TURNING INSERTS · POSITIVE INSERTS · TCMT - 60° TRIANGULAR

TCMT-HQ

60° positive triangular cermet insert (TCMT) for finishing and semi-finishing of steels with high surface quality.

KEY DATA	
Product type	Turning Inserts
ISO materials	P steel
Operation	Finishing · Semi-finishing
Chipbreaker	**HQ**
INNOT grades	**IT115C** ★ · **ITC10** ★ ★ recommended
Nose radii	R0.4
Online page	innot-it.com/en/prodotto/tcmt-hq

ISO specifications

ISO	RADIUS (RE)	AVAILABLE GRADES	CHIPBREAKER
TCMT1102	0.4	ITC10 - IT115C	HQ

HQ chipbreaker data sheet

Operation	Finishing
ISO material	P (steels, especially low and medium carbon)
Tolerance	M
Features	Rompitruciolo universale per il cermet, dalla finitura alla semi-finitura. Angoli di spoglia tridimensionali e doppio rilievo convesso per un'ottima resa di taglio e un'ottima finitura superficiale. Inserto positivo a 7° (forma T, triangolare 60°) con fissaggio a vite: 3 taglienti, per tornitura esterna e barenatura con portautensili tipo STFC (90°).

Available INNOT grades

Grade	ISO	Coating	Composition	Application
ITC10 ★	**P**	**Cermet**	Uncoated	New-generation, very stable cermet: ideal for finishing low-carbon steels and wherever high surface quality is needed. Hard, compact surface, excellent chemical stability, wear and chipping resistance.
IT115C ★	**P**	**PVD**	AlTiSiN + TiSiN	Coated cermet: compared with uncoated cermet it withstands high temperatures better and allows higher cutting speeds. Low-friction nano-gradient coating with excellent adhesion to the substrate: outstanding tool life and stability.

★ Recommended grade for this chipbreaker. Cermet = ceramic-metallic material for high-quality finishes. PVD = physical vapour deposition coating. ISO P = steels.

Recommended cutting data

External turning of steels with cermet (ISO P)

Recommended cutting speed and feed for INNOT cermet grades.

Grade	Material	Hardness	Vc (m/min) min – recomm. – max	fn (mm/rev)
ITC10	Low and medium carbon / low and medium alloy steels	150 – 250 HB	100 – 200 – 300	0.10 – 0.30
ITC10	High-carbon alloy steels	350 HB	100 – 150 – 200	0.05 – 0.25
IT115C	Low and medium carbon / low and medium alloy steels	150 – 250 HB	200 – 300 – 400	0.10 – 0.30
IT115C	High-carbon alloy steels	350 HB	180 – 260 – 320	0.05 – 0.25

Cermet works best in finishing with small depths of cut and stable conditions. IT115C (coated) allows higher speeds than ITC10.

Internal turning (boring) of steels with cermet (ISO P)

Starting values for internal turning with a boring bar, derived from this insert's external turning data: cutting speed −15%, feed −20%.

Grade	Material	Hardness	Vc (m/min) min – recomm. – max	fn (mm/rev)
ITC10	Low and medium carbon / low and medium alloy steels	150 – 250 HB	85 – 170 – 255	0.08 – 0.24
ITC10	High-carbon alloy steels	350 HB	85 – 130 – 170	0.04 – 0.20
IT115C	Low and medium carbon / low and medium alloy steels	150 – 250 HB	170 – 255 – 340	0.08 – 0.24
IT115C	High-carbon alloy steels	350 HB	155 – 220 – 270	0.04 – 0.20

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.