

TURNING INSERTS · PARTING AND GROOVING

QCMB-CT

Double-ended insert for grooving and side turning, with CT chipbreaker and INNOT CVD, PVD and cermet grades.



KEY DATA

Product type	Turning Inserts
ISO materials	P steel M stainless K cast iron S superalloys
Operation	Parting and grooving
Chipbreaker	CT
INNOT grades	IT6115 · IT7115 · IT7125 · IT7225 ★ · IT8225 ★ · IT9205 ★ · IT9215 ★ · ITC10 ★ recommended
Nose radii	R0.2 · R0.4 · R0.8
Online page	innot-it.com/en/prodotto/qcmb-ct

Specifications

Code	Width CW	Corner radius RE	INSL	Available grades
QCMB1502-CT	1.5 mm (+0.05/0)	0.2	16.0	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10
QCMB2002-CT	2.0 mm (+0.05/0)	0.2	16.0	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10
QCMB2502-CT	2.5 mm (+0.05/0)	0.2	18.5	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10
QCMB3004-CT	3.0 mm (+0.05/0)	0.4	21.0	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10
QCMB4004-CT	4.0 mm (+0.05/0)	0.4	21.0	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10
QCMB5008-CT	5.0 mm (+0.05/0)	0.8	26.0	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10
QCMB6004-CT	6.0 mm (+0.05/0)	0.4	26.0	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10
QCMB6008-CT	6.0 mm (+0.05/0)	0.8	26.0	IT8225 - IT6115 - IT7115 - IT7125 - IT7225 - IT9205 - IT9215 - ITC10

CW = cutting width, RE = corner radius, INSL = insert length (mm).

CT chipbreaker data sheet

Operation	Grooving, parting and side turning
ISO material	P (steels), M (stainless steels), K (cast irons), S (superalloys and titanium)
Type	Two cutting edges
Tolerance	M
Features	Rompitruciolo per lavorare in tuffo e in tornitura laterale con lo stesso inserto. La sede di posizionamento ottimizzata riduce il rischio di rotture anomale dell'inserto. Gamma di gradi più ampia: dall'acciaio alle superleghe.
Compatible toolholders	Toolholders for external and face grooves, boring bars for internal grooves

Available INNOT grades

Grade	ISO	Coating	Composition	Application
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.
IT6115	K	CVD	TiN + MT-TiCN + Al ₂ O 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.
IT7115	M · S	PVD	AlTiSiN + TiSiN	Sub-micron grain substrate with nano-gradient coating: excellent wear and oxidation resistance, great stability. Suitable for titanium alloys and superalloys.
IT7125	M	PVD	AlTiN	Universal grade for turning stainless steel in continuous and interrupted cuts. Smooth, low-friction coating, high nano-hardness and excellent oxidation resistance.
IT7225 ★	M	PVD	AlTiSiN + TiSiN	First-choice grade for turning stainless steel. Nano-gradient coating on a sub-micron grain substrate: excellent wear resistance and toughness.
IT9205 ★	S	PVD	AlTiN + TiSiN + AlCrN	Highly wear-resistant grade for superalloys. Uniform sub-micron hard phase and alloying elements for greater reliability; excellent thermal stability and oxidation resistance.
IT9215 ★	S	PVD	AlTiN + TiSiN + AlCrN	Universal grade for turning superalloys. Greater toughness and reliability; the multilayer structure limits cracks and protects the coating from flaking and chipping.
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.

★ Recommended grade for this insert. CVD = chemical vapour deposition coating, PVD = physical vapour deposition coating.

Recommended cutting data

Parting and grooving - cutting speed

Velocità di taglio Vc (m/min) in funzione dell'avanzamento fn (mm/giro)

Material	HB	Rm (N/mm²)	IT8225			IT7225			IT6115			IT9205			IT9215		
			fn 0.1	fn 0.3	fn 0.5	fn 0.1	fn 0.3	fn 0.5	fn 0.1	fn 0.3	fn 0.5	fn 0.1	fn 0.2	fn 0.3	fn 0.1	fn 0.2	fn 0.3
NON-ALLOY STEELS																	
C≤0.25% - Annealed	125	428	280	200	130	260	180	120	-	-	-	-	-	-	-	-	-
0.25<C≤0.55% - Annealed	190	639	240	160	115	200	140	105	-	-	-	-	-	-	-	-	-
0.25<C≤0.55% - Quenched and tempered	210	708	130	115	100	120	110	100	-	-	-	-	-	-	-	-	-
C>0.55% - Annealed	190	639	145	130	115	130	120	110	-	-	-	-	-	-	-	-	-
C>0.55% - Quenched and tempered	300	1013	115	100	80	110	95	70	-	-	-	-	-	-	-	-	-
Short-chipping - Annealed	220	745	130	115	100	120	105	90	-	-	-	-	-	-	-	-	-
LOW-ALLOY STEELS																	
Annealed	175	591	280	200	130	170	135	120	-	-	-	-	-	-	-	-	-
Quenched and tempered	300	1013	115	100	80	105	90	70	-	-	-	-	-	-	-	-	-
Quenched and tempered	380	1282	170	90	70	160	80	60	-	-	-	-	-	-	-	-	-
STAINLESS STEELS																	
Ferritic / martensitic - Annealed	200	675	-	-	-	200	150	105	-	-	-	-	-	-	-	-	-
Martensitic - Quenched and tempered	330	1114	-	-	-	150	115	70	-	-	-	-	-	-	-	-	-
Austenitic - Solution annealed	200	675	-	-	-	185	155	125	-	-	-	-	-	-	-	-	-
Precipitation-hardening austenitic (PH)	300	1013	-	-	-	165	135	95	-	-	-	-	-	-	-	-	-
Austenitic-ferritic (duplex)	230	778	-	-	-	145	110	85	-	-	-	-	-	-	-	-	-

CAST IRONS																	
Ferritic malleable	200	400	-	-	-	-	-	-	-	220	160	80	-	-	-	-	-
Pearlitic malleable	260	700	-	-	-	-	-	-	-	115	90	65	-	-	-	-	-
Grey - low strength	180	200	-	-	-	-	-	-	-	260	220	150	-	-	-	-	-
Grey - high strength / austenitic	245	350	-	-	-	-	-	-	-	240	200	130	-	-	-	-	-
Ferritic ductile	155	400	-	-	-	-	-	-	-	160	130	80	-	-	-	-	-
Pearlitic ductile	265	700	-	-	-	-	-	-	-	145	110	80	-	-	-	-	-
Compacted graphite iron (CGI)	230	400	-	-	-	-	-	-	-	150	120	90	-	-	-	-	-
SUPERALLOYS AND TITANIUM																	
Iron-based - Annealed	200	680	-	-	-	-	-	-	-	-	-	-	70	50	-	60	40
Iron-based - Aged	280	940	-	-	-	-	-	-	-	-	-	-	50	40	-	40	30
Nickel / cobalt-based - Annealed	250	840	-	-	-	-	-	-	-	-	-	-	50	40	-	40	30
Nickel / cobalt-based - Aged	350	1180	-	-	-	-	-	-	-	-	-	-	40	30	-	35	25
Nickel / cobalt-based - Cast	320	1080	-	-	-	-	-	-	-	-	-	-	30	25	-	25	20
Aged $\alpha+\beta$ titanium alloys	375	1260	-	-	-	-	-	-	-	-	-	-	50	40	30	40	30
β titanium alloys	410	1400	-	-	-	-	-	-	-	-	-	-	40	35	30	30	25

Valori indicativi per lavorazione con refrigerante. In troncatura e nelle gole interne ridurre la velocità del 30-50%. In troncatura, avvicinandosi al centro del pezzo, ridurre l'avanzamento del 30%.

Consigli d'uso

- Parting off: when approaching the centre reduce the feed by 30% for longer life and a better finish; keep the tool overhang to a minimum.
- External grooving and side turning: with depths over 0.5 mm work in radial passes (up to $0.75 \times$ insert width), retract 0.1 mm, then an axial pass.
- Wide grooves: make side-by-side stepped plunges, then finish the bottom and the flanks.
- Face grooves: start from the largest diameter and move inwards; for finishing machine the bottom and the outer diameter first, then the inner one.
- Internal grooves: work from the inside outwards to help the chip out.

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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.