

AN ALTERNATIVE SOURCE FOR SCREW THREAD INSERTS

PRODUCTS CATALOG

VOLUME 8



MANUFACTURER
AND
DISTRIBUTOR
OF
SCREW THREAD
INSERTS

QUALITY, SERVICE, DELIVERY SINCE 1972

HELICAL WIRE INC

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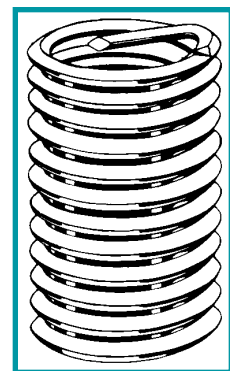
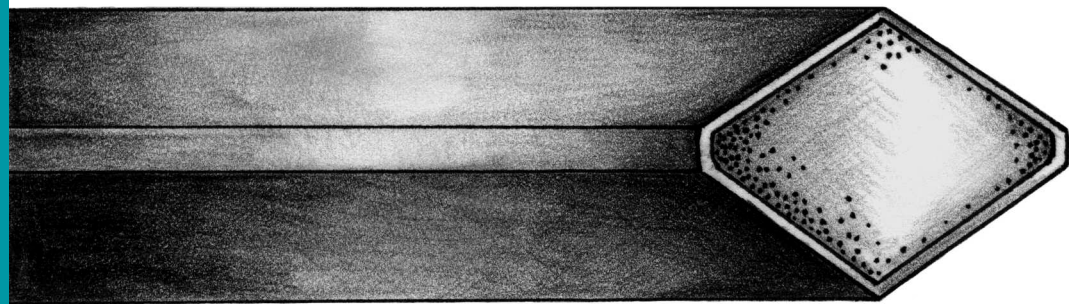
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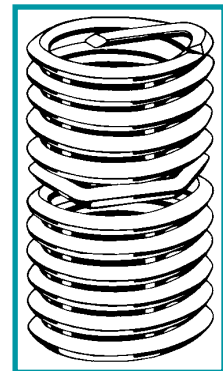
MANUFACTURING

HELICAL WIRE INC. inserts are precision manufactured screw thread inserts that play a critical role in engineering applications. Screw thread inserts are a reliable means of strengthening tapped holes in light weight materials and alloys.

HELICAL WIRE INC. insert products are manufactured from 18-8 stainless steel diamond shaped wire per specifications AS7245 and NASM8846 for the standard series and per MA1565 for the metric series. All inserts manufactured by Helical Wire Inc. are engineered to meet and or exceed the Military and Aerospace standards and are inspected to meet the requirements of our ISO 9001-2008 quality system. Also inserts are manufactured from Inconel X-750 per AS7246, Phosphor Bronze per AMS 7247, Nitronic 60 per AMS5848B and Nimonic 90 per AMS 5829.



NON-LOCKING



LOCKING

Helical Wire inserts are available in the non-locking or free running screw thread, or in the locking or self-locking type. The self-locking style locks the bolt or screw in place when installed due to a configuration of cords or flats on one or more of its interior convolutions.

Helical Wire utilizes a color coded system that identifies our insert's materials and finishes by color. This color system is used for easy identification in our internal house and for all customer shipment labels.

MATERIALS AND FINISHES

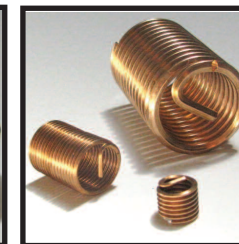
HELICAL WIRE INC. screw thread inserts are manufactured of 18-8 stainless steel, and other materials that are of the highest standard for strength and durability. Our inserts are also manufactured to meet the specific needs of certain types of mechanical applications. In various installation assembly processes the need arises for material that will be non-magnetic and in some applications heat resistant.

The Helical Wire standard inch free running, or non-locking series, will come in a clean finish. The standard inch self-locking series comes in a red colored finish. The Metric series is the same clean finish for both the locking series and the free-running series.

Our inserts are available in various plated finishes. We offer all of our inserts with plating upon request, regardless of the material or type of insert. We keep many popular sizes in our stock with various plated finishes. We can usually ship plated inserts immediately upon request. If they aren't quoted in stock, our lead times are faster than most. When plating is specified by a customer's part number and call out, we do whatever we can to meet their specific plating needs.



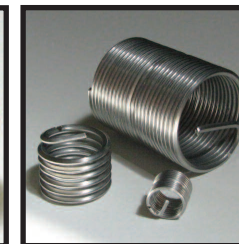
STAINLESS STEEL
General purpose uses. 18-8 diamond shaped wire. Manufactured per AS7245 and ANSM8846. Locking and Non-locking Standard and Metric



PHOSPHOROUS BRONZE
For use in salt water applications. Non magnetic and electrically conductive. Manufactured per AMS7247. Locking and Non-locking Standard and Metric



INCONEL X-750
For use in high temperatures. This material is non-magnetic. Manufactured per AS7246. Locking and Non-locking Standard and Metric



NITRONIC 60
For use in vacuum situations. Non-magnetic, particle free and no additional coatings required. Manufactured per AMS5848B. Locking and Non-locking Standard and Metric



NIMONIC 90
Used in high temperature applications. Manufactured per AMS5829. Locking and Non-locking Standard and Metric



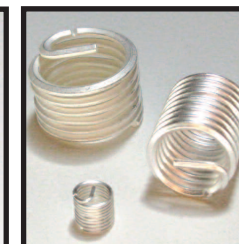
RED DYE
Locking inserts are died red for easy distinction from the non-locking inserts. Manufactured per AS7245 and NASM8846. Locking Standard



PRIMER FREE
Easier installation. Eliminates the need for the zinc primers and epoxies while preventing corrosion. Manufactured per Xylan (R) 5251/840 Black or Xylan 5230/1131 Gray Black in Locking, Non-locking, Standard and Metric.



CADMIUM PLATE
Used in Military applications only. Manufactured per AMS2400 Type II Rev C. Locking, Non-locking, Standard and Metric in Olive Drab and Non-Olive Drab.



SILVER PLATE
Used to reduce galling of threads when used at high temperatures. Manufactured per AMS2411-D or QQ-S-365. Locking, Non-locking, Standard and Metric



DRY FILM LUBE
Used in high friction applications and temperatures up to 400°. Manufactured per AS5272. Locking and Non-locking, Standard and Metric

HELICAL WIRE INC

STANDARD BULK

NON-LOCKING COARSE PART NUMBERS

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	MS EQUIVALENT	CROSS REFERENCE COMPETITOR
2-56	256N0086	MS122095	MS21208C02-10	1185-02CN086
	0129	135	15	129
	0172	175	20	172
	0215	215	25	215
	0258	255	30	258
3-48	348N0099	MS122115	MS21208C03-10	1185-03CN099
	0148	155	15	148
	0198	195	20	198
	0248	235	25	248
	0297	275	30	297
4-40	440N0112	MS122076	MS21208C04-10	1185-04CN112
	0168	116	15	168
	0224	156	20	224
	0280	196	25	280
	0336	236	30	336
5-40	540N0125	MS122077	MS21208C05-10	1185-05CN125
	0188	117	15	188
	0250	157	20	250
	0312	197	25	312
	0375	237	30	375
6-32	632N0138	MS122078	MS21208C06-10	1185-06CN138
	0207	118	15	207
	0276	158	20	276
	0345	198	25	345
	0414	238	30	414
8-32	832N0164	MS122079	MS21208C08-10	1185-2CN164
	0246	119	15	246
	0328	159	20	328
	0410	199	25	410
	0492	239	30	492
10-24	1024N0190	MS122080	MS21208C1-10	1185-3CN190
	0285	120	15	285
	0380	160	20	380
	0475	200	25	475
	0570	240	30	570
12-24	1224N0216	-	MS21208C2-10	1185-1CN216
	0324	-	15	324
	0432	-	20	432
	0540	-	25	540
	0648	-	30	648

NON-LOCKING COARSE PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	MS EQUIVALENT	CROSS REFERENCE COMPETITOR
1/4-20	1420N0250	MS122081	MS21208C4-10	1185-4CN250
	0375	121	15	375
	0500	161	20	500
	0625	201	25	625
	0750	241	30	750
5/16-18	51618N0312	MS122082	MS21208C5-10	1185-5CN312
	0469	122	15	469
	0625	162	20	625
	0781	202	25	781
	0938	242	30	938
3/8-16	3816N0375	MS122083	MS21208C6-10	1185-6CN375
	0562	123	15	562
	0750	163	20	750
	0938	203	25	938
	1125	243	30	1125
7/16-14	71614N0438	MS122084	MS21208C7-10	1185-7CN438
	0656	124	15	656
	0875	164	20	875
	1094	204	25	1094
	1312	244	30	1312
1/2-13	1213N0500	MS122085	MS21208C8-10	1185-8CN500
	0750	125	15	750
	1000	165	20	1000
	1250	205	25	1250
	1500	245	30	1500
9/16-12	91612N0562	MS122086	MS21208C9-10	1185-9CN562
	0844	126	15	844
	1125	166	20	1125
	1408	206	25	1408
	1688	246	30	1688
5/8-11	5811N0625	MS122087	MS21208C10-10	1185-10CN625
	0938	127	15	938
	1250	167	20	1250
	1562	207	25	1562
	1875	247	30	1875
3/4-10	3410N0750	MS122088	MS21208C12-10	1185-12CN750
	1125	128	15	1125
	1500	168	20	1500
	1875	208	25	1875
	2250	248	30	2250

STANDARD BULK

NON-LOCKING COARSE PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	MS EQUIVALENT	CROSS REFERENCE COMPETITOR
7/8-9	789N0875	MS122089	MS21208C14-10	1185-14CN875
	1312	129	15	1312
	1750	169	20	1750
	2188	209	25	2188
	2625	249	30	2625
1-8	18N1000	MS122090	MS21208C16-10	1185-16CN1000
	1500	130	15	1500
	2000	170	20	2000
	2500	210	25	2500
	3000	250	30	3000
1 1/8-7	1187N1125	MS122091	MS21208C18-10	118518CN1125
	1688	131	15	1688
	2250	171	20	2250
	2812	211	25	2812
	3375	251	30	3375
1 1/4-7	1147N1250	MS122092	MS21208C20-10	1185-20CN1250
	1875	132	15	1875
	2500	172	20	2500
	3125	212	25	3125
	3750	252	30	3750
1 3/8-6	1386N1375	MS122093	MS21208C22-10	1185-22CN1375
	2052	133	15	2052
	2750	173	20	2750
	3438	213	25	3438
	4125	253	30	4125
1 1/2-6	1126N1500	MS122094	MS21208C24-10	1185-24CN1500
	2250	134	15	2250
	3000	174	20	3000
	3750	214	25	3750
	4500	254	30	4500

When ordering Inconel per AS7246 add 'X' at the end of the part number and before the plating letter. To specify Phosphor Bronze per AMS 7247 material add 'B' after the part number and before the plating letter and for Nitronic 60 per AMS 5848B add "N".

To order Dry Film Lube per AS5272 add an 'L' at the end of the number. 'W' appears after the 'N' in the competitor's part number. Example: c/r1185-24CNW1500, 1126N1500L. To request Cad Plate per QQ-P-416 Rev. F add an 'P' at the end of the number. 'Y' appears after the 'N' in the competitor's part number. Example: 1185-24CNY1500, 1126N1500P. For Primer Free per Xylan (R) 5251/840 Black add an 'H' at the end of the number. 'PF' appears after the 'N' in the competitor's part number. Example: 1185-24CNPF1500, 1126N1500H. For Silver Plate per AMS 2411 or QQ-S-365 add 'V' at the end of the part number. Example: 1185-24CNV1500, 1126N1500V.

To request left hand thread add 'LH' at the end of the part number and before plating letter.

NON-LOCKING FINE PART NUMBERS

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	MS EQUIVALENT	CROSS REFERENCE COMPETITOR
3-56	356N0099	MS124670	MS21208F03-10	1191-03CN099
	0148	710	15	148
	0198	750	20	198
	0248	790	25	248
	0297	830	30	297
4-48	448N0112	MS124671	MS21208F04-10	1191-04CN0112
	0168	711	15	168
	0224	751	20	224
	0280	791	25	280
	0336	831	30	336
6-40	640N0138	MS124653	MS21208F06-10	1191-06CN0138
	0207	693	15	207
	0276	733	20	276
	0345	773	25	345
	0414	813	30	414
8-36	836N0164	MS124654	MS21208F08-10	1191-2CN0164
	0246	694	15	246
	0328	734	20	328
	0410	774	25	410
	0492	814	30	492
10-32	1032N0190	MS124655	MS21208F1-10	1191-3CN0190
	0285	695	15	285
	0380	735	20	380
	0475	775	25	475
	0570	815	30	570
1/4-28	1428N0250	MS124656	MS21208F4-10	1191-4CN250
	0375	696	15	375
	0500	736	20	500
	0625	776	25	625
	0750	816	30	750
5/16-24	51624N0312	MS124657	MS21208F5-10	1191-5CN312
	0469	697	15	469
	0625	737	20	625
	0781	777	25	781
	0938	817	30	938
3/8-24	3824N0375	MS124658	MS21208F6-10	1191-6CN375
	0562	698	15	562
	0750	738	20	750
	0938	778	25	938
	1125	818	30	1125

STANDARD BULK

NON-LOCKING FINE PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	MS EQUIVALENT	CROSS REFERENCE COMPETITOR
7/16-20	71620N0438	MS124659	MS21208F7-10	1191-7CN438
	0656	699	15	656
	0875	739	20	875
	1094	779	25	1094
	1312	819	30	1312
1/2-20	1220N0500	MS124660	MS21208F8-10	1191-8CN500
	0750	700	15	750
	1000	740	20	1000
	1250	780	25	1250
	1500	820	30	1500
9/16-18	91618N0562	MS124661	MS21208F9-10	1191-9CN562
	0844	701	15	844
	1125	741	20	1125
	1406	781	25	1406
	1688	821	30	1688
5/8-18	5818N0625	MS124662	MS21208F10-10	1191-10CN625
	0938	702	15	938
	1250	742	20	1250
	1562	782	25	1562
	1875	822	30	1875
3/4-16	3416N0750	MS124663	MS21208F12-10	1191-12CN750
	1125	703	15	1125
	1500	743	20	1500
	1875	783	25	1875
	2250	823	30	2250
7/8-14	7814N0875	MS124664	MS21208F14-10	1191-14CN875
	1312	704	15	1312
	1750	744	20	1750
	2188	784	25	2188
	2625	824	30	2625
1-12	112N1000	MS124651	MS21208F16-10	1191-161CN1000
	1500	691	15	1500
	2000	731	20	2000
	2500	771	25	2500
	3000	811	30	3000
1-14	114N1000	MS124665	-	1191-16CN1000
	1500	705	-	1500
	2000	745	-	2000
	2500	785	-	2500
	3000	825	-	3000

NON-LOCKING FINE PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	MS EQUIVALENT	CROSS REFERENCE COMPETITOR
1-1/8-12	11812N1125	MS124666	MS21208F18-10	1191-18CN1125
	1688	706	15	1688
	2250	746	20	2250
	2812	786	25	2812
	3375	826	30	3375
1-1/4-12	11412N1250	MS124667	MS21208F20-10	1191-20CN1250
	1875	707	15	1875
	2500	747	20	2500
	3125	787	25	3125
	3750	827	30	3750
1-3/8-12	13812N1375	MS124668	MS21208F22-10	1191-22CN1375
	2062	708	15	2062
	2750	748	20	2750
	3438	788	25	3438
	4125	828	30	4125
1-1/2-12	11212N1500	MS124669	MS21208F24-10	1191-24CN1500
	2250	709	15	2250
	3000	749	20	3000
	3750	789	25	3750
	4500	829	30	4500

When ordering Inconel per AS7246 add 'X' at the end of the part number and before the plating letter. To specify Phosphor Bronze per AMS 7247 material add 'B' after the part number and before the plating letter.

To request Dry Film Lube per ASS272 add an 'L' at the end of the number. 'W' appears after the 'N' in the competitor's part number. Example: MS124669L, c/r1191-24CNW1500 or 11212N1500L.

To request Cad Plate per QQ-P416 Rev. F add an 'P' at the end of the number. 'Y' appears after the 'N' in the competitor's part number. Example: MS124669P, 1191-24CNY1500 or 11212N1500P.

To request Silver Plate per QQ-S365 add 'V' at the end of the part number. Example: MS124669V or 11212N1500V.

For Primer Free per Xylan (R) 5251/840 Black add an 'H' at the end of the number. 'PF' appears after the 'N' in the competitor's part number. Example: 1191-24CNPF1500, 11212N1500H.

To request left hand thread add 'LH' at the end of the part number and before plating letter.

STANDARD BULK

LOCKING COARSE PART NUMBERS

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
2-56	256L0086	MS21209C02-10	3585-02CN086	1/4-20	1420L0250	MS21209C4-10	3585-4CN250
	0129	15	129		0375	15	375
	0172	20	172		0500	20	500
	0215	25	215		0625	25	625
	0258	30	258		0750	30	750
3-48	348L0099	MS21209C03-10	3585-03CN099	5/16-18	51618L0312	MS21209C5-10	3585-5CN312
	0148	15	148		0469	15	469
	0198	20	198		0625	20	625
	0248	25	248		0781	25	781
	0297	30	297		0938	30	938
4-40	440L0112	MS21209C04-10	3585-04CN112	3/8-16	3816L0375	MS21209C6-10	3585-6CN375
	0168	15	168		0562	15	562
	0224	20	224		0750	20	750
	0280	25	280		0938	25	938
	0336	30	336		1125	30	1125
5-40	540L0125	MS21209C05-10	3583-05CN125	7/16-14	71614L0438	MS21209C7-10	3585-7CN438
	0188	15	188		0656	15	656
	0250	20	250		0875	20	875
	0312	25	312		1094	25	1094
	0375	30	375		1312	30	1312
6-32	632L0138	MS21209C06-10	3585-06CN138	1/2-13	1213L0500	MS21209C8-10	3585-8CN500
	0207	15	207		0750	15	750
	0276	20	276		1000	20	1000
	0345	25	345		1250	25	1250
	0414	30	414		1500	30	1500
8-32	832L0164	MS21209C08-10	3585-2CN164	9/16-12	91612L0562	MS21209C9-10	3585-9CN562
	0246	15	246		0844	15	844
	0328	20	328		1125	20	1125
	0410	25	410		1408	25	1408
	0492	30	492		1688	30	1688
10-24	1024L0190	MS21209C1-10	3585-3CN190	5/8-11	5811L0625	MS21209C10-10	3585-10CN625
	0285	15	285		0938	15	938
	0380	20	380		1250	20	1250
	0475	25	475		1562	25	1562
	0570	30	570		1875	30	1875
12-24	1224L0216	MS21209C2-10	3585-1CN216	3/4-10	3410L0750	MS21209C12-10	3585-12CN750
	0324	15	324		1125	15	1125
	0432	20	432		1500	20	1500
	0540	25	540		1875	25	1875
	0648	30	648		2250	30	2250

LOCKING COARSE PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
7/8-9	789L0875	MS21209C14-10	3585-14CN875
	1312	15	1312
	1750	20	1750
	2188	25	2188
	2625	30	2625
1-8	18L1000	MS21209C16-10	3585-16CN1000
	1500	15	1500
	2000	20	2000
	2500	25	2500
	3000	30	3000
1 1/8-7	1187L1125	MS21209C18-10	3585-18CN1125
	1688	15	1688
	2250	20	2250
	2812	25	2812
	3375	30	3375
1 1/4-7	1147L1250	MS21209C20-10	3585-20CN1250
	1875	15	1875
	2500	20	2500
	3125	25	3125
	3750	30	3750
1 3/8-6	1386L1375	MS21209C22-10	3585-22CN1375
	2052	15	2052
	2750	20	2750
	3438	25	3438
	4125	30	4125
1 1/2-6	1126L1500	MS21209C24-10	3585-24CN1500
	2250	15	2250
	3000	20	3000
	3750	25	3750
	4500	30	4500

When ordering Inconel per AS7246 add 'X' at the end of the part number and before the plating letter. To specify Phosphor Bronze per AMS 7247 material add 'B' after the part number and before the plating letter.

To request Dry Film Lube per AS5272 add an 'L' at the end of the number. 'W' appears after the 'N' in the competitor's part number. Example: MS21209C1410L, c/r3585-14CNW0875 or 789L0875L.

To request Cad Plate per QQ-P-416 Rev. F add an 'P' at the end of the number. 'Y' appears after the 'N' in the competitor's part number. Example: MS21209C1410P, c/r3585-14CNY0875 or 789L0875P.

To request Silver Plate per QQ-S-365 add 'V' at the end of the part number. Example: MS21209C1410V or 789L0875V.

For Primer Free per Xylan (R) 5251/840 Black add an 'H' at the end of the number. 'PF' appears after the 'N' in the competitor's part number. Example: 789L0875H/3585-24CNPF1500.

To request left hand thread add 'LH' at the end of the part number and before plating letter.

STANDARD BULK

LOCKING FINE PART NUMBERS

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
3-56	356L0099	MS21209F03-10	3591-03CN099	7/16-20	71620L0438	MS21209F7-10	3591-7CN438
	0148	15	148		0656	15	656
	0198	20	198		0875	20	875
	0248	25	248		1094	25	1094
	0297	30	297		1312	30	1312
4-48	448L0112	MS21209F04-10	3591-04CN112	1/2-20	1220L0500	MS21209F8-10	3591-8CN500
	0168	15	168		0750	15	750
	0224	20	224		1000	20	1000
	0280	25	280		1250	25	1250
	0336	30	336		1500	30	1500
6-40	640L0138	MS21209F06-10	3591-06CN138	9/16-18	91618L0562	MS21209F9-10	3591-9CN562
	0207	15	207		0844	15	844
	0276	20	276		1125	20	1125
	0345	25	345		1408	25	1408
	0414	30	414		1688	30	1688
8-36	836L0164	MS21209F08-10	3591-2CN164	5/8-18	5818L0625	MS21209F10-10	3591-10CN625
	0246	15	246		0938	15	938
	0328	20	328		1250	20	1250
	0410	25	410		1562	25	1562
	0492	30	492		1875	30	1875
10-32	1032L0190	MS21209F1-10	3591-3CN190	3/4-16	3416L0750	MS21209F12-10	3591-12CN750
	0285	15	285		1125	15	1125
	0380	20	380		1500	20	1500
	0475	25	475		1875	25	1875
	0570	30	570		2250	30	2250
1/4-28	1428L0250	MS21209F4-10	3591-4CN250	7/8-14	7814L0875	MS21209F14-10	3591-14CN875
	0375	15	375		1312	15	1312
	0500	20	500		1750	20	1750
	0625	25	625		2188	25	2188
	0750	30	750		2625	30	2625
5/16-24	51624L0312	MS21209F510	3591-5CN312	1-12	112L1000	MS21209F16-10	3591-161CN1000
	0469	15	469		1500	15	1500
	0625	20	625		2000	20	2000
	0781	25	781		2500	25	2500
	0938	30	938		3000	30	3000
3/8-24	3824L0375	MS21209F6-10	3591-6CN375	1-14	114L1000	-	3591-16CN1000
	0562	15	562		1500	-	1500
	0750	20	750		2000	-	2000
	0938	25	938		2500	-	2500
	1125	30	1125		3000	-	3000

LOCKING FINE PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
1-1/8-12	11812L1125	MS21209F18-10	3591-18CN1125
	1688	15	1688
	2250	20	2250
	2812	25	2812
	3375	30	3375
1-1/4-12	11412L1250	MS21209F20-10	3591-20CN1250
	1875	15	1875
	2500	20	2500
	3125	25	3125
	3750	30	3750
1-3/8-12	13812L1375	MS21209F22-10	3591-22CN1375
	2052	15	2052
	2750	20	2750
	3438	25	3438
	4125	30	4125
1-1/2-12	11212L1500	MS21209F24-10	3591-24CN1500
	2250	15	2250
	3000	20	3000
	3750	25	3750
	4500	30	4500

When ordering Inconel per AS7246 add 'X' at the end of the part number and before the plating letter. To specify Phosphor Bronze per AMS 7247 material add 'B' after the part number and before the plating letter.

To request Dry Film Lube per ASS272 add an 'L' at the end of the number. 'W' appears after the 'N' in the competitor's part number. Example: MS21209F1810L, c/r3591-18CNW1125 or 11812L1125L.

To request Cad Plate per QQ-P-416 Rev. F add an 'P' at the end of the number. 'Y' appears after the 'N' in the competitor's part number. Example: MS21209F1810P, c/r3591-18CNY1125 or 11812L1125P.

To request Silver Plate per QQ-S-365 add 'V' at the end of the part number. Example: MS21209F1810V or 11812L1125V.

For Primer Free per Xylan (R) 5251/840 Black add an 'H' at the end of the number. 'PF' appears after the 'N' in the competitor's part number. Example: 11212L15H/3591-24CNPF1500.

To request left hand thread add 'LH' at the end of the part number and before plating letter.

STANDARD BULK

HELICAL WIRE

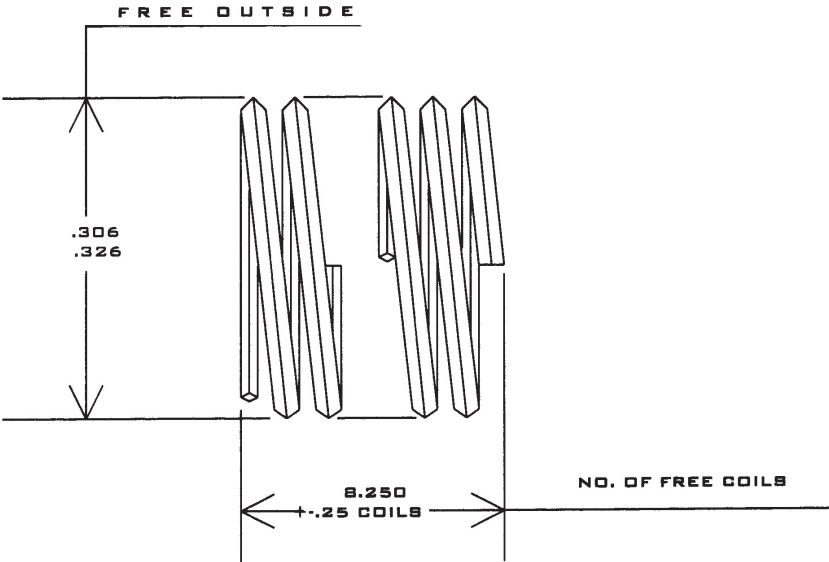
STANDARD LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	NOMINAL LENGTH					NUMBER OF COILS					OUTSIDE DIAMETER	
	NOMINAL LENGTH					NOMINAL LENGTH					OUTSIDE DIAMETER	
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	Min.	Max.
UNIFIED COARSE												
2(.086)-56	0.086	0.129	0.172	0.215	0.258	3	5-1/4	7-3/8	9-5/8	11-7/8	.110	.119
3(.099)-48	0.099	0.148	0.198	0.248	0.297	2-7/8	5	7-1/4	9-3/8	11-1/2	.128	.139
4(.112)-40	0.112	0.168	0.224	0.280	0.336	2-3/4	4-3/4	6-3/4	8-7/8	10-7/8	.144	.159
5(.125)-40	0.125	0.188	0.250	0.312	0.375	3-1/4	5-1/2	7-3/4	10	12-1/4	.158	.173
6(.138)-32	0.138	0.207	0.276	0.345	0.414	2-3/4	4-3/4	6-7/8	8-7/8	10-3/4	.178	.193
8(.086)-32	0.164	0.246	0.328	0.410	0.492	3-1/2	6	8-3/8	10-3/4	13-1/4	.205	.220
10(.190)-24	0.190	0.285	0.380	0.475	0.570	2-7/8	5	7-1/8	9-1/4	11-3/8	.244	.259
12(.216)-24	0.216	0.324	0.432	0.540	0.648	3-1/2	6	8-3/8	10-5/8	13-1/8	.270	.285
1/4(.250)-20	0.250	0.375	0.500	0.625	0.750	3-3/8	5-3/4	8	10-3/8	12-3/4	.310	.330
5/16(.3125)-18	0.312	0.469	0.625	0.781	0.938	4	6-5/8	9-1/4	11-7/8	14-5/8	.380	.400
3/8(.3750)-16	0.375	0.562	0.750	0.938	1.125	4-3/8	7-1/4	10	12-7/8	15-3/4	.452	.472
7/16(.4375)-14	0.438	0.656	0.875	1.094	1.312	4-1/2	7-3/8	10-1/4	13-1/8	16-1/8	.526	.551
1/2(.5000)-13	0.500	0.750	1.000	1.250	1.500	4-7/8	7-7/8	11	14-1/8	17-1/8	.597	.622
9/16(.5625)-12	0.562	0.844	1.125	1.406	1.688	5-1/8	8-1/4	11-1/2	14-3/4	17-7/8	.669	.694
5/8(.6250)-11	0.625	0.938	1.250	1.562	1.875	5-1/4	8-1/2	11-3/4	15	18-3/8	.742	.767
3/4(.7500)-10	0.750	1.125	1.500	1.875	2.250	5-7/8	9-3/8	13	16-1/2	20-1/8	.881	.906
7/8(.8750)-9	0.875	1.312	1.750	2.188	2.625	6-1/4	10	13-3/4	17-1/2	21-1/4	1.022	1.052
1(1.0000)-8	1.000	1.500	2.000	2.500	3.000	6-3/8	10-1/8	14	17-3/4	21-5/8	1.166	1.196
1 1/8(1.1250)-7	1.125	1.688	2.250	2.812	3.375	6-1/8	9-7/8	13-5/8	17-1/2	21-1/4	1.315	1.355
1 1/4(1.2500)-7	1.250	1.875	2.500	3.125	3.750	7	11-1/4	15-3/8	19-1/2	23-3/4	1.443	1.483
1 3/8(1.3750)-6	1.375	2.062	2.750	3.438	4.125	6-1/2	10-1/2	14-3/8	18-3/8	22-1/4	1.598	1.643
1 1/2(1.5000)-13	1.500	2.250	3.000	3.750	4.500	7-1/4	11-1/2	15-7/8	20-1/8	24-1/2	1.727	1.772

STANDARD LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	NOMINAL LENGTH					NUMBER OF COILS					OUTSIDE DIAMETER	
	NOMINAL LENGTH					NOMINAL LENGTH					OUTSIDE DIAMETER	
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	Min.	Max.
UNIFIED FINE												
3(.099)-56	0.099	0.148	0.198	0.248	0.297	3-3/8	5-5/8	8	10-3/8	12-5/8	.131	.146
4(.112)-48	0.112	0.168	0.224	0.280	0.336	3-3/8	5-5/8	7-7/8	10-1/4	12-1/2	.147	.162
6(.138)-40	0.138	0.207	0.276	0.345	0.414	3-1/2	6	8-3/8	10-3/4	13-1/4	.173	.193
8(.164)-36	0.164	0.246	0.328	0.410	0.492	3-7/8	6-1/2	9-1/8	11-5/8	14-1/4	.204	.224
10(.190)-32	0.190	0.285	0.380	0.475	0.570	4-1/8	6-7/8	9-1/2	12	14-7/8	.236	.256
1/4(.2500)-28	0.250	0.375	0.500	0.625	0.750	5	8-1/4	11-3/8	14-1/2	17-5/8	.306	.326
5/16(.3125)-24	0.312	0.469	0.625	0.781	0.938	5-1/2	8-7/8	12-1/4	15-5/8	19	.380	.400
3/8(.3750)-24	0.375	0.562	0.750	0.938	1.125	6-7/8	11	15	19-1/8	23-1/8	.448	.468
7/16(.4375)-20	0.438	0.656	0.875	1.094	1.312	6-5/8	10-5/8	14-5/8	18-1/2	22-1/2	.524	.549
1/2(.5000)-20	0.500	0.750	1.000	1.250	1.500	7-7/8	12-3/8	16-7/8	21-3/8	25-7/8	.592	.617
9/16(.5625)-18	0.562	0.844	1.125	1.406	1.688	8	12-1/2	17-1/8	21-3/4	26-1/4	.666	.691
5/8(.6250)-18	0.625	0.938	1.250	1.562	1.875	9	14-1/8	19-1/4	24-1/4	29-3/8	.733	.758
3/4(.7500)-16	0.750	1.125	1.500	1.875	2.250	9-3/4	15-1/8	20-5/8	26	31-1/2	.876	.901
7/8(.8750)-14	0.875	1.312	1.750	2.188	2.625	9-7/8	15-1/2	21-1/8	26-5/8	32-1/4	1.021	1.051
1(1.0000)-14	1.000	1.500	2.000	2.500	3.000	11-1/2	17-7/8	30-5/8	24-1/4	37	1.156	1.186
1(1.0000)-12	1.000	1.500	2.000	2.500	3.000	9-5/8	15	20-1/2	26	31-1/2	1.169	1.199
1 1/8(1.1250)-12	1.125	1.688	2.250	2.812	3.375	11-1/8	17-1/4	23-3/8	29-1/2	35-3/4	1.304	1.334
1 1/4(1.2500)-12	1.250	1.875	2.500	3.125	3.750	12-1/2	19-3/8	26-1/4	33	39-7/8	1.439	1.469
1 3/8(1.3750)-12	1.375	2.062	2.750	3.438	4.125	13-3/4	21-3/8	28-7/8	36-1/2	44	1.575	1.610
1 1/2(1.5000)-12	1.500	2.250	3.000	3.750	4.500	15-1/4	23-1/2	31-5/8	39-7/8	48-1/8	1.710	1.745

.306
.326



STANDARD LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	WEIGHT LB / 100					NOMINAL THREAD SIZE	WEIGHT LB / 100				
	NOMINAL LENGTH						NOMINAL LENGTH				
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.		1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.
UNIFIED COARSE						UNIFIED FINE					
2(.086)-56	.0051	.0084	.0117	.015	.0183	3(.099)-56	.0051	.0084	.0117	.0192	0.234
3(.099)-48	.0077	.0125	.0174	.0224	.0271	4(.112)-48	.0099	.0160	.0222	.0285	0.346
4(.112)-40	.0121	.0196	.0272	.0348	.0423	6(.138)-40	.020	.0304	.0408	.0512	0.616
5(.125)-40	.0154	.0250	.0345	.044	.0536	8(.164)-36	.0325	.0502	.0680	.0857	1.034
						10(.190)-32	.0474	.0784	.122	.140	0.170
6(.138)-32	.0243	.0384	.0525	.0666	.0807	1/4(.2500)-28	.109	.155	.212	.276	0.338
8(.086)-32	.0355	.0556	.0776	.1008	.125	5/16(.3125)-24	.180	.284	.397	.490	0.602
10(.190)-24	.0537	.0899	.1330	.172	.219	3/8(.3750)-24	.259	.420	.533	.709	0.862
12(.216)-24	.077	.119	.172	.208	.279	7/16(.4375)-20	.459	.699	.917	1.250	1.493
						1/2(.5000)-20	.595	.909	1.234	1.563	1.887
1/4(.250)-20	.145	.196	.308	.385	.490	9/16(.5625)-18	.826	1.266	1.695	2.128	2.564
5/16(.3125)-18	.232	.369	.510	.658	.806	5/8(.6250)-18	1.010	1.562	2.083	2.632	3.030
3/8(.3750)-16	.391	.625	.862	1.064	1.316	3/4(.7500)-16	1.695	2.564	3.448	4.348	5.263
7/16(.4375)-14	.667	.943	1.250	1.667	2.000	7/8(.8750)-14	2.564	4.000	5.263	6.667	7.692
						1(1.0000)-14	3.448	5.263	6.667	8.333	10.000
1/2(.5000)-13	.794	1.316	1.852	2.273	2.857	1(1.0000)-12	3.875	6.063	8.188	10.406	12.815
9/16(.5625)-12	1.235	1.961	2.632	3.226	4.000	1 1/8(1.1250)-12	4.917	7.572	10.227	12.882	15.536
5/8(.6250)-11	1.515	2.439	3.448	4.348	5.263	1 1/4(1.2500)-12	6.254	9.502	12.750	15.998	19.246
3/4(.7500)-10	2.778	4.000	5.263	6.667	8.333	1 3/8(1.3750)-12	7.359	11.276	15.194	19.111	23.028
7/8(.8750)-9	4.545	6.250	8.333	10.000	12.500	1 1/2(1.5000)-12	8.799	13.650	18.501	23.352	28.203
1(1.0000)-8	5.882	9.091	12.500	14.286	16.670						
1 1/8(1.1250)-7	8.392	12.928	17.464	22.000	26.536						
1 1/4(1.2500)-7	10.487	16.070	21.653	27.236	32.819						
1 3/8(1.3750)-6	14.505	22.264	30.122	37.981	45.839						
1 1/2(1.5000)-13	17.563	26.915	36.268	45.620	54.972						

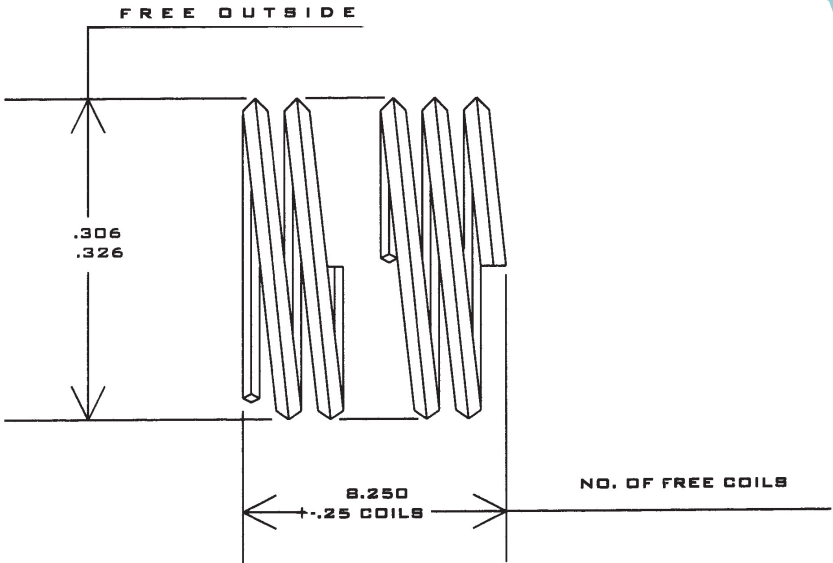
METRIC LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	WEIGHT LB/100					NOMINAL THREAD SIZE	WEIGHT LB/100				
	NOMINAL LENGTH						NOMINAL LENGTH				
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.		1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.
C O A R S E						F I N E					
M2x.4	.002	.003	.005	.007	.008	M8x1	.083	.132	.180	.228	.277
M2.2x0.45	.002	.004	.006	.008	.009	M10x1	.136	.212	.288	.362	.439
M2.5x0.45	.003	.006	.008	.010	.012	M10x1.25	.162	.257	.352	.446	.541
M3x0.5	.006	.009	.012	.016	.019	M12x1.25	.240	.376	.512	.649	.785
M3.5x0.6	.009	.014	.020	.026	.031						
M4x0.7	.014	.022	.031	.039	.048	M12x1.5	.281	.444	.608	.772	.935
M5x0.8	.025	.040	.055	.070	.085	M14x1.5	.391	.614	.836	1.059	1.282
M6x1	.044	.072	.099	.126	.153	M16x1.5	.519	.810	1.101	1.392	1.682
						M18x1.5	.665	1.033	1.401	1.769	2.137
M7x1	.062	.099	.136	.173	.210	M20x1.5	.830	1.284	1.739	2.193	2.647
M8x1.25	.100	.160	.221	.281	.342	M22x1.5	1.013	1.563	2.113	2.662	3.212
M10x1.5	.188	.302	.416	.530	.643	M18x2	.856	1.347	1.838	2.328	2.819
M12x1.75	.318	.509	.700	.890	1.081	M20x2	1.072	1.678	2.284	2.890	3.495
M14x2	.497	.794	1.091	1.388	1.685	M22x2	1.313	2.046	2.779	3.512	4.245
M16x2	.665	1.053	1.441	1.828	2.216	M24x2	1.576	2.448	3.321	4.193	5.065
M18x2.5	1.031	1.645	2.258	2.872	3.486	M27x2	2.017	3.121	4.225	5.329	6.433
M20x2.5	1.297	2.054	2.812	3.569	4.326	M30x2	2.513	3.876	5.238	6.601	7.964
M22x2.5	1.593	2.510	3.426	4.342	5.259	M33x2	3.063	4.712	6.361	8.010	9.659
M24x3	2.239	3.548	4.857	6.166	7.474	M36x2	3.671	5.633	7.595	9.557	11.519
M27x3	2.884	4.540	6.196	7.853	9.509	M39x2	4.331	6.634	8.936	11.239	13.542
M33x3	4.420	6.894	9.367	11.841	14.315	M36x3	5.316	8.260	11.204	14.147	17.091
						M39x3	6.290	9.745	13.200	16.654	20.109

HELICAL WIRE

METRIC LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	NOMINAL LENGTH					NUMBER OF COILS					OUTSIDE DIAMETER	
						NOMINAL LENGTH						
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	Min.	Max.
C O A R S E												
M2x.4	2.0	3.0	4.0	5.0	6.0	3-1/4	5-1/2	7-3/4	10-1/8	12-3/8	2.50	2.70
M2.2x0.45	2.2	3.3	4.4	5.5	6.6	3-1/8	5-3/8	7-5/8	9-7/8	12-1/8	2.80	3.00
M2.5x0.45	2.5	3.8	5.0	6.3	7.5	3-3/8	5-3/4	8-1/8	10-1/2	12-3/4	3.20	3.70
M3x0.5	3.0	4.5	6.0	7.5	9.0	3-3/4	6-3/8	8-7/8	11-3/8	13-7/8	3.80	4.35
M3.5x0.6	3.5	5.3	7.0	8.8	10.5	3-3/4	6-3/8	8-3/4	11-3/8	13-3/4	4.40	4.95
M4x0.7	4.0	6.0	8.0	10.0	12.0	3-5/8	6-1/8	8-5/8	11-1/8	13-5/8	5.05	5.60
M5x0.8	5.0	7.5	10.0	12.5	15.0	4-1/8	6-7/8	9-5/8	12-3/8	15-1/8	6.25	6.80
M6x1	6.0	9.0	12.0	15.0	18.0	4	6-3/4	9-1/2	12-1/8	14-7/8	7.40	7.95
M7x1	7.0	10.5	14.0	17.5	21.0	4-7/8	8	11-1/8	14-1/8	17-1/4	8.65	9.20
M8x1.25	8.0	12.0	16.0	20.0	24.0	4-1/2	7-3/8	10-1/4	13-1/4	16-1/8	9.80	10.35
M10x1.5	10.0	15.0	20.0	25.0	30.0	4-7/8	8	11-1/8	14-1/4	17-3/8	11.95	12.50
M12x1.75	12.0	18.0	24.0	30.0	36.0	5	8-1/4	11-1/2	14-5/8	17-7/8	14.30	15.00
M14x2	14.0	21.0	28.0	35.0	42.0	5-1/8	8-1/2	11-3/4	15	18-3/8	16.65	17.35
M16x2	16.0	24.0	32.0	40.0	48.0	6-1/8	9-3/4	13-1/2	17-1/4	21	18.90	19.60
M18x2.5	18.0	27.0	36.0	45.0	54.0	5-3/8	8-7/8	12-1/4	15-5/8	19	21.30	22.00
M20x2.5	20.0	30.0	40.0	50.0	60.0	6-1/8	9-7/8	13-5/8	17-3/8	21-1/8	23.55	24.40
M22x2.5	22.0	33.0	44.0	55.0	66.0	6-3/4	10-7/8	14-7/8	19	23-1/8	25.90	26.90
M24x3	24.0	36.0	48.0	60.0	72.0	6-1/8	10	13-3/4	17-1/2	21-3/8	28.00	29.00
M27x3	27.0	40.5	54.0	67.5	81.0	7	11-1/4	15-1/2	19-3/4	24	31.40	32.40
M33x3	33.0	49.5	66.0	82.5	99.0	8-3/4	13-7/8	19	24-1/8	29-1/4	38.10	39.50
M30x3.5	30.0	45.0	60.0	75.0	90.0	6-3/4	10-3/4	14-7/8	18-7/8	23	34.80	36.00
M33x3.5	33.0	49.5	66.0	82.5	99.0	7-1/2	12	16-1/2	21	25-3/8	37.80	39.20
M36x4	36.0	54.0	72.0	90.0	108.0	7-1/8	11-3/8	15-5/8	19-7/8	24-1/4	41.50	42.90
M39x4	39.0	58.5	78.0	97.5	117.0	7-7/8	12-1/2	17-1/8	21-3/4	26-3/8	44.60	46.00



METRIC LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	NOMINAL LENGTH					NUMBER OF COILS					OUTSIDE DIAMETER	
						NOMINAL LENGTH						
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.	Min.	Max.
F I N E												
M8x1	8.0	12.0	16.0	20.0	24.0	5-7/8	9-3/8	13	16-1/2	20-1/8	9.70	10.25
M10x1	10.0	15.0	20.0	25.0	30.0	7-5/8	12	16-1/2	21	25-1/2	11.95	12.50
M10x1.25	10.0	15.0	20.0	25.0	30.0	5-7/8	9-1/2	13-1/8	16-3/4	20-3/8	12.10	12.65
M12x1.25	12.0	18.0	24.0	30.0	36.0	7-1/4	11-5/8	15-7/8	20-1/4	24-1/2	14.30	15.00
M12x1.5	12.0	18.0	24.0	30.0	36.0	6	9-5/8	13-3/8	17	20-3/4	14.25	14.95
M14x1.5	14.0	21.0	28.0	35.0	42.0	7-1/8	11-3/8	15-5/8	20	24-1/4	16.55	17.25
M16x1.5	16.0	24.0	32.0	40.0	48.0	8-1/4	13-1/8	18	22-3/4	27-5/8	18.90	19.60
M18x1.5	18.0	27.0	36.0	45.0	54.0	9-1/2	15	20-3/8	25-7/8	31-3/8	21.05	21.75
M20x1.5	20.0	30.0	40.0	50.0	60.0	10-3/4	16-7/8	22-7/8	28-7/8	35	23.15	24.00
M22x1.5	22.0	33.0	44.0	55.0	66.0	11-7/8	18-1/2	25-1/8	31-5/8	38-1/4	25.55	26.45
M18x2	18.0	27.0	36.0	45.0	54.0	7	11-1/8	15-3/8	19-1/2	23-7/8	21.15	21.85
M20x2	20.0	30.0	40.0	50.0	60.0	7-7/8	12-1/2	17-1/4	21-7/8	26-1/2	23.20	24.05
M22x2	22.0	33.0	44.0	55.0	66.0	8-3/4	13-3/4	18-7/8	23-7/8	28	25.60	26.50
M24x2	24.0	36.0	48.0	60.0	72.0	9-1/2	15	20-3/8	25-7/8	31-1/4	28.10	29.10
M27x2	27.0	40.5	54.0	67.5	81.0	10-7/8	17	23-1/4	29-3/8	35-1/2	31.30	32.30
M30x2	30.0	45.0	60.0	75.0	90.0	12-1/4	19-1/8	25-7/8	32-3/4	39-1/2	34.50	35.70
M33x2	33.0	49.5	66.0	82.5	99.0	13-5/8	21-1/8	28-5/8	36	43-1/2	37.80	39.20
M36x2	36.0	54.0	72.0	90.0	108.0	15	23-3/4	31-3/8	39-1/2	47-3/4	41.00	42.40
M39x2	39.0	58.5	78.0	97.5	117.0	16-3/8	25-1/4	34-1/8	43	51-7/8	44.30	45.70
M36x3	36.0	54.0	72.0	90.0	108.0	9-3/4	15-1/4	20-7/8	26-1/2	32	41.30	42.70
M39x3	39.0	58.5	78.0	97.5	117.0	10-3/4	16-3/4	22-3/4	28-7/8	34-7/8	44.40	45.80

METRIC BULK

NON-LOCKING METRIC PART NUMBERS

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
M2 x .40N	M24N020	MA3279-140	1084-2CN020	M7 x 1.0N	M710N070	MA3279-107	1084-7CN070
	030	190	030		105	157	105
	040	240	040		140	207	140
	050	290	050		175	257	175
	060	340	060		210	307	210
M2.2 x .45N	M2245N022	MA3279-100	1084-2.2CN022	M8 x 1.0N	M810N080	MA3279-108	4255-8CN080
	033	150	033		120	158	120
	044	200	044		160	208	160
	055	250	055		200	258	200
	066	300	066		240	308	240
M2.5 x .45N	M2545N025	MA3279-101	1084-2.5CN025	M8 x 1.25N	M8125N080	MA3279-109	1084-8CN080
	038	151	038		120	159	120
	050	201	050		160	209	160
	063	251	063		200	259	200
	075	301	075		240	309	240
M3 x 0.5N	M35N030	MA3279-102	1084-3CN030	M10 x 1.0N	M1010N100	MA3279-141	4255-10CN100
	045	152	045		150	191	150
	060	202	060		200	241	200
	075	252	075		250	291	250
	090	302	090		300	341	300
M3.5 x 0.6N	M356N035	MA3279-103	1084-3.5CN035	M10 x 1.25N	M10125N100	MA3279-110	4649-10CN100
	053	153	053		150	160	150
	070	203	070		200	210	200
	088	253	088		250	260	250
	105	303	105		300	310	300
M4 x 0.7N	M47N040	MA3279-104	1084-4CN040	M10 x 1.5N	M1015N100	MA3279-111	1084-10CN100
	060	154	060		150	161	150
	080	204	080		200	211	200
	100	254	100		250	261	250
	120	304	120		300	311	300
M5 x 0.8N	M58N050	MA3279-105	1084-5CN050	M12 x 1.25N	M12125N120	MA3279-112	4649-12CN120
	075	155	075		180	162	180
	100	205	100		240	212	240
	125	255	125		300	262	300
	150	305	150		360	312	360
M6 x 1.0N	M610N060	MA3279-106	1084-6CN060	M12 x 1.5N	M1215N120	MA3279-113	3745-12CN120
	090	156	090		180	163	180
	120	206	120		240	213	240
	150	256	150		300	263	300
	180	306	180		360	313	360

NON-LOCKING METRIC PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
M12 x 1.75N	M12175N120	MA3279-114	1084-12CN120	M20 x 1.5N	M2015N200	MA3279-122	3745-20CN200
	180	164	180		300	172	300
	240	214	240		400	222	400
	300	264	300		500	272	500
	360	314	360		600	322	600
M14 x 1.5N	M1415N140	MA3279-115	3745-14CN140	M20 x 2.0N	M2020N200	MA3279-123	4266-20CN200
	210	165	210		300	173	300
	280	215	280		400	223	400
	350	265	350		500	273	500
	420	315	420		600	323	600
M14 x 2.0N	M1420N140	MA3279-116	1084-14CN140	M20 x 2.5N	M2025N200	MA3279-124	1084-20CN200
	210	166	210		300	174	300
	280	216	280		400	224	400
	350	266	350		500	274	500
	420	316	420		600	324	600
M16 x 1.5N	M1615N160	MA3279-117	3745-16CN160	M22 x 1.5N	M2215N220	MA3279-125	3745-22CN220
	240	167	240		330	175	330
	320	217	320		440	225	440
	400	267	400		550	275	550
	480	317	480		660	325	660
M16 x 2.0N	M1620N160	MA3279-118	1084-16CN160	M22 x 2.0N	M2220N220	MA3279-126	4266-22CN220
	240	168	240		330	176	330
	320	218	320		440	226	440
	400	268	400		550	276	550
	480	318	480		660	326	660
M18 x 1.5N	M1815N180	MA3279-119	3745-18CN180	M22 x 2.5N	M2225N220	MA3279-127	1084-22CN220
	270	169	270		330	177	330
	360	219	360		440	227	440
	450	269	450		550	277	550
	540	319	540		660	327	660
M18 x 2.0N	M1820N180	MA3279-120	4266-18CN180	M24 x 2.0N	M2420N240	MA3279-128	4277-24CN240
	270	170	270		360	178	360
	360	220	360		480	228	480
	450	270	450		600	278	600
	540	320	540		720	328	720
M18 x 2.5N	M1825N180	MA3279-121	1084-18CN180	M24 x 3.0N	M2430N240	MA3279-129	1084-24CN240
	270	171	270		360	179	360
	360	221	360		480	229	480
	450	271	450		600	279	600
	540	321	540		720	329	720

METRIC BULK

METRIC BULK

NON-LOCKING METRIC PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
M27 x 2.0N	M2720N270	MA3279-130	4266-27CN270	M36 x 2.0N	M3620N360	MA3279-136	4266-36CN360
	405	180	405		540	186	540
	540	230	540		720	236	720
	675	280	675		900	286	900
	810	330	810		1080	336	1080
M27 x 3.0N	M2730N270	MA3279-131	1084-27CN270	M36 x 3.0N	M3630N360	MA3279-137	4277-36CN360
	405	181	405		540	187	540
	540	231	540		720	237	720
	675	281	675		900	287	900
	810	331	810		1080	337	1080
M30 x 2.0N	M3020N300	MA3279-132	4266-30CN300	M36 x 4.0N	M3640N360	-	1084-36CN360
	450	182	450		540	-	540
	600	232	600		720	-	720
	750	282	750		900	-	900
	900	332	900		1080	-	1080
M30 x 3.0N	M3030N300	MA3279-133	-	M39 x 2.0N	M3920N390	MA3279-138	4266-39CN390
	450	183	-		585	188	585
	600	233	-		780	238	780
	750	283	-		975	288	975
	900	333	-		1170	338	1170
M30 x 3.5N	M3035N300	-	1084-30CN300	M39 x 3.0N	M3930N390	MA3279-139	4277-39CN390
	450	-	450		585	189	585
	600	-	600		780	239	780
	750	-	750		975	289	975
	900	-	900		1170	339	1170
M33 x 2.0N	M3320N330	MA3279-134	4266-33CN330	M39 x 4.0N	M3940N390	-	1084-39CN390
	495	184	495		585	-	585
	660	234	660		780	-	780
	825	284	825		975	-	975
	990	334	990		1170	-	1170
M33 x 3.0N	M3330N330	MA3279-135	-	For Dry Film Lube per ASS272 add 'L' at the end of the number. 'W' appears after the 'N' in the competitor's part number. Example: MA3280-131, 1084-27CNW-27.0 or M27x3.0N27.0L. For Cad Plate per Q Q-P-416"F" add 'P' at the end of the number. 'Y' appears after the 'N' in the competitor's part number. Example: MA3281-131, 1084-27CNY-27.0 or M27x3.0N27.0P. For Silver Plate per QQ-S-365 add 'V' at the end of the part number. Example: 1084-27CNV-27.0 or M27x3.0N27.0V. For Primer Free per Xylan (R) 5251/840 Black add an 'H' at the end of the number. 'PF' appears after the 'N' in the competitor's part number. Example: 1084-27CNPF-27.0 or M27x3.0N27.0H. For left hand thread add 'LH' at the end of the part number and before plating letter. See page 19 for letter designation for Inconel and Phosphor Bronze material.			
	495	185	-				
	660	235	-				
	825	285	-				
	990	335	-				
M33 x 3.5N	M3335N330	-	1084-33CN330				
	495	-	495				
	660	-	660				
	825	-	825				
	990	-	990				

LOCKING METRIC PART NUMBERS

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
M2 x .40L	M24L020	MA3329-140	4184-2CN020	M7 x 1.0L	M710L070	MA3329-107	4184-7CN070
	030	190	030		105	157	105
	040	240	040		140	207	140
	050	290	050		175	257	175
	060	340	060		210	307	210
M2.2 x .45L	M2245L022	MA3329-100	4184-2.2CN022	M8 x 1.0L	M810L080	MA3329-108	5255-8CN080
	033	150	033		120	158	120
	044	200	044		160	208	160
	055	250	055		200	258	200
	066	300	066		240	308	240
M2.5 x .45L	M2545L025	MA3329-101	4184-2.5CN025	M8 x 1.25L	M8125L080	MA3329-109	4184-8CN080
	038	151	038		120	159	120
	050	201	050		160	209	160
	063	251	063		200	259	200
	075	301	075		240	309	240
M3 x 0.5L	M35L030	MA3329-102	4184-3CN030	M10 x 1.0L	M1010L100	MA3329-141	5255-10CN100
	045	152	045		150	191	150
	060	202	060		200	241	200
	075	252	075		250	291	250
	090	302	090		300	341	300
M3.5 x 0.6L	M356L035	MA3329-103	4184-3.5CN035	M10 x 1.25L	M10125L100	MA3329-110	5649-10CN100
	053	153	053		150	160	150
	070	203	070		200	210	200
	088	253	088		250	260	250
	105	303	105		300	310	300
M4 x 0.7L	M47L040	MA3329-104	4184-4CN040	M10 x 1.5L	M1015L100	MA3329-111	4184-10CN100
	060	154	060		150	161	150
	080	204	080		200	211	200
	100	254	100		250	261	250
	120	304	120		300	311	300
M5 x 0.8L	M58L050	MA3329-105	4184-5CN050	M12 x 1.25L	M12125L120	MA3329-112	5649-12CN120
	075	155	075		180	162	180
	100	205	100		240	212	240
	125	255	125		300	262	300
	150	305	150		360	312	360
M6 x 1.0L	M610L060	MA3329-106	4184-6CN060	M12 x 1.5L	M1215L120	MA3329-113	5145-12CN120
	090	156	090		180	163	180
	120	206	120		240	213	240
	150	256	150		300	263	300
	180	306	180		360	313	360

METRIC BULK

METRIC BULK

LOCKING METRIC PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
M12 x 1.75L	M12175L120	MA3329-114	4184-12CN120	M20 x 1.5L	M2015L200	MA3329-122	5145-20CN200
	180	164	180		300	172	300
	240	214	240		400	222	400
	300	264	300		500	272	500
	360	314	360		600	322	600
M14 x 1.5L	M1415L140	MA3329-115	5145-14CN140	M20 x 2.0L	M2020L200	MA3329-123	5266-20CN200
	210	165	210		300	173	300
	280	215	280		400	223	400
	350	265	350		500	273	500
	420	315	420		600	323	600
M14 x 2.0L	M1420L140	MA3329-116	4184-14CN140	M20 x 2.5L	M2025L200	MA3329-124	4184-20CN200
	210	166	210		300	174	300
	280	216	280		400	224	400
	350	266	350		500	274	500
	420	316	420		600	324	600
M16 x 1.5L	M1615L160	MA3329-117	5145-16CN160	M22 x 1.5L	M2215L220	MA3329-125	5145-22CN220
	240	167	240		330	175	330
	320	217	320		440	225	440
	400	267	400		550	275	550
	480	317	480		660	325	660
M16 x 2.0L	M1620L160	MA3329-118	4184-16CN160	M22 x 2.0L	M2220L220	MA3329-126	5266-22CN220
	240	168	240		330	176	330
	320	218	320		440	226	440
	400	268	400		550	276	550
	480	318	480		660	326	660
M18 x 1.5L	M1815L180	MA3329-119	5145-18CN180	M22 x 2.5L	M2225L220	MA3329-127	4184-22CN220
	270	169	270		330	177	330
	360	219	360		440	227	440
	450	269	450		550	277	550
	540	319	540		660	327	660
M18 x 2.0L	M1820L180	MA3329-120	5266-18CN180	M24 x 2.0L	M2420L240	MA3329-128	5266-24CN240
	270	170	270		360	178	360
	360	220	360		480	228	480
	450	270	450		600	278	600
	540	320	540		720	328	720
M18 x 2.5L	M1825L180	MA3329-121	4184-18CN180	M24 x 3.0L	M2430L240	MA3329-129	4184-24CN240
	270	171	270		360	179	360
	360	221	360		480	229	480
	450	271	450		600	279	600
	540	321	540		720	329	720

LOCKING METRIC PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR	THREAD SIZE	HELICAL WIRE	AEROSPACE STANDARDS	CROSS REFERENCE COMPETITOR
M27 x 2.0L	M2720L270	MA3329-130	4266-27CN270	M36 x 2.0L	M3620L360	MA3329-136	5266-36CN360
	405	180	405		540	186	540
	540	230	540		720	236	720
	675	280	675		900	286	900
	810	330	810		1080	336	1080
M27 x 3.0L	M2730L270	MA3329-131	1084-27CN270	M36 x 3.0L	M3630L360	MA3329-137	5277-36CN360
	405	181	405		540	187	540
	540	231	540		720	237	720
	675	281	675		900	287	900
	810	331	810		1080	337	1080
M30 x 2.0L	M3020L300	MA3329-132	4266-30CN300	M36 x 4.0L	M3640L360	-	4184-36CN360
	450	182	450		540	-	540
	600	232	600		720	-	720
	750	282	750		900	-	900
	900	332	900		1080	-	1080
M30 x 3.0L	M3030L300	MA3329-133	-	M39 x 2.0L	M3920L390	MA3329-138	5266-39CN390
	450	183	-		585	188	585
	600	233	-		780	238	780
	750	283	-		975	288	975
	900	333	-		1170	338	1170
M30 x 3.5L	M3035L300	-	4184-33CN300	M39 x 3.0L	M3930L390	MA3329-139	5277-39CN390
	450	-	450		585	189	585
	600	-	600		780	239	780
	750	-	750		975	289	975
	900	-	900		1170	339	1170
M33 x 2.0L	M3320L330	MA3329-134	5266-33CN330	M39 x 4.0L	M3940L390	-	4184-39CN390
	495	184	495		585	-	585
	660	234	660		780	-	780
	825	284	825		975	-	975
	990	334	990		1170	-	1170
M33 x 3.0L	M3330L330	MA3329-135	-	When ordering Inconel per AS7246 add 'X' at the end of the part number and before the plating letter. To specify Phosphor Bronze per AMS 7247 material add 'B' after the part number and before the plating letter, and for Nitronic 60 per AMS 5848B add "N". For Dry Film Lube per AS5272 add 'L' at the end of the number. 'W' appears after the 'N' in the competitor's part number. Example: MA3330-131, 4184-27CNW-27.0 or M27x3.0L27.0L. For Cad Plate per Q Q-P-416 Rev. F add 'P' at the end of the number. 'Y' appears after the 'N' in the competitor's part number. Example: MA3331-131, 4184-27CNY-27.0 or M27x3.0L27.0P. For Silver Plate per QQ-S-365 add 'V' at the end of the part number. Example: 4184-27CNV-27.0 or M27x3.0L27.0V. For Primer Free per Xylan (R) 5251/840 Black add an 'H' at the end of the number. Example: MA3329-131H, 4184-27CNPF-27.0 or M27x3.0L27.0H.			
	495	185	-				
	660	235	-				
	825	285	-				
	990	335	-				
M33 x 3.5L	M3335L330	-	4184-36CN330				
	495	-	495				
	660	-	660				
	825	-	825				
	990	-	990				

METRIC BULK

DRILLING

The concept behind screw thread inserts is simple. Drill the hole, tap the drilled hole, install the insert. It is a relatively simple process, but the correct drilling of the initial hole is critical. If the hole is drilled correctly then the hole will be the proper diameter to accommodate the tap. The tap will create threads in the parent material that will be the proper diameter to correctly install the insert. When the insert is correctly installed, the bolt or screw will seat perfectly into the tapped hole. The process can be quite difficult if any step is done incorrectly. Reference MS33537.

Helical Wire Inc. wants to be sure that anyone who uses our inserts can avoid any potential problems. We have suggested sizes for drills to achieve the correct diameter for the particular size of insert that you are using. The following tables list these sizes, and all of these drills are carried in our stock.

STANDARD DRILLS

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE		NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE	
	Aluminum	Plastic, Steel, Magnesium		Aluminum	Plastic, Steel, Magnesium
UNIFIED COARSE			UNIFIED FINE		
2-56	3/32 (.0938)	#41 (.0960)	3-56	#37 (.1040)	#36 (.1065)
3-48	#36 (.1065)	7/64 (.1094)	4-48	3mm (.1181)	#31 (.1200)
4-40	#31 (.1200)	#31 (.1200)	6-40	#26 (.1470)	#25 (.1495)
5-40	3.4mm (.1339)	#29 (.1360)	8-36	#17 (.1730)	#16 (.1770)
6-32	#26 (.1470)	#25 (.1495)	10-32	#7 (.2010)	13/64 (.2031)
8-32	#17 (.1730)	#16 (.1770)	1/4-28	G (.2610)	6.7mm (.2638)
10-24	13/64 (.2031)	#5 (.2055)	5/16-24	21/64 (.3281)	21/64 (.3281)
12-24	#1 (.2280)	#1 (.2280)	3/8-24	25/64 (.3906)	25/64 (.3906)
1/4-20	H (.2660)	H (.2660)	7/16-20	29/64 (.4531)	29/64 (.4531)
5/16-18	Q (.3320)	Q (.3320)	1/2-20	33/64 (.5156)	33/64 (.5156)
3/8-16	X (.3970)	X (.3970)	9/16-18	37/64 (.5781)	37/64 (.5781)
7/16-14	29/64 (.4531)	29/64 (.4531)	5/8-18	41/64 (.6406)	41/64 (.6406)
1/2-13	33/64 (.5156)	17/32 (.5312)	3/4-16	49/64 (.7656)	49/64 (.7656)
9/16-12	37/64 (.5781)	19/32 (.5938)	7/8-14	57/64 (.8906)	57/64 (.8906)
5/8-11	21/32 (.6562)	21/32 (.6562)	1-14	1-1/64 (1.0156)	1-1/32 (1.0312)
3/4-10	25/32 (.7812)	25/32 (.7812)	1-12	1-1/64 (1.0156)	1-1/32 (1.0312)
7/8-9	29/32 (.9062)	29/32 (.9062)	1-1/8-12	1-9/64 (1.1406)	1-5/32 (1.1562)
1-8	1-1/32 (1.0312)	1-1/32 (1.0312)	1-1/4-12	1-17/64 (1.2656)	1-9/32 (1.2812)
1-1/8-7	1-11/64 (1.1719)	1-11/64 (1.1719)	1-3/8-12	1-25/64 (1.3906)	1-13/32 (1.4062)
1-1/4-7	1-19/64 (1.2969)	1-19/64 (1.2969)	1-1/2-12	1-33/64 (1.5156)	1-17/32 (1.5312)
1-3/8-6	1-27/64 (1.4219)	1-27/64 (1.4219)			
1-1/2-6	1-35/64 (1.5469)	1-35/64 (1.5469)			

Alternate drill sizes are suggested in many instances for magnesium, steel and plastics to provide for maximum tap wear and life.

ADD: DR to front of suggested drill size when ordering.

Example: DR 42

METRIC DRILLS

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE		NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE	
	Aluminum	Plastic, Steel, Magnesium		Aluminum	Plastic, Steel, Magnesium
COARSE			FINE		
M2x.4	#2.10 (.0827)	#2.10 (.0827)	M8x1	21/64 (.3281)	21/64 (.3281)
M2.2x.45	#42 (.0935)	#42 (.0935)	M10x1	Y (.4040)	13/32 (.4062)
M2.5x.45	#37 (.1040)	#37 (.1040)	M10x1.25	Y (.4040)	13/32 (.4062)
M3x.5	1/8 (.1250)	1/8 (.1250)	M12x1.25	31/64 (.4844)	31/64 (.4844)
M3.5x.6	#27 (.1440)	#26 (.1470)	M12x1.5	31/64 (.4844)	1/2 (.5000)
M4x.7	#19 (.1660)	#19 (.1660)	M14x1.5	9/16 (.5625)	37/64 (.5781)
M5x.8	#5 (.2055)	#4 (.2090)	M16x1.5	41/64 (.6406)	21/32 (.6562)
M6x1	D (.2460)	1/4 (.2500)	M18x1.5	23/32 (.7188)	47/64 (.7344)
M7x1	L (.2900)	L (.2900)	M20x1.5	51/64 (.7969)	13/16 (.8125)
M8x1.25	21/64 (.3281)	Q (.3320)	M22x1.5	7/8 (.8750)	57/64 (.8906)
M10x1.5	Z (.4130)	Z (.4130)	M18x2	47/64 (.7344)	47/64 (.7344)
M12x1.75	31/64 (.4844)	1/2 (.5000)	M20x2	13/16 (.8125)	13/16 (.8125)
M14x2	37/64 (.5781)	37/64 (.5781)	M22x2	57/64 (.8906)	57/64 (.8906)
M16x2	21/32 (.6562)	21/32 (.6562)	M24x2	31/32 (.9688)	31/32 (.9688)
M18x2.5	47/64 (.7344)	47/64 (.7344)	M27x2	1-5/64 (1.0781)	1-3/32 (1.0938)
M20x2.5	13/16 (.8125)	13/16 (.8125)	M30x2	1-13/64 (1.2031)	1-13/64 (1.2031)
M22x2.5	57/64 (.8906)	57/64 (.8906)	M33x2	1-5/16 (1.3125)	1-21/64 (1.3281)
M24x3	63/64 (.9844)	63/64 (.9844)	M36x2	1-7/16 (1.4375)	1-7/16 (1.4375)
M27x3	1-3/32 (1.0938)	1-3/32 (1.0938)	M39x2	1-35/64 (1.5469)	1-9/16 (1.5625)
M30x3.5	1-7/32 (1.2188)	1-7/32 (1.2188)	M36x3	1-29/64 (1.4531)	1-29/64 (1.4531)
M33x3.5	1-11/32 (1.3438)	1-11/32 (1.3438)			
M36x4	1-29/64 (1.4531)	1-15/32 (1.4688)			
M39x4	1-37/64 (1.5781)	1-37/64 (1.5781)			

HELICAL WIRE INC. carries drills for every insert that we make. Most of our drills are stock items and can be available immediately upon request.

Drills for very large, and special sized inserts may require a certain amount of lead time.

ADD: DR to front of suggested drill size when ordering.

Example: DR 42



TAPPIING

Helical Wire Inserts are commonly characterized as "screw thread" inserts. In order to fasten two mechanical components together using conventional hardware fasteners, you must have something for those fasteners to screw into. But even before a screw thread insert can accommodate any hardware fastener, the insert has to be installed into the parent material.

The preparation of the parent material involves the drilling of a hole into the component. Whether it is a through-hole or a blind-hole, the correct sized drill must be used. Once the hole is correctly prepared it must be tapped to create the threads that will allow the installation of the insert. The tap that is used to do this should always be an STI type tap. The STI designation is specifically manufactured for the use with screw thread inserts.

The tapping of the prepared hole is just as important as using the correct size of inserts in the overall fastening application. If an application calls for the installation of a 10-32 sized insert, a 10-32 STI tap must be used. Depending on the fit requirements in the installation of the inserts a particular "H" limit may be specified for the tap. A particular size of tap will have a pre-determined outside diameter. The "H" limit will raise that outside diameter limit by .0005. For example a 10-32 STI tap with an "H-2" classification will be .0005 smaller on its outside diameter than the same sized tap with an "H-3" classification. These "H" limits allow the installer to get the class fit they desire.

There are different tapping needs in various kinds of installations. Depending on the type of hole in the application, there are different styles of taps that we offer. We have Straight Flute, Spiral Pointed and Spiral Fluted STI taps.

Another important point to consider in the tapping process is that the tap to be used is of good quality. A tap that has been used in multiple applications will eventually wear even though the taps are made of high speed steel. With enough usage over time they will wear creating an undersized hole. There are specified minimum and maximum limits for the inside diameter of a tapped hole per the MS standards, just as there are minimum and maximum outside diameter requirements for the inserts per the MS specifications.

If a hole is prepared with a tap that is too worn the insert probably will be difficult to install. This can create the misconception that the inserts are not within the required specifications per the MS standards when in fact the holes were just tapped too small or not the proper depth. Generally, the depth should be no less than two pitches longer than the insert. This can halt the production process for assembly.

The tapping of the drilled hole is one of the most important parts of the installation process. If the hole is tapped correctly the installation of the inserts will be smooth and trouble free. Helical Wire has taps for the installation of every size of insert that we manufacture. We can supply most sized taps in stock, and we can get large, over sized and special sized taps with short lead times.

The following tables show a listing of all of the tapping products that we commonly carry in our stock.



STRAIGHT FLUTE PLUG TAP - Used in through holes and in blind holes that allow for ample chip clearance. Are easier starting and require less tapping torque than bottoming taps.



STRAIGHT FLUTE BOTTOMING TAP - Used in blind holes drilled to a minimum depth and that require threads close to the bottom of the hole.



SPIRAL POINTED PLUG TAP - Incorporates an angular grind at the point end of the tap which shears chips and drives them forward of the tap. Used widely in long thru holes and blind holes with ample chip clearance. They are free cutting and provide increased tap strength. Not recommended for abrasive materials.



HIGH SPIRAL FLUTE BOTTOMING TAP - Has spiral flutes for efficiently pulling stringy chips out of deep or blind holes in soft materials.

TAPPING

STANDARD COARSE TAP PART NUMBERS

NOMINAL THREAD SIZE	STRAIGHT FLUTE							
	PLUG				BOTTOMING			
	3B		2B *		3B		2B *	
	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
UNIFIED COARSE								
2-56	STI256H1P	02CPB	STI256H2P	02CPA	STI256H1B	02CBB	STI256H2B	02CBA
3-48	STI348H1P	03CPB	STI348H2P	03CPA	STI348H1B	03CBB	STI348H2B	03CBA
4-40	STI440H1P	04CPB	STI440H2P	04CPA	STI440H1B	04CBB	STI440H2B	04CBA
5-40	STI540H1P	05CPB	STI540H2P	05CPA	STI540H1B	05CBB	STI540H2B	05CBA
6-32	STI632H2P	06CPB	STI632H3P	06CPA	STI632H2B	06CBB	STI632H3B	06CBA
8-32	STI832H2P	2CPB	STI832H3P	2CPA	STI832H2B	2CBB	STI832H3B	2CBA
10-24	STI1024H2P	3CPB	STI1024H3P	3CPA	STI1024H2B	3CBB	STI1024H3B	3CBA
12-24	STI1224H2P	1CPB	STI1224H3P	1CPA	STI1224H2B	1CBB	STI1224H3B	1CBA
1/4-20	STI1420H2P	4CPB	STI1420H3P	4CPA	STI1420H2B	4CBB	STI1420H3B	4CBA
5/16-18	STI51618H3P	5CPB	STI51618H4P	5CPA	STI51618H3B	5CBB	STI51618H4B	5CBA
3/8-16	STI3816H3P	6CPB	STI3816H4P	6CPA	STI3816H3B	6CBB	STI3816H4B	6CBA
7/16-14	STI71614H3P	7CPB	STI71614H4P	7CPA	STI71614H3B	7CBB	STI71614H4B	7CBA
1/2-13	STI1213H3P	8CPB	STI1213H4P	8CPA	STI1213H3B	8CBB	STI1213H4B	8CBA
9/16-12	STI91612H3P	187-9	STI91612H4P	38187-9	STI91612H3B	4187-9	STI91612H4B	43187-9
5/8-11	STI5811H3P	8187-10	STI5811H4P	18187-10	STI5811H3B	10187-10	STI5811H4B	20187-10
3/4-10	STI3410H3P	8187-12	STI3410H5P	18187-12	STI3410H3B	10187-12	STI3410H5B	20187-12
7/8-9	STI789H3P	8187-14	STI789H5P	18187-14	STI789H3B	10187-14	STI789H5B	20187-14
1-8	STI18H4P	8187-16	STI18H6P	18187-16	STI18H4B	10187-16	STI18H6B	20187-16
1-1/8-7	STI1187H4P	8187-18	STI1187H6P	18187-18	STI1187H4B	10187-18	STI1187H6B	20187-18
1-1/4-7	STI1147H4P	8187-20	STI1147H6P	18187-20	STI1147H4B	10187-20	STI1147H6B	20187-20
1-3/8-6	STI1386H6P	8187-22	STI1386H8P	18187-22	STI1386H6B	10187-22	STI1386H8B	20187-22
1-1/2-6	STI1126H6P	8187-24	STI1126H8P	18187-24	STI1126H6B	10187-24	STI1126H8B	20187-24
NOMINAL THREAD SIZE	SPIRAL POINT				SPIRAL FLUTED			
	PLUG				BOTTOMING			
	3B		2B *		3B		2B *	
2-56	STI256H1SP	02CSB	STI256H2SP	02CSA	STI256H1SF	5905-02	STI256H2SF	6905-02
3-48	STI348H1SP	03CSB	STI348H2SP	03CSA	STI348H1SF	5905-03	STI348H2SF	6905-03
4-40	STI440H1SP	04CSB	STI440H2SP	04CSA	STI440H1SF	5905-04	STI440H2SF	6905-04
5-40	STI540H1SP	05CSB	STI540H2SP	05CSA	STI540H1SF	5905-05	STI540H2SF	6905-05
6-32	STI632H2SP	06CSB	STI632H3SP	06CSA	STI632H2SF	5905-06	STI632H3SF	6905-06
8-32	STI832H2SP	2CSB	STI832H3SP	2CSA	STI832H2SF	5905-2	STI832H3SF	6905-2
10-24	STI1024H2SP	3CSB	STI1024H3SP	3CSA	STI1024H2SF	5905-3	STI1024H3SF	6905-3
12-24	STI1224H2SP	1CSB	STI1224H3SP	1CSA	STI1224H2SF	5905-1	STI1224H3SF	6905-1
1/4-20	STI1420H2SP	4CSB	STI1420H3SP	4CSA	STI1420H2SF	5905-4	STI1420H3SF	6905-4
5/16-18	STI51618H3SP	5CSB	STI51618H4SP	5CSA	STI51618H3SF		STI51618H4SF	
3/8-16	STI3816H3SP	6CSB	STI3816H4SP	6CSA	STI3816H3SF	5905-5	STI3816H4SF	6905-5
7/16-14	STI71614H3SP	7CSB	STI71614H4SP	7CSA	STI71614H3SF	5905-6	STI71614H4SF	6905-6
1/2-13	STI1213H3SP	8CSB	STI1213H4SP	8CSA	STI1213H3SF	5905-7	STI1213H4SF	6905-7
					STI1213H3SF	5905-8	STI1213H4SF	6905-8

* 2B taps are used for plated and commercial grade inserts.

STANDARD FINE TAP PART NUMBERS

NOMINAL THREAD SIZE	STRAIGHT FLUTE							
	PLUG				BOTTOMING			
	3B		2B *		3B		2B *	
	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
UNIFIED FINE								
3-56	STI356H1P	03FPB	STI356H2P	03FPA	STI356H1B	03FBB	STI356H2B	03FBA
4-48	STI448H1P	04FPB	STI448H2P	04FPA	STI448H1B	04FBB	STI448H2B	04FBA
6-40	STI640H1P	06FPB	STI640H2P	06FPA	STI640H1B	06FBB	STI640H2B	06FBA
8-36	STI836H1P	2FPB	STI836H2P	2FPA	STI836H1B	2FBB	STI836H2B	2FBA
10-32	STI1032H2P	3FPB	STI1032H3P	3FPA	STI1032H2B	3FBB	STI1032H3B	3FBA
1/4-28	STI1428H2P	4FPB	STI1428H3P	4FPA	STI1428H2B	4FBB	STI1428H3B	4FBA
5/16-24	STI51624H2P	5FPB	STI51624H3P	5FPA	STI51624H2B	5FBB	STI51624H3B	5FBA
3/8-24	STI3824H2P	6FPB	STI3824H3P	6FPA	STI3824H2B	6FBB	STI3824H3B	6FBA
7/16-20	STI71620H3P	7FPB	STI71620H4P	7FPA	STI71620H3B	7FBB	STI71620H4B	7FBA
1/2-20	STI1220H3P	8FPB	STI1220H4P	8FPA	STI1220H3B	8FBB	STI1220H4B	8FBA
9/16-18	STI91618H3P	38193-9	STI91618H4P	18193-9	STI91618H3B	43193-9	STI91618H4B	20193-9
5/8-18	STI5818H3P	8193-10	STI5818H4P	18193-10	STI5818H3B	10193-10	STI5818H4B	20193-10
3/4-16	STI3416H3P	8193-12	STI3416H4P	18193-12	STI3416H3B	10193-12	STI3416H4B	20193-12
7/8-14	STI7814H3P	8193-14	STI7814H4P	18193-14	STI7814H3B	10193-14	STI7814H4B	20193-14
1-14	STI114H4P	8193-16	STI114H6P	18193-16	STI114H4B	10193-16	STI114H6B	20193-16
1-12	STI112H4P	8193-161	STI112H6P	18193-161	STI112H4B	10193-161	STI112H6B	20193-161
1-1/8-12	STI11812H4P	8193-18	STI11812H6P	18193-18	STI11812H4B	10193-18	STI11812H6B	20193-18
1-1/4-12	STI11412H4P	8193-20	STI11412H6P	18193-20	STI11412H4B	10193-20	STI11412H6B	20193-20
1-3/8-12	STI13812H4P	8193-22	STI13812H6P	18193-22	STI13812H4B	10193-22	STI13812H6B	20193-22
1-1/2-12	STI11212H4P	8193-24	STI11212H6P	18193-24	STI11212H4B	10193-24	STI11212H6B	20193-24
NOMINAL THREAD SIZE	SPIRAL POINT				SPIRAL FLUTED			
	PLUG				BOTTOMING			
	3B		2B *		3B		2B *	
3-56	STI356H1SP	03FSB	STI356H2SP	03FSA	STI356H1SF	5906-03	STI356H2SF	6906-03
4-48	STI448H1SP	04FSB	STI448H2SP	04FSA	STI448H1SF	5906-04	STI448H2SF	6906-04
6-40	STI640H1SP	06FSB	STI640H2SP	06FSA	STI640H1SF	5906-06	STI640H2SF	6906-06
8-36	STI836H1SP	2FSB	STI836H2SP	2FSA	STI836H1SF	5906-2	STI836H2SF	6906-2
10-32	STI1032H2SP	3FSB	STI1032H3SP	3FSA	STI1032H2SF	5906-3	STI1032H3SF	6906-3
1/4-28	STI1428H2SP	4FSB	STI1428H3SP	4FSA	STI1428H2SF	5906-4	STI1428H3SF	6906-4
5/16-24	STI51624H2SP	5FSB	STI51624H3SP	5FSA	STI51624H2SF	5906-5	STI51624H3SF	6906-5
3/8-24	STI3824H2SP	6FSB	STI3824H3SP	6FSA	STI3824H2SF	5906-6	STI3824H3SF	6906-6
7/16-20	STI71620H3SP	7FSB	STI71620H4SP	7FSA	STI71620H3SF	5906-7	STI71620H4SF	6906-7
1/2-20	STI1220H3SP	8FSB	STI1220H4SP	8FSA	STI1220H3SF	5906-8	STI1220H4SF	6906-8

* 2B taps are used for plated and commercial grade inserts.

TAPPING

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METRIC COARSE TAP PART NUMBERS

METRIC FINE TAP PART NUMBERS

NOMINAL THREAD SIZE	STRAIGHT FLUTE							
	PLUG				BOTTOMING			
	4H5H	3B	5H 2B*		4H5H	3B	5H 2B*	
	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
COARSE								
M2x.4	STIM22454HP	4687-2	STIM22455HP	2087-2	STIM22454HB	4693-2	STIM22455HB	2093-2
M2.2x.45	STIM22454HP	4687-2.2	STIM22455HP	2087-2.2	STIM22454HB	4693-2.2	STIM22455HB	2093-2.2
M2.5x.45	STIM25454HP	4687-2.5	STIM25455HP	2087-2.5	STIM25454HB	4693-2.5	STIM25455HB	2093-2.5
M3x.5	STIM354HP	4687-3	STIM355HP	2087-3	STIM354HB	4693-3	STIM355HB	2093-3
M3.5x.6	STIM3564HP	4687-3.5	STIM3565HP	2087-3.5	STIM3564HB	4693-3.5	STIM3565HB	2093-3.5
M4x.7	STIM474HP	4687-4	STIM475HP	2087-4	STIM474HB	4693-4	STIM475HB	2093-4
M5x.8	STIM584HP	4687-5	STIM585HP	2087-5	STIM584HB	4693-5	STIM585HB	2093-5
M6x1	STIM6104HP	4687-6	STIM6105HP	2087-6	STIM6104HB	4693-6	STIM6105HB	2093-6
M7x1	STIM7104HP	4687-7	STIM7105HP	2087-7	STIM7104HB	4693-7	STIM7105HB	2093-7
M8x1.25	STIM81254HP	4687-8	STIM81255HP	2087-8	STIM81254HB	4693-8	STIM81255HB	2093-8
M10x1.5	STIM10154HP	4687-10	STIM10155HP	2087-10	STIM10154HB	4693-10	STIM10155HB	2093-10
M12x1.75	STIM121754HP	4687-12	STIM121755HP	2087-12	STIM121754HB	4693-12	STIM121755HB	2093-12
M14x2	STIM1424HP	4687-14	STIM1425HP	2087-14	STIM1424HB	4693-14	STIM1425HB	2093-14
M16x2	STIM1624HP	4687-16	STIM1625HP	2087-16	STIM1624HB	4693-16	STIM1625HB	2093-16
M18x2.5	STIM18254HP	4687-18	STIM18255HP	2087-18	STIM18254HB	4693-18	STIM18255HB	2093-18
M20x2.5	STIM20254HP	4687-20	STIM20255HP	2087-20	STIM20254HB	4693-20	STIM20255HB	2093-20
M22x2.5	STIM22254HP	4687-22	STIM22255HP	2087-22	STIM22254HB	4693-22	STIM22255HB	2093-22
M24x3	STIM2434HP	4687-24	STIM2435HP	2087-24	STIM2434HB	4693-24	STIM2435HB	2093-24
M27x3	STIM2734HP	4687-27	STIM2735HP	2087-27	STIM2734HB	4693-27	STIM2735HB	2093-27
M30x3.5	STIM30354HP	4687-30	STIM3035HP	2087-30	STIM30354HB	4693-30	STIM30355HB	2093-30
M33x3.5	STIM33354HP	4687-33	STIM3335HP	2087-33	STIM33354HB	4693-33	STIM33355HB	2093-33
M36x4	STIM3644HP	4687-36	STIM364HP	2087-36	STIM3644HB	4693-36	STIM3645HB	2093-36
M39x4	STIM3944HP	4687-39	STIM394HP	2087-39	STIM3944HB	4693-39	STIM3945HB	2093-39
NOMINAL THREAD SIZE	SPIRAL POINT				SPIRAL FLUTED			
	PLUG				BOTTOMING			
	4H5H	3B	5H 2B*		4H5H	3B	5H 2B*	
	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
M2x.4	STIM22454HSP	4863-2	STIM22455HSP	4763-2	STIM22454HSF	5081-2	STIM22455HSF	4681-2
M2.2x.45	STIM22454HSP	4863-2.2	STIM22455HSP	4763-2.2	STIM22454HSF	5081-2.2	STIM22455HSF	4681-2.2
M2.5x.45	STIM25454HSP	4863-2.5	STIM25455HSP	4763-2.5	STIM25454HSF	5081-2.5	STIM25455HSF	4681-2.5
M3x.5	STIM354HSP	4863-3	STIM355HSP	4763-3	STIM354HSF	5081-3	STIM355HSF	4681-3
M3.5x.6	STIM3564HSP	4863-3.5	STIM3565HSP	4763-3.5	STIM3564HSF	5081-3.5	STIM3565HSF	4681-3.5
M4x.7	STIM474HSP	4863-4	STIM475HSP	4763-4	STIM474HSF	5081-4	STIM475HSF	4681-4
M5x.8	STIM584HSP	4863-5	STIM585HSP	4763-5	STIM584HSF	5081-5	STIM585HSF	4681-5
M6x1	STIM6104HSP	4863-6	STIM6105HSP	4763-6	STIM6104HSF	5081-6	STIM6105HSF	4681-6
M7x1	STIM7104HSP	4863-7	STIM7105HSP	4763-7	STIM7104HSF	5081-7	STIM7105HSF	4681-7
M8x1.25	STIM81254HSP	4863-8	STIM81255HSP	4763-8	STIM81254HSF	5081-8	STIM81255HSF	4681-8
M10x1.5	STIM10154HSP	4863-10	STIM10155HSP	4763-10	STIM10154HSF	5081-10	STIM10155HSF	4681-10
M12x1.75	STIM121754HSP	4863-12	STIM121755HSP	4763-12	STIM121754HSF	5081-12	STIM121755HSF	4681-12

* 2B taps are used for plated and commercial grade inserts.

NOMINAL THREAD SIZE	STRAIGHT FLUTE							
	PLUG				BOTTOMING			
	4H5H	3B	5H 2B*		4H5H	3B	5H 2B*	
	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
FINE								
M8x1	STIM814HP	5484-8	STIM815HP	4984-8	STIM814HB	5486-8	STIM815HB	4986-8
M10x1	STIM1014HP	5484-10	STIM1015HP	4984-10	STIM1014HB	5486-10	STIM1015HB	4986-10
M10x1.25	STIM101254HP	5444-10	STIM101255HP	4944-10	STIM101254HB	5445-10	STIM101255HB	4945-10
M12x1.25	STIM121254HP	5444-12	STIM121255HP	4944-12	STIM121254HB	5445-12	STIM121255HB	4945-12
M12x1.5	STIM12154HP	5476-12	STIM12155HP	4976-12	STIM12154HB	5477-12	STIM12155HB	4977-12
M14x1.5	STIM14154HP	5476-14	STIM14155HP	4976-14	STIM14154HB	5477-14	STIM14155HB	4977-14
M16x1.5	STIM16154HP	5476-16	STIM16155HP	4976-16	STIM16154HB	5477-16	STIM16155HB	4977-16
M18x1.5	STIM18154HP	5476-18	STIM18155HP	4976-18	STIM18154HB	5477-18	STIM18155HB	4977-18
M20x1.5	STIM20154HP	5476-20	STIM20155HP	4976-20	STIM20154HB	5477-20	STIM20155HB	4977-20
M22x1.5	STIM22154HP	5476-22	STIM22155HP	4976-22	STIM22154HB	5477-22	STIM22155HB	4977-22
M18x2	STIM1824HP	5490-18	STIM1825HP	4990-18	STIM1824HB	5492-18	STIM1825HB	4992-18
M20x2	STIM2024HP	5490-20	STIM2025HP	4990-20	STIM2024HB	5492-20	STIM2025HB	4992-20
M22x2	STIM2224HP	5490-22	STIM2225HP	4990-22	STIM2224HB	5492-22	STIM2225HB	4992-22
M24x2	STIM2424HP	5490-24	STIM2425HP	4990-24	STIM2424HB	5492-24	STIM2425HB	4992-24
M27x2	STIM2724HP	5490-27	STIM2725HP	4990-27	STIM2724HB	5492-27	STIM2725HB	4992-27
M30x2	STIM3024HP	5490-30	STIM3025HP	4990-30	STIM3024HB	5492-30	STIM3025HB	4992-30
M33x2	STIM3324HP	5490-33	STIM3325HP	4990-33	STIM3324HB	5492-33	STIM3325HB	4992-33
M36x2	STIM3624HP	5490-36	STIM3625HP	4990-36	STIM3624HB	5492-36	STIM3625HB	4992-36
M39x2	STIM3924HP	5490-39	STIM3925HP	4990-39	STIM3924HB	5492-39	STIM3925HB	4992-39
M36x3	STIM3634HP	5496-36	STIM3635HP	4996-36	STIM3634HB	5497-36	STIM3635HB	4997-36
M39x3	STIM3934HP	5496-39	STIM3935HP	4996-39	STIM3934HB	5497-39	STIM3935HB	4997-39
NOMINAL THREAD SIZE	SPIRAL POINT				SPIRAL FLUTED			
	PLUG				BOTTOMING			
	4H5H	3B	5H 2B*		4H5H	3B	5H 2B*	
	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
M8x1	STIM814HSP	4864-8	STIM815HSP	4764-8	STIM814HSF	5066-8	STIM815HSF	4666-8
M10x1	STIM1014HSP	4864-10	STIM1015HSP	4764-10	STIM1014HSF	5066-10	STIM1015HSF	4666-10
M10x1.25	STIM101254HSP	4865-10	STIM101255HSP	4765-10	STIM101254HSF	5067-10	STIM101255HSF	4667-10
M12x1.25	STIM121254HSP	4865-12	STIM121255HSP	4765-12	STIM121254HSF	5067-12	STIM121255HSF	4667-12
M12x1.5	STIM12154HSP	4866-12	STIM12155HSP	4766-12	STIM12154HSF	5068-12	STIM12155HSF	4668-12

* 2B taps are used for plated and commercial grade inserts.

THREAD GAGES

Once the hole is drilled and the hole has been tapped, the hole must be checked to make certain that the inside pitch diameter of the hole is correct for the installation of the insert. The minimum and maximum *pitch* diameter of the insert is designed to work in conjunction with the minimum and maximum tolerance of the *pitch* diameter of the tapped hole. So if the hole is tapped correctly to the proper depth there shouldn't be any problems with the installation. The way to check conclusively is to use a STI Thread Gage.

A Thread Gage is a device that is used to measure or to gage the pitch diameter of a tapped hole. These gages are also referred to as "Go-No Go" gages. The gage is basically a handle with two threaded ends. One end being the "Go" end, which when used to screw into the tapped hole will show that it is correct when it goes in. These gages are the only type of gage that is widely recommended for production and regular inspection in the industry. The other end is the "No Go" end. If this end fits into the tapped hole, then the hole has been tapped incorrectly and is oversize.

STANDARD STI GAGE PART NUMBERS

NOMINAL THREAD SIZE	WORKING GAGES		REFERENCE GAGES	
	3B	2B*	3B	2B*
UNIFIED COARSE				
2-56	G256W3B	G256W2B	G256R3B	G256R2B
3-48	G348W3B	G348W2B	G348R3B	G348R2B
4-40	G440W3B	G440W2B	G440R3B	G440R2B
5-40	G540W3B	G540W2B	G540R3B	G540R2B
6-32	G632W3B	G632W2B	G632R3B	G632R2B
8-32	G832W3B	G832W2B	G832R3B	G832R2B
10-24	G1024W3B	G1024W2B	G1024R3B	G1024R2B
12-24	G1224W3B	G1224W2B	G1224R3B	G1224R2B
1/4-20	G1420W3B	G1420W2B	G1420R3B	G1420R2B
5/16-18	G51618W3B	G51618W2B	G51618R3B	G51618R2B
3/8-16	G3816W3B	G3816W2B	G3816R3B	G3816R2B
7/16-14	G71614W3B	G71614W2B	G71614R3B	G71614R2B
1/2-13	G1213W3B	G1213W2B	G1213R3B	G1213R2B
9/16-12			G91612R3B	G91612R2B
5/8-11			G5811R3B	G5811R2B
3/4-10			G3410R3B	G3410R2B
7/8-9			G789R3B	G789R2B
1-8			G18R3B	G18R2B
1-1/8-7			G1187R3B	G1187R2B
1-1/4-7			G1147R3B	G1147R2B
1-3/8-6			G1386R3B	G1386R2B
1-1/2-6			G1126R3B	G1126R2B

NOMINAL THREAD SIZE	WORKING GAGES		REFERENCE GAGES	
	3B	2B*	3B	2B*
UNIFIED FINE				
3-56	G356W3B	G356W2B	G356R3B	G356R2B
4-48	G448W3B	G448W2B	G448R3B	G448R2B
6-40	G640W3B	G640W2B	G640R3B	G640R2B
8-36	G836W3B	G836W2B	G836R3B	G836R2B
10-32	G1032W3B	G1032W2B	G1032R3B	G1032R2B
1/4-28	G1428W3B	G1428W2B	G1428R3B	G1428R2B
5/16-24	G51624W3B	G51624W2B	G51624R3B	G51624R2B
3/8-24	G3824W3B	G3824W2B	G3824R3B	G3824R2B
7/16-20	G71620W3B	G71620W2B	G71620R3B	G71620R2B
1/2-20	G1220W3B	G1220W2B	G1220R3B	G1220R2B
9/16-18			G91618R3B	G91618R2B
5/8-18			G5818R3B	G5818R2B
3/4-16			G3416R3B	G3416R2B
7/8-14			G7814R3B	G7814R2B
1-14			G114R3B	G114R2B
1-12			G112R3B	G112R2B
1-1/8-12			G11812R3B	G11812R2B
1-1/4-12			G11412R3B	G11412R2B
1-3/8-12			G13812R3B	G13812R2B
1-1/2-12			G11212R3B	G11212R2B

* 2B gages are used for plated and commercial grade inserts.

The use of a thread gage before the installation process begins is not only a good idea, but could be critical in the success of the assembly process.

Helical Wire also carries Reference Gages. These are similarly designed gages, but they have an outside thread diameter that is on or close to the minimum thread tolerance. These gages are better suited to be Master Gages to be used for checking the Go-No Go type gages, and for checking basic limited production for sizes 1/2" and up.

METRIC STI GAGE PART NUMBERS

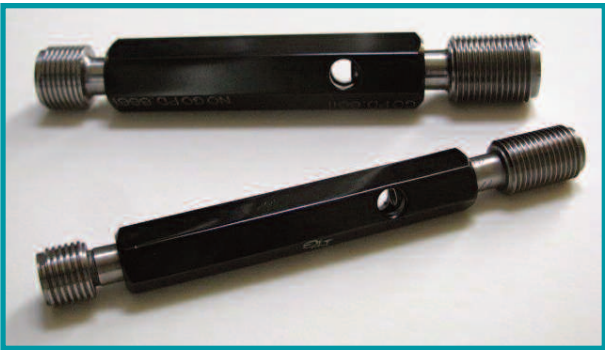
NOMINAL THREAD SIZE	COMPLETE GAGES	
	4H5H	5H*
COARSE		
M2.2x.45	GM224H	GM225H
M2.5x.45	GM254H	GM255H
M3x.5	GM34H	GM35H
M3.5x.6	GM354H	GM355H
M4x.7	GM44H	GM45H
M5x.8	GM54H	GM55H
M6x1	GM6104H	GM6105H
M6.3x1	GM634H	GM635H
M7x1	GM7104H	GM7105H
M8x1.25	GM8124H	GM8125H
M10x1.5	GM10154H	GM10155H
M12x1.75	GM12174H	GM12175H
M14x2	GM1424H	GM1425H
M16x2	GM1624H	GM1625H
M18x2.5	GM18254H	GM18255H
M20x2.5	GM20254H	GM20255H
M22x2.5	GM22254H	GM22255H
M24x3	GM2434H	GM2435H
M27x3	GM2734H	GM2735H
M30x3.5	GM3034H	GM3035H
M33x3.5	GM3334H	GM3335H
M36x4	GM3644H	GM3645H
M39x4	GM3944H	GM3945H

NOMINAL THREAD SIZE	COMPLETE GAGES	
	4H5H	5H*
FINE		
M8x1	GM84H	GM85H
M10x1	GM104H	GM105H
M10x1.25	GM10124H	GM10125H
M12x1.25	GM12124H	GM12125H
M12x1.5	GM12154H	GM12155H
M14x1.5	GM14154H	GM14155H
M16x1.5	GM16154H	GM16155H
M18x1.5	GM18154H	GM18155H
M20x1.5	GM20154H	GM20155H
M22x1.5	GM22154H	GM22155H
M18x2	GM1824H	GM1825H
M20x2	GM2024H	GM2025H
M22x2	GM2224H	GM2225H
M24x2	GM2424H	GM2425H
M27x2	GM2724H	GM2725H
M30x2	GM3024H	GM3025H
M33x2	GM3324H	GM3325H
M36x3	GM3634H	GM3635H
M39x3	GM3934H	GM3935H

* 5H gages are used for plated and commercial grade inserts.

When gaging tapped holes that have been thoroughly cleaned or may have a protective finish applied, always lubricate the gage with light oils.

When gaging to check the accuracy of your application it isn't necessary to gage the hole after the insert is installed. Reference MS33537 on page 1 of 9. Be sure to gage the entire depth of the tapped hole. This may cause the misconception that the hole is not properly tapped because the gage will not fit into the tapped hole. The gage is not designed to check the accuracy of the installed insert.



INSTALLATION TOOLS

When the processes of drilling, tapping, and gauging have all been completed, the insert is ready to be installed. Now that the thread gauge has determined that the tapped hole is the right size and depth for the insert, the next step is to use the right size and type of installation tool for the particular application being used.

Installation tools are designed to make use of the “tang” mechanism that is on the last coil of every insert. Every installation tool, regardless of type or size, will have a threaded shaft or mandrel piece that is machined to have an abrupt end to the threads. This creates a recessed edge at the end of these threads that will allow the installation tool’s shaft to go down through the interior of the insert and pick up the tang of the insert against this recessed edge. As the installation

tool’s shaft is rotated it drives the insert down into the tapped hole to the proper depth using the depth control.

When the insert is being installed it experiences what is called the insert retention principle. What this means is when the insert is in a free state before the installation process begins, it’s outside diameter will actually be greater than the inside diameter of the tapped hole.

As the installation tool’s mandrel drives the insert into the hole, the torque applied by the tool on the tang mechanism will cause the lead coil of the insert to actually reduce in diameter.

This reduction in diameter allows the insert to

be driven into the hole, even though the insert is technically larger in size. When the insert is seated in the tapped hole to the proper depth, the coils will experience an expansion and will actually spring back against the inside of the tapped hole. This allows for a tight fit that will permanently anchor the insert in place. The insert will automatically adjust itself both radially and axially to any expansion or contraction of the parent material.

The installation of the insert always involves the same basic procedure. It will always use the tang mechnis to drive the insert into the tapped hole, and will always experience the tang retention principle. However every installation is not always the same. Depending on the size of insert, type of insert and circumstances in the installation process there are different types of installation tools to be used .

There are four types of installation tools that can be used to install Helical Wire inserts correctly and efficiently. They are the Captive Sleeve, Removable Captive Sleeve, Bolt Type and Power Tools, both electric and pneumatic.



CAPTIVE SLEEVE TYPE 2

The first type of installation tool is probably the most requested and the most used. This is the “Captive Sleeve” type. The Captive Sleeve installation tool works similarly to the Threaded Manrel Type, but the threaded shaft portion is covered by a steel cylinder sleeve. One end of the shaft has a threaded mandrel and on the other end has a hand crank to rotate the mandrel. The sleeve has an insert sized slot in its side on the mandrel end. When the inside shaft is slid back within the chamber it allows the insert to enter into the cylinder. With the insert in the chamber, the mandrel can be slid down to

engage with the insert’s tang, and the hand crank will drive the insert into the hole. The tool is equipped with a set screw to control depth of the installed insert.

This type of tool allows for maximum control because it is done manually with the hand crank, and the operator controls the amount of torque used to install the inserts. It is also made with a slotted end on the sleeve that is well suited for installing the strip feed inserts. The slot accommodates the plastic tape as each strip fed insert is installed. They can be used for numerous installations. All of these tools are made of heat treated steel and conform to A-A-59158.



NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	COMPETITOR PART NUMBER	NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	COMPETITOR PART NUMBER
INCH UNIFIED COARSE			METRIC COARSE		
2-56	HIT256	-	M2x.4	HITM24	-
3-48	HIT348	-	M2.2x.45	HITM2245	7751-2.2
4-40	HIT440	7551-04	M2.5x.45	HITM2545	7751-2.5
5-40	HIT540	7551-05	M3x.5	HITM35	7751-3
6-32	HIT632	7551-06	M3.5x.6	HITM356	7751-3.5
			M4x.7	HITM47	7751-4
8-32	HIT832	7551-2	M5x.8	HITM58	7751-5M
10-24	HIT1024	7551-3M	M6x1	HITM610	7751-6M
12-24	HIT1224	7551-1M	M7x1	HITM710	7751-7M
1/4-20	HIT1420	7551-4M	M8x1.25	HITM8125	7751-8M
5/16-18	HIT51618	7551-5M	M10x1.5	HITM1015	7751-10M
3/8-16	HIT3816	7551-6M	M12x1.75	HITM12175	7751-12M
7/16-14	HIT71614	7551-7M	M14x2	HITM1420	7751-14M
1/2-13	HIT1213	7551-8M	M16x2	HITM1620	7751-16M
INCH UNIFIED FINE			METRIC FINE		
3-56	HIT356	7552-03	M8x1	HITM810	7755-8
4-48	HIT448	7552-04	M10x1	HITM1010	7755-10
6-40	HIT640	7552-06	M10x1.25	HITM10125	7756-10
8-36	HIT836	7552-2	M12x1.25	HITM12125	7756-12
10-32	HIT1032	7552-3M	M12x1.5	HITM1215	7753-12
1/4-28	HIT1428	7552-4M	M14x1.5	HITM1415	-
5/16-24	HIT51624	7552-5M	M16x1.5	HITM1615	-
3/8-24	HIT3824	7552-6M			
7/16-20	HIT71620	7552-7M			
1/2-20	HIT1220	7552-8M			

THREADED MANDREL TYPE 3

The “Threaded Mandrel” installation tool is basically the same as a threaded bolt, with the exception of the recessed end of the threaded mandrel used to pick up the insert tang. It is machined to be square at the other end to accommodate turning the tool with a conventional wrench for installation.



This Threaded Mandrel Type is usually used when installing a small number of inserts. It is the most cost effective and efficient way to install a few inserts, and it is the type that we include in all of our installation kits. Some of the larger Threaded Mandrel Type installation tools are machined with a hole drilled through the opposite end from the mandrel. This is done so that a steel pin can slide into it for the purpose of leverage to rotate and install the larger inserts. All of the Bolt Type installation tools are made of heat treated steel and are manufactured to conform to A-A-59158.

STANDARD

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	COMPETITOR PART NUMBER
UNIFIED COARSE		
3/4-10	HIT3410	3724-12
7/8-9	HIT789	3724-14
1-8	HIT18	3724-16
1-1/8-7	HIT1187	3724-18
1-1/4-7	HIT1147	3724-20
1-3/8-6	HIT1386	3724-22
1-1/2-6	HIT1126	3724-24

METRIC

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	COMPETITOR PART NUMBER
COARSE		
M22x2.5	HITM2225	7751-22
M27x3	HITM2720	7751-27
M30x3.5	HITM3020	7751-30
M33x3.5	HITM3320	7751-33
M36x4	HITM3620	7751-36
M39x4	HITM3920	7751-39

*Fine threads generally require a plastic prewinder.

THREADED MANDREL SQUARE HEAD

The “Threaded Mandrel” installation tool is basically the same as a threaded bolt, with the exception of the recessed end of the threaded mandrel used to pick up the insert tang. It is machined to be square at the other end to accommodate turning the tool with a conventional wrench for installation.



This Threaded Mandrel Type is usually used when installing a small number of inserts. It is the most cost effective and efficient way to install a few inserts, and it is the type that we include in all of our installation kits. Some of the larger Threaded Mandrel Type installation tools are machined with a hole drilled through the opposite end from the mandrel. This is done so that a steel pin can slide into it for the purpose of leverage to rotate and install the larger inserts. All of the Bolt Type installation tools are made of heat treated steel and are manufactured to conform to A-A-59158.

STANDARD

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
UNIFIED COARSE		UNIFIED FINE *	
2-56	BT256	3-56	BT356
3-48	BT348	4-48	BT448
4-40	BT440	6-40	BT640
5-40	BT540	8-36	BT836
6-32	BT632	10-32	BT1032
8-32	BT832		
10-24	BT1024	1/4-28	BT1428
12-24	BT1224	5/16-24	BT51624
1/4-20	BT1420	3/8-24	BT3824
5/16-18	BT51618	7/16-20	BT71620
3/8-16	BT3816	1/2-20	BT1220
7/16-14	BT71614		
1/2-13	BT1213	9/16-18	BT91618
9/16-12	BT91612	5/8-18	BT5818
5/8-11	BT5811	3/4-16	BT3416
3/4-10	BT3410	7/8-14	BT7814
7/8-9	BT789	1-14	BT114
1-8	BT18		
		1-12	BT112
1-1/8-7	BT1187	1-1/8-12	BT11812
1-1/4-7	BT1147	1-1/4-12	BT11412
1-3/8-6	BT1386	1-3/8-12	BT13812
1-1/2-6	BT1126	1-1/2-12	BT11212

METRIC

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
COARSE		FINE *	
M2x.4	BTM24	M8x1	BTM810
M2.2x.45	BTM2245	M10x1	BTM1010
M2.5x.45	BTM2545	M10x1.25	BTM10125
M3x.5	BTM35	M12x1.25	BTM12125
M3.5x.6	BTM356	M12x1.5	BTM1215
M4x.7	BTM47		
		M14x1.5	BTM1415
M5x.8	BTM58	M16x1.5	BTM1615
M6x1	BTM610	M18x1.5	BTM1815
M7x1	BTM710	M20x1.5	BTM2015
M8x1.25	BTM8125	M22x1.5	BTM2215
M10x1.5	BTM1015	M18x2	BTM1820
M12x1.75	BTM12175	M20x2	BTM2020
M14x2	BTM1420	M22x2	BTM2220
M16x2	BTM1620	M24x2	BTM2420
M18x2.5	BTM1825	M27x2	BTM2720
		M30x2	BTM3020
M20x2.5	BTM2025		
M22x2.5	BTM2225		
M24x3	BTM2430		
M27x3	BTM2730		
M30x3.5	BTM3035		

*Fine threads generally require a plastic prewinder.

INSTALLATION TOOLS CONT.

REMOVABLE SLEEVE TYPE 4

The third type of installation tool is referred to as the "Removable Captive Sleeve" type. This type is a cross between the Bolt type and the Captive Sleeve type. It has a shaft with a threaded mandrel end, and the other end has a perpendicular steel pin or rod to turn it. This type also has a sleeve that is removable, and when removed, can be rear loaded with the insert. When the sleeve with the insert inside is slid back onto the tool it is ready to turn the handle and install the insert. The Removable Captive Sleeve tool operates on the same basic principle as the Captive Sleeve tool, but one is side loaded and one is rear loaded. The Removable Captive Sleeve accommodates the larger sized inserts that would otherwise be too big for the regular Captive Sleeve type. The Removable Captive Sleeve style is available in fine thread sizes that pick up where the regular Captive Sleeve tools leave off.

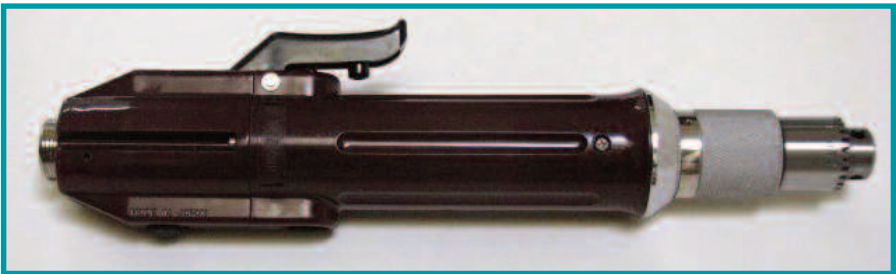


NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	COMPETITOR PART NUMBER	NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	COMPETITOR PART NUMBER
INCH UNIFIED FINE			METRIC FINE		
9/16-18	HIT91618	535-9	M14x1.5	HITM1415	7753-14
5/8-18	HIT5818	535-10	M16x1.5	HITM1615	7753-16
3/4-16	HIT3416	535-12	M18x1.5	HITM1815	7753-18
7/8-14	HIT7814	535-14	M20x1.5	HITM2015	7753-20
1-14	HIT114	535-16	M22x1.5	HITM2215	7753-22
1-12	HIT112	535-161	M18x2	HITM1820	7754-18
1-1/8-12	HIT11812	535-18	M20x2	HITM2020	7754-20
1-1/4-12	HIT11412	535-20	M22x2	HITM2220	7754-22
1-3/8-12	HIT13812	535-22	M24x2	HITM2420	7754-24
1-1/2-12	HIT11212	535-24	M27x2	HITM2720	7754-27
			M30x2	HITM3020	7754-30
			M33x2	HITM3320	7754-33
			M36x2	HITM3620	7754-36
			M39x2	HITM3920	7754-39
			M36x3	HITM3630	7752-36
			M39x3	HITM3930	7752-36

POWER TOOLS

ELECTRIC TOOL

The fourth type of installation tool is the "Power" installation tool. The Power installation tools can be either electric or pneumatic (air) powered. The Electric Tool is comprised of a power supply, an installation driver and a mandrel.



Installation is available in two sizes, small and large. The small driver is used to install insert sizes 2-56 through 8-32 for both UNF and UNC inserts in the standard series, and 2.5M through 4M in the metric series. The large driver accommodates from

10-32 through 1/4" for UNC and UNF standard series, and from 5M through 6M in the metric series. The appropriate thread size Electric Mandrel is inserted into the chuck that is located on the end of the installation driver. The Electric mandrels can be used to install inserts in the bulk or strip feed state.

PNEUMATIC (AIR) TOOL

The Pneumatic (Air) Tool is comprised of a reversible air motor, an adapter and a prewinder (Front End Assembly that includes a mandrel). The set up must include an Air Compressor, an Oiler, Pressure Regulator and an air line. The Pressure Regulator must be used to control the appropriate air pressure for each insert size. The Pneumatic (Air) Tool is also available in two sizes, small and

large. The small air tool is used to install sizes 2-56 through 1/4" for both Unified Coarse and Unified Fine inserts, and 2.2M through 6M in the metric series. The larger air tool is used to install inserts from 5/16" through 1/2" for Unified Coarse and Unified Fine inserts, and from 7M



through 12M in the metric series. The small or large adapter is attached to the appropriate size air motor. The Front End Assembly can be used to install bulk or strip feed inserts in lengths of 1, 1.5 and 2 diameter. Front End Assemblies for insert lengths 2.5 and 3.0 diameter can be provided. Both types of power tools are manufactured of the highest quality and conform to ASME B18.29.1-1993. All mandrels and Front End Assemblies are made of heat treated steel.

STANDARD PNEUMATIC TOOLS

NOMINAL THREAD SIZE	AIR MOTOR		ADAPTER		MOTOR W/ADAPTER	
	STRAIGHT	FOOTSWITCH	STRAIGHT	FOOTSWITCH	STRAIGHT	FOOTSWITCH
COARSE AND FINE						
2-56 thru 1/4	8463AM	M002RVR0068R3AM	8463A	M002RVR006BR3A	8463AMA	M002RVR006BR3AMA
5/16 thru 1/2			8463B		8463AMB	

ADD: "RFF" to the end of our part number to order an Air Motor with an Air Regulator, Filter and Fitting Kit.

STANDARD PNEUMATIC ACCESSORIES

NOMINAL THREAD SIZE	FRONT END ASSEMBLY		PREWINDERS		MANDRELS
	BULK	STRIP	BULK	STRIP	
UNIFIED COARSE					
2-56	FEAB440 FEAB540 FEAB632	FEAS256	PWB440	PWS256	AM256
4-40		FEAS440		PWS440	AM440
5-40		FEAS540	PWB632	PWS632	AM540
6-32		FEAS632			AM632
8-32	FEAB832 FEAB1024	FEAS832	PWB832	PWS832	AM832
10-24		FEAS1024	PWB1024	PWS1024	AM1024
12-24	FEAB1420	FEAS1224	PWB1420	PWS1420	AM1224
1/4-20		FEAS1420			
5/16-18	FEAB51618 FEAB3816 FEAB71614 FEAB1213	FEAS51618	PWB51618	PWS51618	AM51618
3/8-16			PWB3816		AM3816
7/16-14			PWB71614		AM71614
1/2-13			PWB1213		AM1213
UNIFIED FINE					
6-40	FEAB640 FEAB1032	FEAS1032	PWB640	PWS1032	AM640
10-32			PWB1032		AM1032
12-28	FEAB1428	FEAS1228	PWB1428	PWS1428	AM1228
1/4-28					FEAS1428
5/16-24	FEAB51624 FEAB3824 FEAB71620 FEAB1220	FEAS51624	PWB51624	PWS51624	AM51624
3/8-24			PWB3824		AM3824
7/16-20			PWB71620		AM71620
1/2-20			PWB1220		AM1220

STANDARD PNEUMATIC ACCESSORIES CONT.

NOMINAL THREAD SIZE	SPACERS			NOMINAL THREAD SIZE	SPACERS		
	UNIFIED COARSE				UNIFIED FINE		
2-56	SP256-1	SP256-1.5	SP256-2	6-40	SP640-1	SP640-1.5	SP640-2
4-40	SP440-1	SP440-1.5	SP440-2	10-32	SP1032-1	SP1032-1.5	SP1032-2
5-40	SP540-1	SP540-1.5	SP540-2	12-28	SP1428-1	SP1428-1.5	SP1428-2
6-32	SP632-1	SP632-1.5	SP632-2	1/4-28			
8-32	SP832-1	SP832-1.5	SP832-2	5/16-24	SP51624-1	SP51624-1.5	
10-24	SP1024-1	SP1024-1.5	SP1024-2	3/8-24	SP3824-1	SP3824-1.5	
12-24	SP1420-1	SP1420-1.5	SP1420-2	7/16-20	SP71620-1	SP71620-1.5	
1/4-20				1/2-20	SP1220-1	SP1220-1.5	
5/16-18	SP51618-1	SP51618-1.5					
3/8-16	SP3816-1	SP3816-1.5					
7/16-14	SP71614-1	SP71614-1.5					
1/2-13	SP1213-1	SP1213-1.5					



MANDRELS FOR ELECTRIC POWER TOOLS

ELECTRIC POWER TOOLS

NOMINAL THREAD SIZE	POWER SUPPLY	DRIVER	MANDRELS		
UNIFIED COARSE					
2-56 4-40 5-40	SBT60 SBT60	SB400C SB400C	EM256 EM440 EM540		
6-32 8-32 1/4-20	SBT60 SBT60 SBT60	SB400C SB400C SB650C	EM632 EM832 EM1420		
UNIFIED FINE					
3-56 4-48 6-40			EM356 EM448 EM640		
8-36 10-32 1/4-28			SBT60 SBT60	SB650C SB650C	EM836 EM1032 EM1428

POWER TOOLS

POWER TOOLS

METRIC PNEUMATIC TOOLS

NOMINAL THREAD SIZE	AIR MOTOR		ADAPTER		MOTOR W/ADAPTER	
	STRAIGHT	FOOTSWITCH	STRAIGHT	FOOTSWITCH	STRAIGHT	FOOTSWITCH
COARSE AND FINE						
M2.2x.45 thru M6	8463AM	M002RVR0068R3AM	8463A	M002RVR006BR3A	8463AMA	M002RVR006BR3AMA
M7 thru M12	8463AM		8463B		8463AMB	

ADD: "RFF" to the end of our part number to order an Air Motor with an Air Regulator, Filter and Fitting Kit.

METRIC PNEUMATIC ACCESSORIES

NOMINAL THREAD SIZE	FRONT END ASSEMBLY		PREWINDERS		MANDRELS
	BULK	STRIP	BULK	STRIP	
C O A R S E					
M2.2x.45 M2.5x.45 M3x.5 M3.5x.6	FEABM2545 FEABM35 FEABM356	FEASM2245 FEASM2545 FEASM35 FEASM356	PWBM2545 PWBM35 PWBM356	PWSM2245 PWSM2545 PWSM35 PWSM356	AMM2245 AMM2545 AMM35 AMM356
M4x.7 M5x.8 M6x1 M7x1	FEABM47 FEABM58 FEABM610 FEABM710	FEASM47 FEASM58 FEASM610 FEASM710	PWBM47 PWBM58 PWBM610 PWBM710	PWSM47 PWSM58 PWSM610 PWSM710	AMM47 AMM58 AMM610 AMM710
M8x1.25 M10x1.5 M12x1.75	FEABM8125 FEABM1015 FEABM12175	FEASM8125	PWBM8125 PWBM1015 PWBM12175	PWSM8125	AMM8125 AMM1015 AMM12175
F I N E					
M8x1 M10x1 M10x1.25 M12x1.25 M12x1.5	FEABM810 FEABM1010 FEABM10125 FEABM12125 FEABM1215	FEASM810	PWBM810 PWBM1010 PWBM10125 PWBM12125 PWBM1215		AMM810 AMM1010 AMM10125 AMM12125 AMM1215

METRIC PNEUMATIC ACCESSORIES CONT.

NOMINAL THREAD SIZE	SPACERS		
	C O A R S E		
M2.2x.45	SPM22-1	SPM22-1.5	SPM22-2
M2.5x.45	SPM25-1	SPM25-1.5	SPM25-2
M3x.5	SPM3-1	SPM3-1.5	SPM3-2
M3.5x.6	SPM35-1	SPM35-1.5	SPM35-2
M4x.7	SPM4-1	SPM4-1.5	SPM4-2
M5x.8	SPM5-1	SPM5-1.5	SPM5-2
M6x1	SPM6-1	SPM6-1.5	SPM6-2
M7x1	SPM7-1	SPM7-1.5	
M8x1.25	SPM812-1	SPM812-1.5	
M10x1.5	SPM1015-1	SPM1015-1.5	
M12x1.75	SPM1217-1	SPM1217-1.5	

NOMINAL THREAD SIZE	SPACERS	
	F I N E	
M8x1	SPM8-1	SPM8-1.5
M10x1	SPM10-1	SPM10-1.5
M10x1.25	SPM1012-1	SPM1012-1.5
M12x1.25	SPM12-1	SPM12-1.5
M12x1.5	SPM1215-1	SPM1215-1.5



FRONT END ASSEMBLY

ELECTRIC POWER TOOLS

NOMINAL THREAD SIZE	POWER SUPPLY		DRIVER		MANDRELS	
	Reference	Helical Wire	Reference	Helical Wire	Reference	Helical Wire
METRIC SERIES						
M2.5x.45 M3x.5 M3.5x.6	8050-50	SBT60	8050-400C	SB400C		EMM25 EMM3 EMM35
M4x.7 M5x.8 M6x1	8050-50 8050-50 8050-50	SBT60 SBT60 SBT60	8050-650C 8050-650C 8050-650C	SB650C SB650C SB650C		EMM4 EMM5 EMM6

STRIP FEED

Helical Wire Inc. can supply our customers with screw thread inserts that are available in various materials and finishes on reels for multiple insert installing applications.

We commonly refer to this as "Strip Feed". The inserts are centered on a pre-determined length of plastic tape at equal depths. The Strip Feed is available in increments of one hundred pieces, and usually prepared 500, 1000, 1500 or 2000 pieces per reel depending on the size of the inserts.

Once the parts are installed into the plastic tape they are wound onto a spool, or reel so that they can be unwound as they are being installed. This Strip Feed style of inserts is the most effective way to utilize the inserts for assembly line type operations where many inserts are being installed in succession. This Strip Feed is also most effectively installed with the power installation tools for rapid and accurate installation.

Helical Wire also provides our customers, who do this type of installation, with a holder that is dually designed to hold both the power installation tool and the reel of inserts. Most importantly the holder keeps both the reel of inserts and the tool from getting in the way of the installation process. Each holder is equipped with a swing arm that allows the installer to move the installation tool into position to install the inserts, and also allows the tool to rest on the holder out of the way when installation is completed. These holders are made of light weight aluminum and are easy to assemble. They will accommodate both the large and small sizes of power inserting tools.

Helical Wire can provide our customers with Strip Feed in sizes 2-56 through 3/8", for both UNF and UNC inserts in the standard series, and in sizes 2.2M through 10M in the metric series. We can provide Strip Feed for all of these sizes of inserts in any length desired: 1 diameter through 3 diameter. Helical Wire keeps many sizes in stock on reels, and we can usually ship smaller quantities of certain sizes the same day. If an item is requested on Strip Feed and is not in stock, we can almost always get them out the next day. For Strip Feed orders in larger quantities 1 to 3 days is needed to deliver them to you, depending on the quantity. We can also accommodate scheduling of orders to your production requirements.



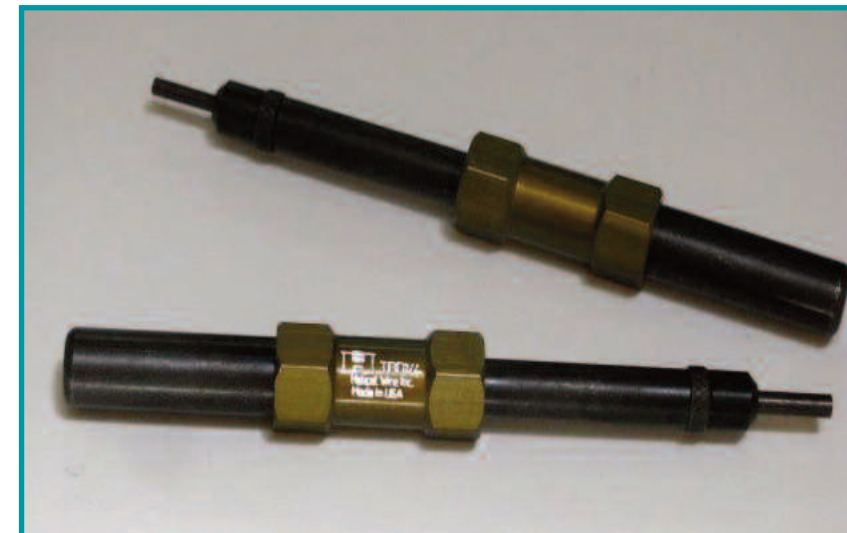
When ordering parts for Strip Feed add "S" to the end of our part number.

TANG BREAK - OFF TOOLS

When screw thread inserts are installed they are screwed into the tapped hole by the tang mechanism on the last coil of the insert. The installation tool rotates the insert as it goes down into the hole until it is installed to the proper depth. At this point the tool is removed, and the installation is done. However there is one more step that should be followed before the bolt is fastened into the hole. This would be the breaking off of the tang. Some applications do not require the tang to be removed.

The tang that drives the insert can be removed to eliminate any interference with the bolt. The removal of the tang provides for greater variation in the depth location of the bolt, and may avoid the possibility of the bolt not seating to the proper depth.

The tools that are used to remove or break off the tangs from the installed insert are called "Tang Break-Off Tools". There are two types of Tang Break-Off tools that Helical Wire can provide, Automatic and Manual.



The Automatic type has a spring loaded sleeve that actuates a punch. When inserting the tool into the hole where the insert has been installed, the Automatic Tang Break-Off tool, or T.B.O., should be resting with the punch on top of the tang. When pressure is applied on the tool it will activate the spring loaded punch to strike a uniform blow on the tang, which will break it off at the notched location. The Automatic style of T.B.O. is available for sizes 2-56 through 1/2" for both UNF and UNC inserts in the standard series, and can be used for sizes 2.2M through 12M in the metric series.

The Manual type of T.B.O. tool is similar to the Automatic tool, but the punch is loose in the insert. Be sure to use the proper size punch. When the tool is in place and the punch is mounted directly over the tang, the tool needs to be struck sharply by a hammer or mallet to break the tang off of the insert. The Manual type of T.B.O. tool is available for sizes 9/16 through 1" in UNF and UNC for the standard series, and for 14M and up in the metric series.

Both of these types of T.B.O. tools will do the job of removing the tangs from the installed inserts to allow for a hassle free bolt installation.

TANG BREAK OFF TOOLS PART NUMBERS

NOMINAL THREAD SIZE	AUTOMATIC		REPLACEMENT PUNCHES		MANUAL
	HELICAL REFERENCE	COMPETITOR RENCREWIRE	HELICAL REFERENCE	COMPETITOR	HELICAL WIRE
INCH UNIFIED COARSE					
2-56	TB0256	3695-02	TB0RP256	3697-02	-
3-48	TB0348	3695-02	TB0RP348	3697-02	-
4-40	TB0440	3695-04	TB0RP440	3697-04	-
5-40	TB0540	3695-04	TB0RP540	3697-04	-
6-32	TB0632	3695-06	TB0RP632	3697-06	-
8-32	TB0832	3695-2	TB0RP832	3697-2	-
-	TB01024	3695-3	TB0RP1024	3697-3	-
12-24	TB01224	3695-3	TB0RP1224	3697-3	-
1/4-20	TB01420	3695-4	TB0RP1420	3697-4	-
5/16-18	TB051618	3695-5	TB0RP51618	3643-5	TB0P51618
3/8-16	TB03816	3695-6	TB0RP3816	3643-6	TB0P3816
7/16-14	TB071614	3695-7	TB0RP71614	3643-7	TB0P71614
1/2-13	TB01213	3695-8	TB0RP1213	3643-8	TB0P1213
9/16-12					TB0P91612
5/8-11					TB0P5811
3/4-10					TB0P3410
7/8-9					TB0P789
1-8					TB0P18
INCH UNIFIED FINE					
3-56	TB0356	3695-02	TB0RP356	3697-02	-
4-48	TB0448	3695-04	TB0RP448	3697-04	-
6-40	TB0640	3695-06	TB0RP640	3697-06	-
8-36	TB0836	3695-2	TB0RP836	3697-2	-
10-32	TB01032	3695-3	TB0RP1032	3697-3	-
1/4-28	TB01428	3695-4	TB0RP1428	3697-4	-
5/16-24	TB051624	3692-5	TB0RP51624	3645-5	TB0P51624
3/8-24	TB03824	3692-6	TB0RP3824	3645-6	TB0P3824
7/16-20	TB071620	3692-7	TB0RP71620	3645-7	TB0P71620
1/2-20	TB01220	3692-8	TB0RP1220	3645-8	TB0P1220
9/16-18					TB0P91618
5/8-18					TB0P5818
3/4-16					TB0P3416
7/8-14					TB0P7814
1-14					TB0P114
1-12					TB0P112

NOMINAL THREAD SIZE	AUTOMATIC		REPLACEMENT PUNCHES		MANUAL
	HELICAL WIRE	COMPETITOR REFERENCE	HELICAL WIRE	COMPETITOR REFERENCE	HELICAL WIRE
METRIC COARSE					
M2x.4	TB0M24	4238-2	TB0RPM24	3697-02	TB0PM24
M2.2x.45	TB0M2245	4238-2.2	TB0RPM2245	3697-02	TB0PM2245
M2.5x.45	TB0M2545	4238-2.2	TB0RPM2545	3697-04	TB0PM2545
M3x.5	TB0M35	4238-3	TB0RPM35	3697-04	TB0PM35
M3.5x.6	TB0M356	4238-3	TB0RPM356	3697-06	TB0PM356
M4x.7	TB0M47	4238-4	TB0RPM47	3697-2	TB0PM47
M5x.8	TB0M58	4238-5	TB0RPM58	3697-3	TB0PM58
M6x1	TB0M610	4238-6	TB0RPM610	3697-3	TB0PM610
M7x1	TB0M710	4238-7	TB0RPM710	3697-4	TB0PM710
M8x1.25	TB0M8125	4238-8	TB0RPM8125	3643-5	TB0PM8125
M10x1.5	TB0M1015	4238-10	TB0RPM1015	3643-6	TB0PM1015
M12x1.75	TB0M12175	4238-12	TB0RPM12175	3643-7	TB0PM12175
METRIC FINE					
M8x1	TB0M810	4238-8	TB0RPM810	3643-5	TB0PM810
M10x1	TB0M1010	4238-10	TB0RPM101	4436-10	TB0PM1010
M10x1.25	TB0M10125	4238-10	TB0RPM10125	4436-10	TB0PM10125
M12x1.25	TB0M12125	4238-12	TB0RPM12125	4436-12	TB0PM12125
M12x1.5	TB0M1215	4238-12	TB0RPM1215	4436-12	TB0PM1215

For 2.5 and 3.0 diameter inserts add -25 or -30 to end of part number.
Example: TBO 1032-30
TBORP 1032-30

EXTRACTION TOOLS

All along the installation process the object has been to get the insert installed into the tapped hole, but there may be instances where the installer may need to take an insert that has been installed out of the hole. Since the insert has experienced the spring back of the insert retention principle it will be anchored securely in the hole and may be difficult to remove. This would be an instance where an "Extraction Tool" would be the most effective way to remove the insert from the hole.

The Extraction tool is a steel shaft with a rod or pin on the top, in a "T" configuration with a narrow triangular tip that is made to wedge itself down inside the insert. Turning the tool counter clockwise with constant pressure will remove the installed insert. This is the best and simplest way to remove inserts from the tapped holes. These Extraction tools are made of heat treated steel and are manufactured to conform to A-A-59158 and ASME B18.29.1-1993.



STANDARD

NOMINAL DIAMETER	HELICAL WIRE PART NUMBER	CROSS REFERENCE COMPETITOR
EXTRACTING TOOL		
2	ET2	1227-02
3 thru 8	ET3	1227-06
10 thru 3/8"	ET10	1227-6
7/16 thru 1"	ET716	1227-16
1-1/8 thru 1-1/2"	ET118	1227-24

METRIC

NOMINAL DIAMETER	HELICAL WIRE PART NUMBER	CROSS REFERENCE COMPETITOR
EXTRACTING TOOL		
2mm	ET2	1227-01
2.2mm	ET2	1227-02
2.5 thru 4.5mm	ET3	1227-06
5 thru 10mm	ET10	1227-6
11 thru 24mm	ET716	1227-16
27 thru 39mm	ET118	1227-24

REPAIR KITS

In certain instances, screw thread inserts are needed for installation on a limited basis. This occurs often in automotive, boat and motorcycle type repairs, or where tapped holes may have been stripped or damaged by wear, corrosion or over-torque. Helical Wire carries a full line of installation repair kits that will provide any mechanic with exactly what they need for these types of repairs.

Each Installation Kit, or repair kit, is complete with a tap, a pre-determined amount of inserts and an installation tool. Every Installation Kit contains a high quality tap that will more than efficiently tap the drilled hole. Even though a drill is not included, the suggested drill size is always printed on the Kit's package. The Installation Kit also includes between four and twelve inserts, depending on the size of the inserts. There are more included for the smaller sizes and less

included for the larger sized inserts. The inserts included are the standard free-running, in the most popular 1.5 diameter size. The self locking style can be included if requested, and a different length of insert can be provided if necessary. Each kit also is equipped with a "Bolt" type installation tool, and a Tang Break-Off tool that will install the amount of inserts required.

Every Installation Kit contains all of the components needed to repair small scale, and some not so small scale screw thread repairs. Helical Wire Installation Kits are available in sizes 4-40 through 1-1/2-6 in the standard UNC series and 6-40 through 1-1/2-12 in the standard UNF series. The kits are also available in metric sizes from 3M to 20M coarse and 8M to 18M in the fine series.

STANDARD REPAIR KITS

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	INSERTS PER KIT	NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	INSERTS PER KIT
UNIFIED COARSE			UNIFIED FINE		
4-40	KIT440	12	6-40	KIT640	12
5-40	KIT540	12	8-36	KIT836	12
6-32	KIT632	12	10-32	KIT1032	12
8-32	KIT832	12	1/4-28	KIT1428	12
10-24	KIT1024	12	5/16-24	KIT51624	12
			3/8-24	KIT3824	6
12-24	KIT1224	12	7/16-20	KIT71620	6
1/4-20	KIT1420	12	1/2-20	KIT1220	6
5/16-18	KIT51618	12	9/16-18	KIT91618	6
3/8-16	KIT3816	6	5/8-18	KIT5818	6
7/16-14	KIT71614	6	3/4-16	KIT3416	4
			7/8-14	KIT7814	6
1/2-13	KIT1213	6	1-14	KIT114	6
9/16-12	KIT91612	6	1-12	KIT112	6
5/8-11	KIT5811	6	1-1/8-12	KIT11812	5
3/4-10	KIT3410	4	1-1/4-12	KIT11412	4
7/8-9	KIT789	6	1-3/8-12	KIT13812	4
			1-1/2-12	KIT11212	4
1-8	KIT18	6			
1-1/8-7	KIT1187	5			
1-1/4-7	KIT1147	6			
1-3/8-6	KIT1386	6			
1-1/2-6	KIT1126	6			

ADD: "D" to end of part number for kit with Drill
"L" after thread size for kit with Locking inserts
ex: 1420LKIT
"2" to end of part number for kit with 2 diameter inserts

METRIC REPAIR KITS

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	INSERTS PER KIT	NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	INSERTS PER KIT
COARSE			FINE		
M3x.5	KITM35	12	M8x1	KITM810	12
M3.5x.6	KITM356	12	M10x1	KITM1010	12
M4x.7	KITM47	12	M10x1.25	KITM10125	12
M5x.8	KITM58	12	M12x1.25	KITM12125	12
M6x1	KITM610	12			
			M12x1.5	KITM1215	12
M7x1	KITM710	12	M14x1.5	KITM1415	12
M8x1.25	KITM8125	12	M16x1.5	KITM1615	6
M10x1.5	KITM1015	12	M18x1.5	KITM1815	6
M12x1.75	KITM12175	12			
M14x2	KITM1420	12			
M16x2	KITM1620	6			
M18x2.5	KITM1825	6			
M20x2.5	KITM2025	4			

ADD: "D" to end of part number for kit with Drill
"L" after thread size for kit with Locking inserts
ex: KITM8125L
-20 to end of part number for kit with 2 diameter inserts



MILITARY STYLE KITS

The Helical Wire Thread repair system will repair stripped or damaged holes due to wear, corrosion & over torque quickly and efficiently. The Helical Wire Military style kit offers the same top quality and durable kit that is used in the field by our troops. Each Military style kit will equip the user with everything necessary to restore the application to a stronger and better than new condition. Each re-sealable, steel kit box comes with an S.T.I. tap, a captive sleeve installation tool, 1.5 diameter non-locking and locking inserts, and an insert Extraction tool. Each kit contains user friendly instructions

and technical information for smooth user operation. Military kits are available in a full range of sizes. The standard Inch series is available from 2-56 through 1-1/2-6 in the Coarse Thread,(UNC) and from 3-56 through 1-1/4-12 in the Fine Series,(UNF). They are also available in Metric sizes from M3x.5 through M18x1.5 with various wire sizes to choose from. All kits are available with Drills and 2.0 diameter length inserts upon request. Each of our Military style kits provides an efficient and economical solution for mechanical problems in critical threaded applications.

STANDARD KITS

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	NSN GOVERNMENT PART NUMBER
UNIFIED COARSE		
2-56	KIT256GS	5180-01-049-8598
3-48	KIT348GS	5180-01-088-3842
4-40	KIT440GS	5180-00-054-7506
5-40	KIT540GS	5180-00-054-7524
6-32	KIT632GS	5180-00-054-7507
8-32	KIT832GS	5180-00-935-0730
10-24	KIT1024GS	5180-00-935-0731
12-24	KIT1224GS	5180-00-054-7526
1/4-20	KIT1420GS	5180-00-935-0732
5/16-18	KIT51618GS	5180-00-935-0733
3/8-16	KIT3816GS	5180-00-935-0734
7/16-14	KIT71614GS	5180-00-054-7503
1/2-13	KIT1213GS	5180-00-051-5024
9/16-12	KIT91612GS	5180-00-059-4829
5/8-11	KIT5811GS	5180-00-054-7514
3/4-10	KIT3410GS	5180-00-051-5025
7/8-9	KIT789GS	5180-00-054-7515
1-8	KIT18GS	5180-00-051-5026
1-1/8-7	KIT1187GS	5180-00-935-0731
1-1/4-7	KIT1147GS	
1-3/8-6	KIT1386GS	
1-1/2-6	KIT1126GS	



STANDARD KITS

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	NSN GOVERNMENT PART NUMBER
UNIFIED FINE		
3-56	KIT356GS	5180-00-054-7525
4-48	KIT448GS	
6-40	KIT640GS	
8-36	KIT836GS	
10-32	KIT1032GS	5180-00-935-0735
1/4-28	KIT1428GS	5180-00-935-0736
5/16-24	KIT51624GS	5180-00-935-0737
3/8-24	KIT3824GS	5180-00-935-0738
7/16-20	KIT71620GS	5180-00-935-0739
1/2-20	KIT1220GS	5180-00-054-7505
9/16-18	KIT91618GS	5180-00-054-7516
5/8-18	KIT5818GS	5180-00-054-7512
3/4-16	KIT3416GS	5180-00-054-7513
7/8-14	KIT7814GS	5180-00-054-7519
1-12	KIT112GS	5180-00-054-7520
1-14	KIT114GS	5180-00-054-7521
1-1/8-12	KIT11812GS	5180-00-054-7522
1-1/4-12	KIT11412GS	



OVERSIZE INSERTS

Helical Wire Inc. tries to help our customers when the preparation of the tapped hole becomes a logistical problem. As covered earlier, the drilling and tapping of the initial hole is very important for installation. In some instances the hole may be tapped larger than it should be. When this happens the tapped hole is “over-sized”.

In order to repair this problem, an “Oversize” Insert is the solution. They can also be used to correct problems of slight taper and bell-mouth in STI tapped holes. Oversize inserts will correct these problems for both STI and standard tapped holes. The use of Oversize inserts, to repair oversize holes, allows the installer to use the original bolt size after the repair has been made.

Oversize inserts are available in both standard and metric series. The Oversize series are manufactured of 18-8 stainless steel and conform to all MS Standards. They are also available in ready to use installation repair kits. These kits are complete with a bolt type installation tool, a small number of free-running 1.5 diameter inserts, and an oversize tap. All of the components included in the Oversize kits are also available separately upon request.

STANDARD PART NUMBERS

NOMINAL THREAD SIZE	HELICAL WIRE FREE-RUNNING	CROSS REFERENCE COMPETITOR	HELICAL WIRE LOCKING	CROSS REFERENCE COMPETITOR
UNIFIED COARSE				
2-56	MS1220950S	-	MS21209C02-10	-
	1350S	8185-02CN129	15	3885-02CN129
	1750S	172	20	172
	2150S	-	25	-
	2550S	-	30	-
3-48	MS1221150S	-	MS21209C03-10	-
	1550S	8185-03CN148	15	3885-03CN148
	1950S	198	20	198
	2350S	-	25	-
	2750S	-	30	-
4-40	MS1220760S	-	MS21209C04-10	-
	1160S	8185-04CN168	15	3885-04CN168
	1560S	224	20	224
	1960S	-	25	-
	2360S	-	30	-
5-40	MS1220770S	-	MS21209C05-10	-
	1170S	8185-05CN188	15	3885-05CN188
	1570S	250	20	250
	1970S	-	25	-
	2370S	-	30	-
6-32	MS1220780S	-	MS21209C06-10	-
	1180S	8185-06CN207	15	3885-06CN207
	1580S	276	20	276
	1980S	-	25	-
	2380S	-	30	-

When using Oversize inserts to repair oversize holes it is not necessary to re-drill the hole. The hole must be tapped with an oversize STI tap.



STANDARD PART NUMBERS CONT.

NOMINAL THREAD SIZE	HELICAL WIRE FREE-RUNNING	CROSS REFERENCE COMPETITOR	HELICAL WIRE LOCKING	CROSS REFERENCE COMPETITOR
UNIFIED COARSE				
8-32	MS1220790S	-	MS21209C08-10	-
	1190S	8185-2CN246	15	3885-2CN246
	1590S	328	20	328
	1990S	-	25	-
	2390S	-	30	-
10-24	MS1220800S	-	MS21209C1-10	-
	1200S	8185-3CN285	15	3885-3CN285
	1600S	380	20	380
	2000S	-	25	-
	2400S	-	30	-
12-24	MS21208C2-100S	-	MS21209C2-10	-
	150S	8185-1CN324	15	3885-1CN324
	200S	432	20	432
	250S	-	25	-
	300S	-	30	-
1/4-20	MS1220810S	-	MS21209C4-10	-
	1210S	8185-4CN375	15	3885-4CN375
	1610S	500-	20	500
	2010S	-	25	-
	2410S	-	30	-
5/16-18	MS1220820S	-	MS21209C5-10	-
	1220S	8185-5CN469	15	3885-5CN469
	1620S	625	20	625
	2020S	-	25	-
	2420S	-	30	-
3/8-16	MS1220830S	-	MS21209C6-10	-
	1230S	8185-6CN562	15	3885-6CN562
	1630S	750	20	750
	2030S	-	25	-
	2430S	-	30	-
7/16-14	MS1220840S	-	MS21209C7-10	-
	1240S	8185-7CN656	15	3885-7CN656
	1640S	875	20	875
	2040S	-	25	-
	2440S	-	30	-
1/2-13	MS1220850S	-	MS21209C8-10	-
	1250S	8185-8CN750	15	3885-8CN750
	1650S	1000	20	1000
	2050S	-	25	-
	2450S	-	30	-

HELICAL WIRE INC

OVERSIZE INSERTS

STANDARD PART NUMBERS CONT.

NOMINAL THREAD SIZE	HELICAL WIRE FREE-RUNNING	CROSS REFERENCE COMPETITOR	HELICAL WIRE LOCKING	CROSS REFERENCE COMPETITOR
UNIFIED FINE				
3-56	MS1246700S	-	MS21209F03-100S	-
	7100S	8191-03CN148	150S	3891-03CN148
	7500S	198	200S	198
	7900S	-	250S	-
	8300S	-	300S	-
4-48	MS1246710S	-	MS21209F04-100S	-
	7110S	8191-04CN168	150S	3891-04CN168
	7510S	224	200S	224
	7910S	-	250S	-
	8310S	-	300S	-
6-40	MS1246530S	-	MS21209F06-100S	-
	6930S	8191-06CN324	150S	3891-06CN324
	7330S	432	200S	432
	7730S	-	250S	-
	8130S	-	300S	-
10-32	MS1246550S	-	MS21209F1-100S	-
	6950S	8191-3CN375	150S	3891-3CN375
	7350S	500-	200S	500-
	7750S	-	250S	-
	8150S	-	300S	-
1/4-28	MS1246560S	-	MS21209F4-100S	-
	6960S	8191-4CN469	150S	3891-4CN469
	7360S	625	200S	625
	7760S	-	250S	-
	8160S	-	300S	-
5/16-24	MS1246570S	-	MS21209F5-100S	-
	6970S	8191-5CN562	150S	3891-5CN562
	7370S	750	200S	750
	7770S	-	250S	-
	8170S	-	300S	-
3/8-24	MS1246580S	-	MS21209F6-100S	-
	6980S	8191-6CN656	150S	3891-6CN656
	7380S	875	200S	875
	7780S	-	250S	-
	8180S	-	300S	-
7/16-20	MS1246590S	-	MS21209F7-100S	-
	6990S	8191-7CN750	150S	3891-7CN750
	7390S	1000	200S	1000
	7790S	-	250S	-
	8190S	-	300S	-
1/2-20	MS1246600S	-	MS21209F8-100S	-
	7000S	8191-8CN750	150S	3891-8CN750
	7400S	1000	200S	1000
	7800S	-	250S	-
	8200S	-	300S	-

METRIC PART NUMBERS

NOMINAL THREAD SIZE	HELICAL WIRE FREE-RUNNING	CROSS REFERENCE COMPETITOR	HELICAL WIRE LOCKING	CROSS REFERENCE COMPETITOR
FINE				
M2.2 x .45N	MA3279-1000S	-	MA3329-1000S	-
	1500S	8084-2.2CN033	1500S	4484-2.2CN033
	2000S	044	2000S	044
	2500S	-	2500S	-
	3000S	-	3000S	-
M2.5 x .45N	MA3279-1010S	-	MA3329-1010S	-
	1510S	8084-2.5CN038	1510S	4484-2.5CN038
	2010S	050-	2010S	050-
	2510S	-	2510S	-
	3010S	-	3010S	-
M3 x 0.5N	MA3279-1020S	-	MA3329-1020S	-
	1520S	8084-3CN045	1520S	4484-3CN045
	2020S	060	2020S	060
	2520S	-	2520S	-
	3020S	-	3020S	-
M3.5 x 0.6N	MA3279-1030S	-	MA3329-1030S	-
	1530S	8084-3.5CN053	1530S	4484-3.5CN053
	2030S	070	2030S	070
	2530S	-	2530S	-
	3030S	-	3030S	-
M4 x 0.7N	MA3279-1040S	-	MA3329-1040S	-
	1540S	8084-4CN060	1540S	4484-4CN060
	2040S	080	2040S	080
	2540S	-	2540S	-
	3040S	-	3040S	-
M5 x 0.8N	MA3279-1050S	-	MA3329-1050S	-
	1550S	8084-5CN075	1550S	4484-5CN075
	2050S	100	2050S	100
	2550S	-	2550S	-
	3050S	-	3050S	-
M6 x 1.0N	MA3279-1060S	-	MA3329-1060S	-
	1560S	8084-6CN090	1560S	4484-6CN090
	2060S	120	2060S	120
	2560S	-	2560S	-
	3060S	-	3060S	-
M7 x 1.0N	MA3279-1070S	-	MA3329-1070S	-
	1570S	8084-7CN105	1570S	4484-7CN105
	2070S	140	2070S	140
	2570S	-	2570S	-
	3070S	-	3070S	-
M8 x 1.25N	MA3279-1090S	-	MA3329-1090S	-
	1590S	8084-8CN120	1590S	4484-8CN120
	2090S	160	2090S	160
	2590S	-	2590S	-
	3090S	-	3090S	-

OVERSIZE INSERTS

OVERSIZE INSERTS

METRIC PART NUMBERS CONT.

NOMINAL THREAD SIZE	HELICAL WIRE FREE-RUNNING	CROSS REFERENCE COMPETITOR	HELICAL WIRE LOCKING	CROSS REFERENCE COMPETITOR
FINE				
M10 x 1.5N	MA3279-1110S	-	MA3329-1110S	-
	1610S	8084-10CN150	1610S	4484-10CN150
	2110S	200	2110S	200
	2610S	-	2610S	-
	3110S	-	3110S	-
M12 x 1.75N	MA3279-1140S	-	MA3329-1140S	-
	1640S	8084-12CN180	1640S	4484-12CN180
	2140S	240	2140S	240
	2640S	-	2640S	-
	3140S	-	3140S	-
COARSE				
M8 x 1.0N	MA3279-1080S	-	MA3329-1080S	-
	1580S	4755-8CN120	1580S	5455-8CN120
	2080S	160	2080S	160
	2580S	-	2580S	-
	3080S	-	3080S	-
M10 x 1.0N	MA3279-1410S	-	MA3329-1410S	-
	1910S	4755-10CN150	1910S	5455-10CN150
	2410S	200	2410S	200
	2910S	-	2910S	-
	3410S	-	3410S	-
M10 x 1.25 N	MA3279-1100S	-	MA3329-1100S	-
	1600S	5149-10CN150	1600S	5849-10CN150
	2100S	200	2100S	200
	2600S	-	2600S	-
	3100S	-	3100S	-
M12 x 1.25N	MA3279-1120S	-	MA3329-1120S	-
	1620S	5149-12CN180	1620S	5849-12CN180
	2120S	240	2120S	240
	2620S	-	2620S	-
	3120S	-	3120S	-
M12 x 1.5N	MA3279-1130S	-	MA3329-1130S	-
	1630S	4745-12CN180	1630S	5645-12CN180
	2130S	240	2130S	240
	2630S	-	2630S	-
	3130S	-	3130S	-

OVERSIZE TOOL PART NUMBERS

BOTTOMING TAP			THREAD PLUG GAUGES			
NOMINAL THREAD SIZE	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR
			3B		2B	
INCH - UNIFIED COARSE						
2-56	STI2560S	56187-02-2	G2563BOS	4026-02-2	G2562BOS	4033-02-2
3-48	STI3480S	56187-03-2	G3483BOS	4026-03-2	G3482BOS	4033-03-2
4-40	STI4400S	56187-04-2	G4403BOS	4026-04-2	G4402BOS	4033-04-2
5-40	STI5400S	56187-05-2	G5403BOS	4026-05-2	G5402BOS	4033-05-2
6-32	STI6320S	56187-06-2	G6323BOS	4026-06-2	G6322BOS	4033-06-2
8-32	STI8320S	56187-2-2	G8323BOS	4026-2-2	G8322BOS	4033-2-2
10-24	STI10240S	56187-3-2	G10243BOS	4026-3-2	G10242BOS	4033-3-2
12-24	STI12240S	56187-1-2	G12243BOS	4026-1-2	G12242BOS	4033-1-2
1/4-20	STI14200S	56187-4-2	G14203BOS	4026-4-2	G14202BOS	4033-4-2
5/16-18	STI516180S	56187-5-2	G516183BOS	4026-5-2	G516182BOS	4033-5-2
3/8-16	STI38160S	56187-6-2	G38163BOS	4026-6-2	G38162BOS	4033-6-2
7/16-14	STI716140S	56187-7-2	G716143BOS	4026-7-2	G716142BOS	4033-7-2
1/2-13	STI12130S	56187-8-2	G12133BOS	4026-8-2	G12132BOS	4033-8-2
INCH - UNIFIED FINE						
3-56	STI356	56193-03-2	G3563BOS	4027-03-2	G3562BOS	4034-03-2
4-48	STI448	56193-04-2	G4483BOS	4027-04-2	G4482BOS	4034-04-2
6-40	STI640	56193-06-2	G6403BOS	4027-06-2	G6402BOS	4034-06-2
10-32	STI1032	56193-3-2	G10323BOS	4027-3-2	G10322BOS	4034-3-2
1/4-28	STI1428	56193-4-2	G14283BOS	4027-4-2	G14282BOS	4034-4-2
5/16-24	STI51624	56193-5-2	G516243BOS	4027-5-2	G516242BOS	4034-5-2
3/8-24	STI3824	56193-6-2	G38243BOS	4027-6-2	G38242BOS	4034-6-2
7/16-20	STI71620	56193-7-2	G716203BOS	4027-7-2	G716202BOS	4034-7-2
1/2-20	STI1220	56193-8-2	G12203BOS	4027-8-2	G12202BOS	4034-8-2
METRIC COARSE						
			4H5H		5H	
M2.2x.45	STIM22450S	4893-2.2	GM22453BOS	5346-2.2	GM22452BOS	4895-2.2
M2.5x.45	STIM25450S	4893-2.5	GM25453BOS	5346-2.5	GM25452BOS	4895-2.5
M3x.5	STIM350S	4893-3	GM353BOS	5346-3	GM352BOS	4895-3
M3.5x.6	STIM3560S	4893-3.5	GM3563BOS	5346-3.5	GM3562BOS	4895-3.5
M4x.7	STIM470S	4893-4	GM473BOS	5346-4	GM472BOS	4895-4
M5x.8	STIM580S	4893-5	GM583BOS	5346-5	GM582BOS	4895-5
M6x1	STIM6100S	4893-6	GM6103BOS	5346-6	GM6102BOS	4895-6
M7x1	STIM7100S	4893-7	GM7103BOS	5346-7	GM7102BOS	4895-7
M8x1.25	STIM81250S	4893-8	GM81253BOS	5346-8	GM81252BOS	4895-8
M10x1.5	STIM10150S	4893-10	GM10153BOS	5346-10	GM10152BOS	4895-10
M12x1.75	STIM121750S	4893-12	GM121753BOS	5346-12	GM121752BOS	4895-12
METRIC FINE						
M8x1	STIM8100S	4867-8	GM8103BOS	5374-8	GM8102BOS	5347-8
M10x1	STIM10100S	4867-10	GM10103BOS	5374-10	GM10102BOS	5347-10
M10x1.25	STIM101250S	4868-10	GM101253BOS	5375-10	GM101252BOS	5348-10
M12x1.25	STIM121250S	4868-12	GM121253BOS	5375-12	GM121252BOS	5348-12
M12x1.5	STIM12150S	4869-12	GM12153BOS	5376-12	GM12152BOS	5349-12

OVERSIZE TOOLS

TWINSETS

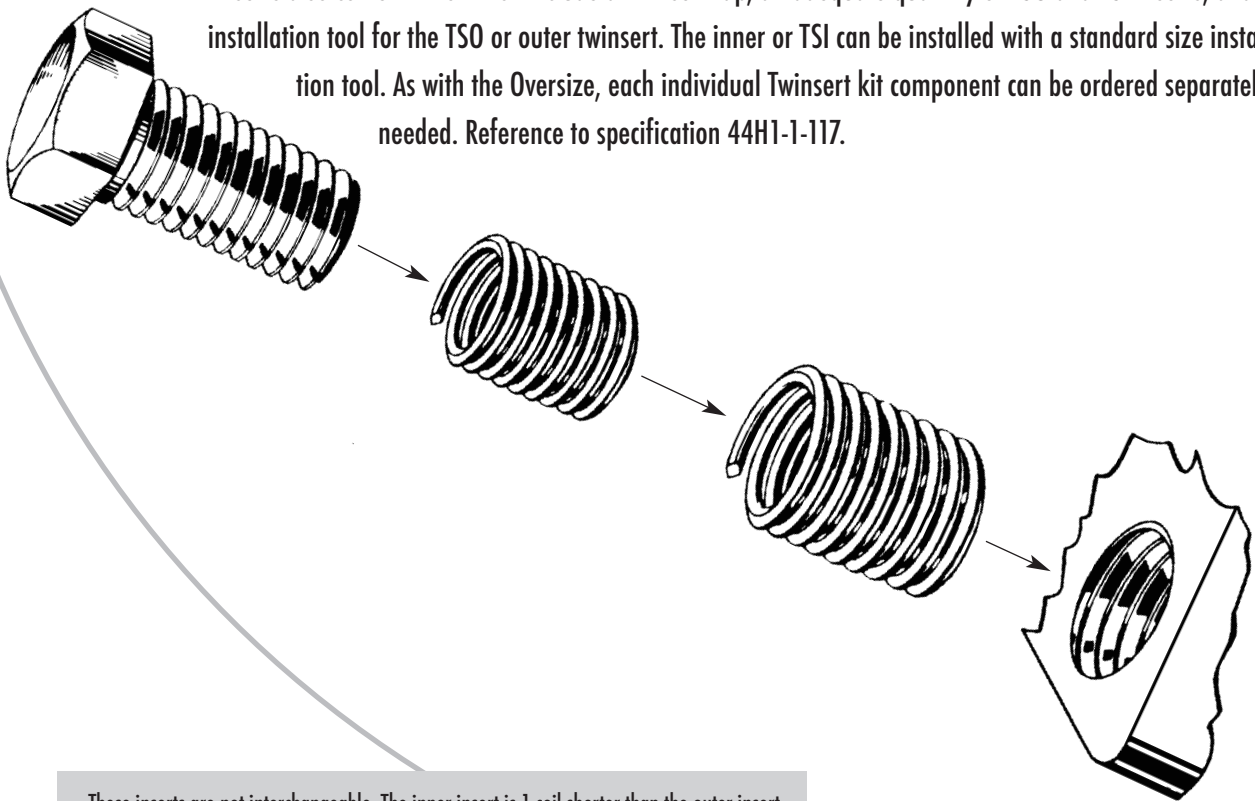
When a hole has been tapped incorrectly another mode of repair is the use of "Twinserts". Twinserts are used to correct tapped holes that are stripped, off-center, or damaged beyond the range of the Oversize inserts. A Twinert application would use two inserts in tandem that would fit inside each other. One would be the Twinert Outer, or TSO. The TSO will always be free-running. The second would be the Twinert Inner, or TSI. The Twinert inner can be either free-running or self locking.

Like the Oversize method of repairing incorrectly tapped holes, a tap specifically designed for the Twinert application must be used to re-tap the hole. Then the Twinert outer is installed into the hole. Next the tang of the TSO needs to be broken off, then the Twinert inner would be installed so that the end of the last coil of the inner would be 1/2 pitch below the end of the outer insert (the TSI is 1 coil shorter than the TSO).

This method of repairing will accomplish the same goal as the Oversize method. It will correct the problem of the incorrectly tapped hole for both STI and standard holes, and will allow the installer to use the originally intended bolt size.

The Double-sert series are available in all of the sizes that Helical Wire manufactures for both the standard inch and metric inserts. They are also made of 18-8 stainless steel and conform to the same specifications of the Oversize series. They can also be made of Phosphor Bronze, Inconel X-750, Nitronic 60 and Nimonic 90 material on request.

Twinserts also come in kits which include a Twinert tap, an adequate quantity of TSO and TSI inserts, and an installation tool for the TSO or outer twinert. The inner or TSI can be installed with a standard size installation tool. As with the Oversize, each individual Twinert kit component can be ordered separately if needed. Reference to specification 44H1-1-117.



These inserts are not interchangeable. The inner insert is 1 coil shorter than the outer insert.
ADD: "KIT" to the front of Free-running or Locking part number for kit. Extraction tool not included in kits. Tooling Per T.O. 44H1-1-117 NAVWEPS 02-1-19.

STANDARD TWINERT PART NUMBERS

NOMINAL THREAD SIZE	OUTER INSERT		INNER INSERT			
			FREE RUNNING		LOCKING	
	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR
UNIFIED COARSE						
2-56	MS122135TSO 175TSO	2385-02CN129 172	MS122135TSI 175TSI	4485-02CN129 172	MS21209C02-15TSI 20TSI	4685-02CN129 172
3-48	MS122155TSO 195TSO	2385-03CN148 198	MS122155TSI 195TSI	4485-03CN148 198	MS21209C03-15TSI 20TSI	4685-03CN148 198
4-40	MS122116TSO 156TSO	2385-04CN168 224	MS122116TSI 156TSI	4485-04CN168 224	MS21209C04-15TSI 20TSI	4685-04CN168 224
5-40	MS122117TSO 157TSO	2385-05CN188 250	MS122117TSI 157TSI	4485-05CN188 250	MS21209C05-15TSI 20TSI	4685-05CN188 250
6-32	MS122118TSO 158TSO	2385-06CN207 276	MS122118TSI 158TSI	4485-06CN207 276	MS21209C06-15TSI 20TSI	4685-06CN207 276
8-32	MS122119TSO 159TSO	2385-2CN246 328	MS122119TSI 159TSI	4485-2CN246 328	MS21209C08-15TSI 20TSI	4685-2CN246 328
10-24	MS122120TSO 160TSO	2385-3CN285 380	MS122120TSI 160TSI	4485-3CN285 380	MS21209C1-15TSI 20TSI	4685-3CN285 380
12-24	MS21208C2-15TSO 20TSO	2385-1CN324 432	MS21208C2-15TSI 20TSI	4485-1CN324 432	MS21209C2-15TSI 20TSI	4685-1CN324 432
1/4-20	MS122121TSO 161TSO	2385-4CN375 500	MS122121TSI 161TSI	4485-4CN375 500	MS21209C4-15TSI 20TSI	4685-4CN375 500
5/16-18	MS122122TSO 162TSO	2385-5CN469 625	MS122122TSI 162TSI	4485-5CN469 625	MS21209C5-15TSI 20TSI	4685-5CN469 625
3/8-16	MS122123TSO 163TSO	2385-6CN562 750	MS122123TSI 163TSI	4485-6CN562 750	MS21209C6-15TSI 20TSI	4685-6CN562 750
7/16-14	MS122124TSO 164TSO	2385-7CN656 875	MS122124TSI 164TSI	4485-7CN656 875	MS21209C7-15TSI 20TSI	4685-7CN656 875
1/2-13	MS122125TSO 165TSO	2385-8CN750 1000	MS122125TSI 165TSI	4485-8CN750 1000	MS21209C8-15TSI 20TSI	4685-8CN750 1000
9/16-12	MS122126TSO 166TSO	2385-9CN844 1125	MS122126TSI 166TSI	4485-9CN844 1125	MS21209C9-15TSI 20TSI	4685-9CN844 1125
5/8-11	MS122127TSO 167TSO	2385-10CN938 1250	MS122127TSI 167TSI	4485-10CN938 1250	MS21209C10-15TSI 20TSI	4685-10CN938 1250
3/4-10	MS122128TSO 168TSO	2385-12CN1125 1500	MS122128TSI 168TSI	4485-12CN1125 1500	MS21209C12-15TSI 20TSI	4685-12CN1125 1500

STANDARD TWIN SERT PART NUMBERS CONT.

NOMINAL THREAD SIZE	OUTER INSERT		INNER INSERT			
			FREE RUNNING		LOCKING	
	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR
U N I F I E D F I N E						
3-56	MS124710TSO 750TSO	2391-03CN148 198	MS124710TSI 750TSI	4491-03CN148 198	MS21209F03-15TSI 20TSI	4691-03CN148 198
4-48	MS124711TSO 751TSO	2391-04CN168 224	MS124711TSI 751TSI	4491-04CN168 224	MS21209F04-15TSI 20TSI	4691-04CN168 224
6-40	MS124693TSO 733TSO	2391-06CN207 276	MS124693TSI 733TSI	4491-06CN207 276	MS21209F06-15TSI 20TSI	4691-06CN207 276
10-32	MS124695TSO 735TSO	2391-3CN285 380	MS124695TSI 735TSI	4491-3CN285 380	MS21209F1-15TSI 20TSI	4691-3CN285 380
1/4-28	MS124696TSO 736TSO	2391-4CN375 500	MS124696TSI 736TSI	4491-4CN375 500	MS21209F4-15TSI 20TSI	4691-4CN375 500
5/16-24	MS124697TSO 737TSO	2391-5CN469 625	MS124697TSI 737TSI	4491-5CN469 625	MS21209F5-15TSI 20TSI	4691-5CN469 625
3/8-24	MS124698TSO 738TSO	2391-6CN562 750	MS124698TSI 738TSI	4491-6CN562 750	MS21209F6-15TSI 20TSI	4691-6CN562 750
7/16-20	MS124699TSO 739TSO	2391-7CN656 875	MS124699TSI 739TSI	4491-7CN656 875	MS21209F7-15TSI 20TSI	4691-7CN656 875
1/2-20	MS124700TSO 740TSO	2391-8CN750 1000	MS124700TSI 740TSI	4491-8CN750 1000	MS21209F8-15TSI 20TSI	4691-8CN750 1000
9/16-18	MS124701TSO 741TSO	2391-9CN844 1125	MS124701TSI 741TSI	4491-9CN844 1125	MS21209F9-15TSI 20TSI	4691-9CN844 1125
5/8-18	MS124702TSO 742TSO	2391-10CN938 1250	MS124702TSI 742TSI	4491-10CN938 1250	MS21209F10-15TSI 20TSI	4691-10CN938 1250
3/4-16	MS124703TSO 743TSO	2391-12CN1125 1500	MS124703TSI 743TSI	4491-12CN1125 1500	MS21209F12-15TSI 20TSI	4691-12CN1125 1500



STANDARD TWIN SERT TOOL PART NUMBERS

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE		BOTTOMING TAP		OUTER INSTALLATION TOOL		OUTER TBO		OUTER EXTRACTION TOOL	
	Aluminum	Steel	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
UNIFIED COARSE										
2-56	#32 (.1160)	#32 (.1160)	STI256TST	3887-02	HIT256TSO	2698-02	TBO440TSO	4032-02	ET3	1227-06
3-48	#30 (.1285)	#29 (.1360)	STI348TST	3887-03	HIT348TSO	2698-03	TBO348TSO	4032-04	ET3	1227-06
4-40	#24 (.1520)	#23 (.1540)	STI440TST	3887-04	HIT440TSO	2698-04	TBO440TSO	4032-04	ET3	1227-06
5-40	#19 (.1660)	#18 (.1695)	STI540TST	3887-05	HIT540TSO	2698-05	TBO540TSO	4032-06	ET3	1227-06
6-32	#12 (.1890)	#11 (.1910)	STI632TST	3887-06	HIT632TSO	2698-06	TBO632TSO	4032-06	ET3	1227-06
8-32	#3 (.2130)	7/32 (.2188)	STI832TST	3887-2	HIT832TSO	2698-2	TBO832TSO	4032-2	ET3	1227-06
10-24	"F" (.2570)	"G" (.2610)	STI1024TST	3887-3	HIT1024TSO	2698-3	TBO1024TSO	4032-3	ET10	1227-6
12-24	9/32 (.2812)	9/32 (.2810)	STI1224TST	3887-1	HIT1224TSO	2698-1	TBO1224TSO	4032-1	ET10	1227-6
1/4-20	21/64 (.3281)	"Q" (.3320)	STI1420TST	3887-4	HIT1420TSO	2698-4	TBO1420TSO	4032-4	ET10	1227-6
5/16-18	"X" (.3970)	"Y" (.4040)	STI51618TST	3887-5	HIT51618TSO	2698-5	TBO51618TSO	4032-5	ET10	1227-6
3/8-16	15/32 (.4688)	15/32 (.4688)	STI3816TST	3887-6	HIT3816TSO	2698-6	TBO3816TSO	4032-6	ET716	1227-16
7/16-14	35/64 (.5469)	9/16 (.5625)	STI71614TST	4087-7	HIT71614TSO	2698-7	TBO71614TSO	4032-7	ET716	1227-16
1/2-13	5/8 (.6250)	5/8 (.6250)	STI1213TST	4087-8	HIT1213TSO	2698-8	TBO1213TSO	-	ET716	1227-16
9/16-12	11/16 (.6875)	45/64 (.7031)	STI91612TST	4087-9	HIT91612TSO	2698-9	TBO91612TSO	-	ET716	1227-16
5/8-11	49/64 (.7656)	49/64 (.7656)	STI5811TST	4087-10	HIT5811TSO	2698-10	TBO5811TSO	-	ET716	1227-16
3/4-10	29/32 (.9062)	29/32 (.9062)	STI3410TST	4087-12	HIT3410TSO	2698-12	TBO3410TSO	-	ET716	1227-16
UNIFIED FINE										
3-56	#30 (.1285)	#30 (.1285)	STI356TST	3893-03	HIT356TSO	2705-03	TBO356TSO	4032-04	ET3	1227-06
4-48	#26 (.1470)	#26 (.1470)	STI448TST	3893-04	HIT448TSO	2705-04	TBO448TSO	4032-04	ET3	1227-06
6-40	#15 (.1800)	#14 (.1820)	STI640TST	3893-06	HIT640TSO	2705-06	TBO640TSO	4032-06	ET3	1227-06
10-32	"C" (.2420)	"D" (.2460)	STI1032TST	3893-3	HIT1032TSO	2705-3	TBO1032TSO	4032-3	ET10	1227-6
1/4-28	5/16 (.3125)	5/16 (.3125)	STI1428TST	3893-4	HIT1428TSO	2705-4	TBO1428TSO	4032-4	ET10	1227-6
5/16-24	"V" (.3770)	"V" (.3770)	STI51624TST	3893-5	HIT51624TSO	2705-5	TBO51624TSO	4032-5	ET10	1227-6
3/8-24	7/16 (.4375)	7/16 (.4375)	STI3824TST	3993-6	HIT3824TSO	2705-6	TBO3824TSO	4032-6	ET716	1227-16
7/16-20	33/64 (.5156)	33/64 (.5156)	STI71620TST	3993-7	HIT71620TSO	2705-7	TBO71620TSO	4032-7	ET716	1227-16
1/2-20	37/64 (.5781)	37/64 (.5781)	STI1220TST	3993-8	HIT1220TSO	2705-8	-	-	ET716	1227-16
9/16-18	41/64 (.6406)	21/32 (.6562)	STI91618TST	3993-9	HIT91618TSO	2705-9	-	-	ET716	1227-16
5/8-18	45/64 (.7031)	23/32 (.7188)	STI5818TST	3993-10	HIT5818TSO	2705-10	-	-	ET716	1227-16
3/4-16	37/32 (.8438)	55/64 (.8594)	STI3416TST	3993-12	HIT3416TSO	2705-12	-	-	ET716	1227-16

These inserts are not interchangeable. The inner insert is 1 coil shorter than the outer insert.
ADD: "KIT" to the front of Free-running or Locking part number for kit. Extraction tool not included in kits. Tooling Per T.O. 44H1-1-117 NAVWEPS 02-1-19.

TWIN S E R T S

METRIC TWIN SERT PART NUMBERS

NOMINAL THREAD SIZE	OUTER INSERT		INNER INSERT			
			FREE RUNNING		LOCKING	
	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR
COURSE						
M2.2x.45	MA3279-150TSO 200TSO	1884-2.2CN033 044	MA3279-150TSI 200TSI	4784-2.2CN033 044	MA3329-150TSI 200TSI	4884-2.2CN033 044
M2.5x.45	MA3279-151TSO 201TSO	1884-2.5CN038 050	MA3279-151TSI 201TSI	4784-2.5CN038 050	MA3329-151TSI 201TSI	4884-2.5CN038 050
M3x.5	MA3279-152TSO 202TSO	1884-3CN045 060	MA3279-152TSI 202TSI	4784-3CN045 060	MA3329-152TSI 202TSI	4884-3CN045 060
M3.5x.6	MA3279-153TSO 203TSO	1884-3.5CN053 070	MA3279-153TSI 203TSI	4784-3.5CN053 070	MA3329-153TSI 203TSI	4884-3.5CN053 070
M4x7	MA3279-154TSO 204TSO	1884-4CN060 080	MA3279-154TSI 204TSI	4784-4CN060 080	MA3329-154TSI 204TSI	4884-4CN060 080
M5x.8	MA3279-155TSO 205TSO	1884-5CN075 100	MA3279-155TSI 205TSI	4784-5CN075 100	MA3329-155TSI 205TSI	4884-5CN075 100
M6x1	MA3279-156TSO 206TSO	1884-6CN090 120	MA3279-156TSI 206TSI	4784-6CN090 120	MA3329-156TSI 206TSI	4884-6CN090 120
M7x1	MA3279-157TSO 207TSO	1884-7CN105 140	MA3279-157TSI 207TSI	4784-7CN105 140	MA3329-157TSI 207TSI	4884-7CN105 140
M8x1.25	MA3279-159TSO 209TSO	1884-8CN120 160	MA3279-159TSI 209TSI	4784-8CN120 160	MA3329-159TSI 209TSI	4884-8CN120 160
M10x1.5	MA3279-161TSO 211TSO	1884-10CN150 200	MA3279-161TSI 211TSI	4784-10CN150 200	MA3329-161TSI 211TSI	4884-10CN150 200
M12x1.75	MA3279-164TSO 214TSO	1884-12CN180 240	MA3279-164TSI 214TSI	4784-12CN180 240	MA3329-164TSI 214TSI	4884-12CN180 240
M14x2	MA3279-166TSO 216TSO	1884-14CN210 280	MA3279-166TSI 216TSI	4784-14CN210 280	MA3329-166TSI 216TSI	4884-14CN210 280
M16x2	MA3279-168TSO 218TSO	1884-16CN240 320	MA3279-168TSI 218TSI	4784-16CN240 320	MA3329-168TSI 218TSI	4884-16CN240 320
M18x2.5	MA3279-171TSO 221TSO	1884-18CN270 360	MA3279-171TSI 221TSI	4784-18CN270 360	MA3329-171TSI 221TSI	4884-18CN270 360
M20x2.5	MA3279-174TSO 224TSO	1884-20CN300 400	MA3279-174TSI 224TSI	4784-20CN300 400	MA3329-174TSI 224TSI	4884-20CN300 400

METRIC TWIN SERT PART NUMBERS CONT.

NOMINAL THREAD SIZE	OUTER INSERT		INNER INSERT			
			FREE RUNNING		LOCKING	
	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR	HELICAL WIRE	CROSS REFERENCE COMPETITOR
COURSE						
M8x1	MA3279-158TSO 208TSO	1855-8CN120 160	MA3279-158TSI 208TSI	3855-8CN110 150	MA3329-158TSI 208TSI	5755-8CN110 150
M10x1	MA3279-191TSO 241TSO	1855-10CN150 200	MA3279-191TSI 241TSI	3855-10CN140 190	MA3329-191TSI 241TSI	5755-10CN140 190
M10x1.25	MA3279-160TSO 210TSO	1849-10CN150 200	MA3279-160TSI 210TSI	3849-10CN138 188	MA3329-160TSI 210TSI	5749-10CN138 188
M12x1.25	MA3279-162TSO 212TSO	1849-12CN180 240	MA3279-162TSI 212TSI	3849-12CN168 228	MA3329-162TSI 212TSI	5749-12CN168 228
M12x1.5	MA3279-163TSO 213TSO	1845-12CN180 240	MA3279-163TSI 213TSI	3845-12CN165 225	MA3329-163TSI 213TSI	5745-12CN165 225
M14x1.5	MA3279-165TSO 215TSO	1845-14CN210 280	MA3279-165TSI 215TSI	3845-14CN195 265	MA3329-165TSI 215TSI	5745-14CN195 265
M16x1.5	MA3279-167TSO 217TSO	1845-16CN240 320	MA3279-167TSI 217TSI	3845-16CN225 305	MA3329-167TSI 217TSI	5745-16CN225 305
M18x1.5	MA3279-169TSO 219TSO	1845-18CN270 360	MA3279-169TSI 219TSI	3845-18CN255 345	MA3329-169TSI 219TSI	5745-18CN255 345
M18x2	MA3279-170TSO 220TSO	1866-18CN270 360	MA3279-170TSI 220TSI	3866-18CN250 340	MA3329-170TSI 220TSI	5766-18CN250 340
M20x1.5	MA3279-172TSO 222TSO	1845-20CN300 400	MA3279-172TSI 222TSI	3845-20CN285 385	MA3329-172TSI 222TSI	5745-20CN285 385
M20x2	MA3279-173TSO 223TSO	1866-20CN300 400	MA3279-173TSI 223TSI	3866-20CN280 380	MA3329-173TSI 223TSI	5766-20CN280 380

These inserts are not interchangeable. The inner insert is 1 coil shorter than the outer insert.
ADD: "KIT" to front of Free-running or Locking part number for kit. Extraction tool not included in kits.

TWIN S E R T S

TWIN S E R T S

METRIC TWIN SERT TOOL PART NUMBERS

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE		BOTTOMING TAP		OUTER INSTALLATION TOOL		OUTER TBO		OUTER EXTRACTION TOOL	
	Aluminum	Steel	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
COARSE										
M2.2x.45	2.9	2.9	STIM2245TST	4673-2.2	HITM2245TSO	1887-2.2	TBOM2245TSO	4543-2.2	ET3	1227-06
M2.5x.45	3.2	3.2	STIM2545TST	4673-2.5	HITM2545TSO	1887-2.5	TBOM2545TSO	4543-2.5	ET3	1227-06
M3x.5	3.8	3.8	STIM35TST	4673-3	HITM35TSO	1887-3	TBOM35TSO	4543-3	ET3	1227-06
M3.5x.6	4.5	4.5	STIM356TST	4673-3.5	HITM356TSO	1887-3.5	TBOM356TSO	4543-3.5	ET10	1227-6
M4x7	5.1	5.1	STIM47TST	4673-4	HITM47TSO	1887-4	TBOM47TSO	4543-4	ET10	1227-6
M5x.8	6.3	6.3	STIM58TST	4673-5	HITM58TSO	1887-5	TBOM58TSO	4543-5	ET10	1227-6
M6x1	7.6	7.6	STIM610TST	4673-6	HITM610TSO	1887-6	TBOM610TSO	4543-6	ET10	1227-6
M7x1	8.6	8.6	STIM710TST	4673-7	HITM710TSO	1887-7	TBOM710TSO	4543-7	ET10	1227-6
M8x1.25	10.0	10.0	STIM8125TST	4673-8	HITM8125TSO	1887-8	TBOM8125TSO	4543-8	ET10	1227-6
M10x1.5	12.5	12.5	STIM1015TST	4673-10	HITM1015TSO	1887-10	TBOM1015TSO	4543-10	ET716	1227-16
M12x1.75	14.5	15.0	STIM12175TST	4673-12	HITM12175TSO	1887-12	TBOM12175TSO	-	ET716	1227-16
M14x2	17.0	17.5	STIM1420TST	4673-14	HITM1420TSO	1887-14	TBOM1420TSO	-	ET716	1227-16
M16x2	19.0	19.5	STIM1620TST	4673-16	HITM1620TSO	1887-16	TBOM1620TSO	-	ET716	1227-16
M18x2.5	22.0	22.0	STIM1825TST	4673-18	HITM1825TSO	1887-18	TBOM1825TSO	-	ET716	1227-16
M20x2.5	24.0	24.0	STIM2025TST	4673-20	HITM2025TSO	1887-20	TBOM2025TSO	-	ET716	1227-16
FINE										
M8x1	9.6	9.6	STIM810TST	4711-8	HITM810TSO	1896-8	TBOM810TSO	4543-8	ET10	1227-6
M10x1	11.5	11.8	STIM1010TST	4711-10	HITM1010TSO	1896-10	TBOM1010TSO	4543-10	ET716	1227-16
M10x1.25	12.0	12.0	STIM10125TST	4712-10	HITM10125TSO	1897-10	TBOM10125TSO	4543-10	ET716	1227-16
M12x1.25	14.0	14.0	STIM12125TST	4712-12	HITM12125TSO	1897-12	-	-	ET716	1227-16
M12x1.5	14.25	14.5	STIM1215TST	4713-12	HITM1215TSO	1898-12	-	-	ET716	1227-16
M14x1.5	16.25	16.5	STIM1415TST	4713-14	HITM1415TSO	1898-14	-	-	ET716	1227-16
M16x1.5	18.5	18.5	STIM1615TST	4713-16	HITM1615TSO	1898-16	-	-	ET716	1227-16
M18x1.5	20.5	20.5	STIM1815TST	4713-18	HITM1815TSO	1898-18	-	-	ET716	1227-16
M20x1.5	22.5	22.5	STIM2015TST	4713-20	HITM2015TSO	1898-20	-	-	ET716	1227-16
M18x2	21.0	21.5	STIM1820TST	4714-18	HITM1820TSO	1899-18	-	-	ET716	1227-16
M20x2	23.0	23.5	STIM2020TST	4714-20	HITM2020TSO	1899-20	-	-	ET716	1227-16

8 - PITCH I N S E R T S

Helical Wire Inc. also manufactures 8-Pitch inserts. These inserts are designed specifically for 8-pitch holes in order to reduce the pitch diameter of a standard 8-pitch tapped thread for use with original application and repairs. This reduction is by exactly 1/8" so that repairs can be made in normal 1/8" thread-size increments. A damaged hole can be repaired by tapping with the next 1/8" larger standard 8-pitch tap. After the insert is installed, a permanently repaired thread is provided to the original size with no special taps ever needed. This method of thread repair is quick, economical and provides better threads than the original without scrapping expensive parts and very little down-time.

We manufacture these inserts of 18-8 stainless steel per AS7245 and Inconel X-750 per AS7246 in Standard Free-running and Self-locking inserts sizes. Special lengths can be made to order.

NOMINAL THREAD SIZE	NOMINAL LENGTH	HELICAL WIRE PART NO.	COMPETITOR'S PART NUMBER
NON - LOCKING			
1-1/8-8	1125	1188N1125	4190-18CN-1125
	1688	1188N1688	4190-18CN-1688
	2250	1188N2250	4190-18CN-2250
1-1/4-8	1250	1148N1250	4190-20CN-1250
	1875	1148N1875	4190-20CN-1875
	2500	1148N2500	4190-20CN-2500
1-3/8-8	1375	1388N1375	4190-22CN-1375
	2062	1388N2062	4190-22CN-2062
	2750	1388N2750	4190-22CN-2750
1-1/2-8	1500	1128N1500	4190-24CN-1500
	2250	1128N2250	4190-24CN-2250
	3000	1128N3000	4190-24CN-3000
1-5/8-8	1625	1588N1625	4190-26CN-1625
	2438	1588N2438	4190-26CN-2438
	3250	1588N3250	4190-26CN-3250
1-3/4-8	1750	1348N1750	4190-28CN-1750
	2625	1348N2625	4190-28CN-2625
	3500	1348N3500	4190-28CN-3500
1-7/8-8	1875	1788N1875	4190-30CN-1875
	2812	1788N2812	4190-30CN-2812
	3750	1788N3750	4190-30CN-3750
2-8	2000	28N2000	4190-32CN-2000
	3000	28N3000	4190-32CN-3000
	4000	28N4000	4190-32CN-4000

NOMINAL THREAD SIZE	NOMINAL LENGTH	HELICAL WIRE PART NO.	COMPETITOR'S PART NUMBER
LOCKING			
1-1/8-8	1125	1188L1125	4490-18CN-1125
	1688	1188L1688	4490-18CN-1688
	2250	1188L2250	4490-18CN-2250
1-1/4-8	1250	1148L1250	4490-20CN-1250
	1875	1148L1875	4490-20CN-1875
	2500	1148L2500	4490-20CN-2500
1-3/8-8	1375	1388L1375	4490-22CN-1375
	2062	1388L2062	4490-22CN-2062
	2750	1388L2750	4490-22CN-2750
1-1/2-8	1500	1128L1500	4490-24CN-1500
	2250	1128L2250	4490-24CN-2250
	3000	1128L3000	4490-24CN-3000
1-5/8-8	1625	1588L1625	4490-26CN-1625
	2438	1588L2438	4490-26CN-2438
	3250	1588L3250	4490-26CN-3250
1-3/4-8	1750	1348L1750	4490-28CN-1750
	2625	1348L2625	4490-28CN-2625
	3500	1348L3500	4490-28CN-3500
1-7/8-8	1875	1788L1875	4490-30CN-1875
	2812	1788L2812	4490-30CN-2812
	3750	1788L3750	4490-30CN-3750
2-8	2000	28L2000	4490-32CN-2000
	3000	28L3000	4490-32CN-3000
	4000	28L4000	4490-32CN-4000

INSTALLATION TOOLS

NOMINAL THREAD SIZE	HELICAL WIRE PART NO.	COMPETITOR'S PART NUMBER
BOLT TYPE		
1-1/8-8	BT1188	4288-18
1-1/4-8	BT1148	4288-20
1-3/8-8	BT1388	4288-22
1-1/2-8	BT1128	4288-24
1-5/8-8	BT1588	4288-26
1-3/4-8	BT1348	4288-28
1-7/8-8	BT1788	4288-30
2-8	BT128	4288-32

ADD: "X" at the end of the part number to specify Inconel X-750 material

"V" at the end of the part number to specify Silver Plating per QQ-S-365.

8 - PITCH I N S E R T S

SPECIAL SIZES

Helical Wire Inc. manufactures inserts in as many sizes and types as we possibly can, even some that are hard to find. We refer to these as "Specials". We manufacture exceptional sizes to meet the exact needs of certain customers. These inserts are designed and manufactured for specific mechanical needs.

The Automotive inserts are sizes that are commonly used in automotive manufacturing. They are frequently used in the assembly of particular engine components, such as carburetor units. They are an integral part of the quality required by major Auto makers to fabricate the best possible products.

The Pipe Thread series are available in a complete range of sizes for the most frequent use of correcting taper pipe thread failures which can occur in such applications as exhaust pipes on small engines.

The Spark Plug inserts provide the most durable and highest quality repair available for professional mechanics and engine rebuilders. Helical Wire manufactures Spark Plug inserts for any size engine. They are the preferred method of repair specified by virtually all U.S. and foreign vehicle manufacturers.

Helical Wire Inc. can also manufacture special sized inserts in various sizes not shown. Some special sizes may be uncommon dimensions or thread sizes for unique applications and circumstances. These specials would require additional lead time for production, and would also require a mechanical set up fee that would be determined upon quoting of the individual item.



NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
AUTOMOTIVE	
1-20 N 325 7/8-20 N 330 12-28 N XXX	120N0325 7820N0330 1228N0XXX
7/8-18 N XXX 1-1/16-12 N XXX	7818XXX 111612NXXX

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
SPARK PLUGS	
9M x 1.25 N XXX 10M x 1.0 N XXX 12M x 1.0 N XXX	M9125NXXXSP M1010NXXXSP M1210NXXXSP
11M x 1.0 N XXX 11M x 1.25 N XXX 11M x 1.5 N XXX	M1110NXXXSP M11125NXXXSP M1115NXXXSP
14M x 1.25 N 375 14M x 1.25 N 437 14M x 1.25 N 500 14M x 1.25 N 750	M14125N375SP M14125N437SP M14125N500SP M14125N750SP
18M x 1.5 N 500	M1815N500SP

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
PIPE THREAD	
1/8-27 1/4-18 3/8-18	PT1827 PT1418 PT3818
1/2-14 3/4-14 1-11-1/2	PT1214 PT3414 PT11112

When ordering Automotive or Spark Plug inserts please put in desired length in place of XXX. If ordering Repair Kits please add 'KIT' at front of part number.

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE	TAP		INSTALLATION TOOL		OUTER TBO		EXTRACTION TOOL	
		Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference	Helical Wire	Cross Reference
AUTOMOTIVE									
1-20 7/8-20 12-28		STI120H3P STI7820H3P STI1228H3P		HIT120 HIT7820 HIT1228					
7/8-18 1-1/16-12		STI7818SP? -		HIT7818? HIT11612?					
SPARK PLUG									
M14x1.25 M18x1.5		STIM14125SP STIM1815SP		HITM14125SP HITM1815SP	4889-14 4889-18			ET716 ET716	1227-16 1227-16
PIPE THREAD									
1/8-27	X (.3970)	STI1827NPT	328-2	HIT1827NPT	3371-2			ET716	1227-16
1/4-18 3/8-18	17/32 (.5312) 21/32 (.6562)	STI1418NPT STI3818NPT	328-4 328-6	HIT1418NPT HIT3818NPT	3371-4 3371-6			ET716 ET716	1227-16 1227-16
1/2-14 3/4-14	13/16 (.8125) 1-1/32 (1.031)	STI1214NPT STI3414NPT	328-8 328-12	HIT1214NPT HIT3414NPT	3371-8 3371-12			ET716 ET118	1227-16 1227-24
1-11-1/2	1-19/64 (1.297)	STI11112NPT	328-16	HIT11112NPT	3371-16			ET118	1227-24

COMMERCIAL / NON MILITARY GRADE *

NON-LOCKING METRIC PART NUMBERS

THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER	THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER
M2.5 x .45N	CM2545N025	05252	3.40	3.10 - 3.20	M8 x 1.0N	CM810N080	07082	6.15	9.40 - 9.65
	038	05253	6.20			120	07083	9.85	
	050	05254	8.95			160	07084	13.65	
	063	05255	11.45			200	07085	17.45	
	075	05256	14.05			240	07086	21.15	
M3 x 0.5N	CM35N030	05032	3.85	3.65 - 3.80	M8 x 1.25N	CM8125N080	05082	4.55	9.60 - 9.80
	045	05033	6.90			120	05083	7.55	
	060	05034	9.75			160	05084	10.55	
	075	05035	12.55			200	05085	13.55	
	090	05036	15.35			240	05086	16.55	
M3.5 x 0.6N	CM356N035	05352	4.00	4.30 - 4.46	M9 x 1.0N	CM910N090	07092	7.05	10.41 - 10.65
	053	05353	6.75			135	07093	11.35	
	070	05354	9.45			180	07094	15.65	
	088	05355	12.15			225	07095	19.85	
	105	05356	14.85			270	07096	24.15	
M4 x 0.7N	CM47N040	05042	3.85	4.90 - 5.15	M9 x 1.25N	CM9125N090	05092	5.35	10.68 - 10.92
	060	05043	6.55			135	05093	8.75	
	080	05044	9.15			180	05094	12.15	
	100	05045	11.85			225	05095	15.55	
	120	05046	14.45			270	05096	18.95	
M5 x 0.8N	CM58N050	05052	4.45	6.00 - 6.20	M10 x 1.0N	CM1010N10.0	08102	8.05	11.34 - 11.63
	075	05053	7.35			150	08103	12.75	
	100	05054	10.25			200	08104	17.55	
	125	05055	13.15			250	08105	22.25	
	150	05056	16.05			300	08106	26.95	
M6 x 1.0N	CM610N060	05062	4.15	7.25 - 7.45	M10 x 1.25N	CM10125N100	07102	6.05	11.80 - 12.10
	090	05063	6.95			150	07103	9.85	
	120	05064	9.75			200	07104	13.55	
	150	05065	12.55			250	07105	17.35	
	180	05066	15.35			300	07106	21.15	
M7 x 1.0N	CM710N070	05074	5.15	8.35 - 8.65	M11 x 1.0N	CM1110N110	08112	8.95	12.40 - 12.70
	105	05075	8.45			165	08113	14.15	
	140	05076	11.70			220	08114	19.35	
	175		15.00			275	08115	24.55	
	210		18.30			330	08116	29.75	

*COMMERCIAL GRADE Inserts have a DIFFERENT O.D. and COIL COUNT than MA OR MS SPECS.

Commercial Grade inserts do not conform to Aerospace or Military specifications. Helical Wire, Inc. assumes no liability for the selection and use thereof".

NON-LOCKING METRIC PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER		THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER				
M11 x 1.25N	CM11125N110	07112	6.90	12.83 - 13.10		M14 x 1.5N	CM1415N140	07142	7.35	16.15 - 16.55				
		165	07113					11.00	210		07143	11.75		
		220	07114					15.15	280		07144	16.25		
		275	07115					19.35	350		07145	20.65		
		330	07116					23.45	420		07146	25.05		
M11 x 1.5N	CM1115N110	05112	5.55	12.95 - 13.25		M15 x 1.5N	CM1515N150	07152	7.95	17.25 - 17.65				
		165	05113					9.05	225		07153	12.75		
		220	05114					12.55	300		07154	17.45		
		275	05115					16.05	375		07155	22.25		
		330	05116					19.45	450		07156	26.95		
M12 x 1.0N	CM1210N120	08122-1.0	10.25	13.55 - 13.90		M15 x 2.0N	CM1520N150	05152	5.55	17.70 - 18.10				
		180	08123-1.0					15.35	225		05153	9.15		
		240	08124-1.0					21.30	300		05154	12.70		
M12 x 1.25N	CM12125N120	08122	7.65	13.70 - 14.05				375	05155	16.30				
		180	08123					12.15	450	05156	19.85			
		240	08124					16.65	M16 x 1.5N	CM1615N160	07162	8.65	18.20 - 18.60	
		300	08125					21.25			240	07163		13.75
		360	08126					25.75			320	07164		18.85
M12 x 1.5N	CM1215N120	07122	5.85	14.00 - 14.30				400	07165	23.85				
		180	07123					9.50	480	07166	28.95			
		240	07124					13.23	M16 x 2.0N	CM1620N160	05162	6.10	18.35 - 18.55	
		300	07125					16.85			240	05163		9.60
		360	07126					20.60			320	05164		13.70
M13 x 1.25N	CM13125N130	08132	8.35	14.70 - 15.05				400	05165	17.50				
		195	08133					13.25	480	05166	21.15			
		260	08134					18.25	M18 x 1.5N	CM1815N180	08182	9.85	20.35 - 20.75	
		325	08135					23.15			270	08183		15.45
		390	08136					28.15			360	08184		21.05
M13 x 1.5N	CM1315N130	07132	6.65	15.20 - 15.53				450	08185	26.75				
		195	07133					10.75	540	08186	32.35			
		260	07134					14.95	M20 x 1.5N	CM2015N200	08202	11.25	22.08 - 22.50	
M13 x 1.75N	CM13175N130	05132	5.50	15.35 - 15.75				300			08203	17.65		
		195	05133					9.05			400	08204		23.95
		260	05134					12.60			500	08205		30.35
		325	05135					16.10			600	08206		36.75
		390	05136	19.65										

HELICAL WIRE INC

COMMERCIAL / NON MILITARY GRADE *

NON-LOCKING METRIC PART NUMBERS

THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER	THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER
M20 x 2.0N	CM2020N200	07202	8.05	22.97 - 23.40	M27x 2.0N	CM2720N270	07272	11.08	30.40 - 30.85
	300	07203	12.75			405	07273	17.40	
	400	07204	17.45			540	07274	23.87	
	500	07205	22.25			675	07275	30.20	
	600	07206	26.95			810	07276	36.52	
M22 x 1.5N	CM22x1.5N220	08222	12.55	23.90 - 24.45	M30x 1.5N	CM3015N300	08302	17.45	32.50 - 32.80
	330	08223	19.75			450	08303	26.95	
	440	08224	26.65			600	08304	36.55	
	550	08225	33.65			750	08305	46.05	
	660	08226	40.65			900	08306	55.55	
M22 x 2.0N	CM2220N220	07222	9.05	25.00 - 25.40	M30x 2.0N	CM3020N300	07302	12.48	33.55 - 34.00
	330	07223	14.25			450	07303	19.58	
	440	07224	19.45			600	07304	26.54	
	550	07225	24.65			750	07305	33.62	
	660	07226	30.15			900	07306	40.58	
M24 x 1.5N	CM2415N240	08242	13.85	26.10 - 26.60	M30x 3.5N	CM3035N300	05302	6.65	34.85 - 35.35
	360	08243	21.55			450	05303	10.75	
	480	08244	29.15			600	05304	14.89	
	600	08245	36.85			750	05305	18.95	
	720	08246	44.45			900	05306	23.13	
M24 x 2.0N	CM2420N240	07242	9.95	27.00 - 27.50	M33x 2.0N	CM3320N330	07332	13.93	36.70 - 37.15
	360	07243	15.65			495	07333	21.67	
	480	07244	21.45			660	07334	29.42	
	600	07245	27.15			825	07335	37.03	
	720	07246	32.85			990	07336	44.78	
M26x 1.5N	CM2615N260	08262	15.15	28.10 - 28.60	M33x 3.0N	CM3330N330	07332-3	9.05	37.65 - 38.00
	390	08263	23.45			495	07333-3	14.25	
	520	08264	31.75			660	07334-3		
	650	08265	40.05			825	07335-3		
	780	08266	48.35			990	07336-3		
M27x 1.5N	CM2715N270	08272	15.85	29.10 - 29.60	M33x 3.5N	CM3335N330	05322	7.75	38.20 - 38.55
	405	08273	24.45			495	05323	11.95	
	540	08274	33.15			660	05324	16.40	
	675	08275	41.80			825	05325	21.15	
	810	08276	50.45			990	05326	25.30	

NON-LOCKING METRIC PART NUMBERS CONT.

THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER		THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER		
M36x 1.5N	CM3615N360	08362	22.15	38.45 - 38.95		M42x 2.0N	CM4220N420	08422	19.15	44.70 - 45.50		
		540	08363				33.95		630		08423	29.45
		720	08364				45.75		840		08424	39.85
M36x 2.0N	CM3620N360	07362-2	16.15	39.52 - 40.05		M42x 3.0N	CM4230N420	07422	11.75	47.20 - 47.85		
		540	07363-2				25.05		630		07423	18.45
		720	07364-2				33.75		840		07424	26.05
		900	07365-2			42.65	M42x 4.0N	CM4240N420	05422-2	8.50	48.50 - 49.00	
		1080	07366-2			51.45			630	05423-2		13.45
M36x 4.0N	CM3640N360	05262	7.00	41.90 - 42.40		M45x 3.0N		840	05424-2	18.65		
		540	05263				11.35	CM4530N450		07452	12.70	50.30 - 51.00
		720	05264				15.75			675	07453	
		900	05265			20.05			900	07454	26.95	
	1080	05266	24.35				1125		07455	34.15		
M39x 2.0N	CM3920N390	08392	16.95	42.40 - 43.05		M48x 3.0N		1350	07456	41.25		
		585	08393				26.25	CM4830N480		07482	13.65	52.50 - 53.50
		780	08394		35.55				720	07483	21.25	
M39x 3.0N	CM3930N390	07392	10.95	43.87 - 44.30	M48x 4.0N		960		07484	28.85		
		585	07393			17.15	CM4840N720		05483-4	15.56	53.80 - 54.30	
		780	07394			23.35						
M39x 4.0N	CM3940N390	05392	7.80	45.05 - 45.55								
		585	05393		12.50							
		780	05394		17.15							
		975	05395		21.85							
		1170	05396		23.55							

HELICAL WIRE INC

COMMERCIAL / NON MILITARY GRADE *

NON-LOCKING STANDARD

THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER	THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER
356N	C356N0099	04532	3.60	3.15 - 3.25	3824N	C3824N0375	04062	7.05	11.00 - 11.20
	0148	04533	6.05			0562	04063	11.25	
	0198	04534	8.65			0750	04064	15.45	
	0248	04535	11.25			0938	04065	19.75	
	0297	04536	13.75			1125	04066	23.95	
448N	C448N0112	04542	3.55	3.57 - 3.67	71620N	C71620N0438	04072	6.85	12.96 - 13.20
	0168	04543	5.95			0656	04073	11.05	
	0224	04544	8.25			0875	04074	15.25	
	0280	04545	10.95			1094	04075	19.75	
	0336	04546	13.35			1312	04076	23.45	
640N	C640N0138	04562	3.55	4.38 - 4.50	1220N	C1220N0500	04082	8.05	14.60 - 14.90
	0207	04563	6.15			0750	04083	12.75	
	0276	04564	8.65			1000	04084	17.45	
	0345	04565	11.15			1250	04085	22.05	
	0414	04566	13.75			1500	04086	26.75	
836N	C836N0164	04582	3.85	5.14 - 5.28	91618N	C91618N0562	04092	8.15	16.38 - 16.68
	0246	04583	6.85			0844	04093	12.85	
	0328	04584	9.35			1125	04094	17.65	
	0410	04585	11.95			1406	04095	22.45	
	0492	04586	14.65			1687	04096	27.15	
1032N	C1032N0190	04602	4.25	5.85 - 6.00	5818N	C5818N0625	04102	9.25	18.00 - 18.30
	0285	04603	7.05			0938	04103	14.55	
	0380	04604	9.95			1250	04104	20.05	
	0475	04605	12.25			1562	04105	25.05	
	0570	04606	15.65			1875	04106	30.45	
1428N	C1428N0250	04042	5.50	7.60 - 7.80	3416N	C3416N0750	04122	9.95	21.20 - 21.60
	0375	04043	8.45			1125	04123	15.55	
	0500	04044	11.65			1500	04124	21.35	
	0625	04045	14.95			1875	04125	26.85	
	0750	04046	18.15			2250	04126	32.65	
51624N	C51624N0312	04052	5.55	9.45 - 9.65	7814N	C7814N0875	04142	10.15	24.97 - 25.33
	0469	04053	9.05			1312	04143	16.15	
	0625	04054	12.55			1750	04144	22.05	
	0781	04055	16.15			2188	04145	27.85	
	0938	04056	19.65			2625	04146	33.75	

NON-LOCKING STANDARD CONT.

THREAD SIZE	HELICAL WIRE	CROSS REFERENCE	NUMBER OF COILS	OUTSIDE DIAMETER
112N	C112N1000	04162	9.95	28.47 - 28.83
	1500	04163	15.65	
	2000	04164	21.35	
	2500	04165	27.15	
	3000	04166	32.95	
114N	C114N1000	04162-14	11.95	28.07 - 28.43
	1500	04163-14	18.55	
	2000	04164-14	25.05	
	2500	04165-14	31.75	
	3000	04166-14	38.35	
11812N	C11812N1125	04182	11.55	31.72 - 32.10
	1688	04183	17.95	
	2250	04184	24.35	
	2812	04185	30.85	
	3375	04186	37.35	
11412N	C11412N1250	04202	12.95	34.90 - 35.30
	1875	04203	20.15	
	2500	04204	27.45	
	3125	04205	34.55	
	3750	04206	41.75	
13812N	C13812N1375	04222	24.25	38.22 - 38.53
	2062	04223	22.25	
	2750	04224	30.15	
	3438	04225	38.15	
	4125	04226	46.05	
11212N	C11212N1500	04242	15.85	41.38 - 41.78
	2250	04243	24.55	
	3000	04244	33.05	
	3750	04245	41.75	
	4500	04246	50.35	

*COMMERCIAL GRADE Inserts have a DIFFERENT O.D. and COIL COUNT than MA OR MS SPECS.

Commercial Grade inserts do not conform to Aerospace or Military specifications. Helical Wire, Inc. assumes no liability for the selection and use thereof".

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