

Wuerth Industrial Services Malaysia

W.TEC[®]

INSERT COIL

Wire Thread Inserts



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Dear customer of Würth Industrie Service!

Within the Würth group Würth Industrie Service GmbH & Co. KG is responsible for delivering industrial customers. In 1999 the company was founded as an independent company and since that date it is operating from its location at the Industriepark Würth in Bad Mergentheim / Germany.

The wide range of C-parts adapted to the needs of different target groups and the unique supply concept make Würth Industrie Service be your competent partner for C-parts. The product range of Würth Industrie Service is focused on industrial requirements for production needs, small parts and assembly material for the construction of plants, machines and vehicles as well as maintenance equipment.

Würth Industrie Service provides market support and consequently analyses the current needs and the future requirements of all customers.

The wire thread inserts in stock decisively expand our standard product range and meet the requirements of several company standards in the field of the automotive industry as well as the machinery and plant engineering.

In addition to the products Würth Industrie Service provides competent and individual technical customer service.

Learn more about W.TEC® INSERT COILS in this brochure!

We look forward to a cooperative partnership and thank you for your confidence.



Dr. Uwe Hasselmann,
Head of Technical Department

W.TEC® INSERT COIL

Made of austenitic stainless steel thread inserts are the perfect thread reinforcement in low strength metals or in plastics, as they are not only space-saving but also resistant. The diamond-shaped helical wire in combination with a tang that is broken at the predetermined breaking point after installation characterize the thread insert.

A sophisticated material selection and a high level of care during production offer the user further advantages: high surface quality, high wear resistance, low thread friction, high corrosion and heat resistance.

Due to continuous quality controls during the production process we ensure a consistently high quality level.

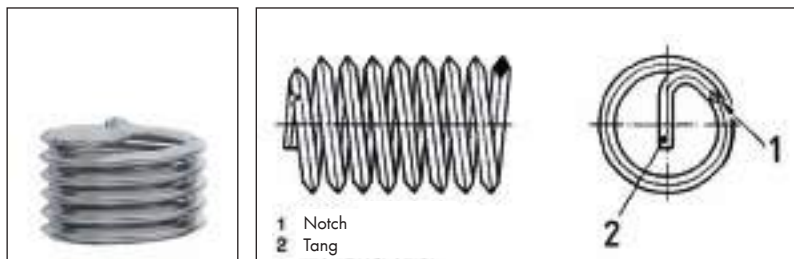
Among other materials, thread inserts are used in low strength materials such as aluminium, brass, plastics etc. to ensure reliable connections even in case of small diameters. Damaged or stripped threads can also be repaired and show better properties after reinforcement than before. As a standard screw thread inserts can be placed and inserted in the premanufactured special thread.



W.TEC® INSERT COIL – Free Running

These thread inserts have got a free running thread true to gauge along the entire length. After installation the tolerance of the ISO thread is 6H. The inserts are not coloured.





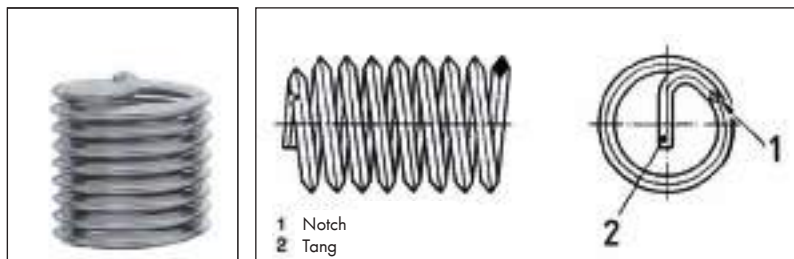
W.TEC® INSERT COIL – Free Running DIN 8140-1

- Form A
- 1.0 x Diameter

Diameter x Pitch	1.0 D 1.0 x Diameter
Item no.	
M 2 x 0.4	46272 2
M 2.5 x 0.45	462725 25
M 3 x 0.5	46273 3
M 3.5 x 0.6	462735 35
M 4 x 0.7	46274 4
M 5 x 0.8	46275 5
M 6 x 0.75	462760 6
M 6 x 1.0	46276 6
M 7 x 1.0	46277 7
M 8 x 0.75	462780 8
M 8 x 1.0	462781 8
M 8 x 1.25	46278 8
M 9 x 1.0	462791 9
M 9 x 1.25	46279 9
M 10 x 1.0	462710110
M 10 x 1.25	462710210
M 10 x 1.5	462710 10
M 11 x 1.0	462711111
M 11 x 1.5	462711 11
M 12 x 1.0	462712112
M 12 x 1.25	462712212
M 12 x 1.5	462712312
M 12 x 1.75	462712 12
M 13 x 1.5	462713313
M 14 x 1.0	462714114
M 14 x 1.25	462714214
M 14 x 1.5	462714314
M 14 x 2.0	462714 14
M 16 x 1.5	462716316
M 16 x 2.0	462716 16
M 18 x 1.5	462718318
M 18 x 2.0	462718418
M 18 x 2.5	462718 18

Diameter x Pitch	1.0 D 1.0 x Diameter
Item no.	
M 20 x 1.5	462720320
M 20 x 2.0	462720420
M 20 x 2.5	462720 20
M 22 x 1.5	462722322
M 22 x 2.0	462722422
M 22 x 2.5	462722 22
M 24 x 1.5	462724324
M 24 x 2.0	462724424
M 24 x 3.0	462724 24
M 28 x 1.5	462728328
M 30 x 1.5	462730330
M 30 x 2.0	462730430
M 30 x 3.5	462730 30
M 33 x 2.0	462733433
M 33 x 3.5	462733 33
M 36 x 4.0	462736 36

Further dimensions are available on request.



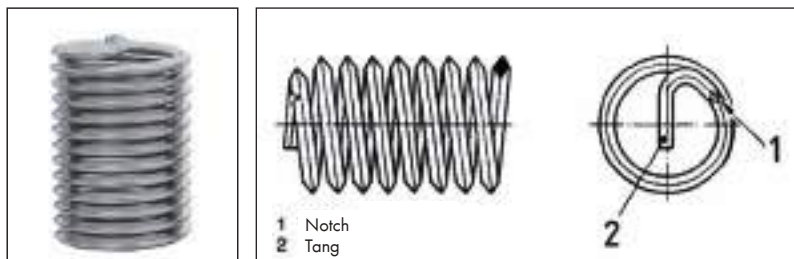
W.TEC® INSERT COIL – Free Running DIN 8140-1

- Form A
- 1.5 x Diameter

Diameter x Pitch	1.5 D 1.5 x Diameter
Item no.	
M 2 x 0.4	46272 3
M 2.5 x 0.45	462725 375
M 3 x 0.5	46273 45
M 3.5 x 0.6	462735 525
M 4 x 0.7	46274 6
M 5 x 0.8	46275 75
M 6 x 0.75	462760 9
M 6 x 1.0	46276 9
M 7 x 1.0	46277 105
M 8 x 0.75	462780 12
M 8 x 1.0	462781 12
M 8 x 1.25	46278 12
M 9 x 1.0	462791 135
M 9 x 1.25	46279 135
M 10 x 1.0	462710115
M 10 x 1.25	462710215
M 10 x 1.5	462710 15
M 11 x 1.0	4627111165
M 11 x 1.25	4627112165
M 11 x 1.5	462711 165
M 12 x 1.0	462712118
M 12 x 1.25	462712218
M 12 x 1.5	462712318
M 12 x 1.75	462712 18
M 13 x 1.5	4627133195
M 14 x 1.0	462714121
M 14 x 1.25	462714221
M 14 x 1.5	462714321
M 14 x 2.0	462714 21
M 16 x 1.5	462716324
M 16 x 2.0	462716 24
M 18 x 1.5	462718327
M 18 x 2.0	462718427
M 18 x 2.5	462718 27

Diameter x Pitch	1.5 D 1.5 x Diameter
Item no.	
M 20 x 1.5	462720330
M 20 x 2.0	462720430
M 20 x 2.5	462720 30
M 22 x 1.5	462722333
M 22 x 2.0	462722433
M 22 x 2.5	462722 33
M 24 x 1.5	462724336
M 24 x 2.0	462724436
M 24 x 3.0	462724 36
M 26 x 1.5	462726339
M 28 x 1.5	462728342
M 30 x 1.5	462730345
M 30 x 2.0	462730445
M 30 x 3.5	462730 45
M 33 x 2.0	4627334495
M 33 x 3.5	462733 495
M 36 x 1.5	462736354
M 36 x 2.0	462736454
M 36 x 3.0	462736554
M 36 x 4.0	462736 54
M 39 x 2.0	4627394585
M 39 x 4.0	462739 585
M 42 x 2.0	462742463
M 42 x 3.0	462742563
M 42 x 4.0	462742663

Further dimensions are available on request.



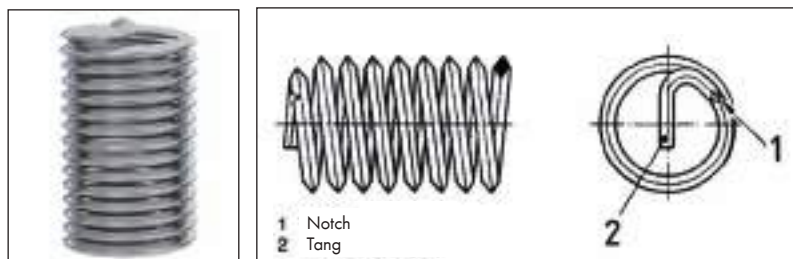
W.TEC® INSERT COIL – Free Running DIN 8140-1

- Form A
- 2.0 x Diameter

Diameter x Pitch	2.0 D 2 x Diameter
	Item no.
M 2 x 0.4	46272 4
M 2.5 x 0.45	462725 5
M 3 x 0.5	46273 6
M 3.5 x 0.6	462735 7
M 4 x 0.7	46274 8
M 5 x 0.8	46275 10
M 6 x 0.75	462760 12
M 6 x 1.0	46276 12
M 7 x 1.0	46277 14
M 8 x 0.75	462780 16
M 8 x 1.0	462781 16
M 8 x 1.25	46278 16
M 9 x 1.0	462791 18
M 9 x 1.25	46279 18
M 10 x 1.0	462710120
M 10 x 1.25	462710220
M 10 x 1.5	462710 20
M 11 x 1.0	462711122
M 11 x 1.25	462711222
M 11 x 1.5	462711 22
M 12 x 1.0	462712124
M 12 x 1.25	462712224
M 12 x 1.5	462712324
M 12 x 1.75	462712 24
M 13 x 1.5	462713326
M 14 x 1.0	462714128
M 14 x 1.25	462714228
M 14 x 1.5	462714328
M 14 x 2.0	462714 28
M 16 x 1.5	462716332
M 16 x 2.0	462716 32
M 18 x 1.5	462718336
M 18 x 2.0	462718436
M 18 x 2.5	462718 36

Diameter x Pitch	2.0 D 2 x Diameter
	Item no.
M 20 x 1.5	462720340
M 20 x 2.0	462720440
M 20 x 2.5	462720 40
M 22 x 1.5	462722344
M 22 x 2.0	462722444
M 22 x 2.5	462722 44
M 24 x 1.5	462724348
M 24 x 2.0	462724448
M 24 x 3.0	462724 48
M 33 x 3.5	462733 66
M 36 x 4.0	462736 72

Further dimensions are available on request.



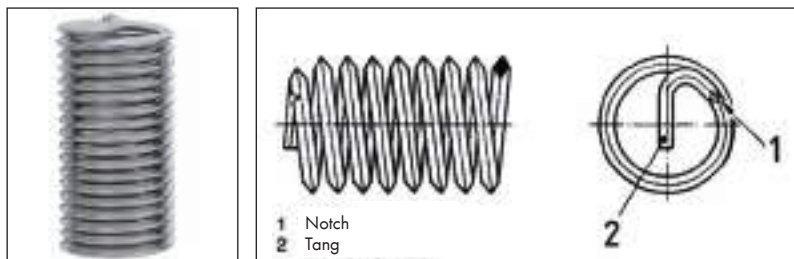
W.TEC® INSERT COIL – Free Running DIN 8140-1

- Form A
- 2.5 x Diameter

Diameter x Pitch	2.5 D 2.5 x Diameter
Item no.	
M 2 x 0.4	46272 5
M 2.5 x 0.45	462725 625
M 3 x 0.5	46273 75
M 3.5 x 0.6	462735 875
M 4 x 0.7	46274 10
M 5 x 0.8	46275 125
M 6 x 1.0	46276 15
M 7 x 1.0	46277 175
M 8 x 1.0	462781 20
M 8 x 1.25	46278 20
M 9 x 1.25	46279 225
M 10 x 1.0	462710125
M 10 x 1.25	462710225
M 10 x 1.5	462710 25
M 11 x 1.5	462711 275
M 12 x 1.0	462712130
M 12 x 1.25	462712230
M 12 x 1.5	462712330
M 12 x 1.75	462712 30
M 14 x 1.0	462714135
M 14 x 1.25	462714235
M 14 x 1.5	462714335
M 14 x 2.0	462714 35
M 16 x 1.5	462716340
M 16 x 2.0	462716 40
M 18 x 1.5	462718345
M 18 x 2.0	462718445
M 18 x 2.5	462718 45

Diameter x Pitch	2.5 D 2.5 x Diameter
Item no.	
M 20 x 1.5	462720350
M 20 x 2.0	462720450
M 20 x 2.5	462720 50
M 22 x 1.5	462722355
M 22 x 2.0	462722455
M 22 x 2.5	462722 55
M 24 x 1.5	462724360
M 24 x 2.0	462724460
M 24 x 3.0	462724 60

Further dimensions are available on request.



W.TEC® INSERT COIL – Free Running DIN 8140-1

- Form A
- 3.0 x Diameter

Diameter x Pitch	3.0 D 3 x Diameter
Item no.	
M 2 x 0.4	46272 6
M 2.5 x 0.45	462725 75
M 3 x 0.5	46273 9
M 3.5 x 0.6	462735 105
M 4 x 0.7	46274 12
M 5 x 0.8	46275 15
M 6 x 1.0	46276 18
M 7 x 1.0	46277 21
M 8 x 1.0	462781 24
M 8 x 1.25	46278 24
M 9 x 1.25	46279 27
M 10 x 1.0	462710130
M 10 x 1.25	462710230
M 10 x 1.5	462710 30
M 11 x 1.5	462711 33
M 12 x 1.0	462712136
M 12 x 1.25	462712236
M 12 x 1.5	462712336
M 12 x 1.75	462712 36
M 14 x 1.0	462714142
M 14 x 1.25	462714242
M 14 x 1.5	462714342
M 14 x 2.0	462714 42
M 16 x 1.5	462716348
M 16 x 2.0	462716 48
M 18 x 1.5	462718354
M 18 x 2.0	462718454
M 18 x 2.5	462718 54

Diameter x Pitch	3.0 D 3 x Diameter
Item no.	
M 20 x 1.5	462720360
M 20 x 2.0	462720460
M 20 x 2.5	462720 60
M 22 x 1.5	462722366
M 22 x 2.0	462722466
M 22 x 2.5	462722 66
M 24 x 1.5	462724372
M 24 x 2.0	462724472
M 24 x 3.0	462724 72

Further dimensions are available on request.

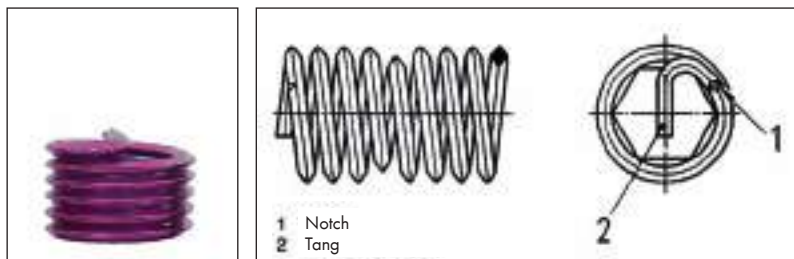


Storage equipment available on request for dimensions M3 to M10 and lengths 1.0 D to 2.0 D.

W.TEC® INSERT COIL – Screw Grip

This thread insert does not only have the advantages of the “free running” type but it has also got a screw-locking section. One or more polygonal coils have got a clamping effect on the flanks of the inserted screw. The result is an elastically resilient frictional locking. The clamping torques are comparable to the indications of DIN 267 Part 15 or DIN EN ISO 2320. The red colour clearly distinguishes this type from the “free running” type.





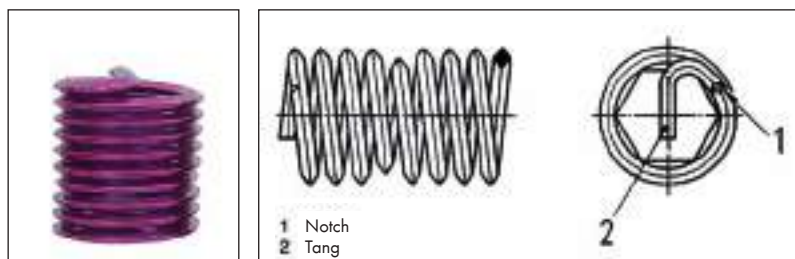
W.TEC® INSERT COIL – Screw Grip DIN 8140-1

- Form B
- 1.0 and 1.5 x Diameter

Diameter x Pitch	1.0 D 1.0 x Diameter
	Item no.
M 2 x 0.4	46262 2
M 2.5 x 0.45	462625 25
M 3 x 0.5	46263 3
M 3.5 x 0.6	462635 35
M 4 x 0.7	46264 4
M 5 x 0.8	46265 5
M 6 x 1.0	46266 6
M 7 x 1.0	46267 7
M 8 x 1.0	462681 8
M 8 x 1.25	46268 8
M 10 x 1.25	462610210
M 10 x 1.5	462610 10
M 12 x 1.75	462612 12
M 14 x 2.0	462614 14
M 16 x 2.0	462616 16
M 18 x 2.5	462618 18
M 20 x 1.5	462620320
M 20 x 2.5	462620 20
M 24 x 3.0	462624 24
M 30 x 3.5	462630 30

Diameter x Pitch	1.5 D 1.5 x Diameter
	Item no.
M 2 x 0.4	46262 3
M 3 x 0.5	46263 45
M 3.5 x 0.6	462635 525
M 4 x 0.7	46264 6
M 5 x 0.8	46265 75
M 6 x 1.0	46266 9
M 7 x 1.0	46267 105
M 8 x 1.0	462681 12
M 8 x 1.25	46268 12
M 10 x 1.25	462610215
M 10 x 1.5	462610 15
M 12 x 1.25	462612218
M 12 x 1.5	462612318
M 12 x 1.75	462612 18
M 14 x 2.0	462614 21
M 16 x 2.0	462616 24
M 18 x 2.5	462618 27
M 20 x 1.5	462620330
M 20 x 2.5	462620 30
M 24 x 3.0	462624 36
M 30 x 3.5	462630 45
M 36 x 4.0	462636 54

Further dimensions are available on request.



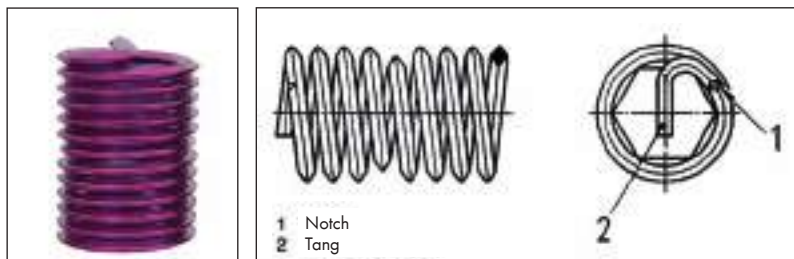
W.TEC® INSERT COIL – Screw Grip DIN 8140-1

- Form B
- 2.0 and 2.5 x Diameter

Diameter x Pitch	2.0 D 2.0 x Diameter
	Item no.
M 2 x 0.4	46262 4
M 3 x 0.5	46263 6
M 3.5 x 0.6	462635 7
M 4 x 0.7	46264 8
M 5 x 0.8	46265 10
M 6 x 1.0	46266 12
M 7 x 1.0	46267 14
M 8 x 1.0	462681 16
M 8 x 1.25	46268 16
M 10 x 1.25	462610220
M 10 x 1.5	462610 20
M 12 x 1.25	462612224
M 12 x 1.5	462612324
M 12 x 1.75	462612 24
M 14 x 2.0	462614 28
M 16 x 2.0	462616 32
M 20 x 1.5	462620330
M 20 x 2.5	462620 40
M 24 x 2.0	462624448
M 24 x 3.0	462624 48
M 30 x 3.5	462630 60
M 36 x 4.0	462636 72

Diameter x Pitch	2.5 D 2.5 x Diameter
	Item no.
M 2 x 0.4	46262 5
M 3 x 0.5	46263 75
M 3.5 x 0.6	462635 875
M 4 x 0.7	46264 10
M 5 x 0.8	46265 125
M 6 x 1.0	46266 15
M 7 x 1.0	46267 175
M 8 x 1.0	462681 20
M 8 x 1.25	46268 20
M 10 x 1.25	462610225
M 10 x 1.5	462610 25
M 12 x 1.25	462612230
M 12 x 1.75	462612 30
M 14 x 2.0	462614 35
M 16 x 2.0	462616 40
M 20 x 2.5	462620 50
M 24 x 3.0	462624 60

Further dimensions are available on request.



W.TEC® INSERT COIL – Screw Grip DIN 8140-1

- Form B
- 3.0 x Diameter

Diameter x Pitch	3.0 D
	3.0 x Diameter
	Item no.
M 2 x 0.4	46262 6
M 3 x 0.5	46263 9
M 3.5 x 0.6	462635 105
M 4 x 0.7	46264 12
M 5 x 0.8	46265 15
M 6 x 1.0	46266 18
M 7 x 1.0	46267 21
M 8 x 1.0	462681 24
M 8 x 1.25	46268 24
M 10 x 1.25	462610230
M 10 x 1.5	462610 30
M 12 x 1.75	462612 36
M 14 x 2.0	462614 42
M 16 x 2.0	462616 48

Further dimensions are available on request.



Storage equipment available on request for dimensions M3 to M10 and lengths 1.0 D to 2.0 D.

1. Drilling a core hole

Use the special twist drill to drill the core hole or to widen the damaged thread. You can also use a countersink. Suitable twist drills for all standard hole diameters can be found on pages 16 and 17.



2.1 Thread cutting

Use the special W.TEC® cutting taps to cut a receiving thread in the core hole. The use of cutting oil is recommended. Suitable taps for all standard diameters can be found on pages 18 to 23.



EVEN STRONGER

2.2 Thread forming

W.TEC® forming taps create stronger receiving threads by chipless forming of the mating material and further increase the performance results. Further information starting on page 24.



3.1 Installation by hand

The thread insert is placed on the tool. Position the adjusting ring in that way, that the insert tang is centered in the slot. Apply light pressure to screw the thread insert in the receiving thread so that it is located $\frac{1}{4}$ to $\frac{1}{2}$ turn below the surface. DO NOT turn against the rotation direction, as the tang may break.



3.2 Automatic installation of the thread insert

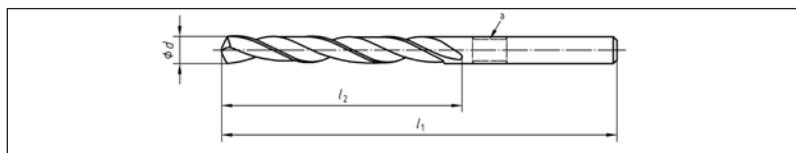
Set the lock nuts to the respective installation depth ($1/4$ - $1/2$ turn below the surface). Screw the thread insert onto the insertion tool and install it in the receiving thread. As soon as the lock nut touches the material, the machine has to be switched to reverse. Hard touching of the material has to be avoided to prevent damage on the material, the tool and the thread insert.



4. Breaking the tang

Break the tang and remove the tang with the tang breaker by slightly tapping on the predetermined breaking point. There are also automatic tang breakers available for serial production.



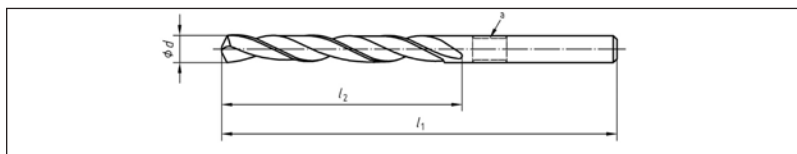


W.TEC® INSERT COIL – ZEBRA Twist Drill HSS DIN 338

- Short version with cylindrical shank

d	l ₁	l ₂	M	M	Item no.
2.10	49.0	24.0	M 2 x 0.4		0624000210
2.30	53.0	27.0	M 2.2 x 0.45		0624000230
2.60	57.0	30.0	M 2.5 x 0.45		0624000260
3.20	65.0	36.0	M 3 x 0.5		0624000320
3.70	70.0	39.0	M 3.5 x 0.6		0624000370
4.20	75.0	43.0	M 4 x 0.7		0624000420
5.20	86.0	52.0	M 5 x 0.8		0624000520
6.30	101.0	63.0	M 6 x 1.0	M 6 x 0.75	0624000630
7.30	109.0	69.0	M7 x 1.0		0624000730
8.20	117.0	75.0	M 8 x 0.75		0624000820
8.30			M 8 x 1.25	M 8 x 1.0	0624000830
9.30	125.0	81.0	M 9 x 1.25	M 9 x 1.0	0624000930
10.30	133.0	87.0	M 10 x 1.0	M 10 x 1.25	0624001030
10.40			M 10 x 1.5		On request
12.30	151.0	101.0	M 12 x 1.0	M 12 x 1.25	0624001230
12.40			M 12 x 1.75	M 12 x 1.5	On request
14.40	169.0	114.0	M 14 x 1.0	M 14 x 1.25	On request
14.50			M 14 x 2.0	M 14 x 1.5	0624001450
15.50	178.0	120.0	M 15 x 2.0	M 15 x 1.5	0624001550
16.50	184.0	125.0	M 16 x 2.0	M16 x 1.5	0624001650
18.50	198.0	135.0	M 18 x 2.5	M 18 x 2.0 M18 x 1.5	0624001850

All dimensions in mm.



**W.TEC® INSERT COIL –
Twist Drill HSS
DIN 345
Morse taper shank**

d	l₁	l₂	M	M	Item no.
20.50	243.0	145.0	M 20 x 2.5	M 20 x 2.0 M 20 x 1.5	0628205
22.50	253.0	155.0	M 22 x 2.5	M 22 x 2.0 M 22 x 1.5	0628225
24.50	281.0	160.0	M 24 x 3.0	M 24 x 2.0 M 24 x 1.5	0628245
26.50	286.0	165.0	M 26 x 1.5		0628265
27.50	291.0	170.0	M 27 x 2.0	M 27 x 1.5	0628275
28.50	296.0	175.0	M 28 x 1.5		0628285
30.50	301.0	180.0	M 30 x 3.5	M 30 x 2.0 M 30 x 1.5	0628305
33.50	334.0	185.0	M 33 x 3.5	M 33 x 2.0	On request
36.50	344.0	195.0	M 36 x 3.0	M 36 x 2.0 M 36 x 1.5	On request
37.00			M 36 x 4.0		On request
39.50	349.0	200.0	M 39 x 2.0		On request
40.00			M 39 x 4.0		0628400
42.50	354.0	205.0	M 42 x 2.0		On request
43.00	359.0	210.0	M 42 x 4.5 M 42 x 4.0	M 42 x 3.0 M 42 x 2.0	On request

All dimensions in mm.

W.TEC® INSERT COIL – Taps

The dimensions of the W.TEC® taps differ from standard taps. To install the thread insert the W.TEC® taps have got the same pitch, but a bigger diameter than standard taps. The taps „STI“ and „EG“ are made of high-speed steel (HSS or HSSE) according to standards.



Chamfer forms of taps



Finishing tap

Chamfer: Form D (3-4 threads)
for through holes and blind holes



Machine tap

Chamfer: Form B (approx. 4 threads)
for through holes



Machine tap

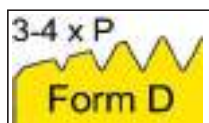
Chamfer: Form C (2-3 threads)
for blind holes

w
behaviour

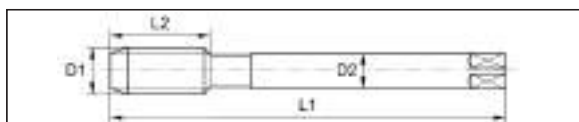


Hole shape





HSSG	EG
	STI



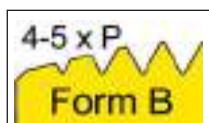
W.TEC® INSERT COIL – Tap HSSG – Form D

For blind holes and through holes

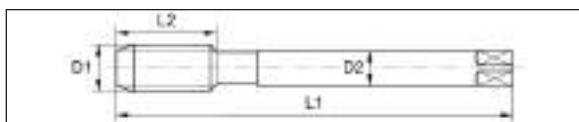


M	D1	D2	L1	L2	Drill diameter	Item no.
M 2 x 0.4	2.52	2.80	44.5	9.5	2.1	4625000001
M 2.5 x 0.45	3.09	3.15	48.0	11.0	2.6	4625000002
M 3 x 0.5	3.65	3.50	53.0	16.5	3.2	4625000003
M 3.5 x 0.6	4.28	4.50	53.0	13.0	3.7	4625000004
M 4 x 0.7	4.91	4.90	63.0	22.0	4.2	4625000005
M 5 x 0.8	6.04	6.45	68.0	25.0	5.3	4625000006
M 6 x 0.75	6.98	8.00	72.0	22.0	6.2	4625000007
M 6 x 1.0	7.30	8.00	72.0	28.0	6.3	4625000008
M 7 x 1.0	8.30	9.60	77.0	33.0	7.3	4625000009
M 8 x 0.75	8.90	10.00	80.0	24.0	8.2	4625000010
M 8 x 1.0	9.30	9.60	77.0	33.0	8.3	4625000011
M 8 x 1.25	9.62	9.60	77.0	32.0	8.3	4625000012
M 9 x 1.0	10.30	8.00	85.0	25.0	9.3	4625000013
M 9 x 1.25	10.62	8.00	85.0	25.0	9.3	4625000014
M 10 x 1.0	11.30	8.10	80.0	36.0	10.3	4625000015
M 10 x 1.25	11.62	9.20	85.0	42.0	10.3	4625000016
M 10 x 1.5	11.95	9.20	85.0	42.0	10.4	4625000017
M 11 x 1.0	12.25	9.00	89.0	29.0	11.3	4625000018
M 11 x 1.25	12.62	9.00	89.0	29.0	11.3	4625000019
M 11 x 1.5	12.95	9.00	89.0	29.0	11.4	4625000020
M 12 x 1.0	13.30	9.00	95.0	30.0	12.3	4625000021
M 12 x 1.25	13.62	10.90	91.0	42.0	12.3	4625000022
M 12 x 1.5	13.95	10.90	91.0	42.0	12.4	4625000023
M 12 x 1.75	14.27	10.90	91.5	42.0	12.4	4625000024
M 13 x 1.25	14.62	12.50	102.0	32.0	13.4	4625000025
M 13 x 1.5	14.95	12.50	102.0	32.0	13.4	4625000026
M 13 x 1.75	15.25	12.50	102.0	32.0	13.0	4625000027

M	D1	D2	L1	L2	Drill diameter	Item no.
M 14 x 1.0	15.30	12.5	102.0	32.0	14.4	4625000028
M 14 x 1.25	15.57	12.1	96.0	46.0	14.4	4625000029
M 14 x 1.5	15.95	12.1	96.0	46.0	14.5	4625000030
M 14 x 2.0	16.60	12.5	102.0	32.0	14.5	4625000031
M 15 x 1.5	16.95	14.0	102.0	37.0	15.5	4625000032
M 15 x 2.0	17.60	14.0	102.0	37.0	15.5	4625000033
M 16 x 1.5	17.95	14.0	104.0	29.0	16.5	4625000034
M 16 x 2.0	18.60	14.0	112.0	37.0	16.5	4625000035
M 18 x 1.5	19.95	16.5	113.0	51.0	18.5	4625000036
M 18 x 2.0	20.60	14.0	104.0	29.0	18.5	4625000037
M 18 x 2.5	21.25	16.0	118.0	38.0	18.5	4625000038
M 20 x 1.5	21.95	16.0	113.0	33.0	20.5	4625000039
M 20 x 2.0	22.60	16.0	113.0	33.0	20.5	4625000040
M 20 x 2.5	23.25	16.0	118.0	38.0	20.5	4625000041
M 22 x 1.5	23.95	18.0	120.0	35.0	22.5	4625000042
M 22 x 2.0	24.60	18.0	120.0	35.0	22.5	4625000043
M 22 x 2.5	25.25	18.0	130.0	45.0	22.5	4625000044
M 24 x 1.5	26.02	18.0	120.0	35.0	24.5	4625000045
M 24 x 2.0	26.60	20.0	127.0	37.0	24.5	4625000046
M 24 x 3.0	27.90	20.0	138.0	48.0	24.5	4625000047
M 30 x 3.0	33.90	22.4	137.0	37.0	30.5	4625000048
M 30 x 3.5	34.55	25.0	162.0	57.0	30.5	4625000049
M 39 x 2.0	41.60	31.5	187.0	67.0	39.5	4625000050
M 39 x 3.0	42.90	31.5	187.0	67.0	39.5	4625000051
M 39 x 4.0	44.20	31.5	187.0	67.0	39.5	4625000052
M 42 x 2.0	44.60	35.5	200.0	70.0	42.5	4625000053
M 42 x 3.0	45.90	35.5	200.0	70.0	42.8	4625000054
M 42 x 4.0	47.20	35.5	200.0	70.0	43.0	4625000055
M 42 x 4.5	47.85	35.5	200.0	70.0	43.0	4625000056

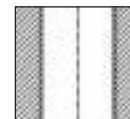


HSSE	EG
	STI



W.TEC® INSERT COIL – Tap HSSG – Form B

For through holes

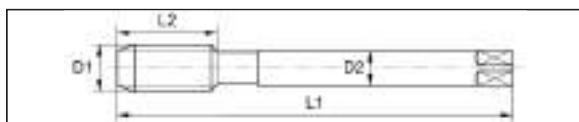


M	D1	D2	L1	L2	Drill diameter	Item no.
M 3 x 0.5	3.65	4.0	53.0	13.0	3.2	4625000057
M 3.5 x 0.6	4.28	4.5	53.0	13.0	3.7	4625000058
M 4 x 0.7	4.91	5.0	58.0	16.0	4.2	4625000059
M 5 x 0.8	6.04	6.3	66.0	19.0	5.3	4625000060
M 6 x 1.0	7.30	8.0	72.0	22.0	6.3	4625000061
M 7 x 1.0	8.30	9.0	72.0	22.0	7.3	4625000062
M 8 x 1.0	9.30	10.0	80.0	24.0	8.3	4625000063
M 8 x 1.25	9.62	10.0	80.0	24.0	8.3	4625000064
M 10 x 1.0	11.20	8.0	85.0	25.0	10.3	4625000065
M 10 x 1.5	11.95	9.0	89.0	29.0	10.4	4625000066
M 12 x 1.25	13.62	11.2	95.0	30.0	12.3	4625000067
M 12 x 1.5	13.95	11.2	95.0	30.0	12.4	4625000068
M 12 x 1.75	14.27	11.2	95.0	30.0	12.4	4625000069
M 14 x 1.25	15.57	12.5	102.0	32.0	14.4	4625000070
M 14 x 1.5	15.95	12.5	102.0	32.0	14.5	4625000071
M 14 x 2.0	16.60	12.5	102.0	32.0	14.5	4625000072
M 16 x 2.0	18.60	14.0	112.0	37.0	16.5	4625000073

All dimensions in mm.

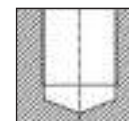


HSSE	EG
	STI



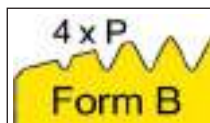
W.TEC® INSERT COIL – Tap HSSE – Form C

For blind holes

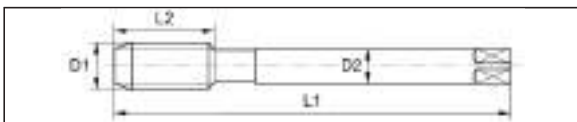


M	D1	D2	L1	L2	Drill diameter	Item no.
M 2 x 0.4	2.52	3.5	47.0	12.5	2.1	4625000074
M 3 x 0.5	3.65	3.5	53.0	18.0	3.2	4625000075
M 3.5 x 0.6	4.28	4.5	58.0	13.0	3.7	4625000076
M 4 x 0.7	4.91	5.0	64.0	22.5	4.2	4625000077
M 5 x 0.8	6.04	6.4	66.0	26.0	5.3	4625000078
M 6 x 1.0	7.30	8.0	72.0	27.5	6.3	4625000079
M 7 x 1.0	8.30	9.5	77.0	33.0	7.3	4625000080
M 8 x 1.0	9.30	10.0	80.0	24.0	8.3	4625000081
M 8 x 1.25	9.62	9.6	77.0	34.0	8.3	4625000082
M 10 x 1.0	11.20	8.0	85.0	25.0	10.3	4625000083
M 10 x 1.5	11.95	9.3	86.0	43.0	10.4	4625000084
M 12 x 1.25	13.62	11.2	95.0	30.0	12.3	4625000085
M 12 x 1.5	13.95	11.2	91.0	43.5	12.4	4625000086
M 12 x 1.75	14.27	11.2	91.0	43.5	12.4	4625000087
M 14 x 1.25	15.57	12.5	102.0	32.0	14.4	4625000088
M 14 x 1.5	15.95	12.0	97.0	48.0	14.5	4625000089
M 14 x 2.0	16.60	12.5	102.0	32.0	14.5	4625000090
M 16 x 2.0	18.60	15.0	108.0	52.0	16.5	4625000091
M 18 x 1.5	19.95	16.5	113.0	51.0	18.5	4625000092

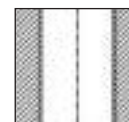
All dimensions in mm.



HSSE	EG
	STI



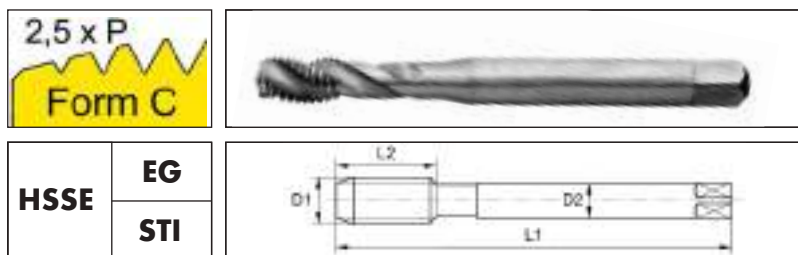
**W.TEC® INSERT COIL -
Tap HSSE -
DIN 371/376 -
Form B**



For through holes

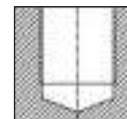
M	D1	D2	L1	L2	Drill diameter	Item no.
M 2.5 x 0.45	3.09	3.5	56.0	11.0	2.6	4625000100
M 3 x 0.5	3.65	4.5	63.0	10.0	3.2	4625000101
M 4 x 0.7	4.91	6.0	70.0	13.0	4.2	4625000102
M 5 x 0.8	6.04	6.0	80.0	13.0	5.3	4625000103
M 6 x 1.0	7.30	8.0	90.0	17.0	6.3	4625000104
M 8 x 1.25	9.62	10.0	100.0	18.0	8.3	4625000105
M 10 x 1.5	11.95	9.0	110.0	22.0	10.4	4625000106
M 12 x 1.75	14.27	11.0	110.0	26.0	12.4	4625000107
M 16 x 2.0	18.60	14.0	125.0	27.0	16.5	4625000108
M 20 x 2.5	23.25	18.0	160.0	34.0	20.5	4625000109

All dimensions in mm.

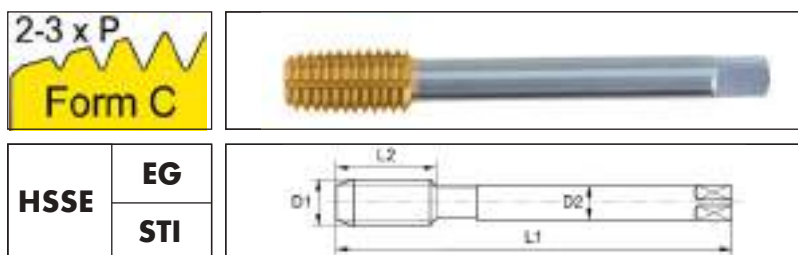


**W.TEC® INSERT COIL –
Tap HSSE –
DIN 371/376 –
Form C**

For blind holes



M	D1	D2	L1	L2	Drill diameter	Item no.
M 2.5 x 0.45	3.09	3.5	56.0	6.0	2.6	4625000110
M 3 x 0.5	3.65	4.5	63.0	6.0	3.2	4625000111
M 4 x 0.7	4.91	6.0	70.0	8.0	4.2	4625000112
M 5 x 0.8	6.04	6.0	80.0	8.0	5.3	4625000113
M 6 x 1.0	7.30	8.0	90.0	10.0	6.3	4625000114
M 8 x 1.25	9.62	10.0	100.0	16.0	8.3	4625000115
M 10 x 1.5	11.95	9.0	110.0	15.0	10.4	4625000116
M 12 x 1.75	14.27	11.0	110.0	20.0	12.4	4625000117
M 16 x 2.0	18.60	14.0	125.0	22.0	16.5	4625000118
M 20 x 2.5	23.25	18.0	160.0	30.0	20.5	4625000119



**W.TEC® INSERT COIL –
Form tap HSSE –
Form C**

For blind holes and
through holes

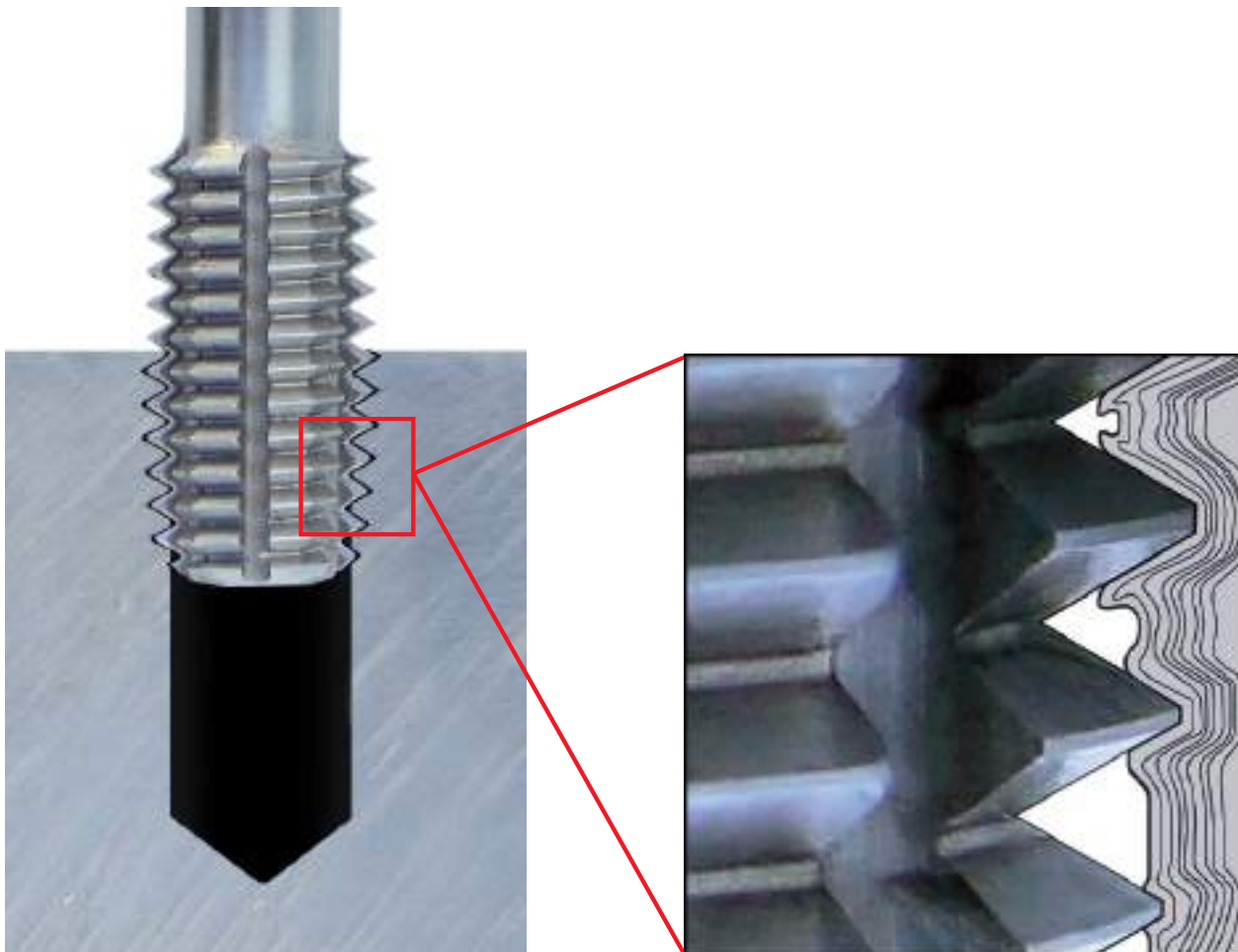


M	D1	D2	L1	L2	Drill diameter	Item no.
M 3 x 0.5	3.65	4.0	53.0	13.0	3.4	4625000093
M 4 x 0.7	4.91	5.0	58.0	16.0	4.6	4625000094
M 5 x 0.8	6.04	6.3	66.0	19.0	5.6	4625000095
M 6 x 1.0	7.30	8.0	72.0	22.0	6.8	4625000096
M 8 x 1.25	9.62	10.0	80.0	24.0	9.0	4625000097
M 10 x 1.5	11.95	9.0	89.0	29.0	11.2	4625000098
M 12 x 1.75	14.27	11.2	95.0	30.0	13.4	4625000099

All dimensions in mm.

W.TEC® INSERT COIL – Forming Taps

W.TEC® forming taps design the receiving thread by chipless forming. These threads show demonstrable benefits in comparison to traditional receiving threads. Due to the chipless forming process the grain structure is not interrupted and the mating material is cold-formed. This ensures a high-strength connection and increases the performance. Processes and lead times can also be improved by the omission of work steps such as the removal of chips.



W.TEC® INSERT COIL — Insertion tools



For manual insertion

M	Item no.
M 2 x 0.4 M 2.2 x 0.45	4625000152
M 2.5 x 0.45	4625000153
M 18 x 2.5	4625000154
M 18 x 2.0	4625000155
M 18 x 1.5	4625000156
M 20 x 2.5	4625000157
M 20 x 2.0	4625000158
M 20 x 1.5	4625000159
M 22 x 2.5	4625000160
M 22 x 2.0	4625000161
M 22 x 1.5	4625000162
M 24 x 3.0	4625000163
M 24 x 2.0	4625000164
M 24 x 1.5	4625000165
M 26 x 1.5	4625000166
M 27 x 2.0	4625000167
M 27 x 1.5	4625000168
M 28 x 1.5	4625000169
M 30 x 3.5 M 30 x 3.0	4625000170
M 30 x 2.0 M 30 x 1.5	4625000172
M 33 x 3.5	4625000174
M 33 x 2.0	4625000175
M 33 x 2.1	4625000176
M 36 x 4.0 M 36 x 3.0	4625000177
M 36 x 1.5	4625000178
M 39 x 4.0	4625000179
M 39 x 3.0	4625000180

M	Item no.
M 39 x 2.0	4625000181
M 42 x 4.5	4625000182
M 42 x 4.0	4625000183
M 42 x 3.0	4625000184
M 42 x 2.0	4625000185



For manual or mechanical insertion

M	Item no.
M 3 x 0.5 M 3.5 x 0.6	4625000120
M 4 x 0.7	4625000122
M 5 x 0.8	4625000123
M 6 x 1.0	4625000124
M 7 x 1.0	4625000126
M 8 x 1.25 M 9 x 1.25 M 8 x 1.0 M 9 x 1.0	4625000127
M 10 x 1.5 M 11 x 1.5 M 10 x 1.25 M 11 x 1.25	4625000132
M 12 x 1.75 M 12 x 1.0 M 12 x 1.5 M 13 x 1.5	4625000138
M 14 x 2.0 M 15 x 2.0 M 14 x 1.5 M 15 x 1.5 M 14 x 1.25 M 16 x 2.0	4625000144

W.TEC® INSERT COIL — Insertion tools



For mechanical insertion

M	Length	WAF	Item no.
M 3 x 0.5	46.00	5.50	4625000186
M 4 x 0.7	48.00	7.00	4625000187
M 5 x 0.8	57.00	8.00	4625000188
M 6 x 1.0	62.00	10.00	4625000189
M 7 x 1.0	72.00	11.00	4625000190
M 8 x 1.25	72.00	13.00	4625000191
M 10 x 1.0	77.00	17.00	4625000192
M 10 x 1.5	82.00	17.00	4625000193
M 12 x 1.25	79.00	19.00	4625000194
M 12 x 1.5	79.00	19.00	4625000195
M 12 x 1.75	92.00	19.00	4625000196
M 14 x 1.5	94.00	21.00	4625000197
M 14 x 2.0	94.00	21.00	4625000198

W.TEC® INSERT COIL — Tang breaker



M	M	Length	Item no.
M 2 x 0.4	M 2.2 x 0.45		4625000204
M 2.5 x 0.45			4625000205
M 3 x 0.5	M 3.5 x 0.6	100.0	4625000206
M 4 x 0.7		100.0	4625000207
M 5 x 0.8		100.0	4625000208
M 6 x 1.0 M 6 x 0.75	M 7 x 1.0	100.0	4625000209
M 8 x 1.25 M 8 x 1.0 M 8 x 0.75	M 9 x 1.25 M 9 x 1.0	100.0	4625000210
M 10 x 1.5 M 10 x 1.25 M 10 x 1.0	M 11 x 1.5 M 11 x 1.25 M 11 x 1.0	100.0	4625000211
M 12 x 1.75 M 12 x 1.5 M 12 x 1.25	M 12 x 1.0	100.0	4625000212

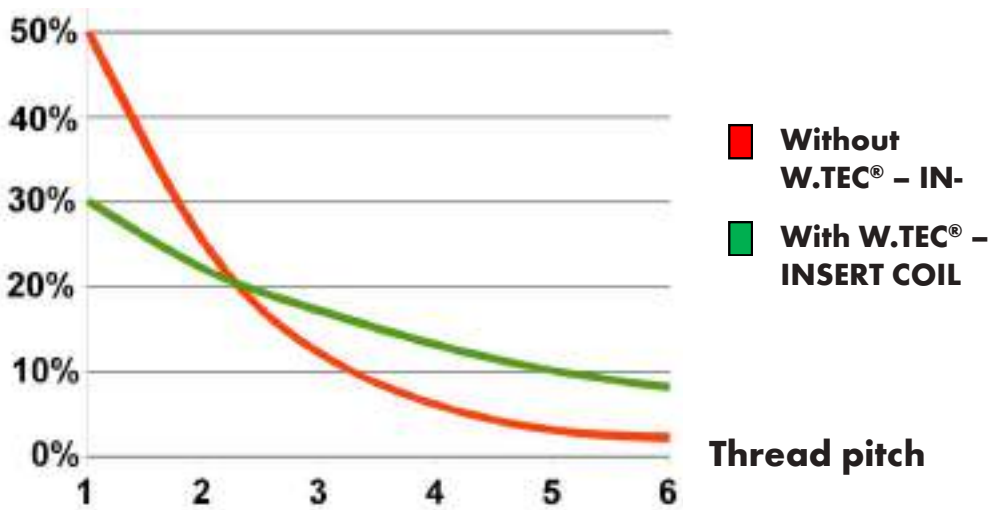
W.TEC® INSERT COIL — Extraction tool



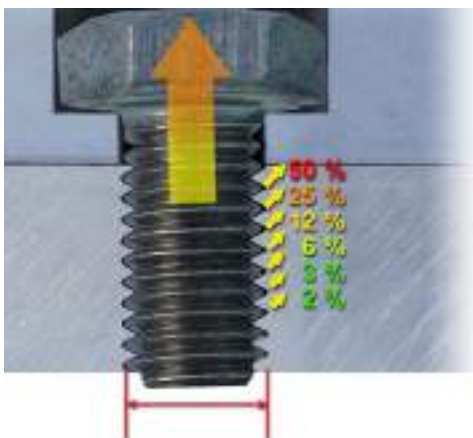
M	Item no.
M2 - M 4	4625000199
M 3 - M 10	4625000200
M 11 - M 24	4625000201
M 20 - M 39	4625000202
M 38 - M 65	4625000203

The W.TEC® INSERT COIL thread insert ensures that the load of the extraction force is optimally distributed along the whole length of the thread engagement. Normally the first two pitches of a standard screw connection have to bear 70 % of the load. Using a thread insert its uniform distribution enormously increases the pull-out strength. The longer the thread insert, the higher the loading capacity in comparison to conventional threads. Possible material savings due to smaller screws or smaller threads are shown in the following illustration.

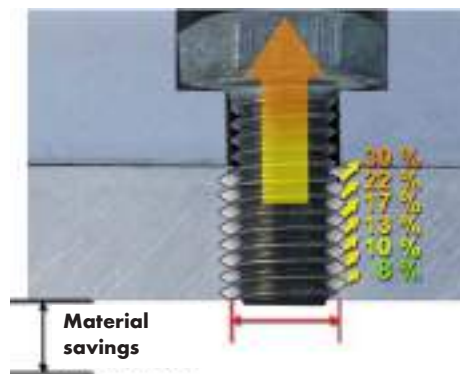
Load distribution per thread pitch



WITHOUT W.TEC® INSERT



WITH W.TEC® INSERT COIL



Load distribution

If you have an internal thread and you use the W.TEC® INSERT COIL, not only the static but also the dynamic operating loads are uniformly distributed along the whole length of the thread insert and every single pitch. The flexibility of the thread inserts compensates pitch and angular errors and ensures an optimum load transmission from the bolt to the mating thread.

Tight fit

Before installation the thread insert is to a defined size larger in the outer diameter than the tapped hole. This characteristic and the high spring force of the material lead to radial expansion and so the thread insert perfectly anchors in the hole without clearance. Additional screw locking of the thread insert is not necessary.

Thread friction torque and torsional stress

Due to precise manufacturing and the use of austenitic stainless steel W.TEC® INSERT COIL wire thread inserts have got a high surface quality that ensures a wear-resistant, high-strength thread with a constantly low friction torque.

Corrosion resistance

The basic material (austenitic stainless steel/A2) avoids galling due to external influences. For parts with an extremely high risk of contact corrosion special thread inserts can also be manufactured and used.

Space and weight reduction

Weight reduction is essential for many new designs and goes hand in hand with a space-saving and resource-efficient basic geometry. W.TEC® INSERT COIL wire thread inserts need less joints, dimensions can be reduced and resources can be saved.

Cost reduction due to thread reinforcement

- Lightweight technology due to an increased bearing capacity of the thread
- No expensive repair work due to an enhanced corrosion resistance
- Improved durability due to wear-resistant threads

Materials used for W.TEC® INSERT COILS - Wire Thread Inserts

	Material	Temperature resistance	
	Stainless steel A2 AISI 304 X5CrNi18-10 Material no.: 1.4301	315°C long-term 425°C short-term	
	Stainless steel A4 AISI 316 Ti X6CrNiMoTi17-12-2 Material no.: 1.4571	315°C long-term 425°C short-term	
	Inconel X750 NiCr15Fe7TiAl Material no.: 2.4669	550°C long-term 750°C short-term	
	Nimonic 90 NiCr20Co 18Ti Material no.: 2.4632	600°C long-term 900°C short-term	
	Bronze CuSn6 CW452K Material no.: 2.1020	250°C long-term 300°C short-term	
Surface treatment	Colour	Purposes	
Zinc plating	blue, yellow	For high corrosion resistance, alternative to cadmium plating	
Silver plating	silver	Avoids galling at high temperature	
Dry film lubrication	grey	Additional lubrication in high friction applications, e.g. recommended for "Screw Grip" inserts	
Determination of the nominal lengths (standard values)			
Material strength of the workpiece Rm N/mm²	Nominal lengths for thread inserts of length l₁ Property class of the screw or yield point of the screw material in N/mm²		
	5.8/400	8.8/640	10.9/900
up to 150	2d	2.5d	2.5d
more than 150 up to 200	1.5d	2d	2d
more than 200 up to 250	1.5d	1.5d	2d
more than 250 up to 300	1d	1.5d	1.5d
more than 300 up to 400	1d	1d	1.5d
more than 400	1d	1d	1.5d

Additional information for W.TEC® INSERT COIL - Forming Taps

Material	Strength	Tapping speed in m/min	Recommended lubrication
Structural steels, free-cutting steels, cold extrusion steels etc.	< 600 N/mm ²	20-80	Cutting oil/emulsion
Structural steels, case hardening steels, cast steel etc.	< 800 N/mm ²	20-60	Cutting oil/emulsion
Heat-treatable steels, cold work steels, nitriding steels etc.	< 100 N/mm ²	10-40	Cutting oil
Stainless steel, Ferritic, martensitic	< 950 N/mm ²	10-25 (limited usable with emulsion)	Cutting oil
Stainless steel Austenitic	< 950 N/mm ²	10-25 (limited usable with emulsion)	Cutting oil
Wrought aluminium alloys	< 550 N/mm ²	15-40	Cutting oil/emulsion
Cast aluminium alloys	Si < 12%	15-40	Cutting oil/emulsion
Pure copper	< 400 N/mm ²	20-40	Cutting/emulsion
Copper-zinc alloys (Brass long-chipping)	< 550 N/mm ²	40-80	Emulsion

$$\text{Cutting/tapping speed [m/min]} = \frac{(\text{Outer diameter} \times \pi \times \text{Speed})}{1000}$$

$$\text{Speed n [1/min]} = \frac{(\text{Cutting speed in m/min} \times 1000)}{(\text{Outer diameter} \times \pi)}$$

$$\text{Feed programming [mm/min]} = \text{Speed} \times \text{Pitch}$$

Please note that the above mentioned cutting and tapping speeds are standard values and that they have to be adapted depending on the lubrication and the application.

W.TEC[®] INSERT COIL

Wire Thread Inserts

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