



## System components for installation

### Standard range of HELICOIL® plus manual and machine taps

Materials	Range of types			Recommended guide values <sup>Ⓞ</sup>	
	Manual tap  All hole types	Machine tap		Cutting speed [m/min]	Cooling Lubrication
		Through hole 	Blind hole 		
Aluminium and aluminium casting alloys (short-chip)	0140.0 0140.1-2* 0140.3-5**	0141.1	0141.5	10...20	emulsion
Aluminium and aluminium casting alloys (long-chip)	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/red brass	0140.1-2*	0141.1	0141.5	5...12	oil, emulsion
Brass tough	0140.3-5*			16	oil, emulsion
Zinc alloy				20	oil, emulsion
Brass, brittle	0140.0 0140.1-2* 0140.3-5**	0141.1	0141.5	25	oil dry

<sup>Ⓞ</sup>In individual cases, cutting tests are required for other materials.

\* Set of taps (two-piece)

\*\* Set of taps (three-piece)

We also supply tin-coated taps.

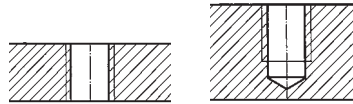
For materials which are difficult to machine and which are not listed in the overview, such as

- stainless steels
- heat-resisting steel
- other steel alloys
- titanium alloys

we can offer you special taps!

**HELICOIL® machine taps for specific requirements**

Usually, standard taps of the HELICOIL® program range comply with practical requirements.  
 For specific requirements with critical chip removal requirements, special machine taps must be used.



Material	Through hole	Blind hole	Cutting speed (m/min.)	Cooling Lubrication
Aluminium alloys with a high silicon content SI > 12 %	0141 9XXX 444	0141 9XXX 451	10	oil/emulsion
Materials difficult to machine such as: Stainless steel Heat-resisting steel	0141 9XXX 444	0141 9XXX 451	5 4	oil/emulsion
Hard materials cast iron	0141 9XXX 418	0141 9XXX 418	8 – 10	petroleum/ emulsion
Tough, seizing materials such as: Electrolytic copper Bronze, hard	0141 9XXX 445	0141 9XXX 451	12 5	oil
Brass, brittle	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
Plastic, soft thermoplastic	0141 9XXX 445	0141 9XXX 451		compressed air/ emulsion
Plastic, brittle thermoset	0141 9XXX 446	0141 9XXX 446		compressed air

Example of a designation: M 4 dimension:: 0141 **9040** 451

Further taps as special versions, such as tin-coated taps or oversize taps, on request.

## Thread tolerances of holding threads

### Metric threads

#### ■ Normal tolerances for metric threads:

According to DIN 8140 Part 2, HELICOIL® holding threads comply with tolerance **6H mod.**

6H mod corresponds to the accuracy of tolerance **5H** (also see imprint on gauge for HELICOIL® holding thread).

After the HELICOIL® plus thread insert has been installed, the completed ISO thread complies with tolerance **6H**.

#### ■ More precise tolerances for metric threads:

Aerospace standards require ISO thread tolerance **5H**:

HELICOIL® holding threads then have to comply with tolerance **5H mod.**

**5H mod** corresponds to the accuracy of tolerance **4H** (also see imprint on gauge for HELICOIL® holding thread).

After the HELICOIL® plus thread insert has been installed, the completed ISO thread complies with tolerance **5H**.

#### ■ MJ thread:

There is no specific HELICOIL® holding thread defined for the use of threaded bolts with an MJ thread profile.

#### ■ Item codes/examples:

##### Effect on the item code of HELICOIL® taps

For tolerances **6H mod** and **5H**, the 9th digit of the item code is **1**

Example: M 10 0141 410 0152

For tolerances **5H mod** and **4H**, the 9th digit of the item code is **2**

Example: M 10 0141 410 0252

##### Effect on the item code of HELICOIL® forming taps

For tolerances **6H mod** and **5H**, the 9th digit of the item code is **0**

Example: M 10 0144 110 0004

For tolerances **5H mod** and **4H**, the 9th digit of the item code is **2**

Example: M 10 0144 110 0204

##### Effect on the item code of HELICOIL® thread plug limit gauges

For tolerances **6H mod** and **5H**, the 9th digit of the item code is **5**

Example: M 10 0147 310 0500

For tolerances **5H mod** and **4H**, the 9th digit of the item code is **4**

Example: M 10 0147 310 0400

## Manual taps for HELICOIL® plus



### Type 0140.0

HELICOIL® manual tap, cutting

for coarse threads up to P = 2 mm  
for fine threads up to P = 3 mm

For cutting materials with a strength up to 700 N/mm<sup>2</sup>.

For through holes.

For blind holes only if sufficient chip space is provided.  
Minimum requirement 1d deeper than the full thread length.



### Type 0140.1-2

HELICOIL® manual tap,

two-piece set with stepped flank diameter:

pre-tap 4-pitch chamfer 0140.1...  
final tap 2-pitch chamfer 0140.2...

Pitches up to P = 3.5 mm

For cutting materials with a strength up to 700 N/mm<sup>2</sup>.

For through holes and blind holes.



Type 0140.3-5 see page 26.

For combined drilling and tapping tools,  
see page 26.

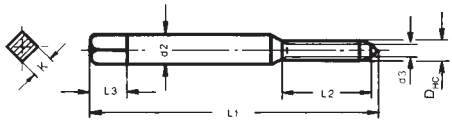
Nominal thread Ø	Cutting taps for tolerance class 6H*	Taps for tolerance class 6H* (1 set)	
		Pre-taps Type 0140.1 Order No	Finishing taps Type 0140.2 Order No
d	Type 0140.0 Order No	Type 0140.1 Order No	Type 0140.2 Order No
M 2	0140 002 0104	0140 102 0104	0140 202 0102
M 2.5	0140 025 0104	0140 125 0104	0140 225 0102
M 3	0140 003 0104	0140 103 0104	0140 203 0102
M 3.5	0140 035 0104	0140 135 0104	0140 235 0102
M 4	0140 004 0104	0140 104 0104	0140 204 0102
M 5	0140 005 0104	0140 105 0104	0140 205 0102
M 6	0140 006 0104	0140 106 0104	0140 206 0102
M 7	0140 007 0104	0140 107 0104	0140 207 0102
M 8	0140 008 0104	0140 108 0104	0140 208 0102
M 8 x 1	0140 008 3104	0140 108 3104	0140 208 3102
M 9	0140 009 0104	0140 109 0104	0140 209 0102
M 10	0140 010 0104	0140 110 0104	0140 210 0102
M 10 x 1	0140 010 3104	0140 110 3104	0140 210 3102
M 10 x 1.25	0140 010 9104	0140 110 9104	0140 210 9102
M 11	0140 011 0104	0140 111 0104	0140 211 0102
M 12	0140 012 0104	0140 112 0104	0140 212 0102
M 12 x 1	0140 012 3104	0140 112 3104	0140 212 3102
M 12 x 1.25	0140 012 9104	0140 112 9104	0140 212 9102
M 12 x 1.5	0140 012 4104	0140 112 4104	0140 212 4102
M 14	0140 014 0104	0140 114 0104	0140 214 0102
M 14 x 1	0140 014 3104	0140 114 3104	0140 214 3102
M 14 x 1.25	0140 014 9104	0140 114 9104	0140 214 9102
M 14 x 1.5	0140 014 4104	0140 114 4104	0140 214 4102
M 16	0140 016 0104	0140 116 0104	0140 216 0102
M 16 x 1.5	0140 016 4104	0140 116 4104	0140 216 4102
M 18	–	0140 118 0104	0140 218 0102
M 18 x 1.5	0140 018 4104	0140 118 4104	0140 218 4102
M 18 x 2	0140 018 5104	0140 118 5104	0140 218 5102
M 20	–	0140 120 0104	0140 220 0102
M 20 x 1.5	0140 020 4104	0140 120 4104	0140 220 4102
M 20 x 2	0140 020 5104	0140 120 5104	0140 220 5102
M 22	–	0140 122 0104	0140 222 0102
M 22 x 1.5	0140 022 4104	0140 122 4104	0140 222 4102
M 22 x 2	0140 022 5104	0140 122 5104	0140 222 5102
M 24	–	0140 124 0104	0140 224 0102
M 24 x 1.5	0140 024 4104	0140 124 4104	0140 224 4102
M 24 x 2	0140 024 5104	0140 124 5104	0140 224 5102

Further dimensions on request.

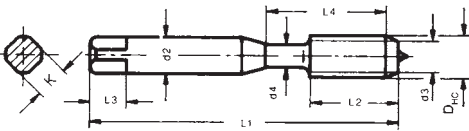
\* For tolerance class 4H, the ninth digit of the order No changes from 1 to 2. For details see page 23.  
Types 0140.0 and 0140.2 can, to a limited degree, also be used as machine taps.

Shank Ø tolerance h9. They are especially suitable for short-chip materials such as grey cast iron, brass or magnesium.

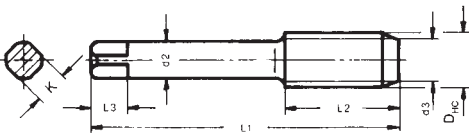
**Construction dimensions for manual taps**



**Version A**



**Version B**



**Version C**

Nominal thread Ø d	Design	Min. Outside Ø D <sub>hc</sub>	Shank Ø h 9 d 2	Chamfer Ø d 3	Total length L 1	Max. thread length L 2	Square length L 3	Square h 12 K	L 4	d 4
M 2	A	2.5	2.8	2	40	9	5	2.1	–	–
M 2.5	B	3.1	3.5	2.5	40	10	6	2.7	13.5	2.6
M 3	B	3.6	4	3	45	10	6	3	13.5	3.1
M 3.5	B	4.3	4.5	3.5	45	12	6	3.4	15.5	3.6
M 4	B	4.9	6	4	50	14	8	4.9	17.5	4.2
M 5	B	6.0	6	5	50	16	8	4.9	19.5	5.2
M 6	C	7.3	6	6	56	19	8	4.9	–	–
M 7	C	8.3	7	7	63	19	8	5.5	–	–
M 8	C	9.6	7	8	70	22	8	5.5	–	–
M 8 x 1	C	9.3	7	8	63	19	8	5.5	–	–
M 9	C	10.6	8	9	70	24	9	6.2	–	–
M 10	C	11.9	9	10	75	27	10	7	–	–
M 10 x 1	C	11.3	9	10	70	22	10	7	–	–
M 10 x 1.25	C	11.6	10	9	70	22	10	7	–	–
M 11	C	12.9	11	11	70	22	12	9	–	–
M 12	C	14.3	11	12	80	30	12	9	–	–
M 12 x 1	C	13.3	11	12	70	22	12	9	–	–
M 12 x 1.25	C	13.6	11	12	70	22	12	9	–	–
M 12 x 1.5	C	14.0	11	12	70	22	12	9	–	–
M 14	C	16.6	12	14	80	32	12	9	–	–
M 14 x 1	C	15.3	12	14	70	22	12	9	–	–
M 14 x 1.25	C	15.6	12	14	70	22	12	9	–	–
M 14 x 1.5	C	16.0	12	14	70	22	12	9	–	–
M 16	C	18.6	14	16	80	22	14	11	–	–
M 16 x 1.5	C	18.0	14	16	80	22	14	11	–	–
M 18	C	21.3	16	18	95	40	15	12	–	–
M 18 x 1.5	C	20.0	16	18	80	22	15	12	–	–
M 18 x 2	C	20.6	16	18	80	22	15	12	–	–
M 20	C	23.3	18	20	100	40	17	14.5	–	–
M 20 x 1.5	C	22.0	18	20	80	22	17	14.5	–	–
M 20 x 2	C	22.6	18	20	80	22	17	14.5	–	–
M 22	C	25.3	18	22	110	50	17	14.5	–	–
M 22 x 1.5	C	24.0	18	22	90	22	17	14.5	–	–
M 22 x 2	C	24.6	18	22	90	22	17	14.5	–	–
M 24	C	27.9	20	24	110	50	19	16	–	–
M 24 x 1.5	C	26.0	18	24	90	22	17	14.5	–	–
M 24 x 2	C	26.6	20	24	90	22	19	16	–	–

**Manual taps for HELICOIL® plus**



**Type 0140.0**

HELICOIL® manual tap, cutting

for coarse threads up to P = 2 mm  
for fine threads up to P = 3 mm

For cutting materials with a strength up to 700 N/mm<sup>2</sup>.  
For through holes.

For blind holes only if sufficient chip space is provided.  
Minimum requirement 1d deeper than the full thread length.



**Type 0140.1-2**

HELICOIL® manual tap,  
two-piece set with stepped flank diameter:

pre-tap 4-pitch chamfer 0140.1...  
final tap 2-pitch chamfer 0140.2...

Pitches up to P = 3.5 mm

For cutting materials with a strength up to 700 N/mm<sup>2</sup>.  
For through holes and blind holes.



**Type 0140.3-5**

HELICOIL® manual tap, three-piece set from M 36 with  
constant pitch

pre-tap 0140.3...  
middle tap 0140.4...  
final tap 0140.5...

Nominal thread Ø	Cutting taps for tolerance class 6H*	Taps for tolerance class 6H* (1 set)	
		Pre-taps Type 0140.1 Order No	Finishing taps Type 0140.2 Order No
d	Type 0140.0 Order No	Type 0140.1 Order No	Type 0140.2 Order No
M 26 x 1.5	0140 026 4104	0140 126 4104	0140 226 4102
M 27	–	0140 127 0104	0140 227 0102
M 27 x 1.5	0140 027 4104	0140 127 4104	0140 227 4102
M 27 x 2	0140 027 5104	0140 127 5104	0140 227 5102
M 28 x 1.5	0140 028 4104	0140 128 4104	0140 228 4102
M 30	–	0140 130 0104	0140 230 0102
M 30 x 1.5	0140 030 4104	0140 130 4104	0140 230 4102
M 30 x 2	0140 030 5104	0140 130 5104	0140 230 5102
M 33	–	0140 133 0104	0140 233 0102
M 33 x 2	0140 033 5104	0140 133 5104	0140 233 5102
M 36**	–	–	–
M 36 x 1.5	0140 036 4104	0140 136 4104	0140 236 4102
M 36 x 2	0140 036 5104	0140 136 5104	0140 236 5102
M 36 x 3	0140 036 6104	0140 136 6104	0140 236 6102

Further dimensions on request.

\* For tolerance class 4H, the ninth digit of the order No changes from 1 to 2. For details see page 23.

\*\* Set of taps (three-flute), additionally intermediate tap 0140 436 0104.

Types 0140.0 and 0140.2 can, to a limited degree, also be used as machine taps.

Shank Ø tolerance h9. They are especially suitable for short-chip materials such as: grey cast iron, brass or magnesium.

**Combined drilling and tapping tools**

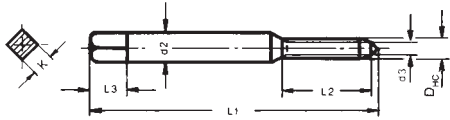


For tapping HELICOIL® holding threads in damaged metric coarse and fine thread.

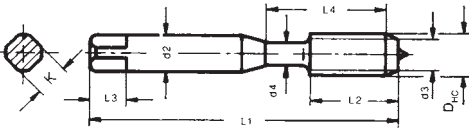
Pre-drilling of the HELICOIL® holding thread tap hole is not required. Due to the guiding unit d 3 x L 5, it can only be used for blind-hole threads under certain conditions.

Nominal thread Ø	Order No
d	
M 6	0142 006 0102
M 8	0142 008 0102
M 10	0142 010 0102
M 10 x 1	0142 910 3450
M 12	0142 912 0450
M 12 x 1.25	0142 912 9450
M 12 x 1.5	0142 912 4450
M 14	0142 914 0450
M 14 x 1.25*	0142 914 9450
M 14 x 1.25**	0142 014 9102
M 14 x 1.5	0142 914 4450
M 16	0142 916 0450
M 16 x 1.5	0142 916 4450
* L 1 = 92	** L 1 = 153

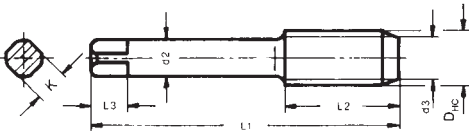
**Construction dimensions for manual taps**



**Version A, see pages 24/25**



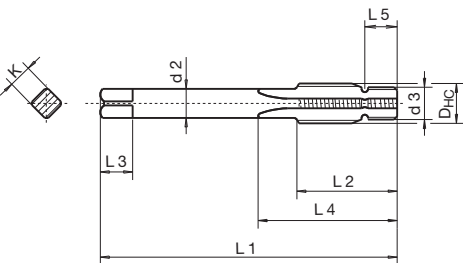
**Version B, see pages 24/25**



**Version C, see pages 24 to 27**

Nominal thread Ø d	Design	Min outside Ø D <sub>HC</sub>	Shank Ø h 9 d 2	Chamfer Ø d 3	Total length L 1	Max. thread length L 2	Square length L 3	Square h 12 K	L 4	d 4
M 26 x 1.5	C	28.0	20	26	90	22	19	16	-	-
M 27	C	30.9	22	27	125	56	21	18	-	-
M 27 x 1.5	C	29.0	22	27	90	22	21	18	-	-
M 27 x 2	C	29.6	22	27	90	22	21	18	-	-
M 28 x 1.5	C	30.0	22	28	90	22	21	18	-	-
M 30	C	34.6	28	30	125	40	25	22	-	-
M 30 x 1.5	C	32.0	22	30	90	22	21	18	-	-
M 30 x 2	C	32.6	25	30	100	22	23	20	-	-
M 33	C	37.6	28	33	125	40	25	22	-	-
M 33 x 2	C	35.6	28	33	125	40	25	22	-	-
M 36	C	41.2	32	36	150	63	27	24	-	-
M 36 x 1.5	C	38.0	28	36	100	25	25	22	-	-
M 36 x 2	C	38.6	32	36	125	40	27	24	-	-
M 36 x 3	C	39.9	32	36	125	40	27	24	-	-

**Construction dimensions for combined drilling and tapping tools**



Nominal thread Ø d	Min. outside Ø D <sub>HC</sub>	Shank Ø h 9 d 2	Chamfer Ø d 3	Total length L 1	Max. thread length L 2	Square length L 3	L 4 min.	Lead Thread Length L 5	Square h 12 K
M 6	7.3	8	M 6	90	26	9	36	6	6.2
M 8	9.7	10	M 8	90	28	11	38	7.5	8
M 10	12.0	12	M 10	100	31	12	42	9	9
M 10 x 1	11.3	9	M 10 x 1	92	31	10	42	9	7
M 12	14.3	11	M 12	92	35	12	43	10	9
M 12 x 1.25	13.7	11	M 12 x 1.25	92	35	12	43	10	9
M 12 x 1.5	13.7	11	M 12 x 1.25	92	35	12	43	10	9
M 14	13.7	11	M 12 x 1.25	92	35	12	43	10	9
M 14 x 1.25	15.7	11	M 14 x 1.25	92	35	12	43	10	9
M 14 x 1.25	15.7	11	M 14 x 1.25	153	35	12	43	10	9
M 14 x 1.5	16.0	11	M 14 x 1.5	92	35	12	43	10	9
M 16	18.7	14	M 16	90	39	14	50	9	11
M 16 x 1.5	18.0	14	M 16 x 1.5	92	39	14	50	10	11

**Machine taps for HELICOIL® plus**



**Type 0141.1**

HELICOIL® machine tap, straight-fluted, rake angle 10°, with spiral point 4-pitch chamfer for through holes, for blind holes with deeper drilled tap hole.

For materials with a strength below and above 700 N/mm².



**Type 0141.4**

HELICOIL® machine tap, spiral flutes 45° right-hand spiral, rake angle 15°, 2-pitch chamfer for blind holes.

For aluminium alloys with a strength of up to 500 N/mm². Up to M 8 2-flute.

From M 9 3-flute and additionally also for soft steels with a strength of up to 450 N/mm².



**Typ 0141.5**

HELICOIL® machine tap, spiral flutes 40° right-hand spiral, rake angle 10°, 3-flute, 2-pitch chamfer for blind holes, for blind holes with deeper drilled tap hole.

For steels with a strength from 500 N/mm² to 850 N/mm² maximum.

Also suitable for aluminium alloys with an Si content of up to approximately 10%.

HELICOIL® special taps for specific applications and materials, see page 22.

Nominal thread Ø	for tolerance class 6H*	for tolerance class 6H*	for tolerance class 6H*
	Type 0141.1 Order No	Type 0141.4 Order No	Type 0141.5 Order No
d			
M 2	0141 102 0104	0141 402 0152	0141 502 0102
M 2.5	0141 125 0104	0141 425 0152	0141 525 0102
M 3	0141 103 0104	0141 403 0152	0141 503 0102
M 3.5	0141 135 0104	0141 435 0152	0141 535 0102
M 4	0141 104 0104	0141 404 0152	0141 504 0102
M 5	0141 105 0104	0141 405 0152	0141 505 0102
M 6	0141 106 0104	0141 406 0152	0141 506 0102
M 7	0141 107 0104	0141 407 0152	0141 507 0102
M 8	0141 108 0104	0141 408 0152	0141 508 0102
M 8 x 1	0141 108 3104	0141 408 3152	0141 508 3102
M 9	0141 109 0104	0141 409 0152	0141 509 0102
M 10	0141 110 0104	0141 410 0152	0141 510 0102
M 10 x 1	0141 110 3104	0141 410 3152	0141 510 3102
M 10 x 1.25	0141 110 9104	–	0141 510 9102
M 11	0141 111 0104	0141 411 0152	0141 511 0102
M 12	0141 112 0104	0141 412 0152	0141 512 0102
M 12 x 1	0141 112 3104	0141 412 3152	0141 512 3102
M 12 x 1.25	0141 112 9104	–	0141 512 9102
M 12 x 1.5	0141 112 4104	0141 412 4152	0141 512 4102
M 14	0141 114 0104	–	0141 514 0102
M 14 x 1	0141 114 3104	0141 414 3152	0141 514 3102
M 14 x 1.25	0141 114 9104	–	–
M 14 x 1.5	0141 114 4104	0141 414 4152	0141 514 4102
M 16	0141 116 0104	–	0141 516 0102
M 16 x 1.5	0141 116 4104	0141 416 4152	0141 516 4102
M 18	0141 118 0104	–	0141 518 0102
M 18 x 1.5	0141 118 4104	0141 418 4152	0141 518 4102
M 18 x 2	0141 118 5104	–	0141 518 5102
M 20	0141 120 0104	–	0141 520 0102
M 20 x 1.5	0141 120 4104	0141 420 4152	0141 520 4102
M 20 x 2	0141 120 5104	–	0141 520 5102
M 22	0141 122 0104	–	0141 522 0102
M 22 x 1.5	0141 122 4104	0141 422 4152	0141 522 4102
M 22 x 2	0141 122 5104	–	0141 522 5102
M 24	0141 124 0104	–	0141 524 0102
M 24 x 1.5	0141 124 4104	0141 424 4152	0141 524 4102
M 24 x 2	0141 124 5104	–	0141 524 5102

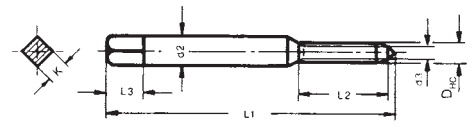
Further dimensions on request.

\* For tolerance class 4H, the ninth digit of the order No changes from 1 to 2.

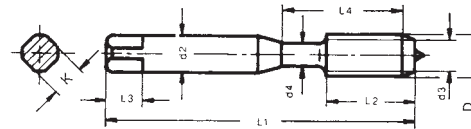
For details see page 23.



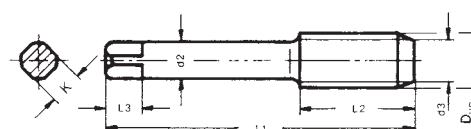
**Construction dimensions for machine taps**



**Version A**



**Version B**



**Version C**

Nominal thread Ø d	Design	Min. outside Ø D <sub>hc</sub>	Shank Ø h 9 d 2	Chamfer Ø d 3	Total length L 1	Types 0141.1 / 0141.4 max. thread length L2	Type 0141.5 max. thread length L2	Square length L 3	Square h 12 K	L 4	d 4
M 2	A	2.5	2.8	2	50	8	4	5	2.1	-	-
M 2.5	B	3.1	3.5	2.5	56	11	5	6	2.7	18	2.6
M 3	B	3.7	4	3	56	13	6	6	2.7	20	3.1
M 3.5	B	4.3	4.5	3.5	63	13	7	6	3.1	21	3.6
M 4	B	4.9	6	4	70	16	8	8	4.9	25	4.2
M 5	B	6.0	6	5	80	17	10	8	4.9	30	5.2
M 6	B	7.3	8	6	90	20	12	9	6.2	35	6.2
M 7	B	8.3	9	7	90	20	12	10	7	35	7.2
M 8	B	9.6	10	8	100	20	14	11	8	39	8.3
M 8 x 1	B	9.3	9	8	90	20	12	10	7	35	8.2
M 9	C	10.6	8	9	100	22	14	9	6.2	-	-
M 10	C	12.0	9	10	110	24/16	16	10	7	-	-
M 10 x 1	C	11.3	9	10	100	22	16	10	7	-	-
M 10 x 1.25	C	11.6	9	10	100	22	16	10	7	-	-
M 11	C	13.0	11	11	100	22/20	20	11	9	-	-
M 12	C	14.3	11	12	110	26/20	20	12	9	-	-
M 12 x 1	C	13.3	11	12	100	22/20	20	12	9	-	-
M 12 x 1.25	C	13.6	11	12	100	22/20	20	12	9	-	-
M 12 x 1.5	C	14.0	11	12	100	22/20	20	12	9	-	-
M 14	C	16.6	12	14	110	28/20	20	12	9	-	-
M 14 x 1	C	15.3	12	14	100	22/20	20	12	9	-	-
M 14 x 1.25	C	15.6	12	14	100	22/20	20	12	9	-	-
M 14 x 1.5	C	16.0	12	14	100	22/20	20	12	9	-	-
M 16	C	18.6	14	16	125	34/25	25	14	11	-	-
M 16 x 1.5	C	18.0	14	16	110	25	25	14	11	-	-
M 18	C	21.3	16	18	140	34/25	25	15	12	-	-
M 18 x 1.5	C	20.0	16	18	125	25	25	15	12	-	-
M 18 x 2	C	20.6	16	18	140	34	25	15	12	-	-
M 20	C	23.3	18	20	140	34/25	25	17	14.5	-	-
M 20 x 1.5	C	22.0	18	20	125	25	25	17	14.5	-	-
M 20 x 2	C	22.6	18	20	140	34	25	17	14.5	-	-
M 22	C	25.3	18	22	160	38/30	30	17	14.5	-	-
M 22 x 1.5	C	24.0	18	22	140	28	28	17	14.5	-	-
M 22 x 2	C	24.6	18	22	140	28	28	17	14.5	-	-
M 24	C	27.9	20	24	160	38/30	30	19	16	-	-
M 24 x 1.5	C	26.0	18	24	140	28	28	17	14.5	-	-
M 24 x 2	C	26.6	20	24	140	28	28	19	16	-	-

**Machine taps for HELICOIL® plus**



**Type 0141.1**

HELICOIL® machine tap, straight-fluted, rake angle 10°, with spiral point 4-pitch chamfer for through holes, for blind holes with deeper drilled tap hole.

For materials with a strength below and above 700 N/mm².



**Type 0141.4**

HELICOIL® machine tap, spiral flutes 45° right-hand spiral, rake angle 15°, 2-pitch chamfer for blind holes.

For aluminium alloys with a strength of up to 500 N/mm². Up to M 8 2-flute.

From M 9 3-flute and additionally also for soft steels with a strength of up to 450 N/mm².



**Typ 0141.5**

HELICOIL® machine tap, spiral flutes 40° right-hand spiral, rake angle 10°, 3-flute, 2-pitch chamfer for blind holes, for blind holes with deeper drilled tap hole.

For steels with a strength from 500 N/mm² to 850 N/mm² maximum.

Also suitable for aluminium alloys with an Si content of up to approximately 10%.

HELICOIL® special taps for specific applications and materials, see page 22.

Nominal thread Ø d	for tolerance class 6H*	for tolerance class 6H*	for tolerance class 6H*
	Type 0141.1 Order No	Type 0141.4 Order No	Type 0141.5 Order No
M 26 x 1.5	0141 126 4104	0141 426 4152	0141 526 4102
M 27	0141 127 0104	–	0141 527 0102
M 27 x 1.5	0141 127 4104	0141 427 4152	0141 527 4102
M 27 x 2	0141 127 5104	–	0141 527 5102
M 28 x 1.5	0141 128 4104	0141 428 4152	0141 528 4102
M 30	0141 130 0104	–	0141 530 0102
M 30 x 1.5	0141 130 4104	0141 430 4152	0141 530 4102
M 30 x 2	0141 130 5104	–	0141 530 5102
M 33	0141 133 0104	–	0141 533 0102
M 33 x 2	0141 133 5104	–	0141 533 5102
M 36	0141 136 0104	–	0141 536 0102
M 36 x 1.5	0141 136 4104	0141 436 4152	–
M 36 x 2	0141 136 5104	–	0141 536 5102
M 36 x 3	0141 136 6104	–	0141 536 6102

Further dimensions on request.

\* For tolerance class 4H, the ninth digit of the order No changes from 1 to 2. For details see page 23.

**Machine forming taps for HELICOIL® plus**



Chipless production of internal threads for blind-hole and through-hole threads.

With oil grooves.

Perfect lubrication even for large depths.

Cutting speeds as for tapping.

Lubrication:

Oil-containing lubricants or grease-containing emulsions.

Range of materials:

Very ductile materials, such as aluminium, copper or zinc alloys, steel up to 700 N/mm², soft stainless steels at an elongation at break of at least 10%.

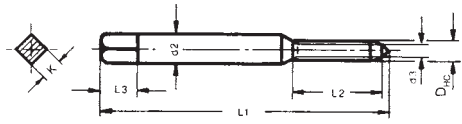
Nominal thread Ø d	Guide value for shaped hole Ø d <sub>F</sub>	Order No <sup>Ⓞ</sup>
M 3	3.4	0144 103 0004
M 3.5	4.0	0144 135 0004
M 4	4.6	0144 104 0004
M 5	5.6	0144 105 0004
M 6	6.8	0144 106 0004
M 8	9.0	0144 108 0004
M 10	11.2	0144 110 0004
M 12	13.4	0144 112 0004

Further dimensions on request.

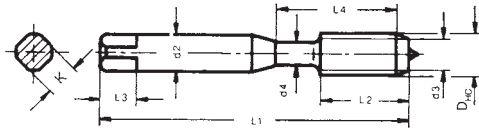
We also supply tin-coated forming taps.

Ⓞ For tolerance class 4H, the ninth digit of the Order No changes from 0 to 2. For details see page 23.

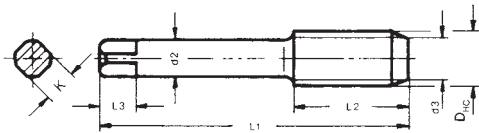
**Construction dimensions for machine taps**



**Version A, see pages 28/29**



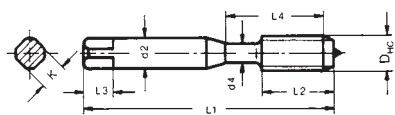
**Version B, see pages 28/29**



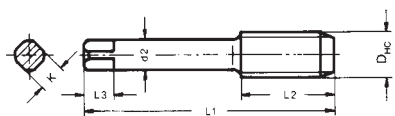
**Version C, see also pages 28 to 31**

Nominal thread $\varnothing$ d	Design	Min. outside $\varnothing$ $D_{HC}$	Shank $\varnothing$ h 9 d 2	Chamfer $\varnothing$ d 3	Total length L 1	Types 0141.1 / 0141.4 max. thread length L 2	Type 0141.5 max. thread length L 2	Square length L 3	Square h 12 K	L 4	d 4
M 26 x 1.5	C	28.0	20	26	140	28	28	19	16	-	-
M 27	C	30.9	22	27	180	50	50	21	18	-	-
M 27 x 1.5	C	29.0	22	27	150	28	28	21	18	-	-
M 27 x 2	C	29.6	22	27	150	28	28	21	18	-	-
M 28 x 1.5	C	30.0	22	28	150	28	28	21	18	-	-
M 30	C	34.5	28	30	200	56	56	25	22	-	-
M 30 x 1.5	C	32.0	22	30	150	28	28	21	18	-	-
M 30 x 2	C	32.6	25	30	160	30	28	23	20	-	-
M 33	C	37.5	28	33	200	56	56	25	22	-	-
M 33 x 2	C	35.6	28	33	170	30	30	25	22	-	-
M 36	C	41.2	32	36	200	60	60	27	24	-	-
M 36 x 1.5	C	38.0	28	36	170	30	30	25	22	-	-
M 36 x 2	C	38.6	32	36	170	30	30	27	24	-	-
M 36 x 3	C	39.9	32	36	200	60	60	27	24	-	-

**Construction dimensions for machine forming taps for HELICOIL® plus**



**Version B**



**Version C**

Nominal thread $\varnothing$ d	Design	Min. outside $\varnothing$ $D_{HC}$	Shank $\varnothing$ h 9 d 2	Total length L 1	Max. thread length L 2	Square length L 3	Square h 12 K	L 4	d 4
M 3	B	3.69	4	56	13	6	2.7	20	3.1
M 3.5	B	4.33	4.5	63	13	6	3.1	21	3.6
M 4	B	4.96	6	70	16	8	4.9	25	4.2
M 5	B	6.09	6	80	17	8	4.7	30	5.2
M 6	B	7.37	8	90	20	9	6.2	35	7.2
M 8	B	9.69	10	100	20	11	8	39	8.9
M 10	C	12.02	9	110	24	10	7	-	-
M 12	C	14.37	11	110	26	12	9	-	-

Further dimensions on request.

We also supply tin-coated forming taps.

© For tolerance class 4H, the ninth digit of the designation changes from 0 to 2.

For details see page 23.

**Gauges for HELICOIL®plus holding threads**




Nominal thread Ø d	P	Order No*	Nominal thread Ø d	P	Order No*
M 2	0.4	0147 302 0500	M 18 x 1.5	1.5	0147 318 4500
M 2.5	0.45	0147 325 0500	M 18 x 2	2	0147 318 5500
M 3	0.5	0147 303 0500	M 20	2.5	0147 320 0500
M 3.5	0.6	0147 335 0500	M 20 x 1.5	1.5	0147 320 4500
M 4	0.7	0147 304 0500	M 20 x 2	2	0147 320 5500
M 5	0.8	0147 305 0500	M 22	2.5	0147 322 0500
M 6	1	0147 306 0500	M 22 x 1.5	1.5	0147 322 4500
M 7	1	0147 307 0500	M 22 x 2	2	0147 322 5500
M 8	1.25	0147 308 0500	M 24	3	0147 324 0500
M 8 x 1	1	0147 308 3500	M 24 x 1.5	1.5	0147 324 4500
M 9	1.25	0147 309 0500	M 24 x 2	2	0147 324 5500
M 10	1.5	0147 310 0500	M 26 x 1.5	1.5	0147 326 4500
M 10 x 1	1	0147 310 3500	M 27	3	0147 327 0500
M 10 x 1.25	1.25	0147 310 9500	M 27 x 1.5	1.5	0147 327 4500
M 11	1.5	0147 311 0500	M 27 x 2	2	0147 327 5500
M 12	1.75	0147 312 0500	M 28 x 1.5	1.5	0147 328 4500
M 12 x 1	1	0147 312 3500	M 30	3.5	0147 330 0500
M 12 x 1.25	1.25	0147 312 9500	M 30 x 1.5	1.5	0147 330 4500
M 12 x 1.5	1.5	0147 312 4500	M 30 x 2	2	0147 330 5500
M 14	2	0147 314 0500	M 33	3.5	0147 333 0500
M 14 x 1	1	0147 314 3500	M 33 x 2	2	0147 333 5500
M 14 x 1.25	1.25	0147 314 9500	M 36	4	0147 336 0500
M 14 x 1.5	1.5	0147 314 4500	M 36 x 1.5	1.5	0147 336 4500
M 16	2	0147 316 0500	M 36 x 2	2	0147 336 5500
M 16 x 1.5	1.5	0147 316 4500	M 36 x 3	3	0147 336 6500
M 18	2.5	0147 318 0500	–	–	–

Further dimensions on request.

\* For tolerance class 4H, the ninth digit of the order No changes from 5 to 4.  
For details see page 23.

## 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 166 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	

**UNF = American National Fine threads**

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.
<b>BSW = British Standard Whitworth thread</b>			
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
<b>BSF = British Standard Fine Thread</b>			
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
<b>BA = British Association Standard Thread</b>			
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

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

#### 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.

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

Nominal thread Ø d	for tolerance class 2 B* Typs 0141.0 and 0141.1 Order no.	for tolerance class 2 B* Type 0141.5 Order no.
<b>BSP = British Standard Pipe thread · G = ISO 228/1 Pipe thread</b>		
G 1/8"	0141 071 4102 <sup>①</sup>	–
G 1/4"	0141 074 4102 <sup>①</sup>	–
G 3/8"	0141 077 4102 <sup>①</sup>	–
G 1/2"	0141 079 4102 <sup>①</sup>	–
G 5/8"	0141 081 4102 <sup>①</sup>	–
G 3/4"	0141 083 4102 <sup>①</sup>	–
G 7/8"	0141 085 4102 <sup>①</sup>	–
G 1"	0141 086 4102 <sup>①</sup>	–
G 1 1/4"	0141 088 4102 <sup>①</sup>	–
G 1 1/2"	0141 090 4102 <sup>①</sup>	–

### 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.

### 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.

① 2-action cut

### 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.

**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.*
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**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.