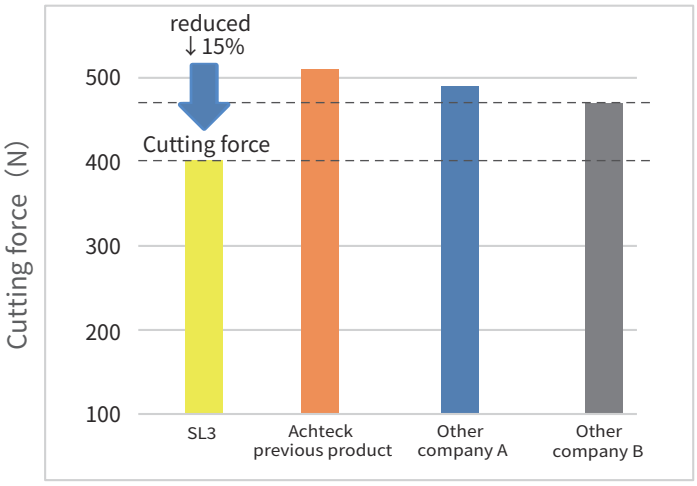
AP100S （S05-S25)

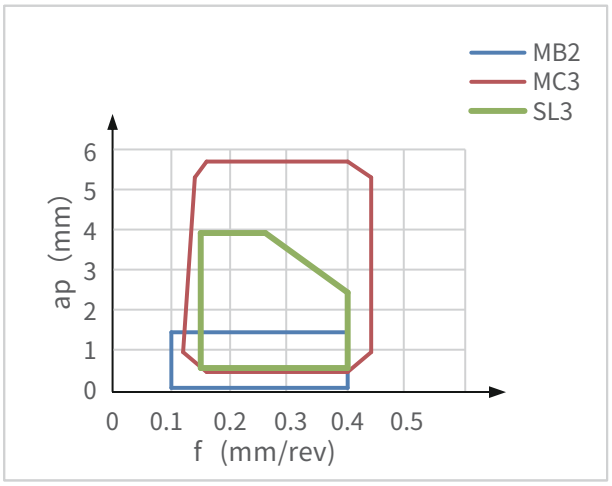
- New “nano-structured” coating technology for super compact coating structure
- Smooth coating surface to reduced cutting force and increased the wear resistance
- Excellent wear resistance, chipping resistance and high thermal resistance
- First choice for machining heat resistant alloy

AP200U（M15-M35）

- Submicron carbide substrate
- Excellent wear resistance and chipping resistance
- Reliable machining performance
- First choice for machining stainless steel

Cutting force and chip-breaking range





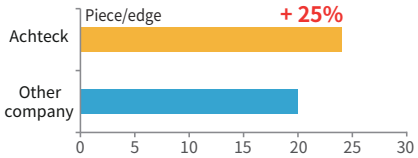
Material:316L Insert:CNMG 120408E-SL3 AP200U
Speed:150m/min f:0.25mm/rev
ap:1.5mm

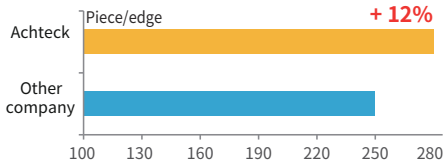
Parameter recommendation table of grades

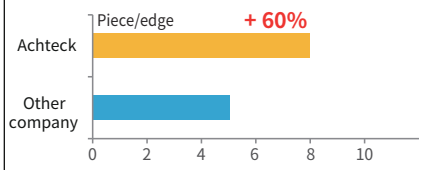
Machining mateial				Brinell hardness (HB)	Extension strength (N/mm²)	Grade					
						Starting value of cutting speed Vc(m/min)					
ISO	Material classification					AP100S			AP200U		
						f (mm/rev)			f (mm/rev)		
						0.1	0.3	0.5	0.1	0.3	0.5
M	Stainless steel	Ferritic/martensitic, annealed		200	675	135	115	75	125	130	105
		Martensitic, heat-treated		330	1114	100	75	60	85	65	55
		Austenitic, quench hardened		200	675	220	200	130	200	160	110
		Austenitic, precipitation hardened (PH)		300	1013	160	140		140	120	
		Austenitic/ferritic, duplex		230	778	170	150	110	150	140	80
S	Heat resistant alloy	Fe based	Annealed	200	680	100	70		90	70	
			Hardened	280	940	80	60		70	60	
		Ni or Co based	Annealed	250	840	80	60		70	60	
			Hardened	350	1180	70	50		60	50	
			Cast	320	1080	60	40		50	40	
	Titanium alloys	Pure titanium		200	680						
		α and β alloys, hardened		375	1260				70	50	40
		β alloys		410	1400				40	35	30
	Tungsten alloys			300	1010						
	Molybdenum alloys			300	1010						

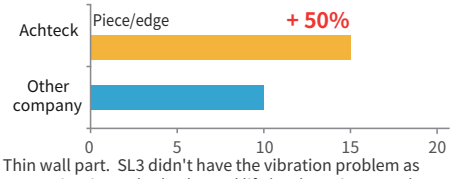
* This table is showing us the cutting data under general cutting condition, and these need to be adjusted according to machine rigidity, tool body, machining condition, coolant and other factors.
(f=mm/rev needs to be adjusted according to the insert diameter)

Success Stories

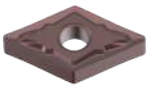
Insert	TNMG 160404E-SL3 AP200U
Part	
Material	304
Vc	150 m/min
f	0.1 mm/rev
ap	0.2 mm
Coolant	Emulsion
Result	 Under the same conditions, the tool life has been **25%** compared with other company

Insert	SNMG 120412E-SL3 AP100S
Part	
Material	1.4718
Vc	65-90 m/min
f	0.2-0.3mm/rev
ap	0.3 mm
Coolant	Emulsion
Result	 Under the same conditions, the tool life has been **12%** compared with , cost per part is reduced by **10%**

Insert	WNMG 080408E-SL3 AP100S
Part	
Material	Inconel 718
Vc	50 m/min
f	0.12 mm/rev
ap	0.3 mm
Coolant	Emulsion
Result	 Under the same conditions, the tool life increased by **60%** compared with

Insert	TNMG 160408E-SL3 AP100S
Part	
Material	316
Vc	120 m/min
f	0.15mm/rev
ap	0.5 mm
Coolant	Emulsion
Result	 Thin wall part. SL3 didn't have the vibration problem as competitor insert had. The tool life has been increased by **50%**

Negative Insert List

Insert	Product code	Size(mm)				Grade	
		r	d	l	s	AP100S	AP200U
	CNMG 120404E-SL3	0.4	12.7	12.9	4.76	●	●
	CNMG 120408E-SL3	0.8	12.7	12.9	4.76	●	●
	DNMG 110408E-SL3	0.8	9.525	11.62	4.76	●	○
	DNMG 150404E-SL3	0.4	12.7	15.5	4.76	●	○
	DNMG 150408E-SL3	0.8	12.7	15.5	4.76	●	●
	DNMG 150604E-SL3	0.4	12.7	15.5	6.35	●	○
	DNMG 150608E-SL3	0.8	12.7	15.5	6.35	●	●
	SNMG 120404E-SL3	0.4	12.7	12.7	4.76	●	○
	SNMG 120408E-SL3	0.8	12.7	12.7	4.76	●	●
	SNMG 120412E-SL3	1.2	12.7	12.7	4.76	●	●
	TNMG 160404E-SL3	0.4	9.525	16.5	4.76	●	○
	TNMG 160408E-SL3	0.8	9.525	16.5	4.76	●	●
	TNMG 160412E-SL3	1.2	9.525	16.5	4.76	●	●
	VNMG 160404E-SL3	0.4	9.525	16.5	4.76	●	○
	VNMG 160408E-SL3	0.8	9.525	16.5	4.76	●	●
	WNMG 060404E-SL3	0.4	9.525	6.52	4.76	●	○
	WNMG 060408E-SL3	0.8	9.525	6.52	4.76	●	●
	WNMG 080404E-SL3	0.4	12.7	8.7	4.76	●	○
	WNMG 080408E-SL3	0.8	12.7	8.7	4.76	●	●
	WNMG 080412E-SL3	1.2	12.7	8.7	4.76	●	●

● Stocked ○ Non-stocked