

TURNING INSERTS · NEGATIVE INSERTS · VNMG - 35° RHOMBIC

VNMG-GC

35° negative rhombic insert for finishing steels with excellent surface quality, with GC chipbreaker and INNOT CVD grades.



KEY DATA

Product type	Turning Inserts
ISO materials	P steel
Operation	Finishing
Chipbreaker	GC
INNOT grades	IT8105 ★ · IT8115 · IT8125 · IT8225 ★ ★ recommended
Nose radii	R0.4 · R0.8
Online page	innot-it.com/en/prodotto/vnmg-gc

ISO specifications

ISO	RADIUS (RE)	AVAILABLE GRADES	CHIPBREAKER
VNMG1604	0.4 - 0.8	IT8105 - IT8115 - IT8125 - IT8225	GC

GC chipbreaker data sheet

Operation	Finishing
ISO material	P (non-alloy, alloy and tool steels)
Tolerance	M
Features	Recommended chipbreaker for finishing ISO P materials. Excellent chip control and high surface quality. Sharp yet strong cutting edge. Particularly suitable for machining shoulders and for wall face-ups. 35° rhombic shape: the slimmest tip in the range, for copy turning and profiling of grooves, radii and shoulders where other shapes cannot reach.

Available INNOT grades

Grade	ISO	Coating	Composition	Application
IT8105 ★	P	CVD	TiN + MT-TiCN + Al ₂ O ₃	Tornitura di acciaio in condizioni stabili. Elevata durezza a caldo, resistenza all'usura e alla deformazione plastica.
IT8115	P	CVD	TiN + MT-TiCN + Al ₂ O ₃	Continuous and lightly interrupted cuts. Finishing and semi-finishing of carbon and alloy steels.
IT8125	P	CVD	TiN + MT-TiCN + Al ₂ O ₃	Interrupted and continuous cuts on steel. The reinforced substrate limits plastic deformation at high temperature.
IT8225 ★	P	CVD	TiN + MT-TiCN + Al ₂ O ₃	First-choice grade for steel, very versatile. Multilayer coating with excellent wear resistance and toughness.

★ Recommended grade for this chipbreaker. CVD = chemical vapour deposition coating. ISO P = steels.

Recommended cutting data

External turning of steels (ISO P) - GC chipbreaker

Recommended cutting data by material and cutting condition (stable, average, difficult).

Material	Condition	Vc (m/min) by grade	fn (mm/rev)	ap (mm)
Structural steels ≤ 180 HB (S235, C45...)	Stable	IT8105: 250 - 420 IT8115: 230 - 400 IT8125: 215 - 360 IT8225: 225 - 380	0.08 - 0.36	0.30 - 2.00
Structural steels ≤ 180 HB (S235, C45...)	Average	IT8105: 250 - 420 IT8115: 230 - 400 IT8125: 215 - 360 IT8225: 225 - 380	0.08 - 0.36 (IT8105) 0.08 - 0.31 (others)	0.30 - 2.00
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Stable	IT8105: 250 - 420 IT8115: 230 - 400 IT8125: 215 - 360 IT8225: 225 - 380	0.08 - 0.36	0.30 - 2.00
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Average	IT8105: 250 - 420 IT8115: 230 - 400 IT8125: 215 - 360 IT8225: 225 - 380	0.08 - 0.36 (IT8105) 0.08 - 0.31 (others)	0.30 - 2.00
Quenched and tempered steels ≥ 280 HB	Stable	IT8105: 230 - 400 IT8115: 210 - 380	0.10 - 0.40	0.30 - 2.00
Quenched and tempered steels ≥ 280 HB	Average	IT8105: 230 - 380 IT8115: 210 - 360	0.10 - 0.35	0.30 - 2.00

Guide values for the GC chipbreaker. Conditions not shown are not recommended for that material.

Internal turning (boring) of steels (ISO P) - GC chipbreaker

Starting values for internal turning with a boring bar, derived from this insert's external turning data: cutting speed –15%, feed –20%, maximum depth of cut –40%. Negative inserts are mounted on boring bars for bores from about Ø 25 mm upwards (Ø 32-40 mm for the larger sizes).

Material	Condition	Vc (m/min) by grade	fn (mm/rev)	ap (mm)
Structural steels ≤ 180 HB (S235, C45...)	Stable	IT8105: 215 - 355 IT8115: 195 - 340 IT8125: 185 - 305 IT8225: 190 - 325	0.06 - 0.29	0.30 - 1.20
Structural steels ≤ 180 HB (S235, C45...)	Average	IT8105: 215 - 355 IT8115: 195 - 340 IT8125: 185 - 305 IT8225: 190 - 325	0.06 - 0.29 (IT8105) 0.06 - 0.25 (altri)	0.30 - 1.20
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Stable	IT8105: 215 - 355 IT8115: 195 - 340 IT8125: 185 - 305 IT8225: 190 - 325	0.06 - 0.29	0.30 - 1.20
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Average	IT8105: 215 - 355 IT8115: 195 - 340 IT8125: 185 - 305 IT8225: 190 - 325	0.06 - 0.29 (IT8105) 0.06 - 0.25 (altri)	0.30 - 1.20
Quenched and tempered steels ≥ 280 HB	Stable	IT8105: 195 - 340 IT8115: 180 - 325	0.08 - 0.32	0.30 - 1.20
Quenched and tempered steels ≥ 280 HB	Average	IT8105: 195 - 325 IT8115: 180 - 305	0.08 - 0.28	0.30 - 1.20

With a boring bar overhang above 3 times the diameter (steel bar) or 5 times (carbide or anti-vibration bar), reduce speed and feed further. Use the bar's internal coolant to clear the chips.

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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.