

TURNING INSERTS · POSITIVE INSERTS · VBMT / VCMT - 35° RHOMBIC

VCGT-AK

Ground 35° positive rhombic insert (VCGT) for turning aluminium, with AK chipbreaker and INNOT uncoated carbide grades.



KEY DATA

Product type Turning Inserts

ISO materials **N** aluminium

Operation Finishing

Chipbreaker **AK**

INNOT grades **ITK10** ★ · ITK20
★ recommended

Nose radii R0.2 · R0.4 · R0.8

Online page innot-it.com/en/prodotto/vcgt-ak

ISO specifications

ISO	RADIUS (RE)	AVAILABLE GRADES	CHIPBREAKER
VCGT1103	0.2 - 0.4	ITK10 - ITK20	AK
VCGT1604	0.2 - 0.4 - 0.8	ITK10 - ITK20	AK

AK chipbreaker data sheet

Operation	Finishing
ISO material	N (aluminium alloys and non-ferrous metals)
Tolerance	G (ground insert)
Features	Chipbreaker for machining aluminium alloys. The large top and bottom rake angle makes the cutting edge sharper: cutting is faster and lighter, with effective chip breaking. Tolerance G (ground insert) for greater accuracy. 7° positive insert (shape V, 35° rhombic) with screw clamping: the slimmest tip in the range, for copy turning and profiling of grooves and radii. SVQC (107.5°) and SVUC (93°) type toolholders.

Available INNOT grades

Grade	ISO	Coating	Composition	Application
ITK10 ★	N	Uncoated	Fine-grain carbide	First-choice grade for turning aluminium alloys. Uncoated carbide with a fine, uniform grain matrix: high transverse rupture strength and good wear resistance.
ITK20	N	Uncoated	Carbide	Universal grade for turning aluminium alloys. Uncoated carbide with excellent wear resistance, better chipping resistance, great versatility and reliability.

★ Recommended grade for this chipbreaker. Uncoated carbide, with a sharp cutting edge for gummy materials. ISO N = aluminium and non-ferrous metals.

Recommended cutting data

External turning of aluminium (ISO N) - AK chipbreaker

Material	Condition	Vc (m/min) by grade	fn (mm/rev)	ap (mm)
Aluminium alloys and non-ferrous metals	Stable	ITK10: 300 - 700 ITK20: 300 - 700	0.10 - 0.30	0.50 - 3.00
Aluminium alloys and non-ferrous metals	Average	ITK10: 300 - 700 ITK20: 300 - 700	0.10 - 0.25	0.50 - 3.00
Aluminium alloys and non-ferrous metals	Difficult	ITK10: 300 - 700 ITK20: 300 - 700	0.10 - 0.20	0.50 - 3.00

Guide values for the AK chipbreaker (positive inserts), given only for the grades available in this product.

Internal turning / boring (ISO N)

Material	Operation	Cut	RE	Vc (m/min) min - recomm. - max	ap (mm) min - recomm. - max	fn (mm/rev) min - recomm. - max
Copper, copper alloys, aluminium (Si < 10%) ≤ 100 HB	High-speed finishing (bright surface)	Continuous	0.4 - 0.8	200 - 400 - 1000	0.05 - 0.1 - 0.3	0.05 - 0.1 - 0.15
	Finishing	Continuous	0.4 - 0.8	100 - 200 - 400	0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2
		Interrupted		100 - 200 - 400	0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2

Recommended grades: ITK10 - ITK20. Guide values for positive inserts, machining diameter over Ø10 mm. ap = radial depth of cut.

Profondità di passata e misura dell'inserto. The AK chipbreaker range goes up to ap 3 mm. The 35° shape has the slimmest tip in the range: with VCGT11 (11 mm cutting edge) keep the depth of cut within about 1/4 of the edge, i.e. about 2.5 mm. With VCGT16 (16.5 mm cutting edge) the full range can be used.

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Cutting data are indicative starting values: adjust them to machine, clamping, tool overhang and workpiece material. Data and images may change without notice.