

Cast iron milling

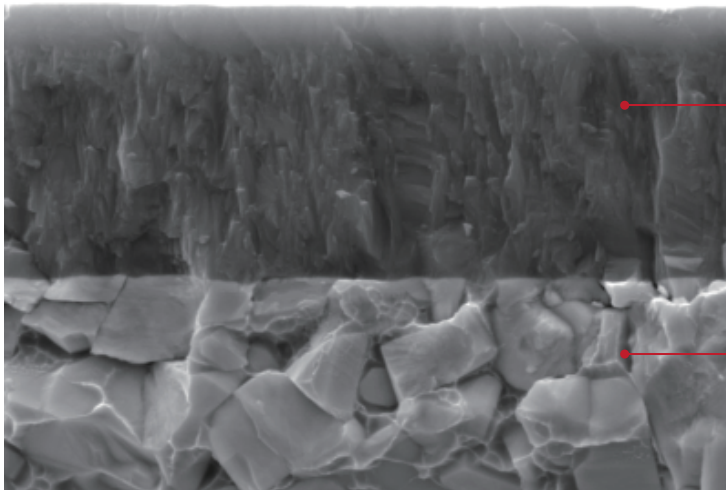
New grade AP251K



AP251K grade introduction

Achteck has launched a new PVD grade AP251K for cast iron milling, which used a new cemented carbide substrate and coating structure. The substrate has uniform grain structure, with high hardness and high wear resistance. It's a PVD nano coating, which has excellent oxidation resistance and thermal crack resistance, can effectively protect the substrate, get stable machining and better tool life than AP351K. This grade is used for face milling, shoulder milling, high feed milling. Suitable for dry and wet high-performance milling of cast iron materials.

AP251K grade feature



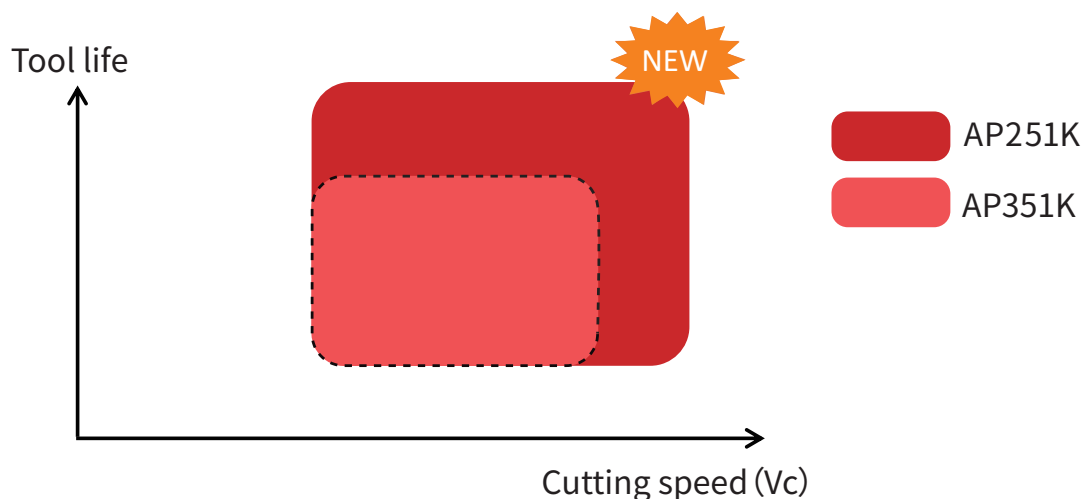
PVD nano coating—

Good oxidation resistance and thermal crack resistance

Carbide substrate—

High wear resistance

Comparison between AP251K and AP351K



Customer benefits

- For universal applications, suitable for different machining conditions.
- Better machining stability and reliability.
- Suitable for higher cutting speed and effectively improves production efficiency.
- Longer tool life and lower tool cost, less tool changing.

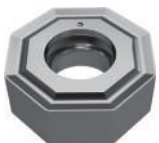
AP251K application range

For cast iron milling in all conditions

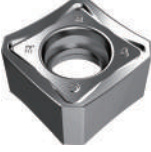
Materials	Application range								
Application	Finishing						Roughing		
ISO classification	10	15	20	25	30	35	40	45	50
									

- Application range includes finishing, semi-finishing and roughing.
- Suitable for dry and wet machining.
- First choice for cast iron milling under low to medium cutting speed conditions.
- It can be used in automotive industry, general machinery and other industries.

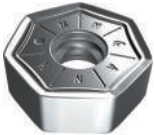
AP251K product list

No.	Insert	Product code	Stock
1		ADMT 11T308R-MM4	●
2		APKT 1705PER-DT	●
3		APMT 1135PDER	●
4		APMT 1604PDER	●
5		LNHU 090408ER-MR2	●
6		LNHU 130608ER-MR2	●
7		ODHT 0605APEN-MM3	●
8		ODMT 060508EN-MM3	●
9		ONMU 050408-MM4	●
10		SDKT 1204AEEN-MR2	●
11		SNGX 120608-MM4	●
12		SNGX 1206ANN-MM3	●

AP251K product list

No.	Insert	Product code	Stock
13		SNGX 1206ANN-MM4	●
14		SNGX 1206ANN-MR6	●
15		SNGX 1206ENN-MM4	●
16		SNGX 1206ENN-MR6	●
17		SNGX 1206ZNN-MM3	●
18		SNGX 1206ZNN-MM4	●
19		SNGX 1206ZNN-MR6	●
20		SNMX 120608-MM4	●
21		SNMX 120612-MM4	●
22		SNMX 120612-MR6	●
23		SNMX 120620-MM4	●
24		SNMX 120620-RR2	●
25		SNMX 1206ANN-MM4	●
26		SNMX 1206ANN-MR6	●
27		SNMX 1206ZNN-MM4	●

AP251K product list

No.	Insert	Product code	Stock
28		WNGU 080608R-MM4	●
29		WNGU 080608R-MR2	●
30		WNGU 080612R-MR2	●
31		XNMU 070508-MM4	●
32		XNMU 0705ANN-MM4	●
33		XNMU 0705ANN-MR6	●
34		XNMU 090612-MM4	●
35		XNMU 0906ANN-MR6	●

Case study 1

Workpiece: Gearbox housing

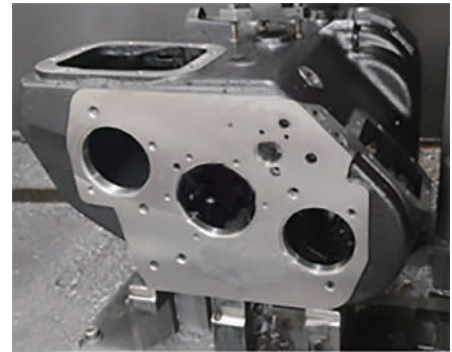
Material: GG25

Cutter: AFM88-160-Z12-A40R-SN12-N

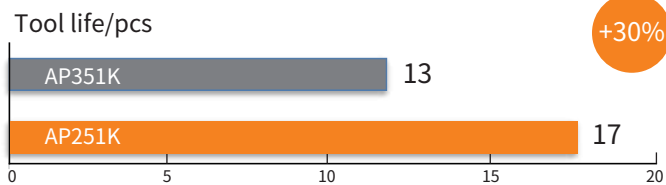
Insert: SNGX 120608-MM4

Insert grade: AP251K

Operation: Finish milling



Cutting parameter:	AP351K	AP251K
Vc [m/min]	260	260
fz [mm]	0.12	0.12
ap [mm]	0.3	0.3
Coolant	Emulsion	Emulsion



Case study 2

Workpiece: Bedplate

Material: GG25

Cutter: AFM45-125-Z16-A40R-XN09-W

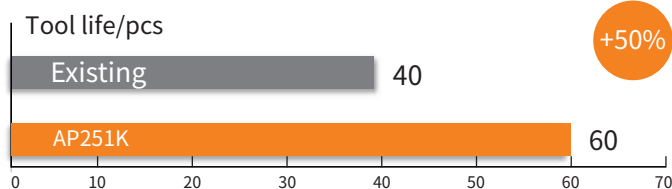
Insert: XNMU 090612-MM4

Insert grade: AP251K

Operation: Rough milling



Cutting parameter:	Existing	AP251K
Vc [m/min]	235	235
fz [mm]	0.18	0.18
ap [mm]	2.5	2.5
Coolant	Emulsion	Emulsion



• **AP251K parameter recommendation**

Materials					AP251K cutting parameter range		
ISO	Material classification		Brinell Hardness (HB)	Tensile strength (N/mm ²)	Starting value of cutting speed Vc(m/min)		
					1/10	1/5	1/1
	Malleable cast iron	Ferritic	200	400	260	230	190
		Pearlitic	260	700	240	200	170
	Grey cast iron	Low tensile strength	180	200	310	280	240
		High tensile strength / austenitic	245	350	250	230	190
	Nodular Cast Iron	Ferritic	155	400	280	250	220
		Pearlitic	265	700	200	170	130
	Graphite Cast Iron GGV (CGI)		230	400	210	180	140