



Flowtapping

Chipless cold formed threads.



A threading method, where the thread is formed by a cold forming tap. The material is extruded into the desired size and pitch, without any cutting at all, eliminating mostly all possible disadvantage from the process of cutting in metals. Roll-form tapping is a method to be applied in all materials with suitable cold forming characteristics, i.e.:

The possibilities with Flowtapping:

Roll-form tapping is suitable in almost any bendable material with a tensile strength up to approx. 1200 N/mm², in some cases up to 1400 N/mm².

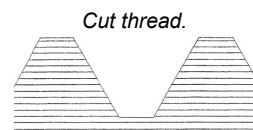
Specific applications can necessitate practical testing, in which we will be happy to assist.

Good experiences has been made with diameters up to 40mm and pitch with a maximum of 3mm.

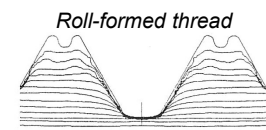
Brittle material (i.e. CuZn40Pb 2) is not suitable for Flowtapping.

Steel, stainless, aluminium, copper lead, brass (not brittle types) and even hardened materials can be roll-formed with threads.

By Flowtapping the material structure is preserved thereby giving better strength of the thread.



Material structure cut through, increase vulnerability to breakage.



Stronger, easier, more productive and chipless.

The advantages of Flowtapping are numerous :

- much stronger threads than traditionally cut thread. Increased pull- and wear-resistance
- precise tolerances
- increased tapping speed, common range 10 – 50 mtr/sec
- no problems with chips
- better tool life-time
- less tool breakage
- easy and efficient process, being applied without cutting
- especially fine results in deep bottom-holes, up to 4 x diameter, due to absence of chips
- major advantages in automation
- lead screws in automatic tapping machines not needed

Historical

Cold formed threads have been widely known and acknowledged through many Years, as a production method for outside threadings on bolts. Best known is probably Unbrako®, which already in the 1920'ies set new standards, obtained by the use of cold formed threading, as the significant part of their production technology, combined with the characteristic inner hexagon for the "Unbrako®-key".

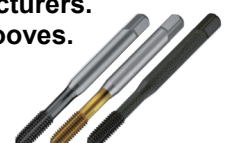
Since then, cold formed threading has evolved to be used also in tapping, due to the fact that the cold forming process holds major advantages, namely; Higher pull strength and better wear resistance.

Together with the fact that cold forming taps usually offers better tool lifetime, increased cycle speed and far less risk of tap breakage, as well as the absence of swarf in the process is an extra, appreciative benefit in every kind of production, the advantages counted are numerous in rational, modern, industrial production.

We deliver quality roll-forming threading taps from specialized threading tool manufacturers.

Our customers prefer roll-forming taps with TiN coated surface treatment and oil grooves.

Customer experiences verify that this combination is the best choice, both productionwise as to minimizing operating costs.



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Import and distribution of Flowdrill® frictional drilling systems and roll-forming taps, used for strong bushings in tubes and sheet metal.

We have been using Flowdrill® and roll-forming taps since the Flowdrill introduction in 1980 and were offered the agency in 1991.

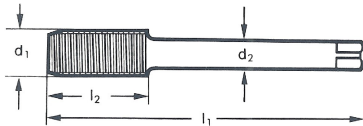
Additional product information, prices etc. can be found on : www.dts-aa.dk

Roll formed Threads

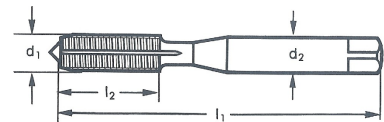
Guideline and specifics



1/2" BSP in alum. profile,
in Flowdrill® Ø20,0 hole



Cold formed threading. Standards and usability



Cold forming threading taps are manufactured to exactly the same standards and tolerances as cutting taps. Cold forming threading taps are delivered with shafts applicable to existing tool fixtures and tapping heads. Cold forming threading taps are deliverable with surface treatments; Nitrated, TiN, TiAlN, Co amo. Cold forming threading taps are deliverable with grinded oil grooves to improve lubricating efficiency. Cold forming threading taps are deliverable in both oversize measures, as for counter clockwise threading. Cold forming threading taps are deliverable specially grinded for specific tasks as i.e. conical threads etc.

Process and technique :

In general the same equipment, machinery and procedure is applicable for flowtapping as when tapping threads by cutting. Cold forming thread taps are advantageous in i.e. CNC-machinery, turning lathes, drilling stands both with reversible spindle or by use of reversible tapping attachment, by manual hand-drilling machine, by battery-powered hand-drilling machine, by tapping automat with/without lead schrew a.m.o. Flowtapping require approx. 2 times the torque of ordinary thread cutting.

Threading types:

All common types can be cold formed:

- i.e.:
- Metric, and Metric-fine.
 - BSP.
 - NPT
 - UNC
 - UNF
 - BSW
 - W
 - a.m.o.

CONSULT US FOR FURTHER GUIDANCE !!

Drill sizes:

It is crucial that the drill-size used is correct, in order to achieve a hole-size approx. the size of the outer diam. deducted half the height of the thread flank.

Calculation formulas described below can be applied:

Drilling diameter for thread with 55° angle (i.e. G, W) :

$$\varnothing(\text{Drill}) = \varnothing(\text{Thread}) - (0,57 \times \text{thread-pitch})$$

Drilling diameter for thread with 60° angle (i.e. M, M-fin) :

$$\varnothing(\text{Drill}) = \varnothing(\text{Thread}) - (0,46 \times \text{thread-pitch})$$

To obtain further information regarding roll-forming threads, tools and machinery

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All prices, specifications and calculations are to be considered strictly indicative, presenting no grounds whatsoever for liability claims of any kind.

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COLD FORMED THREADS IN MASSIVE MATERIAL.				
TiN-treated, high-quality cold forming tap with oil grooves.				
Thread	Recommended drilling diam. in massive material	RPM in Mild Steel (St37)	RPM in Stainless	RPM in Cu / Al
		20 - 50 m/min	10 -18 m/min	20 - 50 m/min
M2	1,8	3200-7900	1600-2850	3200-7900
M3	2,8	2100-5300	1050-1900	2100-5300
M4	3,7	1600-4000	800-1430	1600-4000
M5	4,6	1250-3200	630-1150	1250-3200
M6	5,5	1050-2650	530-950	1050-2650
M8	7,4	800-2000	400-715	800-2000
M10	9,3	630-1600	320-570	630-1600
M12	11,2	530-1325	260-475	530-1325
M16	15,0	400-1000	200-360	400-1000
M20	18,8	320-800	160-285	320-800
G1/16	7,4	800-2000	400-715	800-2000
G1/8"	9,4	630-1600	320-570	630-1600
G1/4"	12,6	485-1200	240-435	485-1200
G3/8"	16,0	380-950	190-345	380-950
G1/2"	20,2	300-760	150-270	300-760
G3/4"	25,7	240-600	120-215	240-600
G1	32,2	190-480	95-170	190-480
It is assumed that machinery is capable of performing the process, and that the roll-forming tapping process is adequately lubricated.				
Roll-forming taps with surface treatment and oil grooves is recommendable.				
Indutek/Danish Tool Systems delivers Flowtaps from M2 to 1 1/2" BSP, produced by leading manufactureres.				