

TURNING INSERTS · NEGATIVE INSERTS · SNMG - 90° SQUARE

SNMG-GF

90° negative square insert for finishing steels, with GF chipbreaker and INNOT CVD grades.



KEY DATA

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

ISO specifications

ISO	RADIUS (RE)	AVAILABLE GRADES	CHIPBREAKER
SNMG1204	0.4 - 0.8	IT8105 - IT8115 - IT8125 - IT8225	GF

GF chipbreaker data sheet

Operation	Finishing
ISO material	P (non-alloy, alloy and tool steels)
Tolerance	M
Features	Prima scelta per la finitura dei materiali ISO P. Angolo di spoglia positivo molto ampio per ridurre la resistenza al taglio. L'inclinazione positiva del tagliente guida il truciolo nella direzione corretta. La tavola frangitruciolo a doppio stadio garantisce una buona rottura del truciolo anche con profondità di passata ridotte. Forma quadrata 90°: la più robusta tra gli inserti negativi, con 8 taglienti utilizzabili (4 per faccia); ideale per sgrossatura, sfacciatura e smussi a 45°.

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) - GF 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: 230 - 400 IT8115: 215 - 360 IT8125: 190 - 355 IT8225: 205 - 375	0.10 - 0.30	0.30 - 1.50
Structural steels ≤ 180 HB (S235, C45...)	Average	IT8105: 230 - 400 IT8115: 215 - 360 IT8125: 190 - 355 IT8225: 205 - 375	0.10 - 0.25	0.30 - 1.50
Structural steels ≤ 180 HB (S235, C45...)	Difficult	IT8125: 190 - 355 IT8225: 205 - 375	0.10 - 0.20	0.30 - 1.50
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Stable	IT8105: 230 - 400 IT8115: 215 - 360 IT8125: 190 - 355 IT8225: 205 - 375	0.10 - 0.30	0.30 - 1.50
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Average	IT8105: 230 - 400 IT8115: 215 - 360 IT8125: 190 - 355 IT8225: 205 - 375	0.10 - 0.25	0.30 - 1.50
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Difficult	IT8125: 190 - 355 IT8225: 205 - 375	0.10 - 0.20	0.30 - 1.50
Quenched and tempered steels ≥ 280 HB	Stable	IT8105: 215 - 380 IT8115: 190 - 360	0.10 - 0.30	0.30 - 1.50
Quenched and tempered steels ≥ 280 HB	Average	IT8105: 215 - 400 IT8115: 190 - 380	0.10 - 0.25	0.30 - 1.50

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

Internal turning (boring) of steels (ISO P) - GF 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: 195 - 340 IT8115: 185 - 305 IT8125: 160 - 300 IT8225: 175 - 320	0.08 - 0.24	0.30 - 0.90
Structural steels ≤ 180 HB (S235, C45...)	Average	IT8105: 195 - 340 IT8115: 185 - 305 IT8125: 160 - 300 IT8225: 175 - 320	0.08 - 0.20	0.30 - 0.90
Structural steels ≤ 180 HB (S235, C45...)	Difficult	IT8125: 160 - 300 IT8225: 175 - 320	0.08 - 0.16	0.30 - 0.90
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Stable	IT8105: 195 - 340 IT8115: 185 - 305 IT8125: 160 - 300 IT8225: 175 - 320	0.08 - 0.24	0.30 - 0.90
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Average	IT8105: 195 - 340 IT8115: 185 - 305 IT8125: 160 - 300 IT8225: 175 - 320	0.08 - 0.20	0.30 - 0.90

Material	Condition	Vc (m/min) by grade	fn (mm/rev)	ap (mm)
Carbon and alloy steels 180 - 280 HB (41Cr4, 42CrMo4...)	Difficult	IT8125: 160 - 300 IT8225: 175 - 320	0.08 - 0.16	0.30 - 0.90
Quenched and tempered steels $\geq$ 280 HB	Stable	IT8105: 185 - 325 IT8115: 160 - 305	0.08 - 0.24	0.30 - 0.90
Quenched and tempered steels $\geq$ 280 HB	Average	IT8105: 185 - 340 IT8115: 160 - 325	0.08 - 0.20	0.30 - 0.90

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.