

<b>UNC</b>	American National Coarse Thread
<b>UNF</b>	American National Fine Thread
<b>BSW</b>	British Standard Whitworth Thread
<b>BSF</b>	British Standard Fine Thread
<b>BSP/</b>	British Standard Pipe Thread
<b>G</b>	ISO 228/1 Pipe Thread
<b>BA</b>	British Association Standard Thread



**HeliCoil**<sup>®</sup> *plus*

Imperial thread inserts for metals

**BÖLLHOFF**

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## HELICOIL® plus Thread Technology

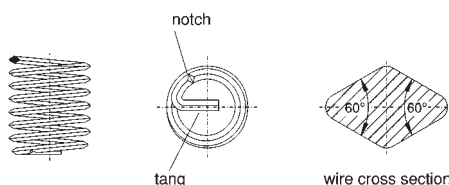
### The System

Thread inserts achieve a heavy-duty connection capability in low-strength metal materials and have been proven practice for over fifty years. These thread inserts, made from a well-proven and tested quality stainless steel are formed from rhomboidally profiled wire into a resilient spiral. After installation the tang can be broken off at the notch (pre-set break-off point), if required for through hole applications.



### The latest generation for this technology is called HELICOIL® plus.

Due to its optimal fitting structural shape, installation of HELICOIL® plus has been made far more simple. This is guaranteed by the installation area, which facilitates that the HELICOIL® plus can be utilised as a screw and screwed-in. The tool sleeve required until now with its leader cartridge is no longer necessary. Only a fitting mandrel is now required for screwing-in. But the acceptable available structural form tools can still be utilised.



- $R_m$  = tensile strength minimum 1400 N/mm<sup>2</sup>
- HV = Vickers hardness minimum 425 HV 0,2
- $R_z$  = roughness depth approximately 2,5  $\mu$ m
- $\mu_G$  = reduced and constant thread friction, results in a heightened pre-stressing force  $F_y$
- $\tau_t$  = reduction in the torsion stress in the screw shank

### The Technology

HELICOIL® plus thread inserts distinguish themselves through a high wearing tensile strength, low thread friction with tight tolerances, a high surface quality as well as corrosive and heat resistance.

The material and nut thread strength pre-determined performance limits are increased through the Internationally tried and tested HELICOIL® plus thread technology.

## HELICOIL® plus Thread Technology

### The Versions

HELICOIL® plus thread inserts are available in two versions: HELICOIL® plus free running and HELICOIL® plus screwlock. Both variations distinguish themselves due to an optimal design. As with a screw the threaded inserts are simply screwed in by means of a fitting mandrel. The fitting time is reduced by up to 20% due to the fact that the program of utilisable tools has been so radically extended compared to previous methods of operations. HELICOIL® plus is available for the sizes G, UNC and UNF less and equal 1/2" inch. All other sizes are produced as HELICOIL® plus.

#### ■ HELICOIL® plus free running

The thread insert with its precision-formed rhomboidal profile is coil for coil free running. The result is a true-to-gauge internal thread, double sided utilisable. After the HELICOIL® installation the thread has the tolerance 2B or 3B in accordance to NASM 33537 for 3B, special tapping tool has been used. (Details see page 26)

The HELICOIL® plus free running is coloured green for better identification in its fitted condition and the colour does not come off.

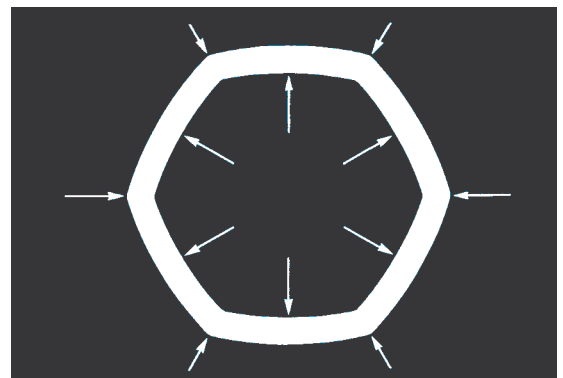
Every Böllhoff original HELICOIL® plus free running thread insert is unmistakably identified by means of a diamond shaped quality embossing at the end of the final coil.



#### ■ HELICOIL® plus screwlock

HELICOIL® plus screwlock offers the same thread technological advantages as HELICOIL® plus free running. In addition, a screw-locking section is worked in, which serves as a screw-locking device. The locking of the screw is achieved by means of one or several polygons formed coils, which grip the threads of the installed screw. In this way an elastically resilient friction lock is created. The locking torque achieved in this way is defined in the standard NASM 8846 for UNC and UNF sizes in accordance to NASM 21209 or can be individually adapted to problemsolutions. Standard values for the lock moments can be found in the table on page 7.

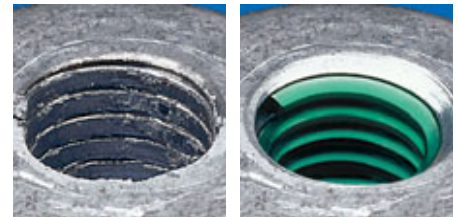
The red coloured HELICOIL® plus screwlock thread insert, also stamped with the diamond formed embossing, should only be utilised with higher grade screws (starting from 8.8). High grade alloyed screws should be lubricated according to the recommendations of the manufacturer. The same torque should be applied as for the HELICOIL® plus free running.



## HELICOIL® plus Thread Technology

### The Applications

HELICOIL® plus provides high strength threads, by means of transferring the stress from flank to flank into the holding thread. A system of high reliability, that has been registered for German and International Trade Mark Rights with world-wide coverage. HELICOIL® plus is a guarantee for standardised material and quality requirements for manufactured thread inserts. They are the basis of national standards, aeronautical standards, military standards, and also for in-house standards of leading major users.



Damaged thread

Repaired thread

#### ■ Design Element

Anywhere where materials of low shearing strength are utilised (**for example aluminium, alu-magnesium alloys and reinforced plastic**), HELICOIL® plus is indispensable for **thread reinforcement**. Branches that are especially effected by this are machine and plant construction, the automobile industry, electronic and medicine technology as well as aeronautics and the astronautics industries. By use of the thread reinforcement, wear and tear of the nut thread can be ruled out even with regular functions.

HELICOIL® plus makes the development of **miniaturisation** and **lightweight design** for volume parts possible. Stability is guaranteed by the use of threading reinforcement with HELICOIL® plus.

#### ■ Reject Reclamation and Repairing of Threads

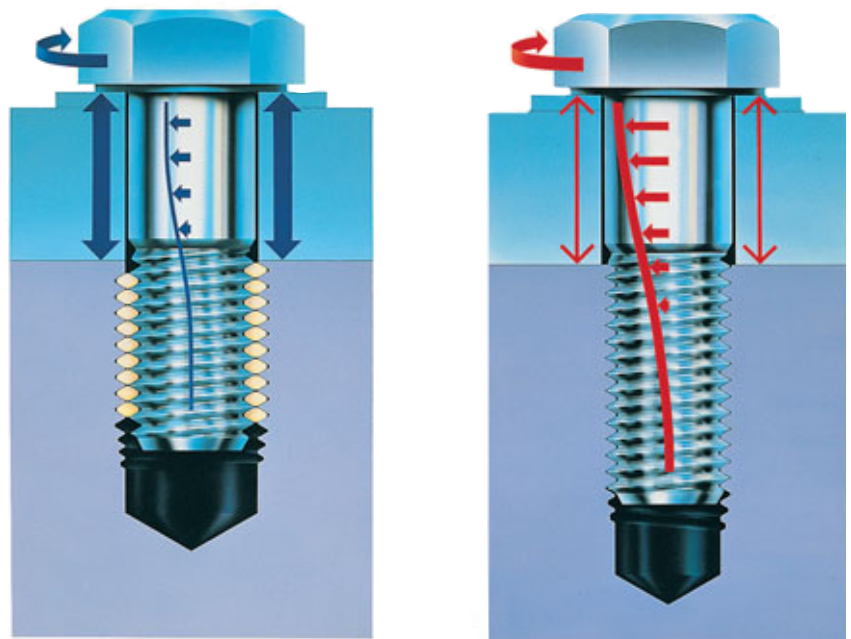
HELICOIL® plus thread inserts have been released world-wide for the economical and lasting repairing of damaged or worn out threads.

Alongside the repair of valuable individual components, the possibility of recycling damaged threads of rejected large production volume component parts, allowing for the feed back into the production process, is of major importance.

### The Advantages

#### ■ Wear and Tear Stability

HELICOIL® plus thread inserts are manufactured from austenitic chrome-nickel-steel (tensile strength of a minimum 1400 N/mm<sup>2</sup>). The formed thread provides a high surface quality. This guarantees a heavy-duty, wear and tear resistant thread with an extremely low constant thread friction force. This allows for a constant pre-stressing being achieved with the identical tightening torque upon repeated re-screwing. This leads simultaneously to a better utilisation of the yield point for high strength screws. The torsion stress is noticeably reduced hereby: In comparison with cut threads, the surface roughness depth is up to 90% lower with HELICOIL® plus.

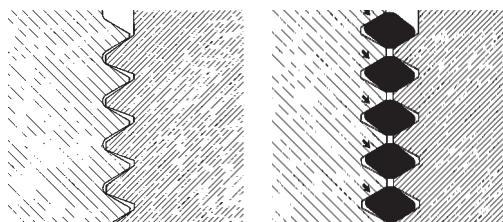


**HELICOIL® plus Thread Technology**

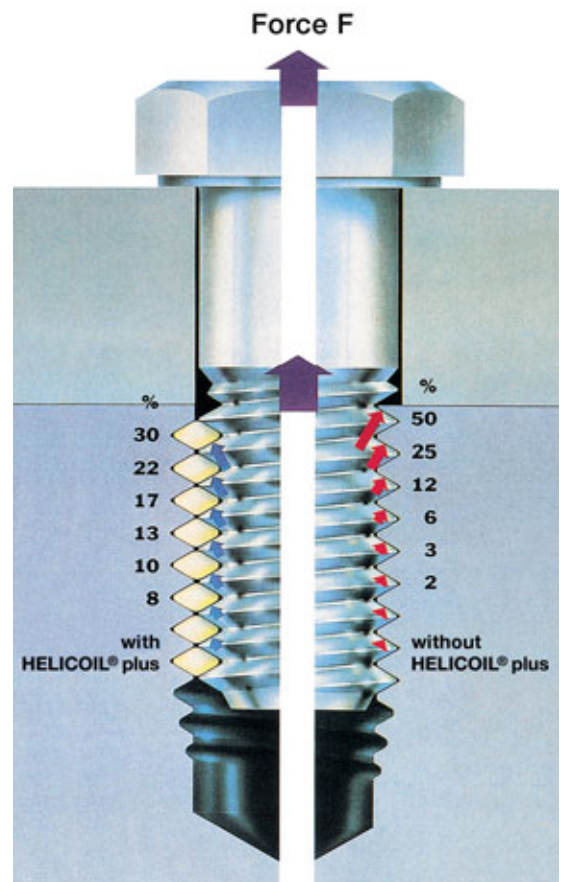
**The Advantages**

■ **Stronger Assemblies**

The flexible characteristics of the HELICOIL® plus thread inserts provide an uniform loading and tension distribution and with that, a perfect thread pitch angle. Pitch and angle defects are balanced out over the entire length of the thread insert. Therefore an ideal force transfer is achieved between the bolt and the nut thread. The durability of the thread connection is significantly increased. This applies to both static and dynamic work loads.



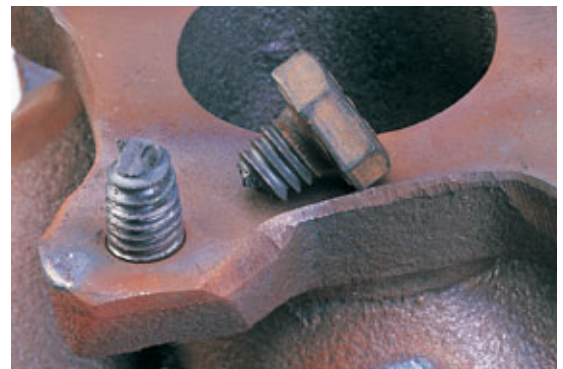
Due to the better repartition of the screw-load, the fatigue strength of a screw will be increased. This is an argument for to use HELICOIL® even in high strength parent material, for example steel or casted iron.



■ **Corrosion Resistance, wide Temperature Range**

The material properties of the HELICOIL® plus ensure that locking and tight gripping of screws under normal environmental conditions does not occur. HELICOIL® plus thread inserts made from nickel based materials (INCONEL and NIMONIC 90) are available for thermal high stressed thread connections, with or without any coating. Elasticity and springiness is preserved even under high temperatures.

HELICOIL® plus from high-strength hard coated aluminium has been specially developed for utilisation with materials liable to high corrosion such as magnesium. Contact corrosion is hereby ruled out.



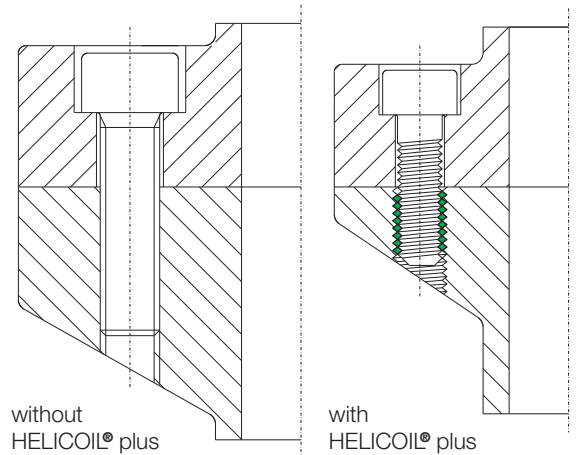
## HELICOIL® plus Thread Technology

### The Advantages

#### ■ Freedom of design

HELICOIL® plus thread inserts allow a wide range for the designer in the choice of materials and material thickness. The actual trend towards lightweight design (for example from magnesium) is fulfilled by HELICOIL® plus with highest loading capacity by means of thread reinforcement with its simultaneous low area requirement. Due to fewer connection points and a reduction in screw sizes, the saving of materials, size and weight with the same or higher requirements HELICOIL® plus leads to a substantial reduction in costs.

- shorter female threads
- smaller screw with higher strength class

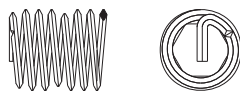


#### ■ Fitting Stability

The outer diameter of the HELICOIL® plus thread insert is larger than that of the tapped thread by a precisely calculated value in the non-fitted condition. This difference ensures, in addition to the inherent spring action of the HELICOIL® plus thread insert material radial expansion, a stable, play-free positioning in the nut thread. Additional fixing elements adhesives – such as required for fixed bushes – are no longer necessary. For utilisation of hammer driven screws please consult our technical consultant.



### Enhanced Screw locking by using of HELICOIL® plus screwlock



Thread technology and the polyagonal coils of the HELICOIL® plus screwlock ensure a high enhanced screw gripping and with that a counteraction of the self-loosening of the screws. An additional fixing connector such as of a splint, wire or washer is not necessary. This reduces costs and ensures easier assembly.

Maximum locking torque for HELICOIL® plus and HELICOIL® plus screwlock as per NASM 8846 for insertion or removal and minimum release torque for screw fasteners  
Values in Nm

UNC = American National Coarse Thread

Thread	1-64	2-56	3-48	4-40	5-40	6-32	8-32	10-24	12-24	1/4"-20	5/16"-18	3/8"-16	7/16"-14	1/2"-13
Max. lock torque Insertion or removal	0.11	0.14	0.23	0.34	0.53	0.68	1.02	1.47	2.71	3.39	6.78	9.04	11.30	16.95
Min. release torque 1.-15 screws, min.	0.01	0.02	0.05	0.07	0.09	0.11	0.17	0.23	0.34	0.51	0.85	1.36	1.86	2.71

UNF = American National Fine Thread

Thread	3-56	4-48	6-40	8-36	10-32	12-28	1/4"-28	5/16"-24	3/8"-24	7/16"-20	1/2"-20	-	-	-
Max. lock torque Insertion or removal	0.23	0.34	0.68	1.02	1.47	2.71	3.39	6.78	9.04	11.30	16.95	-	-	-
Min. release torque 1.-15 screws, min.	0.05	0.07	0.11	0.17	0.23	0.34	0.40	0.73	1.07	1.58	2.03	-	-	-

Locking torques of other inch sizes on request.

**HELICOIL® plus Thread Technology**

**Materials**

Thread insert Materials <sup>①</sup>	Temperature resistance	Minimum tensile strength at room temperature	Available surface treatment <sup>①</sup>	Examples of use	
Stainless steel A 2 X5 CrNi 18 10 Material no. 1.4301	-195°C low temp. 425°C short-time 315°C long-time	1400 N/mm <sup>2</sup>	– without – waxed – dry lubricating film – cadmium plated – silver plated	standard uses for all strength categories > 8,8 and materials <sup>②</sup>	general light construction, e.g. aluminium or aluminium alloys <sup>③</sup>
Stainless steel A 4 X6 CrNiMoTi 17 12 2 <sup>④</sup> Material no. 1.4571	-195°C low temp. 425°C short-time 315°C long-time	1400 N/mm <sup>2</sup>		– increased corrosive protection – high grade alloy CrNi steel screws <sup>③</sup> – low thread friction	general light construction, sea water / chlorinated water
Bronze CuSN 6 Material no. 2.1020.34	300°C short-time 250°C long-time	900 N/mm <sup>2</sup>	– without – cadmium plated	– Cu work pieces – expansion threads – CrNi screws	
Inconel X 750 NiCr 15 Fe 7 TiAl <sup>④</sup> Material no. 2.4669	750°C short-time 550°C long-time	1150 N/mm <sup>2</sup>	– without – silver plated	– thermal stress in conjunction with corrosive protection	– astronautics – aeronautics – turbo-chargers
Nimonic 90 NiCr 20 Co 18 Ti Material no. - 2.4632	900°C short-time 600°C long-time				
Aluminium alloy AlZnMgCu 1,5 <sup>④</sup> Material no. 3.4365	170°C short-time 150°C long-time	500 N/mm <sup>2</sup>	– hard anodized – dry lubricating film	– magnesium work pieces	– vehicle technology – lightweight construction

① Other materials or surface upon enquiry  
 ② Special anti-corrosive measures must be made when utilising magnesium alloys  
 ③ If CrNi screws are utilised, a commercially available lubricant must be used  
 ④ Non-stock item, delivery upon enquiry

Note: These data are valid only for uncolored HELICOIL® plus.  
 To M 5 has the applied color a temperature stability from -18 °C to +200 °C  
 Starting from M 6 the applied color has a temperature stability from -5 °C to +120 °C (short time +150 °C)

**Thread Types**

Thread	HELICOIL® plus free running		HELICOIL® plus screwlock		Page
	Nominal diameter	Nominal length	Nominal diameter	Nominal length	
UNIFIED or American national coarse threads = UNC/NC	2-56 to 1 1/2"-6	1 d to 2.5 d	2-56 to 3/4"-16	1 d to 2.5 d	10 – 19
UNIFIED or American national fine threads = UNF/NF	3-56 to 1 1/2"-12	1 d to 2.5 d	3-56 to 3/4"-16	1 d to 2.5 d	
British Standard Whitworth Thread= BSW	1/8" to 1 1/2"	1 d to 2.5 d	5/16" to 3/4"	1 d to 3 d	
British Standard Fine Thread = BSF	3/16" to 1 1/2"	1 d to 2.5 d	3/16" to 3/4"	1 d to 2.5 d	
Pipe Thread G ISO 228/1, British Standard Pipe thread = BSP	G 1/8" to G 1 1/2" 1/8" to 1 1/2"	1 d to 2.5 d	–	–	
British Association Standard Thread = BA	OBA to 6BA	1 d to 2.5 d	OBA 2BA 4BA 6BA	1 d to 2.5 d	
Metric ISO thread standard thread	M 2 to M 68	0.5 d to 3 d	M 2 to M 39	0.75 d to 3 d e	see cat.
Metric ISO thread fine thread	M 8 x 1 to M 160 x 6	0.5 d to 3 d	M 8 x 1 to M 64 x 4	0.75 d to 3 d	0100

⑤ Not possible for M 2 and M 2.5.

HELICOIL® plus thread inserts complying with multiple requirements and standards from general industry, aerospace industry like DIN 8140, DIN 65536, LN 9039, LN 9499.  
 For UNC and UNF sizes, see page 9b.  
 Further standards (p.e. MS or EN-standards) upon inquiry.

HELICOIL® plus Thread Technology Design Guidelines

HELICOIL® plus Thread Inserts Technical Data

Determination of the Nominal Lengths

Guideline values for determining the length of the HELICOIL® plus thread insert relative to the parent material and the screw yield point, valid for temperatures of 20°C

Strength of the parent material Tensile strength R <sub>m</sub> (N/mm <sup>2</sup> )	Screw quality category								
	3.6 4.6	4.8 5.6	5.8 6.6	6.8 6.9	8.8	9.8	10.9	12.9	14.9
up to 100	1.5 d	1.5 d	2 d	2.5 d	3 d	3 d	-	-	-
> 100 – 150	1.5 d	1.5 d	2 d	2 d	2.5 d	2.5 d	2.5 d	2.5 d	3 d
> 150 – 200	1 d	1.5 d	1.5 d	1.5 d	2 d	2 d	2 d	2.5 d	2.5 d
> 200 – 250	1 d	1 d	1.5 d	1.5 d	1.5 d	1.5 d	2 d	2.5 d	2.5 d
> 250 – 300	1 d	1 d	1 d	1 d	1.5 d	1.5 d	1.5 d	2 d	2 d
> 300 – 350	1 d	1 d	1 d	1 d	1 d	1.5 d	1.5 d	1.5 d	2 d
> 350 – 400	1 d	1 d	1 d	1 d	1 d	1 d	1.5 d	1.5 d	1.5 d
> 400	1 d	1 d	1 d	1 d	1 d	1 d	1.5 d	1.5 d	1.5 d

The figures are valid for materials with a tensile to shear strength ratio of  $\frac{\text{shear strength}}{\text{tensile strength}} = 0.65$ ; like aluminium and steel alloys.

Cast iron alloys have a ratio of  $\frac{\text{shear strength}}{\text{tensile strength}} = 0.8$  to 1.4

The guideline values must be assessed so that the screw is always the weakest part of the connection.

Falling short of recommended nominal lengths is acceptable, if it is proven by testing.

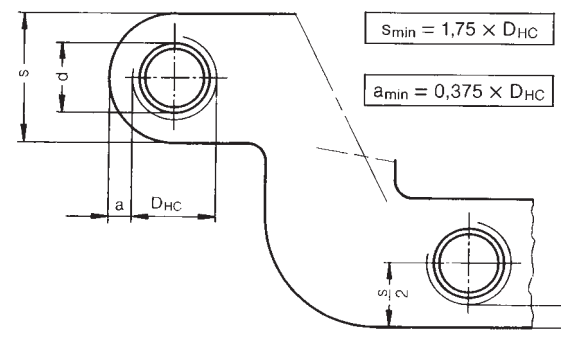
Intermediate lengths are also available.

The rating of the temperature stressed screw connection must take the change of temperature dependant materials into consideration.

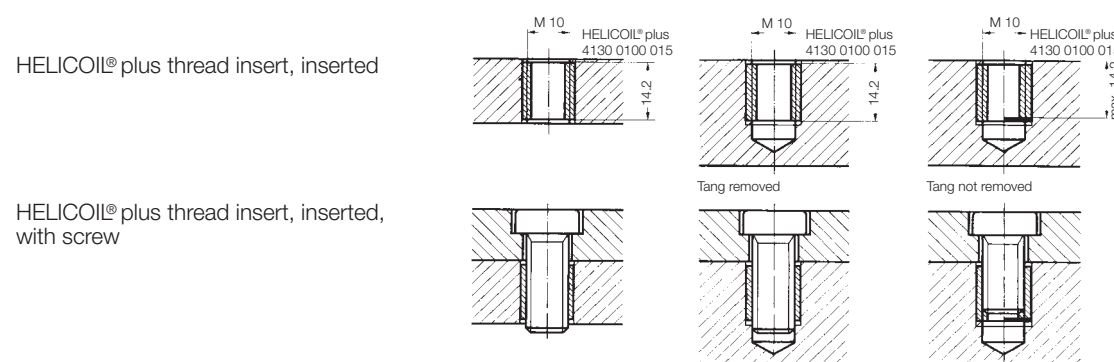
Minimum Wall Thickness

Assessment of the minimum wall thickness is mainly pre-determined by the individual operating data. These in turn determine the strength of the material and the length of the thread. The quoted guideline value formula applies to aluminium, cast and wrought alloys and a HELICOIL® plus screw-in thread length of 1.5 d.

- d = nominal diameter
- D<sub>HC</sub> = HELICOIL® plus outer diameter
- a = remaining wall thickness



Graphic representation for the example M 10 x 15:



HELICOIL® plus thread inserts in compliance with aerospace and military standards:

Quality Management System:

The Böllhoff Quality Management System (QMS) was awarded EN 9100 quality assurance certification on 5th January 2004 and is therefore an approved supplier to the European aerospace industry.

HELICOIL® plus free running, UNC and UNF Imperial sizes

HELICOIL® plus free running inserts in Imperial sizes smaller than or the same as UNC 8-32 meet the geometric definitions of the following standards:

- UNC Threads: MS122076 – MS122275
- UNF Threads: MS124651 – MS124850

HELICOIL® plus free running inserts in Imperial sizes larger than UNC 8-32 and all UNF sizes do not meet the geometric definitions of these MS standards in their non-assembled state (shape of the first thread turn of HELICOIL® plus). In their assembled state, all HELICOIL® plus inserts in Imperial sizes meet the specifications of these standards.

Coloring: HELICOIL® plus free running inserts in Imperial sizes are colored green.

HELICOIL® plus screwlock, UNC and UNF Imperial sizes

HELICOIL® plus screwlock inserts in Imperial sizes larger than UNC 8-32 and all UNF sizes do not meet the geometric definitions of the MS21209 in their non-assembled state (shape of the first thread turn of HELICOIL® plus). In their assembled state, all HELICOIL® plus screwlock inserts in Imperial sizes meet the specifications of the MS21209 standard.

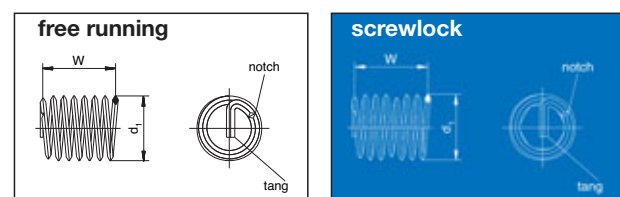
Coloring: HELICOIL® plus screwlock inserts in Imperial sizes are colored red as specified in the MS21209 standard.

Other standards are available on request.

For more information relating to compliance of our inserts with standards, please contact Böllhoff directly.

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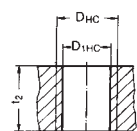
**HELICOIL® plus Thread Inserts**



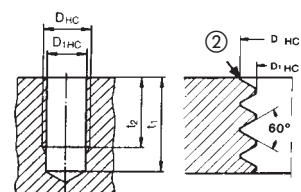
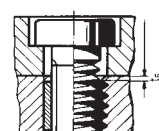
The free running and screwlock thread insert control values are W and d<sub>1</sub>, when not inserted.

Its length can only be measured when the insert is in position.

**Holding thread**



**Composition**



tang not broken off

- d = thread diameter
- P = pitch
- d<sub>1</sub> = outer diameter of thread insert prior to installation
- W = number of coils prior to installation
- D<sub>Hc</sub> = outer thread of tapped hole
- D<sub>1Hc</sub> = thread core diameter
- B = recommended twist drill diameter
- t<sub>1</sub> = minimum depth of core hole according to DIN 76 Part 1
- t<sub>2</sub> = nominal length of thread insert and minimum length of holding thread
- t<sub>3</sub> = maximum screw-in depth if tang has not been broken off
- t<sub>5</sub> = distance of thread insert from separating surface = 0.25 P, if t<sub>2</sub> complies with the above mentioned minimum value

② 90° countersinking or deburring before tapping:  
Countersinking diameter = D<sub>Hc</sub> + 0,1 mm.

■ Angle of pressure 60° with UNC/UNF.  
Deviating is valid for G-pipe threads of the angles of pressure 55° and for BA Thread 48°.

■ By utilisation of HELICOIL® plus thread inserts in series production it is recommended that the values t<sub>1</sub> and t<sub>2</sub> at a minimum however the size of 1 x P is always added.

① Materials or surfaces are always to be recorded with the 5<sup>th</sup> digit of the ordering ref. no.:

**Example:**

- 0 = Stainless steel A 2, X 5 CrNi 18 10      4130 002 0005
  - 1 = Bronze, CuSn 6
  - 2 = Nimonic 90, NiCr 20 Co 18 Ti, silver plated\*
  - 3 = Stainless steel A 4, X 6 CrNiMoTi 17 12 2
  - 4 = Inconel X 750, NiCr 15 fe 7 TiAl, silver plated\*
  - 5 = Inconel X 750, NiCr 15 fe 7 TiAl, polished
  - 6 = Stainless steel A 2, X 5 CrNi 18 10, cadmium plated
  - 7 = Stainless steel A 2, X 5 CrNi 18 10, magazine loaded\*\*
  - 8 = Bronze, CuSn 6, magazine loaded\*\*
- Other materials upon request

\* utilise special tools  
\*\* see pages 20 and 21

All dimensions in mm. Subject to technical modifications.

**Thread Inserts HELICOIL® plus – UNC/NC = American National Coarse threads**

d	P	t <sub>2</sub> min.*			d <sub>1</sub> min. max.	D <sub>1Hc</sub> min. max.	B	t <sub>3</sub> max.	D <sub>Hc</sub> min.	free running Order no. ①	screwlock Order no. ①
		x d	mm	W							
2-56	0.435	1 d	2.2	3.0	2.7	2.28	2.4	1.8	2.84	4130 063 6004	4132 063 6004
		1.5 d	3.3	5.25						4130 063 6006	4132 063 6006
		2 d	4.4	7.4						4130 063 6008	4132 063 6008
		2.5 d	5.5	9.6						4130 063 6010	4132 063 6010
4-40	0.635	1 d	2.9	2.8	3.6	3.00	3.1	2.5	3.67	4130 065 6004	4132 065 6004
		1.5 d	4.3	4.8						4130 065 6006	4132 065 6006
		2 d	5.8	6.8						4130 065 6008	4132 065 6008
		2.5 d	7.2	8.8						4130 065 6010	4132 065 6010
5-40	0.635	1 d	3.2	3.3	4.0	3.33	3.4	2.8	4.00	4130 066 6004	4132 066 6004
		1.5 d	4.8	5.5						4130 066 6006	4132 066 6006
		2 d	6.4	7.8						4130 066 6008	4132 066 6008
		2.5 d	7.9	10.0						4130 066 6010	4132 066 6010
6-32	0.794	1 d	3.5	2.8	4.5	3.68	3.8	3.1	4.54	4130 067 6004	4132 067 6004
		1.5 d	5.3	4.8						4130 067 6006	4132 067 6006
		2 d	7.0	6.7						4130 067 6008	4132 067 6008
		2.5 d	8.8	8.7						4130 067 6010	4132 067 6010
8-32	0.794	1 d	4.2	3.5	5.2	4.34	4.4	3.8	5.20	4130 068 6004	4132 068 6004
		1.5 d	6.3	5.9						4130 068 6006	4132 068 6006
		2 d	8.3	8.3						4130 068 6008	4132 068 6008
		2.5 d	10.5	10.7						4130 068 6010	4132 068 6010
10-24	1.058	1 d	4.8	2.9	6.2	5.06	5.2	4.3	6.20	4130 069 6004	4132 069 6004
		1.5 d	7.2	5.0						4130 069 6006	4132 069 6006
		2 d	9.6	7.1						4130 069 6008	4132 069 6008
		2.5 d	12.1	9.2						4130 069 6010	4132 069 6010
12-24	1.058	1 d	5.5	3.5	6.8	5.72	5.8	5.0	6.86	4130 070 6004	4132 070 6004
		1.5 d	8.2	5.9						4130 070 6006	4132 070 6006
		2 d	11.0	8.3						4130 070 6008	4132 070 6008
		2.5 d	13.7	10.7						4130 070 6010	4132 070 6010
1/4"-20	1.270	1 d	6.4	3.4	8.0	6.62	6.7	5.8	8.00	4130 074 6004	4132 074 6004
		1.5 d	9.5	5.7						4130 074 6006	4132 074 6006
		2 d	12.7	8.0						4130 074 6008	4132 074 6008
		2.5 d	15.9	10.3						4130 074 6010	4132 074 6010
5/16"-18	1.411	1 d	7.9	4.0	9.7	8.24	8.4	7.2	9.77	4130 076 6004	4132 076 6004
		1.5 d	11.9	6.6						4130 076 6006	4132 076 6006
		2 d	15.9	9.3						4130 076 6008	4132 076 6008
		2.5 d	19.8	11.9						4130 076 6010	4132 076 6010
3/8"-16	1.588	1 d	9.5	4.4	11.5	9.89	10.0	8.7	11.59	4130 077 6004	4132 077 6004
		1.5 d	14.3	7.2						4130 077 6006	4132 077 6006
		2 d	19.1	10.1						4130 077 6008	4132 077 6008
		2.5 d	23.8	12.9						4130 077 6010	4132 077 6010

\*Other lengths upon request.

① see folding page 9b

Further thread inserts on the following pages

**Thread Inserts HELICOIL® plus – UNC/NC = American National Coarse threads**

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no. ①	screwlock Order no. ①
		x d	mm								
7/16"-14	1.814	1 d	11.1	4.5	13.4	11.51	11.6	10.2	13.47	4130 078 6004	4132 078 6004
		1.5 d	16.7	7.4						4130 078 6006	4132 078 6006
		2 d	22.2	10.3						4130 078 6008	4132 078 6008
		2.5 d	27.8	13.1						4130 078 6010	4132 078 6010
1/2"-13	1.954	1 d	12.7	4.8	15.2	13.12	13.2	11.7	15.24	4130 079 6004	4132 079 6004
		1.5 d	19.1	7.9						4130 079 6006	4132 079 6006
		2 d	25.4	10.9						4130 079 6008	4132 079 6008
		2.5 d	31.8	13.9						4130 079 6010	4132 079 6010

**Thread Inserts HELICOIL® – UNC/NC**

9/16"-12	2.117	1 d	14.3	5.1	17.0	14.75	14.9	13.2	17.04	0130 080 6004	0132 080 6004
		1.5 d	21.5	8.3						0130 080 6006	0132 080 6006
		2 d	28.6	11.5						0130 080 6008	0132 080 6008
		2.5 d	35.7	14.7						0130 080 6010	0132 080 6010
5/8"-11	2.309	1 d	15.9	5.3	18.9	16.38	16.6	14.7	18.88	0130 081 6004	0132 081 6004
		1.5 d	23.8	8.3						0130 081 6006	0132 081 6006
		2 d	31.8	11.8						0130 081 6008	0132 081 6008
		2.5 d	39.7	15.0						0130 081 6010	0132 081 6010
3/4"-10	2.540	1 d	19.1	5.9	22.4	19.60	19.7	17.8	22.35	0130 083 6004	0132 083 6004
		1.5 d	28.6	9.4						0130 083 6006	0132 083 6006
		2 d	38.1	13.0						0130 083 6008	0132 083 6008
		2.5 d	47.6	16.6						0130 083 6010	0132 083 6010
7/8"-9	2.822	1 d	22.2	6.3	26.0	22.84	23.0	20.8	25.89	0130 085 6004	–
		1.5 d	33.3	10.0						0130 085 6006	–
		2 d	44.5	13.7						0130 085 6008	–
		2.5 d	55.6	17.4						0130 085 6010	–
1"-8	3.175	1 d	25.4	6.4	29.6	26.09	26.2	23.8	29.53	0130 086 6004	–
		1.5 d	38.1	10.2						0130 086 6006	–
		2 d	50.8	14.0						0130 086 6008	–
		2.5 d	63.5	17.8						0130 086 6010	–
1 1/8"-7	3.629	1 d	28.6	6.3	33.4	29.36	29.5	26.8	33.29	0130 087 6004	–
		1.5 d	42.9	10.0						0130 087 6006	–
		2 d	57.2	13.8						0130 087 6008	–
		2.5 d	–	–						0130 087 6010	–
1 1/4"-7	3.629	1 d	31.8	7.1	36.7	32.54	33.0	30.0	36.46	0130 088 6004	–
		1.5 d	47.6	11.3						0130 088 6006	–
		2 d	63.5	15.4						0130 088 6008	–
		2.5 d	–	–						0130 088 6010	–
1 3/8"-6	4.234	1 d	34.9	6.6	40.6	35.84	36.0	32.8	40.42	0130 089 6004	–
		1.5 d	52.4	10.6						0130 089 6006	–
		2 d	69.9	14.4						0130 089 6008	–
		2.5 d	–	–						0130 089 6010	–
1 1/2"-6	4.234	1 d	38.1	7.4	43.9	39.02	39.5	36.0	43.60	0130 090 6004	–
		1.5 d	57.2	11.6						0130 090 6006	–
		2 d	76.2	15.9						0130 090 6008	–
		2.5 d	–	–						0130 090 6010	–

\*Other lengths upon request.

① see folding page 9b

**Thread Inserts HELICOIL® plus – UNF/NF = American National Fine threads**

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no. ①	screwlock Order no. ①
		x d	mm								
4-48	0.529	1 d	2.8	3.4	3.7 4.1	2.97 3.12	3.0	2.5	3.53	4130 065 7004	4132 065 7004
		1.5 d	4.3	5.6				4.0		4130 065 7006	4132 065 7006
		2 d	5.7	7.9				5.4		4130 065 7008	4132 065 7008
		2.5 d	7.1	10.3				6.7		4130 065 7010	4132 065 7010
6-40	0.635	1 d	3.5	3.6	4.5 4.9	3.66 3.81	3.8	3.1	4.33	4130 067 7004	4132 067 7004
		1.5 d	5.3	6.0				4.9		4130 067 7006	4132 067 7006
		2 d	7.0	8.4				6.6		4130 067 7008	4132 067 7008
		2.5 d	8.8	10.8				8.4		4130 067 7010	4132 067 7010
8-36	0.706	1 d	4.2	4.0	5.3 5.7	4.32 4.47	4.4	3.8	5.08	4130 068 7004	4132 068 7004
		1.5 d	6.3	6.6				5.9		4130 068 7006	4132 068 7006
		2 d	8.3	9.1				7.9		4130 068 7008	4132 068 7008
		2.5 d	10.5	11.7				10.1		4130 068 7010	4132 068 7010
10-32	0.794	1 d	4.8	4.1	6.1 6.5	5.00 5.16	5.1	4.4	5.86	4130 069 7004	4132 069 7004
		1.5 d	7.2	6.8				6.8		4130 069 7006	4132 069 7006
		2 d	9.6	9.5				9.2		4130 069 7008	4132 069 7008
		2.5 d	12.1	12.1				11.7		4130 069 7010	4132 069 7010
1/4"-28	0.907	1 d	6.4	5.0	7.8 8.3	6.55 6.72	6.7	5.9	7.53	4130 074 7004	4132 074 7004
		1.5 d	9.5	8.1				9.0		4130 074 7006	4132 074 7006
		2 d	12.7	11.3				12.2		4130 074 7008	4132 074 7008
		2.5 d	15.9	14.4				15.4		4130 074 7010	4132 074 7010
5/16"-24	1.058	1 d	7.9	5.5	9.7 10.2	8.17 8.35	8.2	7.4	9.31	4130 076 7004	4132 076 7004
		1.5 d	11.9	8.9				11.4		4130 076 7006	4132 076 7006
		2 d	15.9	12.2				15.4		4130 076 7008	4132 076 7008
		2.5 d	19.8	15.6				19.3		4130 076 7010	4132 076 7010
3/8"-24	1.058	1 d	9.5	6.9	11.4 11.9	9.75 9.93	9.8	9.0	10.90	4130 077 7004	4132 077 7004
		1.5 d	14.3	10.9				13.8		4130 077 7006	4132 077 7006
		2 d	19.1	14.9				18.6		4130 077 7008	4132 077 7008
		2.5 d	23.8	19.0				23.3		4130 077 7010	4132 077 7010
7/16"-20	1.270	1 d	11.1	6.6	13.4 13.9	11.39 11.59	11.5	10.5	12.76	4130 078 7004	4132 078 7004
		1.5 d	16.7	10.6				16.1		4130 078 7006	4132 078 7006
		2 d	22.2	14.5				21.6		4130 078 7008	4132 078 7008
		2.5 d	27.8	18.4				27.2		4130 078 7010	4132 078 7010
1/2"-20	1.270	1 d	12.7	7.8	15.1 15.7	12.97 13.16	13.1	12.1	14.35	4130 079 7004	4132 079 7004
		1.5 d	19.1	12.3				18.5		4130 079 7006	4132 079 7006
		2 d	25.4	16.8				24.8		4130 079 7008	4132 079 7008
		2.5 d	31.8	21.3				31.2		4130 079 7010	4132 079 7010

\*Other lengths upon request.

① see folding page 9b

**Thread Inserts HELICOIL® – UNF/NF = American National Fine threads**

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no.①	screwlock Order no.①
		x d	mm								
9/16"-18	1.411	1 d	14.3	7.9	16.9	14.59	14.7	13.6	16.12	0130 080 7004	0132 080 7004
		1.5 d	21.5	12.5						0130 080 7006	0132 080 7006
		2 d	28.6	17.1						0130 080 7008	0132 080 7008
		2.5 d	35.7	21.6						0130 080 7010	0132 080 7010
5/8"-18	1.411	1 d	15.9	8.9	18.6	16.18	16.3	15.2	17.71	0130 081 7004	0132 081 7004
		1.5 d	23.8	14.1						0130 081 7006	0132 081 7006
		2 d	31.8	19.1						0130 081 7008	0132 081 7008
		2.5 d	39.7	24.3						0130 081 7010	0132 081 7010
3/4"-16	1.588	1 d	19.1	9.7	22.2	19.39	19.5	18.3	21.11	0130 083 7004	0132 083 7004
		1.5 d	28.6	15.1						0130 083 7006	0132 083 7006
		2 d	38.1	20.6						0130 083 7008	0132 083 7008
		2.5 d	47.7	26.0						0130 083 7010	0132 083 7010
7/8"-14	1.814	1 d	22.2	9.9	26.0	22.62	22.7	21.3	24.58	0130 085 7004	–
		1.5 d	33.3	15.4						0130 085 7006	–
		2 d	44.5	21.0						0130 085 7008	–
		2.5 d	55.6	26.6						0130 085 7010	–
1"-14	1.814	1 d	25.4	11.5	29.4	25.86	26.0	24.5	27.76	0130 086 9004	–
		1.5 d	38.1	17.9						0130 086 9006	–
		2 d	50.8	24.3						0130 086 9008	–
		2.5 d	63.5	30.6						0130 086 9010	–
1"-12	2.117	1 d	25.4	9.7	29.7	25.86	26.0	24.3	28.15	0130 086 7004	–
		1.5 d	38.1	15.1						0130 086 7006	–
		2 d	50.8	20.6						0130 086 7008	–
		2.5 d	63.5	26.1						0130 086 7010	–
1 1/8"-12	2.117	1 d	28.6	10.1	33.2	29.03	29.0	27.5	31.33	0130 087 7004	–
		1.5 d	42.9	17.3						0130 087 7006	–
		2 d	57.2	23.4						0130 087 7008	–
		2.5 d	–	–						0130 087 7010	–
1 1/4"-12	2.117	1 d	31.8	12.4	36.6	32.21	32.5	30.7	34.50	0130 088 7004	–
		1.5 d	47.6	19.3						0130 088 7006	–
		2 d	63.5	26.1						0130 088 7008	–
		2.5 d	–	–						0130 088 7010	–
1 3/8"-12	2.117	1 d	34.9	13.8	40.0	35.38	35.5	33.8	37.68	0130 089 7004	–
		1.5 d	52.4	21.3						0130 089 7006	–
		2 d	69.9	28.9						0130 089 7008	–
		2.5 d	–	–						0130 089 7010	–
1 1/2"-12	2.117	1 d	38.1	15.2	43.4	38.56	38.5	37.0	40.85	0130 090 7004	–
		1.5 d	57.2	23.4						0130 090 7006	–
		2 d	76.2	31.6						0130 090 7008	–
		2.5 d	–	–						0130 090 7010	–

\*Other lengths upon request.

① see folding page 9b

**Thread Inserts HELICOIL® – BSW = British Standard Withworth Thread**

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no.①	screwlock Order no.②
		x d	mm								
1/8"-40	0.635	1 d	3.2	3.4	4.0	3.28	3.4	2.8	3.93	0130 071 3004	–
		1.5 d	4.8	5.6				4.4		0130 071 3006	0132 071 3006
		2 d	6.4	7.9				6.0		0130 071 3008	0132 071 3008
		2.5 d	7.9	10.3				7.5		0130 071 3010	0132 071 3010
3/16"-24	1.058	1 d	4.8	2.9	6.1	4.98	5.1	4.3	6.01	0130 072 3004	–
		1.5 d	7.1	5.1				6.6		0130 072 3006	0132 072 3006
		2 d	9.6	6.1				9.1		0130 072 3008	0132 072 3008
		2.5 d	11.9	9.3				11.4		0130 072 3010	0132 072 3010
1/4"-20	1.270	1 d	6.4	3.4	7.9	6.63	6.7	5.8	7.84	0130 074 3004	–
		1.5 d	9.5	5.9				8.9		0130 074 3006	0132 074 3006
		2 d	12.7	8.1				12.1		0130 074 3008	0132 074 3008
		2.5 d	15.9	10.5				15.3		0130 074 3010	0132 074 3010
5/16"-18	1.411	1 d	7.9	4.1	9.7	8.33	8.5	7.2	9.59	0130 076 3004	0132 076 3004
		1.5 d	11.9	6.7				11.2		0130 076 3006	0132 076 3006
		2 d	15.9	9.4				15.2		0130 076 3008	0132 076 3008
		2.5 d	19.8	12.0				19.1		0130 076 3010	0132 076 3010
3/8"-16	1.588	1 d	9.5	4.5	11.5	9.91	10.0	8.7	11.39	0130 077 3004	0132 077 3004
		1.5 d	14.3	7.3				13.5		0130 077 3006	0132 077 3006
		2 d	19.1	10.2				18.3		0130 077 3008	0132 077 3008
		2.5 d	23.8	13.0				23.0		0130 077 3010	0132 077 3010
7/16"-14	1.814	1 d	11.1	4.6	13.5	11.51	11.6	10.2	13.24	0130 078 3004	0132 078 3004
		1.5 d	16.7	7.5				15.8		0130 078 3006	0132 078 3006
		2 d	22.2	10.4				21.3		0130 078 3008	0132 078 3008
		2.5 d	27.8	13.3				26.9		0130 078 3010	0132 078 3010
1/2"-12	2.117	1 d	12.7	4.4	15.4	13.08	13.2	11.6	15.17	0130 079 3004	0132 079 3004
		1.5 d	19.1	7.3				18.0		0130 079 3006	0132 079 3006
		2 d	25.4	10.1				24.3		0130 079 3008	0132 079 3008
		2.5 d	31.8	13.0				30.7		0130 079 3010	0132 079 3010
9/16"-12	2.117	1 d	14.3	5.2	17.0	14.68	14.8	13.2	16.76	0130 080 3004	0132 080 3004
		1.5 d	21.5	8.4				20.4		0130 080 3006	0132 080 3006
		2 d	28.6	11.6				27.5		0130 080 3008	0132 080 3008
		2.5 d	35.7	14.8				34.6		0130 080 3010	0132 080 3010
5/8"-11	2.309	1 d	15.9	5.4	18.9	16.59	16.7	14.7	18.57	0130 081 3004	0132 081 3004
		1.5 d	23.8	8.7				22.6		0130 081 3006	0132 081 3006
		2 d	31.8	11.9				30.6		0130 081 3008	0132 081 3008
		2.5 d	39.7	15.3				38.5		0130 081 3010	0132 081 3010
11/16"-11	2.309	1 d	17.5	6.1	20.5	18.21	18.3	16.3	20.16	0130 082 3004	0132 082 3004
		1.5 d	26.2	9.7				25.0		0130 082 3006	0132 082 3006
		2 d	34.9	13.3				33.7		0130 082 3008	0132 082 3008
		2.5 d	43.6	16.9				42.4		0130 082 3010	0132 082 3010

\*Other lengths upon request.

① see folding page 9b

**Thread Inserts HELICOIL® – BSW = British Standard Withworth Thread**

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no.①	screwlock Order no.①
		x d	mm								
3/4"-10	2.540	1 d	19.1	6.0	22.4 23.0	19.84 20.09	20.0	17.8	22.02	0130 083 3004	0132 083 3004
		1.5 d	28.6	9.6				27.3		0130 083 3006	0132 083 3006
		2 d	38.1	13.2				36.8		0130 083 3008	0132 083 3008
		2.5 d	47.6	16.8				46.3		0130 083 3010	0132 083 3010
7/8"-9	2.822	1 d	22.2	6.4	26.0 26.7	23.01 23.27	23.0	20.8	25.52	0130 085 3004	–
		1.5 d	33.3	10.1				31.9		0130 085 3006	–
		2 d	44.5	13.9				43.1		0130 085 3008	–
		2.5 d	55.6	17.7				54.2		0130 085 3010	–
1"-8	3.175	1 d	25.4	6.5	27.7 30.4	26.19 26.52	26.5	23.8	29.10	0130 086 3004	–
		1.5 d	38.1	10.3				36.5		0130 086 3006	–
		2 d	50.8	14.1				49.2		0130 086 3008	–
		2.5 d	63.5	17.9				61.9		0130 086 3010	–
1 1/8"-7	3.629	1 d	28.6	6.4	33.5 34.4	29.74 30.12	30.0	26.8	32.80	0130 087 3004	–
		1.5 d	42.9	10.1				41.1		0130 087 3006	–
		2 d	57.2	13.9				55.4		0130 087 3008	–
		2.5 d	–	–				–		0130 087 3010	–
1 1/4"-7	3.629	1 d	31.8	7.3	36.7 37.7	32.92 33.30	33.0	30.0	35.97	0130 088 3004	–
		1.5 d	47.6	11.4				45.8		0130 088 3006	–
		2 d	63.5	15.6				61.7		0130 088 3008	–
		2.5 d	–	–				–		0130 088 3010	–
1 1/2"-6	4.233	1 d	38.1	7.4	43.9 45.1	39.27 39.90	39.5	36.0	43.02	0130 090 3004	–
		1.5 d	57.2	11.8				55.1		0130 090 3006	–
		2 d	76.2	16.1				74.1		0130 090 3008	–
		2.5 d	–	–				–		0130 090 3010	–

\*Other lengths upon request.

① see folding page 9b

**Thread Inserts HELICOIL® – BSF = British Standard Fine Thread**

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no. ①	screwlock Order no. ①
		x d	mm								
3/16"-32	0.794	1 d	4.8	4.1	6.0	4.88	5.0	4.4	5.71	0130 072 5004	0132 072 5004
		1.5 d	7.1	6.8						0130 072 5006	0132 072 5006
		2 d	9.5	9.4						0130 072 5008	0132 072 5008
		2.5 d	11.9	12.1						0130 072 5010	0132 072 5010
7/32"-28	0.907	1 d	5.5	4.3	7.0	5.72	5.8	5.0	6.63	0130 073 5004	0132 073 5004
		1.5 d	8.3	7.0						0130 073 5006	0132 073 5006
		2 d	11.1	9.8						0130 073 5008	0132 073 5008
		2.5 d	13.9	12.5						0130 073 5010	0132 073 5010
1/4"-26	0.977	1 d	6.4	4.6	7.9	6.53	6.6	5.9	7.51	0130 074 5004	0132 074 5004
		1.5 d	9.5	7.6						0130 074 5006	0132 074 5006
		2 d	12.7	10.4						0130 074 5008	0132 074 5008
		2.5 d	15.9	13.4						0130 074 5010	0132 074 5010
9/32"-26	0.977	1 d	7.1	5.4	8.7	7.32	7.4	6.6	8.31	0130 075 5004	0132 075 5004
		1.5 d	10.7	8.7						0130 075 5006	0132 075 5006
		2 d	14.3	11.9						0130 075 5008	0132 075 5008
		2.5 d	17.9	15.3						0130 075 5010	0132 075 5010
5/16"-22	1.155	1 d	7.9	5.0	9.8	8.20	8.3	7.3	9.30	0130 076 5004	0132 076 5004
		1.5 d	11.9	8.1						0130 076 5006	0132 076 5006
		2 d	15.9	11.2						0130 076 5008	0132 076 5008
		2.5 d	19.8	14.3						0130 076 5010	0132 076 5010
3/8"-20	1.270	1 d	9.5	5.6	11.6	9.78	9.9	8.8	11.02	0130 077 5004	0132 077 5004
		1.5 d	14.3	9.0						0130 077 5006	0132 077 5006
		2 d	19.1	12.4						0130 077 5008	0132 077 5008
		2.5 d	23.8	15.8						0130 077 5010	0132 077 5010
7/16"-18	1.411	1 d	11.1	5.9	13.6	11.43	11.5	10.4	12.78	0130 078 5004	0132 078 5004
		1.5 d	16.7	9.5						0130 078 5006	0132 078 5006
		2 d	22.2	13.1						0130 078 5008	0132 078 5008
		2.5 d	27.8	16.6						0130 078 5010	0132 078 5010
1/2"-16	1.588	1 d	12.7	6.1	15.5	13.03	13.1	11.9	14.57	0130 079 5004	0132 079 5004
		1.5 d	19.1	9.7						0130 079 5006	0132 079 5006
		2 d	25.4	13.3						0130 079 5008	0132 079 5008
		2.5 d	31.8	16.9						0130 079 5010	0132 079 5010
9/16"-16	1.588	1 d	14.3	7.0	17.2	14.66	14.8	13.5	16.16	0130 080 5004	0132 080 5004
		1.5 d	21.5	11.1						0130 080 5006	0132 080 5006
		2 d	28.6	15.1						0130 080 5008	0132 080 5008
		2.5 d	35.7	19.3						0130 080 5010	0132 080 5010
5/8"-14	1.814	1 d	15.9	6.8	19.1	16.26	16.4	15.0	18.01	0130 081 5004	0132 081 5004
		1.5 d	23.8	10.8						0130 081 5006	0132 081 5006
		2 d	31.8	14.8						0130 081 5008	0132 081 5008
		2.5 d	39.7	18.7						0130 081 5010	0132 081 5010

\*Other lengths upon request.

① see folding page 9b

**Thread Inserts HELICOIL® – BSF = British Standard Fine Thread**

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no. ①	screwlock Order no. ①
		x d	mm								
11/16"-14	1.814	1 d	17.5	7.6	20.8	17.86	18.0	16.6	19.60	0130 082 5004	0132 082 5004
		1.5 d	26.2	11.9				25.3		0130 082 5006	0132 082 5006
		2 d	34.9	16.3				34.0		0130 082 5008	0132 082 5008
		2.5 d	43.6	20.8				42.7		0130 082 5010	0132 082 5010
3/4"-12	2.117	1 d	19.1	7.0	22.9	19.43	19.5	18.0	21.53	0130 083 5004	0132 083 5004
		1.5 d	28.6	11.1				27.5		0130 083 5006	0132 083 5006
		2 d	38.1	15.2				37.0		0130 083 5008	0132 083 5008
		2.5 d	47.6	19.3				46.5		0130 083 5010	0132 083 5010
13/16"-12	2.117	1 d	20.6	7.7	24.6	21.03	21.2	19.5	23.12	0130 084 5004	–
		1.5 d	30.9	12.1				29.9		0130 084 5006	–
		2 d	41.3	16.6				40.2		0130 084 5008	–
		2.5 d	51.6	21.1				50.5		0130 084 5010	–
7/8"-11	2.309	1 d	22.2	7.6	26.5	22.61	22.7	21.0	24.94	0130 085 5004	–
		1.5 d	33.3	11.9				32.1		0130 085 5006	–
		2 d	44.5	16.4				43.3		0130 085 5008	–
		2.5 d	55.6	20.8				54.4		0130 085 5010	–
1"-10	2.540	1 d	25.4	7.9	30.2	26.19	26.5	24.1	28.38	0130 086 5004	–
		1.5 d	38.1	12.5				36.8		0130 086 5006	–
		2 d	50.8	17.1				49.5		0130 086 5008	–
		2.5 d	63.5	21.6				62.6		0130 086 5010	–
1 1/8"-9	2.822	1 d	28.6	8.1	33.9	29.36	29.5	27.2	31.88	0130 087 5004	–
		1.5 d	42.9	12.7				41.5		0130 087 5006	–
		2 d	57.2	17.3				55.8		0130 087 5008	–
		2.5 d	–	–				–		0130 087 5010	–
1 1/4"-9	2.822	1 d	31.8	9.1	37.3	32.54	32.5	30.4	35.06	0130 088 5004	–
		1.5 d	47.6	14.3				46.2		0130 088 5006	–
		2 d	63.5	19.4				62.1		0130 088 5008	–
		2.5 d	–	–				–		0130 088 5010	–
1 3/8"-8	3.175	1 d	34.9	8.8	41.2	35.71	36.0	33.3	38.64	0130 089 5004	–
		1.5 d	52.4	13.9				50.8		0130 089 5006	–
		2 d	69.9	18.9				68.3		0130 089 5008	–
		2.5 d	–	–				–		0130 089 5010	–
1 1/2"-8	3.175	1 d	38.1	9.8	44.6	38.89	39.0	36.5	41.82	0130 090 5004	–
		1.5 d	57.2	15.3				55.6		0130 090 5006	–
		2 d	76.2	20.8				74.6		0130 090 5008	–
		2.5 d	–	–				–		0130 090 5010	–

\*Other lengths upon request.

① see folding page 9b

**Thread Inserts HELICOIL® – ISO 228/1 Pipe threads \*\***

d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no. ①	screwlock Order no. ①
		x d	mm								
G 1/8" – 28	0.907	1 d	3.2	1.9	11.5	9.91	10.0	2.7	10.82	4130 071 4004	–
		1.5 d	4.8	3.6				4.3		4130 071 4006	–
		2 d	6.4	5.1				5.9		4130 071 4008	–
		2.5 d	7.9	6.6				7.4		4130 071 4010	–
G 1/4" – 19	1.337	1 d	6.4	3.1	15.7	13.46	13.6	5.7	14.74	4130 074 4004	–
		1.5 d	9.5	5.3				8.8		4130 074 4006	–
		2 d	12.7	7.4				12.0		4130 074 4008	–
		2.5 d	15.9	9.6				15.2		4130 074 4010	–
G 3/8" – 19	1.337	1 d	9.5	5.3	19.5	17.02	17.1	8.8	18.25	4130 077 4004	–
		1.5 d	14.3	8.5				13.6		4130 077 4006	–
		2 d	19.1	11.8				18.4		4130 077 4008	–
		2.5 d	23.8	15.0				23.1		4130 077 4010	–
G 1/2" – 14	1.814	1 d	12.7	5.2	24.6	21.34	21.5	11.7	23.09	4130 079 4004	–
		1.5 d	19.1	8.4				18.1		4130 079 4006	–
		2 d	25.4	11.6				24.6		4130 079 4008	–
		2.5 d	31.8	14.8				30.8		4130 079 4010	–

**Thread Inserts HELICOIL® – ISO 228/1 Pipe threads \*\***

G 5/8" – 14	1.814	1 d	15.9	6.8	26.7	23.24	23.4	14.9	25.05	0130 081 4004	–
		1.5 d	23.8	10.8				22.8		0130 081 4006	–
		2 d	31.8	14.8				30.8		0130 081 4008	–
		2.5 d	39.7	18.8				38.7		0130 081 4010	–
G 3/4" – 14	1.814	1 d	19.1	8.4	30.5	26.75	27.0	18.1	28.59	0130 083 4004	–
		1.5 d	28.6	13.3				27.6		0130 083 4006	–
		2 d	38.1	18.1				37.1		0130 083 4008	–
		2.5 d	47.6	22.9				46.6		0130 083 4010	–
G 7/8" – 14	1.814	1 d	22.2	10.0	34.6	30.48	30.6	21.2	32.35	0130 085 4004	–
		1.5 d	33.3	15.6				32.3		0130 085 4006	–
		2 d	44.5	21.3				43.5		0130 085 4008	–
		2.5 d	–	–				–		0130 085 4010	–
G 1" – 11	2.309	1 d	25.4	8.9	38.4	33.53	33.7	24.3	35.96	0130 086 4004	–
		1.5 d	38.1	13.9				37.0		0130 086 4006	–
		2 d	50.8	19.0				49.7		0130 086 4008	–
		2.5 d	–	–				–		0130 086 4010	–
G 1 1/4" – 11	2.309	1 d	31.8	11.4	47.7	42.29	42.5	30.7	44.63	0130 088 4004	–
		1.5 d	47.6	17.8				46.5		0130 088 4006	–
		2 d	63.5	24.1				62.4		0130 088 4008	–
		2.5 d	–	–				–		0130 088 4010	–
G 1 1/2" – 11	2.309	1 d	38.1	13.9	54.1	48.41	48.5	37.0	50.53	0130 090 4004	–
		1.5 d	57.2	21.6				56.1		0130 090 4006	–
		2 d	–	–				–		0130 090 4008	–
		2.5 d	–	–				–		0130 090 4010	–

\* Other lengths upon request.

\*\*G ≙ BSP (British Standard Pipe thread)

① see folding page 9b

**Thread Inserts HELICOIL® – BA = British Association Standard Thread**

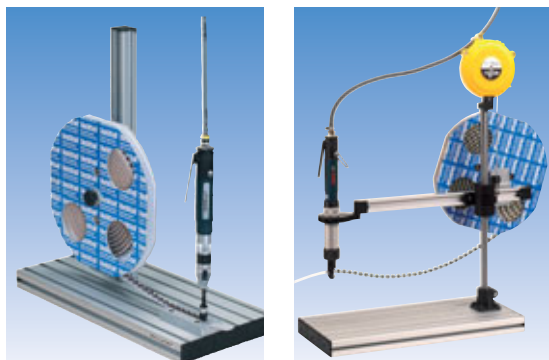
d	P	t <sub>2</sub> min.*		W	d <sub>1</sub> min. max.	D <sub>1HC</sub> min. max.	B	t <sub>3</sub> max.	D <sub>HC</sub> min.	free running Order no. <sup>①</sup>	screwlock Order no. <sup>①</sup>
		x d	mm								
0 BA	1.00	1 d	6.0	4.3	7.4	6.12	6.2	5.5	7.12	0130 092 2004	–
		1.5 d	9.0	6.9				8.5		0130 092 2006	–
		2 d	12.0	9.6				11.5		0130 092 2008	–
		2.5 d	15.0	12.3				14.5		0130 092 2010	–
1 BA	0.90	1 d	5.3	4.1	6.5	5.41	5.5	4.8	6.31	0130 093 2004	–
		1.5 d	8.0	6.8				7.5		0130 093 2006	–
		2 d	10.6	9.4				10.1		0130 093 2008	–
		2.5 d	13.3	12.0				12.8		0130 093 2010	–
2 BA	0.81	1 d	4.7	4.0	5.8	4.85	4.9	4.3	5.61	0130 094 2004	–
		1.5 d	7.1	6.6				6.7		0130 094 2006	–
		2 d	9.4	9.0				9.0		0130 094 2008	–
		2.5 d	11.8	11.7				11.4		0130 094 2010	–
3 BA	0.73	1 d	4.1	3.9	5.1	4.22	4.3	3.7	4.92	0130 095 2004	–
		1.5 d	6.2	6.3				5.8		0130 095 2006	–
		2 d	8.2	8.8				7.8		0130 095 2008	–
		2.5 d	10.3	11.3				9.9		0130 095 2010	–
4 BA	0.66	1 d	3.6	3.7	4.5	3.73	3.8	3.3	4.35	0130 096 2004	–
		1.5 d	5.4	6.1				5.1		0130 096 2006	–
		2 d	7.2	8.4				6.9		0130 096 2008	–
		2.5 d	9.0	10.9				8.7		0130 096 2010	–
5 BA	0.59	1 d	3.2	3.6	4.0	3.28	3.3	2.9	3.87	0130 097 2004	–
		1.5 d	4.8	6.0				4.5		0130 097 2006	–
		2 d	6.4	8.4				6.1		0130 097 2008	–
		2.5 d	8.0	10.8				7.7		0130 097 2010	–
6 BA	0.53	1 d	2.8	3.5	3.6	2.87	2.9	2.5	3.40	0130 098 2004	–
		1.5 d	4.2	5.8				3.9		0130 098 2006	–
		2 d	5.6	8.0				5.3		0130 098 2008	–
		2.5 d	7.0	10.3				6.7		0130 098 2010	–

\*Other lengths upon request.

① see folding page 9b

**Magazined HELICOIL® plus Thread Inserts for Optimized Installation**

**HELICOIL® plus STRIPFEED®**



Accessory: see page 43

Magazined HELICOIL® plus thread inserts offer advantages especially when working with smaller thread inserts.

Hand operated and stationary installation devices are available.

The working advantages for short and long series are:

- More simple handling
- An improvement to the working conditions in production assembly
- Performance improvement due to reliable feeding
- Reduction in costs

For details of metric sizes, see our catalogue 0100.

**UNC/NC = American National Coarse threads**

Nominal thread Ø	Nominal length	Magazined on reels Ø = 320 mm			Magazined on reels Ø = 220 mm		
		Number of inserts	HELICOIL® plus free running Order no.	HELICOIL® plus screwlock Order no.	Number of Inserts	HELICOIL® plus free running Order no.	HELICOIL® plus screwlock Order no.
2-56	1 x d	5000	4130 763 6004	4132 763 6004	1000	4130 763 6024*	4132 763 6024*
	1.5 x d	4000	4130 763 6006	4132 763 6006	1000	4130 763 6026*	4132 763 6026*
	2 x d	3000	4130 763 6008	4132 763 6008	1000	4130 763 6028*	4132 763 6028*
	2.5 x d	*	4130 763 6010	4132 763 6010	1000	*	*
4-40	1 x d	4000	4130 765 6004	4132 765 6004	1000	4130 765 6024*	4132 765 6024*
	1.5 x d	2500	4130 765 6006	4132 765 6006	1000	4130 765 6026*	4132 765 6026*
	2 x d	2300	4130 765 6008	4132 765 6008	1000	4130 765 6028*	4132 765 6028*
	2.5 x d	1800	4130 765 6010	4132 765 6010	1000	*	*
5-40	1 x d	3500	4130 766 6004	4132 766 6004	1000	4130 766 6024*	4132 766 6024*
	1.5 x d	2800	4130 766 6006	4132 766 6006	1000	4130 766 6026*	4132 766 6026*
	2 x d	2000	4130 766 6008	4132 766 6008	1000	4130 766 6028*	4132 766 6028*
	2.5 x d	1650	4130 766 6010	4132 766 6010	1000	*	*
6-32	1 x d	2500	4130 767 6004	4132 767 6004	1000	4130 767 6024*	4132 767 6024*
	1.5 x d	1500	4130 767 6006	4132 767 6006	1000	4130 767 6026*	4132 767 6026*
	2 x d	1400	4130 767 6008	4132 767 6008	1000	4130 767 6028*	4132 767 6028*
	2.5 x d	1350	4130 767 6010	4132 767 6010	1000	*	*
8-32	1 x d	2000	4130 768 6004	4132 768 6004	1000	4130 768 6024*	4132 768 6024*
	1.5 x d	1400	4130 768 6006	4132 768 6006	1000	4130 768 6026*	4132 768 6026*
	2 x d	1100	4130 768 6008	4132 768 6008	1000	4130 768 6028*	4132 768 6028*
	2.5 x d	850	4130 768 6010	4132 768 6010	1000	*	*
10-24	1 x d	1500	4130 769 6004	4132 769 6004	1000	4130 769 6024*	4132 769 6024*
	1.5 x d	1000	4130 769 6006	4132 769 6006	1000	4130 769 6026*	4132 769 6026*
	2 x d	800	4130 769 6008	4132 769 6008	1000	4130 769 6028*	4132 769 6028*
	2.5 x d	650	4130 769 6010	4132 769 6010	1000	*	*
12-24	1 x d	1450	4130 770 6004	4132 770 6004	1000	4130 770 6024*	4132 770 6024*
	1.5 x d	950	4130 770 6006	4132 770 6006	1000	4130 770 6026*	4132 770 6026*
	2 x d	700	4130 770 6008	4132 770 6008	1000	4130 770 6028*	4132 770 6028*
	2.5 x d	500	4130 770 6010	4132 770 6010	1000	*	*
1/4"-20	1 x d	1000	4130 774 6004	4132 774 6004	1000	4130 774 6024*	4132 774 6024*
	1.5 x d	650	4130 774 6006	4132 774 6006	1000	4130 774 6026*	4132 774 6026*
	2 x d	500	4130 774 6008	4132 774 6008	1000	4130 774 6028*	4132 774 6028*
	2.5 x d	400	4130 774 6010	4132 774 6010	1000	*	*
5/16"-18	1 x d	700	4130 776 6004	4132 776 6004	1000	4130 776 6024*	4132 776 6024*
	1.5 x d	400	4130 776 6006	4132 776 6006	1000	4130 776 6026*	4132 776 6026*
	2 x d	300	4130 776 6008	4132 776 6008	1000	4130 776 6028*	4132 776 6028*
	2.5 x d	250	4130 776 6010	4132 776 6010	1000	*	*
3/8"-16	1 x d	400	4130 777 6004	4132 777 6004	1000	4130 777 6024*	4132 777 6024*
	1.5 x d	300	4130 777 6006	4132 777 6006	1000	4130 777 6026*	4132 777 6026*
	2 x d	200	4130 777 6008	4132 777 6008	1000	4130 777 6028*	4132 777 6028*
	2.5 x d	150	4130 777 6010	4132 777 6010	1000	*	*

\* Upon request

**HELICOIL® plus Withdrawal Equipment pick-and-place**

Thread UNC/NC Nominal Ø	Order no.
2-56	*
4-40	*
5-40/6-32	4148 002 0000
8-32/10-24/12-24	4148 004 0000
1/4"-20	4148 006 0000
5/16"-18	4148 008 0000
3/8"-16	4148 008 0000



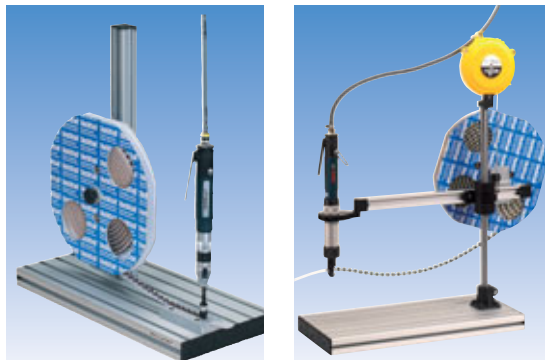
Withdrawal equipment "pick-and place"



Installation of HELICOIL® plus

**Magazined HELICOIL® plus Thread Inserts for Optimized Installation**

**HELICOIL® plus STRIPFEED®**



Accessory: see page 43

Magazined HELICOIL® plus thread inserts offer advantages especially when working with smaller thread inserts. Hand operated and stationary installation devices are available for this.

The working advantages for short and long series are:

- More simple handling
- An improvement to the working conditions in production assembly
- Performance improvement due to reliable feeding
- Reduction in costs

For details of metric sizes, see our catalogue 0100.

**UNF/NF = American National Fine threads**

Nominal thread Ø	Nominal length	Magazined on reels Ø = 320 mm			Magazined on reels Ø = 220 mm		
		Number of inserts	HELICOIL® plus free running Order no.	HELICOIL® plus screwlock Order no.	Number of Inserts	HELICOIL® plus free running Order no.	HELICOIL® plus screwlock Order no.
4-48	1 x d	4500	4130 765 7004	4132 765 7004	1000	4130 765 7024*	4132 765 7024*
	1.5 x d	3000	4130 765 7006	4132 765 7006	1000	4130 765 7026*	4132 765 7026*
	2 x d	2500	4130 765 7008	4132 765 7008	1000	4130 765 7028*	4132 765 7028*
	2.5 x d	2000	4130 765 7010	4132 765 7010	1000	*	*
6-40	1 x d	2500	4130 767 7004	4132 767 7004	1000	4130 767 7024*	4132 767 7024*
	1.5 x d	1500	4130 767 7006	4132 767 7006	1000	4130 767 7026*	4132 767 7026*
	2 x d	1400	4130 767 7008	4132 767 7008	1000	4130 767 7028*	4132 767 7028*
	2.5 x d	1500	4130 767 7010	4132 767 7010	1000	*	*
8-36	1 x d	2000	4130 768 7004	4132 768 7004	1000	4130 768 7024*	4132 768 7024*
	1.5 x d	1400	4130 768 7006	4132 768 7006	1000	4130 768 7026*	4132 768 7026*
	2 x d	1100	4130 768 7008	4132 768 7008	1000	4130 768 7028*	4132 768 7028*
	2.5 x d	850	4130 768 7010	4132 768 7010	1000	*	*
10-32	1 x d	1500	4130 769 7004	4132 769 7004	1000	4130 769 7024*	4132 769 7024*
	1.5 x d	1000	4130 769 7006	4132 769 7006	1000	4130 769 7026*	4132 769 7026*
	2 x d	800	4130 769 7008	4132 769 7008	1000	4130 769 7028*	4132 769 7028*
	2.5 x d	650	4130 769 7010	4132 769 7010	100	*	*
1/4"-28	1 x d	1000	4130 774 7004	4132 774 7004	1000	4130 774 7024*	4132 774 7024*
	1.5 x d	650	4130 774 7006	4132 774 7006	1000	4130 774 7026*	4132 774 7026*
	2 x d	500	4130 774 7008	4132 774 7008	1000	4130 774 7028*	4132 774 7028*
	2.5 x d	400	4130 774 7010	4132 774 7010	1000	*	*
5/16"-24	1 x d	700	4130 776 7004	4132 776 7004	1000	4130 776 7024*	4132 776 7024*
	1.5 x d	400	4130 776 7006	4132 776 7006	1000	4130 776 7026*	4132 776 7026*
	2 x d	300	4130 776 7008	4132 776 7008	1000	4130 776 7028*	4132 776 7028*
	2.5 x d	250	4130 776 7010	4132 776 7010	1000	*	*
3/8"-24	1 x d	400	4130 777 7004	4132 777 7004	1000	4130 777 7024*	4132 777 7024*
	1.5 x d	300	4130 777 7006	4132 777 7006	1000	4130 777 7026*	4132 777 7026*
	2 x d	200	4130 777 7008	4132 777 7008	1000	4130 777 7028*	4132 777 7028*
	2.5 x d	150	4130 777 7010	4132 777 7010	1000	*	*

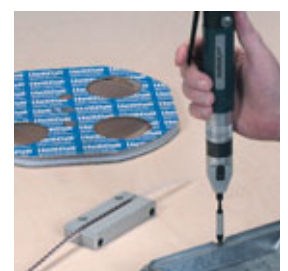
\* Upon request.

**HELICOIL® plus  
Withdrawal  
Equipment  
pick-and-place**

Thread UNF/NF Nominal Ø	Order no.
4-48	*
6-40	4148 002 0000
8-36	4148 004 0000
10-32	4148 004 0000
1/4"-28	4148 006 0000
5/16"-24	4148 008 0000
3/8"-24	4148 008 0000



Withdrawal equipment "pick-and-place"



Installation of HELICOIL® plus

## Installation of HELICOIL® plus Thread Inserts

### Preparation of Work Piece

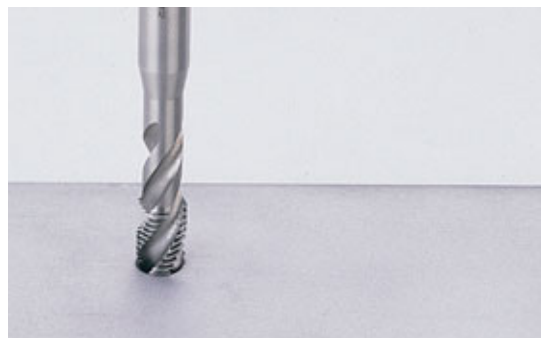
#### ■ Drilling of the core hole

Standard commercial twist drills are used.  
Reference points for diameters and core hole depths are found on pages 10 to 19.  
90° countersinking or deburring before tapping:  
countersinking diameter =  $D_{HC} + 0,1 \text{ mm}$



#### ■ Tapping the holding thread

Original HELICOIL® taps should be used for cutting the HELICOIL® plus holding threads. Details of recommended hand and machine taps are given on pages 24 to 30. To gauge the size of the holding thread use the HELICOIL® thread gauges (see page 31).



### Installation process

#### ■ Fitting the thread insert

The thread insert can be installed using an installation mandrel, a manual insertion tool or automatic tools. Screw the HELICOIL® plus thread insert onto the installation mandrel with its tang facing downwards (3A) HELICOIL® thread UNC > 1/2", UNF > 1/2", G > 1/2", BSW, BSF and BA specifications should be installed using a pre-stressing mandrel (3B). Threads to UNC and BSW  $\geq 5/8"$ -11 specifications should be installed using the fly-over tool (3C).



3A



3B



3C

#### ■ Installing the insert

Turn the tap (4A), the spindle (4B) or the fly-over tool (4C) by hand (or start the automatic tool drive) and screw in the thread insert. Install the thread insert to that it is at least 0.25 P below the top surface of the workpiece (see page 9a  $t_5$ ).



4A



4B



4C

#### ■ Breaking off the tang

If the hole is a through hole, you should break off the tang at the notch. To do this, use a break-off tool (5A and 5B). For 3/4" fine or standard pitch threads you can break off the tang with a pair of long-nose pliers (5C).

For blind holes there is no need to remove the tang provided that the maximum screw-in depth  $t_3$  is not exceeded.



5A



5B





5C

**Advisory Service for Threaded Inserts HELICOIL® plus**

<b>Customer data</b>	Information request date: _____	
	Company: _____ Address: _____ _____	
	Tel.: _____ Fax: _____ Telex: _____	
	Contact person (name and responsibilities): _____ _____	
	Applicable department: _____	
	Customer registration guidelines: _____	
Requested date for visit from technical marketing advisor: _____		
<b>Application</b>	Technical description (Function, sizes, tolerances, as well as requirements made on HELICOIL® plus)	
	Can Böllhoff – be supplied with a sample (according to application)? <input type="checkbox"/> yes <input type="checkbox"/> no – be supplied with a drawing (of the application)? <input type="checkbox"/> yes <input type="checkbox"/> no	
	Processing and working principle: _____	
	Appendix: _____	
<b>Information</b>	New applications: <input type="checkbox"/> yes <input type="checkbox"/> no	Sample required: <input type="checkbox"/> yes <input type="checkbox"/> no if yes, then date and number: _____ _____
	Annual requirement: _____	
	Delivery amount: _____	pre-series required: <input type="checkbox"/> yes <input type="checkbox"/> no if yes, then date and number: _____ _____
	Duration of application: _____	
	Series start (date): _____	
<b>Information</b>	Present solution (this or a similar application):	

## System Components for Installation

### Standard range from **HELICOIL® plus** Manual and Machine taps

Materials	Range of types			Recommended standard values <sup>①</sup>	
	Manual tap all drilling forms	Machine tap		Cutting speed [m/min]	Cooling lubrication
		Through hole tapping 	Blind hole tapping 		
Aluminium and cast aluminium alloys (brittle, short chips)	0140.0 0140.1-2* 0140.3-5**	0141.1	0141.5	10...20	Emulsion
Aluminium and cast aluminium alloys (malleable, long chips)	0140.0 0140.1-2* 0140.3-5**	0141.1	0141.4	15...20	Emulsion
Magnesium alloys	0140.0 0140.1-2* 0140.3-5**	0141.1	0141.4	25	Dry
Steel to 700 N/mm <sup>2</sup>	0140.0			16	Oil/Emulsion
Cast iron soft $R_m \leq 250$ N/mm <sup>2</sup>	0140.1-2*	0141.1	0141.5	15	Petroleum/Emulsion
Cast iron hard $R_m > 250$ N/mm <sup>2</sup>	0140.3-5**			10	Emulsion
Malleable cast iron				10	Oil/Emulsion
Copper	0140.0			16	Oil/Emulsion
Bronze/gunmetal	0140.1-2*	0141.1	0141.5	5...12	Oil/Emulsion
Brass – tough	0140.3-5*			16	Oil/Emulsion
Zinc alloys				20	Oil/Emulsion
Brass – Brittle	0140.0 0140.1-2* 0140.3-5**	0141.1	0141.5	25	Oil Dry

<sup>①</sup>In individual cases a test should be made.

\* Set manual taps (two parts)

\*\* Set manual taps (three parts)

We also supply TiN coated taps.

For materials that are very difficult to machine, not listed, such as:

- stainless steel
- heat resistant steel
- other steel alloys
- titan alloys

we also supply special taps!

**HELICOIL® machine taps for special applications**

Standard HELICOIL® taps fulfil the requirements of most applications. In special applications where cutting specifications are a critical factor, special versions of machine taps are required.



Material	Through holes	Blind holes	Cutting speed (m/min.)	Coolant/Lubricant
Aluminium alloys with high silicium content SI > 12%	0141 9XXX 444	0141 9XXX 451	10	oil/emulsion
Difficult to machine materials, such as:  Stainless and corrosion resistant steel  High-temperature steel	0141 9XXX 444	0141 9XXX 451	5  4	oil/emulsion
Hard materials Cast iron	0141 9XXX 418	0141 9XXX 418	8 – 10	petrol/emulsion
Ductile, jamming materials, such as:  Electrolytic copper  Hard bronze	0141 9XXX 445	0141 9XXX 451	12  5	oil
Brittle brass	0141 9XXX 424	0141 9XXX 424	25	oil
Titanium alloys ≤ 700 N/mm <sup>2</sup>  > 700 N/mm <sup>2</sup>	0141 9XXX 444  0141 9XXX 447	0141 9XXX 451  0141 9XXX 432	8  4	oil
Soft plastics, Thermoplastics	0141 9XXX 445	0141 9XXX 451		compressed air/emulsion
Brittle plastics, Duroplast	0141 9XXX 446	0141 9XXX 446		compressed air

Example designation: measurement UMC 6-32: 0141 9676 451

Other special taps (e.g. taps with TIN coating or oversize taps) are available on request.

## Thread tolerances for thread inserts

### Imperial threads (UNC and UNF)

#### ■ Standard tolerance for imperial threads:

HELICOIL® holding threads meet the specifications of NASM 33537 Tolerance class **2B** (medium).

#### ■ High-precision tolerance for Imperial threads:

HELICOIL® holding threads for high-precision applications in the aerospace industry meet the specifications of NASM 33537 Tolerance class **3B** (fine).

#### ■ UNJC and UNJF threads:

Bolts with UNJC or UNJF threads as per DIN ISO 3161 can be used with HELICOIL® nut threads.

Special HELICOIL® holding threads are not required. The holding thread tolerance class **3B** is widely used in the aerospace industry.

#### ■ Part numbers / Example:

##### How HELICOIL® taps are indicated in part numbers

Tolerance class **2B** (medium) is indicated by a **1** in the ninth position of the part number.

Example: UNC 6-32      0141 1676 **1**04

Tolerance class **3B** (fine) is indicated by a **2** in the ninth position of the part number.

Example: UNC 6-32      0141 1676 **2**04

##### How HELICOIL® thread gauges are indicated in part numbers

Tolerance class **2B** (medium) is indicated by a **5** in the ninth position of the part number.

Example: UNC 6-32      0147 3676 **5**04

Tolerance class **3B** (fine) is indicated by a **4** in the ninth position of the part number.

Example: UNC 6-32      0147 3676 **4**04

**Manual taps for HELICOIL® and HELICOIL® plus**



**Type 0140.0**

HELICOIL® manual taps, cut

For standard threads up to P = 2 mm  
For fine threads up to P = 3 mm

For tapping materials up to 700 N/mm<sup>2</sup> strength.

For through-holes.

For blind holes only if sufficient tapping space is available. Minimum requirement 1 d deeper than the fully cut thread length.



**Type 0140.1-2**

HELICOIL® manual taps, set of 2  
Two parts set, graded pitch

Pre-tap 4 action cut 0140.1...  
Final tap 2 action cut 0140.2...

For pitches up to P = 3.5 mm

For tapping materials over 700 N/mm<sup>2</sup> strength.

For through-hole and blind-hole tapping.

Nominal thread Ø d	Cutting taps for tolerance class 2B*		Set taps for tolerance class 2B*	
	Type 0140.0 Order no.	Type 0140.1 Order no.	Pre-cutter Type 0140.1 Order no.	Final cutter Type 0140.2 Order no.
<b>UNC/NC = American National Coarse threads</b>				
2-56	0140 063 6104	0140 163 6104	0140 263 6102	
4-40	0140 065 6104	0140 165 6104	0140 265 6102	
5-40	0140 066 6104	0140 166 6104	0140 266 6102	
6-32	0140 067 6104	0140 167 6104	0140 267 6102	
8-32	0140 068 6104	0140 168 6104	0140 268 6102	
10-24	0140 069 6104	0140 169 6104	0140 269 6102	
12-24	0140 070 6104	0140 170 6104	0140 270 6102	
1/4"-20	0140 074 6104	0140 174 6104	0140 274 6102	
5/16"-18	0140 076 6104	0140 176 6104	0140 276 6102	
3/8"-16	0140 077 6104	0140 177 6104	0140 277 6102	
7/16"-14	0140 078 6104	0140 178 6104	0140 278 6102	
1/2"-13	0140 079 6104	0140 179 6104	0140 279 6102	
9/16"-12	0140 080 6104	0140 180 6104	0140 280 6102	
5/8"-11	0140 081 6104	0140 181 6104	0140 281 6102	
3/4"-10	0140 083 6104	0140 183 6104	0140 283 6102	
7/8"-9	0140 085 6104	0140 185 6104	0140 285 6102	
1"-8	0140 086 6104	0140 186 6104	0140 286 6102	
1 1/8"-7	0140 087 6104	0140 187 6104	0140 287 6102	
1 1/4"-7	0140 088 6104	0140 188 6104	0140 288 6102	
1 3/8"-6	0140 089 6104	0140 189 6104	0140 289 6102	
1 1/2"-6	0140 090 6104	0140 190 6104	0140 290 6102	

<b>UNF = American National Fine threads</b>				
4-48	0140 065 7104	0140 165 7104	0140 265 7102	
6-40	0140 067 7104	0140 167 7104	0140 267 7102	
8-36	0140 068 7104	0140 168 7104	0140 268 7102	
10-32	0140 069 7104	0140 169 7104	0140 269 7102	
1/4"-28	0140 074 7104	0140 174 7104	0140 274 7102	
5/16"-24	0140 076 7104	0140 176 7104	0140 276 7102	
3/8"-24	0140 077 7104	0140 177 7104	0140 277 7102	
7/16"-20	0140 078 7104	0140 178 7104	0140 278 7102	
1/2"-20	0140 079 7104	0140 179 7104	0140 279 7102	
9/16"-18	0140 080 7104	0140 180 7104	0140 280 7102	
5/8"-18	0140 081 7104	0140 181 7104	0140 281 7102	
3/4"-16	0140 083 7104	0140 183 7104	0140 283 7102	
7/8"-14	0140 085 7104	0140 185 7104	0140 285 7102	
1"-14	0140 086 9104	0140 186 9104	0140 286 9102	
1"-12	0140 086 7104	0140 186 7104	0140 286 7102	
1 1/8"-12	0140 087 7104	0140 187 7104	0140 287 7102	
1 1/4"-12	0140 088 7104	0140 188 7104	0140 288 7102	
1 3/8"-12	0140 089 7104	0140 189 7104	0140 289 7102	
1 1/2"-12	0140 090 7104	0140 190 7104	0140 290 7102	

Further sizes upon request.

\* for tolerance class 3B the ninth digit of the order no. changes from 1 to 2.

Details refer to page 23.

Types 0140.0 and 0140.2 can be utilised as machine taps.

Shaft diameter tolerance h9. They are especially suitable for brittle materials such as cast iron, brass and magnesium.

**Manual taps for HELICOIL® and HELICOIL® plus**



**Type 0140.0**

HELICOIL® manual taps, cut

For standard threads up to P = 2 mm  
For fine threads up to P = 3 mm

For tapping materials up to 700 N/mm<sup>2</sup> strength.

For through-holes.

For blind holes only if sufficient tapping space is available. Minimum requirement 1 d deeper than the fully cut thread length.



**Type 0140.1-2**

HELICOIL® manual taps, set of 2  
Two parts set, graded pitch

Pre-tap 4 action cut 0140.1...  
Final tap 2 action cut 0140.2...

For pitches up to P = 3.5 mm

For tapping materials over 700 N/mm<sup>2</sup> strength.

For through-hole and blind-hole tapping.

Nominal thread Ø  d	Cutting taps for tolerance class 2B*  Type 0140.0 Order no.	Set taps for tolerance class 2B*	
		Pre-cutter Type 0140.1 Order no.	Final cutter Type 0140.2 Order no.

**BSW = British Standard Whitworth thread**

1/8"-40	0140 071 3104	0140 171 3104	0140 271 3102
3/16"-24	0140 072 3104	0140 172 3104	0140 272 3102
1/4"-20	0140 074 3104	0140 174 3104	0140 274 3102
5/16"-18	0140 076 3104	0140 176 3104	0140 276 3102
3/8"-16	0140 077 3104	0140 177 3104	0140 277 3102
7/16"-14	0140 078 3104	0140 178 3104	0140 278 3102
1/2"-12	0140 079 3104	0140 179 3104	0140 279 3102
9/16"-12	0140 080 3104	0140 180 3104	0140 280 3102
5/8"-11	0140 081 3104	0140 181 3104	0140 281 3102
11/16"-11	0140 082 3104	0140 182 3104	0140 282 3102
3/4"-10	0140 083 3104	0140 183 3104	0140 283 3102
7/8"-9	0140 085 3104	0140 185 3104	0140 285 3102
1"-8	0140 086 3104	0140 186 3104	0140 286 3102
1 1/8"-7	0140 087 3104	0140 187 3104	0140 287 3102
1 1/4"-7	0140 088 3104	0140 188 3104	0140 288 3102
1 1/2"-6	0140 090 3104	0140 190 3104	0140 290 3102

**BSF = British Standard Fine Thread**

3/16"-32	0140 072 5104	0140 172 5104	0140 272 5102
7/32"-28	0140 073 5104	0140 173 5104	0140 273 5102
1/4"-26	0140 074 5104	0140 174 5104	0140 274 5102
9/32"-26	0140 075 5104	0140 175 5104	0140 275 5102
5/16"-22	0140 076 5104	0140 176 5104	0140 276 5102
3/8"-20	0140 077 5104	0140 177 5104	0140 277 5102
7/16"-18	0140 078 5104	0140 178 5104	0140 278 5102
1/2"-16	0140 079 5104	0140 179 5104	0140 279 5102
9/16"-16	0140 080 5104	0140 180 5104	0140 280 5102
5/8"-14	0140 081 5104	0140 181 5104	0140 281 5102
11/16"-14	0140 082 5104	0140 182 5104	0140 282 5102
3/4"-12	0140 083 5104	0140 183 5104	0140 283 5102
13/16"-12	0140 084 5104	0140 184 5104	0140 284 5102
7/8"-11	0140 085 5104	0140 185 5104	0140 285 5102
1"-10	0140 086 5104	0140 186 5104	0140 286 5102
1 1/8"-9	0140 087 5104	0140 187 5104	0140 287 5102
1 1/4"-9	0140 088 5104	0140 188 5104	0140 288 5102
1 3/8"-8	0140 089 5104	0140 189 5104	0140 289 5102
1 1/2"-8	0140 090 5104	0140 190 5104	0140 290 5102

**BA = British Association Standard Thread**

0 BA	0140 092 2104	0140 192 2104	0140 292 2102
1 BA	0140 093 2104	0140 193 2104	0140 293 2102
2 BA	0140 094 2104	0140 194 2104	0140 294 2102
3 BA	0140 095 2104	0140 195 2104	0140 295 2102
4 BA	0140 096 2104	0140 196 2104	0140 296 2102
5 BA	0140 097 2104	0140 197 2104	0140 297 2102
6 BA	0140 098 2104	0140 198 2104	0140 298 2102

Further sizes upon request.

\* for tolerance class 3B the ninth digit of the order no. changes from 1 to 2.

Details refer to page 23.

Types 0140.0 and 0140.2 can be utilised as machine taps.

Shaft diameter tolerance h9. They are especially suitable for brittle materials such as cast iron, brass and magnesium.

**Machine taps for HELICOIL® and HELICOIL® plus**



**Type 0141.1**

HELICOIL® machine taps, straight grooved, cutting angle 10°, with curling cut, 4 action cut for through holes, for blind holes with deep-drilled thread hole.

For pitches up to P = 3.5 mm.

For materials below and above 700 N/mm<sup>2</sup> strength.

For tapping through holes.



**Type 0141.4**

HELICOIL® machine taps, spiral grooves 45° right-hand twist, cutting angle 15°, 2-turn cut for blind holes.

For pitches up to P = 1.5 mm.

For blind hole tapping.

For aluminium alloys to 500 N/mm<sup>2</sup> strength.

To UNC 8-32/UNF 8-36 2-groove.

Starting from UNC 10-24/UNF 10-32 3-groove, additionally also for soft steel to 450 N/mm<sup>2</sup> strength.



**Type 0141.5**

HELICOIL® machine taps, spiral grooves 40° right hand twist, cutting angle 10°, 2 turn cut for blind holes, for blind holes with deep-drilled thread hole.

For pitches up to p = 3 mm.

For steels from 500 N/mm<sup>2</sup> upto max. 850 N/mm<sup>2</sup> strength. For blind hole tapping.

Also for aluminium alloy with Si content to approx. 10% suitably.

HELICOIL® special thread tapes for special applications and materials see page 25.

Nominal thread Ø d	for tolerance class 2 B*	for tolerance class 2 B*	for tolerance class 2 B*
	Type 0141.1 Order no.	Typ 0141.4 Order no.	Type 0141.5 Order no.

**UNC/NC = American National Coarse Thread**

2-56	0141 163 6104	0141 463 6152	0141 563 6102
4-40	0141 165 6104	0141 465 6152	0141 565 6102
5-40	0141 166 6104	0141 466 6152	0141 566 6102
6-32	0141 167 6104	0141 467 6152	0141 567 6102
8-32	0141 168 6104	0141 468 6152	0141 568 6102
10-24	0141 169 6104	0141 469 6152	0141 569 6102
12-24	0141 170 6104	0141 470 6152	0141 570 6102
1/4"-20	0141 174 6104	0141 474 6152	0141 574 6102
5/16"-18	0141 176 6104	0141 476 6152	0141 576 6102
3/8"-16	0141 177 6104	0141 477 6152	0141 577 6102
7/16"-14	0141 178 6104	0141 478 6152	0141 578 6102
1/2"-13	0141 179 6104	0141 479 6152	0141 579 6102

**UNF/NF = American National Fine Thread**

4-48	0141 165 7104	0141 465 7152	0141 565 7102
6-40	0141 167 7104	–	0141 567 7102
8-36	0141 168 7104	0141 468 7152	0141 568 7102
10-32	0141 169 7104	0141 469 7152	0141 569 7102
1/4"-28	0141 174 7104	0141 474 7152	0141 574 7102
5/16"-24	0141 176 7104	0141 476 7152	0141 576 7102
3/8"-24	0141 177 7104	0141 477 7152	0141 577 7102
7/16"-20	0141 178 7104	0141 478 7152	0141 578 7102
1/2"-20	0141 179 7104	0141 479 7152	0141 579 7102
9/16"-18	–	0141 480 7152	0141 580 7102
5/8"-18	–	0141 481 7152	0141 581 7102
3/4"-16	–	0141 483 7152	0141 583 7102

**BSW = British Standard Whitworth Thread**

1/8"-40	0141 171 3104	0141 471 3152	0141 571 3102
3/16"-24	0141 172 3104	0141 472 3152	0141 572 3102
1/4"-20	0141 174 3104	0141 474 3152	0141 574 3102
5/16"-18	0141 176 3104	0141 476 3152	0141 576 3102
3/8"-16	0141 177 3104	0141 477 3152	0141 577 3102
7/16"-14	0141 178 3104	0141 478 3152	0141 578 3102
1/2"-12	0141 179 3104	0141 479 3152	0141 579 3102
9/16"-12	–	–	–

**BSF = British Standard Fine Thread**

9/16"-32	0141 172 5104	–	0141 572 5102
7/32"-28	0141 173 5104	–	0141 573 5102
1/4"-26	0141 174 5104	–	0141 574 5102
9/32"-26	0141 175 5104	–	0141 575 5102
5/16"-22	0141 176 5104	0141 476 5152	0141 576 5102
3/8"-20	0141 177 5104	0141 477 5152	0141 577 5102
7/16"-18	0141 178 5104	0141 478 5152	0141 578 5102
1/2"-16	0141 179 5104	–	0141 579 5102
9/16"-16	–	–	0141 580 5102
5/8"-14	–	–	0141 581 5102
11/16"-14	–	–	0141 582 5102
3/4"-12	–	–	0141 583 5102

Further sizes upon request.

\* for tolerance class 3B the ninth digit in the order no. changes from 1 to 2.

**Machine taps for HELICOIL® and HELICOIL® plus**



**Type 0141.0 / Type 0141.1**

HELICOIL® machine taps, straight grooved, tapping angle 10°, with curling cut, 4-action cut for through holes, for blind holes with deep-drilled thread hole

For pitches up to P = 3.5 mm.

For materials below and above 700 N/mm<sup>2</sup> strength.

For tapping through holes.



**Type 0141.5**

HELICOIL® machine taps, spiral grooves 40° right hand twist, cutting angle 10°, 2 turn cut for blind holes, for blind holes with deep-drilled thread hole

For pitches up to p = 3 mm.

For steels from 500 N/mm<sup>2</sup> upto max. 850 N/mm<sup>2</sup> strength.

For blind hole tapping.

Also for aluminium alloy with Si content to approx. 10% suitably.

HELICOIL® special thread tapes for special applications and materials see page 25.

Nominal thread Ø d	for tolerance class 2 B* Types 0141.0 and 0141.1 Order no.	for tolerance class 2 B* Type 0141.5 Order no.
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**BSP = British Standard Pipe thread · G = ISO 228/1 Pipe thread**

G 1/8"	0141 071 4102 <sup>⓪</sup>	–
G 1/4"	0141 074 4102 <sup>⓪</sup>	–
G 3/8"	0141 077 4102 <sup>⓪</sup>	–
G 1/2"	0141 079 4102 <sup>⓪</sup>	–
G 5/8"	0141 081 4102 <sup>⓪</sup>	–
G 3/4"	0141 083 4102 <sup>⓪</sup>	–
G 7/8"	0141 085 4102 <sup>⓪</sup>	–
G 1"	0141 086 4102 <sup>⓪</sup>	–
G 1 1/4"	0141 088 4102 <sup>⓪</sup>	–
G 1 1/2"	0141 090 4102 <sup>⓪</sup>	–

**BA = British Association Standard Thread**

0 BA	0141 192 2104	0141 592 2102
1 BA	0141 193 2104	0141 593 2102
2 BA	0141 194 2104	0141 594 2102
3 BA	0141 195 2104	0141 595 2102
4 BA	0141 196 2104	0141 596 2102
5 BA	0141 197 2104	0141 597 2102
6 BA	0141 198 2104	0141 598 2102

Further sizes upon request.

\* for tolerance class 3B the ninth digit in the order no. changes from 1 to 2.

<sup>⓪</sup> 2-action cut

**Internal Thread Gauges for HELICOIL® plus Holding Thread**



Nominal thread Ø d	for tolerance class 2 B* Order no.*	Nominal thread-Ø d	for tolerance class 2 B* Order no.*
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**UNC/NC = American National Coarse Thread**

2-56	0147 363 6500	1/2"-13	0147 379 6500
4-40	0147 365 6500	9/16"-12	0147 380 6500
5-40	0147 366 6500	5/8"-11	0147 381 6500
6-32	0147 367 6500	3/4"-10	0147 383 6500
8-32	0147 368 6500	7/8"-9	0147 385 6500
10-24	0147 369 6500	1"-8	0147 386 6500
12-24	0147 370 6500	1 1/8"-7	0147 387 6500
1/4"-20	0147 374 6500	1 1/4"-7	0147 388 6500
5/16"-18	0147 376 6500	1 3/8"-6	0147 389 6500
3/8"-16	0147 377 6500	1 1/2"-6	0147 390 6500
7/16"-14	0147 378 6500		

**UNF/NF = American National Fine Thread**

4-48	0147 365 7500	5/8"-18	0147 381 7500
6-40	0147 367 7500	3/4"-16	0147 383 7500
8-36	0147 368 7500	7/8"-14	0147 385 7500
10-32	0147 369 7500	1"-14	0147 386 9500
1/4"-28	0147 374 7500	1"-12	0147 386 7500
5/16"-24	0147 376 7500	1 1/8"-12	0147 387 7500
3/8"-24	0147 377 7500	1 1/4"-12	0147 388 7500
7/16"-20	0147 378 7500	1 3/8"-12	0147 389 7500
1/2"-20	0147 379 7500	1 1/2"-12	0147 390 7500
9/16"-18	0147 380 7500		

Other dimensions upon request.

\* for tolerance class 3B the ninth digit in the order no. changes from 5 to 4.

**Internal Thread Gauges for HELICOIL® plus Holding Thread**


Nominal thread Ø d	for tolerance class 2 B* Order no.*	Nominal thread-Ø d	for tolerance class 2 B* Order no.*
-----------------------	--	-----------------------	--

**BSW = British Standard Whitworth Thread**

1/8"-40	0147 371 3500	5/8"-11	0147 381 3500
3/16"-24	0147 372 3500	11/16"-11	0147 382 3500
1/4"-20	0147 374 3500	3/4"-10	0147 383 3500
5/16"-18	0147 376 3500	7/8"-9	0147 385 3500
3/8"-16	0147 377 3500	1"-8	0147 386 3500
7/16"-14	0147 378 3500	1 1/8"-7	0147 387 3500
1/2"-12	0147 379 3500	1 1/4"-7	0147 389 3500
9/16"-12	0147 380 3500	1 1/2"-6	0147 390 3500

**BSF = British Standard Fine Thread**

3/16"-32	0147 372 5500	11/16"-14	0147 382 5500
7/32"-28	0147 373 5500	3/4"-12	0147 383 5500
1/4"-26	0147 374 5500	13/16"-12	0147 384 5500
9/32"-26	0147 375 5500	7/8"-11	0147 385 5500
5/16"-22	0147 376 5500	1"-10	0147 386 5500
3/8"-20	0147 377 5500	1 1/8"-9	0147 387 5500
7/16"-18	0147 378 5500	1 1/4"-9	0147 388 5500
1/2"-16	0147 379 5500	1 3/8"-8	0147 389 5500
9/16"-16	0147 380 5500	1 1/2"-8	0147 390 5500
5/8"-14	0147 381 5500		

**BSP = British Standard Pipe thread · G = ISO 228/1 Pipe thread**

G 1/8"	0147 371 4500	G 3/4"	0147 383 4500
G 1/4"	0147 374 4500	G 7/8"	0147 385 4500
G 3/8"	0147 377 4500	G 1"	0147 386 4500
G 1/2"	0147 379 4500	G 1 1/4"	0147 388 4500
G 5/8"	0147 381 4500	G 1 1/2"	0147 390 4500

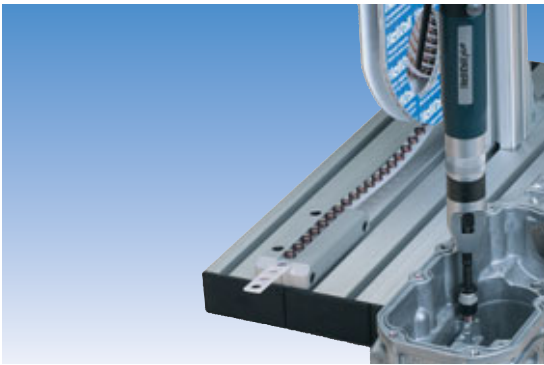
**BA = British Association Standard Thread**

0 BA	0147 392 2500	4 BA	0147 396 2500
1 BA	0147 393 2500	5 BA	0147 397 2500
2 BA	0147 394 2500	6 BA	0147 398 2500
3 BA	0147 395 2500	-	-

Other dimensions upon request.

\* for tolerance class 3B the ninth digit in the order no. changes from 5 to 4.

**HELICOIL® plus Installation Mandrels for the rapid installation of HELICOIL® plus UNC 2-56 to UNF 1/2"-20 with HELICOIL® plus Installation Tools.**



Pick and Place equipment see pages 20 and 21.

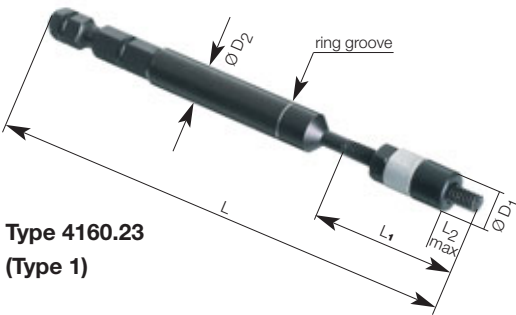
**Also suitable for the pick and place installation method. The benefits to you:**

- Simple installation mandrel
  - ➔ for critical installation points
  - ➔ rapid conversion
  - ➔ lower cost tools
- Size UNC 2-56 to UNF 1/2"-20
  - HELICOIL® plus STRIPFEED® (UNC 2-56 ... 3/8"-16 and UNF 4-48 ... 3/8"-24)
  - HELICOIL® plus bulk (UNC 2-56 ... 1/2"-13 and UNF 4-48 ... 1/2"-20)
  - ➔ flexible
- Pick and Place installation
  - ➔ simple handling with HELICOIL® plus
  - ➔ shorter assembly time
- Direction of rotation simple to change
  - ➔ easy operation

**HELICOIL® plus installation spindles for Type P-S 412 electric and pneumatic power tools**

**Installation spindle with depth stop (imperial sizes)**

For the installation of HELICOIL® plus free running and screwlock inserts only. With 1/4" hexagon insert bit as per DIN 3126 - E 6,3.



**Type 4160.23 (Type 1)**

**Important:**

This installation mandrels can be also used for manually installation.

HELICOIL® plus screwlock installation tools are marked with a ring groove on the drive spindle. Free running installation tools have a flat-side drive spindle.

**UNC/NC = American National Coarse Thread**

Nominal thread Ø	Spindle free running Order no.	Spindle screwlock Order no.	L <sub>1</sub>	L <sub>2</sub> max	L	D <sub>1</sub>	D <sub>2</sub>	Type
For installation tools type B-S 206, E-S 206, E-S 410 and P-S 412								
2-56	4160 236 3620	4160 236 3620	17	17	113	8	8	1
4-40	4160 236 5620	4160 236 5620	22	22	118	8	8	1
5-40	4160 236 6620	4160 236 6620	24	24	117	8	8	1
6-32	4160 236 7620	4160 236 7620	26	26	119	8	8	1
8-32	4160 236 8620	4160 236 8622	35	19	100	8	8	1
10-24	4160 236 9620	4160 236 9620	49	32	105	9	8	1
12-24	4160 237 0620	4160 237 0620	49	32	105	10	8	1

**For installation tools type B-S 824, E-S 410 and P-S 412**

1/4"-20	4160 257 4620	4160 257 4620	49	32	105	12	8	1
5/16"-18	4160 257 6620	4160 257 6620	49	32	105	16	8	1
3/8"-16	4160 257 7620	4160 257 7620	59	35	115	16	8	1
7/16"-14	4160 257 8620	4160 257 8620	64	42	120	20	8	1
1/2"-13	4160 257 9620	4160 257 9620	74	48	130	21	8	1

**UNF/NF = American National Fine Thread**

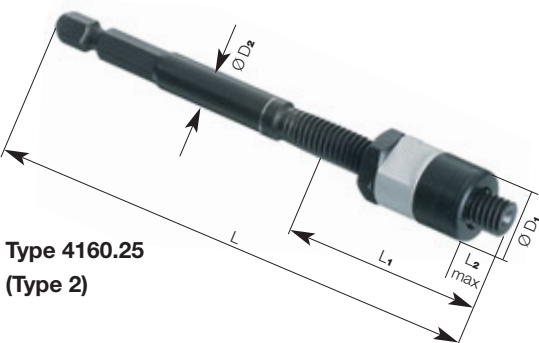
For installation tools type B-S 206, E-S 206, E-S 410 and P-S 412

4-48	4160 236 5720	4160 236 5722	22	22	118	6	8	1
6-40	4160 236 7720	4160 236 7722	44	30	100	8	8	1
8-36	4160 236 8720	4160 236 8722	44	30	100	8	8	1
10-32	4160 236 9720	4160 236 9722	49	34	105	10	8	1

For installation tools type B-S 824, E-S 410 and P-S 412

1/4"-28	4160 257 4720	4160 257 4722	49	28	105	12	8	1
5/16"-24	4160 257 6720	4160 257 6722	49	28	105	16	8	2
3/8"-24	4160 257 7720	4160 257 7722	59	37	115	16	8	2
7/16"-20	4160 257 8720	4160 257 8722	64	40	120	20	8	2
1/2"-20	4160 257 9720	4160 257 9722	74	58	130	21	8	2

Tools for use with NiCr15Fe7TiAl, NiCr20Co18Ti and AlZnMgCu1,5 inserts are available on request.



**Type 4160.25 (Type 2)**

## Electric and Battery power pack Installation Tools for HELICOIL® plus



### Battery power pack Installation Tool Type B-S 206

For use with HELICOIL® plus UNC 2-56 to UNC 1/4"-20 and UNF 4-48 to UNF 1/4"-28 with HELICOIL® plus installation spindles.

#### Extent of delivery:

- Accumulator pistol baton installation tool (bendable)
- 2 pcs. Accumulator pack 3.6 V, 1.5 Ah
- Fast battery charger
- Carrying case

#### Technical details:

Speed without load:	two levels (200 min <sup>-1</sup> and 600 min <sup>-1</sup> ); reversible
Torque:	Adjust. 21 steps 0.3 – 2.9 Nm / max. 4.4 Nm
Tool holding fixture:	1/4" hexagon socket
Weight including accumulator battery:	0.5 kg
Accumulator battery:	3.6 V / 1.5 Ah / charging time 30 min.
Order no.:	<b>4160 430 0000</b>

#### Spare parts and equipment:

Spare accu. battery:	Order no. 4160 430 0200
Fast battery charger:	Order no. 4160 430 0300



### Battery power pack Installation Tool Type B-S 824

For use with HELICOIL® plus UNC 5/16"-18 to UNC 1/2"-13 and UNF 5/16"-24 to UNF 1/2"-20 with HELICOIL® plus installation spindles.

#### Extent of delivery:

- Accumulator pistol screwdriver
- 2 pcs. Accumulator pack 15.6 V, 3 Ah
- Fast battery charger
- Carrying case

#### Technical details:

Load free revolutions:	Step 1 / stage-less 65 – 450 min <sup>-1</sup> , reversible Step 2 / stage-less 200 – 1450 min <sup>-1</sup> , reversible
Torque:	Adjust. 19 steps 1 – 6.9 Nm / max. 31.9 Nm
Tool holding fixture:	Three parts chuck 1.0 – 13 mm
Weight including accumulator battery:	2.0 kg
Accumulator battery:	15.6 V / 3 Ah / charging time 45 min.
Order no.:	<b>4160 350 0000</b>

#### Spare parts and equipment:

Spare accumulator battery:	Order no. 4160 350 0200
Fast battery charger:	Order no. 4160 350 0300

## Electric Installation tool for HELICOIL® plus



### Electric Installation tool Type E-S 206

For the speedy working with HELICOIL® plus UNC 2-56 to UNC 1/4"-20 and UNF 4-48 to UNF 1/4"-28 with HELICOIL® plus installation mandrel

#### Extent of delivery:

- Baton screw driver with 1/4" hexagonal chuck
- Power supply unit for two screw drivers
- Carrying case

#### Technical details:

Load-free revolutions:	720 min <sup>-1</sup>
Output voltage:	35 V DC
Torque:	M = 0.45 – 0.95 Nm stepless adjustable clutch
Tool holding fixture:	Quick release chuck, 1/4" hexagon socket with radial bearing
Weight:	0.31 kg
Order no.:	<b>4160 220 0000</b>

Special size HELICOIL® plus mandrels with 1/4" hexagon should be ordered separately, see pages 33.



### Electric Installation tool Type E-S 410

For speedy working with HELICOIL® plus UNC 8-32 to UNC 3/8"-16 and UNF 8-36 to UNF 3/8"-24 with HELICOIL® plus installation mandrel.

#### Extent or delivery:

- Baton screw driver with 1/4" hexagonal chuck
- Revolution adjustment by means of high running ramp control (type CLT 500)
- Carrying case

#### Technical details:

Load-free revolutions:	Stage-less adjustable on the adjusting equipment, 720 min <sup>-1</sup> RPM. Automatic reversing switch upon reaching the screw-in depth
Torque:	M = 0.9 – 3.5 Nm
Tool holding fixture:	1/4" hexagonal socket chuck with radial bearing
Weight:	0.66 kg
Order no.:	<b>4160 440 0000</b>

Special size HELICOIL® plus mandrels with 1/4" hexagon should be ordered separately, see page 33.

**Pneumatic Installation tool for HELICOIL® plus**

**Pneumatic Installation tool Type P-S 412**

For the rapid installation of HELICOIL® plus UNC 8-32 to UNC 1/2"-13 and UNF 8-36 to UNF 1/2"-20 with HELICOIL® plus installation mandrel

**Technical details:**

Load-free revolutions:	1500 min <sup>-1</sup> at p = 6.3 bar adjustable by adjusting air pressure
Air consumption:	5.5 L/s at p = 6.3 bar
Torque:	M = 1.2 – 4.5 Nm stepless adjustable clutch
Tool holding fixture:	Quick release chuck, 1/4" hexagon socket with radial bearing
Weight:	0.8 kg
Order no.:	<b>4160 270 0010</b>

Special size HELICOIL® plus mandrels with 1/4" hexagon should be ordered separately, see page 33.

**Pneumatic Installation tool Type P-S 1216**

For the rapid installation of HELICOIL® plus UNC 7/16" and UNC 1/2"-13 and UNF 7/16"-20 and UNF 1/2"-20 with HELICOIL® plus installation mandrel

**Technical details:**

Load-free revolutions:	950 min <sup>-1</sup> at p = 6.3 bar adjustable by adjusting air pressure
Air consumption:	5.5 L/s at p = 6.3 bar
Torque:	M = 1.2 – 5.5 Nm stepless adjustable clutch
Tool holding fixture:	Quick release chuck, 1/4" hexagon socket with radial bearing
Weight:	0.8 kg
Order no.:	<b>4160 180 0010</b>

Special size HELICOIL® plus mandrels with 1/4" hexagon should be ordered separately, see page 33.

**Accessories:**

**Extra hand grip for P-S 1216**

Hand grip for safe positioning during insert torquing, for sizes ≥ UNC 7/16"-14 and UNF 7/16"-20.

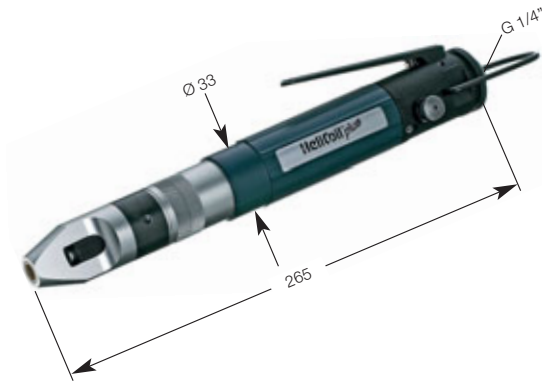
Order no.: 4160 180 0006

**Hanger bracket for P-S 412 and P-S 1216**

For hanging power tools horizontally on balance systems.

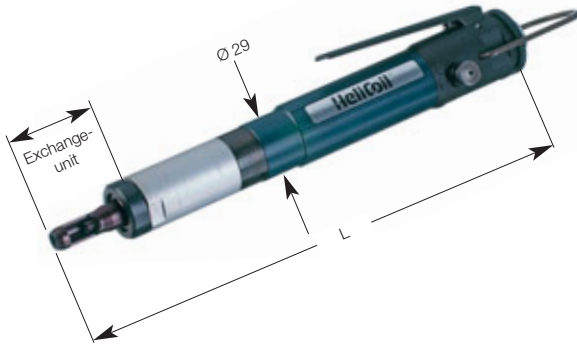
For details, see page 40.

Order no.: 4160 180 0007



**Mechanical Installation Tool Type P-PSG for HELICOIL® and HELICOIL® plus**  
*free running and screwlock*

**Complete tool**



Push-start HELICOIL® and HELICOIL®plus installation tool for handling **bulk-fed** inserts.  
 Power installation tool with reversing compressed air motor and size change part (exchange unit).  
 The HELICOIL® installation depth is set by changing the compensating discs.  
 This tool is recommended for medium- to large-series production applications.

**Ordering example for UNC 5-40:**

P-PSG 256 UNC 5-40  
 Part no. 0160 376 6600

Nominal thread Ø d	Type	Complete tool Order no.	Construction size		Weight kg	Con-nection bar	**Compressed air con-sumption l/Min.
			Ø D	L			

**UNC/NC = American National Coarse Thread**

2-56	P-PSG 256	0160 376 3600	28	240	0.6	2.5-4.0	204
4-40		0160 376 5600	28	240	0.6	2.5-4.0	204
5-40		0160 376 6600	28	240	0.6	2.5-4.0	204
6-32		0160 376 7600	28	240	0.6	2.5-4.0	204
8-32		0160 376 8600	28	240	0.6	2.5-4.0	204
10-24		0160 376 9600	28	240	0.6	2.5-4.0	204
12-24		0160 377 0600	42	360	1.4	4.0-5.0	282
1/4"-20	P-PSG 714	0160 377 4600	42	360	1.4	4.0-5.0	282
5/16"-18		0160 287 6600	42	360	1.4	4.0-5.0	282
3/8"-16		0160 287 7600	42	360	1.4	4.0-5.0	282
7/16"-14		0160 287 8600	42	360	1.4	4.0-5.0	282
1/2"-13		0160 287 9600	42	360	1.4	4.0-5.0	282

**UNF/NF = American National Fine Thread**

4-48	P-PSG 256	0160 376 5700	42	360	1.4	4.0-5.0	282
6-40		0160 376 7700	42	360	1.4	4.0-5.0	282
8-36		0160 376 8700	42	360	1.4	4.0-5.0	282
10-32		0160 376 9700	42	360	1.4	4.0-5.0	282
1/4"-28		P-PSG 714	0160 377 4700	42	360	1.4	4.0-5.0
5/16"-24	0160 287 6700		42	360	1.4	4.0-5.0	282
3/8"-24	0160 287 7700		42	360	1.4	4.0-5.0	282
7/16"-20	0160 287 8700		42	360	1.4	4.0-5.0	282
1/2"-20	0160 287 9700		42	360	1.4	4.0-5.0	282

**Important notes when ordering:**

When ordering a tool please quote type, size and length of the HELICOIL® plus thread inserts to be utilised. All dimensions to HELICOIL® nominal length 1.5 d applicable. Further nominal length on request. The installation tools are fitted with Bosch motors, \*\*compressed air requirements approximately 6.3 bar. Installations with screwlock are possible for all sizes. For inserts made from NiCr15Fe7TiAl, NiCr20Co18Ti and AlZnMgCu1.5 adapted tools upon request.

**Components**

Nominal thread Ø d	Type	Exchange unit ≤ 2d order no.	Basic tool Order no.	Motor Order no.
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**UNC/NC = American National Coarse Thread**

2-56	P-PSG 256	0160 276 3650	0160 370 0040	0160 370 0010
4-40		0160 176 5650		
5-40		0160 176 6650		
6-32		0160 176 7650		
8-32		0160 176 8650		
10-24		0160 176 9650		
12-24		0160 177 0650		
1/4"-20	0160 177 4650	0160 180 0040	0160 180 0011	
5/16"-18	0160 287 6650			
3/8"-16	0160 287 7650			
7/16"-14	0160 287 8650			
1/2"-13	0160 287 9650			

**UNF/NF = American National Fine Thread**

4-48	P-PSG 256	0160 176 5750	0160 370 0040	0160 370 0010
6-40		0160 176 7750		
8-36		0160 176 8750		
10-32		0160 176 9750		
1/2"-28		0160 177 4750		
5/16"-24	0160 287 6750	0160 180 0040	0160 180 0011	
3/8"-24	0160 287 7750			
7/16"-20	0160 287 8750			
1/2"-20	0160 287 9750			

Exchange unit



Basic tool



Motor



**Manual Installation tool Type P-PSG for HELICOIL® and HELICOIL® plus**

Pre-winder cartridge



**free running and screwlock**

**Wear and spare parts**

Installation mandrel



Clutch for installation mandrel



Compensating disc assortment



Nominal thread Ø d	Type	Pre-winder cartridge Order no.	Installation mandrel Order no.	Clutch for installation mandrel Order no.	Compensating disc assortment Order no.
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**UNC/NC = American National Coarse Thread**

2-56	P-PSG 256	0160 276 3632	0160 276 3620	0160 170 0006	0160 170 0060
4-40		0160 176 5632	0160 276 5620		
5-40		0160 176 6632	0160 176 6620		
6-32		0160 176 7632	0160 276 7620		
8-32		0160 176 8632	0160 276 8620		
10-24		0160 176 9632	0160 276 9620		
12-24	P-PSG 714	0160 177 0632	0160 277 0620	0160 170 0066	
1/4"-20		0160 177 4632	0160 177 4620		
5/16"-18		0160 287 6632	0160 287 6620		
3/8"-16		0160 287 7632	0160 287 7620		
7/16"-14		0160 287 8632	0160 187 8620		
1/2"-13		0160 287 9632	0160 287 9620		

**UNF/NF = American National Fine Thread**

4-48	P-PSG 256	0160 176 5732	0160 176 5720	0160 170 0006	0160 170 0060
6-40		0160 176 7732	0160 176 7720		
8-36		0160 176 8732	0160 176 8720		
10-32		0160 276 9732	0160 276 9720		
1/4"-28	P-PSG 714	0160 177 4732	0160 177 4720	0160 170 0066	
5/16"-24		0160 287 6732	0160 187 6720		
3/8"-24		0160 287 7732	0160 287 7720		
7/16"-20		0160 287 8732	0160 187 8720		
1/2"-20		0160 287 9732	0160 287 9720		

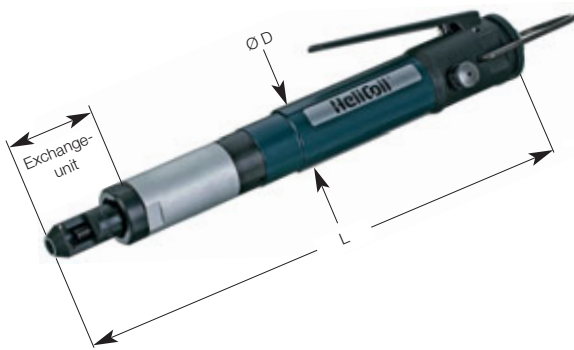
Ordering instructions:

When ordering a tool, please state the type, size and length of the HELICOIL® thread insert to be used. Tools for installing HELICOIL® thread inserts longer 2.5 d are available on request. Tools P-PSG 714 and P-PSG 1626 are fitted with a sliding finger guard in compliance with accident prevention regulations. Do not remove the finger guard. Tools for use with NiCr15Fe7TiAl, NiCr20Co18Ti and AlZnMgCu1.5 inserts are available on request.

Other sizes available on request.

**Mechanical Installation Tool Type P-PSG for HELICOIL® and HELICOIL® plus**

**STRIPFEED®  
Complete tool**



Push-start HELICOIL® und HELICOIL® plus installation tool for handling **magazine-fed** thread inserts.  
Power installation tool with reversing compressed air motor and size change part (exchange unit).  
The HELICOIL® installation depth is set by changing the compensating discs.  
This tool is recommended for medium- to large-series production applications.

Nominal thread Ø d	Type	Complete tool Order no.	Construction size		Weight kg	Con-nection bar	air con-sumption l/Min.
			Ø D	L			
<b>UNC/NC = American National Coarse Thread</b>							
2-56	P-PSG 256 SF	0160 376 3603	28	240	0.6	2.5-4.0	204
4-40		0160 376 5603	28	240	0.6	2.5-4.0	204
5-40		0160 376 6603	28	240	0.6	2.5-4.0	204
6-32		0160 376 7603	28	240	0.6	2.5-4.0	204
8-32		0160 376 8603	28	240	0.6	2.5-4.0	204
10-24		0160 376 9603	28	240	0.6	2.5-4.0	204
12-24		0160 377 0603	42	360	1.4	4.0-5.0	282
1/4"-20		0160 377 4603	42	360	1.4	4.0-5.0	282
5/16"-18		0160 287 6603	42	360	1.4	4.0-5.0	282
3/8"-16		0160 287 7603	42	360	1.4	4.0-5.0	282
7/16"-14	0160 287 8603	42	360	1.4	4.0-5.0	282	
1/2"-13	P-PSG 714 SF	0160 287 9603	42	360	1.4	4.0-5.0	282

**UNF/NF = American National Fine Thread**

4-48	P-PSG 256 SF	0160 376 5703	42	360	1.4	4.0-5.0	282
6-40		0160 376 7703	42	360	1.4	4.0-5.0	282
8-36		0160 376 8703	42	360	1.4	4.0-5.0	282
10-32		0160 376 9703	42	360	1.4	4.0-5.0	282
1/4"-28		0160 377 4703	42	360	1.4	4.0-5.0	282
5/16"-24		0160 287 6703	42	360	1.4	4.0-5.0	282
3/8"-24	P-PSG 714 SF	0160 287 7703	42	360	1.4	4.0-5.0	282
7/16"-20		0160 287 8703	42	360	1.4	4.0-5.0	282
1/2"-20		0160 287 9703	42	360	1.4	4.0-5.0	282

Important notes when ordering:

When ordering a tool please quote type, size and length of the HELICOIL® plus thread inserts to be utilised.

The installation tools are fitted with Bosch motors, \*\*compressed air requirements approximately 6.3 bar.

Installations with HELICOIL® screwlock are possible for all sizes.

For inserts made from NiCr15Fe7TiAl, NiCr20Co18Ti and AlZnMgCu1.5 adapted tools upon request.

Exchange unit



Basic tool



Motor



**Components**

Nominal thread Ø d	Type	Exchange unit ≤ 2d order no.	Basic tool order no.	Motor order no.
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**UNC/NC = American National Coarse Thread**

2-56	P-PSG 256 SF	0160 276 3653	0160 370 0040	0160 370 0010		
4-40		0160 176 5653				
5-40		0160 176 6653				
6-32		0160 176 7653				
8-32		0160 176 8653				
10-24		0160 176 9653				
12-24		0160 177 0653				
1/4"-20		0160 177 4653				
5/16"-18		0160 287 6653			0160 180 0040	0160 180 0010
3/8"-16		0160 287 7653				
7/16"-14	0160 287 8653					
1/2"-13	0160 287 9653					

**UNF/NF = American National Fine Thread**

4-48	P-PSG 256 SF	0160 176 5753	0160 370 0040	0160 370 0010
6-40		0160 176 7753		
8-36		0160 176 8753		
10-32		0160 176 9753		
1/4"-28		0160 177 4753		
5/16"-24		0160 287 6753		
3/8"-24	0160 287 7753			

**Parallel system type S for HELICOIL® and HELICOIL® plus installation tools**



Type	Product characteristic		order no.
S 600	Working radius	140 mm – 600 mm	0182 080 0003 (see scope of delivery)
	Working height	50 mm – 430 mm	
	Weight without tool	8 kg	
	Max. permitted torque	Max. 15 Nm	

**Advantages**

- Ergonomic
- Quick, accurate positioning
- Precise installation direction
- No reaction torque
- Tool holder
- Light and easy to use
- Flexibility
- Suitable for use with electrical and pneumatic HELICOIL® installation tools
- Rapid tool changeover
- 360° rotation
- Roller bearings for light, smooth movement
- Safe, orderly workstation

**Included in delivery**

- 3-axis guide system
- Tool holder
- 1 Balancer 1-3 kg
- Base plate made from extruded aluminium profile with slots, dimensions: w x h x l: 240 x 40 x 500 mm

**Accessories**

Type	Dimensions	order no.
Maintenance unit	for 6 bar nominal flow G 1/4" = 700 L/min	0182 080 1001
Stationary roll holder for HELICOIL® plus STRIPFEED®		0182 080 0004
Hose	LW 6	0196 000 1130
Hose clip	8 – 12 mm	0196 000 1150
Hose liner	G 1/8"-6	0196 000 1151
Hose liner	G 1/4"-6	0196 000 1152
Waste air hose	Ø 15 mm	0196 000 1131

**Automatic STRIPFEED® unit for HELICOIL® plus**



- For integration into
- Assembly lines
  - Robot/handling systems

These units are assembled to customer application-requirements. Please ask concerning any extension systems.

Magazined HELICOIL® plus thread inserts offer many advantages especially when processing smaller thread inserts.



Automatic installation of HELICOIL® plus screwlock, separation by vibration.

**Manual Installation Tools for HELICOIL® and HELICOIL® plus**

**Manual Installation mandrel, with pre-stressing cartridge for HELICOIL® and HELICOIL® plus. Applicable for HELICOIL® plus in case of fine thread pitches and special applications.**



Type **H-PSG**:  
Threaded mandrel, with bit gauge  
Order no. 0150 **01**. ...\*



Type **H-PMG**:  
Flat mandrel, pitch guided, with bit gauge  
Order no. 0150 **02**. ...\*



Type **H-PM**:  
Flat mandrel, without pitch guiding, with bit gauge  
Order no. 0150 **04**. ...\*



**Fly-over tool for HELICOIL® and HELICOIL® plus**  
Type **H-M**  
with bit gauge  
Order no. 0150 **07**. ...\*

Nominal thread Ø	Type	Installation tools with pre-stressing cartridge Order no.	Fly-over tools Type H-M Order no.
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**BSP = British Standard Pipe thread · G = ISO 228/1 Pipe thread**

G 1/8"	H-PSG G 1/8"	0150 017 1400	–
G 1/4"	H-PMG G 1/4"	0150 027 4400	–
G 3/8"	H-PMG G 3/8"	0150 027 7400	–
G 1/2"	H-PMG G 1/2"	0150 027 9400	–
G 5/8"	H-PMG G 5/8"	0150 028 1400	–
G 3/4"	H-PMG G 3/4"	0150 028 3400	–
G 7/8"	H-PMG G 7/8"	0150 028 5400	–
G 1"	H-PMG G 1"	0150 028 6400	–
G 1 1/4"	H-PMG G 1 1/4"	0150 028 8400	–
G 1 1/2"	H-PMG G 1 1/2"	0150 029 0400	–

**BA = British Association Standard Thread**

0 BA	H-PM 0 BA	0150 049 2200	–
1 BA	H-PSG 1 BA	0150 019 3200	–
2 BA	H-PSG 2 BA	0150 019 4200	–
3 BA	H-PSG 3 BA	0150 019 5200	–
4 BA	H-PSG 4 BA	0150 019 6200	–
5 BA	H-PSG 5 BA	0150 019 7200	–
6 BA	H-PSG 6 BA	0150 019 8200	–

\* For thread inserts made from NiCr 15 Fe 7 Ti Al, NiCr 20 Co 18 Ti, AlZn Mg Cu 1.5 adapted tools upon request.

**Manual Installation Tools for HELICOIL® and HELICOIL® plus**

**Manual Installation tool, with pre-stressing cartridge for HELICOIL® and HELICOIL® plus. Applicable for HELICOIL® plus in case of fine thread pitches and special applications.**

**Manual installation mandrels you will find on page 36 (HELICOIL® plus installation mandrels).**



Type **H-PSG**:  
Threaded mandrel, with bit gauge  
Order no. 0150 **01**. ...\*



Type **H-PMG**:  
Flat mandrel, pitch guided, with bit gauge  
Order no. 0150 **02**. ...\*



Type **H-PM**:  
Flat mandrel, without pitch guiding, with bit gauge  
Order no. 0150 **04**. ...\*



**Fly-over tool for HELICOIL® and HELICOIL® plus**

Type **H-M**  
with bit gauge  
Order no. 0150 **07**. ...\*

Nominal thread Ø	Type	Installation tools with pre-stressing cartridge	Fly-over tools Type H-M
		Order no.	Order no.

**UNC/NC = American National Coarse Thread**

2-56	H-PSG	UNC 2-56	on request	
4-40	H-PSG	UNC 4-40	0150 016 5600	-
5-40	H-PSG	UNC 5-40	0150 016 6600	-
6-32	H-PSG	UNC 6-32	0150 016 7600	-
8-32	H-PSG	UNC 8-32	0150 016 8600	-
10-24	H-PSG	UNC 10-24	0150 016 9600	-
12-24	H-PM	UNC 12-24	0150 047 0600	-
1/4"-20	H-PM	UNC 1/4"-20	0150 047 4600	-
5/16"-18	H-PM	UNC 5/16"-18	0150 047 6600	-
3/8"-16	H-PM	UNC 3/8"-16	0150 047 7600	-
7/16"-14	H-PM	UNC 7/16"-14	0150 047 8600	-
1/2"-13	H-PM	UNC 1/2"-13	0150 047 9600	-
9/16"-12	H-PM	UNC 9/16"-12	0150 048 0600	-
5/8"-11	H-M	UNC 5/8"-11	-	0150 078 1000
3/4"-10	H-M	UNC 3/4"-10	-	0150 078 3000
7/8"-9	H-M	UNC 7/8"-9	-	0150 078 5000
1"-8	H-M	UNC 1"-8	-	0150 078 6000
1 1/8"-7	H-M	UNC 1 1/8"-7	-	0150 078 7000
1 1/4"-7	H-M	UNC 1 1/4"-7	-	0150 078 8000
1 3/8"-6	H-M	UNC 1 3/8"-6	-	0150 078 9000
1 1/2"-6	H-M	UNC 1 1/2"-6	-	0150 079 0000

**UNF/NF = American National Fine Thread**

4-48	H-PSG	UNF 4-48	0150 016 5700	-
6-40	H-PSG	UNF 6-40	0150 016 7700	-
8-36	H-PSG	UNF 8-36	0150 016 8700	-
10-32	H-PSG	UNF 10-32	0150 016 9700	-
1/4"-28	H-PSG	UNF 1/4"-28	0150 017 4700	-
5/16"-24	H-PSG	UNF 5/16"-24	0150 017 6700	-
3/8"-24	H-PSG	UNF 3/8"-24	0150 017 7700	-
7/16"-20	H-PSG	UNF 7/16"-20	0150 017 8700	-
1/2"-20	H-PSG	UNF 1/2"-20	0150 017 9700	-
9/16"-18	H-PMG	UNF 9/16"-18	0150 028 0700	-
5/8"-18	H-PMG	UNF 5/8"-18	0150 028 1700	-
3/4"-16	H-PMG	UNF 3/4"-16	0150 028 3700	-
7/8"-14	H-PMG	UNF 7/8"-14	0150 028 5700	-
1"-14	H-PMG	UNF 1"-14	0150 028 6900	-
1"-12	H-PMG	UNF 1"-12	0150 028 6700	-
1 1/8"-12	H-PMG	UNF 1 1/8"-12	0150 028 7700	-
1 1/4"-12	H-PMG	UNF 1 1/4"-12	0150 028 8700	-
1 3/8"-12	H-PMG	UNF 1 3/8"-12	0150 028 9700	-
1 1/2"-12	H-PMG	UNF 1 1/2"-12	0150 029 0700	-

\* For thread inserts made from NiCr 15 Fe 7 Ti Al, NiCr 20 Co 18 Ti, AlZn Mg Cu 1.5 adapted tools upon request.

**Manual Installation Tools for HELICOIL® and HELICOIL® plus**

**Manual Installation mandrel, with pre-stressing cartridge for HELICOIL® and HELICOIL® plus. Applicable for HELICOIL® plus in case of fine thread pitches and special applications.**



Type **H-PSG**:  
Threaded mandrel, with bit gauge  
Order no. 0150 **01**. ...\*



Type **H-PMG**:  
Flat mandrel, pitch guided, with bit gauge  
Order no. 0150 **02**. ...\*



Type **H-PM**:  
Flat mandrel, without pitch guiding, with bit gauge  
Order no. 0150 **04**. ...\*



**Fly-over tool for HELICOIL® and HELICOIL® plus**  
Type **H-M**  
with bit gauge  
Order no. 0150 **07**. ...\*

Nominal thread Ø	Type	Installation tools with pre-stressing cartridge	Fly-over tools Type H-M
		Order no.	Order no.

**BSW = British Standard Whitworth Thread**

1/8"-40	H-PSG	BSW 1/8"-40	0150 017 1300	–
3/16"-24	H-PSG	BSW 3/16"-24	0150 017 2300	–
1/4"-20	H-PM	BSW 1/4"-20	0150 047 4300	–
5/16"-18	H-PM	BSW 5/16"-18	0150 047 6300	–
3/8"-16	H-PM	BSW 3/8"-16	0150 047 7300	–
7/16"-14	H-PM	BSW 7/16"-14	0150 047 8300	–
1/2"-12	H-PM	BSW 1/2"-12	0150 047 9300	–
9/16"-12	H-PM	BSW 9/16"-12	0150 048 0300	–
5/8"-11	H-M	BSW 5/8"-11	–	0150 078 1000
11/16"-11	H-M	BSW 11/16"-11	–	0150 078 2000
3/4"-10	H-M	BSW 3/4"-10	–	0150 078 3000
7/8"-9	H-M	BSW 7/8"-9	–	0150 078 5000
1"-8	H-M	BSW 1"-8	–	0150 078 6000
1 1/8"-7	H-M	BSW 1 1/8"-7	–	0150 078 7000
1 1/4"-7	H-M	BSW 1 1/4"-7	–	0150 078 8000
1 1/2"-6	H-M	BSW 1 1/2"-6	–	0150 079 0000

**BSF = British Standard Fine Thread**

3/16"-32	H-PSG	BSF 3/16"-32	0150 017 2500	–
7/32"-28	H-PSG	BSF 7/32"-28	0150 017 3500	–
1/4"-26	H-PM	BSF 1/4"-26	0150 047 4500	–
9/32"-26	H-PM	BSF 9/32"-26	0150 047 5500	–
5/16"-22	H-PM	BSF 5/16"-22	0150 047 6500	–
3/8"-20	H-PM	BSF 3/8"-20	0150 047 7500	–
7/16"-18	H-PM	BSF 7/16"-18	0150 047 8500	–
1/2"-16	H-PM	BSF 1/2"-16	0150 047 9500	–
9/16"-16	H-PM	BSF 9/16"-16	0150 048 0500	–
5/8"-14	H-PM	BSF 5/8"-14	0150 048 1500	–
11/16"-14	H-PM	BSF 11/16"-14	0150 048 2500	–
3/4"-12	H-PM	BSF 3/4"-12	0150 048 3500	–
13/16"-12	H-PM	BSF 13/16"-12	0150 048 4500	–
7/8"-11	H-PM	BSF 7/8"-11	0150 048 5500	–
1"-10	H-PM	BSF 1"-10	0150 048 6500	–
1 1/8"-9	H-PM	BSF 1 1/8"-9	0150 048 7500	–
1 1/4"-9	H-PM	BSF 1 1/4"-9	0150 048 8500	–
1 3/8"-8	H-PM	BSF 1 3/8"-8	0150 048 9500	–
1 1/2"-8	H-PM	BSF 1 1/2"-8	0150 049 0500	–

\* For thread inserts made from NiCr 15 Fe 7 Ti Al, NiCr 20 Co 18 Ti, AlZn Mg Cu 1.5 adapted tools upon request.

**Tang break off and extracting tools for HELICOIL® and HELICOIL® plus**

**Tang break-off tools for HELICOIL® and HELICOIL® plus**



Tang break-off tool



Semi automatic tang break-off tool with spring loaded tension **Typ TB-M**



Pneumatic tang break-off tool with push start **Typ TB-P**

Nominal thread Ø	Tang break-off tool Order no.	Type TB-M Order no.	Type TB-P pneumatic* Order no.
<b>UNC/NC = American National Coarse Thread</b>			
2-56	0158 040 0000	0158 602 0000	–
4-40	0158 040 1000	0158 603 0000	0168 040 3000
5-40	0158 040 1000	0158 603 0000	0168 040 3000
6-32	0158 040 2000	0158 603 0000	0168 040 4000
8-32	0158 040 2000	0158 604 0000	0168 040 4000
10-24	0158 040 3000	0158 604 0000	0168 040 5000
12-24	0158 040 3000	0158 605 0000	0168 040 5000
1/4"-20	0158 040 3000	0158 606 0000	0168 040 6000
5/16"-18	0158 040 5000	0158 607 0000	0168 040 8000
3/8"-16	0158 040 5000	0158 609 0000	0168 041 0000
7/16"-14	0158 040 6000	0158 610 0000	0168 041 0000
1/2"-13	0158 040 6000	0158 612 0000	0168 041 2000
9/16"-12	–	0158 612 0000	–
5/8"-11	–	0158 614 0000	–

\* Operating pressures 3 – 4 bar, connection G 1/4"  
As of BSW 3/4" the tang must be removed by narrow nose.

Nominal thread Ø	Tang break-off tool order no.	Type TB-M Order no.	Type TB-P pneumatic* Order no.
<b>UNF/NF = American National Fine Thread</b>			
4-48	0158 040 1000	0158 603 0000	0168 040 3000
6-40	0158 040 2000	0158 603 0000	0168 040 4000
8-36	0158 040 2000	0158 604 0000	0168 040 4000
10-32	0158 040 3000	0158 604 0000	0168 040 5000
1/4"-28	0158 040 3000	0158 606 0000	0168 040 6000
5/16"-24	0158 040 4000	0158 608 0000	0168 040 8000
3/8"-24	0158 040 4000	0158 609 0000	0168 041 0000
7/16"-20	0158 040 5000	0158 611 0000	0168 041 0000
1/2"-20	0158 040 6000	0158 612 0000	0168 041 2000
9/18"-18	–	0158 614 0000	–
5/8"-18	–	0158 616 0000	–

\* Operating pressures 3 – 4 bar, connection G 1/4"  
As of BSW 3/4" the tang must be removed by narrow nose.

**Tang break off and extracting tools for HELICOIL® and HELICOIL® plus**
**Extracting tools for HELICOIL® and HELICOIL® plus**


Nominal thread Ø	order no.
UNC 2-56 ... UNC 6-32	0180 300 0000
UNF 4-48 ... UNF 6-40	
UNC 8-32 ... UNC 3/8"-16	0180 301 0000
UNF 8-36 ... UNF 3/8"-24	
UNC 7/16"-14 ... UNC 5/8"-11	0180 302 0000
UNF 7/16"-20 ... UNF 9/16"-1	
UNC 3/4"-10 ... UNC 7/8"-9	0180 303 0000
UNF 5/8"-18 ... UNF 7/8"-14	
UNC 1"-8 ... UNC 1 1/8"-7	0180 304 0000
UNF 1"-14 ... UNF 1 1/8"-12	
UNC 1 1/4"-7 ... UNC 1 1/2"-6	0180 305 0000
UNF 1 1/4"-12 ... UNF 1 1/2"-12	

**Machine extracting tools for HELICOIL® and HELICOIL® plus**


With 1/4" hexagon, insert bit as per DIN 3126 - E 6,3 for battery tools B-S 206 und type B-S 824.

Nominal thread-Ø	Order no.
UNC 2-56 ... UNC 12-24	0180 501 0000
UNF 4-48 ... UNF 1/4"-28	
UNC 1/4"-20 ... UNC 5/8"-11	0180 502 0000
UNF 5/16"-24 ... UNF 5/8"-18	

**Tang break off and extracting tools for HELICOIL® and HELICOIL® plus**

**Tang break-off tools for HELICOIL® and HELICOIL® plus**



Tang break-off tool



Semi automatic tang break-off tool with spring loaded tension  
**Typ TB-M**



Pneumatic tang break-off tool with push start **Typ TB-P**

Nominal thread Ø	Tang break-off tool Order no.	Type TB-M Order no.	Type TB-P pneumatic* order no.
<b>BSW = British Standard Whitworth Thread</b>			
3/4"-40	0158 040 1000	0158 603 0000	upon request
3/16"-24	0158 040 2000	0158 604 0000	
1/4"-20	0158 040 3000	0158 606 0000	
5/16"-18	0158 040 4000	0158 607 0000	
3/8"-16	0158 040 4000	0158 609 0000	
7/16"-14	0158 040 5000	0158 610 0000	
1/2"-12	0158 040 6000	0158 612 0000	
9/16"-12	–	0158 612 0000	
5/8"-11	–	0158 614 0000	
3/4"-11	–	0158 616 0000	

\* Operating pressures 3 – 4 bar, connection G 1/4"  
As of BSW 3/4" the tang must be removed by narrow nose.

Nominal thread Ø	Tang break-off tool Order no.	Type TB-M Order no.	Type TB-P pneumatic* Order no.
<b>BSF = British Standard Fine Thread</b>			
3/18"-32	0158 040 2000	0158 604 0000	upon request
7/32"-28	0158 040 3000	0158 605 0000	
1/4"-26	0158 040 3000	0158 606 0000	
9/32"-26	0158 040 4000	0158 607 0000	
5/18"-22	0158 040 4000	0158 608 0000	
3/8"-20	0158 040 4000	0158 609 0000	
7/18"-18	0158 040 5000	0158 611 0000	
1/2"-16	0158 040 6000	0158 612 0000	
9/18"-16	–	0158 614 0000	
5/8"-14	–	0158 616 0000	

\* Operating pressures 3 – 4 bar, connection G 1/4"  
As of BSW 3/4" the tang must be removed by narrow nose.

**Extracting tools for HELICOIL® and HELICOIL® plus**



Nominal thread Ø	Order no.
BSW 1/8"-40 ... BSW 3/8"-16	0180 301 0000
BSF 3/16"-32 ... BSF 5/16"-22	
BSW 7/16"-14 ... BSW 5/8"-11	0180 302 0000
BSW 3/8"-20 ... BSW 5/8"-14	
BSW 11/16"-11 ... BSW 7/8"-9	0180 303 0000
BSF 11/16"-14 ... BSF 7/8"-11	
BSW 1"-8 ... BSW 1 1/8"-7	0180 304 0000
BSF 1"-10 ... BSF 1 1/8"-9	
BSW 1 1/4"-7 ... BSW 1 1/2"-6	0180 305 0000
BSF 1 1/4"-9 ... BSF 1 1/2"-8	

**Tang break off and extracting tools for HELICOIL® and HELICOIL® plus**

**Tang break-off tools for HELICOIL® and HELICOIL® plus**



Tang break-off tool



Semi automatic tang break-off tool with spring loaded tension **Typ TB-M**



Pneumatic tang break-off tool with push start **Typ TB-P**

Nominal thread Ø	Tang break-off tool Order no.	Type TB-M Order no.	Type TB-P pneumatic* Order no.
<b>BSP = British Standard Pipe Thread · G = ISO 228/1 Pipe thread</b>			
G 1/8"	0158 040 5000	0158 610 0000	–

<b>BA = British Association Standard Thread</b>			upon request
0 BA	0158 040 3000	0158 606 0000	
1 BA	0158 040 3000	0158 605 0000	
2 BA	0158 040 3000	0158 605 0000	
3 BA	0158 040 2000	0158 604 0000	
4 BA	0158 040 2000	0158 605 0000	
5 BA	0158 040 1000	0158 603 0000	
6 BA	0158 040 1000	0158 603 0000	

\* Operating pressures 3 – 4 bar, connection G 1/4"  
As of BSW 3/4" the tang must be removed by narrow nose.

**Extracting tools for HELICOIL® and HELICOIL® plus**



Nominal thread Ø	Order no.	Nominal thread Ø	Order no.
<b>BSP = British Standard Pipe thread · G = ISO 228/1 Pipe thread</b>		<b>BA = British Association Standard Thread</b>	
G 1/8"	0180 302 0000	0 BA	0180 300 0000
G 1/4"		1 BA	
G 3/8"	0180 303 0000	2 BA	
G 1/2"		3 BA	
G 5/8"	0180 304 0000	4 BA	
G 3/4"		5 BA	
G 7/8"	0180 305 0000	6 BA	
G 1"			
G 1 1/4"			
G 1 1/2"			

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Apart from these 21 countries, Böllhoff supports its international customers in other important industrial markets in close partnership with agents and dealers.

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