TURNING INSERTS · NEGATIVE INSERTS · TNMG - 60° TRIANGULAR

TNMA

60° flat negative triangular insert, without chipbreaker, for turning cast iron with CVD grade IT6115.

KEY DATA	
Product type	Turning Inserts
ISO materials	K cast iron
Operation	Roughing
Chipbreaker	**Piano (senza rompitruciolo)**
INNOT grades	**IT6115** ★ ★ recommended
Nose radii	R0.4 · R0.8 · R1.2 · R1.6
Online page	innot-it.com/en/prodotto/tnma

ISO specifications

ISO	RADIUS (RE)	AVAILABLE GRADES	CHIPBREAKER
TNMA1604	0.4 - 0.8 - 1.2	IT6115	Flat (no chipbreaker)
TNMA2204	0.8 - 1.2 - 1.6	IT6115	Flat (no chipbreaker)

Flat (no chipbreaker) data sheet

Operation	Roughing – unstable cuts
ISO material	K (grey cast iron)
Tolerance	M
Features	Inserto piano senza rompitruciolo per i materiali ISO K. Ha un'elevata robustezza strutturale e un ottimo appoggio sul portautensile: è la scelta più sicura per i tagli instabili e interrotti sulla ghisa. Forma triangolare 60°: 6 taglienti utilizzabili (3 per faccia), molto versatile per tornitura longitudinale e sfacciatura con un'ampia scelta di portautensili.

Available INNOT grades

Grade	ISO	Coating	Composition	Application
IT6115 ★	**K**	**CVD**	TiN + MT-TiCN + Al_2O_3	First-choice grade for turning cast iron. Thicker black CVD coating with special post-coating treatment: excellent wear resistance and toughness. Also suitable for roughing high-strength steels.

★ Recommended grade for this chipbreaker. CVD = chemical vapour deposition coating. ISO K = cast irons.

Recommended cutting data

External turning of cast iron (ISO K)

Recommended cutting data for grey cast iron, strength ≤ 350 MPa.

Material	Condition	Vc (m/min) by grade	fn (mm/rev)	ap (mm)
Grey cast iron (GG20, GG30 – EN-GJL-200, EN-GJL-300)	Stable	IT6115: 155 – 285	0.20 – 0.60	2.50 – 6.00
Grey cast iron (GG20, GG30 – EN-GJL-200, EN-GJL-300)	Average	IT6115: 155 – 285	0.20 – 0.55	2.50 – 6.00
Grey cast iron (GG20, GG30 – EN-GJL-200, EN-GJL-300)	Difficult	IT6115: 155 – 285	0.20 – 0.50	2.50 – 6.00

Valori indicativi. L'inserto piano è indicato soprattutto per tagli instabili e interrotti.

Internal turning (boring) of cast iron (ISO K)

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)
Grey cast iron (GG20, GG30 – EN-GJL-200, EN-GJL-300)	Stable	IT6115: 130 – 240	0.16 – 0.48	2.50 – 3.60
Grey cast iron (GG20, GG30 – EN-GJL-200, EN-GJL-300)	Average	IT6115: 130 – 240	0.16 – 0.44	2.50 – 3.60
Grey cast iron (GG20, GG30 – EN-GJL-200, EN-GJL-300)	Difficult	IT6115: 130 – 240	0.16 – 0.40	2.50 – 3.60

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.

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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.