PRODUCTS CATALOG

MANUFACTURER AND DISTRIBUTOR OF SCREW THREAD INSERTS SINCE 1972.

HELICAL WIRE, INC.

AN ALTERNATIVE SOURCE FOR SCREW THREAD INSERTS AND RELATED TOOLING.

FOR MORE INFORMATION

CALL US AT 775-246-5333

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PLEASE SEND INQUIRIES TO HELICAL WIRE INC.
26 CASH DRIVE CARSON CITY, NEVADA 89706

REVISED 10-2014

HELICAL WIRE INC 1972 42 2014 YEARS OF SERVICE

WE GLADLY ACCEPT VISA AND MASTERCARD

ISO 9001:2008 CERTIFIED

AMERICAN Made SCREW THREAD INSERTS

ISO AS9001C REV.C CERTIFIED PENDING

HELICAL WIRE INC

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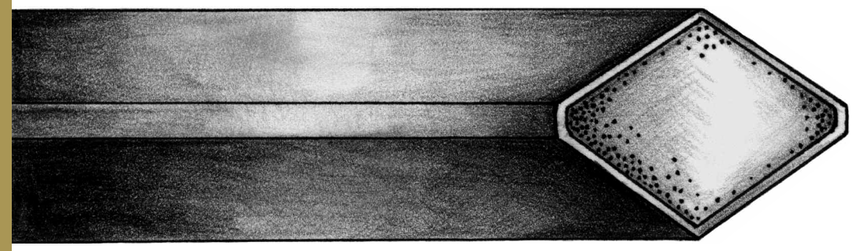
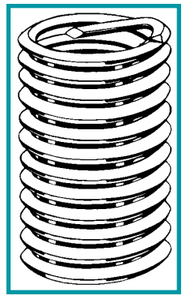
MANUFACTURING

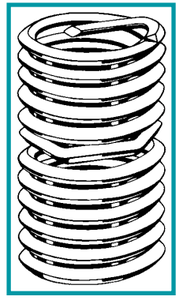
HELICAL WIRE INC. inserts are precision manufactured screw thread inserts that play a critical role in engineering applications. Screw thread inserts are a reliable means of strengthening tapped holes in light weight materials and alloys.

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.

LOCKING NON-LOCKING DRY FILM LUBE CADMIUM PLATE PRIMER FREE SILVER PLATE

MATERIALS AND FINISHES

HELICAL WIRE INC. screw thread inserts are manufactured of 18-8 stainless steel per AS7245, 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.

Helical Wire can supply screw thread inserts made from Phosphor Bronze and Inconel X-750 materials. Both of these materials meet the criterion mentioned above and conform to AMS 7247 and AS7246. We keep many of these Phosphor Bronze and Inconel inserts in stock. All inserts that we make in the Standard Inch or Metric series are available in these materials upon request.

All of the wire that is used to make our coil thread inserts has a certain amount of oil that is a by product of manufacturing. Directly following the process of manufacturing, all of our inserts go through a process of cleaning to remove any residual oil that may be on the inserts in post-production. No matter what kind of material or finish, the process is the same.

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.

Helical Wire 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 supply our screw thread inserts with Dry Film Lube per AS5272, Cadmium Plate Olive Drab per QQ-P-416 Type II, Cadmium plate without Olive Drab, and also Primer Free per Xylan (R) 5251/840 Black or Xylan 5230/1131 Gray Black. We offer Silver Plating per AMS2411-D or QQ-S-365, and also Passivation upon request. 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,usually about two weeks. When plating is specified by a customer's part number and call out, we do whatever we can to meet their specific plating needs.

PHOSPHOROUS BRONZE INCONEL X-750 NITRONIC 60 NIMONIC 90 TOOLING

NON-LOCKING COARSE

INSERT SIZE	AEROSPACE STANDARDS	MS EQUIVALENT	HELICAL WIRE
2-56	MS122095	MS21208C0210	256N0086
	135	15	0129
	175	20	0172
	215	25	0215
	255	30	0258
3-48	MS122115	MS21208C0310	348N0099
	155	15	0148
	195	20	0198
	235	25	0248
	275	30	0297
4-40	MS122076	MS21208C0410	440N0112
	116	15	0168
	156	20	0224
	196	25	0280
	236	30	0336
5-40	MS122077	MS21208C0510	540N0125
	117	15	0188
	157	20	0250
	197	25	0312
	237	30	0375
6-32	MS122078	MS21208C0610	632N0138
	118	15	0207
	158	20	0276
	198	25	0345
	238	30	0414
8-32	MS122079	MS21208C0810	832N0164
	119	15	0246
	159	20	0328
	199	25	0410
	239	30	0492
10-24	MS122080	MS21208C110	1024N0190
	120	15	0285
	160	20	0380
	200	25	0475
	240	30	0570
12-24	-	MS21208C210	1224N0216
	-	15	0324
	-	20	0432
	-	25	0540
	-	30	0648

NON-LOCKING COARSE CONT.

INSERT SIZE	AEROSPACE STANDARDS	MS EQUIVALENT	HELICAL WIRE
1/4-20	MS122081	MS21208C410	1420N0250
	121	15	0375
	161	20	0500
	201	25	0625
	241	30	0750
5/16-18	MS122082	MS21208C510	51618N0312
	122	15	0469
	162	20	0625
	202	25	0781
	242	30	0936
3/8-16	MS122083	MS21208C610	3816N0375
	123	15	0562
	163	20	0750
	203	25	0938
	243	30	1125
7/16-14	MS122084	MS21208C710	71614N0438
	124	15	0656
	164	20	0875
	204	25	1094
	244	30	1312
1/2-13	MS122085	MS21208C810	1213N0500
	125	15	0750
	165	20	1000
	205	25	1250
	245	30	1500
9/16-12	MS122086	MS21208C910	91612N0562
	126	15	0844
	166	20	1125
	206	25	1408
	246	30	1688
5/8-11	MS122087	MS21208C1010	5811N0625
	127	15	0938
	167	20	1250
	207	25	1562
	247	30	1875
3/4-10	MS122088	MS21208C1210	3410N0750
	128	15	1125
	168	20	1500
	208	25	1875
	248	30	2250

NON-LOCKING COARSE CONT.

INSERT SIZE	AEROSPACE STANDARDS	MS EQUIVALENT	HELICAL WIRE
7/8-9	MS122089	MS21208C1410	789N0875
	129	15	1312
	169	20	1750
	209	25	2188
	249	30	2625
1-8	MS122090	MS21208C1610	18N1000
	130	15	1500
	170	20	2000
	210	25	2500
	250	30	3000
1 1/8-7	MS122091	MS21208C1810	1187N1125
	131	15	1688
	171	20	2250
	211	25	2812
	251	30	3375
1 1/4-7	MS122092	MS21208C2010	1147N1250
	132	15	1875
	172	20	2500
	212	25	3125
	252	30	3750
1 3/8-6	MS122093	MS21208C2210	1386N1375
	133	15	2052
	173	20	2750
	213	25	3438
	253	30	4125
1 1/2-6	MS122094	MS21208C2410	1126N1500
	134	15	2250
	174	20	3000
	214	25	3750
	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

INSERT SIZE	AEROSPACE STANDARDS	MS EQUIVALENT	HELICAL WIRE
3-56	MS124670	MS21208F0310	356N0099
	710	15	0148
	750	20	0198
	790	25	0248
	830	30	0297
4-48	MS124671	MS21208F0410	448N0112
	711	15	0168
	751	20	0224
	791	25	0280
	831	30	0336
6-40	MS124653	MS21208F0610	640N0138
	693	15	0207
	733	20	0276
	773	25	0345
	813	30	0414
8-36	MS124654	MS21208F0810	836N0164
	694	15	0246
	734	20	0328
	774	25	0410
	814	30	0492
10-32	MS124655	MS21208F110	1032N0190
	695	15	0285
	735	20	0380
	775	25	0475
	815	30	0570
1/4-28	MS124656	MS21208F410	1428N0250
	696	15	0375
	736	20	0500
	776	25	0625
	816	30	0750
5/16-24	MS124657	MS21208F510	51624N0312
	697	15	0469
	737	20	0625
	777	25	0781
	817	30	0938
3/8-24	MS124658	MS21208F610	3824N0375
	698	15	0562
	738	20	0750
	778	25	0938
	818	30	1125

NON-LOCKING FINE CONT.

INSERT SIZE	AEROSPACE STANDARDS	MS EQUIVALENT	HELICAL WIRE
7/16-20	MS124659	MS21208F710	71620N0438
	699	15	0656
	739	20	0875
	779	25	1094
	819	30	1312
1/2-20	MS124660	MS21208F810	1220N0500
	700	15	0750
	740	20	1000
	780	25	1250
	820	30	1500
9/16-18	MS124661	MS21208F910	91618N0562
	701	15	0844
	741	20	1125
	781	25	1406
	821	30	1688
5/8-18	MS124662	MS21208F1010	5818N0625
	702	15	0938
	742	20	1250
	782	25	1562
	822	30	1875
3/4-16	MS124663	MS21208F1210	3416N0750
	703	15	1125
	743	20	1500
	783	25	1875
	823	30	2250
7/8-14	MS124664	MS21208F1410	7814N0875
	704	15	1312
	744	20	1750
	784	25	2188
	824	30	2625
1-12	MS124651	MS21208F1610	112N1000
	691	15	1500
	731	20	2000
	771	25	2500
	811	30	3000
1-14	MS124665	-	114N1000
	705	-	1500
	745	-	2000
	785	-	2500
	825	-	3000

STANDARD BULK

NON-LOCKING FINE CONT.

INSERT SIZE	AEROSPACE STANDARDS	MS EQUIVALENT	HELICAL WIRE
1-1/8-12	MS124666	MS21208F1810	11812N1125
	706	15	1688
	746	20	2250
	786	25	2812
	826	30	3375
1-1/4-12	MS124667	MS21208F2010	11412N1250
	707	15	1875
	747	20	2500
	787	25	3125
	827	30	3750
1-3/8-12	MS124668	MS21208F2210	13812N1375
	708	15	2062
	748	20	2750
	788	25	3438
	828	30	4125
1-1/2-12	MS124669	MS21208F2410	11212N1500
	709	15	2250
	749	20	3000
	789	25	3750
	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 AS5272 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-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: MS124669P, 1191-24CNY1500 or 11212N1500P.

To request Silver Plate per QQ-S-365 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.

LOCKING COARSE

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
2-56	MS21209C0210	256L0086
	15	0129
	20	0172
	25	0215
	30	0258
3-48	MS21209C0310	348L0099
	15	0148
	20	0198
	25	0248
	30	0297
4-40	MS21209C0410	440L0112
	15	0168
	20	0224
	25	0280
	30	0336
5-40	MS21209C0510	540L0125
	15	0188
	20	0250
	25	0312
	30	0375
6-32	MS21209C0610	632L0138
	15	0207
	20	0276
	25	0345
	30	0414
8-32	MS21209C0810	832L0164
	15	0246
	20	0328
	25	0410
	30	0492
10-24	MS21209C110	1024L0190
	15	0285
	20	0380
	25	0475
	30	0570
12-24	MS21209C210	1224L0216
	15	0324
	20	0432
	25	0540
	30	0648
1/4-20	MS21209C410	1420L0250
	15	0375
	20	0500
	25	0625
	30	0750
5/16-18	MS21209C510	51618L0312
	15	0469
	20	0625
	25	0781
	30	0938
3/8-16	MS21209C610	3816L0375
	15	0562
	20	0750
	25	0938
	30	1125
7/16-14	MS21209C710	71614L0438
	15	0656
	20	0875
	25	1094
	30	1312
1/2-13	MS21209C810	1213L0500
	15	0750
	20	1000
	25	1250
	30	1500
9/16-12	MS21209C910	91612L0562
	15	0844
	20	1125
	25	1408
	30	1688
5/8-11	MS21209C1010	5811L0625
	15	0938
	20	1250
	25	1562
	30	1875
3/4-10	MS21209C1210	3410L0750
	15	1125
	20	1500
	25	1875
	30	2250

LOCKING COARSE CONT.

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
7/8-9	MS21209C1410	789L0875
	15	1312
	20	1750
	25	2188
	30	2625
1-8	MS21209C1610	18L1000
	15	1500
	20	2000
	25	2500
	30	3000
1 1/8-7	MS21209C1810	1187L1125
	15	1688
	20	2250
	25	2812
	30	3375
1 1/4-7	MS21209C2010	1147L1250
	15	1875
	20	2500
	25	3125
	30	3750
1 3/8-6	MS21209C2210	1386L1375
	15	2052
	20	2750
	25	3438
	30	4125
1 1/2-6	MS21209C2410	1126L1500
	15	2250
	20	3000
	25	3750
	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.

LOCKING FINE

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
3-56	MS21209F0310	356L0099
	15	0148
	20	0198
	25	0248
	30	0297
4-48	MS21209F0410	448L0112
	15	0168
	20	0224
	25	0280
	30	0336
6-40	MS21209F0610	640L0138
	15	0207
	20	0276
	25	0345
	30	0414
8-36	MS21209F0810	836L0164
	15	0246
	20	0328
	25	0410
	30	0492
10-32	MS21209F110	1032L0190
	15	0285
	20	0380
	25	0475
	30	0570
1/4-28	MS21209F410	1428L0250
	15	0375
	20	0500
	25	0625
	30	0750
5/16-24	MS21209F510	51624L0312
	15	0469
	20	0625
	25	0781
	30	0938
3/8-24	MS21209F610	3824L0375
	15	0562
	20	0750
	25	0938
	30	1125

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
7/16-20	MS21209F710	71620L0438
	15	0656
	20	0875
	25	1094
	30	1312
1/2-20	MS21209F810	1220L0500
	15	0750
	20	1000
	25	1250
	30	1500
9/16-18	MS21209F910	91618L0562
	15	0844
	20	1125
	25	1408
	30	1688
5/8-18	MS21209F1010	5818L0625
	15	0938
	20	1250
	25	1562
	30	1875
3/4-16	MS21209F1210	3416L0750
	15	1125
	20	1500
	25	1875
	30	2250
7/8-14	MS21209F1410	7814L0875
	15	1312
	20	1750
	25	2188
	30	2625
1-12	MS21209F1610	112L1000
	15	1500
	20	2000
	25	2500
	30	3000
1-14	-	114L1000
	-	1500
	-	2000
	-	2500
	-	3000

LOCKING FINE CONT.

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
1-1/8-12	MS21209F1810	11812L1125
	15	1688
	20	2250
	25	2812
	30	3375
1-1/4-12	MS21209F2010	11412L1250
	15	1875
	20	2500
	25	3125
	30	3750
1-3/8-12	MS21209F2210	13812L1375
	15	2052
	20	2750
	25	3438
	30	4125
1-1/2-12	MS21209F2410	11212L1500
	15	2250
	20	3000
	25	3750
	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: 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.

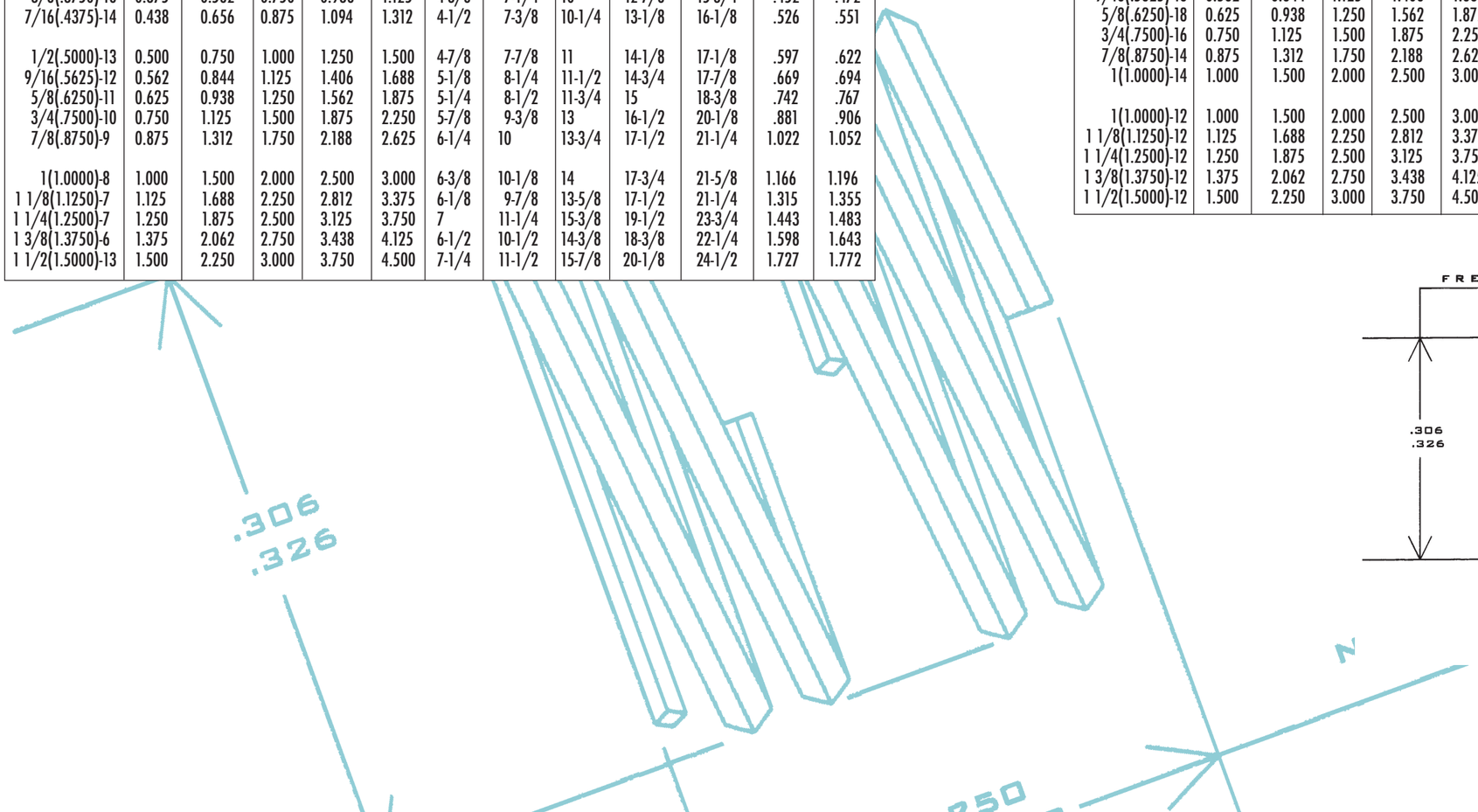
To request Silver Plate per QQ-S-365 add 'V' at the end of the part number. Example: MS21209F1810V or 11812L1125V.

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.

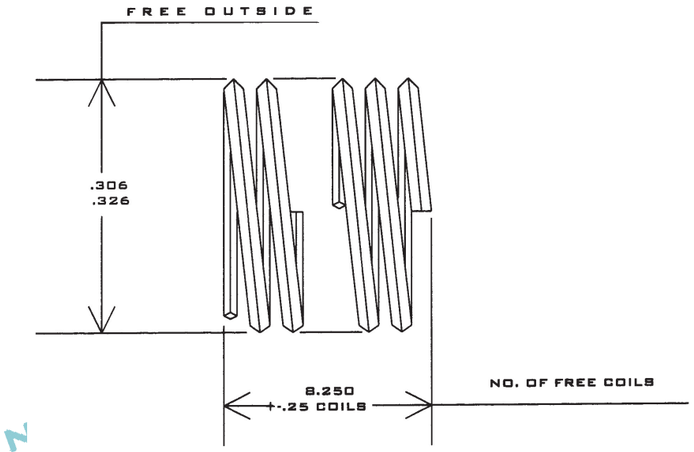
STANDARD LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	NOMINAL LENGTH					NUMBER OF COILS 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 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



STANDARD LOCKING / NON-LOCKING

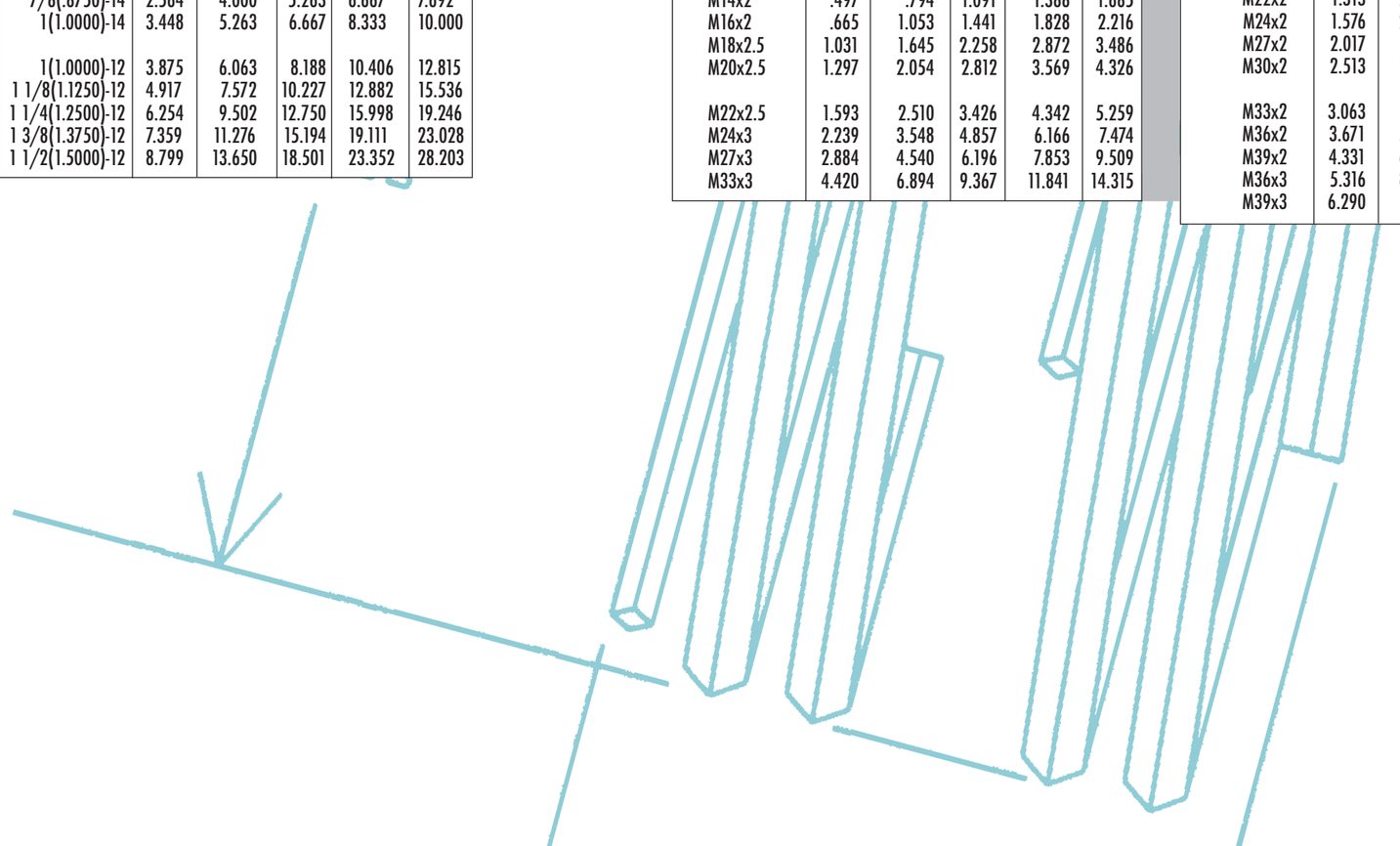
NOMINAL THREAD SIZE	WEIGHT LB/100 NOMINAL LENGTH				
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.
UNIFIED COARSE					
2(.086)-56	.0051	.0084	.0117	0.15	.0183
3(.099)-48	.0077	.0125	.0174	.0224	.0271
4(.112)-40	.0121	.0196	.0272	.0348	.0423
5(.125)-40	.0154	.0250	.0345	.044	.0536
6(.138)-32	.0243	.0384	.0525	.0666	.0807
8(.086)-32	.0355	.0556	.0776	.1008	.125
10(.190)-24	.0537	.0899	.1330	.172	.219
12(.216)-24	.077	.119	.172	.208	.279
1/4(.250)-20	.145	.196	.308	.385	.490
5/16(.3125)-18	.232	.369	.510	.658	.806
3/8(.3750)-16	.391	.625	.862	1.064	1.316
7/16(.4375)-14	.667	.943	1.250	1.667	2.000
1/2(.5000)-13	.794	1.316	1.852	2.273	2.857
9/16(.5625)-12	1.235	1.961	2.632	3.226	4.000
5/8(.6250)-11	1.515	2.439	3.448	4.348	5.263
3/4(.7500)-10	2.778	4.000	5.263	6.667	8.333
7/8(.8750)-9	4.545	6.250	8.333	10.000	12.500
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

NOMINAL THREAD SIZE	WEIGHT LB/100 NOMINAL LENGTH				
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.
UNIFIED FINE					
3(.099)-56	.0051	.0084	.0117	.0192	0.234
4(.112)-48	.0099	.0160	.0222	.0285	0.346
6(.138)-40	.020	.0304	.0408	.0512	0.616
8(.164)-36	.0325	.0502	.0680	.0857	1.034
10(.190)-32	.0474	.0784	.122	.140	0.170
1/4(.2500)-28	.109	.155	.212	.276	0.338
5/16(.3125)-24	.180	.284	.397	.490	0.602
3/8(.3750)-24	.259	.420	.533	.709	0.862
7/16(.4375)-20	.459	.699	.917	1.250	1.493
1/2(.5000)-20	.595	.909	1.234	1.563	1.887
9/16(.5625)-18	.826	1.266	1.695	2.128	2.564
5/8(.6250)-18	1.010	1.562	2.083	2.632	3.030
3/4(.7500)-16	1.695	2.564	3.448	4.348	5.263
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(1.0000)-12	3.875	6.063	8.188	10.406	12.815
1 1/8(1.1250)-12	4.917	7.572	10.227	12.882	15.536
1 1/4(1.2500)-12	6.254	9.502	12.750	15.998	19.246
1 3/8(1.3750)-12	7.359	11.276	15.194	19.111	23.028
1 1/2(1.5000)-12	8.799	13.650	18.501	23.352	28.203

METRIC LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	WEIGHT LB/100 NOMINAL LENGTH				
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.
UNIFIED COARSE					
M2x.4	.002	.003	.005	.007	.008
M2.2x0.45	.002	.004	.006	.008	.009
M2.5x0.45	.003	.006	.008	.010	.012
M3x0.5	.006	.009	.012	.016	.019
M3.5x0.6	.009	.014	.020	.026	.031
M4x0.7	.014	.022	.031	.039	.048
M5x0.8	.025	.040	.055	.070	.085
M6x1	.044	.072	.099	.126	.153
M7x1	.062	.099	.136	.173	.210
M8x1.25	.100	.160	.221	.281	.342
M10x1.5	.188	.302	.416	.530	.643
M12x1.75	.318	.509	.700	.890	1.081
M14x2	.497	.794	1.091	1.388	1.685
M16x2	.665	1.053	1.441	1.828	2.216
M18x2.5	1.031	1.645	2.258	2.872	3.486
M20x2.5	1.297	2.054	2.812	3.569	4.326
M22x2.5	1.593	2.510	3.426	4.342	5.259
M24x3	2.239	3.548	4.857	6.166	7.474
M27x3	2.884	4.540	6.196	7.853	9.509
M33x3	4.420	6.894	9.367	11.841	14.315

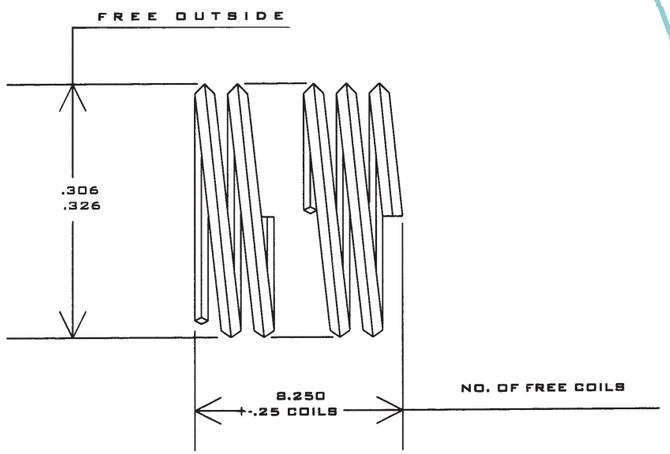
NOMINAL THREAD SIZE	WEIGHT LB/100 NOMINAL LENGTH				
	1Dia.	1 1/2 Dia.	2 Dia.	2 1/2 Dia.	3 Dia.
UNIFIED FINE					
M8x1	.083	.132	.180	.228	.277
M10x1	.136	.212	.288	.362	.439
M10x1.25	.162	.257	.352	.446	.541
M12x1.25	.240	.376	.512	.649	.785
M12x1.5	.281	.444	.608	.772	.935
M14x1.5	.391	.614	.836	1.059	1.282
M16x1.5	.519	.810	1.101	1.392	1.682
M18x1.5	.665	1.033	1.401	1.769	2.137
M20x1.5	.830	1.284	1.739	2.193	2.647
M22x1.5	1.013	1.563	2.113	2.662	3.212
M18x2	.856	1.347	1.838	2.328	2.819
M20x2	1.072	1.678	2.284	2.890	3.495
M22x2	1.313	2.046	2.779	3.512	4.245
M24x2	1.576	2.448	3.321	4.193	5.065
M27x2	2.017	3.121	4.225	5.329	6.433
M30x2	2.513	3.876	5.238	6.601	7.964
M33x2	3.063	4.712	6.361	8.010	9.659
M36x2	3.671	5.633	7.595	9.557	11.519
M39x2	4.331	6.634	8.936	11.239	13.542
M36x3	5.316	8.260	11.204	14.147	17.091
M39x3	6.290	9.745	13.200	16.654	20.109



TECHNICAL INFORMATION

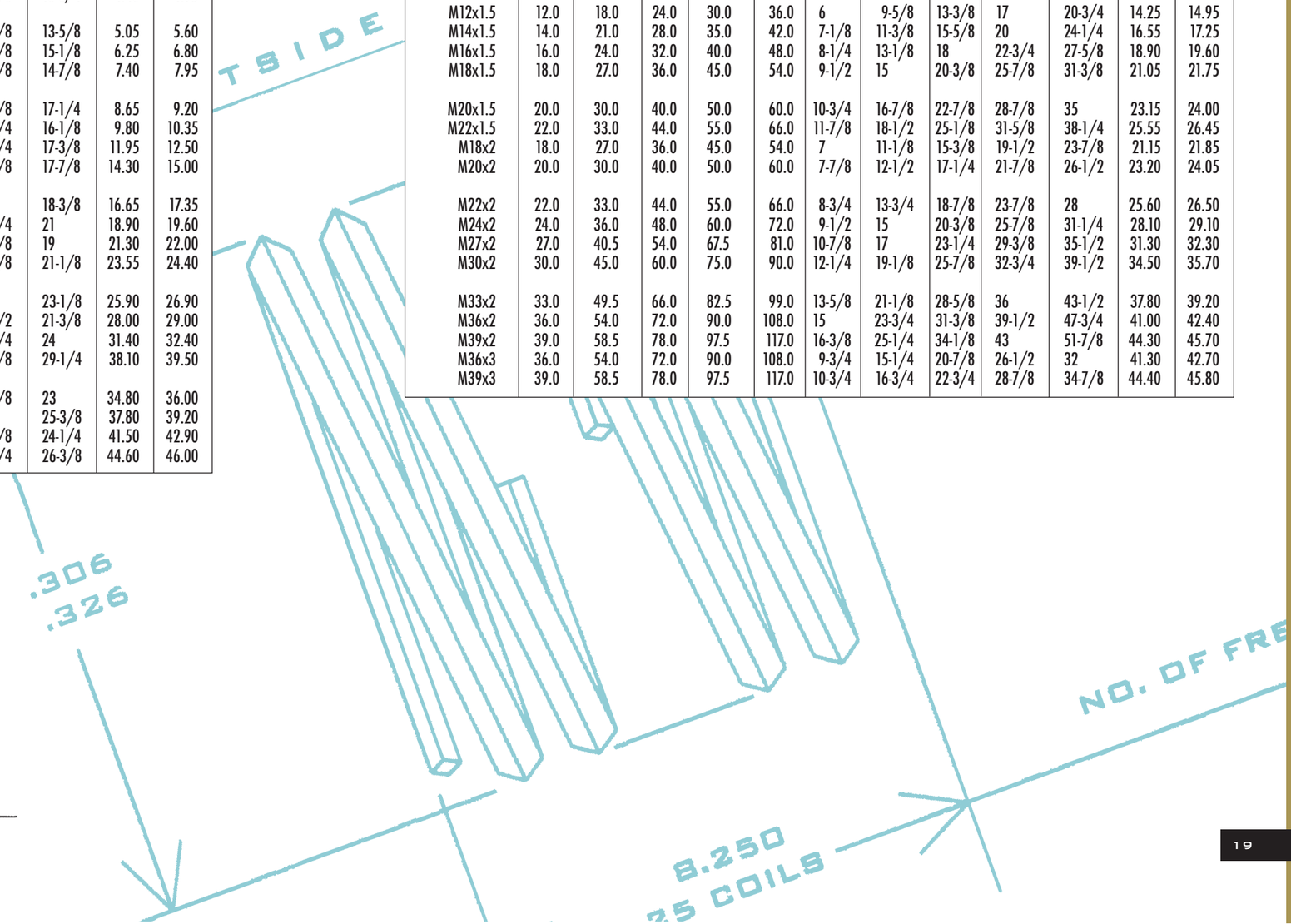
METRIC LOCKING / NON-LOCKING

NOMINAL THREAD SIZE	NOMINAL LENGTH					NUMBER OF COILS 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												
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 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												
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



NON-LOCKING METRIC

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M2 x .40N	MA3279-140	M2.0x.40N2.0
	190	3.0
	240	4.0
	290	5.0
	340	6.0
M2.2 x .45N	MA3279-100	M2.2x.45N2.2
	150	3.3
	200	4.4
	250	5.5
	300	6.6
M2.5 x .45N	MA3279-101	M2.5x.45N2.5
	151	3.8
	201	5.0
	251	6.3
	301	7.5
M3 x 0.5N	MA3279-102	M3x.5N3.0
	152	4.5
	202	6.0
	252	7.5
	302	9.0
M3.5 x 0.6N	MA3279-103	M3.5x.6N3.5
	153	5.3
	203	7.0
	253	8.8
	303	10.5
M4 x 0.7N	MA3279-104	M4x.7N4.0
	154	6.0
	204	8.0
	254	10.0
	304	12.0
M5 x 0.8N	MA3279-105	M5x.8N5.0
	155	7.5
	205	10.0
	255	12.5
	305	15.0
M6 x 1.0N	MA3279-106	M6x1.0N6.0
	156	9.0
	206	12.0
	256	15.0
	306	18.0
M7 x 1.0N	MA3279-107	M7x1.0N7.0
	157	10.5
	207	14.0
	257	17.5
	307	21.0
M8 x 1.0N	MA3279-108	M8x1.0N8.0
	158	12.0
	208	16.0
	258	20.0
	308	24.0
M8 x 1.25N	MA3279-109	M8x1.25N8.0
	159	12.0
	209	16.0
	259	20.0
	309	24.0
M10 x 1.0N	MA3279-141	M10x1.0N10.0
	191	15.0
	241	20.0
	291	25.0
	341	30.0
M10 x 1.25N	MA3279-110	M10x1.25N10.0
	160	15.0
	210	20.0
	260	25.0
	310	30.0
M10 x 1.5N	MA3279-111	M10x1.5N 10.0
	161	15.0
	211	20.0
	261	25.0
	311	30.0
M12 x 1.25N	MA3279-112	M12x1.25N12.0
	162	18.0
	212	24.0
	262	30.0
	312	36.0
M12 x 1.5N	MA3279-113	M12x1.5N12.0
	163	18.0
	213	24.0
	263	30.0
	313	36.0

NON-LOCKING METRIC CONT.

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M12 x 1.75N	MA3279-114	M12x1.75N12.0
	164	18.0
	214	24.0
	264	30.0
	314	36.0
M14 x 1.5N	MA3279-115	M14x1.5N14.0
	165	21.0
	215	28.0
	265	35.0
	315	42.0
M14 x 2.0N	MA3279-116	M14x2.0N14.0
	166	21.0
	216	28.0
	266	35.0
	316	42.0
M16 x 1.5N	MA3279-117	M16x1.5N16.0
	167	24.0
	217	32.0
	267	40.0
	317	48.0
M16 x 2.0N	MA3279-118	M16x2.0N16.0
	168	24.0
	218	32.0
	268	40.0
	318	48.0
M18 x 1.5N	MA3279-119	M18x1.5N18.0
	169	27.0
	219	36.0
	269	45.0
	319	54.0
M18 x 2.0N	MA3279-120	M18x2.0N18.0
	170	27.0
	220	36.0
	270	45.0
	320	54.0
M18 x 2.5N	MA3279-121	M18x2.5N18.0
	171	27.0
	221	36.0
	271	45.0
	321	54.0
M20 x 1.5N	MA3279-122	M20x1.5N20.0
	172	30.0
	222	40.0
	272	50.0
	322	60.0
M20 x 2.0N	MA3279-123	M20x2.0N20.0
	173	30.0
	223	40.0
	273	50.0
	323	60.0
M20 x 2.5N	MA3279-124	M20x2.5N20.0
	174	30.0
	224	40.0
	274	50.0
	324	60.0
M22 x 1.5N	MA3279-125	M22x1.5N22.0
	175	33.0
	225	44.0
	275	55.0
	325	66.0
M22 x 2.0N	MA3279-126	M22x2.0N22.0
	176	33.0
	226	44.0
	276	55.0
	326	66.0
M22 x 2.5N	MA3279-127	M22x2.5N22.0
	177	33.0
	227	44.0
	277	55.0
	327	66.0
M24 x 2.0N	MA3279-128	M24x2.0N24.0
	178	36.0
	228	48.0
	278	60.0
	328	72.0
M24 x 3.0N	MA3279-129	M24x3.0N24.0
	179	36.0
	229	48.0
	279	60.0
	329	72.0

METRIC BULK

NON-LOCKING METRIC CONT.

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M27 x 2.0N	MA3279-130	M27x2.0N27.0
	180	40.5
	230	54.0
	280	67.5
	330	81.0
M27 x 3.0N	MA3279-131	M27x3.0N27.0
	181	40.5
	231	54.0
	281	67.5
	331	81.0
M30 x 2.0N	MA3279-132	M30x2.0N30.0
	182	45.0
	232	60.0
	282	75.0
	332	90.0
M30 x 3.0N	MA3279-133	M30x3.0N30.0
	183	45.0
	233	60.0
	283	75.0
	333	90.0
M30 x 3.5N	-	M30x3.5N30.0
	-	45.0
	-	60.0
	-	75.0
	-	90.0
M33 x 2.0N	MA3279-134	M33x2.0N33.0
	184	49.5
	234	66.0
	284	82.5
	334	99.0
M33 x 3.0N	MA3279-135	M33x3.0N33.0
	185	49.5
	235	66.0
	285	82.5
	335	99.0
M33 x 3.5N	-	M33x3.5N33.0
	-	49.5
	-	66.0
	-	82.5
	-	99.0
M36 x 2.0N	MA3279-136	M36x2.0N36.0
	186	54.0
	236	72.0
	286	90.0
	336	108.0
M36 x 3.0N	MA3279-137	M36x3.0N36.0
	187	54.0
	237	72.0
	287	90.0
	337	108.0
M36 x 4.0N	-	M36x4.0N36.0
	-	54.0
	-	72.0
	-	90.0
	-	108.0
M39 x 2.0N	MA3279-138	M39x2.0N39.0
	188	58.5
	238	78.0
	288	97.5
	338	117.0
M39 x 3.0N	MA3279-139	M39x3.0N39.0
	189	58.5
	239	78.0
	289	97.5
	339	117.0
M39 x 4.0N	-	M39x4.0N39.0
	-	58.5
	-	78.0
	-	97.5
	-	117.0

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: 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.

LOCKING METRIC

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M2 x .40L	MA3329-190	M2.0x.40L3.0
	240	4.0
	290	5.0
	340	6.0
M2.2 x .45L	MA3329-100	M2.2x.45L2.2
	150	3.3
	200	4.4
	250	5.5
	300	6.6
M2.5 x .45L	MA3329-101	M2.5x.45L2.5
	151	3.8
	201	5.0
	251	6.3
	301	7.5
M3 x 0.5L	MA3329-102	M3x.5L3.0
	152	4.5
	202	6.0
	252	7.5
	302	9.0
M3.5 x 0.6L	MA3329-103	M3.5x.6L3.5
	153	5.3
	203	7.0
	253	8.8
	303	10.5
M4 x 0.7L	MA3329-104	M4x.7L4.0
	154	6.0
	204	8.0
	254	10.0
	304	12.0
M5 x 0.8L	MA3329-105	M5x.8L5.0
	155	7.5
	205	10.0
	255	12.5
	305	15.0
M6 x 1.0L	MA3329-106	M6x1.0L6.0
	156	9.0
	206	12.0
	256	15.0
	306	18.0
M7 x 1.0L	MA3329-107	M7x1.0L7.0
	157	10.5
	207	14.0
	257	17.5
	307	21.0
M8 x 1.0L	MA3329-108	M8x1.0L8.0
	158	12.0
	208	16.0
	258	20.0
	308	24.0
M8 x 1.25L	MA3329-109	M8x1.25L8.0
	159	12.0
	209	16.0
	259	20.0
	309	24.0
M10 x 1.0L	MA3329-141	M10x1.0L10.0
	191	15.0
	241	20.0
	291	25.0
	341	30.0
M10 x 1.25L	MA3329-110	M10x1.25L10.0
	160	15.0
	210	20.0
	260	25.0
	310	30.0
M10 x 1.5L	MA3329-111	M10x1.5L10.0
	161	15.0
	211	20.0
	261	25.0
	311	30.0
M12 x 1.25L	MA3329-112	M12x1.25L12.0
	162	18.0
	212	24.0
	262	30.0
	312	36.0
M12 x 1.5L	MA3329-113	M12x1.5L12.0
	163	18.0
	213	24.0
	263	30.0
	313	36.0

METRIC BULK

LOCKING METRIC CONT.

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M12 x 1.75L	MA3329-114	M12x1.75L12.0
	164	18.0
	214	24.0
	264	30.0
	314	36.0
M14 x 1.5L	MA3329-115	M14x1.5L14.0
	165	21.0
	215	28.0
	265	35.0
	315	42.0
M14 x 2.0L	MA3329-116	M14x2.0L14.0
	166	21.0
	216	28.0
	266	35.0
	316	42.0
M16 x 1.5L	MA3329-117	M16x1.5L16.0
	167	24.0
	217	32.0
	267	40.0
	317	48.0
M16 x 2.0L	MA3329-118	M16x2.0L16.0
	168	24.0
	218	32.0
	268	40.0
	318	48.0
M18 x 1.5L	MA3329-119	M18x1.5L18.0
	169	27.0
	219	36.0
	269	45.0
	319	54.0
M18 x 2.0L	MA3329-120	M18x2.0L18.0
	170	27.0
	220	36.0
	270	45.0
	320	54.0
M18 x 2.5L	MA3329-121	M18x2.5L18.0
	171	27.0
	221	36.0
	271	45.0
	321	54.0

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M20 x 1.5L	MA3329-122	M20x1.5L20.0
	172	30.0
	222	40.0
	272	50.0
	322	60.0
M20 x 2.0L	MA3329-123	M20x2.0L20.0
	173	30.0
	223	40.0
	273	50.0
	323	60.0
M20 x 2.5L	MA3329-124	M20x2.5L20.0
	174	30.0
	224	40.0
	274	50.0
	324	60.0
M22 x 1.5L	MA3329-125	M22x1.5L22.0
	175	33.0
	225	44.0
	275	55.0
	325	66.0
M22 x 2.0L	MA3329-126	M22x2.0L22.0
	176	33.0
	226	44.0
	276	55.0
	326	66.0
M22 x 2.5L	MA3329-127	M22x2.5L22.0
	177	33.0
	227	44.0
	277	55.0
	327	66.0
M24 x 2.0L	MA3329-128	M24x2.0L24.0
	178	36.0
	228	48.0
	278	60.0
	328	72.0
M24 x 3.0L	MA3329-129	M24x3.0L24.0
	179	36.0
	229	48.0
	279	60.0
	329	72.0

METRIC BULK

LOCKING METRIC CONT.

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M27 x 2.0L	MA3329-130	M27x2.0L27.0
	180	40.5
	230	54.0
	280	67.5
	330	81.0
M27 x 3.0L	MA3329-131	M27x3.0L27.0
	181	40.5
	231	54.0
	281	67.5
	331	81.0
M30 x 2.0L	MA3329-132	M30x2.0L30.0
	182	45.0
	232	60.0
	282	75.0
	332	90.0
M30 x 3.5L	-	M30x3.5L30.0
	-	45.0
	-	60.0
	-	75.0
	-	90.0
M33 x 2.0L	MA3329-134	M33x2.0L33.0
	184	49.5
	234	66.0
	284	82.5
	334	99.0
M33 x 3.0L	MA3329-135	M33x3.0L33.0
	185	49.5
	235	66.0
	285	82.5
	335	99.0
M33 x 3.5L	-	M33x3.5L33.0
	-	49.5
	-	66.0
	-	82.5
	-	99.0
M36 x 2.0L	MA3329-136	M36x2.0L36.0
	186	54.0
	236	72.0
	286	90.0
	336	108.0

THREAD SIZE	AEROSPACE STANDARDS	HELICAL WIRE
M36 x 3.0L	MA3329-137	M36x3.0L36.0
	187	54.0
	237	72.0
	287	90.0
	337	108.0
M36 x 4.0L	-	M36x4.0L36.0
	-	54.0
	-	72.0
	-	90.0
	-	108.0
M39 x 2.0L	MA3329-138	M39x2.0L39.0
	188	58.5
	238	78.0
	288	97.5
	338	117.0
M39 x 3.0L	MA3329-139	M39x3.0L39.0
	189	58.5
	239	78.0
	289	97.5
	339	117.0
M39 x 4.0L	-	M39x4.0L39.0
	-	58.5
	-	78.0
	-	97.5
	-	117.0

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.

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	
	Aluminum	Plastic, Steel, Magnesium
UNIFIED COARSE		
2-56	3/32 (.0938)	#41 (.0960)
3-48	#36 (.1065)	7/64 (.1094)
4-40	#31 (.1200)	#31 (.1200)
5-40	3.4mm (.1339)	#29 (.1360)
6-32	#26 (.1470)	#25 (.1495)
8-32	#17 (.1730)	#16 (.1770)
10-24	13/64 (.2031)	#5 (.2055)
12-24	#1 (.2280)	#1 (.2280)
1/4-20	H (.2660)	H (.2660)
5/16-18	Q (.3320)	Q (.3320)
3/8-16	X (.3970)	X (.3970)
7/16-14	29/64 (.4531)	29/64 (.4531)
1/2-13	33/64 (.5156)	17/32 (.5312)
9/16-12	37/64 (.5781)	19/32 (.5938)
5/8-11	21/32 (.6562)	21/32 (.6562)
3/4-10	25/32 (.7812)	25/32 (.7812)
7/8-9	29/32 (.9062)	29/32 (.9062)
1-8	1-1/32 (1.0312)	1-1/32 (1.0312)
1-1/8-7	1-11/64 (1.1719)	1-11/64 (1.1719)
1-1/4-7	1-19/64 (1.2969)	1-19/64 (1.2969)
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)

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE	
	Aluminum	Plastic, Steel, Magnesium
UNIFIED FINE		
3-56	#37 (.1040)	#36 (.1065)
4-48	3mm (.1181)	#31 (.1200)
6-40	#26 (.1470)	#25 (.1495)
8-36	#17 (.1730)	#16 (.1770)
10-32	#7 (.2010)	13/64 (.2031)
1/4-28	G (.2610)	6.7mm (.2638)
5/16-24	21/64 (.3281)	21/64 (.3281)
3/8-24	25/64 (.3906)	25/64 (.3906)
7/16-20	29/64 (.4531)	29/64 (.4531)
1/2-20	33/64 (.5156)	33/64 (.5156)
9/16-18	37/64 (.5781)	37/64 (.5781)
5/8-18	41/64 (.6406)	41/64 (.6406)
3/4-16	49/64 (.7656)	49/64 (.7656)
7/8-14	57/64 (.8906)	57/64 (.8906)
1-14	1-1/64 (1.0156)	1-1/32 (1.0312)
1-12	1-1/64 (1.0156)	1-1/32 (1.0312)
1-1/8-12	1-9/64 (1.1406)	1-5/32 (1.1562)
1-1/4-12	1-17/64 (1.2656)	1-9/32 (1.2812)
1-3/8-12	1-25/64 (1.3906)	1-13/32 (1.4062)
1-1/2-12	1-33/64 (1.5156)	1-17/32 (1.5312)

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

METRIC DRILLS

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE	
	Aluminum	Plastic, Steel, Magnesium
COARSE		
M2x.4	#2.10 (.0827)	#2.10 (.0827)
M2.2x.45	#42 (.0935)	#42 (.0935)
M2.5x.45	#37 (.1040)	#37 (.1040)
M3x.5	1/8 (.1250)	1/8 (.1250)
M3.5x.6	#27 (.1440)	#26 (.1470)
M4x.7	#19 (.1660)	#19 (.1660)
M5x.8	#5 (.2055)	#4 (.2090)
M6x1	D (.2460)	1/4 (.2500)
M7x1	L (.2900)	L (.2900)
M8x1.25	21/64 (.3281)	Q (.3320)
M10x1.5	Z (.4130)	Z (.4130)
M12x1.75	31/64 (.4844)	1/2 (.5000)
M14x2	37/64 (.5781)	37/64 (.5781)
M16x2	21/32 (.6562)	21/32 (.6562)
M18x2.5	47/64 (.7344)	47/64 (.7344)
M20x2.5	13/16 (.8125)	13/16 (.8125)
M22x2.5	57/64 (.8906)	57/64 (.8906)
M24x3	63/64 (.9844)	63/64 (.9844)
M27x3	1-3/32 (1.0938)	1-3/32 (1.0938)
M30x3.5	1-7/32 (1.2188)	1-7/32 (1.2188)
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)

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE	
	Aluminum	Plastic, Steel, Magnesium
FINE		
M8x1	21/64 (.3281)	21/64 (.3281)
M10x1	Y (.4040)	13/32 (.4062)
M10x1.25	Y (.4040)	13/32 (.4062)
M12x1.25	31/64 (.4844)	31/64 (.4844)
M12x1.5	31/64 (.4844)	1/2 (.5000)
M14x1.5	9/16 (.5625)	37/64 (.5781)
M16x1.5	41/64 (.6406)	21/32 (.6562)
M18x1.5	23/32 (.7188)	47/64 (.7344)
M20x1.5	51/64 (.7969)	13/16 (.8125)
M22x1.5	7/8 (.8750)	57/64 (.8906)
M18x2	47/64 (.7344)	47/64 (.7344)
M20x2	13/16 (.8125)	13/16 (.8125)
M22x2	57/64 (.8906)	57/64 (.8906)
M24x2	31/32 (.9688)	31/32 (.9688)
M27x2	1-5/64 (1.0781)	1-3/32 (1.0938)
M30x2	1-13/64 (1.2031)	1-13/64 (1.2031)
M33x2	1-5/16 (1.3125)	1-21/64 (1.3281)
M36x2	1-7/16 (1.4375)	1-7/16 (1.4375)
M39x2	1-35/64 (1.5469)	1-9/16 (1.5625)
M36x3	1-29/64 (1.4531)	1-29/64 (1.4531)

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.

TAPPING

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.

STANDARD COARSE TAPS

NOMINAL THREAD SIZE	STRAIGHT FLUTE			
	PLUG		BOTTOMING	
	3B	2B*	3B	2B*
UNIFIED COARSE				
2-56	STI256H1P	STI256H2P	STI256H1B	STI256H2B
3-48	STI348H1P	STI348H2P	STI348H1B	STI348H2B
4-40	STI440H1P	STI440H2P	STI440H1B	STI440H2B
5-40	STI540H1P	STI540H2P	STI540H1B	STI540H2B
6-32	STI632H2P	STI632H3P	STI632H2B	STI632H3B
8-32	STI832H2P	STI832H3P	STI832H2B	STI832H3B
10-24	STI1024H2P	STI1024H3P	STI1024H2B	STI1024H3B
12-24	STI1224H2P	STI1224H3P	STI1224H2B	STI1224H3B
1/4-20	STI1420H2P	STI1420H3P	STI1420H2B	STI1420H3B
5/16-18	STI51618H3P	STI51618H4P	STI51618H3B	STI51618H4B
3/8-16	STI3816H3P	STI3816H4P	STI3816H3B	STI3816H4B
7/16-14	STI71614H3P	STI71614H4P	STI71614H3B	STI71614H4B
1/2-13	STI1213H3P	STI1213H4P	STI1213H3B	STI1213H4B
9/16-12	STI91612H3P	STI91612H4P	STI91612H3B	STI91612H4B
5/8-11	STI5811H3P	STI5811H4P	STI5811H3B	STI5811H4B
3/4-10	STI3410H3P	STI3410H5P	STI3410H3B	STI3410H5B
7/8-9	STI789H3P	STI789H5P	STI789H3B	STI789H5B
1-8	STI18H4P	STI18H6P	STI18H4B	STI18H6B
1-1/8-7	STI1187H4P	STI1187H6P	STI1187H4B	STI1187H6B
1-1/4-7	STI1147H4P	STI1147H6P	STI1147H4B	STI1147H6B
1-3/8-6	STI1386H6P	STI1386H8P	STI1386H6B	STI1386H8B
1-1/2-6	STI1126H6P	STI1126H8P	STI1126H6B	STI1126H8B

NOMINAL THREAD SIZE	SPIRAL POINT		SPIRAL FLUTED	
	PLUG		BOTTOMING	
	3B	2B*	3B	2B*
2-56	STI256H1SP	STI256H2SP	STI256H1SF	STI256H2SF
3-48	STI348H1SP	STI348H2SP	STI348H1SF	STI348H2SF
4-40	STI440H1SP	STI440H2SP	STI440H1SF	STI440H2SF
5-40	STI540H1SP	STI540H2SP	STI540H1SF	STI540H2SF
6-32	STI632H2SP	STI632H3SP	STI632H2SF	STI632H3SF
8-32	STI832H2SP	STI832H3SP	STI832H2SF	STI832H3SF
10-24	STI1024H2SP	STI1024H3SP	STI1024H2SF	STI1024H3SF
12-24	STI1224H2SP	STI1224H3SP	STI1224H2SF	STI1224H3SF
1/4-20	STI1420H2SP	STI1420H3SP	STI1420H2SF	STI1420H3SF
5/16-18	STI51618H3SP	STI51618H4SP	STI51618H3SF	STI51618H4SF
3/8-16	STI3816H3SP	STI3816H4SP	STI3816H3SF	STI3816H4SF
7/16-14	STI71614H3SP	STI71614H4SP	STI71614H3SF	STI71614H4SF
1/2-13	STI1213H3SP	STI1213H4SP	STI1213H3SF	STI1213H4SF

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

STANDARD FINE TAPS

NOMINAL THREAD SIZE	STRAIGHT FLUTE			
	PLUG		BOTTOMING	
	3B	2B*	3B	2B*
UNIFIED FINE				
3-56	STI356H1P	STI356H2P	STI356H1B	STI356H2B
4-48	STI448H1P	STI448H2P	STI448H1B	STI448H2B
6-40	STI640H1P	STI640H2P	STI640H1B	STI640H2B
8-36	STI836H1P	STI836H2P	STI836H1B	STI836H2B
10-32	STI1032H2P	STI1032H3P	STI1032H2B	STI1032H3B
1/4-28	STI1428H2P	STI1428H3P	STI1428H2B	STI1428H3B
5/16-24	STI51624H2P	STI51624H3P	STI51624H2B	STI51624H3B
3/8-24	STI3824H2P	STI3824H3P	STI3824H2B	STI3824H3B
7/16-20	STI71620H3P	STI71620H4P	STI71620H3B	STI71620H4B
1/2-20	STI1220H3P	STI1220H4P	STI1220H3B	STI1220H4B
9/16-18	STI91618H3P	STI91618H4P	STI91618H3B	STI91618H4B
5/8-18	STI5818H3P	STI5818H4P	STI5818H3B	STI5818H4B
3/4-16	STI3416H3P	STI3416H4P	STI3416H3B	STI3416H4B
7/8-14	STI7814H3P	STI7814H4P	STI7814H3B	STI7814H4B
1-14	STI114H4P	STI114H6P	STI114H4B	STI114H6B
1-12	STI112H4P	STI112H6P	STI112H4B	STI112H6B
1-1/8-12	STI11812H4P	STI11812H6P	STI11812H4B	STI11812H6B
1-1/4-12	STI11412H4P	STI11412H6P	STI11412H4B	STI11412H6B
1-3/8-12	STI13812H4P	STI13812H6P	STI13812H4B	STI13812H6B
1-1/2-12	STI11212H4P	STI11212H6P	STI11212H4B	STI11212H6B

NOMINAL THREAD SIZE	SPIRAL POINT		SPIRAL FLUTED	
	PLUG		BOTTOMING	
	3B	2B*	3B	2B*
3-56	STI356H1SP	STI356H2SP	STI356H1SF	STI356H2SF
4-48	STI448H1SP	STI448H2SP	STI448H1SF	STI448H2SF
6-40	STI640H1SP	STI640H2SP	STI640H1SF	STI640H2SF
8-36	STI836H1SP	STI836H2SP	STI836H1SF	STI836H2SF
10-32	STI1032H2SP	STI1032H3SP	STI1032H2SF	STI1032H3SF
1/4-28	STI1428H2SP	STI1428H3SP	STI1428H2SF	STI1428H3SF
5/16-24	STI51624H2SP	STI51624H3SP	STI51624H2SF	STI51624H3SF
3/8-24	STI3824H2SP	STI3824H3SP	STI3824H2SF	STI3824H3SF
7/16-20	STI71620H3SP	STI71620H4SP	STI71620H3SF	STI71620H4SF
1/2-20	STI1220H3SP	STI1220H4SP	STI1220H3SF	STI1220H4SF

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

METRIC COARSE TAPS

NOMINAL THREAD SIZE	STRAIGHT FLUTE			
	PLUG		BOTTOMING	
	4H5H 3B	5H 2B*	4H5H 3B	5H 2B*
COARSE				
M2x.4	STIM22454HP	STIM22455HP	STIM22454HB	STIM22455HB
M2.2x.45	STIM22454HP	STIM22455HP	STIM22454HB	STIM22455HB
M2.5x.45	STIM25454HP	STIM25455HP	STIM25454HB	STIM25455HB
M3x.5	STIM354HP	STIM355HP	STIM354HB	STIM355HB
M3.5x.6	STIM3564HP	STIM3565HP	STIM3564HB	STIM3565HB
M4x.7	STIM474HP	STIM475HP	STIM474HB	STIM475HB
M5x.8	STIM584HP	STIM585HP	STIM584HB	STIM585HB
M6x1	STIM6104HP	STIM6105HP	STIM6104HB	STIM6105HB
M6.3x1	STIM6314HP	STIM6315HP	STIM6314HB	STIM6315HB
M7x1	STIM7104HP	STIM7105HP	STIM7104HB	STIM7105HB
M8x1.25	STIM81254HP	STIM81255HP	STIM81254HB	STIM81255HB
M10x1.5	STIM10154HP	STIM10155HP	STIM10154HB	STIM10155HB
M12x1.75	STIM121754HP	STIM121755HP	STIM121754HB	STIM121755HB
M14x2	STIM1424HP	STIM1425HP	STIM1424HB	STIM1425HB
M16x2	STIM1624HP	STIM1625HP	STIM1624HB	STIM1625HB
M18x2.5	STIM18254HP	STIM18255HP	STIM18254HB	STIM18255HB
M20x2.5	STIM20254HP	STIM20255HP	STIM20254HB	STIM20255HB
M22x2.5	STIM22254HP	STIM22255HP	STIM22254HB	STIM22255HB
M24x3	STIM2434HP	STIM2435HP	STIM2434HB	STIM2435HB

NOMINAL THREAD SIZE	SPIRAL POINT		SPIRAL FLUTED	
	PLUG		BOTTOMING	
	3B	2B*	3B	2B*
M2x.4	STIM22454HSP	STIM22455HSP	STIM22454HSF	STIM22455HSF
M2.2x.45	STIM22454HSP	STIM22455HSP	STIM22454HSF	STIM22455HSF
M2.5x.45	STIM25454HSP	STIM25455HSP	STIM25454HSF	STIM25455HSF
M3x.5	STIM354HSP	STIM355HSP	STIM354HSF	STIM355HSF
M3.5x.6	STIM3564HSP	STIM3565HSP	STIM3564HSF	STIM3565HSF
M4x.7	STIM474HSP	STIM475HSP	STIM474HSF	STIM475HSF
M5x.8	STIM584HSP	STIM585HSP	STIM584HSF	STIM585HSF
M6x1	STIM6104HSP	STIM6105HSP	STIM6104HSF	STIM6105HSF
M6.3x1	STIM6314HSP	STIM6315HSP	STIM6314HSF	STIM6315HSF
M7x1	STIM7104HSP	STIM7105HSP	STIM7104HSF	STIM7105HSF
M8x1.25	STIM81254HSP	STIM81255HSP	STIM81254HSF	STIM81255HSF
M10x1.5	STIM10154HSP	STIM10155HSP	STIM10154HSF	STIM10155HSF
M12x1.75	STIM121754HSP	STIM121755HSP	STIM121754HSF	STIM121755HSF

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

METRIC FINE TAPS

NOMINAL THREAD SIZE	STRAIGHT FLUTE			
	PLUG		BOTTOMING	
	4H5H 3B	5H 2B*	4H5H 3B	5H 2B*
COARSE				
M8x1	STIM814HP	STIM815HP	STIM814HB	STIM815HB
M10x1	STIM1014HP	STIM1015HP	STIM1014HB	STIM1015HB
M10x1.25	STIM101254HP	STIM101255HP	STIM101254HB	STIM101255HB
M12x1.25	STIM121254HP	STIM121255HP	STIM121254HB	STIM121255HB
M12x1.5	STIM12154HP	STIM12155HP	STIM12154HB	STIM12155HB
M14x1.5	STIM14154HP	STIM14155HP	STIM14154HB	STIM14155HB
M16x1.5	STIM16154HP	STIM16155HP	STIM16154HB	STIM16155HB
M18x1.5	STIM18154HP	STIM18155HP	STIM18154HB	STIM18155HB
M20x1.5	STIM20154HP	STIM20155HP	STIM20154HB	STIM20155HB
M22x1.5	STIM22154HP	STIM22155HP	STIM22154HB	STIM22155HB
M18x2	STIM1824HP	STIM1825HP	STIM1824HB	STIM1825HB
M20x2	STIM2024HP	STIM2025HP	STIM2024HB	STIM2025HB
M22x2	STIM2224HP	STIM2225HP	STIM2224HB	STIM2225HB
M24x2	STIM2424HP	STIM2425HP	STIM2424HB	STIM2425HB
M27x2	STIM2724HP	STIM2725HP	STIM2724HB	STIM2725HB
M30x2	STIM3024HP	STIM3025HP	STIM3024HB	STIM3025HB
M33x2	STIM3324HP	STIM3325HP	STIM3324HB	STIM3325HB
M36x2	STIM3624HP	STIM3625HP	STIM3624HB	STIM3625HB
M39x2	STIM3924HP	STIM3925HP	STIM3924HB	STIM3925HB
M36x3	STIM3634HP	STIM3635HP	STIM3634HB	STIM3635HB
M39x3	STIM3934HP	STIM3935HP	STIM3934HB	STIM3935HB

NOMINAL THREAD SIZE	SPIRAL POINT		SPIRAL FLUTED	
	PLUG		BOTTOMING	
	3B	2B*	3B	2B*
M8x1	STIM814HSP	STIM815HSP	STIM814HSF	STIM815HSF
M10x1	STIM1014HSP	STIM1015HSP	STIM1014HSF	STIM1015HSF
M10x1.25	STIM101254HSP	STIM10125HSP	STIM101254HSF	STIM101255HSF
M12x1.25	STIM121254HSP	STIM12125HSP	STIM121254HSF	STIM121255HSF
M12x1.5	STIM12154HSP	STIM12155HSP	STIM12154HSF	STIM12155HSF

* 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 GAGES STI

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 GAGES STI

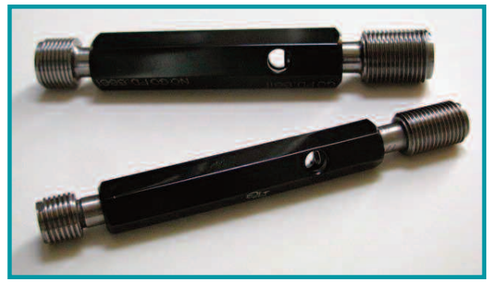
NOMINAL THREAD SIZE	COMPLETE GAGES	
	4H5H	5H*
COARSE		
M2.2x.45	GM224H	GM225H
M2.5x.45	GM254H	GM255H
M3x.5	GM34H	GM35H
M3.5x.6	GM354H	GM355H
M4x.7	GM44H	GM45H
M5x.8	GM54H	GM55H
M6x1	GM6104H	GM6105H
M6.3x1	GM634H	GM635H
M7x1	GM7104H	GM7105H
M8x1.25	GM8124H	GM8125H
M10x1.5	GM10154H	GM10155H
M12x1.75	GM12174H	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.

BOLT TYPE

The first type of installation tool is what we refer to as the "Bolt Type" installation tool. This type 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. This type is also machined to be square at the other end to accommodate turning the tool with a conventional wrench for installation.

This Bolt 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 Bolt 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.

The Bolt Type installation tools are available in sizes 2-56 through1-1/2" in both the UNF and UNC standard series, and also in sizes 2.2M through 30M in the metric series. See page 34 for metric sizes and part numbers.

*Fine threads generally require a plastic prewinder.

STANDARD

NOMINAL THREAD SIZE	OUR PART NUMBER
UNIFIED COARSE	
2-56	BT256
3-48	BT348
4-40	BT440
5-40	BT540
6-32	BT632
8-32	BT832
10-24	BT1024
12-24	BT1224
1/4-20	BT1420
5/16-18	BT51618
3/8-16	BT3816
7/16-14	BT71614
1/2-13	BT1213
9/16-12	BT91612
5/8-11	BT5811
3/4-10	BT3410
7/8-9	BT789
1-8	BT18
1-1/8-7	BT1187
1-1/4-7	BT1147
1-3/8-6	BT1386
1-1/2-6	BT1126

NOMINAL THREAD SIZE	OUR PART NUMBER
UNIFIED FINE*	
3-56	BT356
4-48	BT448
6-40	BT640
8-36	BT836
10-32	BT1032
1/4-28	BT1428
5/16-24	BT51624
3/8-24	BT3824
7/16-20	BT71620
1/2-20	BT1220
9/16-18	BT91618
5/8-18	BT5818
3/4-16	BT3416
7/8-14	BT7814
1-14	BT114
1-12	BT112
1-1/8-12	BT11812
1-1/4-12	BT11412
1-3/8-12	BT13812
1-1/2-12	BT11212

CAPTIVE SLEEVE

The second 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 Bolt 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. The Captive Sleeve tool 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. All of these tools are made of heat treated steel and conform to A-A-59158. They can be used for numerous installations. This Captive Sleeve or hand crank style of installation tool is available for sizes 2-56 through 1/2-13 UNC, and for sizes 3-56 through 1/2-20 UNF in the standard series. They are available in the metric series from 2.2M through 18M.

NOMINAL THREAD SIZE	HELICAL WIRE * PART NUMBER
UNIFIED COARSE	
2-56	HIT256
3-48	HIT348
4-40	HIT440
5-40	HIT540
6-32	HIT632
8-32	HIT832
10-24	HIT1024
12-24	HIT1224
1/4-20	HIT1420
5/16-18	HIT51618
3/8-16	HIT3816
7/16-14	HIT71614
1/2-13	HIT1213

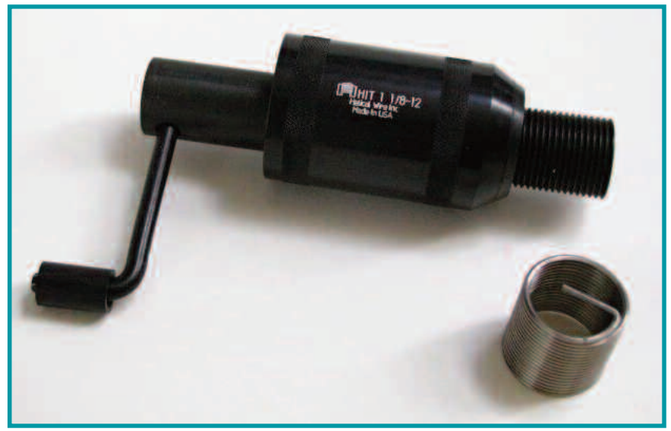
NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
UNIFIED FINE	
3-56	HIT356
4-48	HIT448
6-40	HIT640
8-36	HIT836
10-32	HIT1032
1/4-28	HIT1428
5/16-24	HIT51624
3/8-24	HIT3824
7/16-20	HIT71620
1/2-20	HIT1220

* Metal Tool. Competitor adds M to P/N denoting metal tool.

* *Not Captive Sleeve type.

REMOVABLE SLEEVE

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
UNIFIED FINE	
9/16-18	HIT91618
5/8-18	HIT5818
3/4-16	HIT3416
7/8-14	HIT7814
1-14	HIT114
1-12	HIT112
1-1/8-12	HIT11812
1-1/4-12	HIT11412
1-3/8-12	HIT13812
1-1/2-12	HIT11212

They are available in fine thread sizes 9/16 and up in the standard series. The metric series are available for 12M and up.

METRIC INSTALLATION TOOLS

BOLT TYPE

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
COARSE	
M2x.4	BTM24
M2.2x.45	BTM2245
M2.5x.45	BTM2545
M3x.5	BTM35
M3.5x.6	BTM356
M4x.7	BTM47
M5x.8	BTM58
M6x1	BTM610
M7x1	BTM710
M8x1.25	BTM8125
M10x1.5	BTM1015
M12x1.75	BTM12175
M14x2	BTM1420
M16x2	BTM1620
M18x2.5	BTM1825
M20x2.5	BTM2025
M22x2.5	BTM2225
M24x3	BTM2430
M27x3	BTM2730
M30x3.5	BTM3035

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
FINE	
M8x1	BTM810
M10x1	BTM1010
M10x1.25	BTM10125
M12x1.25	BTM12125
M12x1.5	BTM1215
M14x1.5	BTM1415
M16x1.5	BTM1615
M18x1.5	BTM1815
M20x1.5	BTM2015
M22x1.5	BTM2215
M18x2	BTM1820
M20x2	BTM2020
M22x2	BTM2220
M24x2	BTM2420
M27x2	BTM2720
M30x2	BTM3020

REMOVABLE SLEEVE

NOMINAL THREAD SIZE	HELICAL WIRE* PART NUMBER
FINE	
M18x1.5	HITM1815
M20x1.5	HITM2015
M22x1.5	HITM2215
M18x2	HITM1820
M20x2	HITM2020
M22x2	HITM2220
M24x2	HITM2420
M27x2	HITM2720
M30x2	HITM3020
M33x2	HITM3320
M36x2	HITM3620
M39x2	HITM3920
M36x3	HITM3630
M39x3	HITM3930

CAPTIVE SLEEVE

NOMINAL THREAD SIZE	HELICAL WIRE* PART NUMBER
COARSE	
M2x.4	HITM24
M2.2x.45	HITM2245
M2.5x.45	HITM2545
M3x.5	HITM35
M3.5x.6	HITM356
M4x.7	HITM47
M5x.8	HITM58
M6x1	HITM610
M7x1	HITM710
M8x1.25	HITM8125
M10x1.5	HITM1015
M12x1.75	HITM12175
M14x2	HITM1420
M16x2	HITM1620

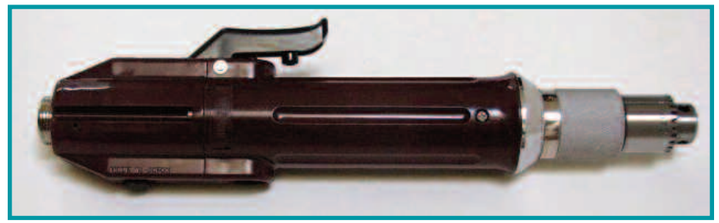
NOMINAL THREAD SIZE	HELICAL WIRE* PART NUMBER
FINE	
M8x1	HITM810
M10x1	HITM1010
M10x1.25	HITM10125
M12x1.25	HITM12125
M12x1.5	HITM1215
M14x1.5	HITM1415
M16x1.5	HITM1615

* Metal Tool. Competitor adds M to P/N denoting metal tool.

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		M002RVR0068R3AM	8463A	M002RVR006BR3A	8463AMA	M002RVR006BR3AMA
5/16 thru 1/2	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.

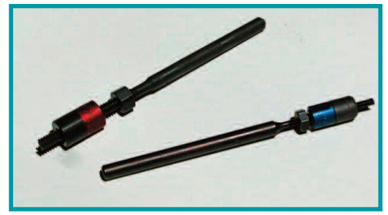
STANDARD PNEUMATIC ACCESSORIES

NOMINAL THREAD SIZE	FRONT END ASSEMBLY		PREWINDERS		MANDRELS
	BULK	STRIP	BULK	STRIP	
UNIFIED COARSE					
2-56		FEAS256		PWS256	AM256
4-40	FEAB440	FEAS440	PWB440	PWS440	AM440
5-40	FEAB540	FEAS540			AM540
6-32	FEAB632	FEAS632	PWB632	PWS632	AM632
8-32	FEAB832	FEAS832	PWB832	PWS832	AM832
10-24	FEAB1024	FEAS1024	PWB1024	PWS1024	AM1024
12-24		FEAS1224			AM1224
1/4-20	FEAB1420	FEAS1420	PWB1420	PWS1420	AM1420
5/16-18	FEAB51618	FEAS51618	PWB51618	PWS51618	AM51618
3/8-16	FEAB3816		PWB3816		AM3816
7/16-14	FEAB71614		PWB71614		AM71614
1/2-13	FEAB1213		PWB1213		AM1213
UNIFIED FINE					
6-40	FEAB640		PWB640		AM640
10-32	FEAB1032	FEAS1032	PWB1032	PWS1032	AM1032
12-28		FEAS1228			AM1228
1/4-28	FEAB1428	FEAS1428	PWB1428	PWS1428	AM1428
5/16-24	FEAB51624	FEAS51624	PWB51624	PWS51624	AM51624
3/8-24	FEAB3824		PWB3824		AM3824
7/16-20	FEAB71620		PWB71620		AM71620
1/2-20	FEAB1220		PWB1220		AM1220

STANDARD PNEUMATIC ACCESSORIES CONT.

NOMINAL THREAD SIZE	SPACERS		
UNIFIED COARSE			
2-56	SP256-1	SP256-1.5	SP256-2
4-40	SP440-1	SP440-1.5	SP440-2
5-40	SP540-1	SP540-1.5	SP540-2
6-32	SP632-1	SP632-1.5	SP632-2
8-32	SP832-1	SP832-1.5	SP832-2
10-24	SP1024-1	SP1024-1.5	SP1024-2
12-24			
1/4-20	SP1420-1	SP1420-1.5	SP1420-2
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	

NOMINAL THREAD SIZE	SPACERS		
UNIFIED FINE			
6-40	SP640-1	SP640-1.5	SP640-2
10-32	SP1032-1	SP1032-1.5	SP1032-2
12-28			
1/4-28	SP1428-1	SP1428-1.5	SP1428-2
5/16-24	SP51624-1	SP51624-1.5	
3/8-24	SP3824-1	SP3824-1.5	
7/16-20	SP71620-1	SP71620-1.5	
1/2-20	SP1220-1	SP1220-1.5	



MANDRELS FOR ELECTRIC POWER TOOLS

ELECTRIC POWER TOOLS

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

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

METRIC PNEUMATIC ACCESSORIES CONT.

NOMINAL THREAD SIZE	SPACERS		
COARSE			
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	
FINE		
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						EMM25
M3x.5	8050-50	SBT60	8050-400C	SB400C		EMM3
M3.5x.6						EMM35
M4x.7	8050-50	SBT60	8050-650C	SB650C		EMM4
M5x.8	8050-50	SBT60	8050-650C	SB650C		EMM5
M6x1	8050-50	SBT60	8050-650C	SB650C		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.

All T.B.O. tools are made of heat treated steel and conform to the MIL Spec standard A-A-59158 and ASME B18.29.1-1993.

STANDARD TBOS

NOMINAL THREAD SIZE	AUTOMATIC	MANUAL	REPLACEMENT PUNCHES
UNIFIED COARSE			
2-56	TBO256		TBORP256
3-48	TBO348		TBORP348
4-40	TBO440		TBORP440
5-40	TBO540		TBORP540
6-32	TBO632		TBORP632
8-32	TBO832		TBORP832
10-24	TBO1024		TBORP1024
12-24	TBO1224		TBORP1224
1/4-20	TBO1420		TBORP1420
5/16-18	TBO51618	TBOM51618	TBORP51618
3/8-16	TBO3816	TBOM3816	TBORP3816
7/16-14	TBO71614	TBOM71614	TBORP71614
1/2-13	TBO1213	TBOM1213	TBORP1213
9/16-12		TBOM91612	
5/8-11		TBOM5811	
3/4-10		TBOM3410	
7/8-9		TBOM789	
1-8		TBOM18	

NOMINAL THREAD SIZE	AUTOMATIC	MANUAL	REPLACEMENT PUNCHES
UNIFIED FINE			
3-56	TBO356		TBORP356
4-48	TBO448		TBORP448
6-40	TBO640		TBORP640
8-36	TBO836		TBORP836
10-32	TBO1032		TBORP1032
1/4-28	TBO1428		TBORP1428
5/16-24	TBO51624	TBOM51624	TBORP51624
3/8-24	TBO3824	TBOM3824	TBORP3824
7/16-20	TBO71620	TBOM71620	TBORP71620
1/2-20	TBO1220	TBOM1220	TBORP1220
9/16-18		TBOM91618	
5/8-18		TBOM5818	
3/4-16		TBOM3416	
7/8-14		TBOM7814	
1-14		TBOM114	
1-12		TBOM112	

METRIC TBOS

NOMINAL THREAD SIZE	AUTOMATIC	REPLACEMENT PUNCHES
COARSE		
M2x.4	TBOM24	TBORPM24
M2.2x.45	TBOM2245	TBORPM2245
M2.5x.45	TBOM2545	TBORPM2545
M3x.5	TBOM35	TBORPM35
M3.5x.6	TBOM356	TBORPM356
M4x.7	TBOM47	TBORPM47
M5x.8	TBOM58	TBORPM58
M6x1	TBOM610	TBORPM610
M7x1	TBOM710	TBORPM710
M8x1.25	TBOM8125	TBORPM8125
M10x1.5	TBOM1015	TBORPM1015
M12x1.75	TBOM12175	TBORPM12175

NOMINAL THREAD SIZE	AUTOMATIC	REPLACEMENT PUNCHES
FINE		
M8x1	TBOM810	TBORPM810
M10x1	TBOM1010	TBORPM101
M10x1.25	TBOM10125	TBORPM10125
M12x1.25	TBOM12125	TBORPM12125
M12x1.5	TBOM1215	TBORPM1215

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
EXTRACTING TOOL	
2	ET2
3 thru 8	ET3
10 thru 3/8"	ET10
7/16 thru 1"	ET716
1-1/8 thru 1-1/2"	ET118

METRIC

NOMINAL DIAMETER	HELICAL WIRE PART NUMBER
EXTRACTING TOOL	
2mm	ET2
2.2mm	ET2
2.5 thru 4.5mm	ET3
5 thru 10mm	ET10
11 thru 24mm	ET716
27 thru 39mm	ET118

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
UNIFIED COARSE		
4-40	KIT440	12
5-40	KIT540	12
6-32	KIT632	12
8-32	KIT832	12
10-24	KIT1024	12
12-24	KIT1224	12
1/4-20	KIT1420	12
5/16-18	KIT51618	12
3/8-16	KIT3816	6
7/16-14	KIT71614	6
1/2-13	KIT1213	6
9/16-12	KIT91612	6
5/8-11	KIT5811	6
3/4-10	KIT3410	4
7/8-9	KIT789	6
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

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	INSERTS PER KIT
UNIFIED FINE		
6-40	KIT640	12
8-36	KIT836	12
10-32	KIT1032	12
1/4-28	KIT1428	12
5/16-24	KIT51624	12
3/8-24	KIT3824	6
7/16-20	KIT71620	6
1/2-20	KIT1220	6
9/16-18	KIT91618	6
5/8-18	KIT5818	6
3/4-16	KIT3416	4
7/8-14	KIT7814	6
1-14	KIT114	6
1-12	KIT112	6
1-1/8-12	KIT11812	5
1-1/4-12	KIT11412	4
1-3/8-12	KIT13812	4
1-1/2-12	KIT11212	4

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
COARSE		
M3x.5	KITM35	12
M3.5x.6	KITM356	12
M4x.7	KITM47	12
M5x.8	KITM58	12
M6x1	KITM610	12
M7x1	KITM710	12
M8x1.25	KITM8125	12
M10x1.5	KITM1015	12
M12x1.75	KITM12175	12
M14x2	KITM1420	12
M16x2	KITM1620	6
M18x2.5	KITM1825	6
M20x2.5	KITM2025	4

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER	INSERTS PER KIT
FINE		
M8x1	KITM810	12
M10x1	KITM1010	12
M10x1.25	KITM10125	12
M12x1.25	KITM12125	12
M12x1.5	KITM1215	12
M14x1.5	KITM1415	12
M16x1.5	KITM1615	6
M18x1.5	KITM1815	6

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	
4-48	KIT448GS	
6-40	KIT640GS	5180-00-054-7525
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.

STANDARD

NOMINAL THREAD SIZE	FREE-RUNNING	LOCKING	BOTTOMING TAP	THREAD PLUG GAUGES	
				3B	2B
UNIFIED COARSE					
2-56	OSN256	OSL256	OST256	OG2563B	OG2562B
3-48	OSN348	OSL348	OST348	OG3483B	OG3482B
4-40	OSN440	OSL440	OST440	OG4403B	OG4402B
5-40	OSN540	OSL540	OST540	OG5403B	OG5402B
6-32	OSN632	OSL632	OST632	OG6323B	OG6322B
8-32	OSN832	OSL832	OST832	OG8323B	OG8322B
10-24	OSN1024	OSL1024	OST1024	OG10243B	OG10242B
12-24	OSN1224	OSL1224	OST1224	OG12243B	OG12242B
1/4-20	OSN1420	OSL1420	OST1420	OG14203B	OG14202B
5/16-18	OSN51618	OSL51618	OST51618	OG516183B	OG516182B
3/8-16	OSN3816	OSL3816	OST3816	OG38163B	OG38162B
7/16-14	OSN71614	OSL71614	OST71614	OG716143B	OG716142B
1/2-13	OSN1213	OSL1213	OST1213	OG12133B	OG12132B
UNIFIED FINE					
3-56	OSN356	OSL356	OST356	OG3563B	OG3562B
4-48	OSN448	OSL448	OST448	OG4483B	OG4482B
6-40	OSN640	OSL640	OST640	OG6403B	OG6402B
10-32	OSN1032	OSL1032	OST1032	OG10323B	OG10322B
1/4-28	OSN1428	OSL1428	OST1428	OG14283B	OG14282B
5/16-24	OSN51624	OSL51624	OST51624	OG516243B	OG516242B
3/8-24	OSN3824	OSL3824	OST3824	OG38243B	OG38242B
7/16-20	OSN71620	OSL71620	OST71620	OG716203B	OG716202B
1/2-20	OSN1220	OSL1220	OST1220	OG12203B	OG12202B

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.

Oversize inserts are available for every size insert that Helical Wire manufactures in both standard and metric series. The Oversize series are manufactured of 18-8 stainless steel and conform to all MS Standards.

The Oversize inserts 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.

METRIC

NOMINAL THREAD SIZE	FREE-RUNNING	LOCKING	BOTTOMING TAP	THREAD PLUG GAUGES	
				3B	2B
COARSE					
M2.2x.45	OSNM22	OSLM22	OSTM22	OGM223B	OGM222B
M2.5x.45	OSNM25	OSLM25	OSTM25	OGM253B	OGM252B
M3x.5	OSNM3	OSLM3	OSTM3	OGM33B	OGM32B
M3.5x.6	OSNM35	OSLM35	OSTM35	OGM353B	OGM352B
M4x.7	OSNM4	OSLM4	OSTM4	OGM43B	BOGM42
M5x.8	OSNM5	OSLM5	OSTM5	OGM53B	OGM52B
M6x1	OSNM6	OSLM6	OSTM6	OGM63B	OGM62B
M7x1	OSNM7	OSLM7	OSTM7	OGM73B	OGM72B
M8x1.25	OSNM812	OSLM812	OSTM812	OGM8123B	OGM8122B
M10x1.5	OSNM1015	OSLM1015	OSTM1015	OGM10153B	OGM10152B
M12x1.75	OSNM12175	OSLM12175	OSTM12175	OGM121753B	OGM121752B
FINE					
M8x1	OSNM8	OSLM8	OSTM8	OGM83B	OGM82B
M10x1	OSNM10	OSLM10	OSTM10	OGM103B	OGM102B
M10x1.25	OSNM1012	OSLM1012	OSTM1012	OGM10123B	OGM10122B
M12x1.25	OSNM1212	OSLM1212	OSTM1212	OGM12123B	OGM12122B
M12x1.5	OSNM1215	OSLM1215	OSTM1215	OGM12153B	OGM12152B

DOUBLE-SERTS

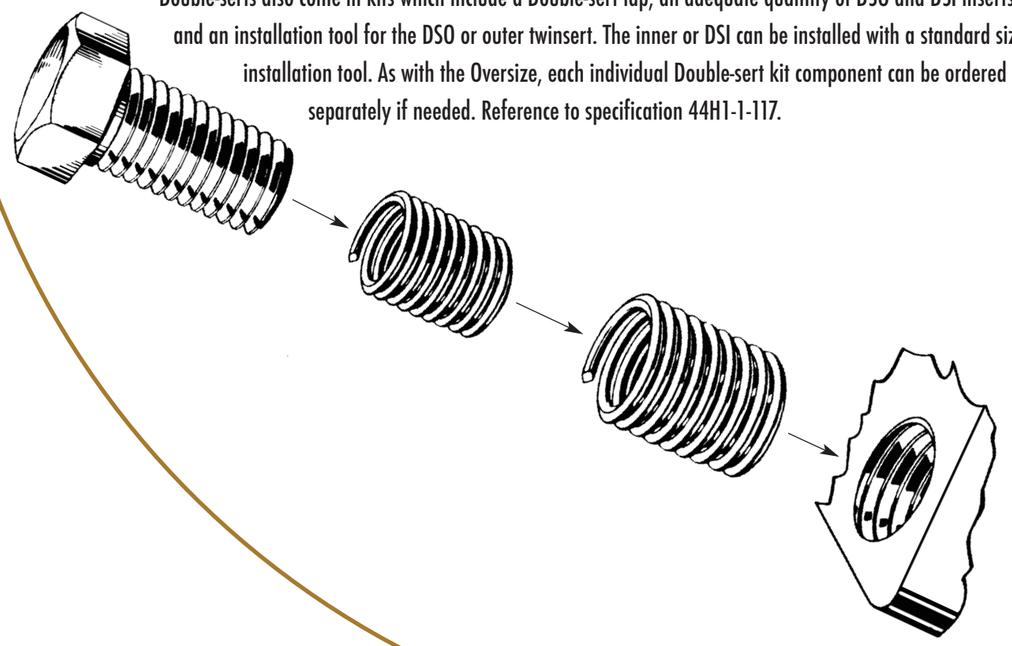
When a hole has been tapped incorrectly another mode of repair is the use of "Double-serts". Double-serts are used to correct tapped holes that are stripped, off-center, or damaged beyond the range of the Oversize inserts. A Double-sert application would use two inserts in tandem that would fit inside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

Like the Oversize method of repairing incorrectly tapped holes, a tap specifically designed for the Double-sert application must be used to re-tap the hole. Then the Double-sert outer is installed into the hole. Next the tang of the DSO needs to be broken off, then the Double-sert 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 DSI is 1 coil shorter than the DSO).

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.

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



STANDARD

NOMINAL THREAD SIZE	OUTER INSERT	INNER INSERT	
		FREE RUNNING	LOCKING
UNIFIED COARSE			
2-56	DSO2560129 0172	DSI256N0111 0154	DSI256L0111 0154
3-48	DSO3480148 0198	DSI348N0127 0177	DSI348L0127 0177
4-40	DSO4400168 0224	DSI440N0143 0199	DSI440L0143 0199
5-40	DSO5400188 0250	DSI540N0163 0225	DSI540L0163 0225
6-32	DSO6320207 0276	DSI632N0176 0245	DSI632L0176 0245
8-32	DSO8320246 0328	DSI832N0215 0297	DSI832L0215 0297
10-24	DSO10240285 0380	DSI1024N0243 0338	DSI1024L0243 0338
12-24	DSO12240324 0432	DSI1224N0282 0390	DSI1224L0282 0390
1/4-20	DSO14200375 0500	DSI1420N0325 0450	DSI1420L0325 0450
5/16-18	DSO516180469 0625	DSI51618N0413 0569	DSI51618L0413 0569
3/8-16	DSO38160562 0750	DSI3816N0500 0688	DSI3816L0500 0688
7/16-14	DSO716140656 0875	DSI71614N0585 0804	DSI71614L0585 0804
1/2-13	DSO12130750 1000	DSI1213N0673 0923	DSI1213L0673 0923
9/16-12	DSO916120844 1125	DSI91612N0761 1042	DSI91612L0761 1042
5/8-11	DSO58110938 1250	DSI5811N0847 1159	DSI5811L0847 1159
3/4-10	DSO34101125 1500	DSI3410N1025 1400	DSI3410L1025 1400

These inserts are not interchangeable. The inner insert is 1 coil shorter than the outer insert.

Extraction tool not included in kits.

ADD: -20 to end of DSO Free-running or Locking part number for 2 diameter Double-serts

"K" to end of Free-running or Locking part number for kit

STANDARD DOUBLE-SERTS CONT.

NOMINAL THREAD SIZE	OUTER INSERT	INNER INSERT	
		FREE RUNNING	LOCKING
UNIFIED COARSE			
3-56	DSO3560148	DSI356N0130	DSI356L0130
	0198	0180	0180
4-48	DSO4480168	DSI448N147	DSI448L0147
	0224	0203	0203
6-40	DSO6400207	DSI640N182	DSI640L0182
	0276	0251	0251
10-32	DSO10320285	DSI1032N254	DSI1032L0254
	0380	0349	0349
1/4-28	DSO14280375	DSI1428N339	DSI1428L0339
	0500	0464	0464
5/16-24	DSO516240469	DSI51624N427	DS51624L0427
	0625	0583	0583
3/8-24	DSO38240562	DSI3824N521	DS3824L0521
	0750	0708	0708
7/16-20	DSO716200656	DSI71620N606	DS71620L0606
	0875	0825	0825
1/2-20	DSO12200750	DSI1220N700	DS1220L0700
	1000	0950	0950
9/16-18	DSO916180844	DSI91618N788	DSI91618L0788
	1125	1069	1069
5/8-18	DSO58180938	DSI5818N0882	DSI5818L0882
	1250	1194	1194
3/4-16	DSO34161125	DSI3416N1062	DSI3416L1062
	1500	1438	1438

STANDARD DOUBLE-SERT TOOLS

NOMINAL THREAD SIZE	SUGGESTED DRILL SIZE		BOTTOMING TAP	OUTER INSTALLATION TOOL	OUTER TBO	OUTER EXTRACTION TOOL
	Aluminum	Steel				
UNIFIED COARSE						
2-56	#32 (.1160)	#32 (.1160)	DST256	DSIT256	DSBT440	DSET440
3-48	#30 (.1285)	#29 (.1360)	DST348	DSIT348	DSBT348	DSET540
4-40	#24 (.1520)	#23 (.1540)	DST440	DSIT440	DSBT440	DSET440
5-40	#19 (.1660)	#18 (.1695)	DST540	DSIT540	DSBT540	DSET540
6-32	#12 (.1890)	#11 (.1910)	DST632	DSIT632	DSBT632	DSET632
8-32	#3 (.2130)	7/32 (.2188)	DST832	DSIT832	DSBT832	DSET832
10-24	"F" (.2570)	"G" (.2610)	DST1024	DSIT1024	DSBT1024	DSET1024
12-24	9/32 (.2812)	9/32 (.2810)	DST1224	DSIT1224	DSBT1224	DSET1224
1/4-20	21/64 (.3281)	"Q" (.3320)	DST1420	DSIT1420	DSBT1420	DSET1420
5/16-18	"X" (.3970)	"Y" (.4040)	DST51618	DSIT51618	DSBT51618	DSET51618
3/8-16	15/32 (.4688)	15/32 (.4688)	DST3816	DSIT3816	DSBT3816	DSET3816
7/16-14	35/64 (.5469)	9/16 (.5625)	DST71614	DSIT71614	DSBT71614	DSET71614
1/2-13	5/8 (.6250)	5/8 (.6250)	DST1213	DSIT1213	DSET1213	
9/16-12	11/16 (.6875)	45/64 (.7031)	DST91612	DSIT91612	DSET91612	
5/8-11	49/64 (.7656)	49/64 (.7656)	DST5811	DSIT5811	DSET5811	
3/4-10	29/32 (.9062)	29/32 (.9062)	DST3410	DSIT3410	DSET3410	
UNIFIED FINE						
3-56	#30 (.1285)	#30 (.1285)	DST356	DSIT356	DSBT356	DSET356
4-48	#26 (.1470)	#26 (.1470)	DST448	DSIT448	DSBT448	DSET448
6-40	#15 (.1800)	#14 (.1820)	DST640	DSBT640	DSET640	
10-32	"C" (.2420)	"D" (.2460)	DST1032	DSIT1032	DSBT1032	DSET1032
1/4-28	5/16 (.3125)	5/16 (.3125)	DST1428	DSIT1428	DSBT1428	DSET1428
5/16-24	"V" (.3770)	"V" (.3770)	DST51624	DSIT51624	DSBT51624	DSET51624
3/8-24	7/16 (.4375)	7/16 (.4375)	DST3824	DSIT3824	DSBT3824	DSET3824
7/16-20	33/64 (.5156)	33/64 (.5156)	DST71620	DSIT71620	DSBT71620	DSET71620
1/2-20	37/64 (.5781)	37/64 (.5781)	DST1220	DSIT1220		DSET1220
9/16-18	41/64 (.6406)	21/32 (.6562)	DST91618	DSIT91618		DSET91618
5/8-18	45/64 (.7031)	23/32 (.7188)	DST5818	DSIT5818		DSET5818
3/4-16	37/32 (.8438)	55/64 (.8594)	DST3416	DSIT3416		DSET3416

METRIC DOUBLE-SERT

NOMINAL THREAD SIZE	OUTER INSERT	INNER INSERT		SUGGESTED DRILL SIZE		BOTTOMING TAP	OUTER INSTAL-LATION TOOL	OUTER TBO	OUTER EXTRAC-TION TOOL
		Free-Running	Locking	Aluminum	Steel				
COARSE									
M2.2x.45	DSOM22	DSNM22	DSLM22	2.9	2.9	DSTM22	DSITM22	DSBTM22	DSETM22
M2.5x.45	DSOM25	DSNM25	DSLM25	3.2	3.2	DSTM25	DSITM25	DSBTM25	DSETM25
M3x.5	DSOM3	DSNM3	DSLM3	3.8	3.8	DSTM3	DSITM3	DSBTM3	DSETM3
M3.5x.6	DSOM35	DSNM35	DSLM35	4.5	4.5	DSTM35	DSITM35	DSBTM35	DSETM35
M4x7	DSOM4	DSNM4	DSLM4	5.1	5.1	DSTM4	DSITM4	DSBTM4	DSETM4
M5x.8	DSOM5	DSNM5	DSLM5	6.3	6.3	DSTM5	DSITM5	DSBTM5	DSETM5
M6x1	DSOM6	DSNM6	DSLM6	7.6	7.6	DSTM6	DSITM6	DSBTM6	DSETM6
M7x1	DSOM7	DSNM7	DSLM7	8.6	8.6	DSTM7	DSITM7	DSBTM7	DSETM7
M8x1.25	DSOM8125	DSNM8125	DSLM8125	10.0	10.0	DSTM8125	DSITM8125	DSBTM8125	DSETM8125
M10x1.5	DSOM1015	DSNM1015	DSLM1015	12.5	12.5	DSTM1015	DSITM1015	DSBTM1015	DSETM1015
M12x1.75	DSOM1217	DSNM1217	DSLM1217	14.5	15.0	DSTM1217	DSITM1217		DSETM1217
M14x2	DSOM142	DSNM142	DSLM142	17.0	17.5	DSTM142	DSITM142		DSETM142
M16x2	DSOM162	DSNM162	DSLM162	19.0	19.5	DSTM162	DSITM162		DSETM162
M18x2.5	DSOM1825	DSNM1825	DSLM1825	22.0	22.0	DSTM1825	DSITM1825		DSETM1825
M20x2.5	DSOM2025	DSNM2025	DSLM2025	24.0	24.0	DSTM2025	DSITM2025		DSETM2025
FINE									
M8x1	DSOM8	DSNM8	DSLM8	9.6	9.6	DSTM8	DSITM8	DSBTM8	DSETM8
M10x1	DSOM10	DSNM10	DSLM10	11.5	11.8	DSTM10	DSITM10	DSBTM10	DSETM10
M10x1.25	DSOM1012	DSNM1012	DSLM1012	12.0	12.0	DSTM1012	DSITM1012	DSBTM1012	DSETM1012
M12x1.25	DSOM1212	DSNM1212	DSLM1212	14.0	14.0	DSTM1212	DSITM1212		DSETM1212
M12x1.5	DSOM1215	DSNM1215	DSLM1215	14.25	14.5	DSTM1215	DSITM1215		DSETM1215
M14x1.5	DSOM1415	DSNM1415	DSLM1415	16.25	16.5	DSTM1415	DSITM1415		DSETM1415
M16x1.5	DSOM1615	DSNM1615	DSLM1615	18.5	18.5	DSTM1615	DSITM1615		DSETM1615
M18x1.5	DSOM1815	DSNM1815	DSLM1815	20.5	20.5	DSTM1815	DSITM1815		DSETM1815
M20x1.5	DSOM2015	DSNM2015	DSLM2015	22.5	22.5	DSTM2015	DSITM2015		DSETM2015
M18x2	DSOM182	DSNM182	DSLM182	21.0	21.5	DSTM182	DSITM182		DSETM182
M20x2	DSOM202	DSNM202	DSLM202	23.0	23.5	DSTM202	DSITM202		DSETM202

These inserts are not interchangeable. The inner insert is 1 coil shorter than the outer insert. Extraction tool not included in kits.

ADD: -20 to end of TSO Free-running or Locking part number for 2 diameter Double-serts

"K" to end of Free-running or Locking part number for kit

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.

The listings below are examples of the different size needs for applications of various special inserts.

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
PIPE THREAD	
1/8-27	PT1827
1/4-18	PT1418
3/8-18	PT3818
1/2-14	PT1214
3/4-14	PT3414
1-11-1/2	PT11112

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
SPARK PLUGS	
9M x 1.25 N XXX	SPM9XXX
10M x 1.0 N XXX	SPM10XXX
12M x 1.0 N XXX	SPM12XXX
11M x 1.0 N XXX	SPM1110XXX
11M x 1.25 N XXX	SPM11125XXX
11M x 1.5 N XXX	SPM1115XXX
14M x 1.25 N 3/8	SPM1438
14M x 1.25 N 437	SPM14437
14M x 1.25 N 500	SPM14500
14M x 1.25 N 750	SPM14750
18M x 1.5 N 500	SPM18500

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
AUTOMOTIVE	
1-20 N 325	120325
7/8-20 N 330	7820330
12-28 N XXX	1228XXX
7/8-18 N XXX	7818XXX
11/16-16 N XXX	111616XXX

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

8-PITCH INSERTS

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 1-1/8 to 2″ in lengths of 1, 1-1/2 and 2 times the nominal diameter. Other lengths can be made to special order.

NOMINAL THREAD SIZE	NOMINAL LENGTH	HELICAL WIRE PART NUMBER
NON-LOCKING		
1-1/8-8	1125	1188N1125
	1688	1188N1688
	2250	1188N2250
1-1/4-8	1250	1148N1250
	1875	1148N1875
	2500	1148N2500
1-3/8-8	1375	1388N1375
	2062	1388N2062
	2750	1388N2750
1-1/2-8	1500	1128N1500
	2250	1128N2250
	3000	1128N3000
1-5/8-8	1625	1588N1625
	2438	1588N2438
	3250	1588N3250
1-3/4-8	1750	1348N1750
	2625	1348N2625
	3500	1348N3500
1-7/8-8	1875	1788N1875
	2812	1788N2812
	3750	1788N3750
2-8	2000	28N2000
	3000	28N3000
	4000	28N4000

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

NOMINAL THREAD SIZE	NOMINAL LENGTH	HELICAL WIRE PART NUMBER
LOCKING		
1-1/8-8	1125	1188L1125
	1688	1188L1688
	2250	1188L2250
1-1/4-8	1250	1148L1250
	1875	1148L1875
	2500	1148L2500
1-3/8-8	1375	1388L1375
	2062	1388L2062
	2750	1388L2750
1-1/2-8	1500	1128L1500
	2250	1128L2250
	3000	1128L3000
1-5/8-8	1625	1588L1625
	2438	1588L2438
	3250	1588L3250
1-3/4-8	1750	1348L1750
	2625	1348L2625
	3500	1348L3500
1-7/8-8	1875	1788L1875
	2812	1788L2812
	3750	1788L3750
2-8	2000	28L2000
	3000	28L3000
	4000	28L4000

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.

INSTALLATION TOOLS

The Installation Tools are used for both the 8-Pitch locking and 8-Pitch non-locking inserts.

NOMINAL THREAD SIZE	HELICAL WIRE PART NUMBER
BOLT TYPE	
1-1/8-8	BT1188
1-1/4-8	BT1148
1-3/8-8	BT1388
1-1/2-8	BT1128
1-5/8-8	BT1588
1-3/4-8	BT1348
1-7/8-8	BT1788
2-8	BT28