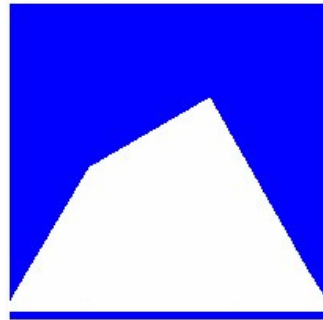


Spiralock[®]

... The edge is in the wedge[™]



Threading Tools

Product Specifications



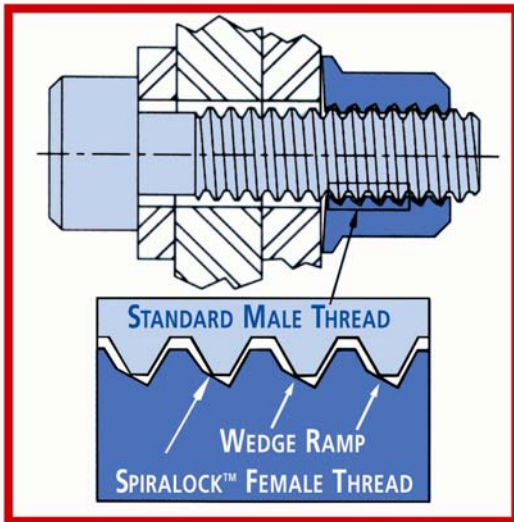
AS9100 REV B and ISO 9001:2000
Certificate Number: FM77129



On the following pages you will find information on Spirallock Tooling Products. The majority of the products listed in this catalog are available for prompt shipment. If for any reason your required thread size is not listed in this catalog, please contact our offices at (800) 521-2688 or send an email to sinfo@spirallock.com. We are able to supply and/or design any tool your application may require. For additional information on Spirallock technology, products and applications, please visit our website, www.spirallock.com.

TABLE OF CONTENTS:

Product Introduction	2
Things to Know About the Spirallock Thread Form	3
Tooling Product Offering	5
Tap Terminology.....	6
Tap Styles	7
Standard Tap Blanks	8
Drill Sizes for Cut Tapping – Metric	10
Drill Sizes for Cut Tapping – Fractional	11
Hole Sizes for Cold Form Tapping – Metric	12
Hole Sizes for Cold Form Tapping – Fractional	13
Recommended Gaging Practices	14
Taps & Gages - Metric	16
Taps & Gages – Fractional	24
Thread Milling Cutters	33
Carbide Inserts	34



Spirallock Corporation has re-engineered the standard (female) internal thread form and added a unique 30-degree wedge ramp at the root of the thread. This unidirectional internal thread form, called Spirallock®, mates with standard 60-degree male thread fasteners.

The wedge ramp allows the bolt to spin freely relative to the female threads until clamp load is applied. At that point, the crests of the standard male thread are drawn tightly against the wedge ramp, eliminating radial clearances and creating a continuous spiral line contact along the entire length of the thread engagement. This continuous line contact spreads the clamp force more evenly over all the engaged threads, improving joint fatigue life as well as the integrity of the threaded joint.

WHY USE SPIRALOCK THREAD FORM?

- Prevents threaded joints from coming loose
- Reduces overall cost of threaded joints
- Eases assembly, thus reducing assembly time
- Improves joint fatigue life
- Keeps your customer happy and eliminates warranty claims

WHERE TO APPLY SPIRALOCK?

- Any hard joint
- Thin gasket application

HOW TO APPLY SPIRALOCK?

- Replace standard threaded hole with the Spirallock thread form and eliminate the need for other thread locking devices!



Things to know about the Spirallock Thread Form



MATES WITH STANDARD MALE FASTENER

The Spirallock thread form is designed to mate with a standard 2A/3A fractional or 6g/6h metric male fastener.

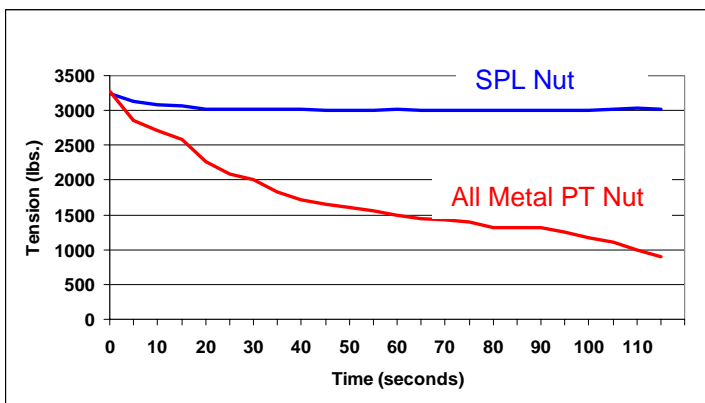
TORQUE/TENSION RELATIONSHIP

The Spirallock thread form design creates a helical line of contact between the crest of the bolt threads and its 30-degree wedge ramp. In order to generate similar joint tension as compared to 60-degree threads, the Spirallock threaded joint generally requires 10% - 20% greater torque due to the brinelling of male and female threads as well as the slight elastic deformation of the male thread.

Although higher torque is required in all Spirallock threaded joints, the increase in required torque will vary depending on the types of materials being used (nut, bolt, joint, etc.). This torque/tension relationship should be evaluated in the actual joint to determine the proper torque required to develop the specified tension.

Static testing by the Goddard Space Flight Center has shown that Spirallock offers a very consistent pattern of friction, especially when the threads are lubricated. Specifically, non-lubricated Spirallock threads had a coefficient of friction or k-Factor range of 0.12-0.36, while lubricated threads had a k-Factor range of 0.08-0.13. Spirallock's more consistent friction factor directly relates to a more consistent joint tension or preload.

RESISTANT TO VIBRATION LOOSENING



Test Parameters: 1/4-28 nut run @ 1200 cycles/minute of transverse movement with +/-0.033 amplitude.

Extensive testing on Junkers transverse vibration equipment has proven that the Spirallock internal locking thread form outperforms other thread locking devices. In fact - unlike other locking devices, which lost preload within the first minute of testing - Spirallock remained tight until the bolts failed due to fatigue.

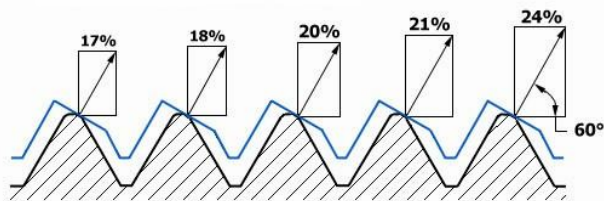
Goddard Space Flight Center determined that the Spirallock thread form was the only product that could withstand the vibrations imposed by the Space Shuttle's solid rocket boosters. The most severe vibration tests did not loosen the nuts when they were subjected to both high amplitude sine and random tests, even tests that were ten times the specifications for the Space Shuttle did not loosen the Spirallock fasteners.

Things to know about the Spirallock Thread Form

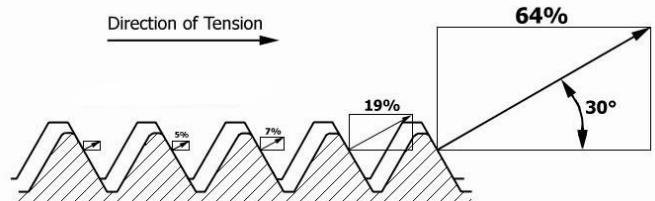


LOAD DISTRIBUTION

Research studies performed by Lawrence Livermore National Laboratory, Massachusetts Institute of Technology and others have confirmed that the load carried by Spirallock threads is much more uniform than the standard 60-degree threads. Additionally, they show that the percentage of load on the first engaged thread produced with a Spirallock tap is significantly lower, 24% versus 64% with five thread engagement.



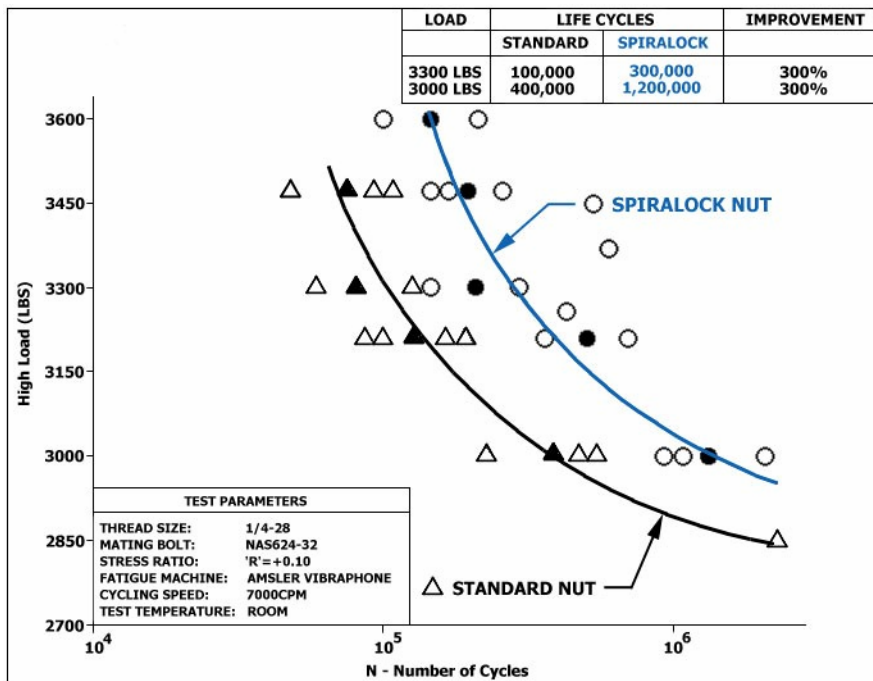
Spirallock Thread



Standard 60° Thread

The uniform thread loading eliminates the load concentration at the first engaged thread, thereby reducing joint failures due to shearing and improving product performance. Furthermore, the Spirallock threaded joint eliminates transverse motion that causes loosening under vibration. Additionally, the Spirallock thread form distributes the joint load in a radial direction versus axial loading with the 60-degree threads, thus taking advantage of the material hoop strength and significantly reducing the chance of failure due to shear.




FATIGUE LIFE



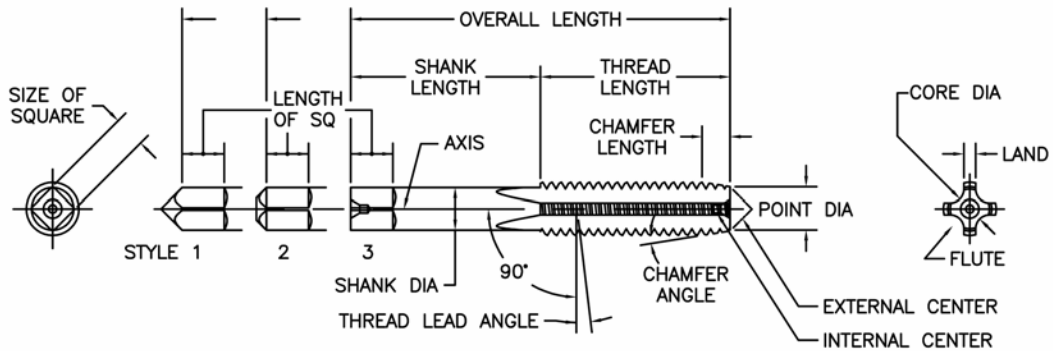
Testing performed on 1/4-28 Spirallock fasteners in conjunction with NAS624-32 bolts has shown that Spirallock can enhance fatigue life 300% over standard fasteners. The even load distribution with Spirallock consistently reduces the stress concentration that leads to fatigue failures.



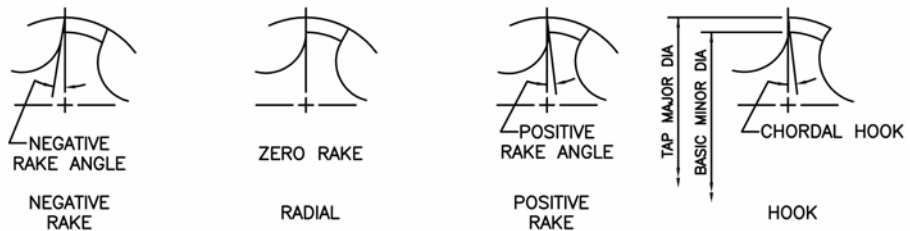
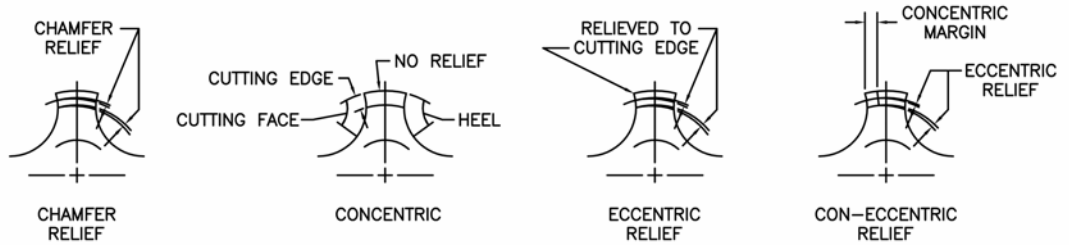
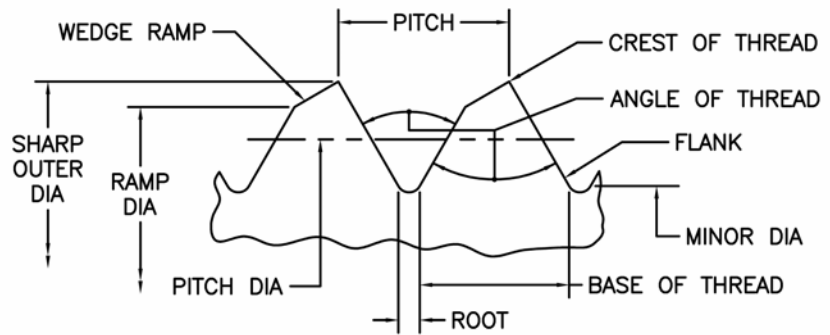
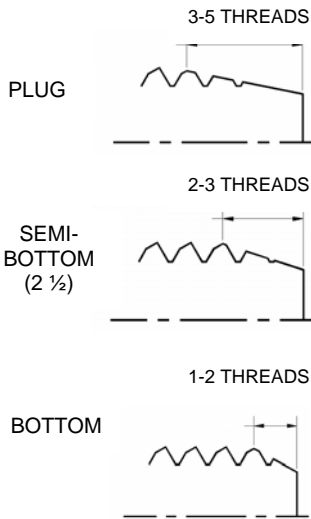
Spirallock®

Available Products	Styles	Sizes *	Surface Coatings	Options	Accessories
Taps	General Purpose Fast Spiral Regular Spiral Spiral Point SA T10 Cold Form	0 – 80 to 1 ½ -12 M1.0 x 0.25 to M39.0x4.00	Nitride TiN TiCN TiALN Steam Oxide Armoclad Flash Chrome Diamond Black	Carbide R/L Hand # of Flutes 	
Threading Inserts	Single Point Multi-Tooth End Mount Face Mount Triangular Square	80 – 4 TPI 0.5 – 4.00 mm pitch	TiN TiCN TiALN		Threading Bars
Thread Gages	Standard Plug Depth Control Location	0 – 80 to 1 ½ -12 M1.0 x 0.25 to M39.0x4.00			Leitech® Depth Gage
Thread Milling Cutters	Shank Type Shell Type	80 – 4 TPI 0.5” – 2” Dia. 0.5 – 4.00 mm pitch 12 – 50 mm Dia.	Bright Finish TiN TiCN	M42 Steel T15 Steel Carbide 	

* Sizes not listed above may be made-to-order.



CHAMFERS





General Purpose: This style tap is the basic tapping tool of the industry and can be used to tap most materials. For high production applications this basic style is best used for tapping tough steels, stainless steels and bronze (except the free-cutting grades of bronze or brass). The plug chamfer is the most widely used; the 2 ½ threaded chamfer is recommended for cast iron, and the bottom is used for tapping full threaded blind holes.



T10 Style Tap: This style was developed by Spiralock engineers for lead screw controlled high production tapping of all grades of cast iron and other abrasive materials. T10 taps are given a special surface treatment that creates an extremely hard and abrasion resistant finish.



SA Style Tap: This tap style is recommended for tapping tough space alloy materials, hence the initials SA. It is similar to our T10 style taps with the exception that SA Style taps are not surface treated.



Spiral Point: These taps have a spiral point grind that forces chips ahead of the tap, resulting in less resistance to thrust. Consequently, they require less torque and can be run at higher speeds. Because the chips are pushed ahead of the cut, Spiral Point Plug Chamfer Taps are ideally suited for tapping deep through-holes in all but the most abrasive materials. Bottom Chamfer Spiral Pointed Taps tend to form a tightly curled broken chip that is easily removed from a blind hole, provided there is sufficient room at the bottom of the tap hole to accommodate the chip.



Fast Spiral Fluted: This tap style is recommended for tapping deep blind holes. The right hand helical ground flutes virtually pull chips out of a hole, thus minimizing chip packing in the flutes and at the bottom of the hole. This style is especially useful for tapping a hole that has a keyway or spline, since the helical lands of the tap will span the interruption.



Cold Forming: The process of cold forming generates threads by displacing material rather than cutting. Since the material is displaced, no metal chips are generated. Due to displacement of material to form the threads, a dimensional allowance has to be made on the drilled hole prior to tapping. Due to its design and purpose, Spiralock Cold Forming Taps have no flutes and are available with a bottom or plug style chamfer.

Note: Standard Spiralock taps have a copper-top square for identification purposes



Spiralock taps are furnished with ramp angles as shown here. This is referred to as style "BT" for bottom tapping. When tapping from the opposite end of a through hole, you must specify Spiralock style "TT" for top tapping, which has the ramp angle in the opposite direction.

Tapping Direction
→

How to order: All Spiralock taps are identified by a 5-digit EDP number. This code and the quantity required are all you need to tell us when ordering. The EDP numbers are listed on pages 16 through 32 of this catalog.

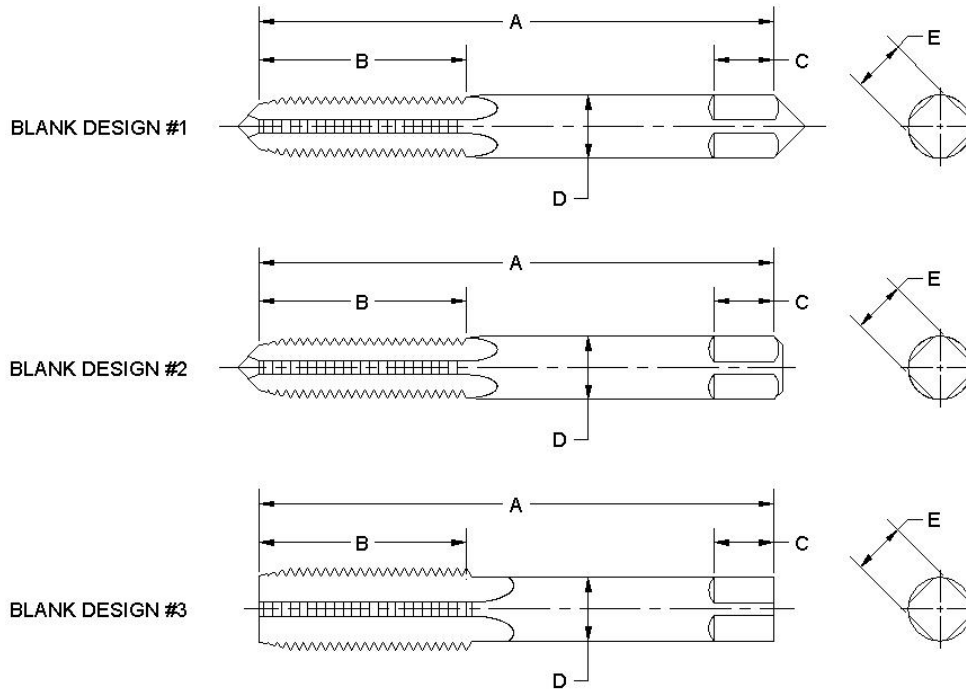


Taken from USCTI Table 302 - General Dimensions

Nominal Diameter Range - Inches		Machine Screw Size No.	Nominal Diameter Inches	Nominal Diameter mm	Design	Tap Dimensions - Inches				
						Overall Length A	Thread Length B	Square Length C	Shank Diameter D	Size of Square E
Over	To (incl.)									
.052	.065	0	1/16	M1.6	1	1 5/8	5/16	3/16	.141	.110
.065	.078	1		M1.8	1	1 11/16	3/8	3/16	.141	.110
.078	.091	2		M2	1	1 3/4	7/16	3/16	.141	.110
.091	.104	3	3/32	M2.5	1	1 13/16	1/2	3/16	.141	.110
.104	.117	4			1	1 7/8	9/16	3/16	.141	.110
.117	.130	5	1/8	M3	1	1 15/16	5/8	3/16	.141	.110
.130	.145	6		M3.5	1	2	11/16	3/16	.141	.110
.145	.171	8	5/32	M4	1	2 1/8	3/4	1/4	.168	.131
.171	.197	10	3/16	M4.5, M5	1	2 3/8	7/8	1/4	.194	.152
.197	.223	12	7/32		1	2 3/8	15/16	9/32	.220	.165
.223	.260	14	1/4	M6	2	2 1/2	1	5/16	.255	.191
.260	.323		5/16	M7, M8	2	2 23/32	1 1/8	3/8	.318	.238
.323	.385		3/8	M10	2	2 15/16	1 1/4	7/16	.381	.286
.385	.448		7/16		3	3 5/32	1 7/16	13/32	.323	.242
.448	.510		1/2	M12	3	3 3/8	1 21/32	7/16	.367	.275
.510	.573		9/16	M14	3	3 19/32	1 21/32	1/2	.429	.322
.573	.635		5/8	M16	3	3 13/16	1 13/16	9/16	.480	.360
.635	.709		11/16	M18	3	4 1/32	1 13/16	5/8	.542	.406
.709	.760		3/4		3	4 1/4	2	11/16	.590	.442
.760	.823		13/16	M20	3	4 15/32	2	11/16	.652	.489
.823	.885		7/8	M22	3	4 11/16	2 7/32	3/4	.697	.523
.885	.948		15/16	M24	3	4 29/32	2 7/32	3/4	.760	.570
.948	1.010		1	M25	3	5 1/8	2 1/2	13/16	.800	.600
1.010	1.073		1 1/16	M27	3	5 1/8	2 1/2	7/8	.896	.672
1.073	1.135		1 1/8		3	5 7/16	2 9/16	7/8	.896	.672
1.135	1.198		1 3/16	M30	3	5 7/16	2 9/16	1	1.021	.766
1.198	1.260		1 1/4		3	5 3/4	2 9/16	1	1.021	.766
1.260	1.323		1 5/16	M33	3	5 3/4	2 9/16	1 1/16	1.108	.831
1.323	1.385		1 3/8		3	6 1/16	3	1 1/16	1.108	.831
1.385	1.448		1 7/16	M36	3	6 1/16	3	1 1/8	1.233	.925
1.448	1.510		1 1/2		3	6 3/8	3	1 1/8	1.233	.925
1.510	1.635		1 5/8	M39	3	6 11/16	3 3/16	1 1/8	1.305	.979
1.635	1.760		1 3/4	M42	3	7	3 3/16	1 1/4	1.430	1.072
1.760	1.885		1 7/8		3	7 5/16	3 9/16	1 1/4	1.519	1.139
1.885	2.010		2	M48	3	7 5/8	3 9/16	1 3/8	1.622	1.233
2.010	2.135		2 1/8		3	8	3 9/16	1 3/8	1.769	1.327
2.135	2.260		2 1/4	M56	3	8 1/4	3 9/16	1 7/16	1.894	1.420
2.260	2.385		2 3/8		3	8 1/2	4	1 7/16	2.019	1.514
2.385	2.510		2 1/2		3	8 3/4	4	1 1/2	2.100	1.575



Taken from USCTI Table 302 – Tolerances



Element	Nominal Diameter Range - Inches		Tolerance Ground Threads
	Over	To (incl.)	
Overall Length A	0.052	1.010	+/- 0.031
	1.010	4.010	+/- 0.063
Thread Length B	0.052	0.223	+/- 0.047
	0.223	0.510	+/- 0.063
	0.510	1.510	+/- 0.094
	1.510	4.010	+/- 0.125
Square Length C	0.052	1.010	+/- 0.031
	1.010	4.010	+/- 0.063
Shank Diameter D	0.052	0.223	-0.0015
	0.223	0.635	-0.0015
	0.635	1.010	-0.0020
	1.010	1.510	-0.0020
	1.510	2.010	-0.0030
Size of Square E	2.010	4.010	-0.0030
	0.052	0.510	-0.0040
	0.510	1.010	-0.0060
	1.010	2.010	-0.0080
	2.010	4.010	-0.0100

Drill Sizes for Cut Tapping Metric System



Spiralock®

Notes:

1. This chart is supplied as a recommendation only. Actual sizes may vary depending on application and the material being tapped. Other thread and hole sizes are available upon request.
2. For aluminum or other soft materials a hole minor diameter on the low side of the suggested range is recommended. For harder materials a hole minor diameter on the high side of the suggested range is recommended.
3. These recommendations are for cutting with regular preload-locking threading taps.
4. Preload-locking threads can be applied to threading tools in sizes from 0.30 mm.

Metric Thread Size	Hole Minor Dia. Min (mm)	Hole Minor Dia. Max (mm)	Drill Size*	Metric Thread Size	Hole Minor Dia. Min (mm)	Hole Minor Dia. Max (mm)	Drill Size*
M2.5 x 0.45	2.210	2.261	#43	M14.0 x 2.00	12.319	12.700	31/64
M3.0 x 0.50	2.667	2.743	#36	M16.0 x 1.50	14.732	15.037	15 mm
M3.5 x 0.60	3.099	3.200	1/8	M16.0 x 2.00	14.300	14.707	9/16
M4.0 x 0.70	3.556	3.632	#28	M18.0 x 1.50	16.739	17.018	17 mm
M4.5 x 0.75	4.013	4.115	#21	M18.0 x 2.50	15.875	16.383	5/8
M5.0 x 0.80	4.318	4.470	11/64	M20.0 x 1.50	18.745	19.025	19 mm
M6.0 x 1.00	5.156	5.359	#5	M20.0 x 2.50	17.882	18.364	23/32
M7.0 x 1.00	6.147	6.350	C	M22.0 x 1.50	20.726	21.031	21 mm
M8.0 x 1.00	7.163	7.341	9/32	M22.0 x 2.50	19.888	20.371	20 mm
M8.0 x 1.25	6.934	7.188	J	M24.0 x 3.00	21.463	22.047	55/64
M9.0 x 1.25	7.950	8.179	8 mm	M27.0 x 3.00	24.460	25.044	31/32
M10.0 x 1.25	8.941	9.195	T	M28.0 x 1.50	26.746	27.026	1 1/16
M10.0 x 1.50	8.738	9.017	S	M30.0 x 2.00	28.321	28.702	28.5 mm
M11.0 x 1.50	9.728	10.033	W	M30.0 x 3.50	27.051	27.737	1 5/64
M12.0 x 1.25	10.947	11.176	11 mm	M33.0 x 2.00	31.318	31.699	1 15/64
M12.0 x 1.75	10.516	10.871	27/64	M33.0 x 3.50	30.048	30.734	1 3/16
M14.0 x 1.25	12.954	13.183	33/64	M36.0 x 4.00	32.614	33.401	1 5/16
M14.0 x 1.50	12.725	13.030	13 mm	M39.0 x 4.00	35.611	36.398	1 13/32

* **Note:** Drill size callouts were determined to best fit the hole minor diameter range.

Drill Sizes for Cut Tapping Fractional System



Notes:

1. This chart is supplied as a recommendation only. Actual sizes may vary depending on application and the material being tapped. Other thread and hole sizes are available upon request.
2. For aluminum or other soft materials a hole minor diameter on the low side of the suggested range is recommended. For harder materials a hole minor diameter on the high side of the suggested range is recommended.
3. These recommendations are for cutting with regular preload-locking threading taps.
4. Preload-locking threads can be applied to threading tools in sizes from #0000-160 Inch.

Fractional Thread Size	Hole Minor Diameter Min.	Hole Minor Diameter Max.	Drill Size*	Fractional Thread Size	Hole Minor Diameter Min.	Hole Minor Diameter Max.	Drill Size*
0 – 80	0.0520	0.0540	#55	7/16 – 20	0.3950	0.4050	X
2 – 56	0.0740	0.0770	#48	1/2 – 13	0.4350	0.4500	7/16
2 – 64	0.0760	0.0780	1.95mm	1/2 – 20	0.4580	0.4680	11.75mm
3 – 48	0.0850	0.0880	#44	9/16 – 12	0.4920	0.5080	1/2
3 – 56	0.0870	0.0900	#43	9/16 – 18	0.5160	0.5260	33/64
4 – 40	0.0960	0.0990	#41	5/8 – 11	0.5480	0.5660	14 mm
4 – 48	0.0980	0.1010	#40	5/8 – 18	0.5780	0.5890	37/64
5 – 40	0.1090	0.1120	7/64	3/4 – 10	0.6660	0.6850	43/64
5 – 44	0.1100	0.1130	#35	3/4 – 16	0.6970	0.7090	45/64
6 – 32	0.1120	0.1180	#33	7/8 – 9	0.7810	0.8030	25/32
6 – 40	0.1220	0.1250	1/8	7/8 – 14	0.8150	0.8290	21 mm
8 – 32	0.1380	0.1440	#28	1” – 8	0.8940	0.9190	29/32
8 – 36	0.1460	0.1500	#26	1” – 12	0.9300	0.9460	15/16
10 – 24	0.1550	0.1630	#21	1” – 14	0.9400	0.9540	24 mm
10 – 32	0.1640	0.1700	#19	1 1/8-7	1.0040	1.0320	1 1/64
12 – 24	0.1810	0.1890	#13	1 1/8-12	1.0550	1.0710	1 1/16
12 – 28	0.1860	0.1930	#12	1 1/4-7	1.1290	1.1570	1 9/64
1/4 - 20	0.2080	0.2180	#4	1 1/4-12	1.1800	1.1960	1 3/16
1/4 - 28	0.2200	0.2270	#2	1 3/8-6	1.2340	1.2670	1 1/4
5/16 – 18	0.2660	0.2760	H	1 3/8-12	1.3050	1.3210	1 5/16
5/16 – 24	0.2770	0.2850	J	1 1/2-6	1.3590	1.3920	1 3/8
3/8 – 16	0.3220	0.3340	P	1 1/2-12	1.4300	1.4460	1 7/16
3/8 – 24	0.3400	0.3480	11/32				
7/16 - 14	0.3770	0.3910	V				

* **Note:** Drill size callouts were determined to best fit the hole minor diameter range.



Spirallock®

Hole Sizes for Cold Form Tapping Metric System

IMPORTANT NOTES ON SPIRALOCK PRETAP HOLE SIZES

Determining Drill Size

Finding the correct drill size for a Spirallock tap may be a “Cut and Try” process.

- Not all drills are alike and therefore the pretap holes produced by different drills may be vastly different. What matters is the actual pretap hole size, how consistently this hole size is maintained, and finally, the after-tap thread percentage or minor diameter. To get good results, you must know the actual hole size and not just the drill size!
- Thin wall parts may expand during tapping and produce oversize after-tap minor diameters.
- Diecast parts may contain porosity, which may cause oversize holes due to shrinkage.

After tapping, thread minor diameter should check within Spirallock recommended minor diameter sizes.

Suggested Procedure for Using Spirallock Tap

1. Test drill a part and measure the pretap hole size.
2. Test tap the part. Check pitch diameter with GO and NOT-GO gages. Check the thread percentage or minor diameter against the customer requirement.
3. Establish a maximum condition for the pretap hole size and monitor this frequently during the production tap run.

Metric Thread Size	Pre-tap Hole Diameter		Metric Thread Size	Pre-tap Hole Diameter	
	Cold-Form Drill Dia. Min. (mm)	Cold-Form Drill Dia. Max. (mm)		Cold-Form Drill Dia. Min. (mm)	Cold-Form Drill Dia. Max. (mm)
M2.5 x 0.45	2.352	2.380	M14.0 x 2.00	13.160	13.350
M3.0 x 0.50	2.835	2.865	M16.0 x 1.50	15.367	15.519
M3.5 x 0.60	3.302	3.335	M16.0 x 2.00	15.151	15.354
M4.0 x 0.70	3.769	3.805	M18.0 x 1.50	17.369	17.508
M4.5 x 0.75	4.257	4.308	M18.0 x 2.50	16.937	17.191
M5.0 x 0.80	4.658	4.735	M20.0 x 1.50	19.373	19.512
M6.0 x 1.00	5.578	5.679	M20.0 x 2.50	18.857	18.908
M7.0 x 1.00	6.574	6.675	M22.0 x 1.50	21.364	21.516
M8.0 x 1.00	7.582	7.671	M22.0 x 2.50	20.945	21.186
M8.0 x 1.25	7.468	7.595	M24.0 x 3.00	22.731	23.023
M9.0 x 1.25	8.478	8.590	M27.0 x 3.00	25.730	26.022
M10.0 x 1.25	9.472	9.599	M28.0 x 1.50	27.374	27.513
M10.0 x 1.50	9.370	9.510	M30.0 x 2.00	29.162	29.352
M11.0 x 1.50	10.363	10.516	M30.0 x 3.50	28.527	28.870
M12.0 x 1.25	11.474	11.588	M33.0 x 2.00	32.159	32.349
M12.0 x 1.75	11.257	11.435	M33.0 x 3.50	31.524	31.867
M14.0 x 1.25	13.477	13.592	M36.0 x 4.00	34.308	34.702
M14.0 x 1.50	13.363	13.515	M39.0 x 4.00	37.341	37.699



IMPORTANT NOTES ON SPIRALOCK PRETAP HOLE SIZES

Determining Drill Size

Finding the correct drill size for a Spirallock tap may be a “Cut and Try” process.

- Not all drills are alike and therefore the pretap holes produced by different drills may be vastly different. What matters is the actual pretap hole size, how consistently this hole size is maintained, and finally, the after-tap thread percentage or minor diameter. To get good results, you must know the actual hole size and not just the drill size!
- Thin wall parts may expand during tapping and produce oversize after-tap minor diameters.
- Diecast parts may contain porosity, which may cause oversize holes due to shrinkage.

After tapping, thread minor diameter should check within Spirallock recommended minor diameter sizes.

Suggested Procedure for Using Spirallock Tap

1. Test drill a part and measure the pretap hole size.
2. Test tap the part. Check pitch diameter with GO and NOT-GO gages. Check the thread percentage or minor diameter against the customer requirement.
3. Establish a maximum condition for the pretap hole size and monitor this frequently during the production tap run.

Fractional Thread Size	Pre-tap Hole Diameter		Fractional Thread Size	Pre-tap Hole Diameter	
	Cold-Form Drill Dia. Min.	Cold Form Drill Dia Max.		Cold-Form Drill Dia. Min.	Cold Form Drill Dia Max.
0 – 80	0.0559	0.0567	7/16 – 20	0.4164	0.4213
2 – 56	0.0801	0.0812	1/2 – 13	0.4675	0.4750
3 – 48	0.0921	0.0933	1/2 – 20	0.4789	0.4838
3 – 56	0.0931	0.0942	9/16 – 12	0.5273	0.5354
4 – 40	0.1038	0.1050	9/16 – 18	0.5390	0.5445
4 – 48	0.1051	0.1063	5/8 – 11	0.5866	0.5955
5 – 40	0.1168	0.1180	5/8 – 18	0.6015	0.6070
5 – 44	0.1175	0.1187	3/4 – 10	0.7078	0.7175
6 – 32	0.1248	0.1279	3/4 – 16	0.7236	0.7297
6 – 40	0.1298	0.1311	7/8 – 9	0.8281	0.8389
8 – 32	0.1508	0.1539	7/8 – 14	0.8448	0.8518
8 – 36	0.1548	0.1562	1” – 8	0.9472	0.9594
10 – 24	0.1724	0.1765	1” – 12	0.9648	0.9729
10 – 32	0.1768	0.1799	1” – 14	0.9698	0.9768
12 – 24	0.1984	0.2025	1 1/8-7	1.0647	1.0786
12 – 28	0.2009	0.2044	1 1/8-12	1.0898	1.0979
1/4 - 20	0.2289	0.2338	1 1/4-7	1.1897	1.2036
1/4 - 28	0.2349	0.2384	1 1/4-12	1.2148	1.2229
5/16 – 18	0.2890	0.2945	1 3/8-6	1.3046	1.3209
5/16 – 24	0.2949	0.2990	1 3/8-12	1.3398	1.3479
3/8 – 16	0.3486	0.3547	1 1/2-6	1.4296	1.4459
3/8 – 24	0.3574	0.3615	1 1/2-12	1.4648	1.4729
7/16 - 14	0.4073	0.4143			



Conventional Spirallock threads:

Conventional Spirallock threads are defined as those of 32 threads per inch and coarser in English sizes and 0.80 mm lead and coarser in Metric sizes. These threads utilize a three (3) member gaging system. It consists of one (1) GO Pitch Diameter & Ramp Gage, one (1) NOT-GO Pitch Diameter Gage and one (1) NOT-GO Ramp Gage. In the catalog, these gages are defined as GO PLUG, HI-LIMIT P.D. and HI-LIMIT RAMP, respectively (See Section 13.3).

Sawtooth Spirallock Threads:

Spirallock sawtooth threads are defined as those finer than 32 threads per inch in English sizes and finer than 0.80 mm lead in Metric sizes. These threads utilize a two (2) member gaging system. It consists of one (1) GO Pitch Diameter & Ramp gage and one (1) NOT-GO Ramp gage. In the catalog these gages are defined as GO PLUG and HI-LIMIT respectively (See Section 13.4).

GO Gage Utilization Practice:

The GO PLUG gage is designed to check that the minimum feature limits of the threaded hole have been met. This is to ensure that the mating screw manufactured to the maximum tolerance limits of Class 2A English sizes and Class 6g Metric sizes will enter the threaded hole.

The GO PLUG Gage should enter the threaded hole for the full length of engagement. A Spirallock Go Gage should enter the tapped hole/fastener from the same direction as would the mating male threaded member.

It is preferred that the gage be free spinning in the threaded hole so as to minimize the wear on the gage. Drag on the gage caused by metal-to-metal contact is acceptable provided that the gage is still within certifiable limits. Provided that only hand threading of the gage into the hole is used, the amount of drag is not limited. However, it must be recognized that drag induces wear and that re-certification of the gages must be performed more frequently.

NOT-GO Gage Utilization Practice:

The NOT-GO Gages are designed to check that the threaded hole does not surpass the maximum feature limits. This is to ensure that the mating screw manufactured to the minimum tolerances limits of Class 2A English sizes and Class 6g Metric sizes will seat properly.

HI-LIMIT Pitch Diameter Plug Gage:

Threads are acceptable as within the maximum feature limits of the pitch diameter if the NOT-GO Pitch Diameter Gage does not enter the threaded hole.

Threads are also acceptable if all complete product threads can be entered, provided that a definite drag from contact with the product material results on or before the third turn of entry. The gage should not be forced after the drag is definite. Special requirements such as exceptionally thin or ductile material, or small number of threads, may necessitate modification of this practice.



HI-LIMIT Ramp Plug Gage:

Threads are acceptable as within the minimum material limits of ramp position if the NOT-GO Ramp Gage does not enter the threaded hole.

Threads are also acceptable if the NOT-GO Ramp Gage enters the threaded hole, up to a maximum of three (3) full revolutions into the threaded hole. Special requirements such as exceptionally thin or ductile material, or small number of threads, may necessitate modification of this practice.

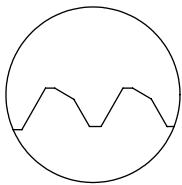
Drag on the gage is a result of metal-to-metal contact and under no circumstances should the NOT-GO Gage be forced when the gage will no longer turn by hand.

Gage Illustrations:

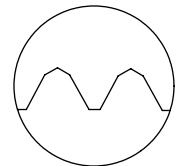
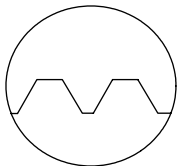
Conventional Spirallock Thread Gages:

This three part gaging system is used with all Spirallock cutting tools making equal to or coarser than 32 TPI (0.80 mm).

GO Pitch Diameter and Ramp Gage



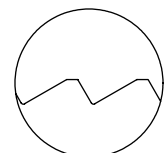
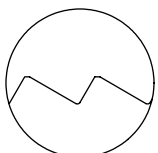
NOT-GO Pitch Diameter and Ramp Gage



Spirallock Sawtooth Thread Gages:

Two gage system for use with all Spirallock cutting tools making finer than a 32 TPI (0.80 mm).

GO Pitch Diameter and NOT-GO Ramp Gage





TAPS										GAGES	
Metric Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
M1.6x0.35 SPL										M1.6x0.35 SPL	
General Purpose							56965	56966	56967	GO Plug	59410
SA							56975	56976	56977	Handle	59411
Spiral Point							56981		56982	HI Ramp	59412
Cold Form				Plug: 56983			Bottom: 56984				
M1.8x0.35 SPL										M1.8x0.35 SPL	
General Purpose							56985	56986	56987	GO Plug	59420
SA							56995	56996	56997	Handle	59421
Spiral Point							57001		57002	HI Ramp	59422
Cold Form				Plug: 57003			Bottom: 57004				
M2x0.40 SPL										M2x0.40 SPL	
General Purpose							57005	57006	57007	GO Plug	59430
SA							57015	57016	57017	Handle	59431
Spiral Point							57021		57022	HI Ramp	59432
Cold Form				Plug: 57023			Bottom: 57024				
M2.2x0.45 SPL										M2.2x0.45 SPL	
General Purpose							57025	57026	57027	GO Plug	59440
SA							57035	57036	57037	Handle	59441
Spiral Point							57041		57042	HI Ramp	59442
Cold Form				Plug: 57043			Bottom: 57044				
M2.5x0.45 SPL										M2.5x0.45 SPL	
General Purpose				56800	56801	56802	56805	56806	56807	GO Plug	59450
SA				56810	56811	56812				Handle	59451
Spiral Point							56815		56817	HI Ramp	59452
Cold Form				Plug: 56818			Bottom: 56819				
M3x0.50 SPL										M3x0.50 SPL	
General Purpose				56820	56821	56822	56825	56826	56827	GO Plug	59460
SA				56830	56831	56832				Handle	59461
Spiral Point							56835		56837	HI Ramp	59462
Cold Form				Plug: 56838			Bottom: 56839				
M3.5x0.60 SPL										M3.5x0.60 SPL	
General Purpose				56840	56841	56842	56845	56846	56847	GO Plug	59470
SA				56850	56851	56852				Handle	59471
Spiral Point							56855		56857	HI Ramp	59472
Regular Spiral				56859		56861					
Fast Spiral				56860		56862					
Cold Form				Plug: 56863			Bottom: 56864				



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Taps and Gages - Metric

TAPS										GAGES	
Metric Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
M4x0.70 SPL										M4x0.70 SPL	
General Purpose	56865	56866	56867	56870	56871	56872	56875	56876	56877	GO Plug	59480
T10		56886	56887		56891	56892				Handle	59481
Spiral Point							56895		56897	HI Ramp	59482
Regular Spiral				56899		56901					
Fast Spiral				56900		56902					
Cold Form	Plug: 56903			Bottom: 56904							
M4.5x0.75 SPL										M4.5x0.75 SPL	
General Purpose	57045	57046	57047	57050	57051	57052	57055	57056	57057	GO Plug	59510
T10	57065	57066	57067	57070	57071	57072				Handle	59511
Spiral Point							57075		57077	HI P.D.	59512
Regular Spiral				57079		57081				HI Ramp	59513
Fast Spiral				57080		57082				HI Handle	59514
Cold Form	Plug: 57083			Bottom: 57084							
M5x0.80 SPL										M5x0.80 SPL	
General Purpose	57085	57086	57087	57090	57091	57092	57095	57096	57097	GO Plug	59520
T-10	57105	57106	57107	57110	57111	57112				GO Handle	59521
Spiral Point							57115		57119	HI P.D.	59522
Regular Spiral				57118		57121				HI Ramp	59523
Fast Spiral				57120		57122				HI Handle	59524
Cold Form	Plug: 57123			Bottom: 57124							
M6x1.00 SPL										M6x1.00 SPL	
General Purpose	57125	57126	57127	57130	57131	57132				GO Plug	59530
T-10	57135	57136	57137	57140	57141	57142				GO Handle	59531
Spiral Point				57150		57152	57155		57157	HI P.D.	59532
Regular Spiral				57159		57161				HI Ramp	59533
Fast Spiral				57160		57162				HI Handle	59534
Cold Form	Plug: 57163			Bottom: 57164							
M7x1.00 SPL										M7x1.00 SPL	
General Purpose	57165	57166	57167	57170	57171	57172				GO Plug	59540
T-10	57185	57186	57187	57176	57177	57178				GO Handle	59541
Spiral Point				57190		57192	57195		57197	HI P.D.	59542
Regular Spiral				57199		57201				HI Ramp	59543
Fast Spiral				57200		57202				HI Handle	59544
Cold Form	Plug: 57203			Bottom: 57204							



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Taps and Gages - Metric

TAPS										GAGES	
Metric Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
M8x1.00 SPL										M8x1.00 SPL	
General Purpose	57205	57206	57207	57210	57211	57212				GO Plug	59550
T-10	57215	57216	57217	57220	57221	57222				GO Handle	59551
Spiral Point				57230		57232	57235		57237	HI P.D.	59552
Regular Spiral				57239		57241				HI Ramp	59553
Fast Spiral				57240		57242				HI Handle	59554
Cold Form	Plug: 57243			Bottom: 57244							
M8x1.25 SPL										M8x1.25 SPL	
General Purpose	57245	57246	57247	57250	57251	57252				GO Plug	59560
T-10	57255	57256	57257	57260	57261	57262				GO Handle	59561
Spiral Point				57270		57272	57275		57277	HI P.D.	59562
Regular Spiral				57279		57281				HI Ramp	59563
Fast Spiral				57280		57282				HI Handle	59564
Cold Form	Plug: 57283			Bottom: 57284							
M9x1.25 SPL										M9x1.25 SPL	
General Purpose	57285	57286	57287	57290	57291	57292				GO Plug	59570
T-10	57295	57296	57297	57300	57301	57302				GO Handle	59571
Spiral Point				57310		57312				HI P.D.	59572
Regular Spiral				57319		57321				HI Ramp	59573
Fast Spiral				57320		57322				HI Handle	59574
Cold Form	Plug: 57323			Bottom: 57324							
M10x1.50 SPL										M10x1.50 SPL	
General Purpose	57365	57366	57367	57370	57371	57372				GO Plug	59590
T-10	57375	57376	57377							GO Handle	59591
Spiral Point				57380		57382				HI P.D.	59592
Regular Spiral				57399		57401				HI Ramp	59593
Fast Spiral				57390		57392				Hi Handle	59594
Cold Form	Plug: 57403			Bottom: 57404							
M10x1.25 SPL										M10x1.25 SPL	
General Purpose	57325	57326	57327	57330	57331	57332				GO Plug	59580
T-10	57335	57336	57337							GO Handle	59581
Spiral Point				57350		57352				HI P.D.	59582
Regular Spiral				57359		57361				HI Ramp	59583
Fast Spiral				57360		57362				HI Handle	59584
Cold Form	Plug: 57363			Bottom: 57364							



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Taps and Gages - Metric

TAPS										GAGES	
Metric Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
M11x1.50 SPL										M11x1.50 SPL	
General Purpose	57405	57406	57407	57410	57411	57412				GO Plug	59600
T-10	57415	57416	57417							GO Handle	59601
Spiral Point				57430		57432				HI P.D.	59602
Regular Spiral				57436		57438				HI Ramp	59603
Fast Spiral				57435		57437				HI Handle	59604
Cold Form	Plug: 57443			Bottom: 57444							
M12x1.25 SPL										M12x1.25 SPL	
General Purpose	57445	57446	57447	57450	57451	57452				GO Plug	59610
T-10	57455	57456	57457							GO Handle	59611
Spiral Point				57470		57472				HI P.D.	59612
Regular Spiral				57476		57478				HI Ramp	59613
Fast Spiral				57475		57477				HI Handle	59614
Cold Form	Plug: 57483			Bottom: 57484							
M12x1.75 SPL										M12x1.75 SPL	
General Purpose	57485	57486	57487	57490	57491	57492				GO Plug	59620
T-10	57495	57496	57497							GO Handle	59621
Spiral Point				57510		57512				HI P.D.	59622
Regular Spiral				57516		57518				HI Ramp	59623
Fast Spiral				57515		57517				HI Handle	59624
Cold Form	Plug: 57523			Bottom: 57524							
M14x1.25 SPL										M14x1.25 SPL	
General Purpose	57525	57526	57527	57530	57531	57532				GO Plug	59630
T-10	57535	57536	57537							GO Handle	59631
Spiral Point				57550		57552				HI P.D.	59632
Regular Spiral				57556		57558				HI Ramp	59633
Fast Spiral				57555		57557				HI Handle	59634
Cold Form	Plug: 57563			Bottom: 57564							
M14x1.50 SPL										M14x1.50 SPL	
General Purpose	57565	57566	57567							GO Plug	59640
T-10	57575	57576	57577							GO Handle	59641
Spiral Point				57590		57592				HI P.D.	59642
Regular Spiral				57596		57598				HI Ramp	59643
Fast Spiral				57595		57597				HI Handle	59644
Cold Form	Plug: 57603			Bottom: 57604							



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Taps and Gages - Metric

TAPS											GAGES		
Metric Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES						
	CHAMFER			CHAMFER			CHAMFER						
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM				
M14x2.00 SPL											M14x2.00 SPL		
General Purpose	57605	57606	57607								GO Plug	59650	
T-10	57615	57616	57617								GO Handle	59651	
Spiral Point				57630		57632					HI P.D.	59652	
Regular Spiral				57636		57638					HI Ramp	59653	
Fast Spiral				57635		57637					Hi Handle	59654	
Cold Form				Plug: 57643			Bottom: 57644						
M16x1.50 SPL											M16x1.50 SPL		
General Purpose	57645	57646	57647								GO Plug	59660	
T-10	57655	57656	57657								GO Handle	59661	
Spiral Point				57665							HI P.D.	59662	
Regular Spiral	57669		57670								HI Ramp	59663	
Cold Form				Plug: 57673			Bottom: 57674						
M16x2.00 SPL											M16x2.00 SPL		
General Purpose	57675	57676	57677								GO Plug	59670	
T-10	57685	57686	57687								GO Handle	59671	
Spiral Point				57695							HI P.D.	59672	
Regular Spiral	57699		57700								HI Ramp	59673	
Cold Form				Plug: 57703			Bottom: 57704						
M18x1.50 SPL											M18x1.50 SPL		
General Purpose	57705	57706	57707								GO Plug	59680	
T-10	57715	57716	57717								GO Handle	59681	
Spiral Point				57725							HI P.D.	59682	
Regular Spiral	57729		57730								HI Ramp	59683	
Cold Form				Plug: 57733			Bottom: 57734						
M18x2.50 SPL											M18x2.50 SPL		
General Purpose	57735	57736	57737								GO Plug	59690	
T-10	57745	57746	57747								GO Handle	59691	
Spiral Point				57755							HI P.D.	59692	
Regular Spiral	57759		57760								HI Ramp	59693	
Cold Form				Plug: 57763			Bottom: 57764						



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Taps and Gages - Metric

TAPS											GAGES		
Metric Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES						
	CHAMFER			CHAMFER			CHAMFER						
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM				
M20x1.50 SPL											M20x1.50 SPL		
General Purpose	57765	57766	57767								GO Plug	59700	
T-10	57775	57776	57777								GO Handle	59701	
Spiral Point				57785							HI P.D.	59702	
Regular Spiral	57789		57790								HI Ramp	59703	
Cold Form	Plug: 57793			Bottom: 57794							HI Handle	59704	
M20x2.50 SPL											M20x2.50 SPL		
General Purpose	57795	57796	57797								GO Plug	59710	
T-10	57805	57806	57807								GO Handle	59711	
Spiral Point				57815		57816					HI P.D.	59712	
Regular Spiral	57819		57820								HI Ramp	59713	
Cold Form	Plug: 57823			Bottom: 57824							HI Handle	59714	
M22x1.50 SPL											M22x1.50 SPL		
General Purpose	57825	57826	57827								GO Plug	59720	
T-10	57835	57836	57837								GO Handle	59721	
Cold Form	Plug: 57843			Bottom: 57844							HI P.D.	59722	
											HI Ramp	59723	
											HI Handle	59724	
M22x2.50 SPL											M22x2.50 SPL		
General Purpose	57845	57846	57847								GO Plug	59730	
T-10	57855	57856	57857								GO Handle	59731	
Cold Form	Plug: 57863			Bottom: 57864							HI P.D.	59732	
											HI Ramp	59733	
											HI Handle	59734	



Spirallock®

Taps and Gages - Metric

TAPS									
Metric Size	SIX FLUTES			FOUR FLUTES			THREE FLUTES		
	CHAMFER			CHAMFER			CHAMFER		
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM
M24x3.00 SPL									
General Purpose				57865	57866	57867			
T-10				57875	57876	57877			
Cold Form	Plug: 57883			Bottom: 57884					
M27x3.00 SPL									
General Purpose				57885	57886	57887			
M28x1.50 SPL									
General Purpose	57895	57896	57897						
M30x2.00 SPL									
General Purpose	57915	57916	57917						
M30x3.50 SPL									
General Purpose				57925	57926	57927			
M33x2.00 SPL									
General Purpose	57935	57936	57937						

GAGES	
M24x3.00 SPL	
GO Plug	59740
GO Handle	59741
HI P.D.	59742
HI Ramp	59743
HI Handle	59744
M27x3.00 SPL	
GO Plug	59750
GO Handle	59751
HI P.D.	59752
HI Ramp	59753
HI Handle	59754
M28x1.50 SPL	
GO Plug	59760
GO Handle	59761
HI P.D.	59762
HI Ramp	59763
HI Handle	59764
M30x2.00 SPL	
GO Plug	59770
GO Handle	59771
HI P.D.	59772
HI Ramp	59773
HI Handle	59774
M30x3.50 SPL	
GO Plug	59780
GO Handle	59781
HI P.D.	59782
HI Ramp	59783
HI Handle	59784
M33x2.00 SPL	
GO Plug	59790
GO Handle	59791
HI P.D.	59792
HI Ramp	59793
HI Handle	59794



Spiralock®

Taps and Gages - Metric

TAPS										GAGES	
Metric Size	SIX FLUTES			FOUR FLUTES			THREE FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
M33x3.50 SPL										M33x3.50 SPL	
General Purpose				57945	57946	57947				GO Plug	59800
										GO Handle	59801
										HI P.D.	59802
										HI Ramp	59803
										HI Handle	59804
M36x4.00 SPL										M36x4.00 SPL	
General Purpose				57955	57956	57957				GO Plug	59810
										GO Handle	59811
										HI P.D.	59812
										HI Ramp	59813
										HI Handle	59814
M39x4.00 SPL										M39x4.00 SPL	
General Purpose				57965	57966	57967				GO Plug	59820
										GO Handle	59821
										HI P.D.	59822
										HI Ramp	59823
										HI Handle	59824



Spirallock®

Taps and Gages - Fractional

TAPS										GAGES	
Machine Screw Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
#0-80 SPL										#0-80 SPL	
General Purpose							56420	56421	56422	GO Plug	56340
SA							56430	56431	56432	Handle	56341
Spiral Point							56436		56437	HI Ramp	56342
Cold Form	Plug: 56438						Bottom: 56439				
#1-64 SPL										#1-64 SPL	
General Purpose							56440	56441	56442	GO Plug	56350
SA							56450	56451	56452	Handle	56351
Spiral Point							56456		56457	HI Ramp	56352
Cold Form	Plug: 56458						Bottom: 56459				
#1-72 SPL										#1-72 SPL	
General Purpose							56460	56461	56462	GO Plug	56360
SA							56470	56471	56472	Handle	56361
Spiral Point							56476		56477	HI Ramp	56362
Cold Form	Plug: 56478						Bottom: 56479				
#2-56 SPL										#2-56 SPL	
General Purpose				56500	56501	56502	56505	56506	56507	GO Plug	56700
SA							56510	56511	56512	Handle	56701
Spiral Point							56515		56517	HI Ramp	56702
Cold Form	Plug: 56518						Bottom: 56519				
#2-64 SPL										#2-64 SPL	
General Purpose				56480	56481	56482	56485	56486	56487	GO Plug	56370
SA							56490	56491	56492	Handle	56371
Spiral Point							56495		56497	HI Ramp	56372
Cold Form	Plug: 56498						Bottom: 56499				
#3-48 SPL										#3-48 SPL	
General Purpose				56520	56521	56522	56525	56526	56527	GO Plug	56710
SA				56530	56531	56532				Handle	56711
Spiral Point							56535		56537	HI Ramp	56712
Regular Spiral							56533		56534		
Fast Spiral							56528		56529		
Cold Form	Plug: 56538						Bottom: 56539				
#3-56 SPL										#3-56 SPL	
General Purpose				56540	56541	56542	56545	56546	56547	GO Plug	56720
SA				56550	56551	56552				Handle	56721
Spiral Point							56555		56557	HI Ramp	56722
Regular Spiral							56553		56554		
Fast Spiral							56548		56549		
Cold Form	Plug: 56558						Bottom: 56559				



Spirallock®

Taps and Gages - Fractional

TAPS										GAGES			
Machine Screw Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES						
	CHAMFER			CHAMFER			CHAMFER						
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM				
#4-40 SPL										#4-40 SPL			
General Purpose				56560	56561	56562	56565	56566	56567	GO Plug	56730		
SA				56570	56571	56572				Handle	56731		
Spiral Point							56575		56577	HI Ramp	56732		
Regular Spiral							56573		56574				
Fast Spiral							56568		56569				
Cold Form				Plug: 56578			Bottom: 56579						
#4-48 SPL										#4-48 SPL			
General Purpose				56580	56581	56582	56585	56586	56587	GO Plug	56740		
SA				56590	56591	56592				Handle	56741		
Spiral Point							56595		56597	HI Ramp	56742		
Regular Spiral							56593		56594				
Fast Spiral							56588		56589				
Cold Form				Plug: 56598			Bottom: 56599						
#5-40 SPL										#5-40 SPL			
General Purpose				56600	56601	56602	56605	56606	56607	GO Plug	56750		
SA				56610	56611	56612				Handle	56751		
Spiral Point							56615		56617	HI Ramp	56752		
Regular Spiral							56613		56614				
Fast Spiral							56608		56609				
Cold Form				Plug: 56618			Bottom: 56619						
#5-44 SPL										#5-44 SPL			
General Purpose				56620	56621	56622	56625	56626	56627	GO Plug	56760		
SA				56630	56631	56632				Handle	56761		
Spiral Point							56635		56637	HI Ramp	56762		
Regular Spiral							56633		56634				
Fast Spiral							56628		56629				
Cold Form				Plug: 56638			Bottom: 56639						
#6-32 SPL										#6-32 SPL			
General Purpose				17010	17011	17012	17015	17016	17017	GO Plug	49500		
T-10				17030	17031	17032				GO Handle	49501		
Spiral Point							17035		17037	HI P.D.	49502		
Regular Spiral				17039		17041				HI Ramp	49503		
Fast Spiral				17040		17042				HI Handle	49504		
Cold Form				Plug: 17043			Bottom: 17044						



TAPS										GAGES	
Machine Screw Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
#6-40 SPL										#6-40 SPL	
General Purpose				56640	56641	56642	56645	56646	56647	GO Plug	56770
SA				56650	56651	56652				Handle	56771
Spiral Point							56655		56657	HI Ramp	56772
Regular Spiral				56661		56663					
Fast Spiral				56660		56662					
Cold Form				Plug: 56668			Bottom: 56669				
#8-32 SPL										#8-32 SPL	
General Purpose	17045	17046	17047	17050	17051	17052	17055	17056	17057	GO Plug	49510
T-10	17065	17066	17067	17070	17071	17072				GO Handle	49511
Spiral Point							17075		17077	HI P.D.	49512
Regular Spiral				17079		17081				HI Ramp	49513
Fast Spiral				17080		17082				HI Handle	49514
Cold Form				Plug: 17083			Bottom: 17084				
#8-36 SPL										#8-36 SPL	
General Purpose	56670	56671	56672				56675	56676	56677	GO Plug	56780
SA				56680	56681	56682				Handle	56781
Spiral Point							56685		56687	HI Ramp	56782
Regular Spiral				56691		56693					
Fast Spiral				56690		56692					
Cold Form				Plug: 56698			Bottom: 56699				
#10-24 SPL										#10-24 SPL	
General Purpose	17085	17086	17087	17090	17091	17092	17095	17096	17097	GO Plug	49520
T-10	17105	17106	17107	17110	17111	17112				Go Handle	49521
Spiral Point							17115		17119	HI P.D.	49522
Regular Spiral				17118		17121				HI Ramp	49523
Fast Spiral				17120		17122				HI Handle	49524
Cold Form				Plug: 17123			Bottom: 17124				
#10-32 SPL										#10-32 SPL	
General Purpose	17125	17126	17127	17130	17131	17132	17135	17136	17137	GO Gage	49530
T-10	17145	17146	17147	17150	17151	17152				GO Handle	49531
Spiral Point							17155		17157	HI P.D.	49532
Regular Spiral				17159		17161				HI RAMP	49533
Fast Spiral				17160		17162				HI Handle	49534
Cold Form				Plug: 17163			Bottom: 17164				



Spirallock®

Taps and Gages - Fractional

TAPS										GAGES	
Fractional Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
#12-24 SPL										#12-24 SPL	
General Purpose	17165	17166	17167	17170	17171	17172	17175	17176	17177	GO Plug	49540
SA	17181	17182	17183	17193	17186	17194				GO Handle	49541
T-10	17196	17197	17198	17200	17201	17202				HI P.D.	49542
Spiral Point							17185		17187	HI Ramp	49543
Regular Spiral				17189		17191				HI Handle	49544
Fast Spiral				17190		17192					
Cold Form	Plug: 17203			Bottom: 17204							
#12-28 SPL										#12-28 SPL	
General Purpose	17205	17206	17207	17210	17211	17212	17215	17216	17217	GO Plug	49550
SA	17221	17222	17223	17233	17238	17234				GO Handle	49551
T-10	17225	17226	17227	17230	17231	17232				HI P.D.	49552
Spiral Point							17236		17237	HI Ramp	49553
Regular Spiral				17239		17241				HI Handle	49554
Fast Spiral				17240		17242					
Cold Form	Plug: 17243			Bottom: 17244							
1/4-20 SPL										1/4-20 SPL	
General Purpose	17245	17246	17247	17250	17251	17252				GO Plug	49560
T-10	17255	17256	17257	17260	17261	17262				GO Handle	49561
Spiral Point				17270		17272	17275		17277	HI P.D.	49562
Regular Spiral				17279		17281				HI Ramp	49563
Fast Spiral				17280		17282				HI Handle	49564
Cold Form	Plug: 17283			Bottom: 17284							
1/4-28 SPL										1/4-28 SPL	
General Purpose	17285	17286	17287	17290	17291	17292				GO Plug	49570
T-10	17295	17296	17297	17300	17301	17302				GO Handle	49571
Spiral Point				17310		17312	17315		17317	HI P.D.	49572
Regular Spiral				17319		17321				HI Ramp	49573
Fast Spiral				17320		17322				HI Handle	49574
Cold Form	Plug: 17323			Bottom: 17324							
5/16-18 SPL										5/16-18 SPL	
General Purpose	17325	17326	17327	17330	17331	17332				GO Plug	49580
T-10	17335	17336	17337	17340	17341	17342				GO Handle	49581
Spiral Point				17350		17352	17355		17357	HI P.D.	49582
Regular Spiral				17359		17361				HI Ramp	49583
Fast Spiral				17360		17362				HI Handle	49584
Cold Form	Plug: 17363			Bottom: 17364							



Spiralock®

Taps and Gages - Fractional

TAPS									
Fractional Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES		
	CHAMFER			CHAMFER			CHAMFER		
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM
5/16-24 SPL									
General Purpose	17365	17366	17367	17370	17371	17372			
T-10	17375	17376	17377	17396	17397	17398			
Spiral Point				17380		17381	17385		17387
Regular Spiral				17389		17391			
Fast Spiral				17390		17392			
Cold Form	Plug: 17403			Bottom: 17404					
3/8-16 SPL									
General Purpose	17405	17406	17407	17410	17411	17412			
T-10	17415	17416	17417	17420	17421	17422			
Spiral Point				17430		17432			
Regular Spiral				17436		17438			
Fast Spiral				17435		17437			
Cold Form	Plug: 17443			Bottom: 17444					
3/8-24 SPL									
General Purpose	17445	17446	17447	17450	17451	17452			
T-10	17455	17456	17457						
Spiral Point				17470		17472			
Regular Spiral				17476		17478			
Fast Spiral				17475		17477			
Cold Form	Plug: 17483			Bottom: 17484					
7/16-14 SPL									
General Purpose	17485	17486	17487	17490	17491	17492			
T-10	17495	17496	17497						
Spiral Point				17510		17512			
Regular Spiral				17516		17518			
Fast Spiral				17515		17517			
Cold Form	Plug: 17523			Bottom: 17524					
7/16-20 SPL									
General Purpose	17525	17526	17527	17530	17531	17532			
T-10	17535	17536	17537						
Spiral Point				17550		17552			
Regular Spiral				17556		17558			
Fast Spiral				17555		17557			
Cold Form	Plug: 17563			Bottom: 17564					

GAGES	
5/16-24 SPL	
GO Plug	49590
GO Handle	49591
HI P.D.	49592
HI Ramp	49593
HI Handle	49594
3/8-16 SPL	
GO Plug	49600
GO Handle	49601
HI P.D.	49602
HI Ramp	49603
HI Handle	49604
3/8-24 SPL	
GO Plug	49610
GO Handle	49611
HI P.D.	49612
HI Ramp	49613
HI Handle	49614
7/16-14 SPL	
GO Plug	49620
GO Handle	49621
HI P.D.	49622
HI Ramp	49623
HI Handle	49624
7/16-20 SPL	
GO Plug	49630
GO Handle	49631
HI P.D.	49632
HI Ramp	49633
HI Handle	49634



Spiralock®

Taps and Gages - Fractional

TAPS									
Fractional Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES		
	CHAMFER			CHAMFER			CHAMFER		
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM
1/2-13 SPL									
General Purpose	17565	17566	17567	17570	17571	17572			
T-10	17575	17576	17577						
Spiral Point				17590		17592			
Regular Spiral				17596		17598			
Fast Spiral				17595		17597			
Cold Form	Plug: 17603			Bottom: 17604					
1/2-20 SPL									
General Purpose	17605	17606	17607	17610	17611	17612			
T-10	17615	17616	17617						
Spiral Point				17630		17632			
Regular Spiral				17636		17638			
Fast Spiral				17635		17637			
Cold Form	Plug: 17643			Bottom: 17644					
9/16-12 SPL									
General Purpose	17645	17646	17647						
T-10	17655	17656	17657						
Spiral Point				17665					
Regular Spiral	17669		17670						
Cold Form	Plug: 17673			Bottom: 17674					
9/16-18 SPL									
General Purpose	17675	17676	17677						
T-10	17685	17686	17687						
Spiral Point				17695					
Regular Spiral	17699		17700						
Cold Form	Plug: 17703			Bottom: 17704					
5/8-11 SPL									
General Purpose	17705	17706	17707						
T-10	17715	17716	17717						
Spiral Point				17725					
Regular Spiral	17729		17730						
Cold Form	Plug: 17733			Bottom: 17734					

GAGES	
1/2-13 SPL	
GO Plug	49640
GO Handle	49641
HI P.D.	49642
HI Ramp	49643
HI Handle	49644
1/2-20 SPL	
GO Plug	49650
GO Handle	49651
HI P.D.	49652
HI Ramp	49653
HI Handle	49654
9/16-12 SPL	
GO Plug	49660
GO Handle	49661
HI P.D.	49662
HI Ramp	49663
HI Handle	49664
9/16-18 SPL	
GO Plug	49670
GO Handle	49671
HI P.D.	49672
HI Ramp	49673
HI Handle	49674
5/8-11 SPL	
GO Plug	49680
GO Handle	49681
HI P.D.	49682
HI Ramp	49683
HI Handle	49684



TAPS											GAGES	
Fractional Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES					
	CHAMFER			CHAMFER			CHAMFER					
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM			
5/8-18 SPL										5/8-18 SPL		
General Purpose	17735	17736	17737							GO Plug	49690	
T-10	17745	17746	17747							GO Handle	49691	
Spiral Point				17755						HI P.D.	49692	
Regular Spiral	17759		17760							HI Ramp	49693	
Cold Form	Plug: 17763			Bottom: 17764						HI Handle	49694	
3/4-10 SPL										3/4-10 SPL		
General Purpose	17765	17766	17767							GO Plug	49700	
T-10	17775	17776	17777							GO Handle	49701	
Spiral Point				17785						HI P.D.	49702	
Regular Spiral	17789		17790							HI Ramp	49703	
Cold Form	Plug: 17793			Bottom: 17794						HI Handle	49704	
3/4-16 SPL										3/4-16 SPL		
General Purpose	17795	17796	17797							GO Plug	49710	
T-10	17805	17806	17807							GO Handle	49711	
Spiral Point				17815						HI P.D.	49712	
Regular Spiral	17819		17820							HI Ramp	49713	
Cold Form	Plug: 17823			Bottom: 17824						HI Handle	49714	
7/8-9 SPL										7/8-9 SPL		
General Purpose	17825	17826	17827							GO Plug	49720	
T-10	17835	17836	17837							GO Handle	49721	
Cold Form	Plug: 17853			Bottom: 17854						HI P.D.	49722	
										HI Ramp	49723	
										HI Handle	49724	
7/8-14 SPL										7/8-14 SPL		
General Purpose	17855	17856	17857							GO Plug	49730	
T-10	17865	17866	17867							GO Handle	49731	
Cold Form	Plug: 17883			Bottom: 17884						HI P.D.	49732	
										HI Ramp	49733	
										HI Handle	49734	



Spirallock®

Taps and Gages - Fractional

TAPS										GAGES	
Fractional Size	FOUR FLUTES			THREE FLUTES			TWO FLUTES				
	CHAMFER			CHAMFER			CHAMFER				
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM		
1-8 SPL										1-8 SPL	
General Purpose	17885	17886	17887							GO Plug	49740
Cold Form	Plug: 17893			Bottom: 17894						GO Handle	49741
										HI P.D.	49742
										HI Ramp	49743
										HI Handle	49744
1-12 SPL										1-12 SPL	
General Purpose	17895	17896	17897							GO Plug	49750
Cold Form	Plug: 17903			Bottom: 17904						GO Handle	49751
										HI P.D.	49752
										HI Ramp	49753
										HI Handle	49754
1-14 SPL										1-14 SPL	
General Purpose	17905	17906	17907							GO Plug	49760
Cold Form	Plug: 17913			Bottom: 17914						GO Handle	49761
										HI P.D.	49762
										HI Ramp	49763
										HI Handle	49764
1 1/8-7 SPL										1 1/8-7 SPL	
General Purpose	17915	17916	17917							GO Plug	49770
										GO Handle	49771
										HI P.D.	49772
										HI Ramp	49773
										HI Handle	49774
1 1/8-12 SPL										1 1/8-12 SPL	
General Purpose	17925	17926	17927							GO Plug	49780
										GO Handle	49781
										HI P.D.	49782
										HI Ramp	49783
										HI Handle	49784
1 1/4-7 SPL										1 1/4-7 SPL	
General Purpose	17935	17936	17937							GO Plug	49790
										GO Handle	49791
										HI P.D.	49792
										HI Ramp	49793
										HI Handle	49794



Spirallock®

Taps and Gages - Fractional

TAPS										GAGES			
Fractional Size	SIX FLUTES			FOUR FLUTES			THREE FLUTES						
	CHAMFER			CHAMFER			CHAMFER						
	PLUG	2.5	BTM	PLUG	2.5	BTM	PLUG	2.5	BTM				
1 1/4-12 SPL										1 1/4-12 SPL			
General Purpose	17945	17946	17947							GO Plug	49800		
										GO Handle	49801		
										HI P.D.	49802		
										HI Ramp	49803		
										HI Handle	49804		
1 3/8-6 SPL										1 3/8-6 SPL			
General Purpose				17955	17956	17957				GO Plug	49810		
										GO Handle	49811		
										HI P.D.	49812		
										HI Ramp	49813		
										HI Handle	49814		
1 3/8-12 SPL										1 3/8-12 SPL			
General Purpose	17965	17966	17967							GO Plug	49820		
										GO Handle	49821		
										HI P.D.	49822		
										HI Ramp	49823		
										HI Handle	49824		
1 1/2-6 SPL										1 1/2-6 SPL			
General Purpose				17975	17976	17977				GO Plug	49830		
										GO Handle	49831		
										HI P.D.	49832		
										HI Ramp	49833		
										HI Handle	49834		
1 1/2-12 SPL										1 1/2-12 SPL			
General Purpose	17985	17986	17987							GO Plug	49840		
										GO Handle	49841		
										HI P.D.	49842		
										HI Ramp	49843		
										HI Handle	49844		



Spirallock Thread Milling Cutters: The Spirallock thread form tools are also available in Thread Milling Cutters, for jobs where larger thread diameters are required. These tools will save handling, set-up and machining time by threading right in your machining center with improved thread quality. Spirallock Thread Milling Cutters can be supplied in shank, shell or insert type cutters.

Cutter Dia.	Pitch	EDP#	Flutes	Nominal Rake	Overall Length	Thread Length	Shank Dia.	Shank Length	Neck Dia.
1/2 "	10	20080	4	7.5	3.250	1.000	0.500	1.780	0.370
	14	20082							
	16	20083							
	18	20085							
	20	20086							
5/8 "	9	20100	5	7.5	3.650	1.250	0.625	1.910	0.480
	14	20103							
3/4 "	7	20120	6	7.5	3.875	1.375	0.750	2.030	0.565
	8	20122							
	12	20126							
	14	20128							
	16	20130							
	18	20132							
	20	20134							
1"	6	20140	6	7.5	4.250	1.500	1.000	2.280	0.785
	8	20143							
	12	20146							
	16	20149							
	18	20152							
	20	20155							
1 1/4"	4.5	20160	7	7.5	4.500	1.750	1.250	2.280	0.990
	5	20162							
	6	20165							
	8	20166							
	12	20169							
	16	20171							
1 1/2"	4	20180	8	7.5	5.250	2.000	1.500	2.690	1.175
	4.5	20181							
	6	20183							
	8	20184							
	12	20186							
	16	20189							
2"	4	20220	8	7.5	6.250	2.500	2.000	3.250	1.675
	8	20223							
	12	20226							
	16	20229							

Note: Spirallock Thread Milling Cutters are made to order.



Insert Selection Process:

1. Determine thread size and minimum minor diameter.
2. Determine minimum bore size smaller than the minor diameter from "Spirallock Insert Selection Chart" below.
3. Select appropriate insert blank size for minimum bore.
4. Select Spirallock EDP# for corresponding insert blank and pitch size using charts on the following page.
5. Select carbide grade and coating (if any).

Spirallock Insert Selection Chart				
Min. Bore	Size	Pitch Range	Boring Bar #	Blank
0.240	06	20-32 T.P.I. (1.00-0.45 mm)	SIR 0205 H06	06 IR A 60
0.310	08	16-32 T.P.I. (1.50-0.45 mm)	SIR 0265 K08	08 IR (X) 60
0.350	08		SIR 0310 K08	
0.470	11	14-32 T.P.I. (1.75-0.45 mm)	SIR 0375 H11	11 IR A 60
0.470	11		SIR 0375 K11	
0.470	11		SIR 0375 M11 C	
0.580	11		SIR 0500 L11	
0.580	11		SIR 0500 P11 C	
0.640	16		7-32 T.P.I. (3.50-0.45 mm)	
0.750	16	SIR 0625 P16		
0.750	16	SIR 0625 R16 C		
0.900	16	SIR 0750 P16		
1.160	16	SIR 1000 R16		
1.400	16	SIR 1250 S16		
1.650	16	SIR 1500 T16		
0.900	22	6 T.P.I. (5.00-0.45 mm)		SIR 0750 P22
1.160	22		SIR 1000 R22	
1.500	22		SIR 1250 S22	

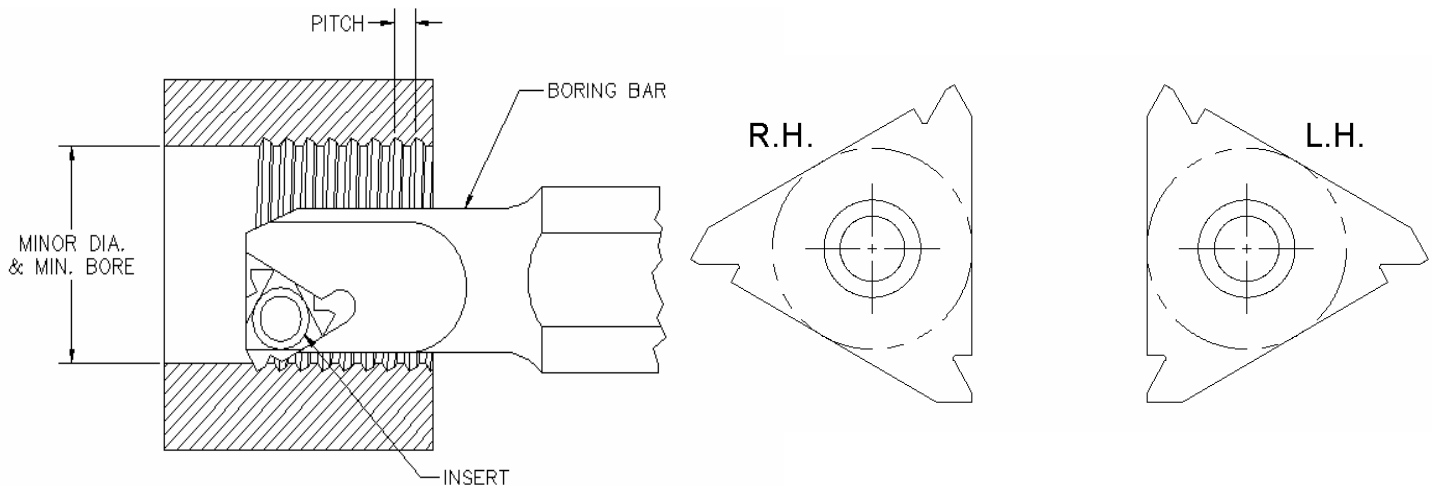
Note: For assistance, please contact Spirallock Corporation at 248-543-7800 or 800-521-2688.



Internal Threading Inserts Laydown Style English Sizes		
Blank	Pitch	EDP#
11	32	90114
11	28	90116
11	27	90118
11	24	90120
11	20	90122
11	18	90124
11	16	90126
11	14	90128
16	32	90144
16	28	90146
16	27	90148
16	24	90150
16	20	90152
16	18	90154
16	16	90156
16	14	90158
16	13	90160
16	12	90162
16	11.5	90164
16	11	90166
16	10	90168
16	9	90170
16	8	90172
16	7	90174
22	6	90176

Internal Threading Inserts Laydown Style Metric Sizes		
Blank	Pitch	EDP#
11	0.80	90014
11	1.00	90016
11	1.25	90018
11	1.50	90020
11	1.75	90022
16	0.80	90038
16	1.00	90040
16	1.25	90042
16	1.50	90044
16	1.75	90046
16	2.00	90048
16	2.50	90050
16	3.00	90052
22	3.50	90054
22	4.00	90056
22	4.50	90058
22	5.00	90060
27	5.50	90062
27	6.00	90064

Miniature Inserts Laydown Style		
Blank	Pitch	EDP#
Fractional Sizes		
06	32	90324
06	28	90326
06	24	90328
06	20	90330
08	32	90334
08	28	90336
08	24	90338
08	20	90340
08	18	90342
08	16	90344
Metric Sizes		
06	0.50	90300
06	0.75	90302
06	1.00	90304
08	0.50	90308
08	0.75	90310
08	1.00	90312
08	1.25	90314
08	1.50	90316



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