

THREADING · TAPS · FORMING TAPS

Forming tap - through and blind holes

Fluteless tap that cold-forms the thread without chips: stronger and ideal for blind holes in steels, stainless steels and aluminium.



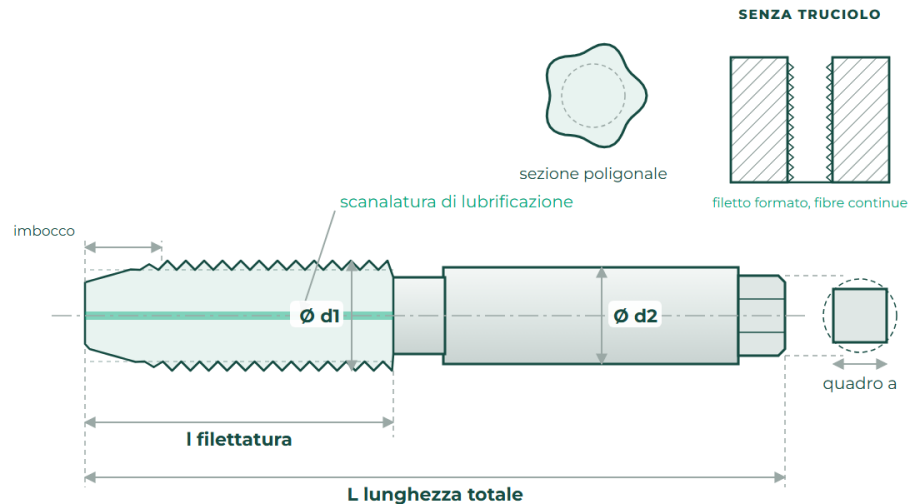
KEY DATA

Product type	Taps
ISO materials	P steel M stainless N aluminium
Online page	innot-it.com/en/prodotto/maschio-a-ruolare

Technical drawing

Maschio a rullare

Filetto formato a freddo, senza truciolo - acciai, inox, alluminio



passanti e ciechi

nessun truciolo

toll. 6HX

M2 - M16

INNOT

At a glance

Hole type	Through holes and blind holes, with the same tool
Process	Cold forming: the lobes of the tap displace the material and form the thread, without chips
Chamfer	Form C (2 - 3 threads) for blind holes, form D (3.5 - 5 threads) for through holes

Thread depth	Up to $2.5 \times d$
Advantages	Stronger thread (continuous grain flow and work-hardened surface), no chips to evacuate, longer tool life, excellent flank finish
Good to know	Higher torque than a cutting tap and a larger tap drill, to be made accurately
Tolerance	6HX (ISO 2); 6GX on request
Tool material	HSS-E; HSS-E-PM for alloy steels and series production
Design	Reinforced shank from M2 to M10 (DIN 371), reduced shank from M12 (DIN 376)

Materials

	Materials
Suitable	Acciai da costruzione, da cementazione e bonificati fino a 1200 N/mm ² , inox austenitici, alluminio e leghe con Si fino al 10 %, rame, ottone a truciolo lungo. Serve un allungamento a rottura di almeno l'8 - 10 %.
Not suitable	Grey cast iron, leaded brass and short-chipping bronze, die-cast aluminium with Si over 10 %, brittle materials: for these use the cast iron tap.

Sizes and tap drill

Thread	Pitch P	Tap drill Ø	L overall	l thread	Ø d2 shank	Square a
M2	0,4	1,8	45	8	2,8	2,1
M2,5	0,45	2,3	50	9	2,8	2,1
M3	0,5	2,8	56	11	3,5	2,7
M3,5	0,6	3,2	56	12	4	3
M4	0,7	3,7	63	13	4,5	3,4
M5	0,8	4,65	70	16	6	4,9
M6	1	5,55	80	19	6	4,9
M8	1,25	7,45	90	22	8	6,2
M10	1,5	9,35	100	24	10	8
M12	1,75	11,2	110	28	9	7
M14	2	13,1	110	30	11	9
M16	2	15,1	110	32	12	9

Misure in mm. Il preforo del maschio a rullare è più grande di quello per maschi a taglio (circa $d - 0,45 \times P$): dal preforo dipende l'altezza della cresta, quindi rispetta il valore in tabella con tolleranza stretta. Misure oltre M16 su richiesta.

Coatings by material

Material	Recommended coating	Guide Vc
Structural and annealed steels	TiN ★ · TiCN for series production	10 - 25 m/min
Quenched and tempered and alloy steels	TiCN ★ · AlCrN	8 - 15 m/min
Stainless steels	Steam oxide ★ · TiN	6 - 12 m/min
Aluminium, copper and long-chipping brass	CrN ★ · DLC	15 - 30 m/min

Consigli d'uso

- Lubrication is decisive: neat oil or a rich emulsion (at least 10 %), never dry.
- In blind holes drill at least 2 – 3 pitches deeper than the thread: the displaced material needs room.
- Check the torque of the machine or tapping head: about 50 % more is needed than with a cutting tap.
- Smussa l'ingresso del foro: la formatura solleva un leggero bordo sul primo filetto.

Selection guide

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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.