

TURNING INSERTS · NEGATIVE INSERTS · SNMG - 90° SQUARE

SNMM-GZ

90° negative square insert for heavy roughing of steels, with GZ chipbreaker and INNOT CVD grades. Large depths of cut and high feeds.



KEY DATA

Product type	Turning Inserts
ISO materials	P steel
Operation	Heavy-duty machining
Chipbreaker	GZ
INNOT grades	IT8115 ★ · IT8125 · IT8135 · IT8225 ★ ★ recommended
Nose radii	R0.8 · R1.2 · R1.6 · R2.4 · R3.2
Online page	innot-it.com/en/prodotto/snmm-gz

ISO specifications

ISO	RADIUS (RE)	AVAILABLE GRADES	CHIPBREAKER
SNMM1506	1.2	IT8115 - IT8125 - IT8225 - IT8135	GZ
SNMM1906	0.8 - 1.2 - 1.6 - 2.4	IT8115 - IT8125 - IT8225 - IT8135	GZ
SNMM2509	2.4 - 3.2	IT8115 - IT8125 - IT8225 - IT8135	GZ

GZ chipbreaker data sheet

Operation	Heavy roughing
ISO material	P (non-alloy, alloy and tool steels)
Tolerance	M
Features	Rompitrucciolo per lavorazioni pesanti dei materiali ISO P. Il piano di spoglia con rilievi dal disegno esclusivo riduce l'area di contatto del truciolo alle grandi profondità di passata e garantisce un ottimo controllo del truciolo. Il tagliente affilato riduce efficacemente le forze di taglio. Adatto a profondità di passata fino a 12 mm sulle misure più grandi. Forma quadrata 90°: la più robusta tra gli inserti negativi, ideale per sgrossatura pesante, sfacciatura e smussi a 45°.

Available INNOT grades

Grade	ISO	Coating	Composition	Application
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.
IT8135	P	CVD	TiN + MT-TiCN + Al ₂ O ₃	Grado per la tornitura dell'acciaio con forti urti. Substrato ad alta tenacità e fase legante rinforzata: eccellente resistenza agli impatti nei tagli molto interrotti.

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

Recommended cutting data

Heavy external turning of steels (ISO P)

Recommended cutting data for the GZ chipbreaker, by material and cutting condition.

Material	Condition	Vc (m/min) by grade	fn (mm/rev)	ap (mm)
Non-alloy and alloy steels $\leq$ 280 HB (S235, C45, 41Cr4, 42CrMo4...)	Stable	IT8115: 100 - 200 IT8125: 100 - 180 IT8225: 100 - 195	0.25 - 1.00	3.00 - 12.00
Non-alloy and alloy steels $\leq$ 280 HB (S235, C45, 41Cr4, 42CrMo4...)	Average	IT8115: 100 - 200 IT8125: 100 - 180 IT8225: 100 - 195	0.25 - 0.95	3.00 - 12.00
Non-alloy and alloy steels $\leq$ 280 HB (S235, C45, 41Cr4, 42CrMo4...)	Difficult	IT8115 · IT8125 · IT8225: 60 - 180	0.25 - 0.90	3.00 - 12.00
Quenched and tempered steels $\geq$ 280 HB	Stable	IT8115: 120 - 245 IT8225: 100 - 190	0.50 - 1.26	3.00 - 11.00
Quenched and tempered steels $\geq$ 280 HB	Average	IT8115: 110 - 245 IT8225: 90 - 190	0.50 - 1.21	3.00 - 11.00

For steels $\geq$ 280 HB IT8115 and IT8225 are recommended. IT8135 is the grade for heavy impacts and heavily interrupted cuts: cutting data on request.

Heavy internal turning (boring) of steels (ISO P)

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 $\varnothing$ 25 mm upwards ($\varnothing$ 32-40 mm for the larger sizes). Heavy roughing needs rigid boring bars in large bores, indicatively above $\varnothing$ 60 mm.

Material	Condition	Vc (m/min) by grade	fn (mm/rev)	ap (mm)
Non-alloy and alloy steels $\leq$ 280 HB (S235, C45, 41Cr4, 42CrMo4...)	Stable	IT8115: 85 - 170 IT8125: 85 - 155 IT8225: 85 - 165	0.20 - 0.80	3.00 - 7.20
Non-alloy and alloy steels $\leq$ 280 HB (S235, C45, 41Cr4, 42CrMo4...)	Average	IT8115: 85 - 170 IT8125: 85 - 155 IT8225: 85 - 165	0.20 - 0.76	3.00 - 7.20
Non-alloy and alloy steels $\leq$ 280 HB (S235, C45, 41Cr4, 42CrMo4...)	Difficult	IT8115 · IT8125 · IT8225: 50 - 155	0.20 - 0.72	3.00 - 7.20
Quenched and tempered steels $\geq$ 280 HB	Stable	IT8115: 100 - 210 IT8225: 85 - 160	0.40 - 1.01	3.00 - 6.60
Quenched and tempered steels $\geq$ 280 HB	Average	IT8115: 95 - 210 IT8225: 75 - 160	0.40 - 0.97	3.00 - 6.60

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.

Profondità di passata e misura dell'inserto. The ap range up to 12 mm is the limit of the GZ chipbreaker and is exploited with SNMM1906 and SNMM2509. With SNMM1506 (15.9 mm cutting edge) stay within about 2/3 of the edge, i.e. around 10 mm depth of cut.

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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.