

MILLING INSERTS · COPY MILLING AND PROFILING

RDHX (15° round)

Ground round insert with 15° clearance for copy milling cutters, from Ø5 to Ø12 mm: moulds, 3D surfaces and hardened steels up to 65 HRC.



KEY DATA

Product type	Milling Inserts
ISO materials	P steel M stainless K cast iron S superalloys H hardened
Operation	Finishing · Semi-finishing · Roughing
INNOT grades	IT5110 · IT5210 ★ · IT5220 · IT6130 ★ · IT7140 · IT7240 ★ ★ recommended
Online page	innot-it.com/en/prodotto/rdhx-tondo-15

Specifications

Code	Ø IC	S	D1	AN	APMX	fz (mm/tooth)
RDHX0501MOE	5	1.59	2.2	15°	1.25	0.05-0.20
RDHX0702MOT	7	2.38	2.8	15°	1.75	0.06-0.25
RDHX0803MOT	8	3.18	3.4	15°	2	0.08-0.28
RDHX1003MOT	10	3.18	3.9	15°	2.5	0.10-0.30
RDHX12T3MOT	12	3.97	4.4	15°	3	0.12-0.35

Misure in mm. IC = diametro dell'inserto, S = spessore, D1 = foro, AN = angolo di spoglia, APMX = profondità di passata massima (¼ del diametro). Tolleranza H: inserti rettificati sul diametro per una ripetibilità di posizionamento elevata. T = tagliente con faccetta di rinforzo, E = tagliente arrotondato.

Technical data

Operation	Milling – Copy milling and profiling: 3D surfaces, moulds, pockets, face milling and ramping
Shape	Round, single-sided, 15° clearance, ground to tolerance H
ISO material	P (steels), M (stainless steels), K (cast irons), S (superalloys and titanium), H (hardened steels)
Features	The round cutting edge spreads the load over the whole circumference: it works with the same strength in face milling, copy milling and ramping. The reinforcing land (T) protects the edge in hardened steels up to 65 HRC and in interrupted cuts; grinding to tolerance H ensures positioning accuracy after every indexing.
Compatible cutters	INNOT modular heads and shell mills for RDHX (see below), and copy milling cutters with a 15° round seat of the same diameter.

How many inserts per cutter diameter

Maximum number of inserts per cutter diameter (modular heads up to Ø42, shell mills from Ø42 to Ø80).

Cutter Ø	RDHX 05	RDHX 07	RDHX 08	RDHX 10	RDHX 12
Ø10	2	-	-	-	-

Cutter Ø	RDHX 05	RDHX 07	RDHX 08	RDHX 10	RDHX 12
Ø12	3	-	-	-	-
Ø15	4	3	-	-	-
Ø16	-	-	2	-	-
Ø20	-	4	3	2	-
Ø24	-	-	-	-	2
Ø25	-	5	4	3	-
Ø30	-	-	-	4	-
Ø32	-	-	5	4	-
Ø35	-	-	-	5	4
Ø42	-	-	-	5	5
Ø50	-	-	-	-	5
Ø52	-	-	-	7	5
Ø66	-	-	-	-	6
Ø80	-	-	-	-	7

Modular heads for RDHX

Heads with M6-M16 threaded connection for carbide or steel extensions: ideal for deep moulds, where small diameters and high rigidity are needed.

RDHX 05 insert (Ø5) - heads from Ø10 to Ø15 mm

Cutter Ø DCX	Inner Ø DC	Cutting edges Z	Connection	LF	APMX
Ø10	Ø5	2	M6	20	1.25
Ø12	Ø7	3	M6	20	1.25
Ø15	Ø10	4	M8	20	1.25

RDHX 07 insert (Ø7) - heads from Ø15 to Ø25 mm

Cutter Ø DCX	Inner Ø DC	Cutting edges Z	Connection	LF	APMX
Ø15	Ø8	2	M8	28	1.75
Ø15	Ø8	3	M8	28	1.75
Ø20	Ø13	4	M10	28	1.75
Ø25	Ø18	5	M12	28	1.75

RDHX 08 insert (Ø8) - heads from Ø16 to Ø32 mm

Cutter Ø DCX	Inner Ø DC	Cutting edges Z	Connection	LF	APMX
Ø16	Ø8	2	M8	28	2
Ø20	Ø12	3	M10	28	2
Ø25	Ø17	4	M12	32	2

Cutter Ø DCX	Inner Ø DC	Cutting edges Z	Connection	LF	APMX
Ø32	Ø24	5	M16	42	2

RDHX 10 insert (Ø10) - heads from Ø20 to Ø42 mm

Cutter Ø DCX	Inner Ø DC	Cutting edges Z	Connection	LF	APMX
Ø20	Ø10	2	M10	28	2.5
Ø25	Ø15	2	M12	32	2.5
Ø25	Ø15	3	M12	32	2.5
Ø30	Ø20	4	M16	42	2.5
Ø32	Ø22	4	M16	42	2.5
Ø35	Ø25	5	M16	42	2.5
Ø42	Ø32	4	M16	42	2.5
Ø42	Ø32	5	M16	42	2.5

RDHX 12 insert (Ø12) - heads from Ø24 to Ø42 mm

Cutter Ø DCX	Inner Ø DC	Cutting edges Z	Connection	LF	APMX
Ø24	Ø12	2	M12	32	3
Ø35	Ø23	3	M16	42	3
Ø35	Ø23	4	M16	42	3
Ø42	Ø30	4	M16	42	3
Ø42	Ø30	5	M16	42	3

Dimensions in mm according to ISO 13399. DCX = outer cutting diameter, DC = inner diameter (DCX – insert Ø), Z = number of inserts, LF = functional length from the contact face, APMX = maximum depth of cut. Internal coolant on all heads.

Shell mills

Insert	Cutter Ø DCX	Cutting edges Z	Bore Ø
RDHX 10	Ø42	5	Ø16
RDHX 10	Ø52	7	Ø22
RDHX 12	Ø50	5	Ø22
RDHX 12	Ø52	5	Ø22
RDHX 12	Ø66	6	Ø27
RDHX 12	Ø80	7	Ø27

Cylindrical and Weldon shank end mills available on request for all sizes.

Available INNOT grades

Grade	ISO	Coating	Composition	Application
IT6130 ★	P · K	CVD	TiN + MT-TiCN + Al ₂ O ₃	Semi-finishing and roughing of steels and cast irons. High-strength composite coating that balances wear and toughness; post-coating treatment increases insert toughness.

Grade	ISO	Coating	Composition	Application
IT7240 ★	M • S	PVD	AlCrN	Milling of difficult materials: stainless steels, superalloys and titanium. High hot hardness, high toughness and resistance to fatigue fracture.
IT5210 ★	P • H	PVD	AlTiN + TiSiN	Milling of hardened steels 50-65 HRC. Coating with high thermal stability and oxidation resistance: withstands the most severe cutting temperatures.
IT5220	P • M • K	PVD	AlTiN + TiSiN	Universal grade for steels, stainless steels and cast irons up to 40-50 HRC. Double-layer coating: strength, toughness and protection against edge chipping.
IT7140	M • S	PVD	AlCrN	Milling of stainless steels, titanium alloys and superalloys. Substrate with special micro-elements: excellent toughness and high-temperature performance.
IT5110	P • H	PVD	TiAlN + CrAlN + TiSiN	Milling of hardened steels 45-55 HRC. Nano-composite coating on an ultra-fine grain substrate: smooth surface, low friction, high nano-hardness and excellent oxidation resistance.

★ Recommended grade. Other grades are available on request.

Recommended cutting data

Copy milling - cutting speed and feed per tooth

Material	Hardness	Grade	Vc (m/min)	fz 05	fz 07	fz 08	fz 10	fz 12
PNon-alloy / mild steel	≤ 180 HB	IT6130 IT5220	240 (180-300)	0.12	0.15	0.18	0.2	0.25
PAlloy / quenched and tempered steel	180-280 HB	IT6130 IT5220	200 (160-250)	0.1	0.13	0.15	0.18	0.22
PTool and mould steel	280-350 HB	IT5220 IT5110	170 (130-210)	0.08	0.12	0.14	0.16	0.2
MSainless steel	≤ 270 HB	IT7240 IT7140	160 (120-200)	0.08	0.1	0.12	0.15	0.18
KGrey and ductile cast iron	180-260 HB	IT6130 IT5220	200 (150-260)	0.12	0.15	0.18	0.2	0.25
STitanium alloys	≤ 350 HB	IT7240 IT7140	60 (40-80)	0.06	0.08	0.1	0.12	0.15
SNickel / cobalt-based superalloys	≤ 400 HB	IT7240	35 (25-50)	0.05	0.07	0.08	0.1	0.12
HHardened steels	45-55 HRC	IT5210 IT5110	75 (50-100)	0.08	0.1	0.12	0.14	0.17
HHardened steels	55-65 HRC	IT5210	55 (40-75)	0.06	0.08	0.1	0.12	0.14

Valori indicativi con ap pari al 15-25% del diametro dell'inserto. Con passate più leggere il truciolo si assottiglia: fz può salire fino al doppio (es. RDHX 10 su acciaio temprato: ap 0.5-1 mm, fz 0.10-0.24 mm/dente). Acciai temprati: lavorare a secco con aria compressa.

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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.