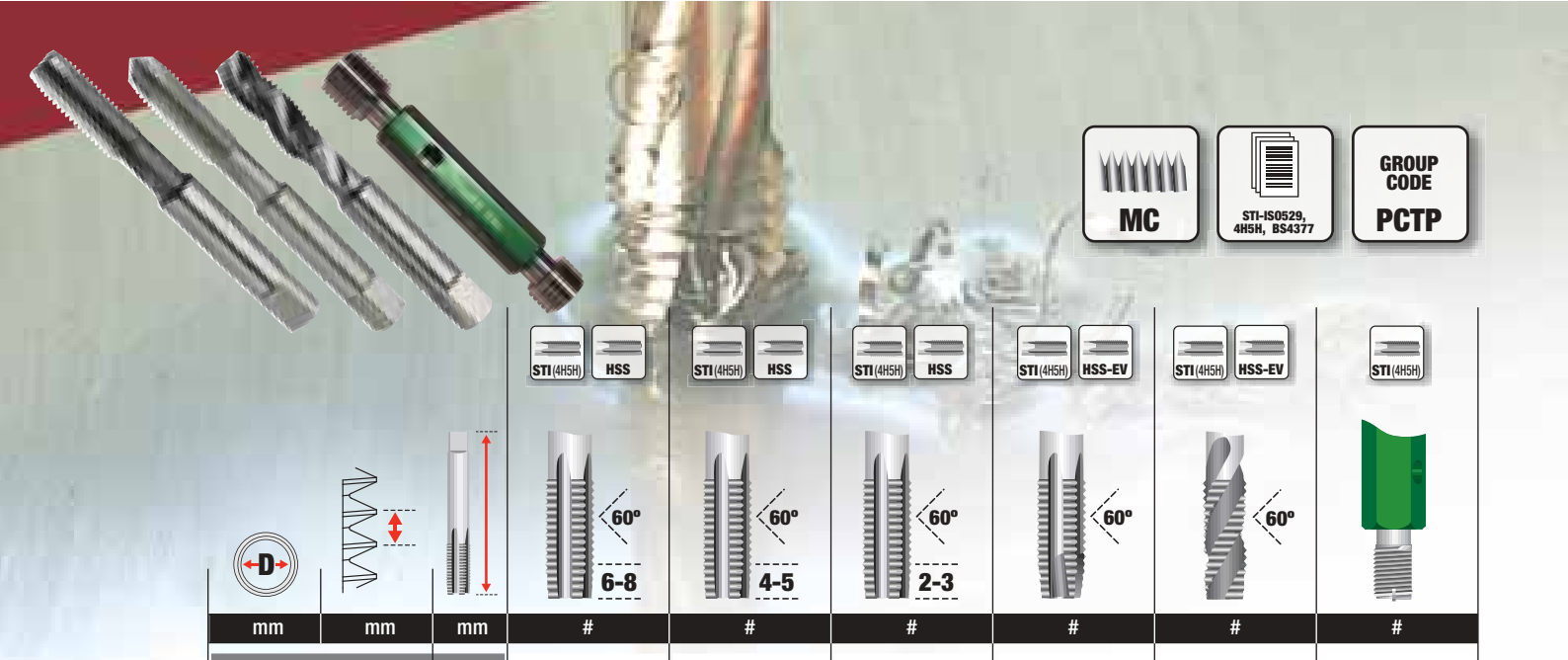
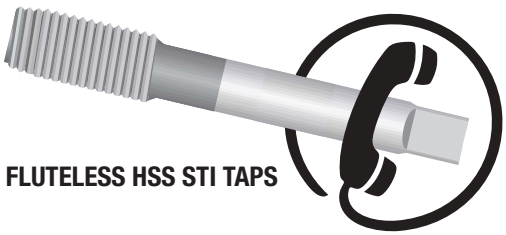


MC

D mm	mm	mm	#	#	#	#	#	#
MC								
2.00	0.40	44.50	3520-2.00T	3520-2.00I	3520-2.00B	3520-2.00SP	3520-2.00SF	3520-2.00GC
2.20	0.45	44.50	3520-2.20T	3520-2.20I	3520-2.20B	3520-2.20SP	3520-2.20SF	3520-2.20GC
2.50	0.45	48.00	3520-2.50T	3520-2.50I	3520-2.50B	3520-2.50SP	3520-2.50SF	3520-2.50GC
3.00	0.50	53.00	3520-3.00T	3520-3.00I	3520-3.00B	3520-3.00SP	3520-3.00SF	3520-3.00GC
3.50	0.60	53.00	3520-3.50T	3520-3.50I	3520-3.50B	3520-3.50SP	3520-3.50SF	–
4.00	0.70	58.00	3520-4.00T	3520-4.00I	3520-4.00B	3520-4.00SP	3520-4.00SF	3520-4.00GC
5.00	0.80	66.00	3520-5.00T	3520-5.00I	3520-5.00B	3520-5.00SP	3520-5.00SF	3520-5.00GC
6.00	1.00	72.00	3520-6.00T	3520-6.00I	3520-6.00B	3520-6.00SP	3520-6.00SF	3520-6.00GC
7.00	1.00	72.00	3520-7.00T	3520-7.00I	3520-7.00B	3520-7.00SP	3520-7.00SF	–
8.00	1.25	80.00	3520-8.00T	3520-8.00I	3520-8.00B	3520-8.00SP	3520-8.00SF	3520-8.00GC
9.00	1.25	85.00	3520-9.00T	3520-9.00I	3520-9.00B	3520-9.00SP	3520-9.00SF	–
10.00	1.50	89.00	3520-10.00T	3520-10.00I	3520-10.00B	3520-10.00SP	3520-10.00SF	3520-10.00GC
11.00	1.50	89.00	3520-11.00T	3520-11.00I	3520-11.00B	3520-11.00SP	3520-11.00SF	–
12.00	1.75	95.00	3520-12.00T	3520-12.00I	3520-12.00B	3520-12.00SP	3520-12.00SF	3520-12.00GC
13.00	1.75	95.00	3520-13.00T	3520-13.00I	3520-13.00B	–	–	–
14.00	2.00	102.00	3520-14.00T	3520-14.00I	3520-14.00B	3520-14.00SP	3520-14.00SF	–
15.00	2.00	112.00	3520-15.00T	3520-15.00I	3520-15.00B	–	–	–
16.00	2.00	112.00	3520-16.00T	3520-16.00I	3520-16.00B	3520-16.00SP	3520-16.00SF	3520-16.00GC
18.00	2.50	118.00	3520-18.00T	3520-18.00I	3520-18.00B	3520-18.00SP	3520-18.00SF	3520-18.00GC
20.00	2.50	118.00	3520-20.00T	3520-20.00I	3520-20.00B	3520-20.00SP	3520-20.00SF	3520-20.00GC
22.00	2.50	130.00	3520-22.00T	3520-22.00I	3520-22.00B	3520-22.00SP	3520-22.00SF	3520-22.00GC
24.00	3.00	138.00	3520-24.00T	3520-24.00I	3520-24.00B	3520-24.00SP	3520-24.00SF	3520-24.00GC
27.00	3.00	151.00	3520-27.00T	3520-27.00I	3520-27.00B	–	–	–
30.00	3.50	162.00	3520-30.00T	3520-30.00I	3520-30.00B	–	–	–
33.00	3.50	162.00	3520-33.00T	3520-33.00I	3520-33.00B	–	–	–
36.00	4.00	170.00	3520-36.00T	3520-36.00I	3520-36.00B	–	–	–



FLUTELESS HSS STI TAPS

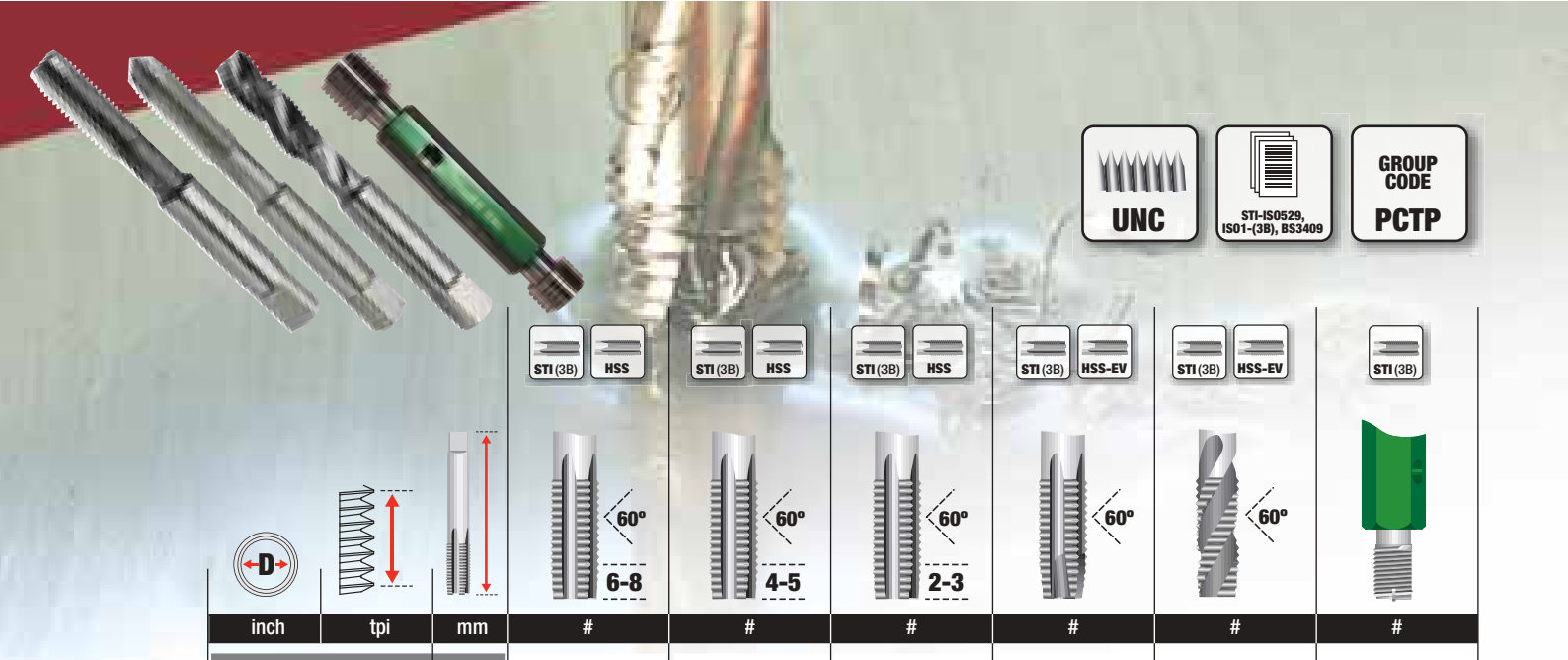
MeFaCo
INDUSTRIAL FASTENERS AND TOOLS

MF

STI-ISO529, 4H5H, BS4377

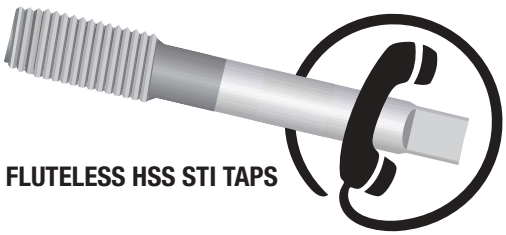
GROUP CODE PCTP

D			STI (4H5H) HSS 60° 6-8	STI (4H5H) HSS 60° 4-5	STI (4H5H) HSS 60° 2-3	STI (4H5H) HSS-EV 60°	STI (4H5H) HSS-EV 60°	STI (4H5H)
mm	mm	mm	#	#	#	#	#	#
MF								
8.00	1.00	80.00	3521-8.00T	3521-8.00I	3521-8.00B	3521-8.00SP	3521-8.00SF	3521-8.00GC
10.00	1.25	85.00	3521-10.00T	3521-10.00I	3521-10.00B	3521-10.00SP	3521-10.00SF	3521-10.00GC
10.00	1.00	85.00	3523-10.00T	3523-10.00I	3523-10.00B	–	–	–
11.00	1.25	88.00	3521-11.00T	3521-11.00I	3521-11.00B	–	–	–
11.00	1.00	88.00	3523-11.00T	3523-11.00I	3523-11.00B	–	–	–
12.00	1.50	95.00	3521-12.00T	3521-12.00I	3521-12.00B	3521-12.00SP	3521-12.00SF	3521-12.00GC
12.00	1.25	95.00	3523-12.00T	3523-12.00I	3523-12.00B	3523-12.00SP	3523-12.00SF	3523-12.00GC
12.00	1.00	95.00	3524-12.00T	3524-12.00I	3524-12.00B	–	–	–
13.00	1.25	95.00	3523-13.00T	3523-13.00I	3523-13.00B	–	–	–
14.00	1.50	102.00	3521-14.00T	3521-14.00I	3521-14.00B	3521-14.00SP	3521-14.00SF	3521-14.00GC
14.00	1.25	102.00	3523-14.00T	3523-14.00I	3523-14.00B	3523-14.00SP	3523-14.00SF	–
14.00	1.00	102.00	3524-14.00T	3524-14.00I	3524-14.00B	–	–	–
15.00	1.50	104.00	3521-15.00T	3521-15.00I	3521-15.00B	–	–	–
16.00	1.50	104.00	3521-16.00T	3521-16.00I	3521-16.00B	3521-16.00SP	3521-16.00SF	3521-16.00GC
18.00	2.00	104.00	3521-18.00T	3521-18.00I	3521-18.00B	3521-18.00SP	3521-18.00SF	3521-18.00GC
18.00	1.50	104.00	3523-18.00T	3523-18.00I	3523-18.00B	3523-18.00SP	3523-18.00SF	3523-18.00GC
20.00	2.00	113.00	3521-20.00T	3521-20.00I	3521-20.00B	3521-20.00SP	3521-20.00SF	3521-20.00GC
20.00	1.50	113.00	3523-20.00T	3523-20.00I	3523-20.00B	3523-20.00SP	3523-20.00SF	3523-20.00GC
22.00	2.00	120.00	3521-22.00T	3521-22.00I	3521-22.00B	3521-22.00SP	3521-22.00SF	3521-22.00GC
22.00	1.50	120.00	3523-22.00T	3523-22.00I	3523-22.00B	3523-22.00SP	3521-22.00SF	3523-22.00GC
24.00	2.00	127.00	3521-24.00T	3521-24.00I	3521-24.00B	3521-24.00SP	3521-24.00SF	3521-24.00GC
24.00	1.50	120.00	3523-24.00T	3523-24.00I	3523-24.00B	3523-24.00SP	3523-24.00SF	3523-24.00GC
26.00	1.50	127.00	3523-26.00T	3523-26.00I	3523-26.00B	–	–	–
27.00	2.00	127.00	3521-27.00T	3521-27.00I	3521-27.00B	–	–	–
27.00	1.50	127.00	3523-27.00T	3523-27.00I	3523-27.00B	–	–	–
28.00	1.50	127.00	3523-28.00T	3523-28.00I	3523-28.00B	–	–	–
30.00	2.00	137.00	3521-30.00T	3521-30.00I	3521-30.00B	–	–	–
30.00	1.50	137.00	3523-30.00T	3523-30.00I	3523-30.00B	–	–	–
33.00	2.00	144.00	3521-33.00T	3521-33.00I	3521-33.00B	–	–	–
36.00	3.00	170.00	3521-36.00T	3521-36.00I	3521-36.00B	–	–	–
36.00	2.00	150.00	3523-36.00T	3523-36.00I	3523-36.00B	–	–	–
36.00	1.50	150.00	3524-36.00T	3524-36.00I	3524-36.00B	–	–	–



UNC

inch	tpi	mm	#	#	#	#	#	#
UNC								
2G	56	48.00	3532-2GT	3532-2GI	3532-2GB	3532-2GSP	3532-2GSF	3532-2GGC
3G	48	48.00	3532-3GT	3532-3GI	3532-3GB	3532-3GSP	3532-3GSF	3532-3GGC
4G	40	53.00	3532-4GT	3532-4GI	3532-4GB	3532-4GSP	3532-4GSF	3532-4GGC
5G	40	53.00	3532-5GT	3532-5GI	3532-5GB	3532-5GSP	3532-5GSF	–
6G	32	58.00	3532-6GT	3532-6GI	3532-6GB	3532-6GSP	3532-6GSF	3532-6GGC
8G	32	62.00	3532-8GT	3532-8GI	3532-8GB	3532-8GSP	3532-8GSF	3532-8GGC
10G	32	66.00	3532-10GT	3532-10GI	3532-10GB	3532-10GSP	3532-10GSF	3532-10GGC
12G	24	66.00	3532-12GT	3532-12GI	3532-12GB	3532-12GSP	3532-12GSF	–
1/4	20	72.00	3532-1/4T	3532-1/4I	3532-1/4B	3532-1/4SP	3532-1/4SF	3532-1/4GC
5/16	18	80.00	3532-5/16T	3532-5/16I	3532-5/16B	3532-5/16SP	3532-5/16SF	3532-5/16GC
3/8	16	85.00	3532-3/8T	3532-3/8I	3532-3/8B	3532-3/8SP	3532-3/8SF	3532-3/8GC
7/16	14	95.00	3532-7/16T	3532-7/16I	3532-7/16B	3532-7/16SP	3532-7/16SF	3532-7/16GC
1/2	13	102.00	3532-1/2T	3532-1/2I	3532-1/2B	3532-1/2SP	3532-1/2SF	3532-1/2GC
9/16	18	112.00	3532-9/16T	3532-9/16I	3532-9/16B	3532-9/16SP	3532-9/16SF	–
5/8	11	112.00	3532-5/8T	3532-5/8I	3532-5/8B	3532-5/8SP	3532-5/8SF	3532-5/8GC
3/4	10	118.00	3532-3/4T	3532-3/4I	3532-3/4B	3532-3/4SP	3532-3/4SF	3532-3/4GC
7/8	9	130.00	3532-7/8T	3532-7/8I	3532-7/8B	3532-7/8SP	3532-7/8SF	3532-7/8GC
1	8	138.00	3532-1T	3532-1I	3532-1B	3532-1SP	3532-1SF	3532-1GC
1-1/8	7	151.00	3532-1.1/8T	3532-1.1/8I	3532-1.1/8B	–	–	–
1-1/4	7	162.00	3532-1.1/4T	3532-1.1/4I	3532-1.1/4B	–	–	–
1-3/8	6	170.00	3532-1.3/8T	3532-1.3/8I	3532-1.3/8B	–	–	–
1-1/2	6	187.00	3532-1.1/2T	3532-1.1/2I	3532-1.1/2B	–	–	–



FLUTELESS HSS STI TAPS

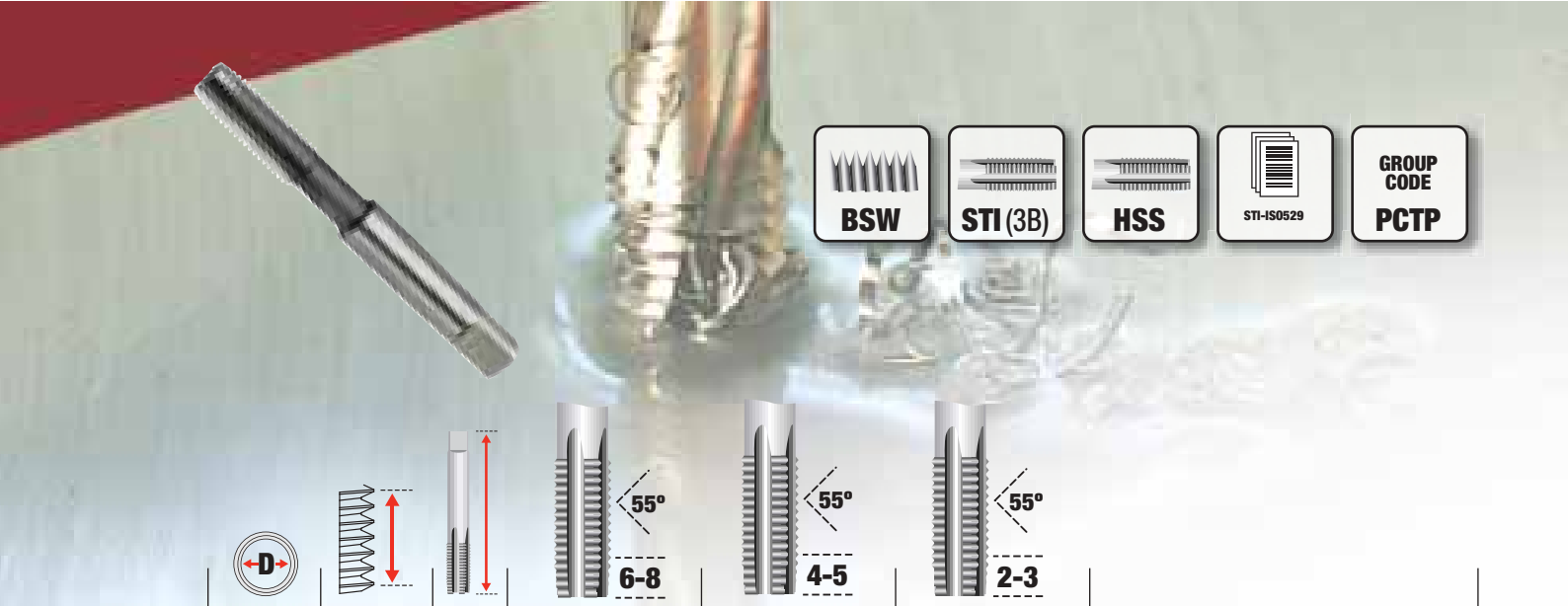
UNF

STI-ISO529, ISO1(3B), BS3409

GROUP CODE PCTP

D inch	tpi	mm	STI (3B) HSS 60° 6-8 #	STI (3B) HSS 60° 4-5 #	STI (3B) HSS 60° 2-3 #	STI (3B) HSS-EV 60° #	STI (3B) HSS-EV 60° #	STI (3B) #
UNF								
3G	56	48.00	3534-3GT	3534-3GI	3534-3GB	3534-3GSP	3534-3GSF	3534-3GGC
4G	48	53.00	3534-4GT	3534-4GI	3534-4GB	3534-4GSP	3534-4GSF	3534-4GGC
6G	40	53.00	3534-6GT	3534-6GI	3534-6GB	3534-6GSP	3534-6GSF	3534-6GGC
8G	36	62.00	3534-8GT	3534-8GI	3534-8GB	3534-8GSP	3534-8GSF	3534-8GGC
10G	32	66.00	3534-10GT	3534-10GI	3534-10GB	3534-10GSP	3534-10GSF	3534-10GGC
12G	28	66.00	3534-12GT	3534-12GI	3534-12GB	3534-12GSP	3534-12GSF	3534-12GGC
1/4	28	69.00	3534-1/4T	3534-1/4I	3534-1/4B	3534-1/4SP	3534-1/4SF	3534-1/4GC
5/16	24	76.00	3534-5/16T	3534-5/16I	3534-5/16B	3534-5/16SP	3534-5/16SF	3534-5/16GC
3/8	24	82.00	3534-3/8T	3534-3/8I	3534-3/8B	3534-3/8SP	3534-3/8SF	3534-3/8GC
7/16	20	84.00	3534-7/16T	3534-7/16I	3534-7/16B	3534-7/16SP	3534-7/16SF	3534-7/16GC
1/2	20	90.00	3534-1/2T	3534-1/2I	3534-1/2B	3534-1/2SP	3534-1/2SF	3534-1/2GC
9/16	18	104.00	3534-9/16T	3534-9/16I	3534-9/16B	3534-9/16SP	3534-1/2SF	–
5/8	18	104.00	3534-5/8T	3534-5/8I	3534-5/8B	3534-5/8SP	3534-5/8SF	3534-5/8GC
3/4	16	104.00	3534-3/4T	3534-3/4I	3534-3/4B	3534-3/4SP	3534-3/4SF	3534-3/4GC
7/8	14	120.00	3534-7/8T	3534-7/8I	3534-7/8B	3534-7/8SP	3534-7/8SF	3534-7/8GC
1	12	127.00	3534-1T	3534-1I	3534-1B	3534-1SP	3534-1SF	3534-1GC
1	14	127.00	3535-1T	3535-1I	3535-1B	3535-1SP	3535-1SF	3535-1GC
1-1/8	12	137.00	3534-1.1/8T	3534-1.1/8I	3534-1.1/8B	–	–	–
1-1/4	12	144.00	3534-1.1/4T	3534-1.1/4I	3534-1.1/4B	–	–	–
1-3/8	12	150.00	3534-1.3/8T	3534-1.3/8I	3534-1.3/8B	–	–	–
1-1/2	12	150.00	3534-1.1/2T	3534-1.1/2I	3534-1.1/2B	–	–	–

UNF



BSW BSF

inch	tpi	mm	#	#	#
BSW					
1/8	40	53.00	3528-1/8T	3528-1/8I	3528-1/8B
3/16	24	56.00	3528-3/16T	3528-3/16I	3528-3/16B
1/4	20	72.00	3528-1/4T	3528-1/4I	3528-1/4B
5/16	18	80.00	3528-5/16T	3528-5/16I	3528-5/16B
3/8	16	85.00	3528-3/8T	3528-3/8I	3528-3/8B
7/16	14	95.00	3528-7/16T	3528-7/16I	3528-7/16B
1/2	12	102.00	3528-1/2T	3528-1/2I	3528-1/2B
9/16	12	102.00	3528-9/16T	3528-9/16I	3528-9/16B
5/8	11	112.00	3528-5/8T	3528-5/8I	3528-5/8B
11/16	11	112.00	3528-11/16T	3528-11/16I	3528-11/16B
3/4	10	118.00	3528-3/4T	3528-3/4I	3528-3/4B
7/8	9	130.00	3528-7/8T	3528-7/8I	3528-7/8B
1	8	138.00	3528-1T	3528-1I	3528-1B

inch	tpi	mm	#	#	#
BSF					
3/16	32	66.00	3530-3/16T	3530-3/16I	3530-3/16B
1/4	26	72.00	3530-1/4T	3530-1/4I	3530-1/4B
5/16	22	80.00	3530-5/16T	3530-5/16I	3530-5/16B
3/8	20	85.00	3530-3/8T	3530-3/8I	3530-3/8B
7/16	18	89.00	3530-7/16T	3530-7/16I	3530-7/16B
1/2	16	95.00	3530-1/2T	3530-1/2I	3530-1/2B
9/16	16	102.00	3530-9/16T	3530-9/16I	3530-9/16B
5/8	14	112.00	3530-5/8T	3530-5/8I	3530-5/8B
11/16	14	112.00	3530-11/16T	3530-11/16I	3530-11/16B
3/4	12	118.00	3530-3/4T	3530-3/4I	3530-3/4B
7/8	11	130.00	3530-7/8T	3530-7/8I	3530-7/8B
1	10	138.00	3530-1T	3530-1I	3530-1B

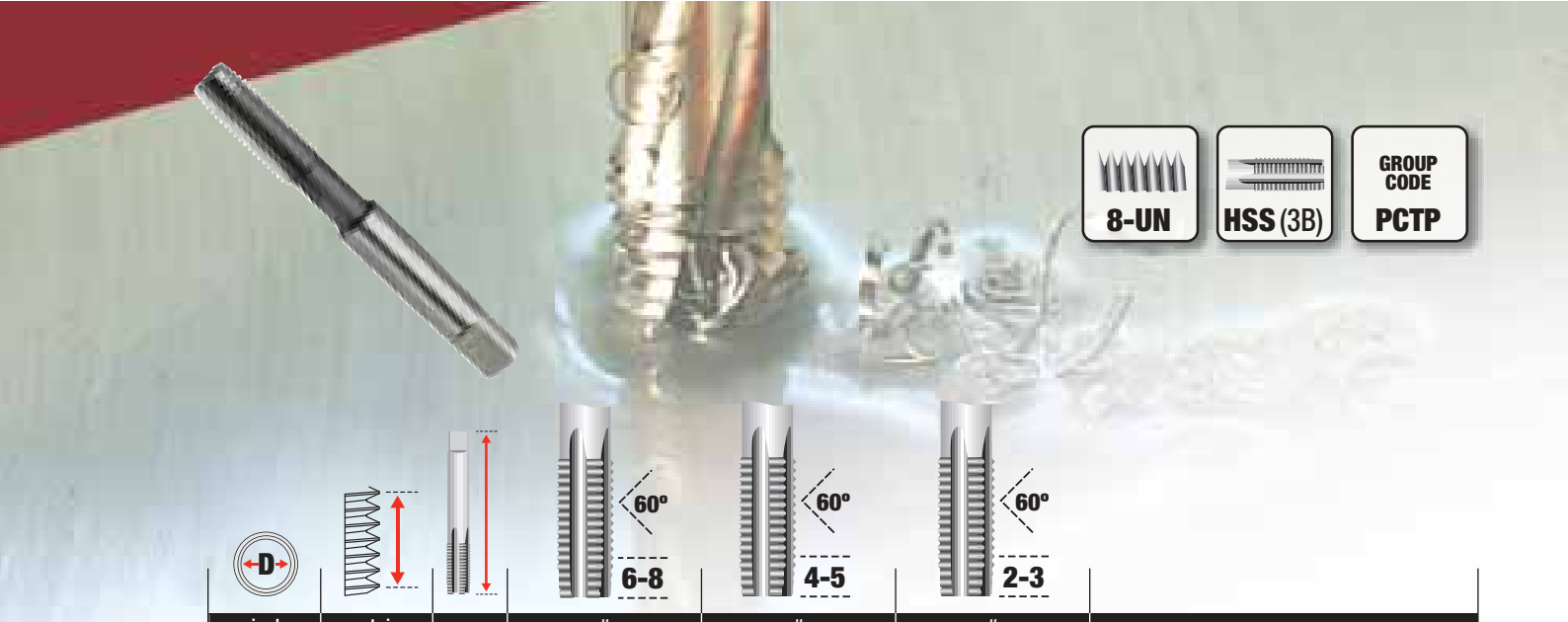
BSP | STI (3B) | HSS | STI-ISO529 | GROUP CODE PCTP

D inch	tpi	mm	55° 6-8	55° 4-5	55° 2-3
				#	
BSP					
1/8	28	59.00	3546-1/8T	3546-1/8I	3546-1/8B
1/4	19	67.00	3546-1/4T	3546-1/4I	3546-1/4B
3/8	19	75.00	3546-3/8T	3546-3/8I	3546-3/8B
1/2	14	87.00	3546-1/2T	3546-1/2I	3546-1/2B
5/8	14	91.00	3546-5/8T	3546-5/8I	3546-5/8B
3/4	14	96.00	3546-3/4T	3546-3/4I	3546-3/4B
1	11	109.00	3546-1T	3546-1I	3546-1B

BSP NPT

NPT | STI (3B) | HSS | ANSI 94.9 | GROUP CODE PCTP

D inch	tpi	mm	12" 0.75" 60° 6-8 #	12" 0.75" 60° 4-5 #	12" 0.75" 60° 2-3 #
NPT					
1/8	27	54.00	3552-1/8T	3552-1/8I	3552-1/8B
1/4	18	62.00	3552-1/4T	3552-1/4I	3552-1/4B
3/8	18	65.00	3552-3/8T	3552-3/8I	3552-3/8B
1/2	14	80.00	3552-1/2T	3552-1/2I	3552-1/2B
3/4	14	83.00	3552-3/4T	3552-3/4I	3552-3/4B
1	11.5	95.00	3552-1T	3552-1I	3552-1B



8-UN | HSS (3B) | GROUP CODE PCTP

8-UN BA

inch	tpi	mm	# (60° 6-8)	# (60° 4-5)	# (60° 2-3)
8-UN					
1-1/8	8	151.00	3570-1.1/8T	3570-1.1/8I	3570-1.1/8B
1-1/4	8	162.00	3570-1.1/4T	3570-1.1/4I	3570-1.1/4B
1-3/8	8	170.00	3570-1.3/8T	3570-1.3/8I	3570-1.3/8B
1-1/2	8	170.00	3570-1.1/2T	3570-1.1/2I	3570-1.1/2B
1-5/8	8	187.00	3570-1.5/8T	3570-1.5/8I	3570-1.5/8B
1-3/4	8	187.00	3570-1.3/4T	3570-1.3/4I	3570-1.3/4B
1-7/8	8	200.00	3570-1.7/8T	3570-1.7/8I	3570-1.7/8B
2	8	200.00	3570-2T	3570-2I	3570-2B

BA | STI (3B) | HSS | GROUP CODE PCTP

inch	tpi	mm	# (47.5° 6-8)	# (47.5° 4-5)	# (47.5° 2-3)
BA					
0	1.00	66.00	3544-0T	3544-0I	3544-0B
2	0.80	66.00	3544-2T	3544-2I	3544-2B
4	0.66	53.00	3544-4T	3544-4I	3544-4B
6	0.53	50.00	3544-6T	3544-6I	3544-6B

BSC | STI (3B) | HSS | GROUP CODE PCTP

D inch	tpi	mm	60° 6-8	60° 4-5	60° 2-3
BSC					
1/4	26	69.00	3560-1/4T	3560-1/4I	3560-1/4B
5/16	26	76.00	3560-5/16T	3560-5/16I	3560-5/16B
3/8	26	82.00	3560-3/8T	3560-3/8I	3560-3/8B
7/16	26	84.00	3560-7/16T	3560-7/16I	3560-7/16B
1/2	26	90.00	3560-1/2T	3560-1/2I	3560-1/2B

BSC

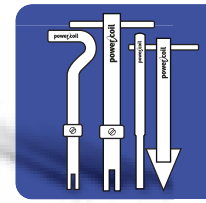
MC | HSS | GROUP CODE PCTP

MF

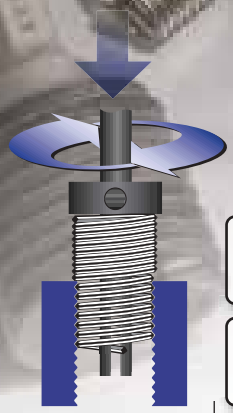
D mm	tpi	mm	60° #	60° #
6.00	1.00	70.00	3520-6.00PN	–
8.00	1.25	75.00	3520-8.00PN	–
10.00	1.50	80.00	3520-10.00PN	–
10.00	1.00	74.00	–	3522-10.00PN
12.00	1.25	75.00	–	3522-12.00PN
14.00	1.25	90.00	–	3522-14.00PN
18.00	1.50	116.00	–	3522-18.00PN

MC		FREE	FREE / LOCK	FREE	FREE / LOCK	FREE / LOCK
D						
mm	mm	#	#	#	#	#
MC						
2.00	0.40	3500-HIT2	3520-2.00HIP	–	3520-2.00MIT	–
2.20	0.45	3500-HIT2	3520-2.20HIP	–	3520-2.20MIT	–
2.50	0.45	3500-HIT3	3520-2.50HIP	–	3520-2.50MIT	–
3.00	0.50	3500-HIT4	3520-3.00HIP	–	3520-3.00MIT	–
3.50	0.60	3500-HIT5	3520-3.50HIP	–	3520-3.50MIT	–
4.00	0.70	3500-HIT6	3520-4.00HIP	–	3520-4.00MIT	–
5.00	0.80	3500-HIT8	3520-5.00HIP	–	3520-5.00MIT	–
6.00	1.00	3500-HIT9	3520-6.00HIP	–	3520-6.00MIT	–
7.00	1.00	3500-HIT10	3520-7.00HIP	–	3520-7.00MIT	–
8.00	1.25	3500-HIT11	3520-8.00HIP	–	3520-8.00MIT	–
9.00	1.25	3500-HIT13	–	–	–	–
10.00	1.50	3500-HIT13	3520-10.00HIP	–	3520-10.00MIT	–
11.00	1.50	3500-HIT14	3520-11.00HIP	–	3520-11.00MIT	–
12.00	1.75	3500-HIT15	3520-12.00HIP	–	3520-12.00MIT	–
13.00	1.75	3500-HIT15	–	–	–	–
14.00	2.00	3500-HIT16	3520-14.00HIP	–	3520-14.00MIT	–
15.00	2.00	3500-HIT16	–	–	–	–
16.00	2.00	3500-HIT18	3520-16.00HIP	–	3520-16.00MIT	–
18.00	2.50	3500-HIT20	–	–	–	3520-18.00HIP
20.00	2.50	3500-HIT21	–	–	–	3520-20.00HIP
22.00	2.50	3500-HIT22	–	–	–	3520-22.00HIP
24.00	3.00	3500-HIT23	–	–	–	3520-24.00HIP
27.00	3.00	–	–	3520-27.00HIM	–	–
30.00	3.50	–	–	3520-30.00HIM	–	–
33.00	3.50	–	–	3520-33.00HIM	–	–
36.00	4.00	–	–	3520-36.00HIM	–	–

mm	mm	#	#	#	#	#
MF						
8.00	1.00	3500-HIT11	3521-8.00HIP	–	3521-8.00MIT	–
10.00	1.25	3500-HIT13	3521-10.00HIP	–	3521-10.00MIT	–
10.00	1.00	3500-HIT13	3523-10.00HIP	–	3523-10.00MIT	–
11.00	1.25	3500-HIT14	–	–	–	–
11.00	1.00	3500-HIT14	–	–	–	–
12.00	1.50	3500-HIT15	3521-12.00HIP	–	3521-12.00MIT	–
12.00	1.25	3500-HIT15	3523-12.00HIP	–	3523-12.00MIT	–
12.00	1.00	3500-HIT15	–	–	–	–
13.00	1.50	3500-HIT15	–	–	–	–
13.00	1.25	3500-HIT16	–	–	–	–
14.00	1.50	3500-HIT16	3521-14.00HIP	–	3521-14.00MIT	–
14.00	1.25	3500-HIT16	3523-14.00HIP	–	3523-14.00MIT	–
14.00	1.00	3500-HIT16	–	–	–	–
15.00	1.50	3500-HIT16	–	–	–	–
16.00	1.50	3500-HIT18	3521-16.00HIP	–	3521-16.00MIT	–
18.00	2.00	3500-HIT20	–	–	–	3521-18.00HIP
18.00	1.50	3500-HIT20	–	–	–	3521-18.00HIP
20.00	2.00	3500-HIT21	–	–	–	3521-20.00HIP
20.00	1.50	3500-HIT21	–	–	–	3521-20.00HIP
22.00	2.00	3500-HIT22	–	–	–	3521-22.00HIP
22.00	1.50	3500-HIT22	–	–	–	3521-22.00HIP
24.00	2.00	3500-HIT23	–	–	–	3521-24.00HIP
24.00	1.50	3500-HIT23	–	–	–	3521-24.00HIP
26.00	1.50	–	–	3523-26.00HIM	–	–
27.00	2.00	–	–	3521-27.00HIM	–	–
27.00	1.50	–	–	3523-27.00HIM	–	–
28.00	1.50	–	–	3523-28.00HIM	–	–
30.00	2.00	–	–	3521-30.00HIM	–	–
30.00	1.50	–	–	3523-30.00HIM	–	–
33.00	2.00	–	–	3521-33.00HIM	–	–
36.00	3.00	–	–	3521-36.00HIM	–	–
36.00	2.00	–	–	3523-36.00HIM	–	–
36.00	1.50	–	–	3524-36.00HIM	–	–



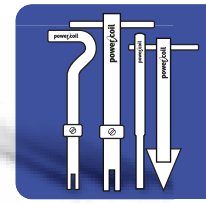
inch	tpi	#	#	#	#	#
UNC						
2G	56	3500-HIT2	3532-2GHIP	–	3532-2GMIT	–
3G	48	3500-HIT3	3532-3GHIP	–	–	–
4G	40	3500-HIT4	3532-4GHIP	–	3532-4GMIT	–
5G	40	3500-HIT4	3532-5GHIP	–	3532-5GMIT	–
6G	32	3500-HIT5	3532-6GHIP	–	3532-6GMIT	–
8G	32	3500-HIT6	3532-8GHIP	–	3532-8GMIT	–
10G	24	3500-HIT7	3532-10GHIP	–	3532-10GMIT	–
12G	24	3500-HIT8	3532-12GHIP	–	3532-12GMIT	–
1/4	20	3500-HIT9	3532-1/4HIP	–	3532-1/4MIT	–
5/16	18	3500-HIT10	3532-5/16HIP	–	3532-5/16MIT	–
3/8	16	3500-HIT13	3532-3/8HIP	–	3532-3/8MIT	–
7/16	14	3500-HIT14	3532-7/16HIP	–	3532-7/16MIT	–
1/2	13	3500-HIT15	3532-1/2HIP	–	3532-1/2MIT	–
9/16	12	3500-HIT16	–	–	–	3532-9/16HIP
5/8	11	3500-HIT18	–	–	–	3532-5/8HIP
3/4	10	3500-HIT20	–	–	–	3532-3/4HIP
7/8	9	3500-HIT22	–	–	–	3532-7/8HIP
1	8	3500-HIT23	–	–	–	3532-1HIP
1-1/8	7	–	–	3532-1.1/8HIM	–	3532-1.1/8HIP
1-1/4	7	–	–	3532-1.1/4HIM	–	3532-1.1/4HIP
1-3/8	6	–	–	3532-1.3/8HIM	–	3532-1.3/8HIP
1-1/2	6	–	–	3532-1.1/2HIM	–	3532-1.1/2HIP

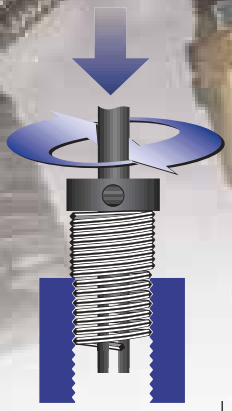


UNF

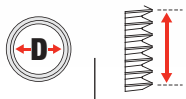
D

inch	tpi	#	#	#	#	#
		FREE	FREE / LOCK	FREE	FREE / LOCK	FREE / LOCK
UNF						
3G	56	3500-HIT3	3534-3GHIP	–	–	–
4G	48	3500-HIT4	3534-4GHIP	–	3534-4GMIT	–
6G	40	3500-HIT5	3534-6GHIP	–	3534-6GMIT	–
8G	36	3500-HIT6	3534-8GHIP	–	3534-8GMIT	–
10G	32	3500-HIT8	3534-10GHIP	–	3534-10GMIT	–
12G	28	3500-HIT8	3534-12GHIP	–	–	–
1/4	28	3500-HIT9	3534-1/4HIP	–	3534-1/4MIT	–
5/16	24	3500-HIT11	3534-5/16HIP	–	3534-5/16MIT	–
3/8	24	3500-HIT13	3534-3/8HIP	–	3534-3/8MIT	–
7/16	20	3500-HIT14	3534-7/16HIP	–	3534-7/16MIT	–
1/2	20	3500-HIT15	3534-1/2HIP	–	3534-1/2MIT	–
9/16	18	3500-HIT16	–	–	–	3534-9/16HIP
5/8	18	3500-HIT18	–	–	–	3534-5/8HIP
3/4	16	3500-HIT21	–	–	–	3534-3/4HIP
7/8	14	3500-HIT22	–	–	–	3534-7/8HIP
1	12	3500-HIT23	–	–	–	3534-1HIP
1	14	3500-HIT23	–	–	–	3535-1HIP
1-1/8	12	–	–	3534-1.1/8HIM	–	3534-1.1/8HIP
1-1/4	12	–	–	3534-1.1/4HIM	–	3534-1.1/4HIP
1-3/8	12	–	–	3534-1.3/8HIM	–	3534-1.3/8HIP
1-1/2	12	–	–	3534-1.1/2HIM	–	3534-1.1/2HIP

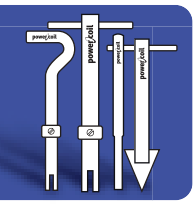




BSW

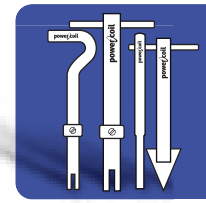


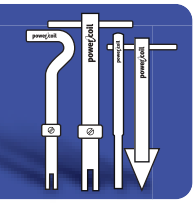
inch	tpi	#	#	#	#	#
BSW						
1/8	40	3500-HIT4	–	–	–	–
3/16	24	3500-HIT7	–	–	–	–
1/4	20	3500-HIT9	–	–	–	–
5/16	18	3500-HIT10	–	–	–	–
3/8	16	3500-HIT11	–	–	–	–
7/16	14	3500-HIT14	–	–	–	–
1/2	12	3500-HIT15	–	–	–	–
9/16	12	3500-HIT16	–	–	–	–
5/8	11	3500-HIT18	–	–	–	–
3/4	10	3500-HIT20	–	–	–	–
7/8	9	3500-HIT22	–	–	–	–
1	8	3500-HIT23	–	–	–	–



BSF

		FREE	FREE / LOCK	FREE	FREE / LOCK	FREE / LOCK
inch	tpi	#	#	#	#	#
BSF						
3/16	32	3500-HIT8	–	–	–	–
1/4	26	3500-HIT9	–	–	–	–
5/16	22	3500-HIT11	–	–	–	–
3/8	20	3500-HIT13	–	–	–	–
7/16	18	3500-HIT14	–	–	–	–
1/2	16	3500-HIT15	–	–	–	–
9/16	16	3500-HIT16	–	–	–	–
5/8	14	3500-HIT18	–	–	–	–
3/4	12	3500-HIT20	–	–	–	–
7/8	11	3500-HIT22	–	–	–	–
1	10	3500-HIT23	–	–	–	–

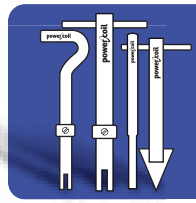




BSP		FREE	FREE / LOCK	FREE	FREE / LOCK	FREE / LOCK
inch	tpi	#	#	#	#	#
BSP(G)						
1/8	28	–	–	3546-1/8HIM	–	–
1/4	19	–	–	3546-1/4HIM	–	–
3/8	19	–	–	3546-3/8HIM	–	–
1/2	14	–	–	3546-1/2HIM	–	–
5/8	14	–	–	3546-5/8HIM	–	–
3/4	14	–	–	3546-3/4HIM	–	–
7/8	14	–	–	3546-7/8HIM	–	–
1	11	–	–	3546-1HIM	–	–

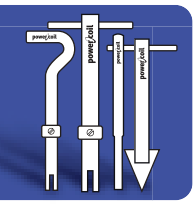
NPT						
inch	tpi	#	#	#	#	#
NPT						
1/8	27	–	–	3552-1/8HIM	–	–
1/4	18	–	–	3552-1/4HIM	–	–
3/8	18	–	–	3552-3/8HIM	–	–
1/2	14	–	–	3552-1/2HIM	–	–
3/4	14	–	–	3552-3/4HIM	–	–
1	11.5	–	–	3552-1HIM	–	–

8-UN		FREE	FREE / LOCK	FREE	FREE / LOCK	FREE / LOCK
inch	tpi	#	#	#	#	#
8-UN						
1-1/8	8	–	–	3570-1.1/8HIM	–	–
1-1/4	8	–	–	3570-1.1/4HIM	–	–
1-3/8	8	–	–	3570-1.3/8HIM	–	–
1-1/2	8	–	–	3570-1.1/2HIM	–	–
1-5/8	8	–	–	3570-1.5/8HIM	–	–
1-3/4	8	–	–	3570-1.3/4HIM	–	–
1-7/8	8	–	–	3570-1.7/8HIM	–	–
2	8	–	–	3570-2HIM	–	–

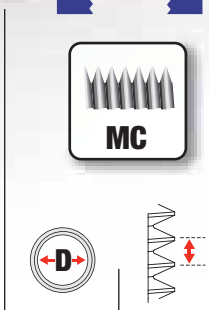


BA						
inch	tpi	#	#	#	#	#
BA						
0	1.00	3500-HIT9	–	–	–	–
2	0.80	3500-HIT7	–	–	–	–
4	0.66	3500-HIT5	–	–	–	–
6	0.53	3500-HIT3	–	–	–	–

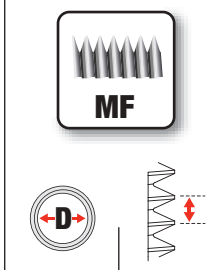
		FREE	FREE / LOCK	FREE	FREE / LOCK	FREE / LOCK
BSC						
inch	tpi	#	#	#	#	#
BSC						
1/4	26	3500-HIT9	–	–	–	–
5/16	26	3500-HIT11	–	–	–	–
3/8	26	3500-HIT13	–	–	–	–
7/16	26	3500-HIT14	–	–	–	–
1/2	26	3500-HIT15	–	–	–	–



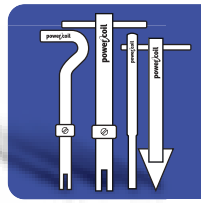
mm	mm	#	#	#	#	#
10.00	1.00	3500-HIT13	–	–	–	–
12.00	1.25	3500-HIT15	–	–	–	–
14.00	1.25	3500-HIT17	–	–	–	–
18.00	1.50	3500-HIT20	–	–	–	–

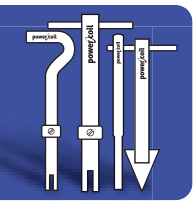


mm	mm	#	#	#	#	#
MC						
2.20	0.45	3520-2.20MIP	3520-2.20MIPM	3520-2.20MIPN	3500-MIP1	–
2.50	0.45	3520-2.50MIP	3520-2.50MIPM	3520-2.50MIPN	3500-MIP1	–
3.00	0.50	3520-3.00MIP	3520-3.00MIPM	3520-3.00MIPN	3500-MIP1	–
3.50	0.60	3520-3.50MIP	3520-3.50MIPM	3520-3.50MIPN	3500-MIP1	–
4.00	0.70	3520-4.00MIP	3520-4.00MIPM	3520-4.00MIPN	3500-MIP1	–
5.00	0.80	3520-5.00MIP	3520-5.00MIPM	3520-5.00MIPN	3500-MIP1	–
6.00	1.00	3520-6.00MIP	3520-6.00MIPM	3520-6.00MIPN	3500-MIP1	–
8.00	1.25	3520-8.00MIP	3520-8.00MIPM	3520-8.00MIPN	–	3500-MIP2
10.00	1.50	3520-10.00MIP	3520-10.00MIPM	3520-10.00MIPN	–	3500-MIP2
12.00	1.75	3520-12.00MIP	3520-12.00MIPM	3520-12.00MIPN	–	3500-MIP2

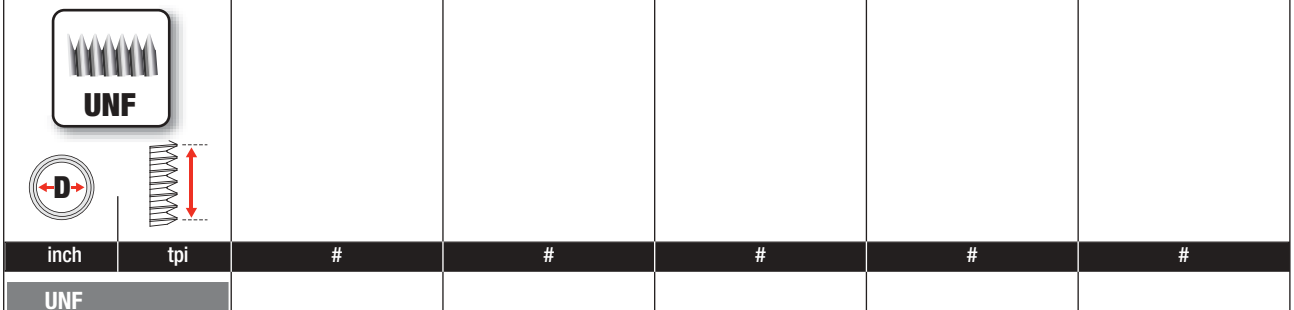


mm	mm	#	#	#	#	#
MF						
8.00	1.00	3521-8.00MIP	3521-8.00MIPM	3521-8.00MIPN	–	3500-MIP2
10.00	1.25	3521-10.00MIP	3521-10.00MIPM	3521-10.00MIPN	–	3500-MIP2
10.00	1.00	3523-10.00MIP	3523-10.00MIPM	3523-10.00MIPN	–	3500-MIP2
12.00	1.50	3521-12.00MIP	3521-12.00MIPM	3521-12.00MIPN	–	3500-MIP2
12.00	1.25	3523-12.00MIP	3523-12.00MIPM	3523-12.00MIPN	–	3500-MIP2



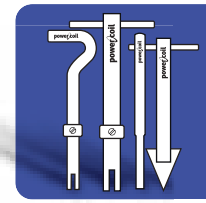


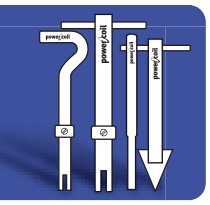
inch	tpi	#	#	#	#	#
UNC						
2G	56	3532-2GMIP	3532-2GMIPM	3532-2GMIPN	3500-MIP1	–
4G	40	3532-4GMIP	3532-4GMIPM	3532-4GMIPN	3500-MIP1	–
5G	40	3532-5GMIP	3532-5GMIPM	3532-5GMIPN	3500-MIP1	–
6G	32	3532-6GMIP	3532-6GMIPM	3532-6GMIPN	3500-MIP1	–
8G	32	3532-8GMIP	3532-8GMIPM	3532-8GMIPN	3500-MIP1	–
10G	24	3532-10GMIP	3532-10GMIPM	3532-10GMIPN	3500-MIP1	–
12G	24	3532-12GMIP	3532-12GMIPM	3532-12GMIPN	3500-MIP1	–
1/4	20	3532-1/4MIP	3532-1/4MIPM	3532-1/4MIPN	3500-MIP1	–
5/16	18	3532-5/16MIP	3532-5/16MIPM	3532-5/16MIPN	–	3500-MIP2
3/8	16	3532-3/8MIP	3532-3/8MIPM	3532-3/8MIPN	–	3500-MIP2
7/16	14	3532-7/16MIP	3532-7/16MIPM	3532-7/16MIPN	–	3500-MIP2
1/2	13	3532-1/2MIP	3532-1/2MIPM	3532-1/2MIPN	–	3500-MIP2



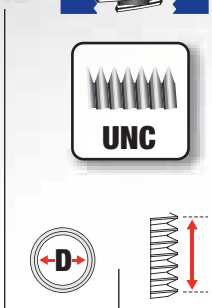
inch	tpi	#	#	#	#	#
UNF						
6G	40	3534-6GMIP	3534-6GMIPM	3534-6GMIPN	3500-MIP1	–
8G	36	3534-8GMIP	3534-8GMIPM	3534-8GMIPN	3500-MIP1	–
10G	32	3534-10GMIP	3534-10GMIPM	3534-10GMIPN	3500-MIP1	–
1/4	28	3534-1/4MIP	3534-1/4MIPM	3534-1/4MIPN	3500-MIP1	–
5/16	24	3534-5/16MIP	3534-5/16MIPM	3534-5/16MIPN	–	3500-MIP2
3/8	24	3534-3/8MIP	3534-3/8MIPM	3534-3/8MIPN	–	3500-MIP2
7/16	20	3534-7/16MIP	3534-7/16MIPM	3534-7/16MIPN	–	3500-MIP2
1/2	20	3534-1/2MIP	3534-1/2MIPM	3534-1/2MIPN	–	3500-MIP2

mm	mm	#	#	#		#
MC						
2.00	0.40	3500-TB2	3500-STB1	3500-PNTB1		3500-RT1
2.20	0.45	3500-TB2	3500-STB1	3500-PNTB1		3500-RT1
2.50	0.45	3500-TB3	3500-STB2	3500-PNTB2		3500-RT1
3.00	0.50	3500-TB4	3500-STB4	3500-PNTB4		3500-RT2
3.50	0.60	3500-TB5	3500-STB4	3500-PNTB4		3500-RT2
4.00	0.70	3500-TB6	3500-STB5	3500-PNTB5		3500-RT2
5.00	0.80	3500-TB8	3500-STB6	3500-PNTB6		3500-RT2
6.00	1.00	3500-TB9	3500-STB8	3500-PNTB8		3500-RT2
7.00	1.00	3500-TB11	–	–		3500-RT2
8.00	1.25	3500-TB12	3500-STB9	3500-PNTB9		3500-RT2
9.00	1.25	3500-TB12	–	–		3500-RT2
10.00	1.50	3500-TB13	3500-STB10	3500-PNTB10		3500-RT2
11.00	1.50	3500-TB14	–	–		3500-RT3
12.00	1.75	3500-TB15	3500-STB12	3500-PNTB12		3500-RT3
13.00	1.75	3500-TB15	–	–		3500-RT3
14.00	2.00	3500-HIT16	–	–		3500-RT3
15.00	2.00	3500-HIT16	–	–		3500-RT3
16.00	2.00	3500-HIT18	–	–		3500-RT3
18.00	2.50	3500-HIT20	–	–		3500-RT3
20.00	2.50	3500-HIT21	–	–		3500-RT3
22.00	2.50	3500-HIT22	–	–		3500-RT3
24.00	3.00	3500-HIT23	–	–		3500-RT3
27.00	3.00	–	–	–		3500-RT4
30.00	3.50	–	–	–		3500-RT4
33.00	3.50	–	–	–		3500-RT4
36.00	4.00	–	–	–		3500-RT4

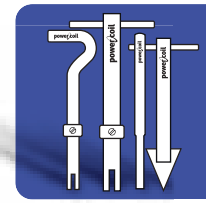




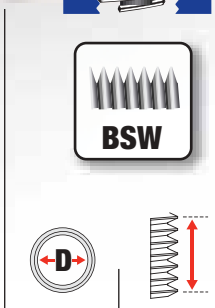
MF						
mm	mm	#	#			#
MF						
8.00	1.00	3500-TB12	3500-STB9	3500-PNTB9		3500-RT2
10.00	1.25	3500-TB13	3500-STB10	3500-PNTB10		3500-RT2
10.00	1.00	3500-TB13	3500-STB10	–		3500-RT2
11.00	1.25	3500-TB14	–	–		3500-RT3
11.00	1.00	3500-TB14	–	–		3500-RT3
12.00	1.50	3500-TB15	3500-STB12	3500-PNTB12		3500-RT3
12.00	1.25	3500-TB15	3500-STB12	3500-PNTB12		3500-RT3
12.00	1.00	3500-TB15	3500-STB12	3500-PNTB12		3500-RT3
13.00	1.50	3500-TB15	–	–		3500-RT3
13.00	1.25	3500-HIT16	–	–		3500-RT3
14.00	1.50	3500-HIT16	–	–		3500-RT3
14.00	1.25	3500-HIT16	–	–		3500-RT3
14.00	1.00	3500-HIT16	–	–		3500-RT3
15.00	1.50	3500-HIT16	–	–		3500-RT3
16.00	1.50	3500-HIT18	–	–		3500-RT3
18.00	2.00	3500-HIT20	–	–		3500-RT3
18.00	1.50	3500-HIT20	–	–		3500-RT3
20.00	2.00	3500-HIT21	–	–		3500-RT3
20.00	1.50	3500-HIT21	–	–		3500-RT3
22.00	2.00	3500-HIT22	–	–		3500-RT3
22.00	1.50	3500-HIT22	–	–		3500-RT3
24.00	2.00	3500-HIT23	–	–		3500-RT3
24.00	1.50	3500-HIT23	–	–		3500-RT3
26.00	1.50	–	–	–		3500-RT4
27.00	2.00	–	–	–		3500-RT4
27.00	1.50	–	–	–		3500-RT4
28.00	1.50	–	–	–		3500-RT4
30.00	2.00	–	–	–		3500-RT4
30.00	1.50	–	–	–		3500-RT4
33.00	2.00	–	–	–		3500-RT4
36.00	3.00	–	–	–		3500-RT4
36.00	2.00	–	–	–		3500-RT4
36.00	1.50	–	–	–		3500-RT4



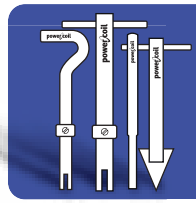
inch	tpi	#	#			#
UNC						
2G	56	3500-TB2	3500-STB1	3500-PNTB1		3500-RT1
3G	48	3500-TB3	–	–		3500-RT1
4G	40	3500-TB4	3500-STB3	3500-PNTB3		3500-RT1
5G	40	3500-TB4	3500-STB3	3500-PNTB3		3500-RT1
6G	32	3500-TB5	3500-STB4	3500-PNTB4		3500-RT1
8G	32	3500-TB6	3500-STB5	3500-PNTB5		3500-RT1
10G	24	3500-TB8	3500-STB6	3500-PNTB6		3500-RT2
12G	24	3500-TB8	3500-STB7	3500-PNTB7		3500-RT2
1/4	20	3500-TB9	3500-STB8	3500-PNTB8		3500-RT2
5/16	18	3500-TB12	3500-STB9	3500-PNTB9		3500-RT2
3/8	16	3500-TB12	3500-STB10	3500-PNTB10		3500-RT3
7/16	14	3500-TB14	3500-STB11	–		3500-RT3
1/2	13	3500-TB15	3500-STB12	3500-PNTB12		3500-RT3
9/16	12	3500-HIT16	–	–		3500-RT3
5/8	11	3500-HIT18	–	–		3500-RT3
3/4	10	3500-HIT20	–	–		3500-RT3
7/8	9	3500-HIT22	–	–		3500-RT3
1	8	3500-HIT23	–	–		3500-RT3
1-1/8	7	–	–	–		3500-RT4
1-1/4	7	–	–	–		3500-RT4
1-3/8	6	–	–	–		3500-RT4
1-1/2	6	–	–	–		3500-RT4

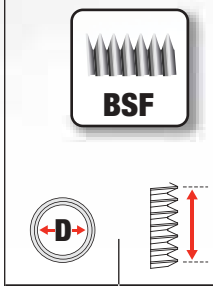


inch	tpi	#	#			#
UNF						
3G	56	3500-TB3	–	–		3500-RT1
4G	48	3500-TB4	3500-STB3	3500-PNTB3		3500-RT1
6G	40	3500-TB5	3500-STB4	3500-PNTB4		3500-RT1
8G	36	3500-TB6	3500-STB5	3500-PNTB5		3500-RT1
10G	32	3500-TB8	3500-STB6	3500-PNTB6		3500-RT2
12G	28	3500-TB8	–	–		3500-RT2
1/4	28	3500-TB9	3500-STB8	3500-PNTB8		3500-RT2
5/16	24	3500-TB12	3500-STB9	3500-PNTB9		3500-RT2
3/8	24	3500-TB13	3500-STB10	3500-PNTB10		3500-RT3
7/16	20	3500-TB14	3500-STB11	–		3500-RT3
1/2	20	3500-TB15	3500-STB12	3500-PNTB12		3500-RT3
9/16	18	3500-HIT16	–	–		3500-RT3
5/8	18	3500-HIT18	–	–		3500-RT3
3/4	16	3500-HIT21	–	–		3500-RT3
7/8	14	3500-HIT22	–	–		3500-RT3
1	12	3500-HIT23	–	–		3500-RT3
1	14	3500-HIT23	–	–		3500-RT3
1-1/8	12	–	–	–		3500-RT4
1-1/4	12	–	–	–		3500-RT4
1-3/8	12	–	–	–		3500-RT4
1-1/2	12	–	–	–		3500-RT4

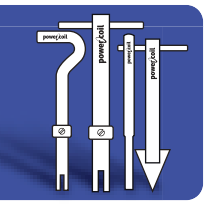


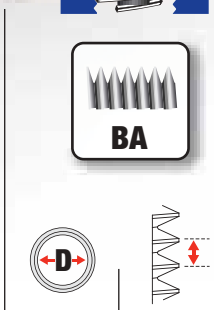
inch	tpi	#	#			#
BSW						
1/8	40	3500-TB4	–	–		3500-RT1
3/16	24	3500-TB8	–	–		3500-RT2
1/4	20	3500-TB9	–	–		3500-RT2
5/16	18	3500-TB11	–	–		3500-RT2
3/8	16	3500-TB12	–	–		3500-RT3
7/16	14	3500-TB14	–	–		3500-RT3
1/2	12	3500-TB15	–	–		3500-RT3
9/16	12	3500-HIT16	–	–		3500-RT3
5/8	11	3500-HIT18	–	–		3500-RT3
3/4	10	3500-HIT20	–	–		3500-RT3
7/8	9	3500-HIT22	–	–		3500-RT3
1	8	3500-HIT23	–	–		3500-RT3



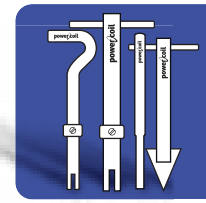


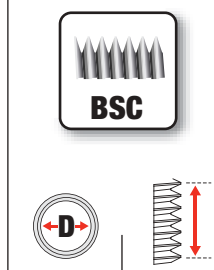
inch	tpi	#	#			#
BSF						
3/16	32	3500-TB6	–	–		3500-RT2
1/4	26	3500-TB9	–	–		3500-RT2
5/16	22	3500-TB11	–	–		3500-RT2
3/8	20	3500-TB12	–	–		3500-RT3
7/16	18	3500-TB14	–	–		3500-RT3
1/2	16	3500-TB15	–	–		3500-RT3
9/16	16	3500-HIT16	–	–		3500-RT3
5/8	14	3500-HIT18	–	–		3500-RT3
3/4	12	3500-HIT20	–	–		3500-RT3
7/8	11	3500-HIT22	–	–		3500-RT3
1	10	3500-HIT23	–	–		3500-RT3





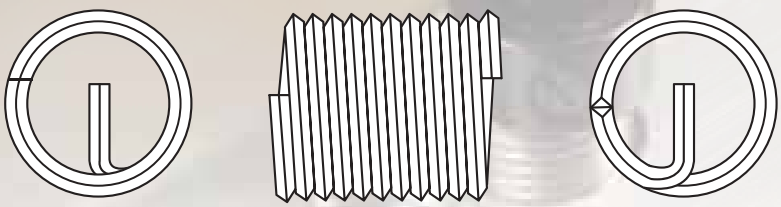
	mm	#	#			#
BA						
0	1.00	3500-TB11	–	–		3500-RT2
2	0.80	3500-TB8	–	–		3500-RT2
4	0.66	3500-TB5	–	–		3500-RT1
6	0.53	3500-TB3	–	–		3500-RT1





inch	tpi	#	#			#
BSC						
1/4	26	3500-TB9	–	–		3500-RT2
5/16	26	3500-TB12	–	–		3500-RT2
3/8	26	3500-TB13	–	–		3500-RT3
7/16	26	3500-TB14	–	–		3500-RT3
1/2	26	3500-TB15	–	–		3500-RT3

powercoil®



Materials

PowerCoil standard inserts are manufactured from fully certified, aircraft quality, 304 (18/8) austenitic stainless steel in accordance with DTD 734A. Alternative materials include 316 stainless steel and a variety of application specific surface coatings.

Alternative Materials

Phosphor Bronze

Non ferrous copper/tin alloy in accordance with BS2783 PB 102 EH – is suitable for operation in temperatures ranging from -200ºC to +300ºC.

Inconel X-750

Heat resisting precipitation hardenable nickel base alloy (equivalent specifications SAE AS 7246, DIN/NF 3018, W.NR 2.4669, UNS N07750). Inconel X-750 is suitable for operation in temperatures ranging from -200ºC to +550º degrees celsius.

Nimonic 90

Heat resisting precipitation hardenable nickel base alloy in accordance with BS2 HR 501 (equivalent specifications W.NR 2.4632, UNS N07090). Nimonic 90 is suitable for operation in temperatures ranging from -100ºC to +650º degrees celsius.

Insert Material	Max. Temperature Peak	Max. Temperature Continuous	Typical Applications	Coatings
Stainless 304	425ºC 800ºF	315ºC 600ºF	Most general applications in all materials	FL, AG, CD
Stainless 316	425ºC 800ºF	315ºC 600ºF	Increased corrosion resistance for salt water applications	FL, AG, CD
Phosphor Bronze	300ºC 572ºF	235ºC 455ºF	Copper parts, non-magnetic, low permeability applications	AG, CD
Iconel X-750	650ºC 1200ºF	550ºC 1020ºF	Aerospace, turbines, corrosive environments, high temp. use	AG
Nimonic 90	650ºC 1200ºF	550ºC 1020ºF	Aerospace and turbine applications	AG

Alternative Finishes & Coatings

Cadmium Plate

Electro-deposited Cadmium in accordance with DTD 904/Def Stan 03-19 (equivalent specifications FED. QQ-P-416, LN 9368). Cadmium plating provides an excellent barrier between dissimilar metals dramatically reducing the effects of galvanic corrosion, its high lubricity and excellent corrosion resistance prevents seizure and galling between threaded components. Cadmium plate is suitable for operation in temperatures ranging from -200ºC to +235ºC.

Cadmium plated parts must not be

- sujected to temperatures exceeding 235ºC (455ºF)
- come into contact with fuel or hot oil
- come into contact with food or drinking water
- be used with titanium components (either directly or indirectly). At elevated temperatures embrittlement and subsequent component failure may occur.
- Cadmium is highly toxic – consequently extreme care must be taken when shipping, handling and installing.

Zinc Plate

Electrolytically deposited zinc in accordance with BS 3382. Electro-deposited zinc is the most widely applied electroplated finish in industry. Zinc is suitable for operation in temperatures ranging from -200ºC to +250ºC.

Silver Plate

Electrolytically deposited silver in accordance with DTD 939. Silver plating is used to prevent seizure and galling between thread components in high temperature applications and is most commonly applied to aero-engine fasteners. Silver plate is suitable for operation in temperatures ranging from -200ºC to +650ºC. Silver plated wire inserts may be installed in various materials including aluminium alloys, magnesium alloys, corrosion and heat resistant materials etc.

Silver plated inserts are not recommended for installation in titanium alloy which may exceed a service temperature of 300ºC (570ºF). Stress corrosion as a result of the combination of silver and titanium may occur in the housing material.

Dry Film Lubricant

Solid film heat cured molybdenum disulphide dry film lubricant coating in accordance with MIL-L-0046010 provides a low frictional coefficient coating with excellent load bearing capabilities. Dry film lubricant prevents seizing and galling between threaded components and is particularly effective in screw locking insert applications. Dry film lubricant is suitable for operation in temperatures ranging from -100ºC to +250ºC.

Plating / Finish	Part No. Suffix	Applicable Process Specification
Silver Plating	AG	DTD 939
Cadmium Plating	CD	QQP-416 or DEF STD 03-19
Dry Film Lubricant	FL	MIL-L-8937 or MIL-L-46010
Red Dye	–	Applied to locking inserts for identification purposes*

* other color dyes may also be utilised for specific identification purposes

Selection of Correct Insert Length

PowerCoil wire thread inserts are available in all popular thread types. Five insert lengths are available for each thread size. It is important to select the correct insert length in order to balance the bolt tensile strength against the shear strength of the parent material. The five insert lengths (recommended thread engagement of the PowerCoil wire thread insert), 1D, 1.5D, 2D, 2.5D and 3D are shown in the shaded area of the table below. These are calculated numbers since the inserts cannot be measured in the free (un-installed) state. The numbers are multiples of the nominal thread size, or diameter, of the insert. The actual insert lengths in the installed position are listed in the insert selection tables. There they represent the actual installed length plus 1/2 pitch. Using the table below, an insert length can be selected which will produce a thread system strong enough to fracture a bolt before it will strip or damage either the parent material or the insert.

Recommended Nominal Insert lengths Based on Parent Material Versus Bolt Material Strengths

UNIFIED (source BS7752 Part 1:1994)

Shear Strength of Parent Material (KSI)	Bolt Material Minimum Ultimate Tensile Strength (KSI)								
	54	**75**	**96**	**108**	**125**	**132**	**160**	**180**	**220**
10	2.0	2.5	3.0	3.0	–	–	–	–	–
15	1.5	1.5	2.0	2.5	2.5	3.0	–	–	–
20	1.0	1.5	1.5	2.0	2.0	2.0	2.5	3.0	3.0
25	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5	2.5
30	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5
40	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	2.0
50	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5

EXAMPLE: If parent material shear strength is 10KSI and the bolt tensile strength is 54 KSI, the correct insert length is 2.0 diameters (2D).

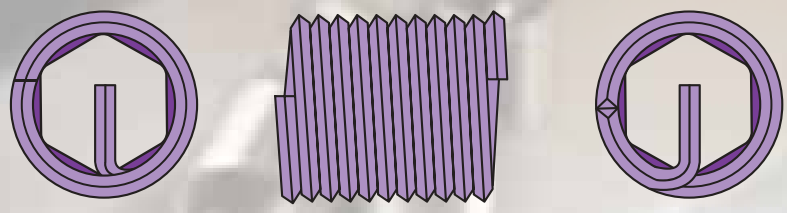
METRIC

Shear Strength of Parent Material (MPa)	Bolt Material Minimum Ultimate Tensile Strength (MPa)							
	300	**400**	**500**	**600**	**800**	**1000**	**1200**	**1400**
70	1.5	2.0	2.5	2.5	–	–	–	–
100	1.0	1.5	1.5	2.0	2.5	3.0	–	–
150	1.0	1.0	1.5	1.5	2.0	2.0	2.5	3.0
200	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2.5
250	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.0
300	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5
350	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5

EXAMPLE: If parent material shear strength is 150Mpa and the bolt tensile strength is 600Mpa, the correct insert length is 1.5 diameters (1.5D).

Bolt Projection

PowerCoil wire thread inserts are designed to be used with standard, readily available bolts and screws that require no special hardware.



The bolt must engage the entire insert length to achieve maximum assembly strength. To ensure against partial engagement, it is recommended that the tang always be removed. This will also guarantee that the locking coil(s) will be engaged by the full threads of the bolt. If design parameters prevent this, contact PowerCoil for assistance.

NOTES:

1. Bolt tensile strengths are specified minimums. When choosing an insert length, consideration should be given the maximum tensile strength allowed by the bolt drawing or procurement specification.
2. Service temperatures can cause significant variations in strength values, therefore compensation should be allowed.
3. The importance of shear values should be kept in mind because the parent material is subject to shear ing stress near the major diameter of the tapped threads.
4. When the strength values fall between two values in the tables, use next lower material shear value, or the next higher bolt tensile strength value.
5. To achieve maximum strength, bolt length and thread length as well as full tapped thread depth must be sufficient to assure full thread engagement over the entire length of the insert.

Screw Locking (Prevailing Torque) Inserts

Screw Locking PowerCoil wire thread inserts are designed for applications subject to the effects of cyclic vibration or impact. The screw locking insert exerts a prevailing torque on male threaded fasteners to prevent loosening due to vibration or impact. They eliminate the need for other, less desirable and costly locking mechanisms. They are excellent in “adjusting screw” applications by preventing the male fastener from creeping.

How Screw Locking Inserts Work

PowerCoil Screw Locking inserts offer the additional security of prevailing locking torque. This is achieved by the action of one or more polygonal grip coils positioned within the insert’s length, which exert radial pressure on the male thread. Each grip coil consists of a number of tangential locking chords which protrude inside the minor diameter of the normal free running coils. As the male thread passes through these grip coils, the locking flats are displaced and exert radial pressure (prevailing torque) on the male thread.

On removal of the male thread, the locking coils relax to their original form permitting repeated assembly whilst retaining a measurable level of prevailing torque.

Please note:
It is recommended that only close fit plated or lubricated bolts or screws are used with screw locking PowerCoil wire thread inserts. When using heat treated unplated or stainless steel bolts, an anti-seize compound, e.g., molybdenum disulfide, must be used in order to minimize galling and assure maximum cycle life. Wear life of screw or bolt using PowerCoil screw locking wire thread inserts can also be improved by specifying dry film lubrication or cadmium plating.

Location of Locking Coils

For 1D, 1.5D, and 2D diameter lengths: The center of the locking coil (or coils) equals 1/2 the number of free coils. For 2.5D and 3D diameter lengths: The locking coil is located the same distance from the tang as 2D length inserts.

Screw locking inserts are dyed red for easy identification purposes only. It is alcohol soluble and can be removed if desired.

Red Dye Coating

PowerCoil screw locking inserts are generally colour coded with an organic red dye for identification purposes. The dye does not affect the installation or performance of the insert and does not need to be removed (in most situations). In situations requiring extreme cleanliness (such as assembly of precision instruments in clean room conditions) the dye may be removed by soaking the inserts in a denatured alcohol solution prior to installation.

PowerCoil Locking Insert Torque Values

METRIC COARSE			METRIC FINE		
Thread mm x mm	Maximum Torque (Nm)	Mininimum Torque (Nm)	Thread mm x mm	Maximum Torque (Nm)	Mininimum Torque (Nm)
M2.2x0.45	0.14	0.02	M8.0x1.00	6.00	0.80
M2.5x0.45	0.23	0.05	M10.0x1.00	10.50	1.40
M3.0x0.50	0.45	0.10	M10.0x1.25	10.50	1.40
M3.5x0.60	0.68	0.12	M12.0x1.25	15.50	2.10
M4.0x0.70	0.90	0.15	M12.0x1.50	15.50	2.10
M5.0x0.80	1.60	0.30	M14.0x1.50	23.50	3.00
M6.0x1.00	3.00	0.40	M16.0x1.50	31.50	4.20
M7.0x1.00	4.50	0.60	M18.0x1.50	42.00	5.50
M8.0x1.25	6.00	0.80	M20.0x1.50	54.00	7.00
M10.0x1.50	10.50	1.40	M22.0x1.50	67.50	9.00
M12.0x1.75	15.50	2.10	M18.0x2.00	42.00	5.50
M14.0x2.00	23.50	3.00	M20.0x2.00	54.00	7.00
M16.0x2.00	31.50	4.20	M22.0x2.00	67.50	9.00
M18.0x2.50	42.00	5.50	M24.0x2.00	80.00	10.50
M20.0x2.50	54.00	7.00	M27.0x2.00	94.00	12.00
M22.0x2.50	67.50	9.00	M30.0x2.00	108.00	14.00
M24.0x3.00	80.00	10.50	M33.0x2.00	122.00	15.50
M27.0x3.00	94.00	12.00	M36.0x2.00	136.00	17.50
M30.0x3.50	108.00	14.00	M39.0x2.00	150.00	19.50
M33.0x3.50	122.00	15.50	M36.0x3.00	136.00	17.50
M36.0x4.00	136.00	17.50	M39.0x3.00	150.00	19.50
M39.0x4.00	150.00	19.50			

Locking torque values conform to MP3329, MP3330, MP3331

PowerCoil Locking Insert Torque Values

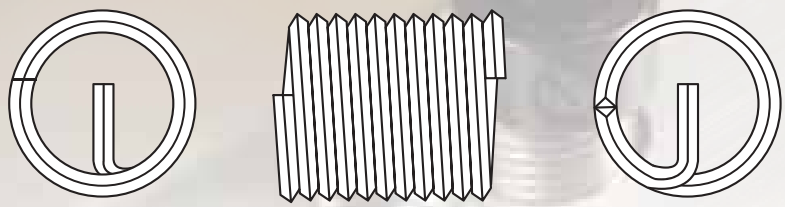
UNIFIED NATIONAL COARSE – UNC			UNIFIED NATIONAL FINE – UNF		
Thread inch x tpi	Maximum Torque (lb in)	Mininimum Torque (lb in)	Thread inch x tpi	Maximum Torque (lb in)	Mininimum Torque (lb in)
2x56	1.25	0.19	3x56	0.13	0.44
3x48	2.00	0.44	4x48	0.19	0.63
4x40	3.00	0.63	6x40	6.00	1.00
5x40	4.69	0.81	8x36	9.00	1.50
6x32	6.00	1.00	10x32	13.00	2.00
8x32	9.00	1.50	1/4x28	30.00	3.50
10x24	13.00	2.00	5/16x24	60.00	6.50
12x24	24.00	3.00	3/8x24	80.00	9.50
1/4x20	30.00	4.50	7/16x20	100.00	14.00
5/16x18	60.00	7.50	1/2x20	150.00	18.00
3/8x18	80.00	12.00	9/16x18	200.00	24.00
7/16x14	100.00	16.50	5/8x18	300.00	32.00
1/2x13	150.00	24.00	3/4x16	400.00	50.00
9/16x12	200.00	30.00	7/8x14	600.00	70.00
5/8x11	300.00	40.00	1x12	800.00	90.00
3/4x10	400.00	60.00	11/8x12	900.00	117.00
7/8x9	600.00	82.00	11/4x12	1000.00	143.00
1x8	800.00	110.00	13/8x12	1150.00	165.00
11/8x7	900.00	137.00	11/2x12	1350.00	190.00
11/4x7	1000.00	165.00			
13/8x6	1150.00	185.00			
11/2x6	1350.00	210.00			

Locking torque values conform to NASM8846

Note: It is also essential that the bolt fully engages all insert coils for maximum strength.

PowerCoil screw locking inserts can be designed to suit a customer’s specific needs. In certain instances and appllications prevailing torque can be lessened or increased to cater for a specific application. In these situations please contact your PowerCoil representative to discuss your specific requirements.

Please Note: Installation of PowerCoil screw locking inserts requires the use of a pre-winder tool. Please discuss other installation options with your PowerCoil agent.



Werkstoffe

PowerCoil Standard Inserts (Standardeinsätze) sind aus 304 (18/8) austenitischem Edelstahl hergestellt, dessen Qualität gemäß DTD 734A als Flugzeugbauniveau zertifiziert ist. Alternative Werkstoffe sind unter anderem 316 Edelstahl und eine Reihe anwendungsspezifischer Beläge.

Alternative Werkstoffe

Phosphorbronze

NE-Kupfer/Zinnlegierung gemäß BS2783 PB 102 EH – ist für den Betrieb im Temperaturbereich -200ºC bis +300ºC geeignet.

Inconel X-750

Hitzebeständige, härtbare Nickelbasislegierung (entsprechend Vorgaben SAE AS 7246, DIN/NF 3018, W.NR 2.4669, UNS N07750). Inconel X-750 ist für den Betrieb im Temperaturbereich -200ºC bis +550ºC geeignet.

Nimonic 90

Hitzebeständige, härtbare Nickelbasislegierung BS2 HR 501 (entsprechend der Vorgaben W.NR 2.4632, UNS N07090). Nimonic 90 ist für den Betrieb im Temperaturbereich -100ºC bis +650ºC geeignet.

Einsatz-material	Max. Temperatur Spitze	Dauernd	Typische Anwendungen	Belag
Edelstahl 304	425ºC 800ºF	315ºC 600ºF	Meiste allgemeine Anwendungen in allen Werkstoffen	FL, AG, CD
Edelstahl 316	425ºC 800ºF	315ºC 600ºF	Erhöhte Rostbeständigkeit, für Anwendungen mit Salzwasser	FL, AG, CD
Phosphorbronze	300ºC 572ºF	235ºC 455ºF	Kupferanteile, nicht magnetisch, Anwendungen mit geringer Durchlässigkeit	AG, CD
Iconel X-750	650ºC 1200ºF	550ºC 1020ºF	Raumfahrt, Turbinen, korrosionsfördende Umgebungen, hohe Temperaturen	AG
Nimonic 90	650ºC 1200ºF	550ºC 1020ºF	Raumfahrt - und Turbinen -anwendungen	AG

Alternative Oberflächen und Beläge

Kadmiumbelag

Galvanisch aufgebrachtes Kadmium gemäß DTD 904/Def Stan 03-19 (entsprechend Vorgaben FED. QQ-P-416, LN 9368). Der Kadmiumbelag ist eine ausgezeichnete Barriere zwischen unähnlichen Metallen, galvanische Korrosion wird wesentlich reduziert, seine gute Schmiereigenschaften und ausgezeichnete Korrosionsbeständigkeit verhindert Festfressen und Verschleiß zwischen den Gewindeteilen. Kadmiumbelag ist für den Betrieb im Temperaturbereich -200ºC bis +235ºC geeignet

Kadmierte Teile dürfen nicht

- Temperaturen über 235ºC (455ºF) ausgesetzt werden
- mit Treibstoff oder Öl in Kontakt kommen
- mit Lebensmitteln oder Trinkwasser in Kontakt kommen
- mit Titankomponenten verwendet werden (direkt oder indirekt). Bei erhöhten Temperaturen kann es zu Brüchigkeit mit nachfolgendem Versagen von Komponenten kommen.
- Kadmium ist hochgiftig – vorsichtig verfrachten, bearbeiten und installieren

Zinkbelag

Galvanisch aufgebrachtes Zink gemäß BS 3382. Galvanisch aufgebrachte Zinkbeläge sind die in der Industrie am häufigsten verwendeten galvanisierten Oberflächen. Zink ist für den Betrieb im Temperaturbereich -200ºC bis +250ºC geeignet.

Silberbelag

Galvanisch aufgebrachtes Silber gemäß DTD 939. Silberbeläge verhindern Festfressen und Verschleiß zwischen den Gewindeteilen in hohen Temperaturen und werden hauptsächlich für Verbindungen in Luftfahrtmotoren verwendet. Silberbelag ist für den Betrieb im Temperaturbereich -200ºC bis +650ºC geeignet. Drahteinsätze mit Silberbelag können in verschiedene Werkstoffe eingesetzt werden, einschließlich Aluminiumlegierungen, Magnesiumlegierungen, korrosions- und hitzebeständige Werkstoffe, usw.

Drahteinsätze mit Silberbelag sollten nicht in Titanlegierungen eingesetzt werden, die eine Betriebstemperatur von 300ºC (570ºF) überschreiten. Spannungskorrosion kann als Folge der Kombination von Silber und Titan im Gehäusematerial auftreten.

Trockenschmiermittel

Heißgehärtetes Molybdändisulfid als Trockenschmierbelag gemäß MIL-L-0046010 ist ein Belag mit niedrigem Reibungskoeffizienten und ausgezeichneter Lasttragkraft. Trockenschmiermittel verhindert Festfressen und Verschleiß zwischen den Gewindeteilen und kommt besonders bei Anwendungen mit Gewindeeinsätzen mit Screwlockung zur Wirkung. Trockenschmiermittel ist für den Betrieb im Temperaturbereich -100ºC bis +250ºC geeignet.

Belag/Oberfläche	Teilnr.-Suffix	Geltende Prozess-Spezifikation
Silberbelag	AG	DTD 939
Kadmiumbelag	CD	QQP-416 oder DEF STD 03-19
Trockenschmiermittel	FL	MIL-L-8937 oder MIL-L-46010
Rote Farbe	–	Zur Kennung auf Screwlockungs-Einsätzen*

* andere Farben können ebenfalls zu Kennungszwecken verwendet werden

Wahl der korrekten Einsatzlänge

PowerCoil Gewinde Einsätze sind in allen gängigen Gewindearten erhältlich. Es sind fünf Einsatzlängen pro Gewindegröße erhältlich. Die korrekte Einsatzlänge ist wichtig, um die Reißlast des Bolzens an die des Mutterwerkstoffs anzugleichen. Die fünf Einsatzlängen (empfohlene Gewindeaufnahme für den PowerCoil Drahtgewindeeinsatz), 1D, 1.5D, 2D, 2.5D und 3D sind in den grauen Spalten in der Tabelle unten zu sehen. Es handelt sich hierbei um berechnete Werte, da die Einsätze im nicht eingesetzten Zustand nicht gemessen werden können. Die Zahlen sind Vielfache der Gewindenenngröße oder –durchmesser des Einsatzes. Die tatsächlichen Einsatzlängen in der eingesetzten Position befinden sich in der Einsatzauswahltabelle. Sie sind dort als tatsächliche eingebaute Länge plus 1/2 Steigung angegeben. Mit der Tabelle unten kann eine Einsatzlänge gewählt werden, die eine Gewindeeinheit erzeugt, die so stabil ist, dass sie den Bolzen zerbricht, bevor das Muttermaterial oder der Einsatz beschädigt werden.

Empfohlene Einsatznennlängen basierend auf der Scherfestgkeit des Mutterwerkstoffs und der Festigkeit des Bolzenmaterials

UNIFIED (source BS7752 Part 1:1994)

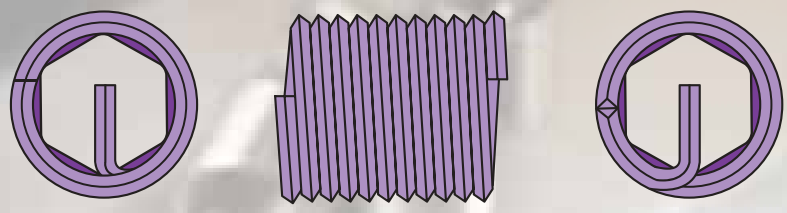
Scherfestigkeit des Muttermaterials (KSI)	Bolzenmaterial – min. Zugfestigkeit vor Bruch (KSI)								
	54	**75**	**96**	**108**	**125**	**132**	**160**	**180**	**220**
10	2.0	2.5	3.0	3.0	–	–	–	–	–
15	1.5	1.5	2.0	2.5	2.5	3.0	–	–	–
20	1.0	1.5	1.5	2.0	2.0	2.0	2.5	3.0	3.0
25	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5	2.5
30	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5
40	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	2.0
50	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5

BEISPIEL: Wenn die Scherfestigkeit des Mutterwerkstoffs 10KSI beträgt und die Zugfestigkeit des Bolzens 54 KSI, ist die korrekte Einsatzlänge 2,0 Durchmesser (2D).

METRISCH

Scherfestigkeit des Muttermaterials (MPa	Bolzenmaterial – min. Zugfestigkeit vor Bruch (MPa)							
	300	**400**	**500**	**600**	**800**	**1000**	**1200**	**1400**
70	1.5	2.0	2.5	2.5	–	–	–	–
100	1.0	1.5	1.5	2.0	2.5	3.0	–	–
150	1.0	1.0	1.5	1.5	2.0	2.0	2.5	3.0
200	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2.5
250	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.0
300	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5
350	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5

BEISPIEL: Wenn die Scherfestigkeit des Mutterwerkstoffs 150MPa beträgt und die Zugfestigkeit des Bolzens 600MPa, ist die korrekte Einsatzlänge 1,0 Durchmesser (1.5D).



Bolzen

PowerCoil Gewinde Einsätze sind für den Einsatz mit allgemein erhältlichen Standardbolzen und –schrauben entworfen, die keine speziellen Komponenten erfordern.

Der Bolzen muss über die gesamte Einsetzlänge eingreifen, um maximale Festigkeit der Einheit zu erreichen. Um nur teilweises Eingreifen auszuschließen, empfiehlt es sich den Mitnehmerzapfen zu entfernen. Dies garantiert, dass die Klemmwindungen vollständig vom Gewinde des Bolzens aufgenommen werden. Wenn dies aufgrund von Designparametern nicht erfolgt, setzen Sie sich bitte mit PowerCoil in Verbindung.

HINWEISE:

1. Die angegebenen Bolzenzugkraftswerte sind Mindestwerte. Bei Wahl der Einsatzlänge, beachten Sie die in der Bolzenzeichnung oder den Beschaffungsangaben zulässigen Höchstwerte für die Zugkraft.
2. Betriebstemperaturen können zu wesentlichen Schwankungen der Werte führen, Kompensation sollte daher möglich sein.
3. Die Scherfestigkeit muss in Betracht gezogen werden, da der Mutterwerkstoff am größeren Durchmesser der gebohrten Gewinde Scherbelastung ausgesetzt ist.
4. Wenn ein Wert zwischen zwei Werten in der Tabelle liegen, verwenden Sie den nächstniedrigeren Scherwert oder den nächsthöheren Zugkraftswert.
5. Um optimale Festigkeit zu erreichen, müssen Bolzen- und Gewindelänge sowie die gesamte gebohrte Gewindetiefe lang genug sein, um das Eingreifen des Gewindes über die gesamte Einsatzlänge zu garantieren.

Einsätze mit Screwlockung (selbstsichernd)

PowerCoil Wire Screw Locking Inserts (screwlockende Einsätze) sind für Anwendungen entworfen, die zyklischen Schwingungen oder Stosswirkungen ausgesetzt sind. Die Einsätze mit Schraubklemmung wirken klemmend auf das eingedrehte Element und verhindern somit, dass dieses sich bei Schwingungen oder Stößen löst. Andere, teurere Klemmmechanismen werden damit überflüssig. Sie eignen sich hervorragend für “Einstellschrauben’, indem sie die Bewegung eingedrehter Schrauben unterbinden.

Funktionsweise der Screwlockeinsätze

PowerCoil Wire Screw Locking Inserts bieten noch zusätzlich die selbstsichernde Screwlockung. Die Screwlockung wird dabei durch eine oder mehrere polygon geformte Windungen erzielt, die radialen Druck auf die eingedrehte Schraube ausüben. Jede dieser Windungen hat eine tangentiell verlaufende Klemmsehne, die in den inneren Durchmesser der normalen, frei laufenden Windungen hineinragt. Wenn das Bolzengewinde durch die Windungen geht, werden die Klemmflächen nach außen verdrängt und üben dann radialen oder Klemmdruck auf das Bolzengewinde aus. Wenn das Bolzengewinde entfernt wird, nehmen die Windungen wieder ihre ursprüngliche Form an und ermöglichen wiederholten Einsatz unter Beibehaltung eines messbaren Klemmdrucks.

BITTE BEACHTEN SIE: Es wird empfohlen nur geschmierte oder eng anliegende, überzogene Bolzen oder Schrauben mit PowerCoil Screwlockeinsätzen verwendet werden. Beim Einsatz mit wärmebehandelten, nicht belegten oder Edelstahlbolzen muss ein Mittel, das Festfressen verhindert, wie z.B. Molybdändisulfid verwendet werden, um fressenden Verschleiß weitgehend zu verhindern und optimale Nutzungsdauer zu garantieren. Die Nutzungsdauer kann auch durch Vorgabe von Trockenschmiermitteln und Kadmierung verbessert werden.

Position der Klemmwindungen

Für Längen von 1D, 1.5D, und 2D: Das Zentrum der Klemmwindung(en) befindet sich 1/2 x Anzahl der freilaufenden Windungen vom Mitnehmerzapfen.

Für Längen von 2.5D und 3D: Die Klemmwindung befindet sich um dieselbe Distanz vom Mitnehmerzapfen wie bei Einsätzen mit 2D Länge.

Screwlockende Einsätze sind rot gefärbt, um sie leichter kenntlich zu machen. Die Farbe ist alkohol-löslich und kann, wenn gewünscht, entfernt werden.

Rote Färbung

PowerCoil Wire Screw Locking Inserts sind mit organischer roter Farbe gefärbt, um sie leichter kenntlich zu machen. Die Farbe beeinträchtigt den Einbau oder die Leistung des Einsatzes nicht und muss nicht entfernt werden (in den meisten Situationen). In Situationen, wo hohe Reinheit gefordert wird (wie bei der Montage von Präzisionsinstrumenten im Reinraum) kann der Farbbelag vor der Installation durch Einweichen der Einsätze in Brennspiritus entfernt werden.

PowerCoil Wire Screw Locking Inserts (screwlockende Einsätze) - Drehmomentwerte

METRISCH STANDARD			METRISCH FEIN		
Gewinde mm x mm	Drehmoment Max. (Nm)	Drehmoment Min. (Nm)	Gewinde mm x mm	Drehmoment Max. (Nm)	Drehmoment Min. (Nm)
M2.2x0.45	0.14	0.02	M8.0x1.00	6.00	0.80
M2.5x0.45	0.23	0.05	M10.0x1.00	10.50	1.40
M3.0x0.50	0.45	0.10	M10.0x1.25	10.50	1.40
M3.5x0.60	0.68	0.12	M12.0x1.25	15.50	2.10
M4.0x0.70	0.90	0.15	M12.0x1.50	15.50	2.10
M5.0x0.80	1.60	0.30	M14.0x1.50	23.50	3.00
M6.0x1.00	3.00	0.40	M16.0x1.50	31.50	4.20
M7.0x1.00	4.50	0.60	M18.0x1.50	42.00	5.50
M8.0x1.25	6.00	0.80	M20.0x1.50	54.00	7.00
M10.0x1.50	10.50	1.40	M22.0x1.50	67.50	9.00
M12.0x1.75	15.50	2.10	M18.0x2.00	42.00	5.50
M14.0x2.00	23.50	3.00	M20.0x2.00	54.00	7.00
M16.0x2.00	31.50	4.20	M22.0x2.00	67.50	9.00
M18.0x2.50	42.00	5.50	M24.0x2.00	80.00	10.50
M20.0x2.50	54.00	7.00	M27.0x2.00	94.00	12.00
M22.0x2.50	67.50	9.00	M30.0x2.00	108.00	14.00
M24.0x3.00	80.00	10.50	M33.0x2.00	122.00	15.50
M27.0x3.00	94.00	12.00	M36.0x2.00	136.00	17.50
M30.0x3.50	108.00	14.00	M39.0x2.00	150.00	19.50
M33.0x3.50	122.00	15.50	M36.0x3.00	136.00	17.50
M36.0x4.00	136.00	17.50	M39.0x3.00	150.00	19.50
M39.0x4.00	150.00	19.50			

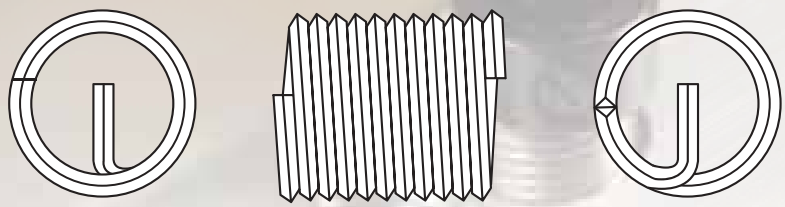
Klemmdrehmomente gemäß MP3329, MP3330, MP3331

PowerCoil Wire Screw Locking Inserts (screwlockende Einsätze) - Drehmomentwerte

UNIFIED NATIONAL STANDARDE – UNC			UNIFIED NATIONAL FEIN – UNF		
Gewinde inch x tpi	Drehmoment Max. (lb in)	Drehmoment Min. (lb in)	Gewinde inch x tpi	Drehmoment Max. (lb in)	Drehmoment Min. (lb in)
2x56	1.25	0.19	3x56	0.13	0.44
3x48	2.00	0.44	4x48	0.19	0.63
4x40	3.00	0.63	6x40	6.00	1.00
5x40	4.69	0.81	8x36	9.00	1.50
6x32	6.00	1.00	10x32	13.00	2.00
8x32	9.00	1.50	1/4x28	30.00	3.50
10x24	13.00	2.00	5/16x24	60.00	6.50
12x24	24.00	3.00	3/8x24	80.00	9.50
1/4x20	30.00	4.50	7/16x20	100.00	14.00
5/16x18	60.00	7.50	1/2x20	150.00	18.00
3/8x18	80.00	12.00	9/16x18	200.00	24.00
7/16x14	100.00	16.50	5/8x18	300.00	32.00
1/2x13	150.00	24.00	3/4x16	400.00	50.00
9/16x12	200.00	30.00	7/8x14	600.00	70.00
5/8x11	300.00	40.00	1x12	800.00	90.00
3/4x10	400.00	60.00	11/8x12	900.00	117.00
7/8x9	600.00	82.00	11/4x12	1000.00	143.00
1x8	800.00	110.00	13/8x12	1150.00	165.00
11/8x7	900.00	137.00	11/2x12	1350.00	190.00
11/4x7	1000.00	165.00			
13/8x6	1150.00	185.00			
11/2x6	1350.00	210.00			

Klemmdrehmomente gemäß NASM8846

Hinweis: Es ist wichtig, dass der Bolzen alle Windungen des Einsatzes aufnimmt, um maximale Festigkeit zu erreichen.
PowerCoil Wire Screw Locking Inserts können Kundenerfordernissen gemäß entworfen werden. In bestimmten Fällen kann das Klemm-Drehmoment reduziert oder erhöht werden, je nach spezifischer Anwerndung. Setzen Sie sich mit Ihrer PowerCoil-Vertretung in Verbindung, um Ihre spezifischen Erfordernisse zu diskutieren.
Bitte beachten: Für das Einsetzen von PowerCoil screwlockenden Einsätzen wird ein Vorspannpatronen-Werkzeug benötigt. Andere Installationsoptionen besprechen Sie bitte mit Ihrem PowerCoil-Vertreter.



Matériaux

Les PowerCoil standard inserts [filets rapportés standard PowerCoil] sont fabriqués à partir d'acier inoxydable austénitique 304 (18/8), pleinement certifié et de qualité pour avions, conformément au DTD 734A. Des matériaux alternatifs sont l'acier inoxydable 316 et une variété de revêtements spécifiques à l'application.

Matériaux alternatifs

Bronze de phosphore

Un alliage en cuivre / étain non ferreux, conformément au BS2783 PB 102 EH, est approprié pour un fonctionnement à des températures allant de -200ºC à +300ºC.

Inconel X-750

Alliage à base de nickel durci par précipitation et résistant aux températures élevées (spécifications équivalentes SAE AS 7246, DIN/NF 3018, W.NR 2.4669, UNS N07750). L'Inconel X-750 est approprié pour le fonctionnement à des températures allant de -200ºC à +550º degrés celsius.

Nimonic 90

Alliage à base de nickel durci par précipitation et résistant aux températures élevées conformément au BS2 HR 501 (spécifications équivalentes W.NR 2.4632, UNS N07090). Le Nimonic 90 est approprié pour le fonctionnement à des températures allant de -100ºC à +650º degrés celsius.

Matière du filet	Température max en pointe	Température max continue	Applications classiques	Revêtements
Acier inoxydable 304	425ºC 800ºF	315ºC 600ºF	La plupart des applications générales avec tous les matériaux	FL, AG, CD
Acier inoxydable 316	425ºC 800ºF	315ºC 600ºF	Meilleure résistance à la corrosion pour les applications en eau de mer	FL, AG, CD
Bronze de phosphore	300ºC 572ºF	235ºC 455ºF	Pièces en cuivre, applications non magnétiques et à faible perméabilité	AG, CD
Iconel X-750	650ºC 1200ºF	550ºC 1020ºF	Aéronautique, propulseurs, environnements corrosifs, températures élevées	AG
Nimonic 90	650ºC 1200ºF	550ºC 1020ºF	Applications dans l'aéronautique et pour les propulseurs	AG

Apprêts et revêtements alternatifs

Plaque de cadmium

Cadmium déposé par voie galvanique conformément au DTD 904/Def Stan 03-19 (spécifications équivalentes à FED. QQ-P-416, LN 9368). Le plaquage au cadmium fournit une excellente barrière entre les métaux distincts qui réduit de manière dramatique les effets de la corrosion galvanique, sa haute onctuosité et son excellente résistance à la corrosion prévient les grippages entre les composants filetés. La plaque de cadmium est appropriée pour l'opération à des températures allant de -200ºC à +235ºC.

Les pièces plaquées au cadmium de doivent pas

- être soumises à des températures supérieures à 235ºC (455ºF)
- entrer en contact avec du combustible ou de l'huile chaude
- entrer en contact avec de la nourriture ou de l'eau potable
- être utilisées avec des composants en titane (directement ou indirectement). A des températures élevées, une fragilisation et les dommages qui en résultent peuvent apparaître.
- Le cadmium est hautement toxique ; en conséquence, une attention particulière doit être observée durant le transport, la manipulation et l'installation.

Plaque de zinc

Zinc déposé par voie galvanique conformément au BS 3382. Le zinc déposé par voie galvanique est l'apprêt le plus largement utilisé dans l'industrie. Le zinc est approprié pour l'opération à des températures allant de -200ºC à +250ºC.

Plaque en argent

Argent déposé par voie galvanique conformément au DTD 939. Le plaquage en argent est utilisé afin de prévenir le grippage entre les composants filetés qui peut apparaître lors d'applications à des températures élevées et il est plus largement appliqué aux pièces de fixation des moteurs d'avion. La plaque en argent est appropriée pour l'opération à des températures allant de -200ºC à +650ºC. Les filets rapportés plaqués à l'argent peuvent être implantés dans divers matériaux comme les alliages d'aluminium, les alliages de magnésium, les matériaux résistant à la corrosion et aux températures élevées, etc.

Les filets rapportés plaqués à l'argent ne sont pas recommandés pour l'installation dans des alliages de titane qui pourraient servir à des températures excédant 300ºC (570ºF). La corrosion sous contrainte, résultat de la combinaison entre l'argent et le titane, peut apparaître dans le matériau des boîtiers.

Film de lubrifiant hydrofuge

Un revêtement de film solide de lubrifiant hydrofuge de bisulfure de molybdène vulcanisé à chaud, conformément au MIL-L-0046010, fournit un revêtement avec un faible coefficient frictionnel avec d'excellentes capacités de portance. Le film de lubrifiant hydrofuge prévient contre le grippage entre les composants filetés et est particulièrement efficace dans les applications de filets rapportés à frein de vis. Le film de lubrifiant hydrofuge est approprié pour l'opération à des températures allant de -100ºC à +250ºC.

Plaquage/Apprêt	Suffixe du nr. de pièce	Spécification de procès applicable
Plaque en argent	AG	DTD 939
Plaque de cadmium	CD	QQP-416 ou DEF STD 03-19
Film de lubrifiant hydrofuge	FL	MIL-L-8937 ou MIL-L-46010
Colorant rouge	–	Appliqué pour les filets rapportés à frein à des fins d'identification*

* des colorants d'une autre couleur peuvent être utilisés à des fins d'identification particulière

Sélection de la longueur correcte du filet rapporté

Les PowerCoil wire thread inserts [filets rapportés PowerCoil] sont disponibles pour tous les types de filets classiques. Cinq longueurs de filets rapportés sont disponibles pour chaque taille de filet. Il est important de sélectionner la longueur correcte de filet rapporté afin d'équilibrer la charge de rupture du boulon et la résistance au cisaillement du matériau récepteur. Les cinq longueurs de filet rapporté (prise de filet recommandée pour le PowerCoil wire thread insert [filet rapporté PowerCoil]), 1D, 1.5D, 2D, 2.5D et 3D sont indiquées dans la zone ombragée du tableau ci-dessous. Ce sont des nombres calculés puisque les filets rapportés ne peuvent pas être mesurés à l'état libre (non implantés). Les nombres sont des multiples de la dimension nominale du filet, ou du diamètre, du filet rapporté. Les longueurs actuelles de filet rapporté qui se trouvent dans la position d'installation sont énumérées dans les tableaux de sélection des filets rapportés. Elles représentent la longueur réelle lorsqu'ils ont implantés, plus 1/2 pas. A l'aide du tableau ci-dessous, une longueur de filet rapporté peut être sélectionnée afin de produire un système fileté suffisamment résistant pour fracturer un boulon avant qu'il ne raye ou n'endommage le matériau récepteur ou le filet rapporté.

Longueurs nominales recommandées de filet rapporté basées sur les forces du matériau récepteur versus celles du matériau du boulon

UNIFIE (source BS7752 Part 1:1994)

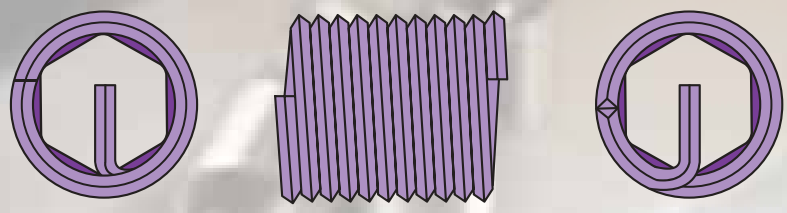
Force de cisaillement du matériau récepteur (KSI)	Charge de rupture (KSI) ultime minimale du matériau du boulon								
	54	**75**	**96**	**108**	**125**	**132**	**160**	**180**	**220**
10	2.0	2.5	3.0	3.0	–	–	–	–	–
15	1.5	1.5	2.0	2.5	2.5	3.0	–	–	–
20	1.0	1.5	1.5	2.0	2.0	2.0	2.5	3.0	3.0
25	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5	2.5
30	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.5
40	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	2.0
50	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5

EXEMPLE : Si la force de cisaillement du matériau récepteur est de 10KSI et la charge de rupture du boulon est de 54 KSI, la longueur correcte du filet rapporté est de 2.0 diamètre (2D).

METRIQUE

Force de cisaillement du matériau récepteur (MPa)	Charge de rupture (Mpa) ultime minimale du matériau du boulon							
	300	**400**	**500**	**600**	**800**	**1000**	**1200**	**1400**
70	1.5	2.0	2.5	2.5	–	–	–	–
100	1.0	1.5	1.5	2.0	2.5	3.0	–	–
150	1.0	1.0	1.5	1.5	2.0	2.0	2.5	3.0
200	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2.5
250	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.0
300	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5
350	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5

EXEMPLE : Si la force de cisaillement du matériau récepteur est de 150Mpa et la charge de rupture du boulon est de 600Mpa, la longueur correcte du filet rapporté est de 1.5 diamètre (1.5D).



Prévision du boulon

Les PowerCoil wire thread inserts [filets rapportés PowerCoil] sont conçus pour être utilisés avec des boulons et des vis standard et facilement accessibles qui ne requièrent pas de matériel spécial.

Le boulon doit s'engager sur toute la longueur du filet rapporté pour atteindre la résistance maximale de l'assemblage. Afin d'éviter un engagement partiel, il est recommandé que le tenon soit toujours retiré. Cela garantira également que la (les) spire(s) de freinage sera (seront) engagée(s) par les filets complets du boulon. Si les paramètres de design empêchent ceci, contactez PowerCoil pour demander assistance.

REMARQUES :

1. Les charges de rupture du boulon spécifiées sont les charges minimales. Lorsque vous choisissez une longueur de filet rapporté, vous devez prendre en considération la charge de rupture maximale permise par le schéma du boulon ou la spécification d'approvisionnement.
2. Les températures de service peuvent causer des variations significatives des valeurs de la charge, en conséquence une marge doit être permise.
3. L'importance des valeurs de cisaillement ne doit pas être perdue de vue parce que le matériau récepteur est enclin à subir une contrainte de cisaillement à proximité du diamètre majeur des filets taraudés.
4. Lorsque les valeurs des charges se trouvent entre deux valeurs parmi celles qui sont indiquées dans les tableaux, utilisez la valeur inférieure de cisaillement du matériau la plus proche, ou la valeur supérieure de charge de rupture du boulon la plus proche.
5. Pour atteindre la résistance maximale, la longueur du boulon et celle du filet, de même que la profondeur du filet taraudé, doivent être suffisantes pour assurer un engagement complet du filet sur toute la longueur du filet rapporté.

Filets rapportés à frein de vis (couple permanent)

Les Screw Locking PowerCoil wire thread inserts [filets rapportés PowerCoil à frein de vis] sont conçus pour les applications sujettes aux effets causés par les vibrations cycliques ou par les impacts. Le filet rapporté à frein de vis exerce une couple permanent sur les pièces de fixation avec un filet extérieur afin d'éviter le desserrage dû aux vibrations ou aux impacts. Ils éliminent le besoin d'utiliser d'autres mécanismes de fixation moins désirables et plus chers. Ils sont excellents lorsqu'ils sont utilisés dans des applications de « vis de réglage » évitant ainsi le fluage de la pièce de fixation mâle.

Fonctionnement des filets rapportés à frein de vis

Les PowerCoil Screw Locking inserts [filets rapportés PowerCoil à frein de vis] offrent une sécurité supplémentaire avec le couple de freinage permanent. Ceci est accompli par la pression radiale exercée sur le filetage extérieur par une ou plusieurs spires à déformation polygonale positionnées sur la longueur du filet rapporté. Chaque spire déformée consiste en un nombre de cordes tangentielles à frein qui dépassent à l'intérieur du diamètre mineur des spires normales. Tandis que le filetage extérieur passe à travers ces spires déformées, les vis de freinage à tête plate sont déplacées et exercent une pression radiale (couple permanent) sur le filetage extérieur.

Lorsque le filetage extérieur est retiré, les spires de freinage débandent pour atteindre leur forme originale, permettant des assemblages répétés tout en conservant un niveau mesurable de couple permanent.

Veuillez noter :
Il est recommandé d'utiliser uniquement des boulons ou vis lubrifiés ou à tête plate à ajustement serré avec les screw locking PowerCoil wire thread inserts [filets rapportés PowerCoil à frein de vis]. Si des boulons en acier inoxydable ou non métallisés traités thermiquement sont utilisés, un lubrifiant antigrippage, par exemple du bisulfure de molybdène, doit être utilisé afin de minimiser le grippage et assurer une durée de vie maximale. La durée de vie par résistance à l'usure des vis ou des boulons qui utilisent les PowerCoil screw locking wire thread inserts [filets rapportés à frein de vis PowerCoil] peut être augmentée grâce à un lubrifiant hydrofuge ou un plaquage de cadmium.

Emplacement des spires de freinage

Pour les longueurs de diamètre 1D, 1.5D et 2D : Le centre de la spire de freinage (ou des spires) est égal à 1/2 du nombre des spires libres. Pour les longueurs de diamètre 2.5D et 3D : La spire de freinage est située à la même distance du tenon que les filets rapportés de longueur 2D.

Les filets rapportés à frein de vis sont colorés en rouge à des fins d'identification uniquement. Le colorant est soluble dans l'alcool et peut être éliminé si nécessaire.

Revêtement de teinture rouge

Les PowerCoil screw locking inserts [filets rapportés PowerCoil à frein de vis] ont généralement un code couleur à l'aide d'un colorant organique à des fins d'identification. Le colorant n'affecte en aucune manière l'installation ou les performances du filet rapporté et il n'est pas nécessaire de l'éliminer (dans la majorité des situations). Dans les situations qui nécessitent une propreté extrême (comme l'assemblage d'instruments de précision dans une pièce propre), le colorant peut être éliminé en immergeant les filets rapportés dans une solution d'alcool dénaturé avant d'être implantés.

Valeurs de couple du PowerCoil Locking Insert [filet rapporté PowerCoil]

METRIQUE A PAS NORMAUX

Filet mm x mm	Couple maximal (Nm)	Couple minimal (Nm)
M2.2x0.45	0.14	0.02
M2.5x0.45	0.23	0.05
M3.0x0.50	0.45	0.10
M3.5x0.60	0.68	0.12
M4.0x0.70	0.90	0.15
M5.0x0.80	1.60	0.30
M6.0x1.00	3.00	0.40
M7.0x1.00	4.50	0.60
M8.0x1.25	6.00	0.80
M10.0x1.50	10.50	1.40
M12.0x1.75	15.50	2.10
M14.0x2.00	23.50	3.00
M16.0x2.00	31.50	4.20
M18.0x2.50	42.00	5.50
M20.0x2.50	54.00	7.00
M22.0x2.50	67.50	9.00
M24.0x3.00	80.00	10.50
M27.0x3.00	94.00	12.00
M30.0x3.50	108.00	14.00
M33.0x3.50	122.00	15.50
M36.0x4.00	136.00	17.50
M39.0x4.00	150.00	19.50

METRIQUE A PAS FINS

Filet mm x mm	Couple maximal (Nm)	Couple minimal (Nm)
M8.0x1.00	6.00	0.80
M10.0x1.00	10.50	1.40
M10.0x1.25	10.50	1.40
M12.0x1.25	15.50	2.10
M12.0x1.50	15.50	2.10
M14.0x1.50	23.50	3.00
M16.0x1.50	31.50	4.20
M18.0x1.50	42.00	5.50
M20.0x1.50	54.00	7.00
M22.0x1.50	67.50	9.00
M18.0x2.00	42.00	5.50
M20.0x2.00	54.00	7.00
M22.0x2.00	67.50	9.00
M24.0x2.00	80.00	10.50
M27.0x2.00	94.00	12.00
M30.0x2.00	108.00	14.00
M33.0x2.00	122.00	15.50
M36.0x2.00	136.00	17.50
M39.0x2.00	150.00	19.50
M36.0x3.00	136.00	17.50
M39.0x3.00	150.00	19.50

Valeurs du couple de freinage en conformité avec MP3329, MP3330, MP3331

Valeurs de couple du PowerCoil Locking Insert [filet rapporté PowerCoil]

PAS NORMAL AMERICAIN - UNC

Filet pouce x tpi	Couple maximal (livre par pouce)	Couple minimal (livre par pouce)
2x56	1.25	0.19
3x48	2.00	0.44
4x40	3.00	0.63
5x40	4.69	0.81
6x32	6.00	1.00
8x32	9.00	1.50
10x24	13.00	2.00
12x24	24.00	3.00
1/4x20	30.00	4.50
5/16x18	60.00	7.50
3/8x18	80.00	12.00
7/16x14	100.00	16.50
1/2x13	150.00	24.00
9/16x12	200.00	30.00
5/8x11	300.00	40.00
3/4x10	400.00	60.00
7/8x9	600.00	82.00
1x8	800.00	110.00
11/8x7	900.00	137.00
11/4x7	1000.00	165.00
13/8x6	1150.00	185.00
11/2x6	1350.00	210.00

PAS NORMAL AMERICAIN - UNF

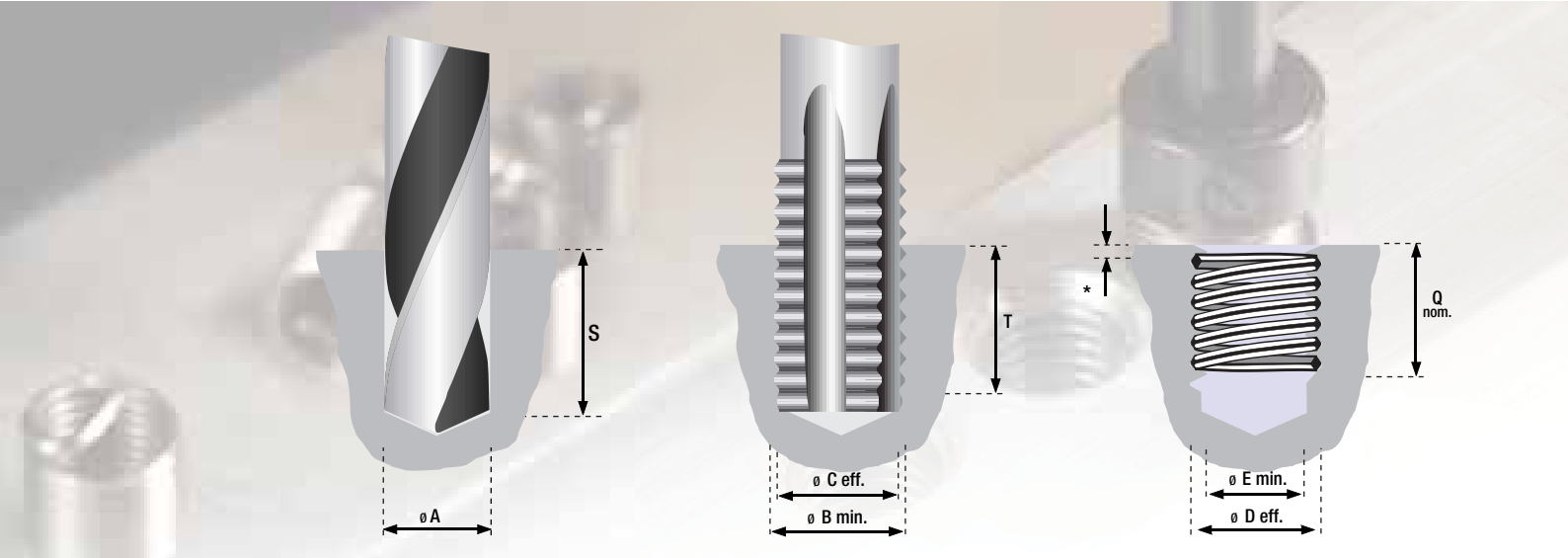
Filet pouce x tpi	Couple maximal (livre par pouce)	Couple minimal (livre par pouce))
3x56	0.13	0.44
4x48	0.19	0.63
6x40	6.00	1.00
8x36	9.00	1.50
10x32	13.00	2.00
1/4x28	30.00	3.50
5/16x24	60.00	6.50
3/8x24	80.00	9.50
7/16x20	100.00	14.00
1/2x20	150.00	18.00
9/16x18	200.00	24.00
5/8x18	300.00	32.00
3/4x16	400.00	50.00
7/8x14	600.00	70.00
1x12	800.00	90.00
11/8x12	900.00	117.00
11/4x12	1000.00	143.00
13/8x12	1150.00	165.00
11/2x12	1350.00	190.00

Valeurs du couple de freinage en conformité avec NASM8846

Remarque : Il est essentiel que le boulon soit complètement engagé sur toutes les spires du filet rapporté pour assurer une résistance maximale.

Les PowerCoil screw locking inserts [filets rapportés à frein de vis PowerCoil] peuvent être conçus pour répondre aux besoins particuliers du client. Dans certains cas et applications, le couple permanent peut être affaibli ou renforcé afin répondre aux nécessités d'une application spécifique. Dans ces situations, veuillez contacter votre représentant PowerCoil pour discuter de vos besoins particuliers.

Veuillez noter : L'installation des PowerCoil screw locking inserts [filets rapportés à frein de vis PowerCoil] exige l'utilisation d'un outil de pré-enroulage. Veuillez discuter d'autres options d'installation avec votre agent PowerCoil.

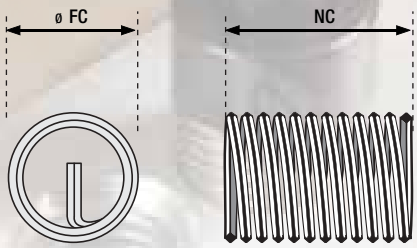


Optimum Thread performance with Wire Thread Inserts is achieved when the inserts are installed 1/2 to 1 pitch below the surface of the Tapped Hole. This means that the actual length of an installed insert is equal to dimension Q less 1/2 to 1 pitch. Dimensions S and T allow for tap end clearance of intermediate taps. When using Bottoming and Spiral Flute Taps these dimensions maybe reduced by an amount equal to 2 thread pitches. Any counterbore depths must be added to these dimensions.

SIZE mm	Drill mm	Drill inch	A max/min mm	B mm	C (5H) mm	D (4H) mm	C (6H) mm	D (5H) mm	E mm	FC min/max mm
METRIC										
M2 X 0.40	2.10	#45	2.177 / 2.087	2.520	2.296 / 2.260	1.796 / 1.740	2.311 / 2.260	1.811 / 1.740	1.567	2.49 / 2.70
M2.2 X 0.45	2.30	#42	2.397 / 2.297	2.785	2.532 / 2.492	1.968 / 1.908	2.547 / 2.492	1.983 / 1.908	1.713	2.76 / 3.00
M2.5 X 0.45	2.60	#37	2.697 / 2.597	3.085	2.832 / 2.792	2.268 / 2.208	2.847 / 2.792	2.283 / 2.208	2.013	3.05 / 3.70
M3 X 0.50	3.20	1/8	3.220 / 3.108	3.650	3.367 / 3.325	2.738 / 2.675	3.384 / 3.325	2.755 / 2.675	2.459	3.61 / 4.35
M3.5 X 0.60	3.70	#27	3.755 / 3.630	4.279	3.940 / 3.890	3.181 / 3.110	3.959 / 3.890	3.200 / 3.110	2.850	4.24 / 4.95
M4 x 0.70	4.20	11/64	4.292 / 4.152	4.909	4.509 / 4.455	3.620 / 3.545	4.529 / 4.455	3.640 / 3.545	3.242	4.86 / 5.60
M5 X 0.80	5.20	13/64	5.333 / 5.173	6.039	5.577 / 5.520	4.560 / 4.480	5.597 / 5.520	4.580 / 4.480	4.134	5.98 / 6.80
M6 X 1.00	6.30	1/4	6.406 / 6.216	7.299	6.719 / 6.650	5.445 / 5.350	6.742 / 6.650	5.468 / 5.350	4.917	7.23 / 7.95
M7 X 1.00	7.30	9/32	7.406 / 7.216	8.299	7.719 / 7.650	6.445 / 6.350	7.742 / 7.650	6.468 / 6.350	5.917	8.22 / 9.20
M8 X 1.25	8.30	21/64	8.483 / 8.271	9.624	8.886 / 8.812	7.288 / 7.188	8.912 / 8.812	7.313/ 7.188	6.647	9.53 / 10.35
M8 X 1.00	8.30	21/64	8.406 / 8.216	9.299	8.719 / 8.650	7.445 / 7.350	8.742 / 8.650	7.468 / 7.350	6.917	9.39 / 10.25
M9 X 1.25	9.40	3/8	9.483 / 9.271	10.624	9.886 / 9.812	8.288 / 8.188	9.912 / 9.812	8.313 / 8.188	7.647	10.52 / 11.16
M9 x 1.00	9.30	23/64	9.406 / 9.216	10.299	9.719 / 9.650	8.445 / 8.350	9.742 / 9.650	8.468 / 8.350	7.917	10.40 / 11.23
M10 X 1.50	10.40	13/32	10.561 / 10.325	11.949	11.061 / 10.974	9.138 / 9.026	11.089 / 10.974	9.166 / 9.026	8.376	11.83 / 12.50
M10 X 1.25	10.30	13/32	10.483 / 10.271	11.624	10.886 / 10.812	9.288 / 9.188	10.912 / 10.812	9.313 / 9.188	8.647	11.74 / 12.65
M10 x 1.00	10.30	13/32	10.406 / 10.216	11.299	10.724 / 10.650	9.445 / 9.350	10.742 / 10.650	9.468 / 9.350	8.917	11.41 / 12.50
M11 X 1.50	11.40	7/16	11.561 / 11.325	12.949	12.061 / 11.974	10.138 / 10.026	12.089 / 11.974	10.166 / 10.026	9.376	12.82 / 13.59
M11 X 1.25	11.30	7/16	11.483 / 11.271	12.624	11.898 / 11.812	10.300 / 10.188	11.926 / 11.812	10.328 / 10.188	9.647	12.75 / 13.76
M11 X 1.00	11.30	7/16	11.406 / 11.216	12.299	11.724 / 11.650	10.445 / 10.350	11.742 / 11.650	10.468 / 10.350	9.917	12.42 / 13.41
M12 X 1.75	12.50	31/64	12.644 / 12.379	14.273	13.236 / 13.137	10.988 / 10.863	13.271 / 13.137	11.023 / 10.863	10.106	14.13 / 15.00
M12 X 1.50	12.40	31/64	12.561 / 12.325	13.949	13.067 / 12.974	11.144 / 11.026	13.099 / 12.974	11.176 / 11.026	10.376	14.09 / 15.20
M12 X 1.25	12.30	31/64	12.483 / 12.271	13.624	12.898 / 12.812	11.300 / 11.188	12.926 / 12.812	11.328 / 11.188	10.647	13.76 / 15.00
M12 X 1.00	12.30	31/64	12.406 / 12.216	13.299	12.724 / 12.649	11.450 / 11.350	12.749 /12.649	11.475 / 11.350	10.917	13.43 / 14.49
M13 X 1.75	13.50	33/64	13.644 / 13.379	15.273	14.236 / 14.137	11.988 / 11.863	14.271 / 14.137	12.023 / 11.863	11.106	15.12 / 16.04
M13 X 1.50	13.20	33/64	13.561 / 13.325	14.949	14.067 / 13.974	12.144 / 12.026	14.099 / 13.974	12.176 / 12.026	11.376	15.10 / 16.29
M13 X 1.25	13.20	33/64	13.483 / 13.271	14.624	13.898 / 13.812	12.300 / 12.188	13.926 / 13.812	12.328 / 12.188	11.647	14.77 / 15.94
M14 X 2.00	14.50	37/64	14.733 / 14.433	16.598	15.406 / 15.299	12.833 / 12.701	15.444 / 15.299	12.871 / 12.701	11.835	16.43 / 17.35
M14 X 1.50	14.40	9/16	14.561 / 14.325	15.949	15.067 / 14.974	13.144 / 13.026	15.099 / 14.974	13.176 / 13.026	12.376	16.11 / 17.25
M14 X 1.25	14.30	9/16	14.483 / 14.271	15.624	14.898 / 14.812	13.300 / 13.188	14.926 / 14.812	13.328 / 13.188	12.674	15.78 / 17.03
M14 X 1.00	14.30	9/16	14.406 / 14.216	15.299	14.724 / 14.649	13.450 / 13.350	14.749 /14.649	13.475 / 13.350	12.917	15.45 / 16.68
M15 X 2.00	15.50	39/64	15.733 / 15.433	17.598	16.406 / 16.299	13.833 / 13.701	16.444 / 16.299	13.871 / 13.701	12.835	17.42 / 18.48
M15 X 1.50	15.30	39/64	15.561 / 15.325	16.949	16.067 / 15.974	14.144 / 14.026	16.099 / 15.974	14.176 / 14.026	13.376	17.12 / 18.47
M16 X 2.00	16.50	21/32	16.733 / 16.433	18.598	17.406 / 17.299	14.833 / 14.701	17.444 / 17.299	14.871 / 14.701	13.835	18.41 / 19.60
M16 X 1.50	16.50	21/32	16.561 / 16.325	17.949	17.067 / 16.974	15.144 / 15.026	17.099 / 16.974	15.176 / 15.026	14.376	18.13 / 19.60
M18 X 2.50	18.80	47/64	18.896 / 18.541	21.248	19.738 / 19.624	16.516 / 16.376	19.778 / 19.624	16.556 / 16.376	15.294	21.04 / 22.00
M18 X 2.00	18.50	23/32	18.733 / 18.433	20.598	19.406 / 19.299	16.833 / 16.701	19.444 / 19.299	16.871 / 16.701	15.835	20.80 / 21.85
M18 X 1.50	18.50	23/32	18.561 / 18.325	19.949	19.067 / 18.974	17.144 / 17.026	19.099 / 18.974	17.176 / 17.026	16.376	20.15 / 21.75
M20 X 2.50	20.80	13/16	20.896 / 20.541	23.248	21.738 / 21.624	18.516 / 18.376	21.778 / 21.624	18.556 / 18.376	17.294	23.02 / 24.40
M20 X 2.00	20.50	13/16	20.733 / 20.433	22.598	21.406 / 21.299	18.833 / 18.701	21.444 / 21.299	18.871 / 18.701	17.835	22.82 / 24.05
M20 X 1.50	20.50	13/16	20.561 / 20.325	21.949	21.067 / 20.974	19.144 / 19.026	21.099 / 20.974	19.176 / 19.026	18.376	22.17 / 24.00
M22 X 2.50	22.80	57/64	22.896 / 22.541	25.248	23.738 / 23.624	20.516 / 20.376	23.778 / 23.624	20.556 / 20.376	19.294	25.00 / 26.90
M22 X 2.00	22.50	57/64	22.733 / 22.433	24.598	23.406 / 23.299	20.833 / 20.701	23.444 / 23.299	20.871 / 20.701	19.835	24.84 / 26.50
M22 X 1.50	22.50	57/64	22.561 / 22.325	23.949	23.067 / 22.974	21.144 / 21.026	23.099 / 22.974	21.176 / 21.026	20.376	24.19 / 26.45
M24 X 3.00	25.00	31/32	25.050 / 24.650	27.897	26.093 / 25.948	22.221 / 22.051	26.135 / 25.948	22.263 / 22.051	20.752	27.62 / 29.00
M24 X 2.00	24.50	31/32	24.733 / 24.433	26.598	25.414 / 25.299	22.841 / 22.701	25.454 / 25.299	22.881 / 22.701	21.835	26.86 / 29.10
M24 X 1.50	24.50	31/32	24.561 / 24.325	25.949	25.044 / 24.975	23.121 / 23.026	25.135 / 24.975	23.186 / 23.026	22.376	26.21 / 28.28
M26 X 1.50	26.50	1.1/32	26.561 / 26.325	27.949	27.044 / 26.975	25.121 / 25.026	27.135 / 26.975	25.186 / 25.026	24.376	28.23 / 30.46
M27 X 3.00	28.00	1.3/32	28.050 / 27.650	30.897	29.093 / 28.948	25.221 / 25.051	29.135 / 28.498	25.263 / 25.051	23.752	30.59 / 32.40
M27 X 2.00	27.50	1.5/64	27.733 / 27.433	29.598	28.414 / 28.299	25.841 / 25.701	28.454 / 28.299	25.881 / 25.701	24.835	29.89 / 32.30
M30 X 3.50	31.00	1.7/32	31.208 / 30.758	34.547	32.428 / 32.273	27.907 / 27.727	32.472 / 32.273	27.951 / 27.727	26.211	34.20 / 35.81
M30 X 3.00	31.00	1.7/32	31.050 / 30.650	33.897	32.093 / 31.948	28.221 / 28.051	32.135 / 31.948	28.263 / 28.051	26.752	34.24 / 36.10
M30 X 2.00	30.50	1.3/16	30.733 / 30.433	32.598	31.414 / 31.299	28.841 / 28.701	31.454 / 31.299	28.881 / 28.701	27.835	32.92 / 35.70
M33 X 3.50	34.00	1.21/64	34.208 / 33.758	37.547	35.428 / 35.273	30.907 / 30.727	35.472 / 35.273	30.951 / 30.727	29.211	37.17 / 38.80
M33 X 3.00	33.50	1.5/16	34.050 / 33.650	36.897	35.093 / 34.948	31.221 / 31.051	35.135 / 34.948	31.263 / 31.051	29.752	37.27 / 39.50
M33 X 2.00	33.50	1.5/16	33.733 / 33.433	35.598	34.414 / 34.299	31.841 / 31.701	34.454 / 34.299	31.881 / 31.701	30.835	35.95 / 39.20
M36 X 4.00	37.00	1.29/64	37.341 / 36.866	41.196	38.763 / 38.598	33.592 / 33.402	38.809 / 38.598	33.638 / 33.402	31.670	40.78 / 42.67
M36 X 3.00	37.00	1.29/64	37.050 / 36.650	39.897	38.093 / 37.948	34.221 / 34.051	38.135 / 37.948	34.263 / 34.051	32.752	40.30 / 42.70
M39 X 4.00	40.00	1.9/16	40.341 / 39.866	44.196	41.763 / 41.598	36.592 / 36.402	41.809 / 41.598	36.638 / 36.402	34.670	43.75 / 45.75
M42 X 4.50	43.00	1.11/16	43.505 / 42.975	47.846	45.098 / 44.923	39.277 / 39.077	45.147 / 44.923	39.327 / 39.077	37.129	47.37 / 49.00
M42 X 3.00	42.50	1.11/16	43.050 / 42.650	45.897	44.093 / 43.948	40.221 / 40.051	44.135 / 43.948	40.263 / 40.051	38.752	46.36 / 49.00

MC / MF	
A	Minor Diameter
B	Major Diameter
C	Pitch Diameter of Tapped Hole (Class 5H)
D	Pitch Diameter of Installed Insert (Class 4H)
E	Installed Insert Internal Diameter - min.
FC	Free Coil Diamater of Un-installed Insert

MC / MF	
S	Drilling Length - minimum
T	Tapping Length - minimum
Q	Nominal Length
NC	Number of Coils in Un-installed Insert counted 90º from tang



IMPORTANT The success of any drill and tapping operation is dependant upon many factors –type of material being cut, cutting speed, coolant, equipment being used – and it is not possible to give specific drill sizes for each material. Drill sizes shown are recommendations only and PowerCoil would strongly suggest that independent testing be performed for specific and critical applications.

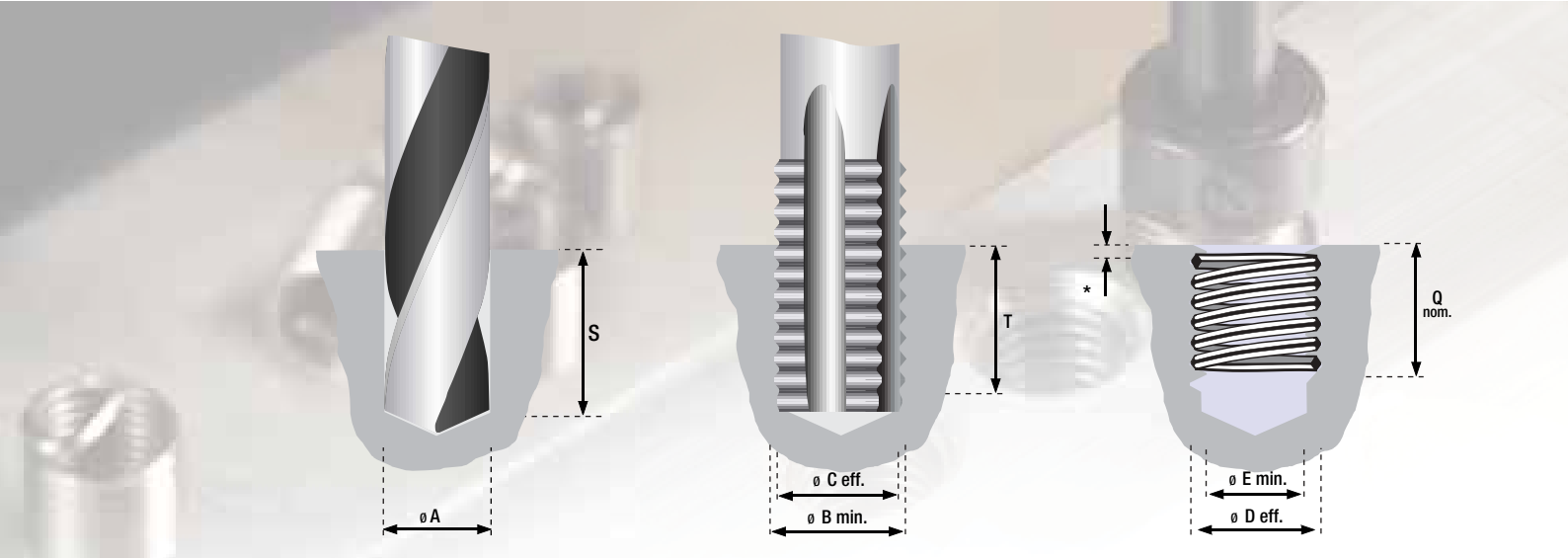
When using wire thread inserts it is important that the drilling and tapping diameters and lengths listed below are adhered to.

The figures outlined in these tables encompass effective free coil tolerances for most globally recognized standards and manufacturers, including those of reduced diameter wire thread inserts.

PowerCoil wire thread inserts can be manufactured to different standards upon request. Technical data on these standards can be obtained from our website – www.powercoil.com.au.

S (Drilling Length – min.)					**T** (Tapping Length – min.)					**Q** (Nominal Length)					**NC** (Number of Coils) - **Max / Min**				
1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D
3.80	4.80	5.80	6.80	7.80	3.40	4.40	5.40	6.40	7.40	2.00	3.00	4.00	5.00	6.00	3.30 / 3.00	5.70 / 5.20	8.10 / 7.40	10.50 / 9.60	13.00 / 11.80
4.23	5.33	6.43	7.53	8.63	3.78	4.88	5.98	7.08	8.18	2.20	3.30	4.40	5.50	6.60	3.20 / 2.90	5.50 / 5.00	7.90 / 7.10	10.30 / 9.30	12.60 / 11.40
4.53	5.78	7.03	8.28	9.53	4.08	5.33	6.58	7.83	9.08	2.50	3.75	5.00	6.25	7.50	3.80 / 3.10	6.50 / 5.20	9.20 / 7.40	11.90 / 9.50	14.60 / 11.70
5.25	6.75	8.25	9.75	11.25	4.75	6.25	7.75	9.25	10.75	3.00	4.50	6.00	7.50	9.00	4.30 / 3.40	7.20 / 5.80	10.10 / 8.20	13.10 / 10.50	16.00 / 12.90
6.20	7.95	9.70	11.45	13.20	5.60	7.35	9.10	10.85	12.60	3.50	5.25	7.00	8.75	10.50	4.10 / 3.40	7.00 / 5.80	9.80 / 8.20	12.60 / 10.50	15.50 / 12.90
7.15	9.15	11.15	13.15	15.15	6.45	8.45	10.45	12.45	14.45	4.00	6.00	8.00	10.00	12.00	4.00 / 3.40	6.80 / 5.70	9.60 / 8.10	12.30 / 10.50	15.10 / 12.80
8.60	11.10	13.60	16.10	18.60	7.80	10.30	12.80	15.30	17.80	5.00	7.50	10.00	12.50	15.00	4.50 / 3.90	7.60 / 6.50	10.60 / 9.20	13.70 / 11.80	16.70 / 14.40
10.50	13.50	16.50	19.50	22.50	9.50	12.50	15.50	18.50	21.50	6.00	9.00	12.00	15.00	18.00	4.30 / 3.80	7.20 / 6.40	10.10 / 9.10	13.10 / 11.70	16.00 / 14.30
11.50	15.00	18.50	22.00	25.50	10.50	14.00	17.50	21.00	24.50	7.00	10.50	14.00	17.50	21.00	5.30 / 4.60	8.70 / 7.70	12.10 / 10.70	15.60 / 13.70	19.00 / 16.70
13.63	17.63	21.63	25.63	29.63	12.38	16.38	20.38	24.38	28.38	8.00	12.00	16.00	20.00	24.00	4.70 / 4.20	7.80 / 7.10	10.90 / 9.90	14.10 / 12.80	17.20 / 15.60
12.50	16.50	20.50	24.50	28.50	11.50	15.50	19.50	23.50	27.50	8.00	12.00	16.00	20.00	24.00	6.10 / 5.60	10.00 / 9.10	13.80 / 12.50	17.70 / 16.00	21.50 / 19.50
14.63	19.13	23.63	28.13	32.63	13.38	17.88	22.38	26.88	31.38	9.00	13.50	18.00	22.50	27.00	5.50 / 5.10	9.00 / 8.40	12.50 / 11.70	16.10 / 15.00	19.60 / 18.30
13.50	18.00	22.50	27.00	31.50	12.50	17.00	21.50	26.00	30.50	9.00	13.50	18.00	22.50	27.00	7.10 / 6.50	11.50 / 10.50	15.80 / 14.50	20.20 / 18.50	24.50 / 22.50
16.75	21.75	26.75	31.75	36.75	15.25	20.25	25.25	30.25	35.25	10.00	15.00	20.00	25.00	30.00	4.90 / 4.60	8.20 / 7.70	11.50 / 10.80	14.70 / 13.80	18.00 / 16.90
15.63	20.63	25.63	30.63	35.63	14.38	19.38	24.38	29.38	34.38	10.00	15.00	20.00	25.00	30.00	6.10 / 5.60	10.00 / 9.20	13.80 / 12.70	17.70 / 16.30	21.50 / 19.80
14.50	19.50	24.50	29.50	34.50	13.50	18.50	23.50	28.50	33.50	10.00	15.00	20.00	25.00	30.00	8.10 / 7.30	12.90 / 11.70	17.80 / 16.10	22.60 / 20.50	27.50 / 24.90
17.75	23.25	28.75	34.25	39.75	16.25	21.75	27.25	32.75	38.25	11.00	16.50	22.00	27.50	33.00	5.60 / 5.20	9.20 / 8.60	12.80 / 12.00	16.40 / 15.40	20.00 / 18.70
16.63	22.13	27.63	33.13	38.63	15.38	20.88	26.38	31.88	37.38	11.00	16.50	22.00	27.50	33.00	6.90 / 6.40	11.20 / 10.30	15.40 / 14.20	19.70 / 18.10	23.90 / 22.00
15.50	21.00	26.50	32.00	37.50	14.50	20.00	25.50	31.00	36.50	11.00	16.50	22.00	27.50	33.00	9.10 / 8.40	14.40 / 13.30	19.80 / 18.20	25.10 / 23.10	30.40 / 28.00
19.88	25.88	31.88	37.88	43.88	18.13	24.13	30.13	36.13	42.13	12.00	18.00	24.00	30.00	36.00	5.10 / 4.80	8.50 / 7.90	11.90 / 11.10	15.20 / 14.20	18.60 / 17.30
18.75	24.75	30.75	36.75	42.75	17.25	23.25	29.25	35.25	41.25	12.00	18.00	24.00	30.00	36.00	6.10 / 5.60	10.00 / 9.20	13.80 / 12.70	17.70 / 16.20	21.50 / 19.80
17.63	23.63	29.63	35.63	41.63	16.38	22.38	28.38	34.38	40.38	12.00	18.00	24.00	30.00	36.00	7.70 / 7.00	12.40 / 11.20	17.00 / 15.50	21.60 / 19.70	26.30 / 23.90
16.50	22.50	28.50	34.50	40.50	15.50	21.50	27.50	33.50	39.50	12.00	18.00	24.00	30.00	36.00	10.10 / 9.30	15.90 / 14.70	21.70 / 20.00	27.60 / 25.40	33.40 / 30.80
20.88	27.38	33.88	40.38	46.88	19.13	25.63	32.13	38.63	45.13	13.00	19.50	26.00	32.50	39.00	5.70 / 5.30	9.40 / 8.70	13.00 / 12.20	16.70 / 15.60	20.30 / 19.00
19.75	26.25	32.75	39.25	45.75	18.25	24.75	31.25	37.75	44.25	13.00	19.50	26.00	32.50	39.00	6.80 / 6.20	11.00 / 10.10	15.20 / 13.90	19.30 / 17.80	23.50 / 21.60
18.63	25.13	31.63	38.13	44.63	17.38	23.88	30.38	36.88	43.38	13.00	19.50	26.00	32.50	39.00	8.50 / 7.80	13.50 / 12.50	18.60 / 17.10	23.60 / 21.70	28.70 / 26.40
23.00	30.00	37.00	44.00	51.00	21.00	28.00	35.00	42.00	49.00	14.00	21.00	28.00	35.00	42.00	5.30 / 5.00	8.70 / 8.20	12.10 / 11.40	15.60 / 14.60	19.00 / 17.90
20.75	27.75	34.75	41.75	48.75	19.25	26.25	33.25	40.25	47.25	14.00	21.00	28.00	35.00	42.00	7.50 / 6.90	12.00 / 11.10	16.50 / 15.30	21.00 / 19.40	25.50 / 23.60
19.63	26.63	33.63	40.63	47.63	18.38	25.38	32.38	39.38	46.38	14.00	21.00	28.00	35.00	42.00	9.30 / 8.60	14.70 / 13.60	20.20 / 18.60	25.60 / 23.60	31.00 / 28.60
18.50	25.50	32.50	39.50	46.50	17.50	24.50	31.50	38.50	45.50	14.00	21.00	28.00	35.00	42.00	12.10 / 11.10	18.90 / 17.40	25.70 / 23.70	32.50 / 30.00	39.30 / 36.20
24.00	31.50	39.00	46.50	54.00	22.00	29.50	37.00	44.50	52.00	15.00	22.50	30.00	37.50	45.00	5.80 / 5.40	9.50 / 8.80	13.10 / 12.30	16.80 / 15.70	20.50 / 19.20
21.75	29.25	36.75	44.25	51.75	20.25	27.75	35.25	42.75	50.25	15.00	22.50	30.00	37.50	45.00	8.10 / 7.50	12.90 / 11.90	17.80 / 16.40	22.60 / 20.80	27.50 / 25.30
25.00	33.00	41.00	49.00	57.00	23.00	31.00	39.00	47.00	55.00	16.00	24.00	32.00	40.00	48.00	6.30 / 5.90	10.20 / 9.50	14.20 / 13.20	18.10 / 16.90	22.00 / 20.50
22.75	30.75	38.75	46.75	54.75	21.25	29.25	37.25	45.25	53.25	16.00	24.00	32.00	40.00	48.00	8.80 / 8.00	13.90 / 12.80	19.10 / 17.50	24.30 / 22.30	29.40 / 27.00
29.25	38.25	47.25	56.25	65.25	26.75	35.75	44.75	53.75	62.75	18.00	27.00	36.00	45.00	54.00	5.50 / 5.20	9.00 / 8.60	12.50 / 11.90	16.10 / 15.30	19.60 / 18.60
27.00	36.00	45.00	54.00	63.00	25.00	34.00	43.00	52.00	61.00	18.00	27.00	36.00	45.00	54.00	7.10 / 6.70	11.50 / 10.90	15.80 / 15.00	20.20 / 19.10	24.50 / 23.20
24.75	33.75	42.75	51.75	60.75	23.25	32.25	41.25	50.25	59.25	18.00	27.00	36.00	45.00	54.00	10.10 / 9.30	15.90 / 14.60	21.70 / 20.00	27.60 / 25.40	33.40 / 30.70
31.25	41.25	51.25	61.25	71.25	28.75	38.75	48.75	58.75	68.75	20.00	30.00	40.00	50.00	60.00	6.30 / 5.90	10.20 / 9.60	14.20 / 13.30	18.10 / 16.90	22.00 / 20.60
29.00	39.00	49.00	59.00	69.00	27.00	37.00	47.00	57.00	67.00	20.00	30.00	40.00	50.00	60.00	8.10 / 7.70	12.90 / 12.20	17.80 / 16.80	22.60 / 21.40	27.50 / 25.90
26.75	36.75	46.75	56.75	66.75	25.25	35.25	45.25	55.25	65.25	20.00	30.00	40.00	50.00	60.00	11.40 / 10.50	17.90 / 16.40	24.40 / 22.40	30.90 / 28.30	37.40 / 34.30
33.25	44.25	55.25	66.25	77.25	30.75	41.75	52.75	63.75	74.75	22.00	33.00	44.00	55.00	66.00	7.10 / 6.50	11.40 / 10.50	15.80 / 14.50	20.10 / 18.50	24.50 / 22.50
31.00	42.00	53.00	64.00	75.00	29.00	40.00	51.00	62.00	73.00	22.00	33.00	44.00	55.00	66.00	9.10 / 8.50	14.40 / 13.40	19.80 / 18.40	25.10 / 23.40	30.40 / 28.40
28.75	39.75	50.75	61.75	72.75	27.25	38.25	49.25	60.25	71.25	22.00	33.00	44.00	55.00	66.00	12.70 / 11.60	19.90 / 18.10	27.00 / 24.60	34.20 / 31.10	41.30 / 37.60
37.50	49.50	61.50	73.50	85.50	34.50	46.50	58.50	70.50	82.50	24.00	36.00	48.00	60.00	72.00	6.30 / 5.90	10.20 / 9.70	14.20 / 13.40	18.10 / 17.10	22.00 / 20.90
33.00	45.00	57.00	69.00	81.00	31.00	43.00	55.00	67.00	79.00	24.00	36.00	48.00	60.00	72.00	10.10 / 9.20	15.90 / 14.60	21.70 / 19.90	27.60 / 25.30	33.40 / 30.60
30.75	42.75	54.75	66.75	78.75	29.25	41.25	53.25	65.25	77.25	24.00	36.00	48.00	60.00	72.00	14.00 / 12.90	21.80 / 20.10	29.70 / 27.30	37.50 / 34.50	45.30 / 41.70
32.75	45.75	58.75	71.75	84.75	31.25	44.25	57.25	70.25	83.25	26.00	39.00	52.00	65.00	78.00	15.40 / 14.20	23.80 / 22.00	32.30 / 29.80	40.80 / 37.60	49.20 / 45.40
40.50	54.00	67.50	81.00	94.50	37.50	51.00	64.50	78.00	91.50	27.00	40.50	54.00	67.50	81.00	7.30 / 6.80	11.70 / 11.00	16.20 / 15.20	20.60 / 19.30	25.10 / 23.50
36.00	49.50	63.00	76.50	90.00	34.00	47.50	61.00	74.50	88.00	27.00	40.50	54.00	67.50	81.00	11.60 / 10.60	18.10 / 16.70	24.70 / 22.70	31.30 / 28.80	37.90 / 34.80
45.75	60.75	75.75	90.75	105.75	42.25	57.25	72.25	87.25	102.25	30.00	45.00	60.00	75.00	90.00	6.90 / 6.50	11.10 / 10.50	15.30 / 14.50	19.50 / 18.60	23.80 / 22.60
43.50	58.50	73.50	88.50	103.50	40.50	55.50	70.50	85.50	100.50	30.00	45.00	60.00	75.00	90.00	8.10 / 7.60	12.90 / 12.20	17.80 / 16.80	22.60 / 21.30	27.50 / 25.90
39.00	54.00	69.00	84.00	99.00	37.00	52.00	67.00	82.00	97.00	30.00	45.00	60.00	75.00	90.00	13.00 / 12.00	20.40 / 18.70	27.70 / 25.40	35.00 / 32.10	42.30 / 38.80
48.75	65.25	81.75	98.25	114.75	45.25	61.75	78.25	94.75	111.25	33.00	49.50	66.00	82.50	99.00	7.70 / 7.40	12.40 / 11.80	17.00 / 16.20	21.70 / 20.70	26.40 / 25.10
46.50	63.00	79.50	96.00	112.50	43.50	60.00	76.50	93.00	109.50	33.00	49.50	66.00	82.50	99.00	9.10 / 8.50	14.40 / 13.50	19.80 / 18.50	25.10 / 23.60	30.40 / 28.60
42.00	58.50	75.00	91.50	108.00	40.00	56.50	73.00	89.50	106.00	33.00	49.50	66.00	82.50	99.00	14.50 / 13.30	22.60 / 20.60	30.60 / 28.00	38.70 / 35.30	46.80 / 42.70
54.00	72.00	90.00	108.00	126.00	50.00	68.00	86.00	104.00	122.00	36.00	54.00	72.00	90.00	108.00	7.30 / 6.90	11.70 / 11.20	16.20 / 15.40	20.60 / 19.60	25.10 / 23.80
49.50	67.50	85.50	103.50	121.50	46.50	64.50	82.50	100.50	118.50	36.00	54.00	72.00	90.00	108.00	10.10 / 9.50	15.90 / 14.90	21.70 / 20.40	27.60 / 25.90	33.40 / 31.40
57.00	76.50	96.00	115.50	135.00	53.00	72.50	92.00	111.50	131.00	39.00	58.50	78.00	97.50	117.00	8.00 / 7.70	12.90 / 12.20	17.70 / 16.80	22.50 / 21.40	27.30 / 26.00
62.25	83.25	104.25	125.25	146.25	57.75	78.75	99.75	120.75	141.75	42.00	63.00	84.00	105.00	126.00	7.60 / 7.30	12.20 / 11.80	16.80 / 16.20	21.50 / 20.70	26.10 / 25.10
55.50	76.50	97.50	118.50	139.50	52.50	73.50	94.50	115.50	136.50	42.00	63.00	84.00	105.00	126.00	12.10 / 11.40	18.90 / 17.80	25.70 / 24.20	32.50 / 30.60	39.30 / 37.10

Optimum Thread performance with Wire Thread Inserts is achieved when the inserts are installed 1/2 to 1 pitch below the surface of the Tapped Hole. This means that the actual length of an installed insert is equal to dimension Q less 1/2 to 1 pitch. Dimensions S and T allow for tap end clearance of intermediate taps. When using Bottoming and Spiral Flute Taps these dimensions maybe reduced by an amount equal to 2 thread pitches. Any counterbore depths must be added to these dimensions.

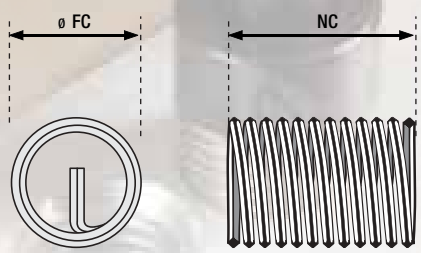


Optimum Thread performance with Wire Thread Inserts is achieved when the inserts are installed 1/2 to 1 pitch below the surface of the Tapped Hole. This means that the actual length of an installed insert is equal to dimension DL less 1/2 to 1 pitch. Dimensions AL and CL allow for tap end clearance of finishing Taps. When using Bottoming and Spiral Flute Taps these dimensions maybe reduced by an amount equal to 2 thread pitches. Any counterbore depths must be added to these dimensions.

SIZE inch	Drill mm	Drill inch	A max/min inch	B inch	C (2B) inch	D (3B) inch	C (1B) inch	D (2B) inch	E inch	FC min/max inch
UNF										
2 X 64	2.30	3/32	0.0931 / 0.0894	0.106	0.0974 / 0.0962	0.0779 / 0.0759	0.0980 / 0.0962	0.0786 / 0.0759	0.0691	0.11 / 0.12
3 X 56	2.70	#37	0.1068 / 0.1029	0.122	0.1119 / 0.1106	0.0895 / 0.0874	0.1126 / 0.1106	0.0902 / 0.0874	0.0797	0.12 / 0.15
4 X 48	3.00	#31	0.1207 / 0.1165	0.139	0.1270 / 0.1255	0.1008 / 0.0985	0.1278 / 0.1255	0.1016 / 0.0985	0.0894	0.14 / 0.16
5 X 44	3.40	#30	0.1342 / 0.1299	0.155	0.1414 / 0.1398	0.1126 / 0.1102	0.1422 / 0.1398	0.1134 / 0.1102	0.1004	0.16 / 0.17
6 X 40	3.70	#26	0.1478 / 0.1434	0.171	0.1559 / 0.1542	0.1243 / 0.1218	0.1568 / 0.1542	0.1252 / 0.1218	0.111	0.17 / 0.19
8 X 36	4.40	11/64	0.1745 / 0.1700	0.200	0.1839 / 0.1820	0.1487 / 0.1460	0.1848 / 0.1820	0.1496 / 0.1460	0.134	0.20 / 0.22
10 X 32	5.10	13/64	0.2015 / 0.1968	0.231	0.2123 / 0.2103	0.1726 / 0.1697	0.2133 / 0.2103	0.1736 / 0.1697	0.156	0.23 / 0.26
1/4 X 28	6.60	17/64	0.2647 / 0.2577	0.296	0.2754 / 0.2732	0.2300 / 0.2268	0.2765 / 0.2732	0.2311 / 0.2268	0.2113	0.30 / 0.33
5/16 X 24	8.20	21/64	0.3289 / 0.3215	0.367	0.3421 / 0.3395	0.2890 / 0.2854	0.3433 / 0.3395	0.2902 / 0.2854	0.2674	0.37 / 0.40
3/8 X 24	9.80	25/64	0.3909 / 0.3840	0.429	0.4047 / 0.4020	0.3516 / 0.3479	0.4059 / 0.4020	0.3528 / 0.3479	0.3299	0.43 / 0.47
7/16 X 20	11.50	29/64	0.4561 / 0.4483	0.503	0.4731 / 0.4700	0.4091 / 0.4050	0.4744 / 0.4700	0.4104 / 0.4050	0.3834	0.51 / 0.55
1/2 X 20	13.00	33/64	0.5182 / 0.5108	0.565	0.5357 / 0.5325	0.4717 / 0.4675	0.5371 / 0.5325	0.4731 / 0.4675	0.4459	0.57 / 0.62
9/16 X 18	14.70	37/64	0.5824 / 0.5745	0.635	0.6020 / 0.5986	0.5308 / 0.5264	0.6035 / 0.5986	0.5323 / 0.5264	0.5024	0.64 / 0.69
5/8 X 18	16.30	41/64	0.6447 / 0.6370	0.697	0.6646 / 0.6611	0.5934 / 0.5889	0.6661 / 0.6611	0.5949 / 0.5889	0.5649	0.70 / 0.76
3/4 X 16	19.50	49/64	0.7716 / 0.7635	0.831	0.7945 / 0.7906	0.7143 / 0.7094	0.7961 / 0.7906	0.7159 / 0.7094	0.6823	0.84 / 0.90
7/8 X 14	22.50	57/64	0.8993 / 0.8905	0.968	0.9257 / 0.9214	0.8339 / 0.8286	0.9274 / 0.9214	0.8356 / 0.8286	0.7977	0.98 / 1.05
1 X 12	26.00	1.1/64	1.0280 / 1.0180	1.108	1.0589 / 1.0542	0.9516 / 0.9459	1.0608 / 1.0542	0.9535 / 0.9459	0.9098	1.12 / 1.20
1 X 14	26.00	1.1/64	1.0243 / 1.0155	1.093	1.0508 / 1.0464	0.9590 / 0.9536	1.0527 / 1.0464	0.9609 / 0.9536	0.9277	1.10 / 1.19
1-1/8 X 12	29.50	1.5/32	1.1543 / 1.1430	1.233	1.1841 / 1.1792	1.0768 / 1.0709	1.1860 / 1.1792	1.0787 / 1.0709	1.0348	1.25 / 1.33
1-1/4 X 12	32.50	1.9/32	1.2793 / 1.2680	1.358	1.3092 / 1.3042	1.2019 / 1.9590	1.3112 / 1.3042	1.2039 / 1.1959	1.1598	1.37 / 1.47
1-3/8 X 12	35.50	1.13/32	1.4043 / 1.3930	1.483	1.4343 / 1.4292	1.3270 / 1.3209	1.4364 / 1.4292	1.3291 / 1.3209	1.2848	1.50 / 1.61
1-1/2 X 12	38.50	1.17/32	1.5293 / 1.5180	1.608	1.5595 / 1.5542	1.4522 / 1.4459	1.5615 / 1.5542	1.4542 / 1.4459	1.4098	1.62 / 1.75
UNC										
2 X 56	2.40	#41	0.0941 / 0.0899	0.109	0.0989 / 0.0976	0.0765 / 0.0744	0.0996 / 0.0976	0.0772 / 0.0744	0.0667	0.11 / 0.12
3 X 48	2.70	#36	0.1080 / 0.1035	0.126	0.1139 / 0.1125	0.0877 / 0.0855	0.1147 / 0.1125	0.0885 / 0.0855	0.0764	0.12 / 0.14
4 X 40	3.00	#31	0.1224 / 0.1174	0.145	0.1298 / 0.1282	0.0982 / 0.0958	0.1307 / 0.1282	0.0991 / 0.0958	0.0849	0.14 / 0.16
5 X 40	3.40	#29	0.1354 / 0.1304	0.158	0.1429 / 0.1412	0.1113 / 0.1088	0.1437 / 0.1412	0.1121 / 0.1088	0.0979	0.16 / 0.17
6 X 32	3.70	#25	0.1503 / 0.1448	0.179	0.1601 / 0.1583	0.1204 / 0.1177	0.1611 / 0.1583	0.1214 / 0.1177	0.1040	0.18 / 0.19
8 X 32	4.40	11/64	0.1758 / 0.1708	0.205	0.1862 / 0.1843	0.1465 / 0.1437	0.1872 / 0.1843	0.1475 / 0.1437	0.1300	0.20 / 0.22
10 X 24	5.10	13/64	0.2051 / 0.1990	0.244	0.2193 / 0.2171	0.1661 / 0.1629	0.2204 / 0.2171	0.1672 / 0.1629	0.1450	0.24 / 0.26
12 X 24	5.70	15/64	0.2308 / 0.2250	0.270	0.2454 / 0.2431	0.1922 / 0.1889	0.2465 / 0.2431	0.1933 / 0.1889	0.1710	0.27 / 0.28
1/4 X 20	6.70	17/64	0.2703 / 0.2608	0.315	0.2851 / 0.2825	0.2211 / 0.2175	0.2863 / 0.2825	0.2223 / 0.2175	0.1959	0.31 / 0.33
5/16 X 18	8.30	21/64	0.3341 / 0.3245	0.385	0.3515 / 0.3486	0.2803 / 0.2764	0.3529 / 0.3486	0.2817 / 0.2764	0.2524	0.38 / 0.40
3/8 X 16	9.90	25/64	0.3985 / 0.3885	0.456	0.4189 / 0.4156	0.3387 / 0.3344	0.4203 / 0.4156	0.3401 / 0.3344	0.3073	0.45 / 0.47
7/16 X 14	11.60	29/64	0.4636 / 0.4530	0.530	0.4875 / 0.4839	0.3957 / 0.3911	0.4890 / 0.4839	0.3972 / 0.3911	0.3602	0.52 / 0.55
1/2 X 13	13.00	33/64	0.5275 / 0.5166	0.600	0.5537 / 0.5499	0.4548 / 0.4500	0.5554 / 0.5499	0.4565 / 0.4500	0.4167	0.59 / 0.62
9/16 X 12	15.00	19/32	0.5918 / 0.5805	0.671	0.6208 / 0.6167	0.5135 / 0.5084	0.6225 / 0.6167	0.5152 / 0.5084	0.4723	0.66 / 0.69
5/8 X 11	16.50	21/32	0.6565 / 0.6447	0.743	0.6885 / 0.6841	0.5714 / 0.5660	0.6903 / 0.6841	0.5732 / 0.5660	0.5266	0.74 / 0.77
3/4 X 10	19.80	25/32	0.7838 / 0.7716	0.880	0.8196 / 0.8149	0.6907 / 0.6850	0.8216 / 0.8149	0.6927 / 0.6850	0.6417	0.87 / 0.91
7/8 X 9	23.00	29/32	0.9124 / 0.8991	1.019	0.9522 / 0.9471	0.8089 / 0.8028	0.9543 / 0.9471	0.8110 / 0.8028	0.7547	1.01 / 1.05
1 X 8	26.20	1.1/32	1.0421 / 1.0271	1.162	1.0868 / 1.0812	0.9254 / 0.9188	1.0890 / 1.0812	0.9276 / 0.9188	0.8647	1.15 / 1.20
1-1/8 X 7	29.50	1.5/32	1.1709 / 1.1559	1.311	1.2239 / 1.2178	1.0393 / 1.0322	1.2262 / 1.2178	1.0416 / 1.0322	0.9704	1.30 / 1.36
1-1/4 X 7	32.50	1.9/32	1.2959 / 1.2809	1.436	1.3490 / 1.3428	1.1644 / 1.1572	1.3514 / 1.3428	1.1668 / 1.1572	1.0954	1.42 / 1.48
1-3/8 X 6	36.00	1.13/32	1.4311 / 1.4111	1.591	1.4900 / 1.4832	1.2745 / 1.2667	1.4926 / 1.4832	1.2771 / 1.2667	1.1946	1.58 / 1.64
1-1/2 X 6	39.50	1.35/64	1.5561 / 1.5361	1.716	1.6151 / 1.6082	1.3996 / 1.3917	1.6177 / 1.6082	1.4022 / 1.3917	1.3196	1.70 / 1.77

UNF / UNC	
A	Minor Diameter
B	Major Diameter
C	Pitch Diameter of Tapped Hole (Class 2B or 1B)
D	Pitch Diameter of Installed Insert (Class 3B or 2B)
E	Installed Insert Internal Diameter - min.
FC	Free Coil Diamater of Un-installed Insert

UNF / UNC	
S	Drilling Length - minimum
T	Tapping Length - minimum
Q	Nominal Length
NC	Number of Coils in Un-installed Insert counted 90º from tang



IMPORTANT The success of any drill and tapping operation is dependant upon many factors –type of material being cut, cutting speed, coolant, equipment being used – and it is not possible to give specific drill sizes for each material. Drill sizes shown are recommendations only and PowerCoil would strongly suggest that independent testing be performed for specific and critical applications.

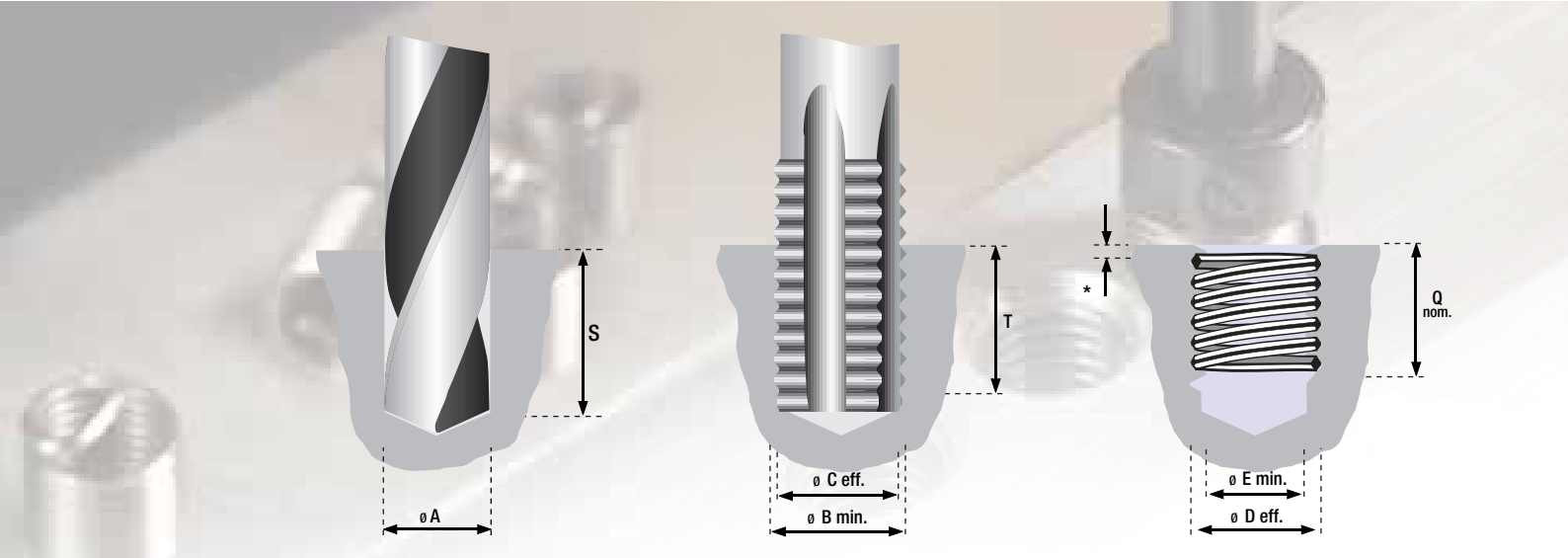
When using wire thread inserts it is important that the drilling and tapping diameters and lengths listed below are adhered to.

The figures outlined in these tables encompass effective free coil tolerances for most globally recognized standards and manufacturers, including those of reduced diameter wire thread inserts.

PowerCoil wire thread inserts can be manufactured to different standards upon request. Technical data on these standards can be obtained from our website – www.powercoil.com.au.

S (Drilling Length – min.)					**T** (Tapping Length – min.)					**Q** (Nominal Length)					**NC** (Number of Coils) - **Max / Min**				
1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D
0.156	0.199	0.242	0.285	0.328	0.141	0.184	0.227	0.270	0.313	0.086	0.129	0.172	0.215	0.258	3.70 / 3.40	6.30 / 5.80	8.90 / 8.20	11.60 / 10.50	14.20 / 12.90
0.179	0.229	0.278	0.328	0.377	0.161	0.210	0.260	0.310	0.359	0.099	0.148	0.198	0.247	0.297	3.70 / 3.10	6.40 / 5.20	9.00 / 7.40	11.60 / 9.60	14.30 / 11.80
0.206	0.262	0.318	0.374	0.430	0.185	0.241	0.297	0.353	0.409	0.112	0.168	0.224	0.280	0.336	3.70 / 3.20	6.40 / 5.40	9.00 / 7.60	11.60 / 9.80	14.20 / 12.10
0.227	0.290	0.352	0.414	0.477	0.204	0.267	0.329	0.391	0.454	0.125	0.187	0.250	0.312	0.375	3.70 / 3.40	6.30 / 5.80	8.90 / 8.20	11.50 / 10.60	14.20 / 13.00
0.250	0.319	0.388	0.457	0.526	0.225	0.294	0.363	0.432	0.501	0.138	0.207	0.276	0.345	0.414	3.70 / 3.20	6.30 / 5.50	9.00 / 7.80	11.60 / 10.10	14.20 / 12.40
0.289	0.371	0.453	0.535	0.617	0.261	0.343	0.425	0.507	0.589	0.164	0.246	0.328	0.410	0.492	4.10 / 3.60	6.90 / 6.10	9.70 / 8.60	12.50 / 11.10	15.30 / 13.60
0.331	0.426	0.521	0.616	0.711	0.299	0.394	0.489	0.584	0.679	0.190	0.285	0.380	0.475	0.570	4.30 / 3.80	7.20 / 6.40	10.10 / 9.00	13.00 / 11.60	15.90 / 14.20
0.411	0.536	0.661	0.786	0.911	0.375	0.500	0.625	0.750	0.875	0.250	0.375	0.500	0.625	0.750	5.20 / 4.70	8.50 / 7.70	11.90 / 10.80	15.20 / 13.80	18.60 / 16.90
0.500	0.656	0.812	0.969	1.125	0.458	0.614	0.771	0.927	1.083	0.312	0.469	0.625	0.781	0.937	5.60 / 5.10	9.20 / 8.50	12.80 / 11.70	16.40 / 15.00	20.00 / 18.30
0.562	0.750	0.937	1.124	1.312	0.521	0.708	0.896	1.083	1.271	0.375	0.562	0.750	0.937	1.125	7.10 / 6.50	11.40 / 10.50	15.80 / 14.50	20.10 / 18.50	24.50 / 22.50
0.662	0.881	1.100	1.319	1.537	0.612	0.831	1.050	1.269	1.487	0.437	0.656	0.875	1.094	1.312	6.90 / 6.30	11.10 / 10.20	15.30 / 14.00	19.50 / 17.90	23.70 / 21.70
0.725	0.975	1.225	1.475	1.725	0.675	0.925	1.175	1.425	1.675	0.500	0.750	1.000	1.250	1.500	8.10 / 7.40	12.90 / 11.90	17.80 / 16.30	22.60 / 20.80	27.50 / 25.20
0.811	1.093	1.374	1.655	1.936	0.756	1.038	1.319	1.600	1.881	0.562	0.844	1.125	1.406	1.687	8.30 / 7.60	13.30 / 12.20	18.20 / 16.80	23.10 / 21.30	28.10 / 25.90
0.874	1.187	1.500	1.812	2.124	0.819	1.132	1.444	1.757	2.069	0.625	0.937	1.250	1.562	1.875	9.40 / 8.70	14.90 / 13.80	20.50 / 18.90	26.00 / 24.00	31.50 / 29.10
1.031	1.406	1.781	2.156	2.531	0.969	1.344	1.719	2.094	2.469	0.750	1.125	1.500	1.875	2.250	10.10 / 9.30	15.90 / 14.70	21.70 / 20.10	27.60 / 25.50	33.40 / 30.90
1.196	1.634	2.071	2.509	2.946	1.125	1.562	2.000	2.437	2.875	0.875	1.312	1.750	2.187	2.625	10.30 / 9.60	16.30 / 15.10	22.20 / 20.60	28.20 / 26.10	34.20 / 31.60
1.375	1.875	2.375	2.875	3.375	1.292	1.792	2.292	2.792	3.292	1.000	1.500	2.000	2.500	3.000	10.10 / 9.40	16.00 / 14.80	21.80 / 20.30	27.70 / 25.70	33.50 / 31.10
1.32	1.82	2.32	2.82	3.32	1.25	1.75	2.25	2.75	3.25	1.000	1.500	2.000	2.500	3.000	12.10 / 11.20	18.90 / 17.50	25.70 / 23.80	32.50 / 30.10	39.40 / 36.40
1.500	2.062	2.625	3.187	3.750	1.417	1.979	2.542	3.104	3.667	1.125	1.687	2.250	2.812	3.375	11.60 / 10.80	18.20 / 16.90	24.80 / 23.00	31.40 / 29.20	38.00 / 35.30
1.625	2.250	2.875	3.500	4.125	1.542	2.167	2.792	3.417	4.042	1.250	1.875	2.500	3.125	3.750	13.10 / 12.20	20.40 / 19.00	27.80 / 25.80	35.10 / 32.70	42.50 / 39.50
1.750	2.438	3.125	3.813	4.500	1.667	2.354	3.042	3.729	4.417	1.375	2.062	2.750	3.437	4.125	14.60 / 13.50	22.70 / 21.00	30.80 / 28.50	38.80 / 36.00	46.90 / 43.50
1.875	2.625	3.375	4.125	4.875	1.792	2.542	3.292	4.042	4.792	1.500	2.250	3.000	3.750	4.500	16.10 / 14.90	24.90 / 23.10	33.70 / 31.30	42.60 / 39.50	51.40 / 47.70
0.166	0.209	0.252	0.295	0.338	0.148	0.191	0.234	0.277	0.320	0.086	0.129	0.172	0.215	0.258	3.10 / 2.80	5.40 / 4.80	7.80 / 6.90	10.10 / 9.00	12.50 / 11.10
0.193	0.242	0.292	0.341	0.391	0.172	0.221	0.271	0.320	0.370	0.099	0.148	0.198	0.247	0.297	3.20 / 2.80	5.50 / 4.90	7.90 / 7.00	10.30 / 9.00	12.70 / 11.20
0.224	0.280	0.336	0.392	0.448	0.199	0.255	0.311	0.367	0.423	0.112	0.168	0.224	0.280	0.336	2.80 / 2.40	4.90 / 4.30	7.10 / 6.20	9.20 / 8.10	11.40 / 10.00
0.237	0.300	0.362	0.425	0.487	0.212	0.275	0.337	0.400	0.462	0.125	0.187	0.250	0.312	0.375	3.30 / 2.90	5.70 / 5.00	8.10 / 7.20	10.50 / 9.30	13.00 / 11.50
0.279	0.348	0.417	0.486	0.555	0.247	0.316	0.385	0.454	0.523	0.138	0.207	0.276	0.345	0.414	2.70 / 2.40	4.80 / 4.30	7.00 / 6.20	9.10 / 8.20	11.20 / 10.10
0.305	0.387	0.469	0.551	0.633	0.273	0.355	0.437	0.519	0.601	0.164	0.246	0.328	0.410	0.492	3.50 / 3.20	6.10 / 5.50	8.60 / 7.80	11.20 / 10.10	13.70 / 12.40
0.377	0.472	0.567	0.662	0.757	0.336	0.431	0.526	0.621	0.716	0.190	0.285	0.380	0.475	0.570	2.80 / 2.60	5.00 / 4.60	7.20 / 6.70	9.40 / 8.70	11.60 / 10.70
0.403	0.511	0.619	0.727	0.835	0.362	0.470	0.578	0.686	0.794	0.216	0.324	0.432	0.540	0.648	3.50 / 3.20	6.00 / 5.60	8.50 / 7.90	11.00 / 10.30	13.50 / 12.60
0.475	0.600	0.725	0.850	0.975	0.425	0.550	0.675	0.800	0.925	0.250	0.375	0.500	0.625	0.750	3.30 / 3.10	5.70 / 5.30	8.10 / 7.60	10.50 / 9.90	13.00 / 12.10
0.562	0.718	0.875	1.031	1.187	0.507	0.663	0.819	0.975	1.132	0.312	0.469	0.625	0.781	0.937	3.90 / 3.70	6.70 / 6.30	9.50 / 8.90	12.20 / 11.50	15.00 / 14.10
0.656	0.844	1.031	1.219	1.406	0.594	0.781	0.969	1.156	1.344	0.375	0.562	0.750	0.937	1.125	4.30 / 4.10	7.20 / 6.80	10.10 / 9.60	13.10 / 12.40	16.00 / 15.20
0.758	0.977	1.196	1.415	1.633	0.687	0.906	1.125	1.344	1.562	0.437	0.656	0.875	1.094	1.312	4.40 / 4.10	7.40 / 7.00	10.40 / 9.80	13.40 / 12.60	16.30 / 15.50
0.846	1.096	1.346	1.596	1.846	0.769	1.019	1.269	1.519	1.769	0.500	0.750	1.000	1.250	1.500	4.80 / 4.50	8.00 / 7.50	11.10 / 10.60	14.30 / 13.60	17.50 / 16.60
0.937	1.219	1.500	1.781	2.062	0.854	1.135	1.417	1.698	1.979	0.562	0.844	1.125	1.406	1.687	5.00 / 4.80	8.40 / 7.90	11.70 / 11.10	15.00 / 14.20	18.30 / 17.40
1.034	1.347	1.659	1.972	2.284	0.943	1.256	1.568	1.881	2.193	0.625	0.937	1.250	1.562	1.875	5.10 / 4.90	8.50 / 8.10	11.90 / 11.30	15.20 / 14.50	18.60 / 17.70
1.200	1.575	1.950	2.325	2.700	1.100	1.475	1.850	2.225	2.600	0.750	1.125	1.500	1.875	2.250	5.80 / 5.50	9.50 / 9.00	13.10 / 12.60	16.80 / 16.10	20.50 / 19.60
1.375	1.812	2.250	2.687	3.125	1.264	1.701	2.139	2.576	3.014	0.875	1.312	1.750	2.187	2.625	6.20 / 5.90	10.00 / 9.60	13.90 / 13.30	17.80 / 17.00	21.70 / 20.70
1.562	2.062	2.562	3.062	3.562	1.437	1.937	2.437	2.937	3.437	1.000	1.500	2.000	2.500	3.000	6.30 / 6.00	10.20 / 9.80	14.20 / 13.60	18.10 / 17.30	22.00 / 21.10
1.768	2.330	2.893	3.455	4.018	1.625	2.187	2.750	3.312	3.875	1.125	1.687	2.250	2.812	3.375	6.20 / 5.90	10.10 / 9.60	14.00 / 13.30	17.90 / 17.00	21.80 / 20.70
1.893	2.518	3.143	3.768	4.393	1.750	2.375	3.000	3.625	4.250	1.250	1.875	2.500	3.125	3.750	7.10 / 6.70	11.40 / 10.90	15.80 / 15.00	20.10 / 19.20	24.40 / 23.30
2.125	2.812	3.500	4.187	4.875	1.958	2.646	3.333	4.021	4.708	1.375	2.062	2.750	3.437	4.125	6.50 / 6.20	10.60 / 10.10	14.60 / 14.00	18.70 / 17.80	22.70 / 21.70
2.250	3.000	3.750	4.500	5.250	2.083	2.833	3.583	4.333	5.083	1.500	2.250	3.000	3.750	4.500	7.30 / 6.90	11.70 / 11.20	16.10 / 15.40	20.60 / 19.60	25.00 / 23.90

Optimum Thread performance with Wire Thread Inserts is achieved when the inserts are installed 1/2 to 1 pitch below the surface of the Tapped Hole. This means that the actual length of an installed insert is equal to dimension DL less 1/2 to 1 pitch. Dimensions AL and CL allow for tap end clearance of finishing Taps. When using Bottoming and Spiral Flute Taps these dimensions maybe reduced by an amount equal to 2 thread pitches. Any counterbore depths must be added to these dimensions.

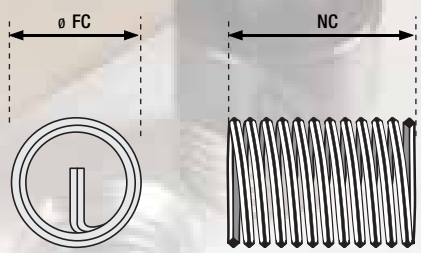


Optimum Thread performance with Wire Thread Inserts is achieved when the inserts are installed 1/2 to 1 pitch below the surface of the Tapped Hole. This means that the actual length of an installed insert is equal to dimension DL less 1/2 to 1 pitch. Dimensions AL and CL allow for tap end clearance of finishing Taps. When using Bottoming and Spiral Flute Taps these dimensions maybe reduced by an amount equal to 2 thread pitches. Any counterbore depths must be added to these dimensions.

SIZE inch	Drill mm	Drill inch	A max/min inch	B inch	C (Close) inch	D (Close) inch	C (Medium) inch	D (Medium) inch	E inch	FC min/max inch
BSF										
3/16 X 32	5.00	13/64	0.198 / 0.192	0.225	0.2087 / .2075	0.1697 / 0.1675	0.2098 / 0.2075	0.1708 / 0.1675	0.1475	0.23 / 0.25
1/4 X 26	6.60	17/64	0.264 / 0.257	0.296	0.2762 / 0.2747	0.2279 / 0.2254	0.2774 / 0.2747	0.2291 / 0.2254	0.2008	0.30 / 0.33
5/16 X 22	8.30	21/64	0.330 / 0.323	0.366	0.3433 / 0.3416	0.2861 / 0.2834	0.3447 / 0.3416	0.2875 / 0.2834	0.2543	0.37 / 0.40
3/8 X 20	9.80	25/64	0.392 / 0.385	0.434	0.4089 / 0.4070	0.3459 / 0.3430	0.4104 / 0.4070	0.3474 / 0.3430	0.3110	0.44 / 0.48
7/16 X 18	11.60	29/64	0.458 / 0.450	0.503	0.4751 / 0.4730	0.4050 / 0.4019	0.4767 / 0.4730	0.4066 / 0.4019	0.3663	0.51 / 0.56
1/2 X 16	13.20	33/64	0.522 / 0.513	0.574	0.5423 / 0.5400	0.4633 / 0.4600	0.5440 / 0.5400	0.4650 / 0.4600	0.4200	0.58 / 0.63
9/16 X 16	14.80	37/64	0.586 / 0.577	0.636	0.6049 / 0.6025	0.5259 / 0.5225	0.6067 / 0.6025	0.5277 / 0.5225	0.4825	0.64 / 0.70
5/8 X 14	16.30	41/64	0.649 / 0.640	0.709	0.6734 / 0.6708	0.5829 / 0.5793	0.6752 / 0.6708	0.5847 / 0.5793	0.5336	0.72 / 0.77
3/4 X 12	19.50	49/64	0.775 / 0.765	0.848	0.8062 / 0.8033	0.7005 / 0.6966	0.8082 / 0.8033	0.7025 / 0.6966	0.6432	0.86 / 0.92
7/8 X 11	22.80	57/64	0.900 / 0.890	0.982	0.9364 / 0.9332	0.8210 / 0.8168	0.9384 / 0.9332	0.8230 / 0.8168	0.7586	0.99 / 1.07
1 X 10	26.20	1.1/32	1.044 / 1.031	1.117	1.0675 / 1.0641	0.9404 / 0.9360	1.0697 / 1.0641	0.9426 / 0.9360	0.8720	1.13 / 1.22
1-1/8 X 9	29.50	1.5/32	1.170 / 1.156	1.255	1.1998 / 1.1962	1.0585 / 1.0539	1.2021 / 1.1962	1.0608 / 1.0539	0.9828	1.27 / 1.37
1-1/4 X 9	32.50	1.9/32	1.295 / 1.281	1.380	1.3250 / 1.3212	1.1837 / 1.1789	1.3274 / 1.3212	1.1861 / 1.1789	1.1078	1.39 / 1.50
1-3/8 X 8	36.00	1.13/32	1.420 / 1.406	1.521	1.4591 / 1.4551	1.3000 / 1.2950	1.4616 / 1.4551	1.3025 / 1.2950	1.2150	1.54 / 1.66
1-1/2 X 8	39.00	1.17/32	1.545 / 1.531	1.646	1.5843 / 1.5801	1.4252 / 1.4200	1.5868 / 1.5801	1.4277 / 1.4200	1.3400	1.66 / 1.81
BSW										
1/8 X 40	3.40	#30	0.135 / 0.129	0.155	0.1420 / 0.1410	0.1109 / 0.1090	0.1430 / 0.1410	0.1119 / 0.1090	0.0930	0.15 / 0.17
3/16 X 24	5.00	13/64	0.202 / 0.196	0.237	0.2154 / 0.2142	0.1631 / 0.1608	0.2166 / 0.2142	0.1643 / 0.1608	0.1341	0.23 / 0.26
1/4 X 20	6.70	17/64	0.267 / 0.261	0.309	0.2836 / 0.2820	0.2206 / 0.2180	0.2849 / 0.2820	0.2219 / 0.2180	0.1860	0.31 / 0.33
5/16 X 18	8.30	21/64	0.334 / 0.328	0.378	0.3498 / 0.3480	0.2797 / 0.2769	0.3512 / 0.3480	0.2811 / 0.2769	0.2413	0.37 / 0.40
3/8 X 16	10.00	25/64	0.398 / 0.390	0.448	0.4170 / 0.4150	0.3380 / 0.3350	0.4185 / 0.4150	0.3395 / 0.3350	0.2950	0.44 / 0.47
7/16 X 14	11.60	29/64	0.463 / 0.453	0.521	0.4855 / 0.4833	0.3950 / 0.3918	0.4871 / 0.4833	0.3966 / 0.3918	0.3461	0.52 / 0.55
1/12 X 12	13.00	33/64	0.525 / 0.515	0.597	0.5557 / 0.5533	0.4500 / 0.4466	0.5575 / 0.5533	0.4518 / 0.4466	0.3932	0.59 / 0.63
9/16 X 12	14.80	37/64	0.588 / 0.578	0.660	0.6184 / 0.6158	0.5127 / 0.5091	0.6201 / 0.6158	0.5144 / 0.5091	0.4557	0.65 / 0.69
5/8 X 11	16.70	21/32	0.663 / 0.653	0.731	0.6859 / 0.6832	0.5705 / 0.5668	0.6878 / 0.6832	0.5724 / 0.5668	0.5086	0.72 / 0.77
3/4 X 10	20.00	25/32	0.791 / 0.781	0.867	0.8171 / 0.8141	0.6900 / 0.6860	0.8191 / 0.8141	0.6920 / 0.6860	0.6220	0.86 / 0.90
7/8 X 9	23.20	29/32	0.916 / 0.906	1.005	0.9495 / 0.9462	0.8082 / 0.8039	0.9516 / 0.9462	0.8103 / 0.8039	0.7328	0.99 / 1.05
1 X 8	26.50	1.1/32	1.044 / 1.031	1.146	1.0836 / 1.0801	0.9245 / 0.9200	1.0859 / 1.0801	0.9268 / 0.9200	0.8400	1.13 / 1.20
1-1/8 X 7	30.00	1.11/64	1.186 / 1.171	1.291	1.2203 / 1.2165	1.0383 / 1.0335	1.2227 / 1.2165	1.0407 / 1.0335	0.9420	1.28 / 1.35
1-1/4 X 7	33.00	1.19/64	1.311 / 1.296	1.416	1.3454 / 1.3415	1.1634 / 1.1585	1.3479 / 1.3415	1.1659 / 1.1585	1.0670	1.40 / 1.48
1-1/2 X 6	39.50	1.35/64	1.571 / 1.546	1.694	1.6110 / 1.6067	1.3986 / 1.3933	1.6137 / 1.6067	1.4013 / 1.3933	1.2866	1.68 / 1.78
BSP										
1/8 X 28	10.00	25/64	0.400 / 0.390	0.426	0.4076 / 0.4058	0.3629 / 0.3601	0.4090 / 0.4058	0.3643 / 0.3601	0.3372	0.43 / 0.47
1/4 X 19	13.6	17/32	0.540 / 0.530	0.580	0.5539 / 0.5517	0.4875 / 0.4843	0.5556 / 0.5517	0.4892 / 0.4843	0.4506	0.59 / 0.64
3/8 X 19	17.1	43/64	0.680 / 0.670	0.718	0.6920 / 0.6897	0.6256 / 0.6223	0.6937 / 0.6897	0.6273 / 0.6223	0.5886	0.73 / 0.79
1/2 X 14	21.5	27/32	0.850 / 0.840	0.909	0.8735 / 0.8708	0.7830 / 0.7793	0.8754 / 0.8708	0.7849 / 0.7793	0.7336	0.92 / 0.99
5/8 X 14	23.4	59/64	0.927 / 0.915	0.986	0.9506 / 0.9478	0.8601 / 0.8563	0.9524 / 0.9478	0.8619 / 0.8563	0.8106	1.00 / 1.08
3/4 X 14	27	1.1/16	1.066 / 1.053	1.126	1.0898 / 1.0868	0.9993 / 0.9953	1.0918 / 1.0868	1.0013 / 0.9953	0.9496	1.14 / 1.23
7/8 X 14	30.5	1.13/64	1.213 / 1.200	1.274	1.2378 / 1.2348	1.1473 / 1.1433	1.2399 / 1.2348	1.1494 / 1.1433	1.0976	1.29 / 1.39
1 X 11	33.7	1.21/64	1.335 / 1.320	1.416	1.3705 / 1.3673	1.2551 / 1.2508	1.3727 / 1.3673	1.2573 / 1.2508	1.1926	1.43 / 1.54
1-1/4 X 11	42.5	1.43/64	1.680 / 1.665	1.757	1.7118 / 1.7083	1.5964 / 1.5918	1.7141 / 1.7083	1.5987 / 1.5918	1.5336	1.77 / 1.91
1-1/2 X 11	48.5	1.29/32	1.921 / 1.906	1.989	1.9440 / 1.9403	1.8286 / 1.8238	1.9464 / 1.9403	1.8310 / 1.8238	1.7656	2.01 / 2.16

BSF / BSW / BSP	
A	Minor Diameter
B	Major Diameter
C	Pitch Diameter of Tapped Hole (Close or Medium)
D	Pitch Diameter of Installed Insert (Close or Medium)
E	Installed Insert Internal Diameter - min.
FC	Free Coil Diamater of Un-installed Insert

BSF / BSW / BSP	
S	Drilling Length - minimum
T	Tapping Length - minimum
Q	Nominal Length
NC	Number of Coils in Un-installed Insert
	counted 90º from tang



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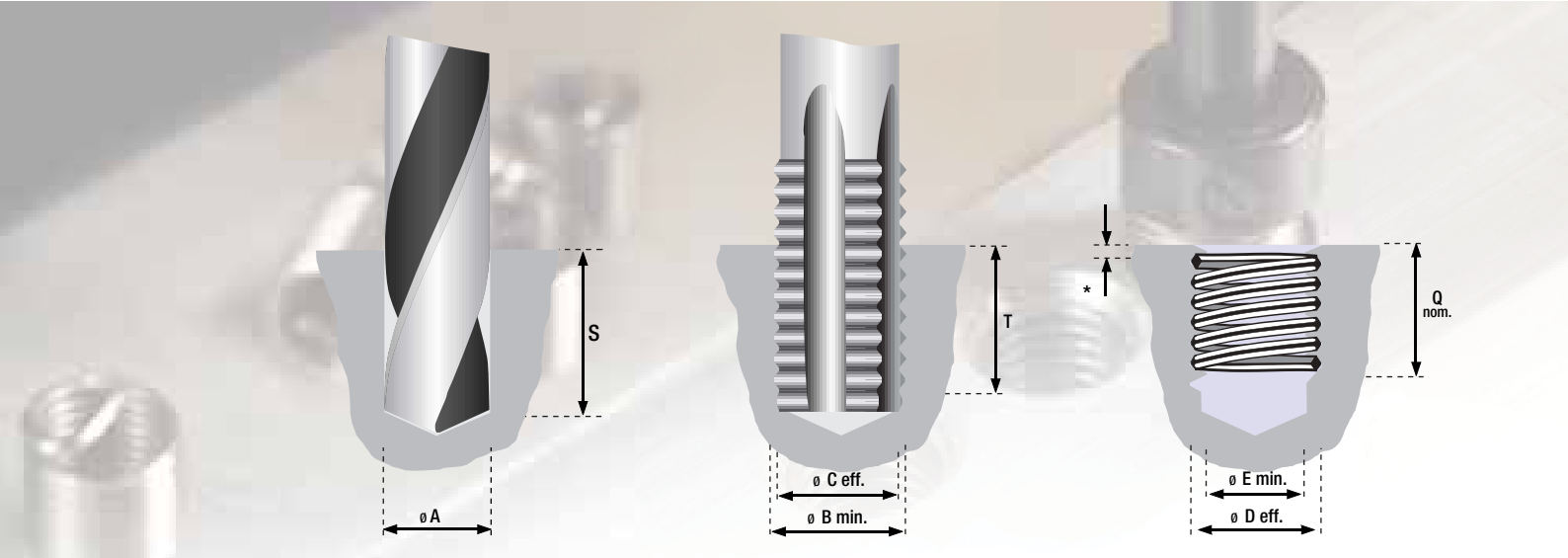
S (Drilling Length – min.)					**T** (Tapping Length – min.)					**Q** (Nominal Length)					**NC** (Number of Coils) - **Max / Min**				
1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D
0.328	0.422	0.515	0.609	0.703	0.297	0.390	0.484	0.578	0.672	0.187	0.281	0.375	0.469	0.562	4.30 / 3.90	7.20 / 6.50	10.20 / 9.20	13.10 / 11.90	16.00 / 14.50
0.423	0.548	0.673	0.798	0.923	0.385	0.510	0.635	0.760	0.885	0.250	0.375	0.500	0.625	0.750	4.80 / 4.30	7.90 / 7.10	11.20 / 9.90	14.40 / 12.70	17.50 / 15.60
0.517	0.673	0.829	0.986	1.142	0.472	0.628	0.784	0.940	1.096	0.312	0.469	0.625	0.781	0.937	5.20 / 4.70	8.50 / 7.70	11.90 / 10.70	15.30 / 13.80	18.70 / 16.80
0.600	0.787	0.975	1.162	1.350	0.550	0.737	0.925	1.112	1.300	0.375	0.562	0.750	0.937	1.125	5.80 / 5.30	9.40 / 8.60	13.20 / 12.00	16.90 / 15.30	20.50 / 18.70
0.687	0.906	1.124	1.343	1.562	0.632	0.851	1.069	1.288	1.507	0.437	0.656	0.875	1.094	1.312	6.20 / 5.60	10.00 / 9.10	13.90 / 12.60	17.80 / 16.10	21.60 / 19.60
0.781	1.031	1.281	1.531	1.781	0.719	0.969	1.219	1.469	1.719	0.500	0.750	1.000	1.250	1.500	6.30 / 5.70	10.20 / 9.30	14.20 / 12.90	18.10 / 16.50	22.00 / 20.00
0.844	1.125	1.406	1.687	1.969	0.781	1.062	1.344	1.625	1.906	0.562	0.844	1.125	1.406	1.687	7.30 / 6.60	11.70 / 10.60	16.10 / 14.70	20.60 / 18.70	25.00 / 22.70
0.946	1.259	1.571	1.884	2.196	0.875	1.187	1.500	1.812	2.125	0.625	0.937	1.250	1.562	1.875	7.10 / 6.50	11.30 / 10.40	15.70 / 14.30	20.00 / 18.30	24.30 / 22.20
1.125	1.500	1.875	2.250	2.625	1.042	1.417	1.792	2.167	2.542	0.750	1.125	1.500	1.875	2.250	7.30 / 6.70	11.70 / 10.80	16.20 / 14.90	20.70 / 19.00	25.10 / 23.00
1.284	1.722	2.159	2.596	3.034	1.193	1.631	2.068	2.506	2.943	0.875	1.312	1.750	2.187	2.625	7.90 / 7.20	12.60 / 11.60	17.40 / 15.90	22.10 / 20.30	26.90 / 24.60
1.450	1.950	2.450	2.950	3.450	1.350	1.850	2.350	2.850	3.350	1.000	1.500	2.000	2.500	3.000	8.30 / 7.60	13.20 / 12.10	18.10 / 16.60	23.10 / 21.20	28.00 / 25.70
1.625	2.187	2.750	3.312	3.875	1.514	2.076	2.639	3.201	3.764	1.125	1.687	2.250	2.812	3.375	8.40 / 7.80	13.30 / 12.30	18.40 / 17.00	23.40 / 21.50	28.40 / 26.10
1.750	2.375	3.000	3.625	4.250	1.639	2.264	2.889	3.514	4.139	1.250	1.875	2.500	3.125	3.750	9.50 / 8.80	15.00 / 13.90	20.60 / 19.00	26.20 / 24.20	31.70 / 29.30
1.937	2.625	3.312	4.000	4.687	1.812	2.500	3.187	3.875	4.562	1.375	2.062	2.750	3.437	4.125	9.30 / 8.50	14.60 / 13.50	20.10 / 18.50	25.50 / 23.50	31.00 / 28.50
2.062	2.812	3.562	4.312	5.062	1.937	2.687	3.437	4.187	4.937	1.500	2.250	3.000	3.750	4.500	10.30 / 9.40	16.10 / 14.80	22.10 / 20.10	28.00 / 25.50	33.90 / 30.90
0.237	0.300	0.362	0.425	0.487	0.212	0.275	0.337	0.400	0.462	0.125	0.187	0.250	0.312	0.375	3.40 / 3.00	5.80 / 5.10	8.40 / 7.30	10.90 / 9.40	13.40 / 11.60
0.375	0.469	0.562	0.656	0.750	0.333	0.427	0.521	0.614	0.708	0.187	0.281	0.375	0.469	0.562	2.90 / 2.60	5.10 / 4.60	7.40 / 6.60	9.70 / 8.70	11.90 / 10.70
0.475	0.600	0.725	0.850	0.975	0.425	0.550	0.675	0.800	0.925	0.250	0.375	0.500	0.625	0.750	3.40 / 3.10	5.90 / 5.40	8.50 / 7.70	11.00 / 9.90	13.50 / 12.20
0.562	0.718	0.875	1.031	1.187	0.507	0.663	0.819	0.975	1.132	0.312	0.469	0.625	0.781	0.937	4.10 / 3.80	6.90 / 6.40	9.80 / 9.00	12.60 / 11.60	15.50 / 14.20
0.656	0.844	1.031	1.219	1.406	0.594	0.781	0.969	1.156	1.344	0.375	0.562	0.750	0.937	1.125	4.40 / 4.10	7.40 / 6.90	10.50 / 9.70	13.50 / 12.50	16.50 / 15.30
0.758	0.977	1.196	1.415	1.633	0.687	0.906	1.125	1.344	1.562	0.437	0.656	0.875	1.094	1.312	4.60 / 4.20	7.60 / 7.10	10.70 / 9.90	13.80 / 12.80	16.90 / 15.60
0.875	1.125	1.375	1.625	1.875	0.792	1.042	1.292	1.542	1.792	0.500	0.750	1.000	1.250	1.500	4.50 / 4.10	7.40 / 7.00	10.50 / 9.80	13.60 / 12.60	16.60 / 15.40
0.937	1.219	1.500	1.781	2.062	0.854	1.135	1.417	1.698	1.979	0.562	0.844	1.125	1.406	1.687	5.20 / 4.90	8.60 / 8.00	12.00 / 11.20	15.40 / 14.40	18.80 / 17.60
1.034	1.347	1.659	1.972	2.284	0.943	1.256	1.568	1.881	2.193	0.625	0.937	1.250	1.562	1.875	5.30 / 5.00	8.70 / 8.20	12.20 / 11.50	15.70 / 14.70	19.20 / 17.90
1.200	1.575	1.950	2.325	2.700	1.100	1.475	1.850	2.225	2.600	0.750	1.125	1.500	1.875	2.250	6.00 / 5.60	9.70 / 9.20	13.50 / 12.70	17.30 / 16.30	21.10 / 19.80
1.375	1.812	2.250	2.687	3.125	1.264	1.701	2.139	2.576	3.014	0.875	1.312	1.750	2.187	2.625	6.30 / 6.00	10.20 / 9.70	14.30 / 13.40	18.20 / 17.10	22.20 / 20.90
1.562	2.062	2.562	3.062	3.562	1.437	1.937	2.437	2.937	3.437	1.000	1.500	2.000	2.500	3.000	6.50 / 6.10	10.40 / 9.90	14.50 / 13.70	18.60 / 17.50	22.60 / 21.20
1.768	2.330	2.893	3.455	4.018	1.625	2.187	2.750	3.312	3.875	1.125	1.687	2.250	2.812	3.375	6.30 / 5.90	10.20 / 9.60	14.30 / 13.40	18.20 / 17.10	22.20 / 20.80
1.893	2.518	3.143	3.768	4.393	1.750	2.375	3.000	3.625	4.250	1.250	1.875	2.500	3.125	3.750	7.20 / 6.80	11.60 / 10.90	16.00 / 15.00	20.40 / 19.20	24.90 / 23.30
2.250	3.000	3.750	4.500	5.250	2.083	2.833	3.583	4.333	5.083	1.500	2.250	3.000	3.750	4.500	7.50 / 7.00	11.90 / 11.30	16.50 / 15.50	21.10 / 19.80	25.60 / 24.00
0.286	0.348	0.411	0.437	0.536	0.250	0.312	0.375	0.437	0.500	0.125	0.187	0.250	0.312	0.375	1.90 / 1.70	3.60 / 3.20	5.30 / 4.80	7.00 / 6.40	8.80 / 7.90
0.487	0.612	0.737	0.862	0.987	0.434	0.559	0.684	0.809	0.934	0.250	0.375	0.500	0.625	0.750	3.10 / 2.80	5.40 / 5.00	7.80 / 7.10	10.10 / 9.20	12.50 / 11.40
0.612	0.799	0.987	1.174	1.362	0.559	0.747	0.934	1.122	1.309	0.375	0.562	0.750	0.937	1.125	5.50 / 5.00	8.90 / 8.20	12.50 / 11.40	16.00 / 14.60	19.50 / 17.90
0.821	1.071	1.321	1.571	1.821	0.750	1.000	1.250	1.500	1.750	0.500	0.750	1.000	1.250	1.500	5.30 / 4.90	8.80 / 8.10	12.20 / 11.20	15.70 / 14.40	19.10 / 17.60
0.946	1.258	1.571	1.883	2.196	0.875	1.187	1.500	1.812	2.125	0.625	0.937	1.250	1.562	1.875	7.10 / 6.50	11.30 / 10.40	15.70 / 14.40	20.00 / 18.40	24.30 / 22.30
1.071	1.446	1.821	2.196	2.571	1.000	1.375	1.750	2.125	2.500	0.750	1.125	1.500	1.875	2.250	8.80 / 8.10	13.90 / 12.90	19.20 / 17.60	24.30 / 22.40	29.50 / 27.20
1.196	1.634	2.071	2.509	2.946	1.125	1.562	2.000	2.437	2.875	0.875	1.312	1.750	2.187	2.625	10.50 / 9.70	16.50 / 15.30	22.60 / 20.80	28.70 / 26.40	34.70 / 32.00
1.409	1.909	2.409	2.909	3.409	1.318	1.818	2.318	2.818	3.318	1.000	1.500	2.000	2.500	3.000	9.30 / 8.60	14.70 / 13.60	20.10 / 18.60	25.60 / 23.60	31.00 / 28.60
1.660	2.284	2.909	3.534	4.159	1.568	2.193	2.818	3.443	4.068	1.250	1.875	2.500	3.125	3.750	12.00 / 11.10	18.70 / 17.40	25.60 / 23.70	32.40 / 30.00	39.20 / 36.20
1.909	2.659	3.409	4.159	4.909	1.818	2.568	3.318	4.068	4.818	1.500	2.250	3.000	3.750	4.500	14.70 / 13.60	22.80 / 21.20	31.00 / 28.70	39.20 / 36.30	47.30 / 43.80

Optimum Thread performance with Wire Thread Inserts is achieved when the inserts are installed 1/2 to 1 pitch below the surface of the Tapped Hole. This means that the actual length of an installed insert is equal to dimension DL less 1/2 to 1 pitch. Dimensions AL and CL allow for tap end clearance of finishing Taps. When using Bottoming and Spiral Flute Taps these dimensions maybe reduced by an amount equal to 2 thread pitches. Any counterbore depths must be added to these dimensions.



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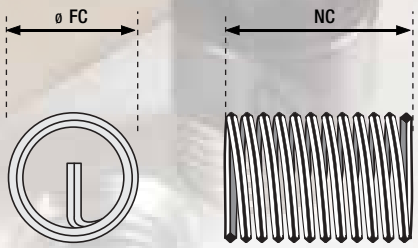
SIZE inch	Drill mm	Drill inch	A max/min inch	B inch	C (Normal) inch	D (Normal) inch			E inch	FC min/max inch
BA										
6BA	2.90	#33	0.116 / 0.113	0.134	0.1252 / 0.1226	0.1014 / 0.0976			0.0850	0.14 / 0.15
5BA	3.40	#29	0.135 / 0.129	0.152	0.1426 / 0.1399	0.1159 / 0.1120			0.0980	0.15 / 0.17
4BA	3.80	#25	0.152 / 0.147	0.171	0.1605 / 0.1574	0.1305 / 0.1262			0.1106	0.17 / 0.19
3BA	4.30	11/64	0.171 / 0.166	0.194	0.1821 / 0.1786	0.1488 / 0.1441			0.1268	0.20 / 0.21
2BA	4.90	#10	0.196 / 0.191	0.221	0.2079 / 0.2042	0.1709/ 0.1659			0.1468	0.22 / 0.24
1BA	5.50	7/32	0.220 / 0.213	0.249	0.2342 / 0.2299	0.1929 / 0.1874			0.1661	0.25 / 0.27
0BA	6.20	C	0.246 / 0.241	0.281	0.2645 / 0.2598	0.2185 / 0.2126			0.1890	0.28 / 0.31

SIZE inch	Drill mm	Drill inch	A max/min inch	B inch	C (Normal) inch	D (Medium) inch			E inch	FC min/max inch
BSC										
3/16 X 32	5.10	13/64	0.205 / 0.195	0.232	0.2112 / 0.2136	0.1738 / 0.1709			0.1543	0.23 / 0.26
1/4 X 26	6.60	17/64	0.270 / 0.258	0.304	0.2790 / 0.2817	0.2328 / 0.2295			0.2090	0.31 / 0.34
5/16 X 26	8.00	5/16	0.332 / 0.320	0.367	0.3415 / 0.3444	0.2965 / 0.2920			0.2715	0.37 / 0.41
3/8 X 26	9.80	25/64	0.395 / 0.383	0.429	0.4040 / 0.4070	0.3583 / 0.3545			0.3340	0.43 / 0.48
7/16 X 26	11.10	7/16	0.457 / 0.446	0.492	0.4665 / 0.4697	0.4210 / 0.4170			0.3965	0.50 / 0.55
1/2 X 26	12.70	1/2	0.520 / 0.508	0.554	0.5290 / 0.5323	0.4837 / 0.4795			0.4590	0.56 / 0.61
9/16 X 26	14.75	37/64	0.582 / 0.571	0.617	0.5915 / 0.5945	0.5464 / 0.5420			0.5215	0.62 / 0.68
5/8 X 26	16.30	41/64	0.645 / 0.633	0.679	0.6540 / 0.6575	0.6090 / 0.6045			0.5840	0.69 / 0.75
3/4 X 26	19.50	49/64	0.769 / 0.758	0.804	0.7790 / 0.7827	0.7343 / 0.7295			0.7090	0.81 / 0.89
1 X 24	25.75	1.1/64	1.020 / 1.009	1.059	1.0314 / 1.0355	0.9828 / 0.9778			0.9556	1.07 / 1.17

SIZE inch	Drill mm	Drill inch	A max/min inch	B inch	C (3B) inch	Tap (Std) 8 Pitch	D (2B) min/max inch			FC min/max inch
UN-8 PITCH										
1.1/8 X 8	28.50	1.1/8	1.155 / 1.130	1.261	1.1757 / 1.1688	1.1/4	1.0528 / 1.0438			1.25 / 1.30
1.1/4 X 8	32.00	1.1/4	1.280 / 1.255	1.386	1.3008 / 1.2938	1.3/8	1.1780 / 1.1688			1.39 / 1.43
1.3/8 X 8	35.00	1.3/8	1.405 / 1.380	1.511	1.4259 / 1.4188	1.1/2	1.3031 / 1.2938			1.52 / 1.57
1.1/2 X 8	38.00	1.1/2	1.530 / 1.505	1.636	1.5510 / 1.5438	1.5/8	1.4283 / 1.4188			1.65 / 1.69
1.5/8 X 8	41.00	1.5/8	1.655 / 1.630	1.761	1.6762 / 1.6688	1.3/4	1.5535 / 1.5438			1.78 / 1.90
1.3/4 X 8	44.50	1.3/4	1.780 / 1.755	1.886	1.8013 / 1.7938	1.7/8	1.6786 / 1.6688			1.90 / 2.04
1.7/8 X 8	47.50	1.7/8	1.905 / 1.880	2.011	1.9264 / 1.9188	2	1.8038 / 1.7938			2.03 / 2.16
2 X 8	50.80	2	2.030 / 2.005	2.136	2.0515 / 2.0438	2.1/8	1.9289 / 1.9188			2.16 / 2.28

BA / BSC / UN-8 PITCH	
A	Minor Diameter
B	Major Diameter
C	Pitch Diameter of Tapped Hole
D	Pitch Diameter of Installed Insert
E	Installed Insert Internal Diameter - min.
FC	Free Coil Diamater of Un-installed Insert

BA / BSC / UN-8 PITCH	
S	Drilling Length - minimum
T	Tapping Length - minimum
Q	Nominal Length
NC	Number of Coils in Un-installed Insert
	counted 90º from tang



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S (Drilling Length – min.)					**T** (Tapping Length – min.)					**Q** (Nominal Length)					**NC** (Number of Coils) - **Max / Min**				
1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D
0.204	0.259	0.314	0.369	0.424	0.183	0.238	0.293	0.348	0.404	0.110	0.165	0.220	0.275	0.331	3.60 / 3.30	6.20 / 5.60	8.70 / 7.90	11.20 / 10.20	13.80 / 12.50
0.230	0.293	0.356	0.419	0.482	0.207	0.270	0.333	0.396	0.459	0.126	0.189	0.252	0.315	0.378	3.80 / 3.40	6.40 / 5.80	9.00 / 8.10	11.60 / 10.50	14.20 / 12.90
0.259	0.329	0.400	0.471	0.542	0.233	0.303	0.374	0.445	0.516	0.142	0.212	0.283	0.354	0.425	3.80 / 3.50	6.40 / 5.80	9.10 / 8.20	11.70 / 10.60	14.40 / 13.00
0.291	0.371	0.452	0.533	0.613	0.262	0.343	0.423	0.504	0.585	0.161	0.242	0.323	0.403	0.484	3.90 / 3.60	6.70 / 6.00	9.40 / 8.50	12.10 / 10.90	14.80 / 13.40
0.328	0.421	0.513	0.606	0.698	0.297	0.389	0.482	0.574	0.667	0.185	0.277	0.370	0.462	0.555	4.20 / 3.80	6.90 / 6.30	9.80 / 8.80	12.60 / 11.40	15.40 / 13.90
0.368	0.472	0.576	0.681	0.785	0.333	0.437	0.541	0.646	0.750	0.209	0.313	0.417	0.522	0.626	4.20 / 3.80	7.10 / 6.40	9.90 / 9.00	12.80 / 11.60	15.60 / 14.10
0.413	0.531	0.649	0.768	0.886	0.374	0.492	0.610	0.728	0.846	0.236	0.354	0.472	0.590	0.709	4.30 / 3.90	7.20 / 6.60	10.10 / 9.20	13.00 / 11.80	16.00 / 14.50

Optimum Thread performance with Wire Thread Inserts is achieved when the inserts are installed 1/2 to 1 pitch below the surface of the Tapped Hole. This means that the actual length of an installed insert is equal to dimension DL less 1/2 to 1 pitch. Dimensions AL and CL allow for tap end clearance of finishing Taps. When using Bottoming and Spiral Flute Taps these dimensions maybe reduced by an amount equal to 2 thread pitches. Any counterbore depths must be added to these dimensions.

S (Drilling Length – min.)					**T** (Tapping Length – min.)					**Q** (Nominal Length)					**NC** (Number of Coils) - **Max / Min**				
1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D
0.33	0.42	0.52	0.61	0.70	0.30	0.39	0.48	0.58	0.67	0.187	0.281	0.375	0.469	0.562	4.10/3.70	6.90/6.20	9.70/8.70	12.50/11.20	15.30/13.70
0.42	0.55	0.67	0.80	0.92	0.38	0.51	0.63	0.76	0.88	0.250	0.375	0.500	0.625	0.750	4.60/4.10	7.60/6.90	10.70/9.60	13.80/12.30	16.80/15.10
0.49	0.64	0.80	0.95	1.11	0.45	0.60	0.76	0.92	1.07	0.312	0.469	0.625	0.781	0.937	6.20/5.50	10.00/9.00	13.90/12.50	17.80/16.00	21.60/19.40
0.55	0.74	0.92	1.11	1.30	0.51	0.70	0.88	1.07	1.26	0.375	0.562	0.750	0.937	1.125	7.80/7.00	12.40/11.20	17.10/15.40	21.70/19.60	26.40/23.80
0.61	0.83	1.05	1.27	1.49	0.57	0.79	1.01	1.23	1.45	0.437	0.656	0.875	1.094	1.312	9.40/8.40	14.80/13.40	20.30/18.30	25.80/23.30	31.20/28.20
0.67	0.92	1.17	1.42	1.67	0.63	0.88	1.13	1.38	1.63	0.500	0.750	1.000	1.250	1.500	11.00/9.90	17.20/15.60	23.50/21.20	29.80/26.90	36.00/32.60
0.74	1.02	1.30	1.58	1.86	0.70	0.98	1.26	1.54	1.82	0.562	0.844	1.125	1.406	1.687	12.60/11.40	19.70/17.80	26.70/24.20	33.80/30.50	40.90/36.90
0.80	1.11	1.42	1.74	2.05	0.76	1.07	1.38	1.70	2.01	0.625	0.937	1.250	1.562	1.875	14.20/12.80	22.00/19.90	29.90/27.10	37.80/34.20	45.70/41.30
0.92	1.30	1.67	2.05	2.42	0.88	1.26	1.63	2.01	2.38	0.750	1.125	1.500	1.875	2.250	17.40/15.70	26.90/24.30	36.30/32.90	45.80/41.50	55.30/50.10
1.19	1.69	2.19	2.69	3.19	1.15	1.65	2.15	2.65	3.15	1.000	1.500	2.000	2.500	3.000	21.80/19.80	33.50/30.40	45.30/41.00	57.00/51.60	68.70/62.20

S (Drilling Length – min.) **Int/Bott**					**T** (Tapping Length – min.) **Int**					**Q** (Nominal Length)					**NC** (Number of Coils) - **Max / Min**				
1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D	1.0D	1.5D	2.0D	2.5D	3.0D
1.69	2.25	2.81	3.38	3.94	1.56	2.13	2.69	3.25	3.81	1.125	1.688	2.250	2.81	3.38	7.50/7.10	12.00/11.50	16.60/15.80	21.10/20.10	25.60/24.50
1.81	2.44	3.06	3.69	4.31	1.69	2.31	2.94	3.56	4.19	1.250	1.875	2.500	3.13	3.75	8.30/8.10	13.30/12.90	18.30/17.70	23.30/22.60	28.20/27.40
1.94	2.62	3.31	4.00	4.69	1.81	2.50	3.19	3.88	4.56	1.375	2.062	2.750	3.44	4.13	9.30/9.00	14.80/14.30	20.20/19.60	25.70/24.90	31.20/30.20
2.06	2.81	3.56	4.31	5.06	1.94	2.69	3.44	4.19	4.94	1.500	2.250	3.000	3.75	4.50	10.30/10.00	16.20/15.80	22.20/21.50	28.10/27.30	34.10/33.10
2.19	3.00	3.81	4.63	5.44	2.06	2.88	3.69	4.50	5.31	1.625	2.438	3.250	4.06	4.88	11.20/10.50	17.70/16.40	24.10/22.40	30.50/28.40	37.00/34.30
2.31	3.19	4.06	4.94	5.81	2.19	3.06	3.94	4.81	5.69	1.750	2.625	3.500	4.38	5.25	12.20/11.40	19.20/17.80	26.10/24.20	33.00/30.70	39.90/37.10
2.44	3.37	4.31	5.25	6.19	2.31	3.25	4.19	5.13	6.06	1.875	2.812	3.750	4.69	5.63	13.20/12.40	20.60/19.30	28.10/26.20	35.50/33.20	42.90/40.10
2.56	3.56	4.56	5.56	6.56	2.44	3.44	4.44	5.44	6.44	2.000	3.000	4.000	5.00	6.00	14.20/13.40	22.10/20.90	30.00/28.40	38.00/35.90	45.90/43.30

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1 DRILL

Drill to clear the damaged thread with a standard twist drill. Thread Repair Kits up to M12 (1/2") include the correct size drill. The required tapping drill size is shown on the front of this pack.

Note: Spark Plug inserts utilise a pilot nose tap which does not require pre-drilling.

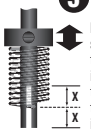
2 TAP

Use the specified tap to cut the holding thread into the cleared hole. When tapping a hole, it is recommended to use a suitable lubricant.

Note: Wire Thread inserts require the use of STI taps which are slightly oversize to provide the correct hole diameter.

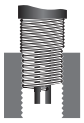
Always check that the thread and pitch of the tap are the same as the bolt you wish to insert into the finished hole.

3 INSERT



Loosen the grub screw and slide the collar along the insert tool shaft so that the tang on the insert is positioned half way up the insert tool slot.

Note: Do not position tang at the very top or bottom of the insert tool slot.



Use the installation tool to wind the insert into the threaded hole using light downward pressure until half a turn below the surface.

Note: Do not work against the thread direction as the tang may break off.

4 SNAP

Lift installation tool, rotate 90º and tap down sharply to break off wire thread insert tang. Use the tang break off tool to perform this function where supplied.

Note: For spark plug and large inserts use long nose pliers to remove the tang.

5 DONE!

You have succesfully repaired your damaged thread. The new thread is normally stronger than the original.

powercoil®

1 DRILL

Drill to clear the damaged thread with a standard twist drill. Thread Repair Kits up to M12 (1/2") include the correct size drill. The required tapping drill size is shown on the front of this pack.

Note: Spark Plug inserts utilise a pilot nose tap which does not require pre-drilling.

2 TAP

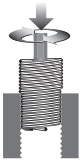
Use the specified tap to cut the holding thread into the cleared hole. When tapping a hole, it is recommended to use a suitable lubricant.

Note: Wire Thread inserts require the use of STI taps which are slightly oversize to provide the correct hole diameter.

Always check that the thread and pitch of the tap are the same as the bolt you wish to insert into the finished hole.

3 INSERT

Wind the insert fully on to the hex drive installation mandrel. Ensure that the insert tang is securely seated in the tang recess on the base of the mandrel.



Using a suitable power tool, wrench or ratchet wind the insert and mandrel into the threaded hole until half a turn below the surface. Unwind the mandrel from the seated insert.

Note: Do not work against the thread direction as the tang may break off.

4 SNAP

Use long nose pliers to break off and remove the tang from the installed insert.

5 DONE!

You have succesfully repaired your damaged thread. The new thread is normally stronger than the original.

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1 DRILL

Drill to clear the damaged thread with a standard twist drill. Thread Repair Kits up to M12 (1/2") include the correct size drill. The required tapping drill size is shown on the front of this pack.

Note: Spark Plug inserts utilise a pilot nose tap which does not require pre-drilling.

2 TAP

Use the specified tap to cut the holding thread into the cleared hole. When tapping a hole, it is recommended to use a suitable lubricant.

Note: Wire Thread inserts require the use of STI taps which are slightly oversize to provide the correct hole diameter.

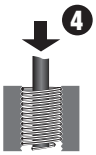
Always check that the thread and pitch of the tap are the same as the bolt you wish to insert into the finished hole.

3 INSERT

Unwind mandrel and place insert into chamber with tang towards nozzle. Rotate the pre-winder handle clockwise to wind the mandrel into the insert until end of mandrel engages with tang. Use gentle downward pressure until insert engages in threaded nozzle. Continue winding until insert reaches end of nozzle. Place tool squarely over tapped hole and continue winding until insert is transferred from tool to workpiece. Rotate handle counterclockwise to wind mandrel out of the installed insert.

Note: Once insert is engaged in nozzle use no downward pressure.

4 SNAP



Insert a tang break off tool and tap down sharply to break off wire thread insert tang.

Note: For spark plug and large inserts use long nose pliers to remove the tang.

5 DONE!

You have succesfully repaired your damaged thread. The new thread is normally stronger than the original.

1 DRILL

Drill to clear the damaged thread with a standard twist drill. Chamfer the hole with a standard countersink (82º - 100º)

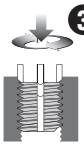
Note: Drill is oversize to accomodate external thread. Check technical charts for correct drill sizes.

2 TAP

Create new thread using a standard tap. Check technical charts for correct tap size.

Note: Use of a suitable lubricant is essential during all tapping procedures.

3 INSERT



Screw the insert into the threaded hole until slightly below the surface of the parent material.

4 DRIVE

Select the correct size installation tool and place over the insert. Drive locking keys down using several hammer taps on end of installation tool.

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wire thread insert system

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