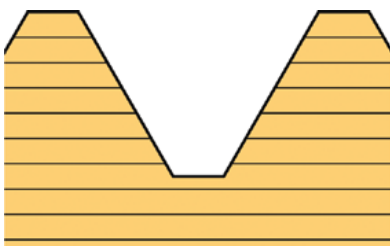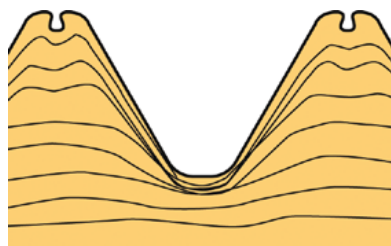# BaerCoil® Forming Taps

BaerCoil® Forming Taps

The thread is formed and not cut. Specialized BaerCoil® forming taps, which form and plasticize the material, are used for this purpose. The parent thread material is compressed to make it stronger.
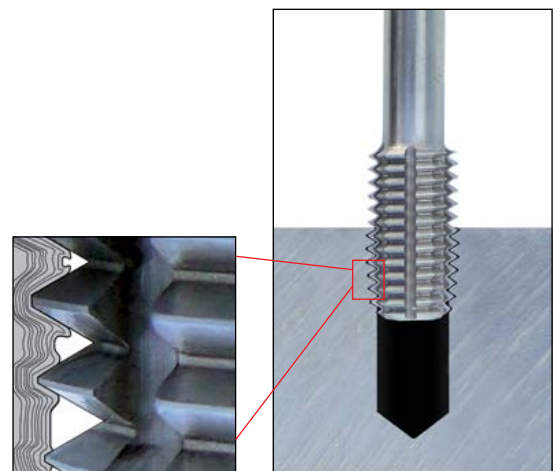
Result: The thread into which the BaerCoil® wire thread insert is turned has a significantly **higher load capacity**. The process of thread forming is **faster** and produces a **better surfac**e than thread cutting. Additionally there are **no chips**, and the thread forming tap has a **longer life time**.

Grain structure of a cutted thread

Grain structure of a formed thread
The patent material gets compressed, will be strengthed and the resistance of the thread gets increased

BaerCoil® System for strongest bolted connection

The BaerCoil® System's combination of thread forming and wire thread insert make modern dimensions possible for construction, development and improvement of previous building components.
Cryogenic Materialtests - CryoMaK within the Institute for Technical Physics at the Institute of Technology in Karlsruhe – KIT – have conducted pull-out strength tests. And customers, after performing internal tests, are already taking advantage of the system and have integrated it into their production process.
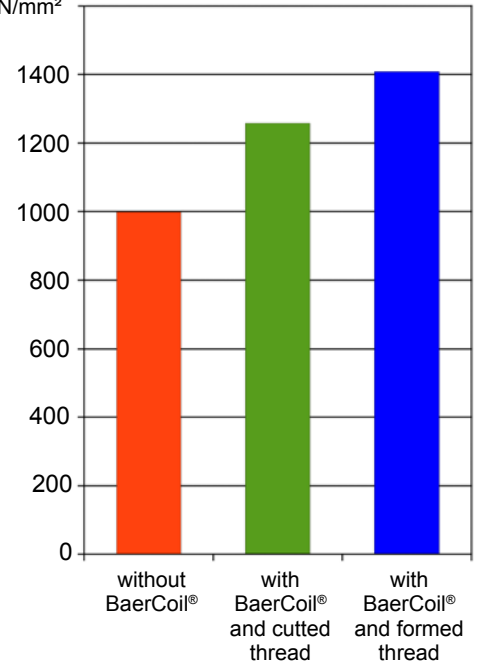
Advantages:
- increased pull out strength and torque of the formed threads
- creates a better surface quality
- no problems with chip
- longer tool lifetime

Materials:
- stainless steel materials up to 950 N/mm²
- construction steels up to 800 N/mm²
- heat-treatable steels up to 1000 N/mm²
- aluminium alloys
- zinc alloys
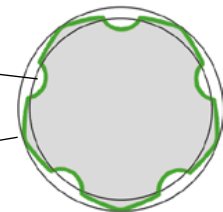- copper alloys

tensile strength N/mm²

1400	
1200	
1000	
800	
600	
400	
200	
0	

without BaerCoil® | with BaerCoil® and cutted thread | with BaerCoil® and formed thread

BaerCoil® Forming Taps

HSSE	EG
TIN	STI

works standard

2-3 x P Form C

Lubrication grooves

Forming lobe

M	D1	D2	L1	L2	□	🛠	No.	€
M 2 x 0,4	2,54	2,8	50	9,0	2,10	2,35	B3601	45,10
M 2,5 x 0,45	3,11	3,5	56	10,0	2,70	2,90	B3603	45,10
M 3 x 0,8	3,68	4,5	63	12,0	3,40	3,40	B3605	38,00
M 4 x 0,7	4,94	6,0	70	14,0	4,90	4,60	B3607	39,00
M 5 x 0,8	6,07	6,0	80	16,0	4,90	5,65	B3608	40,50
M 6 x 1,0	7,34	8,0	90	18,0	6,20	6,85	B3609	43,00
M 8 x 1,25	9,67	10,0	99	20,0	8,00	9,05	B3611	50,00
M 10 x 1,5	11,99	9,0	100	22,0	7,00	11,30	B3615	53,00
M 12 x 1,75	14,33	11,0	110	25,0	9,00	13,50	B3620	68,50

Please inquire further thread standards and dimensions.

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BaerCoil Forming Tap M 10 x 1.5

Forming speeds for BaerCoil® Forming Taps

materials	tensile strength	forming speed in m/min	recommended lubrication
construction steels, free-macining steels, cold-extrusion steels etc.	< 600 N/mm²	20 - 80	Cutting oil/ Emulsion
construction steels, heat-treatable steels, cast steels etc.	< 800 N/mm²	20 - 60	Cutting oil/ Emulsion
heat-treatable steels, cold-extrusion steels, nitriding steels etc.	< 1000 N/mm²	10 - 40	Cutting oil
corrosion and acid proof steels ferritic, martensitic	< 950 N/mm²	10 - 25 (with emulsion just limitedly applicable)	Cutting oil
corrosion and acid proof steels austenitic	< 950 N/mm²	10 - 25 (with emulsion just limitedly applicable)	Cutting oil
aluminium wrought alloys	< 550 N/mm²	15 - 40	Cutting oil/ Emulsion
aluminium cast alloys	Si < 12%	15 - 40	Cutting oil/ Emulsion
pure copper	< 400 N/mm²	20 - 40	Cutting oil/ Emulsion
copper-zinc alloys (brass long-chipping)	< 550 N/mm²	40 - 80	Emulsion

forming (cutting) speed [m/min] = (diameter * π * number of rotation) / 1000
number of rotation n [1/min] = (cutting speed in m/min * 1000) / (diameter * π)
feed programming [mm/min] = number of rotation * pitch
Please notice that the mentioned cutting speeds are only for orientation.
The right cutting speed is depend on lubrication and application.