



VERMONT TAP & DIE



# GREENFIELD THREADING



**Taps And Dies**

  
**GREENFIELD  
INDUSTRIES**  
a product of

2017



## GREENFIELD INDUSTRIES

Greenfield Industries' tradition of excellence has stood the test of time. Since 1834 the mission remains the same, provide the highest quality cutting tools at the greatest value possible. As part of the TDC Group, that mission is easily fulfilled with direct access to the finest raw materials from our own mines. These materials are then refined in our own mills and made into the raw material used in manufacturing Greenfield's unparalleled drills, end mills, taps, dies and other specially manufactured tools.

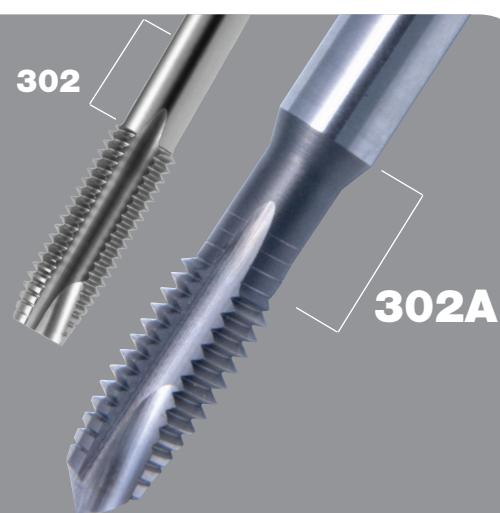
This catalog showcases the range of taps available along with machining parameters. Various coatings are available for our taps designed for specific applications.

This catalog is also available to download at our website, [www.gfii.com](http://www.gfii.com). There you will find catalogs and supplements to our other globally recognized brands.

For more information, contact our Customer Service at 800-348-2885 or by email at [standard.distributors@gfii.com](mailto:standard.distributors@gfii.com), or visit the our web site, [www.gfii.com](http://www.gfii.com).

Greenfield is moving from 302 to 302A tap styles beginning August 1st, 2015.

Look for this rolling change in your orders and continue to enjoy the superior quality and reliability you have always known in Greenfield!





VERMONT TAP & DIE



We are proud to announce the combination of our Greenfield Threading brand with Vermont Tap & Die. Greenfield Industries' centuries old **dedication** to our customers has brought these two products lines together, creating a **commitment** of high-quality taps and dies. This provides you, our customer, the confidence that you are receiving the quality and reliability you expect from the

Greenfield family of tools.

All taps in the Greenfield Threading line are designed to machine a broad range of materials and are manufactured out of premium high speed steel.

In the ever-changing demands of industry and technology, we are continuously researching and finding ways to provide our customers with **all of your cutting tool needs.**





## Reference Information

**Index by Style Number**

300 . . . . .	37
330 . . . . .	37
335 . . . . .	38
377 . . . . .	28
380 . . . . .	34
382 . . . . .	30
383 . . . . .	32
1381 . . . . .	36
1382 . . . . .	36
1383 . . . . .	34
1384 . . . . .	34
1385 . . . . .	34
1386 . . . . .	34
1750 . . . . .	32
1790 . . . . .	32
6382 . . . . .	30 . 32
A1 . . . . .	36
ELPTT . . . . .	27
FTGP . . . . .	24
HTGP . . . . .	7
HTGPL . . . . .	10
HTHM . . . . .	6
PTS . . . . .	27
PTT . . . . .	25
PTTI . . . . .	26
SFGP . . . . .	22
SFGP+5 . . . . .	23
SFHD . . . . .	21
SFS . . . . .	20
SPAR . . . . .	18
SPGP . . . . .	12
SPGP+5 . . . . .	15
SPGPX . . . . .	16
SPGPX+5 . . . . .	16
SPHD . . . . .	19
SPLS . . . . .	17
SPS . . . . .	11

**Metal Cutting Safety***Information to read before using Greenfield Threading products*

Modern metalcutting operations involve high energy, high spindle or cutter speeds, and high temperatures and cutting forces. Hot, flying chips may be projected from the workpiece during metalcutting. Although advanced cutting tool materials are designed and manufactured to withstand the high cutting forces and temperatures that normally occur in these operations, they are susceptible to fragmenting in service, particularly if they are subjected to over-stress, severe impact, or otherwise abused. Therefore, precautions should be taken to adequately protect workers, observers, and equipment against hot, flying chips, fragmented cutting tools, broken workpieces, or other similar projectiles. Machines should be fully guarded and personal protective equipment should be used at all times.

When grinding advanced cutting tool materials, a suitable means for collection and disposal of dust, mist, or sludge should be provided. Overexposure to dust or mist containing metallic particles can be hazardous to health, particularly if exposure continues over an extended period of time, and may cause eye, skin, and mucous membrane irritation and temporary or permanent respiratory disease. Certain existing pulmonary and skin conditions may be aggravated by exposure to dust or mist. Adequate ventilation, respiratory protection, and eye protection should be provided when grinding, and workers should avoid breathing of and prolonged skin contact with dust or mist.

General Industry Safety and Health Regulations, Part 1910, U.S. Department of Labor, published in Title 29 of the Code of Federal Regulations should be consulted. Obtain a copy from Greenfield and read the applicable Material Safety Data Sheet before grinding.

Cutting tools are only one part of the worker /machine-tool system. Many variables exist in machining operations, including the metal removal rate; the workpiece size, shape, strength and rigidity; the chucking and fixturing; the load carrying capability of centers; the cutter and spindle speed and torque limitations; the holder and boring bar overhang; the available power; and the condition of the tooling and the machine. A safe metalcutting operation must take all of these variables, and others, into consideration.

Greenfield has no control over the end use of its products or the environment into which those products are placed. Greenfield urges that its customers adhere to the recommended standards of use of their metalcutting machines and tools, and that they follow procedures that ensure safe metalcutting operations. The information included throughout this catalog under the heading "Technical Data" and other recommendations on machining practices referred to herein are only advisory in nature and do not constitute representations or warranties and are not necessarily appropriate for any particular work environment or application.

**TIN - TiCN****Recommendations****Surface Treatments for Taps**

	Recommended Applications	Precautions
<b>TiN</b> (Titanium Nitride)	For ferrous and non-metallic materials: free-machining steels and irons, high tensile steels, tough machining steels, plastics, hard rubber, and fiber. The hard, smooth finish increases tool life, improves finish, and allows higher speeds.	Use with caution in titanium, titanium alloys, and aluminum die casting due to tendency to gall.
<b>TiCN</b> (Titanium Carbonitride)	For ferrous and non-ferrous materials: cast iron, aluminum, stainless steel, brass, abrasive materials, high-silicon automotive aluminum, glass-filled plastics, and composites. The hard, smooth finish increases tool life and improves finish.	Use with caution in titanium and titanium alloys due to tendency to gall.

**Introduction****Reference by Style****Table of Contents**

Style Number	Description	Page
<b>Machine Taps for Through or Blind Holes</b>		
HTHM . . . . .	CNC Straight Flute Hand Tap for Cast Iron and Harder Materials. . . . .	6
HTGP . . . . .	General Purpose Straight Flute Hand Tap . . . . .	7-9
HTGP Sets . . . . .	General Purpose Straight Flute Hand Tap Sets . . . . .	14
HTGPL . . . . .	General Purpose Left-Hand Straight Flute Hand Tap . . . . .	10
<b>Spiral Point Taps for Through Holes</b>		
SPS . . . . .	CNC Spiral Point Tap for Steels and Stainless Steel . . . . .	11
SPGP . . . . .	General Purpose Spiral Point Tap . . . . .	12-13
SPGP Sets . . . . .	General Purpose Spiral Point Tap Set . . . . .	14
SPGP+5 . . . . .	General Purpose Spiral Point plus 5 Tap . . . . .	15
SPGPX . . . . .	6" Extended Length General Purpose Spiral Point Tap . . . . .	16
SPGPX+5 . . . . .	6" Extended Length General Purpose Spiral Point plus 5 Tap . . . . .	16
SPLS . . . . .	Low Shear General Purpose Spiral Point Tap . . . . .	17
SPAR . . . . .	Spiral Point Tap for Aerospace Fasteners . . . . .	18
SPHD . . . . .	CNC Heavy-Duty Spiral Point . . . . .	19
<b>Spiral Flute Taps for Blind Holes</b>		
SFS . . . . .	CNC Spiral Flute Tap for Steels and Stainless Steel. . . . .	20
SFHD . . . . .	CNC Heavy-Duty Spiral Flute Tap . . . . .	21
SFGP . . . . .	High-Spiral General Purpose Spiral Flute Tap . . . . .	22
SFGP+5 . . . . .	High-Spiral General Purpose Spiral Flute plus 5 Tap . . . . .	23
<b>Thread Forming Taps</b>		
FTGP . . . . .	General Purpose Thread Forming Tap. . . . .	24
<b>Pipe Taps</b>		
PTT . . . . .	NPT/NPTF Medium Hook Taper Pipe Tap . . . . .	25
PTTI . . . . .	NPT/NPTF Medium Hook Interrupted Thread Taper Pipe Tap. . . . .	26
PTS . . . . .	NPS/NPSM/NPSC and NPSF Medium Hook Straight Pipe . . . . .	27
ELPTT . . . . .	CNC Extra Length Medium Hook Taper Pipe Tap with Machine Tap Shank . . . . .	27
<b>Dies</b>		
377 . . . . .	Hexagon Rethreading Dies, Carbon Steel. . . . .	28-29
382, 6382 . . . . .	Round Adjustable Dies, Carbon Steel and High-Speed Steel. . . . .	30-32
1750, 1790 . . . . .	Die Stocks for Round Adjustable Dies. . . . .	32
T&RAD Sets . . . . .	Tap & Round Adjustable Die Set. . . . .	33
1386 . . . . .	Little Giant® Two-Piece Die Systems . . . . .	34-35
1381, 1382, A1 . . . . .	Accessories for Little Giant® Two-Piece Dies . . . . .	36
300, 330 . . . . .	Tap Wrenches . . . . .	37
335 . . . . .	Screw Extractors. . . . .	38
<b>Sets</b>		
All available / Cost Saving Sets. . . . .	. . . . .	55-56
<b>Index by Order Number</b>		
Full index . . . . .	. . . . .	60-65
<b>Technical Information</b>		
Tap / Drill Recommendations . . . . .	. . . . .	4
Pipe Tap Recommendations . . . . .	. . . . .	25
Tapping Speeds. . . . .	. . . . .	39-41
Tap Nomenclature . . . . .	. . . . .	42-43
Standard Tap Marking System . . . . .	. . . . .	44
302 / 302A / 311 Standard Tap Dimensions . . . . .	. . . . .	45-47
Thread Limits – Taper Pipe Taps – Ground Thread . . . . .	. . . . .	47
Thread Limits – Fractional Taps – Ground Thread . . . . .	. . . . .	48
Thread Limits – Machine Screw Taps – Ground Thread . . . . .	. . . . .	49
Thread Limits – Metric Taps – Ground Thread . . . . .	. . . . .	50
Basic Thread Dimensions – Fractional Sizes . . . . .	. . . . .	51-52
Basic Thread Dimensions – Machine Screw Sizes . . . . .	. . . . .	53
Quick Shipment Program – Special Taps – Ground Thread . . . . .	. . . . .	54
Decimal Equivalent Chart . . . . .	. . . . .	inside back cover



## Tap Drill Recommendations

## Reference Information

## Color Code: Machine Screw, Fractional, and Metric Sizes

Tap Size & Pitch inch      metric	Cutting Taps		Forming Taps	
	drill size	decimal inch	drill size	decimal inch
0-80	<b>3/64</b>	.0469	<b>54</b>	.0550
	M1,6 x 0,35	1,25	1,45	.0571
	M1,8 x 0,35	1,45	1,65	.0650
1-64	<b>53</b>	.0595	<b>51</b>	.0670
1-72	<b>53</b>	.0595	<b>51</b>	.0670
	M2 x 0,4	1,6	1,8	.0709
2-56	<b>50</b>	.0700	<b>5/64</b>	.0781
2-64	<b>50</b>	.0700	<b>47</b>	.0785
	M2,2 x 0,45	1,75	2,0	.0787
	M2,5 x 0,45	2,05	2,3	.0906
3-48	<b>47</b>	.0785	<b>43</b>	.0890
3-56	<b>46</b>	.0810	<b>2,3</b>	.0906
4-40	<b>43</b>	.0890	<b>38</b>	.1015
4-48	<b>42</b>	.0935	<b>2,6</b>	.1024
	M3 x 0,5	2,5	7/64	.1094
5-40	<b>38</b>	.1015	<b>33</b>	.1130
5-44	<b>37</b>	.1040	<b>2,9</b>	.1142
	M3,5 x 0,6	2,9	3,2	.1260
6-32	<b>36</b>	.1065	<b>1/8</b>	.1250
6-40	<b>33</b>	.1130	<b>3,25</b>	.1280
	M4 x 0,7	3,3	3,7	.1457
8-32	<b>29</b>	.1360	<b>25</b>	.1495
8-36	<b>29</b>	.1360	<b>24</b>	.1520
	M4,5 x 0,75	3,7	4,1	.1614
10-24	<b>26</b>	.1470	<b>11/64</b>	.1719
10-32	<b>21</b>	.1590	<b>16</b>	.1770
	M5 x 0,8	4,2	14	.1820
12-24	<b>16</b>	.1770	<b>8</b>	.1990
12-28	<b>15</b>	.1800	<b>7</b>	.2010
	M6 x 1	5,0	7/32	.2188
1/4-20	<b>7</b>	.2010	<b>1</b>	.2280
1/4-28	<b>3</b>	.2130	<b>15/64</b>	.2340
	M7 x 1	6,0	F	.2570
5/16-18	<b>F</b>	.2570	<b>L</b>	.2900
5/16-24	<b>I</b>	.2720	<b>M</b>	.2950
	M8 x 1,25	6,7	7,4	.2913
	M8 x 1	7,0	19/64	.2969
3/8-16	<b>5/16</b>	.3125	<b>S</b>	.3480
3/8-24	<b>Q</b>	.3320	<b>T</b>	.3580
	M10 x 1,5	8,5	U	.3680
	M10 x 1,25	8,7	9,4	.3701
7/16-14	<b>U</b>	.3680	<b>Y</b>	.4040
7/16-20	<b>25/64</b>	.3906	<b>Z</b>	.4130

Tap Size & Pitch inch      metric	Cutting Taps		Forming Taps		
	drill size	decimal inch	drill size	decimal inch	
	M12 x 1,75	10,2	.4016	11,2	.4409
	M12 x 1,25	10,8	.4252	11,5	.4528
1/2-13	<b>27/64</b>	.4219	<b>15/32</b>	.4688	
1/2-20	<b>29/64</b>	.4531	<b>12,25</b>	.4823	
	M14 x 2	12,0	.4724	<b>33/64</b>	.5156
9/16-12	<b>31/64</b>	.4844	<b>17/32</b>	.5312	
9/16-18	<b>33/64</b>	.5156	<b>13,5</b>	.5315	
5/8-11	<b>17/32</b>	.5312	<b>14,75</b>	.5807	
5/8-18	<b>37/64</b>	.5781	<b>15,25</b>	.6004	
	M16 x 2	14,0	.5512	<b>19/32</b>	.5938
	M16 x 1,5	14,5	.5709	<b>15,25</b>	.6004
	M18 x 2,5	15,5	.6102	<b>39/64</b>	.6094
	M18 x 1,5	16,5	.6496	<b>17,25</b>	.6791
3/4-10	<b>21/32</b>	.6562	<b>45/64</b>	.7031	
3/4-16	<b>11/16</b>	.6875	<b>23/32</b>	.7188	
	M20 x 2,5	17,5	.6890		
	M20 x 1,5	18,5	.7283		
	M22 x 2,5	19,5	.7677		
	M22 x 1,5	20,5	.8071		
7/8-9	<b>49/64</b>	.7656			
7/8-14	<b>13/16</b>	.8125			
	M24 x 3	21,0	.8268		
	M24 x 2	22,0	.8661		
1-8	<b>7/8</b>	.8750			
1-12	<b>59/64</b>	.9219			
	M27 x 3	24,0	.9449		
	M27 x 2	25,0	.9843		
1-1/8-7	<b>63/64</b>	.9844			
1-1/8-12	<b>1-3/64</b>	1.0469			
	M30 x 3,5	26,5	1.0433		
	M30 x 2	28,0	1.1024		
1-1/4-7	<b>1-7/64</b>	1.1094			
1-1/4-12	<b>1-11/64</b>	1.1719			
	M33 x 3,5	29,5	1.1614		
	M33 x 2	31,0	1.2205		
1-3/8-6	<b>1-7/32</b>	1.2188			
1-3/8-12	<b>1-19/64</b>	1.2969			
	M36 x 4	32,0	1.2598		
	M36 x 3	33,0	1.2992		
1-1/2-6	<b>1-11/32</b>	1.3438			
1-1/2-12	<b>1-27/64</b>	1.4219			
	M39 x 4	35,0	1.3780		
	M39 x 3	36,0	1.4173		

**FORM****TAPS****NOT****AVAILABLE****IN****THESE****SIZES**



## Reference Information

## Icon Glossary

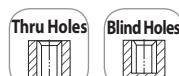
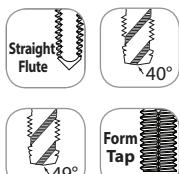
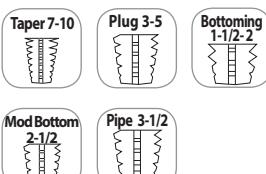
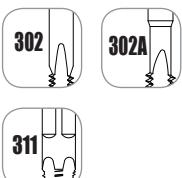
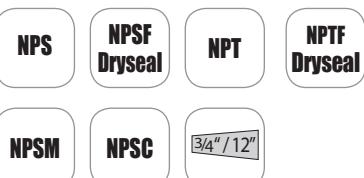
**Material**

✓ = BEST Performance      \* Also Suitable

Icon	Material	Hardness	Surface Treatment Suggestion		
			TiN	TiCN	TiALN
<b>M</b>	Austenitic Stainless Steel	< 35 HRc	*	✓	
	Martensitic Stainless Steel	< 35 HRc	*	✓	
	Martensitic Stainless Steel	>= 35 HRc	*	✓	
	PH Stainless Steel	< 35 HRc	*	✓	
	PH Stainless Steel	<= 35 HRc	*	✓	
<b>S</b>	Ni, Co, Fe Based Super Alloys			✓	
	Titanium			✓	
<b>P</b>	Alloy Steel	16-23 HRc	*	*	✓
	Alloy Steel	23-38 HRc	*	*	✓
	Alloy Steel	> 38 HRc	*	✓	
	Carbon Steel	16-23 HRc	*	*	✓
	Carbon Steel	23-38 HRc	*	*	✓
	Carbon Steel	> 38 HRc	*	✓	
	Low Carbon Steel	13-23 HRc	*	*	✓
	Low Carbon Steel	23-38 HRc	*	*	✓
	Low Carbon Steel	> 38 HRc	*	✓	
<b>K</b>	Gray Cast Iron	18-22 HRc	*	*	✓
	Nodular Cast Iron	22-32 HRc	*	✓	
<b>N</b>	Aluminum	< 10% Si	*	✓	
	Aluminum	> 10% Si	*	✓	
<b>H</b>	Hardened Steel	>45 HRc	*	*	✓

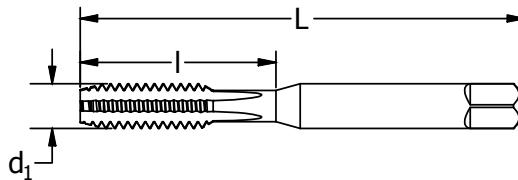
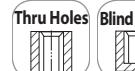
**Surface Treatment**

Additional treatments available upon request.

**Base Material****Applications****Geometry****Chamfers****Styles****Pipe**

**CNC Straight Flute**

Cast Iron and Harder Materials

**Machine Tap for Through or Blind Holes****Style: HTHM****K****H****Note**Tapping speeds -  
see page 39-41.

diameter & pitch	thread form	<b>d<sub>1</sub></b> in	number of flutes	H-limit	<b>L</b> in	<b>I</b> in	order number	Oxide over Nitride	TiCN
10-24	UNC	.1900	4	H3	2.375	.875	330259	—	—
10-32	UNF	.1900	4	H3	2.375	.875	330260	—	—
1/4-20	UNC	.2500	4	H3	2.500	1.000	330261	300216	—
1/4-20	UNC	.2500	4	H5	2.500	1.000	330278	—	—
1/4-28	UNF	.2500	4	H3	2.500	1.000	330262	—	—
5/16-18	UNC	.3125	4	H3	2.719	1.125	330263	300217	—
5/16-18	UNC	.3125	4	H5	2.719	1.125	330279	—	—
5/16-24	UNF	.3125	4	H3	2.719	1.125	330264	—	—
3/8-16	UNC	.3750	4	H3	2.938	1.250	330265	—	—
3/8-16	UNC	.3750	4	H5	2.938	1.250	330280	—	—
7/16-14	UNC	.4375	4	H3	3.156	1.438	330267	—	—
7/16-14	UNC	.4375	4	H5	3.156	1.438	330281	—	—
1/2-13	UNC	.5000	4	H3	3.375	1.656	330269	—	—
1/2-13	UNC	.5000	4	H5	3.375	1.656	330283	—	—
1/2-20	UNF	.5000	4	H5	3.375	1.656	330284	—	—
3/4-16	UNF	.7500	6	H5	4.250	2.000	330290	—	—

**Metric - CNC Straight Flute**

Cast Iron and Harder Materials

**Style: HTHM**

diameter & pitch	<b>d<sub>1</sub></b> mm	number of flutes	D-limit	<b>L</b> in	<b>I</b> in	order number	Oxide over Nitride	TiCN
M5 x 0.8	5.00	4	D4	2.375	.875	330291	—	—
M6 x 1	6.00	4	D5	2.500	1.000	330292	—	—
M8 x 1.25	8.00	4	D5	2.719	1.125	330293	—	—
M10 x 1.5	10.00	4	D6	2.938	1.250	330294	300218	—
M12 x 1.25	12.00	4	D6	3.375	1.656	330295	—	—
M12 x 1.75	12.00	4	D6	3.375	1.656	330296	300219	—
M14 x 1.5	14.00	4	D6	3.594	1.656	330298	—	—



## Machine Tap for Through or Blind Holes

Style: HTGP

General Purpose  
Straight Flute

P N



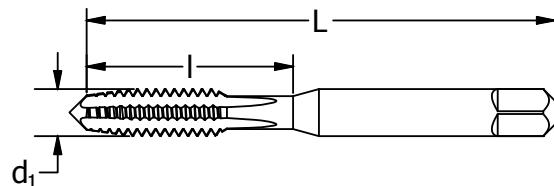
## Note

Tapping speeds - see page 39-41.

Set consists of one each taper, plug, bottoming chamfer.

\* #0 - #3 and 7/8" and larger: 302 blank style.

Sets available - see page 14.



diameter & pitch	thrd form	$d_1$ in	no. flts	H-limit	L in	I in	taper		order number				bottoming		set	
							Bright	TiN	Bright	Oxide	TiN	TiCN	Bright	TiN	Bright	TiN
*0-80	UNF	.0600	2	H1	1.625	0.313	330004	—	330016	—	—	—	330066	—	—	—
*0-80	UNF	.0600	2	H2	1.625	0.313	—	—	300041	—	300047	—	300058	300054	—	—
*1-64	UNC	.0730	2	H1	1.688	0.375	330005	—	330017	—	—	—	330067	—	—	—
*1-72	UNF	.0730	2	H1	1.688	0.375	330006	—	300165	—	—	—	330068	—	—	—
*2-56	UNC	.0860	2	H2	1.750	0.438	—	—	330018	—	—	—	330069	—	—	—
*2-56	UNC	.0860	3	H1	1.750	0.438	330007	—	330019	—	—	—	300264	—	—	—
*2-56	UNC	.0860	3	H2	1.750	0.438	300272	300278	300280	—	300286	330035	300299	300294	341573	174511
*2-64	UNF	.0860	3	H2	1.750	0.438	330008	—	330020	—	—	—	330070	—	—	—
*3-48	UNC	.0990	3	H2	1.813	0.500	300512	339044	300520	—	300526	—	300538	339045	341599	355802
*3-56	UNF	.0990	3	H2	1.813	0.500	300637	339046	300645	—	339047	—	300652	339048	341607	355803
4-40	UNC	.1120	2	H1	1.875	0.563	—	—	330021	—	—	—	—	—	—	—
4-40	UNC	.1120	2	H2	1.875	0.563	—	—	300769	—	—	—	300778	—	—	—
4-40	UNC	.1120	3	H2	1.875	0.563	300819	300815	300827	—	300823	330036	300835	300831	341623	174530
4-48	UNF	.1120	3	H2	1.875	0.563	300934	300930	300942	—	300948	—	300959	300955	341649	174531
5-40	UNC	.1250	2	H2	1.938	0.625	—	—	301007	—	—	—	301015	—	—	—
5-40	UNC	.1250	3	H2	1.938	0.625	301056	301052	301064	—	301060	—	301072	301078	341664	174536
5-44	UNF	.1250	3	H2	1.938	0.625	301171	301177	301189	—	—	—	301197	301193	341672	174537
6-32	UNC	.1380	2	H2	2.000	0.688	—	—	301247	—	—	—	301254	—	—	—
6-32	UNC	.1380	2	H3	2.000	0.688	—	—	301270	—	—	—	301288	—	—	—
6-32	UNC	.1380	3	H2	2.000	0.688	301320	—	301338	—	330062	—	301346	—	341698	—
6-32	UNC	.1380	3	H3	2.000	0.688	301353	301359	301361	330037	301367	330038	301379	301375	341706	174538
6-40	UNF	.1380	3	H2	2.000	0.688	301478	301474	301486	—	301482	—	301494	301490	341714	174539
8-32	UNC	.1640	2	H1	2.125	0.750	—	—	330022	—	—	—	—	—	—	—
8-32	UNC	.1640	2	H2	2.125	0.750	—	—	301544	—	—	—	301551	—	—	—
8-32	UNC	.1640	2	H3	2.125	0.750	—	—	301577	—	—	—	301585	—	—	—
8-32	UNC	.1640	3	H2	2.125	0.750	—	—	301635	—	—	—	301643	—	—	—
8-32	UNC	.1640	3	H3	2.125	0.750	—	—	301668	—	—	—	301676	—	—	—
8-32	UNC	.1640	4	H2	2.125	0.750	301718	—	301726	—	330063	—	301734	—	341730	—
8-32	UNC	.1640	4	H3	2.125	0.750	301742	301748	301759	330039	301755	330040	301767	301763	341748	174544
8-36	UNF	.1640	4	H2	2.125	0.750	301924	301920	301933	—	301938	—	301940	301946	341755	174545

continued on next page





## General Purpose Left-Hand Straight Flute

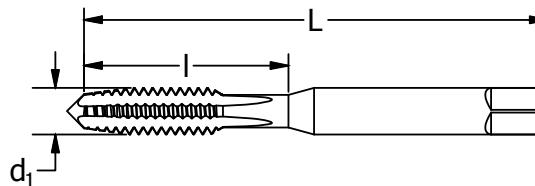
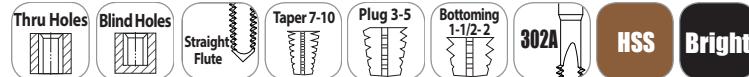
### Machine Tap for Through or Blind Holes



Style: HTGPL



**Note**  
Tapping speeds - see page 39-41.



diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	I in	order number			
							taper Bright	plug Bright	bottoming Bright	set taper/plug/bottom
6-32	UNC	.1380	3	H3	2.000	.688	—	313010	313028	—
8-32	UNC	.1640	4	H3	2.125	.750	313036	313044	313051	341912
10-24	UNC	.1900	4	H3	2.375	.875	313069	313077	313085	—
10-32	UNF	.1900	4	H3	2.375	.875	313093	313102	313119	341938
1/4-20	UNC	.2500	4	H3	2.500	1.000	—	317516	—	—
1/4-28	UNF	.2500	4	H3	2.500	1.000	317532	317540	317557	318779
5/16-18	UNC	.3125	4	H3	2.719	1.125	—	317573	—	—
5/16-24	UNF	.3125	4	H3	2.719	1.125	—	317607	—	—
3/8-16	UNC	.3750	4	H3	2.938	1.250	—	317631	—	—
3/8-24	UNF	.3750	4	H3	2.938	1.250	—	317664	—	—
7/16-20	UNF	.4375	4	H3	3.156	1.438	—	317722	—	—
1/2-13	UNC	.5000	4	H3	3.375	1.656	—	317755	—	—
1/2-20	UNF	.5000	4	H3	3.375	1.656	—	317789	—	—
5/8-18	UNF	.6250	4	H3	3.813	1.813	—	317904	—	—
3/4-10	UNC	.7500	4	H3	4.250	2.000	—	317995	—	—
3/4-16	UNF	.7500	4	H3	4.250	2.000	—	318027	—	—



### The Proper Use of Lubricants in Tapping

Applying the proper lubricants in tapping operations can result in longer tap life, increased production, better workpiece size control, smoother and more accurate threads, less resharpening, and more efficient chip removal. Generally, for best tap performance, straight cutting oil should be used. For non-ferrous and non-metallic materials, a coolant or a cutting fluid (light oil or soluble oil) is recommended.

Often, machining centers are equipped with a coolant or a cutting fluid that contains enough water and oil to provide adequate cooling and lubrication for a variety of tools and workpieces. However, most soluble blends are not suitable for tapping applications. Tapping, especially with thread-forming taps, requires more lubrication than cooling. A coolant or cutting fluid might lack the lubrication necessary to obtain acceptable tool life and part finish. Get recommendations from a coolant specialist.

After you select the proper lubricant, choose the right method of application and pressure. For tapping, use multiple nozzles around the tap. Nozzles should be as close to the surface of the part as possible, positioned at an angle close to the axis of the tool, and should point directly into the hole to flush chips from the flutes. For horizontal tapping, where the tap is stationary and the workpieces rotate, consider using two streams of lubricant, one on each side of the tap.

Whether you are tapping vertically, horizontally, or at an angle, make sure the lubricant reaches the cutting lands of the tap at all times, especially at the point or chamfered sections. Brushing or squirting oil or fluid onto the tap does not provide sufficient lubrication. In fact, heavy viscosity oil may cause the chips to stick or cling to a tap, increasing the chance of breakage. In addition, if the lubricant is automatically applied only on the forward motion of the tap, time the application of the lubricant so that it will reach the hole before the tap starts to cut, particularly with machines on which the cutting fluid is automatically shut off when the tap reverses. For maximum effectiveness, it is better to force the lubricant into the hole under pressure, which will vary depending on the tapping method, hole depth, and tapping speed.

Keep tapping lubricants as clean as possible using a filtering system or other equipment. Dust and other foreign particles can contaminate oil and decrease its effectiveness. Thoroughly clean machines and oil tanks when adding new lubricant and at regular intervals to ensure optimum results.

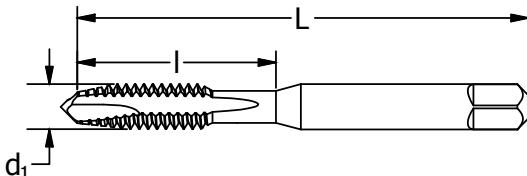


## Spiral Point Taps for Through Holes

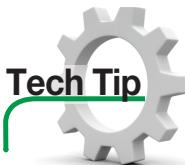
Style: SPS

**P****M****Note**

Tapping speeds - see page 39-41.

**CNC Spiral Point  
Steels and Stainless Steels**


diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	I in	order number
4-40	UNC	.1120	2	H2	1.875	.563	330302
6-32	UNC	.1380	2	H3	2.000	.688	330309
8-32	UNC	.1640	3	H3	2.125	.750	330310
8-32	UNC	.1640	3	H5	2.125	.750	330333
10-24	UNC	.1900	3	H3	2.375	.875	330311
10-32	UNF	.1900	3	H3	2.375	.875	330312
1/4-20	UNC	.2500	3	H3	2.500	1.000	330313
1/4-20	UNC	.2500	3	H5	2.500	1.000	330336
5/16-18	UNC	.3125	3	H3	2.719	1.125	330315
5/16-24	UNF	.3125	3	H3	2.719	1.125	330316
3/8-16	UNC	.3750	3	H3	2.938	1.250	330317
1/2-13	UNC	.5000	3	H3	3.375	1.656	330321

**How to request Made-to-Order taps:**Information required for every order:

- quantity
- ordering number

Information required for some orders, depending on tool style:

- exact tool size
- threads per inch
- pitch
- thread form
- right-hand or left-hand configuration
- limit
- pitch diameter

- class of fit
- chamfer
- number of chamfered threads
- chamfer angle
- number of lube grooves
- short projections

Other features available:

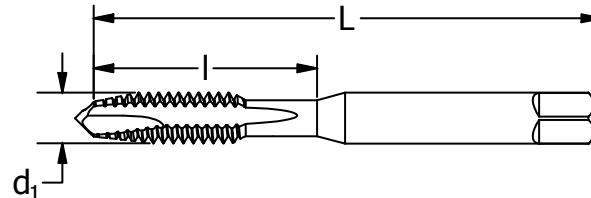
- surface treatment
- special hook
- male centers removed
- special back tape
- recessed neck
- shank flats
- special shank diameter
- special rake
- thread relief
- interrupted threads
- controlled root
- ETTCO notch
- shank grooves

**General Purpose**  
**Spiral Point - Inch**
**Spiral Point Taps for Through Holes****Style: SPGP****P N****Note**

Tapping speeds - see page 39-41.

\* #0 - #3: 302 blank style.

Sets available - see page 14.

**Machine Taps****Spiral Point Taps****Spiral Flute Taps****Thread Forming Taps****Pipe Taps****Dies****Technical Info****Sets****Index**

diameter & pitch	thread form	d <sub>1</sub> in	# of flutes	H-limit	L in	I in	order number				
							Bright	Black Oxide	plug TiN	330148	bottoming Bright
*0-80	UNF	.0600	2	H1	1.625	.313	356002	—	—	—	—
*0-80	UNF	.0600	2	H2	1.625	.313	356027	330100	356023	330148	356035
*1-64	UNC	.0730	2	H2	1.688	.375	356068	—	356061	—	—
*1-72	UNF	.0730	2	H1	1.688	.375	356084	—	—	—	—
*1-72	UNF	.0730	2	H2	1.688	.375	356102	—	356106	—	—
*2-56	UNC	.0860	2	H2	1.750	.438	356142	330101	356148	330149	356159
*2-64	UNF	.0860	2	H2	1.750	.438	356183	—	—	—	—
*3-48	UNC	.0990	2	H2	1.813	.500	356225	—	356221	—	—
*3-56	UNF	.0990	2	H2	1.813	.500	356266	—	356262	—	—
4-40	UNC	.1120	2	H1	1.875	.563	356308	—	—	—	—
4-40	UNC	.1120	2	H2	1.875	.563	356324	330102	356320	330150	356332
4-48	UNF	.1120	2	H2	1.875	.563	356365	—	356361	—	—
5-40	UNC	.1250	2	H2	1.938	.625	356407	330103	356403	330151	356415
6-32	UNC	.1380	2	H1	2.000	.688	356421	—	—	—	—
6-32	UNC	.1380	2	H2	2.000	.688	356422	330104	356486	—	356498
6-32	UNC	.1380	2	H3	2.000	.688	356506	330105	356502	330152	356514
6-32	UNC	.1380	2	H7	2.000	.688	359005	—	—	—	356510
6-40	UNF	.1380	2	H2	2.000	.688	356548	—	356544	—	—
8-32	UNC	.1640	2	H2	2.125	.750	356589	330106	356858	—	—
8-32	UNC	.1640	2	H3	2.125	.750	356633	330107	356602	330153	356634
8-32	UNC	.1640	2	H7	2.125	.750	359047	—	330138	—	—
8-36	UNF	.1640	2	H2	2.125	.750	356647	—	330139	—	—
10-24	UNC	.1900	2	H1	2.375	.875	356662	—	—	—	—
10-24	UNC	.1900	2	H2	2.375	.875	356688	—	330140	—	—
10-24	UNC	.1900	2	H3	2.375	.875	356704	—	356703	330154	356712
10-24	UNC	.1900	2	H7	2.375	.875	359088	—	330141	—	—
10-32	UNF	.1900	2	H2	2.375	.875	356746	—	356742	—	—
10-32	UNF	.1900	2	H3	2.375	.875	356761	—	356767	330155	356779
10-32	UNF	.1900	2	H7	2.375	.875	359120	—	330142	—	—
12-24	UNC	.2160	2	H3	2.375	.938	356803	330108	356809	330156	—
12-28	UNF	.2160	2	H3	2.375	.938	356845	—	356841	—	—
1/4-20	UNC	.2500	2	H1	2.500	1.000	357009	—	330143	—	—
1/4-20	UNC	.2500	2	H2	2.500	1.000	357025	330109	357021	—	—
1/4-20	UNC	.2500	2	H3	2.500	1.000	357041	330110	357047	—	357058
1/4-20	UNC	.2500	2	H5	2.500	1.000	357066	—	357062	—	—
1/4-20	UNC	.2500	2	H11	2.500	1.000	330111	—	—	—	—
1/4-20	UNC	.2500	3	H3	2.500	1.000	357082	330112	357088	330157	—
1/4-20	UNC	.2500	3	H5	2.500	1.000	357108	—	357101	—	—
1/4-20	UNC	.2500	3	H13	2.500	1.000	358494	—	358490	—	—
1/4-28	UNF	.2500	2	H2	2.500	1.000	330113	—	—	—	—
1/4-28	UNF	.2500	2	H3	2.500	1.000	357165	330114	357161	—	357173
1/4-28	UNF	.2500	3	H2	2.500	1.000	330115	—	—	330158	357179

continued on next page



## Machine Tap for Through or Blind Holes

General Purpose  
Straight Flute Sets

SET

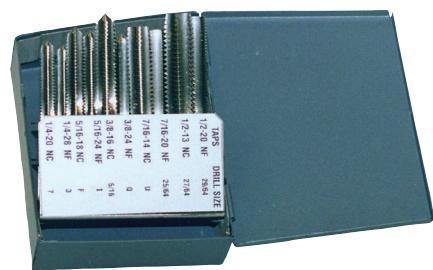
Styles: HTGP and SPGP

Machine  
Taps

## 303SET Plug Hand Tap Set (10-Piece)

style	sizes
H3, 4 Flute	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20

## HTGP

order number  
330082

## HT18 Jobber Drill, Plug Hand Tap Set (18-Piece)

style	sizes
Jobber (Bright)	5/16, 27/64, LET-F, LET-U, #7, #21, #25, #29, #36
H3, 4 Flute	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 6-32, 8-32, 10-24, 10-32

## HTGP

order number  
330083

## HT18T Jobber Drill, Plug Hand Tap Set - TiN (18-Piece)

style	sizes
Jobber (Titanium)	5/16, 27/64, #7, #21, #25, #29, #36, LET-F, LET-U
H3, 4 Flute	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 6-32, 8-32, 10-24, 10-32

## HTGP

order number  
330084

## GT18 Jobber Drill, Plug Spiral PT Tap Set (18-Piece)

style	sizes
Jobber (Bright)	5/16, 27/64, LET-F, LET-U, #7, #21, #25, #29, #36
H3, 2 Flute	1/4-20, 5/16-18, 6-32, 8-32, 10-24, 10-32
H3, 3 Flute	3/8-16, 7/16-14, 1/2-13

## SPGP

order number  
330085

## HT36 Jobber Drill, Plug NC/NF Hand Tap Set (36-Piece)

style	sizes
Jobber (Bright)	5/16, 25/64, 27/64, 29/64, LET-F, LET-I, LET-Q, LET-U, #3, #7, #15, #16, #21, #25, #29, #33, #36
H2, 3 Flute	6-40
H2, 4 Flute	8-36
H3, 3 Flute	6-32
H3, 4 Flute	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 8-32, 10-24, 10-32, 12-24, 12-28,

## HTGP

order number  
330086

## 68 Screw Machine Drill, Plug Hand Tap Set (20-Piece)

style	sizes
Screw Mach (Bright)	5/16, 27/64, #7, #25, #29, #36, #39, #44, LET-F, LET-U
H2, 3 Flute	4-40, 5-40
H3, 3 Flute	6-32
H3, 4 Flute	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 8-32, 10-24

## HTGP

order number  
330087

## HM18 Jobber Drill, Plug Hand Tap Set (18-Piece)

style	sizes
Jobber (Black Oxide)	2.05, 2.50, 2.90, 3.30, 4.20, 5.00, 6.70, 8.5, 10.20
D3, 3 Flute	M2.5x0.45, M3x0.5
D4, 3 Flute	M3.5x0.6, M4x0.7,
D4, 4 Flute	M5x0.8
D5, 4 Flute	M6X1.0, M8X1.25,
D6, 4 Flute	M10x1.5, M12x1.75

## HTGP

order number  
330088



## Spiral Point Taps for Through Holes

Style: SPGP

General Purpose  
Spiral Point - Inch

NEW

P

N

## Note

Tapping speeds - see page 39-41.

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

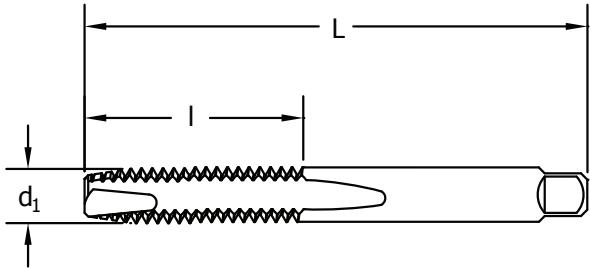
Pipe Taps

Dies

Technical Info

Sets

Index



diameter & pitch	thread form	$d_1$ mm	number of flutes	H-limit	L in	I in	order number		
							Bright	plug	Black Oxide
1/4-20	UNC	.2500	3	H11	2.500	1.000	313500	313555	
1/4-28	UNF	.2500	3	H11	2.500	1.000	313501	313556	
5/16-18	UNC	.3125	3	H11	2.719	1.125	313502	313557	
5/16-24	UNF	.3125	3	H11	2.719	1.125	313503	313558	
3/8-16	UNC	.3750	3	H11	2.938	1.250	313504	313559	
3/8-24	UNF	.3750	3	H11	2.938	1.250	313505	313560	
7/16-14	UNC	.4375	3	H11	3.156	1.438	313506	313561	
7/16-20	UNF	.4375	3	H11	3.156	1.438	313507	313562	
1/2-13	UNC	.5000	3	H11	3.375	1.656	313508	313563	
1/2-20	UNF	.5000	3	H11	3.375	1.656	313509	313564	
5/8-11	UNC	.6250	3	H11	3.813	1.813	313510	313565	
5/8-18	UNF	.6250	3	H11	3.813	1.813	313511	313566	
3/4-10	UNC	.7500	4	H11	4.250	2.000	313512	313567	
3/4-16	UNF	.7500	4	H11	4.250	2.000	313513	313568	

Style: SPGP

Metric - General Purpose  
Spiral Point - Metric

$d_1$ diameter & pitch	number of flutes	D-limit	L in	I in	order number		
					Bright	plug	Black Oxide
M6x1	3	D11	2.500	1.00	313514	313569	
M8x1	3	D11	2.719	1.125	313515	313570	
M8x1.25	3	D11	2.719	1.125	313516	313571	
M10x1	3	D11	2.938	1.25	313517	313572	
M10x1.25	3	D11	2.938	1.25	313518	313573	
M10x1.5	3	D11	2.938	1.25	313519	313574	
M12x1.25	3	D11	3.375	1.656	313520	313575	
M12x1.5	3	D11	3.375	1.656	313521	313576	
M12x1.75	3	D11	3.375	1.656	313522	313577	
M16x1.5	3	D11	3.813	1.813	313523	313578	
M16x2	3	D11	3.813	1.813	313524	313579	

## Spiral Point Taps for Through Holes

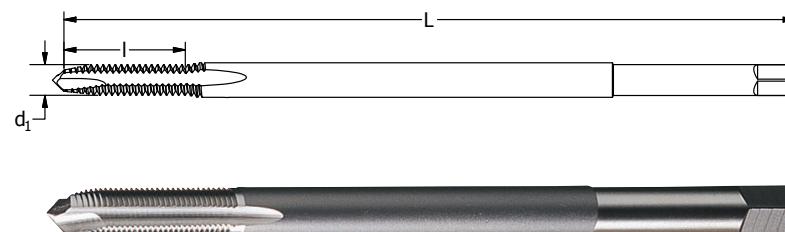
General Purpose  
Extended Length (6")

Style: SPGPX

P N



**Note**  
Tapping speeds - see page 39-41.



diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	I in	order number
8-32	UNC	.1640	2	H3	6.000	.750	918932
10-24	UNC	.1900	2	H3	6.000	.875	918934
10-32	UNF	.1900	2	H3	6.000	.875	918935
1/4-20	UNC	.2500	2	H3	6.000	1.000	918936
1/4-28	UNF	.2500	2	H3	6.000	1.000	918937
5/16-18	UNC	.3125	2	H3	6.000	1.125	918938
5/16-24	UNF	.3125	2	H3	6.000	1.125	918939
3/8-16	UNC	.3750	3	H3	6.000	1.250	918940
3/8-24	UNF	.3750	3	H3	6.000	1.250	918941

NEW

General Purpose - Inch  
Extended Length (6")

Style: SPGPX

P N

**Note**  
Tapping speeds - see page 39-41.

diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	I in	order number
1/4-20	UNC	.2500	3	H11	6"	1.0000	313544 Bright
5/16-18	UNC	.3125	3	H11	6"	1.1250	313545 Black Oxide
3/8-16	UNC	.3750	3	H11	6"	1.2500	313546 Bright
7/16-14	UNC	.4375	3	H11	6"	1.4375	313547 Black Oxide
1/2-13	UNC	.5000	3	H11	6"	1.6562	313548 Bright
5/8-11	UNC	.6250	3	H11	6"	1.8125	313549 Black Oxide

NEW

General Purpose- Metric  
Extended Length (6")

Style: SPGPX

P N

**Note**  
Tapping speeds - see page 39-41.

diameter & pitch	number of flutes	D-limit	L in	I in	order number
M6x1	3	D11	6"	1.0000	313550 Bright
M8x1.25	3	D11	6"	1.1250	313551 Black Oxide
M10x1.5	3	D11	6"	1.2500	313552 Bright
M12x1.75	3	D11	6"	1.6562	313553 Black Oxide
M16x2	3	D11	6"	1.8125	313554 Bright
					313609 Black Oxide



## Spiral Point Taps for Through Holes

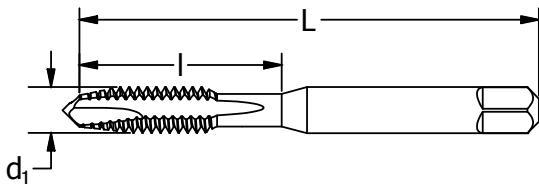
Style: SPLS

General Purpose  
Low Shear

P

N

## Note

Tapping speeds - see  
page 39-41.Machine  
Taps

diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	l in	order number
4-40	UNC	.1120	2	H2	1.875	.563	330175
5-40	UNC	.1250	2	H2	1.938	.625	330176
6-32	UNC	.1380	2	H3	2.000	.688	330177
8-32	UNC	.1640	2	H3	2.125	.750	330178
10-24	UNF	.1900	2	H3	2.375	.875	330179
10-32	UNC	.1900	2	H3	2.375	.875	330180
12-24	UNC	.2160	2	H3	2.375	.938	330181
1/4-20	UNC	.2500	2	H1	2.500	1.000	330182
1/4-20	UNC	.2500	2	H2	2.500	1.000	330183
1/4-20	UNC	.2500	2	H3	2.500	1.000	330184
1/4-20	UNC	.2500	2	H11	2.500	1.000	330185
1/4-28	UNF	.2500	2	H3	2.500	1.000	330186
5/16-18	UNC	.3125	2	H3	2.719	1.125	330187
5/16-24	UNF	.3125	2	H3	2.719	1.125	330188
3/8-16	UNC	.3750	3	H3	2.938	1.250	330189
7/16-14	UNC	.4375	3	H3	3.156	1.438	330190
1/2-13	UNC	.5000	3	H3	3.375	1.656	330191
5/8-11	UNC	.6250	3	H3	3.813	1.813	330192

Spiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

## Spiral Point Taps Aerospace Fasteners

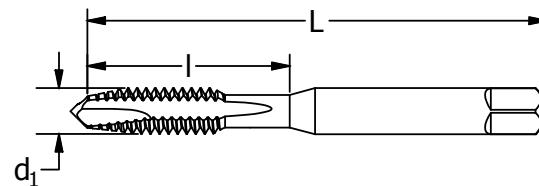
### Spiral Point Taps for Through Holes



Style: SPAR

**P** **N** **M**

**Note**  
Tapping speeds - see page 39-41.



diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	I in	order number
							plug - TiN
6-32	UNC	.1380	3	H3	2.000	.688	285057
8-32	UNC	.1640	3	H3	2.125	.750	285107
10-24	UNC	.1900	3	H3	2.375	.875	285156
10-32	UNF	.1900	3	H3	2.375	.875	285206
10-32	UNF	.1900	3	H5	2.375	.875	285222
1/4-20	UNC	.2500	3	H3	2.500	1.000	285255
1/4-28	UNF	.2500	3	H3	2.500	1.000	285354
1/4-28	UNF	.2500	3	H5	2.500	1.000	285370
5/16-18	UNC	.3125	3	H3	2.719	1.125	285404
5/16-24	UNF	.3125	3	H3	2.719	1.125	285453
5/16-24	UNF	.3125	3	H5	2.719	1.125	285479
3/8-16	UNC	.3750	3	H3	2.938	1.250	285503
3/8-16	UNC	.3750	3	H5	2.938	1.250	285552
3/8-24	UNF	.3750	3	H5	2.938	1.250	285628
7/16-14	UNC	.4375	3	H3	3.156	1.438	285651
7/16-20	UNF	.4375	3	H3	3.156	1.438	285701
1/2-13	UNC	.5000	3	H5	3.375	1.656	285801
1/2-20	UNF	.5000	3	H3	3.375	1.656	285859

Machine Taps

Spiral Point Taps

Spiral Flute Taps

Thread Forming Taps

Pipe Taps

Dies

Technical Info

Sets

Index

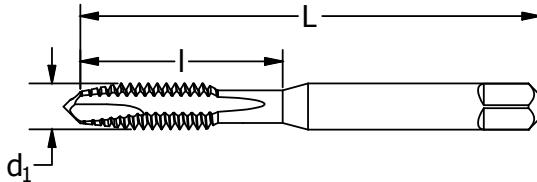


## Spiral Point Taps for Through Holes

Style: SPHD

**P** **N** **M****Note**

Tapping speeds - see page 39-41.

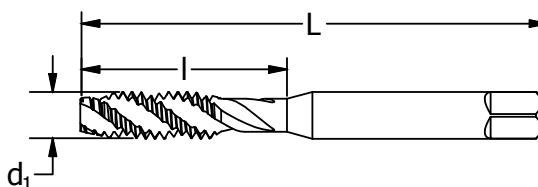


diameter & pitch	thread form	<b>d<sub>1</sub></b> in	number of flutes	H-limit	<b>L</b> in	<b>l</b> in	order number	Bright	TiN
6-32	UNC	.1380	3	H3	2.000	.688	282108	280108	
8-32	UNC	.1640	3	H3	2.125	.750	282157	280157	
10-24	UNC	.1900	3	H3	2.375	.875	282207	280207	
10-32	UNF	.1900	3	H3	2.375	.875	282256	280256	
1/4-20	UNC	.2500	3	H3	2.500	1.000	282306	280306	
1/4-20	UNC	.2500	3	H5	2.500	1.000	282355	280355	
1/4-28	UNF	.2500	3	H3	2.500	1.000	282405	280405	
5/16-18	UNC	.3125	3	H3	2.719	1.125	282454	280454	
5/16-18	UNC	.3125	3	H5	2.719	1.125	282470	280470	
5/16-24	UNF	.3125	3	H3	2.719	1.125	282504	280504	
3/8-16	UNC	.3750	3	H3	2.938	1.250	282553	280553	
3/8-16	UNC	.3750	3	H5	2.938	1.250	282603	280603	
3/8-24	UNF	.3750	3	H3	2.938	1.250	282652	280652	
1/2-13	UNC	.5000	3	H3	3.375	1.656	282801	280801	
1/2-13	UNC	.5000	3	H5	3.375	1.656	282850	280850	
1/2-20	UNF	.5000	3	H3	3.375	1.656	282901	280901	
5/8-11	UNC	.6250	3	H3	3.813	1.813	282959	280959	

Style: SPHD

Metric - Spiral Point Taps  
CNC Heavy-Duty

diameter & pitch	<b>d<sub>1</sub></b> mm	number of flutes	D-limit	<b>L</b> in	<b>l</b> in	order number	Bright	TiCN
M6 x 1.0	6.00	3	D5	2.500	1.000	272550	—	—

**CNC Spiral Flute  
Steels and Stainless Steels****Spiral Flute Taps for Blind Holes****Style: SFS****P    M**
**Note**  
 Tapping speeds - see  
 page 39-41.
**Machine  
Taps****Spiral Point  
Taps****Spiral Flute  
Taps****Thread Forming  
Taps****Pipe Taps****Dies****Technical Info****Sets****Index**

diameter & pitch	thread form	<b>d<sub>1</sub></b> in	number of flutes	H-limit	<b>L</b> in	<b>I</b> in	order number
10-32	UNF	.1900	3	H3	2.375	.875	330465
1/4-20	UNC	.2500	3	H3	2.500	1.000	330466
1/4-20	UNC	.2500	3	H5	2.500	1.000	330489
5/16-18	UNC	.3125	3	H3	2.719	1.125	330468
5/16-18	UNC	.3125	3	H5	2.719	1.125	330490
3/8-16	UNC	.3750	3	H3	2.938	1.250	330470
3/8-16	UNC	.3750	3	H5	2.938	1.250	330491
1/2-13	UNC	.5000	3	H3	3.375	1.656	330474
1/2-13	UNC	.5000	3	H5	3.375	1.656	330494
1/2-20	UNF	.5000	3	H5	3.375	1.656	330495
5/8-11	UNC	.6250	4	H3	3.813	1.813	330478
5/8-11	UNC	.6250	4	H5	3.813	1.813	330496

**Metric - CNC Spiral Flute****Steels and Stainless Steels****Style: SFS**

diameter & pitch	<b>d<sub>1</sub></b> mm	number of flutes	D-limit	<b>L</b> in	<b>I</b> in	order number
M4 x 0.7	4.00	3	D4	2.125	.750	330498
M5 x 0.8	5.00	3	D4	2.375	.875	330499
M6 x 1	6.00	3	D5	2.500	1.000	330502
M8 x 1.25	8.00	3	D5	2.719	1.125	330503
M10 x 1.5	10.00	3	D6	2.938	1.250	330504
M12 x 1.75	12.00	3	D6	3.375	1.656	330505



## Spiral Flute Taps for Blind Holes

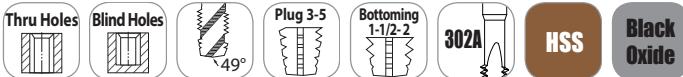
Style: SFHD

P

M

## Note

Tapping speeds - see page 39-41.

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

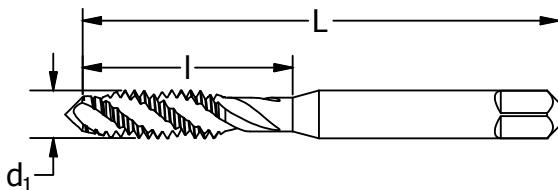
Pipe Taps

Dies

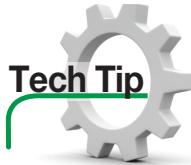
Technical Info

Sets

Index



diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	I in	order number	
							plug Black Oxide	bottoming Black Oxide
6-32	UNC	.1380	3	H3	2.000	.688	281957	282005
8-32	UNC	.1640	3	H3	2.125	.750	282054	282104
10-24	UNC	.1900	3	H3	2.375	.875	282062	282120
10-32	UNF	.1900	3	H3	2.375	.875	282153	282203
1/4-20	UNC	.2500	3	H3	2.500	1.000	282252	282302
1/4-28	UNF	.2500	3	H3	2.500	1.000	282351	282401
5/16-18	UNC	.3125	3	H3	2.719	1.125	282450	282501
5/16-24	UNF	.3125	3	H3	2.719	1.125	282468	282526
3/8-16	UNC	.3750	3	H3	2.938	1.250	282559	282609
3/8-24	UNF	.3750	3	H3	2.938	1.250	282567	282625
1/2-13	UNC	.5000	3	H3	3.375	1.656	282757	282807
1/2-20	UNF	.5000	3	H3	3.375	1.656	282765	282823



## Ground Thread Tap Limits

All standard ground thread taps made to USCTI Tables 327 and 329 will be marked **G** to designate ground thread. **G** will be followed by **H** to designate above basic or **L** for below basic and a numeral to designate the pitch diameter limits. For example: **G H3** indicates a ground thread tap with pitch diameter limits .0010" to .0015" over basic. See table at right.

For taps over 1-1/2" diameter with H or L limit numbers, divide the H or L limit number by 2 to get the amount (in thousandths of an inch) the maximum tap pitch diameter is over basic for the H series or under basic for the L series. In H series taps, the tolerance shown in USCTI Table 331, Column D, subtracted from the maximum pitch diameter will give the minimum pitch diameter. In L series taps the tolerance shown in Table 331, Column D, added to the minimum pitch diameter will give the maximum pitch diameter. These taps will be marked with the appropriate H or L limit number.

## Pitch Diameter Limits

## for taps through 1" diameter

- L1 = basic to basic -.0005
- H1 = basic to basic + .0005
- H2 = basic + .0005 to basic + .0010
- H3 = basic + .0010 to basic + .0015
- H4 = basic + .0015 to basic + .0020
- H5 = basic + .0020 to basic + .0025
- H6 = basic + .0025 to basic + .0030

## for taps over 1" diameter through 1-1/2" diameter

- H4 = basic + .0010 to basic + .0020

## General Purpose Spiral Flute

High-Spiral - Inch

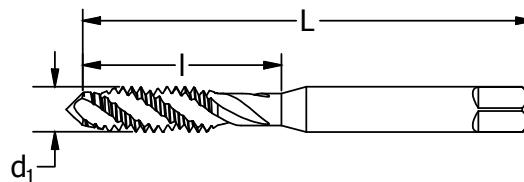
### Spiral Flute Taps for Blind Holes



Style: SFGP

P N


**Note**  
Tapping speeds - see page 39-41.

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	l in	order number			
							Bright	plug	TiN	bottoming
4-40	UNC	.1120	2	H2	1.875	.563	367149	—	—	367156 330202
6-32	UNC	.1380	2	H3	2.000	.688	367222	330193	367230	330203
8-32	UNC	.1640	3	H3	2.125	.750	367263	330194	367271	330204
10-24	UNC	.1900	3	H3	2.375	.875	367305	330195	367313	—
10-32	UNF	.1900	3	H3	2.375	.875	367321	330196	367339	330205
1/4-20	UNC	.2500	3	H3	2.500	1.000	367909	—	367917	367913
1/4-28	UNF	.2500	3	H3	2.500	1.000	367925	—	367933	—
5/16-18	UNC	.3125	3	H3	2.719	1.125	367941	—	367958	—
5/16-24	UNF	.3125	3	H3	2.719	1.125	367966	—	367974	—
3/8-16	UNC	.3750	3	H3	2.938	1.250	367982	—	367990	—
3/8-24	UNF	.3750	3	H3	2.938	1.250	368006	—	368014	—
1/2-13	UNC	.5000	3	H3	3.375	1.656	368063	—	368071	—
1/2-20	UNF	.5000	3	H3	3.375	1.656	368089	—	368097	—

## General Purpose Spiral Flute

High-Spiral - Metric

Style: SFGP

diameter & pitch	$d_1$ mm	number of flutes	D-limit	L in	l in	order number				
						Bright	plug	TiCN	bottoming	
M3 x 0.5	3.00	2	D3	1.938	.625	366110	—	—	366112 330206	
M4 x 0.7	4.00	3	D4	2.125	.750	366130	330197	366132	330207	
M5 x 0.8	5.00	3	D4	2.375	.875	366140	330198	366142	330208	
M 6 x 1.0	6.00	3	D5	2.500	1.000	366150	330199	366152	330209	
M8 x 1.25	8.00	3	D5	2.719	1.125	366160	330200	366162	330210	
M10 x 1.5	10.00	3	D6	2.938	1.250	366170	330201	366172	330211	
M12 x 1.75	12.00	3	D6	3.375	1.656	366180	—	366182	—	



## Spiral Flute Taps for Blind Holes

Style: SFGP

General Purpose Spiral Flute  
- Inch

NEW

P

N

## Note

Tapping speeds - see  
page 39-41.Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

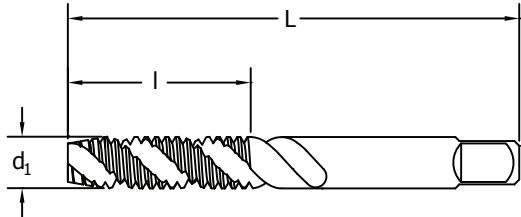
Pipe Taps

Dies

Technical Info

Sets

Index



diameter & pitch	thread form	$d_1$ in	number of flutes	H-limit	L in	I in	order number		
							semi bottoming	Bright	Black Oxide
1/4-20	UNC	.2500	3	H11	2.500	1.000		313525	313580
1/4-28	UNF	.2500	3	H11	2.500	1.000		313526	313581
5/16-18	UNC	.3125	3	H11	2.719	1.125		313527	313582
5/16-24	UNF	.3125	3	H11	2.719	1.125		313528	313583
3/8-16	UNC	.3750	3	H11	2.938	1.250		313529	313584
3/8-24	UNF	.3750	3	H11	2.938	1.250		313530	313585
7/16-14	UNC	.4375	3	H11	3.156	1.438		313531	313586
7/16-20	UNF	.4375	3	H11	3.156	1.438		313532	313587
1/2-13	UNC	.5000	3	H11	3.375	1.656		313533	313588
1/2-20	UNF	.5000	3	H11	3.375	1.656		313534	313589
5/8-11	UNC	.6250	3	H11	3.813	1.813		313535	313590
5/8-18	UNF	.6250	3	H11	3.813	1.813		313536	313591
3/4-10	UNC	.7500	4	H11	4.250	2.000		313537	313592
3/4-16	UNF	.7500	4	H11	4.250	2.000		313538	313593

Style: SFGP

General Purpose Spiral Flute  
- Metric

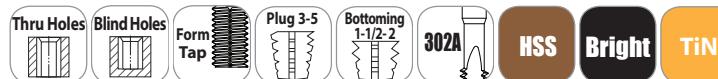
$d_1$ diameter & pitch	number of flutes	D-limit	L in	I in	order number		
					semi bottoming	Bright	Black Oxide
M6x1	3	D11	2.500	1.00		313539	313594
M8x1.25	3	D11	2.719	1.125		313540	313595
M10x1.5	3	D11	2.938	1.25		313541	313596
M12x1.75	3	D11	3.375	1.656		313542	313597
M16x2	3	D11	3.813	1.813		313543	313598

## General Purpose Thread Forming

### Pipe Taps



#### Styles: FTGP

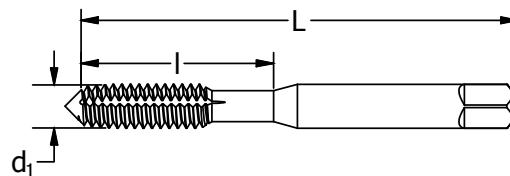


**P** **N**

#### Note

Modify tapping speeds listed on page 39-41 as follows: double the speeds versus thread cutting taps.

\* #0 - #3: 302 blank style.



diameter & pitch	thrd form	$d_1$ in	H-limit	L in	I in	order number			
						plug	bottoming	Bright	TiN
*0-80	UNF	.0600	H2	1.625	.313	—	—	330214	—
*2-56	UNC	.0860	H2	1.750	.438	—	—	330215	—
4-40	UNC	.1120	H3	1.875	.563	289004	—	289012	—
5-40	UNC	.1250	H3	1.938	.625	289087	—	289095	—
6-32	UNC	.1380	H3	2.000	.688	289202	287004	289210	287053
6-32	UNC	.1380	H5	2.000	.688	289228	287103	289236	287152
8-32	UNC	.1640	H3	2.125	.750	289269	287202	289277	287251
8-32	UNC	.1640	H5	2.125	.750	289285	287301	289293	287350
10-24	UNC	.1900	H4	2.375	.875	289368	287400	289376	287459
10-24	UNC	.1900	H6	2.375	.875	289384	287509	289392	287558
10-32	UNF	.1900	H4	2.375	.875	289426	—	289434	—
10-32	UNF	.1900	H6	2.375	.875	289442	287608	289459	287657
1/4-20	UNC	.2500	H4	2.500	1.000	289525	—	289533	—
1/4-20	UNC	.2500	H6	2.500	1.000	289541	287707	289558	287756
1/4-28	UNF	.2500	H4	2.500	1.000	289582	—	289590	—
5/16-18	UNC	.3125	H5	2.719	1.125	289640	—	289657	—
5/16-18	UNC	.3125	H7	2.719	1.125	289665	287905	289673	287954
3/8-16	UNC	.3750	H7	2.938	1.250	289780	288101	289798	288150
3/8-24	UNF	.3750	H5	2.938	1.250	330212	—	—	—
3/8-24	UNF	.3750	H7	2.938	1.250	330213	—	—	—
1/2-13	UNC	.5000	H8	3.375	1.656	289988	288408	289996	288457

## Metric - General Purpose Thread Forming

#### Style: FTGP

diameter & pitch	$d_1$ mm	D-limit	L in	I in	order number			
					plug	bottoming	Bright	TiN
M3 x 0.5	3.00	D5	1.938	.625	291001	291006	291018	291014
M4 x 0.7	4.00	D6	2.125	.750	291083	291089	291091	291097
M5 x 0.8	5.00	D7	2.375	.875	291125	291123	291133	291139
M6 x 1.0	6.00	D8	2.500	1.000	291166	291162	291174	291170
M8 x 1.25	8.00	D9	2.719	1.125	291240	291246	291257	291253
M10 x 1.5	10.00	D10	2.938	1.250	291176	291287	291178	291295



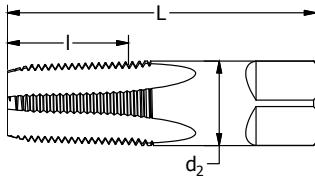
## Pipe Taps

Style: PTT

P

## Note

Tapping speeds - see page 39-41.



diameter & pitch	d <sub>2</sub> in	number of flutes	L in	I in	order number			
					NPT Bright	NPT TiN	NPTF Bright	NPTF TiN
1/16-27	.3125	4	2.1250	0.6875	385307	385328	385323	385329
*1/8-27	.3125	4	2.1250	0.7500	385331	385357	385356	385359
1/8-27	.4375	4	2.1250	0.7500	385364	385385	385380	385386
1/4-18	.5625	4	2.4375	1.0625	385398	385409	385413	385410
3/8-18	.7000	4	2.5625	1.0625	385422	385443	385448	385444
1/2-14	.6875	4	3.1250	1.3750	385455	385458	385471	385477
3/4-14	.9063	5	3.2500	1.3750	385489	385500	385505	385501
1 - 11-1/2	1.1250	5	3.7500	1.7500	385513	385534	385539	385536
1-1/4 - 11-1/2	1.3125	5	4.0000	1.7500	385547	385680	385562	385685
1-1/2 - 11-1/2	1.5000	7	4.2500	1.7500	385570	385681	—	—
2 - 11-1/2	1.8750	7	4.5000	1.7500	385604	385682	—	—

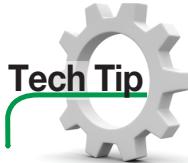
\* small shank

## Taper Pipe

NPT/NPTF Medium Hook

SET

Style: PTT

order number  
NPT Pipe Tap: 1/8 - 1" NPT  
353768

## Tap Drill Recommendations - NPT, NPTF, NPSM, NPSC, NPSF Sizes

## Color Code:

Wire Gage - Purple

Fractional - Red,  
Letter - Blue,  
and

Metric Sizes - Green

Nominal Tap Size & Pitch	NPT & NPTF		NPSM	NPSC	NPSF
	w/o reamer	w/ reamer			
1/16 - 27	C (.242)	A (.234)	—	1/4	D (.246)
1/8 - 27	Q (.332)	21/64	T (.358)	Q	R (.339)
1/4 - 18	7/16	27/64	15/32	7/16	7/16
3/8 - 18	9/16	9/16	.603*	37/64	37/64
1/2 - 14	45/64	11/16	19.0mm	23/32	.705*
3/4 - 14	29/32	57/64	61/64	59/64	59/64
1 - 11 1/2	1-9/64	1-1/8	1-13/64	1-5/32	1-5/32
1 1/4 - 11 1/2	1-31/64	1-15/32	1.546*	1-1/2	—
1 1/2 - 11 1/2	1-23/32	1-45/64	1-25/32	1-47/64	—
2 - 11 1/2	2-3/16	2-11/64	2-1/4	2-1/4	—

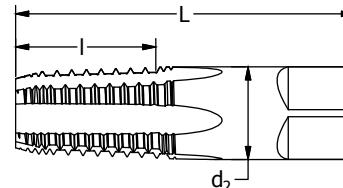
\*special

**Taper Pipe**

NPT/NPTF Medium Hook Interrupted

**Pipe Taps**

Style: PTTI

**P****Note**Tapping speeds -  
see page 39-41.

diameter & pitch	$d_2$ in	number of flutes	L in	l in	NPT Bright	NPTF Bright	NPTF TiN
*1/8-27	.3125	5	2.125	.750	—	385752	—
1/8-27	.4375	5	2.125	.750	385737	385729	385755
1/4-18	.5625	5	2.438	1.063	385760	385786	385789
3/8-18	.7000	5	2.563	1.063	385794	385810	385813
1/2-14	.6875	5	3.125	1.375	385828	385844	385847
3/4-14	.9063	5	3.250	1.375	385851	385877	385870
1-11-1/2	1.1250	5	3.750	1.750	385885	—	—

\* small shank

Machine Taps

Spiral Point Taps

Spiral Flute Taps

Thread Forming Taps

Pipe Taps

Dies

Tech Tip

**Pipe Taps**

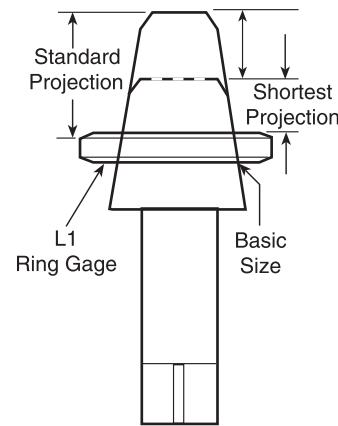
General purpose pipe taps are appropriate for threading a wide variety of materials, both ferrous and non-ferrous.

Ground thread pipe taps are standard in American Standard Pipe Form (NPT) and American Standard Dryseal Pipe Form (NPFT). NPT threads require the use of a sealer, like Teflon® tape or pipe compound. Dryseal taps are used to tap fittings which will give a pressure-tight joint without the use of a sealer.

The nominal size of a pipe tap is that of the pipe fitting to be tapped, not the actual size of the tap. The thread tapers 3/4" per foot.

All pipe taps are furnished with 2 1/2 to 3-1/2 thread chamfer.

Short projection pipe taps are made with a projection shorter than standard for taper pipe tapping where the depth of tapping is limited. Special short projection pipe taps and left hand pipe taps are available as specials.





## Pipe Taps

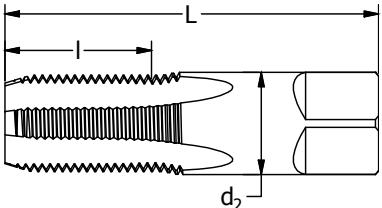
## Style: PTS

NPS/NPSM/NPSC/NPSF

Medium Hook Straight Pipe

P

## Note

Tapping speeds -  
see page 39-41.

diameter & pitch	$d_2$ in	number of flutes	L in	I in	order number		
					NPS/NPSM	NPSC Bright	NPSF Bright
*1/8-27	.3125	4	2.125	.750	—		387212
1/8-27	.4375	4	2.125	.750	387113		387220
1/4-18	.5625	4	2.438	1.063	387121		387238
3/8-18	.7000	4	2.563	1.063	387139		387246
1/2-14	.6875	4	3.125	1.375	387147		387253

\* small shank

Machine Taps

Spiral Point Taps

Spiral Flute Taps

Pipe Taps

Dies

Technical Info

Sets

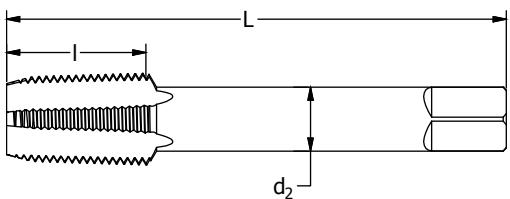
Index

## Style: ELPTT

## CNC Extra Length Med. Hook with Machine Tap Shanks

P

## Note

Tapping speeds -  
see page 39-41.

diameter & pitch	$d_2$ in	number of flutes	L in	I in	order number		
					NPT Bright	NPTF Bright	NPTF TiN
1/8-27	0.318	4	3.000	.750	384524	386008	386129
1/4-18	0.480	4	3.500	1.063	384525	386024	386152
3/8-18	0.480	4	3.750	1.063	384526	386040	386186
1/2-14	0.480	4	4.375	1.375	384527	—	—
3/4-14	0.800	5	4.625	1.375	384528	—	—
1-11-1/2	0.800	5	5.250	1.750	384529	—	—

Inch - Carbon Steel  
Re-threading Dies

## Hexagon Dies



Style: 377

Machine Taps

Spiral Point Taps

Spiral Flute Taps

Thread Forming Taps

Pipe Taps

Dies

Technical Info

Sets

Index

MOST GENERAL PURPOSE MATERIALS

## Note

For dressing over bruised or rusty threads.

No special holder required; use standard wrenches.



Carbon Steel

Bright

die diameter TPI & series	decimal equivalent	length across flats - in	thickness in	order number carbon steel
1/4-20	.2500	.5938	.2500	403108
1/4-28	.2500	.5938	.2500	403116
5/16-18	.3125	.6875	.3125	403124
5/16-24	.3125	.6875	.3125	403132
3/8-16	.3750	.7812	.3750	403140
3/8-24	.3750	.7812	.3750	403157
7/16-14	.4375	.8750	.4375	403165
7/16-20	.4375	.8750	.4375	403173
1/2-13	.5000	1.0625	.5000	403181
1/2-20	.5000	1.0625	.5000	403199
9/16-12	.5625	1.0625	.5000	403207
9/16-18	.5625	1.0625	.5000	403215
5/8-11	.6250	1.2500	.6250	403223
5/8-18	.6250	1.2500	.6250	403231
11/16-11	.6875	1.4375	.7500	403249
11/16-16	.6875	1.4375	.7500	403256
3/4-10	.7500	1.4375	.7500	403264
3/4-16	.7500	1.4375	.7500	403272
7/8-9	.8750	1.6250	.8750	403280
7/8-14	.8750	1.6250	.8750	403298
1-8	1.0000	1.8125	1.0000	403306
1-12	1.0000	1.8125	1.0000	403314
1-14	1.0000	1.8125	1.0000	403322
1-1/8-7	1.1250	2.0000	1.0000	403330
1-1/8-12	1.1250	2.0000	1.0000	403348
1-1/4-7	1.2500	2.1875	1.0000	403355
1-1/4-12	1.2500	2.1875	1.0000	403363
1-3/8-6	1.4100	2.3750	1.0000	403371
1-3/8-12	1.4100	2.3750	1.0000	403389
1-1/2-6	1.5000	2.5625	1.0000	403397
1-1/2-12	1.5000	2.5625	1.0000	403405

## Taper - Carbon Steel

Re-threading Dies

Style: 377

die diameter TPI & series	decimal equiv.	length across flats - in	thickness in	order number carbon steel
1/8-27	.1250	1.0625	.3750	411895
1/4-18	.2500	1.2500	.6250	411896
3/8-18	.3750	1.4375	.6250	411897
1/2-14	.5000	1.6250	.7500	411898
3/4-14	.7500	2.0000	.8125	411899
1 - 11 1/2	1.0000	2.3750	1.0000	411900

metric sizes on next page



## Hexagon Dies

## Style: 377

Metric - Carbon Steel  
Re-threading Dies

die diameter & TPI	decimal equiv.	mm equiv.	length across flats - in	thickness in	order number carbon steel
M5 x 0.8	.1969	5.00	.5938	.2500	404808
M6 x 1	.2362	6.00	.5938	.2500	404809
M8 x 1.25	.3150	8.00	.6875	.3125	404833
M10 x 1.5	.3937	10.00	.8750	.4375	404858
M12 x 1.75	.4724	12.00	1.0125	.5000	404882
M14 x 2	.5512	14.00	1.0125	.5000	404916
M16 x 2	.6299	16.00	1.2500	.6250	404932
M20 x 2.5	.7874	20.00	1.6250	.8750	404973

## SET

## Style: 377

Carbon Steel  
Re-threading Dies

set number	number of sizes	die sizes		order number
		1/4-20 NC	1/2-13 NC	
481	8	5/16-18 NC	9/16-12 NC	403512
		3/8-16 NC	5/8-11 NC	
		7/16-14 NC	3/4-10 NC	
482	10	1/4-20 NC	9/16-12 NC	403553
		5/16-18 NC	5/8-11 NC	
		3/8-16 NC	3/4-10 NC	
		7/16-14 NC	7/8-9 NC	
		1/2-13 NC	1-8 NC	
490	10	1/4-20 NC	1/4-28 NF	403520
		5/16-18 NC	5/16-24 NF	
		3/8-16 NC	3/8-24 NF	
		7/16-14 NC	7/16-20 NF	
		1/2-13 NC	1/2-20 NF	
492	20	1/4-20 NC	1/4-28 NF	403595
		5/16-18 NC	5/16-24 NF	
		3/8-16 NC	3/8-24 NF	
		7/16-14 NC	7/16-20 NF	
		1/2-13 NC	1/2-20 NF	
		9/16-12 NC	9/16-18 NF	
		5/8-11 NC	5/8-18 NF	
		3/4-10 NC	3/4-16 NF	
		7/8-9 NC	7/8-14 NF	
		1-8 NC	1-14 NF	
485	7	M6 x 1	M14 x 2	403522
		M8 x 1.25	M16 x 2	
		M10 x 1.5	M20 x 2.5	
		M12 x 1.75		

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

## Round Adjustable Dies



## Inch - Round Adjustable Dies

382 - Carbon Steel / 6392 - HSS

Styles: 382 and 6382



## Note

Use in hand-held die stocks or machine holders.

Chamfered on both faces, 2 to 3 threads on one side and 1 to 2-1/2 threads on the other for threading close to the shoulder.

Beveled screw slot to remove screw when die is used in a machine holder.

Pipe and Metric sizes after inch.



Machine Taps

Spiral Point Taps

Spiral Flute Taps

Thread Forming Taps

Pipe Taps

Dies

Technical Info

Sets

Index

## order number

die diameter TPI & series	decimal equiv.	outside dia. in	thickness in	style 382 carbon steel	style 6382 high-speed steel
0-80	UNF	.0600	.8125	.2500	401003
1-64	UNC	.0730	.8125	.2500	401029
1-72	UNF	.0730	.8125	.2500	401037
2-56	UNC	.0860	.8125	.2500	401045
2-64	UNF	.0860	.8125	.2500	401052
3-48	UNC	.0990	.8125	.2500	401060
3-56	UNF	.0990	.8125	.2500	401078
4-40	UNC	.1120	.8125	.2500	401102
4-48	UNF	.1120	.8125	.2500	401110
5-40	UNC	.1250	.8125	.2500	401128
5-44	UNF	.1250	.8125	.2500	401129
6-32	UNC	.1380	.8125	.2500	401168
6-32	UNC	.1380	1.000	.3750	401409
6-40	UNF	.1380	.8125	.2500	401169
8-32	UNC	.1640	.8125	.2500	401177
8-32	UNC	.1640	1.0000	.3750	401433
8-36	UNF	.1640	.8125	.2500	400178
10-24	UNC	.1900	.8125	.2500	401201
10-24	UNC	.1900	1.0000	.3750	401466
10-32	UNF	.1900	.8125	.2500	401227
10-32	UNF	.1900	1.0000	.3750	401482
12-24	UNC	.2160	.8125	.2500	401242
12-24	UNC	.2160	1.0000	.3750	401490
12-28	UNF	.2160	.8125	.2500	401243
1/4-20	UNC	.2500	.8125	.2500	401244
1/4-20	UNC	.2500	1.0000	.3750	401979
1/4-20	UNC	.2500	1.5000	.5000	402209
1/4-20	UNC	.2500	2.0000	.6250	402407
1/4-28	UNF	.2500	.8125	.2500	—
1/4-28	UNF	.2500	1.0000	.3750	401995
1/4-28	UNF	.2500	1.5000	.5000	402225
1/4-28	UNF	.2500	2.0000	.6250	402423
5/16-18	UNC	.3125	.8125	.2500	—
5/16-18	UNC	.3125	1.0000	.3750	402019
5/16-18	UNC	.3125	1.5000	.5000	402241
5/16-18	UNC	.3125	2.0000	.6250	402449
5/16-24	UNF	.3125	.8125	.2500	—
5/16-24	UNF	.3125	1.0000	.3750	402027
5/16-24	UNF	.3125	1.5000	.5000	402258
5/16-24	UNF	.3125	2.0000	.6250	402456

continued on next page



## Round Adjustable Dies

Styles: 382 and 6382 (continued)

Inch - Round Adjustable Dies

382 - Carbon Steel / 6392 - HSS

die diameter TPI & series	decimal equiv.	outside dia in	thickness in	order number style 382 carbon steel	style 6382 high-speed steel
3/8-16	UNC .3750	1.0000	.3750	402043	400344
3/8-16	UNC .3750	1.5000	.5000	402274	400445
3/8-16	UNC .3750	2.0000	.6250	402472	—
3/8-24	UNF .3750	1.0000	.3750	402050	400351
3/8-24	UNF .3750	1.5000	.5000	402282	400450
3/8-24	UNF .3750	2.0000	.6250	402480	—
7/16-14	UNC .4375	1.0000	.3750	402068	400369
7/16-14	UNC .4375	1.5000	.5000	402290	400468
7/16-14	UNC .4375	2.0000	.6250	402498	—
7/16-20	UNF .4375	1.0000	.3750	402076	400377
7/16-20	UNF .4375	1.5000	.5000	402308	400476
7/16-20	UNF .4375	2.0000	.6250	402506	—
1/2-13	UNC .5000	1.0000	.3750	402077	—
1/2-13	UNC .5000	1.5000	.5000	402316	400484
1/2-13	UNC .5000	2.0000	.6250	402514	—
1/2-20	UNF .5000	1.0000	.3750	402078	—
1/2-20	UNF .5000	1.5000	.5000	402324	400492
1/2-20	UNF .5000	2.0000	.6250	402522	—
9/16-12	UNC .5625	1.5000	.5000	402332	400500
9/16-12	UNC .5625	2.0000	.6250	402530	—
9/16-18	UNF .5625	1.5000	.5000	402340	400518
9/16-18	UNF .5625	2.0000	.6250	402548	—
5/8-11	UNC .6250	1.5000	.5000	402357	400526
5/8-11	UNC .6250	2.0000	.6250	402555	400609
5/8-11	UNC .6250	2.5000	.7500	402746	—
5/8-18	UNF .6250	1.5000	.5000	402365	400534
5/8-18	UNF .6250	2.0000	.6250	402563	400617
3/4-10	UNC .7500	1.5000	.5000	402370	—
3/4-10	UNC .7500	2.0000	.6250	402597	400625
3/4-10	UNC .7500	2.5000	.7500	402787	—
3/4-16	UNF .7500	1.5000	.5000	402377	—
3/4-16	UNF .7500	2.0000	.6250	402605	400633
3/4-16	UNF .7500	2.5000	.7500	402795	—
7/8-9	UNC .8750	2.0000	.6250	402613	400641
7/8-9	UNC .8750	2.5000	.7500	402803	—
7/8-14	UNF .8750	2.0000	.6250	402621	400658
7/8-14	UNF .8750	2.5000	.7500	402811	—
1-8	UNC 1.0000	2.0000	.6250	402625	—
1-8	UNC 1.0000	2.5000	.7500	402829	—
1-8	UNC 1.0000	3.0000	1.0000	402902	—
1-12	UNF 1.0000	2.0000	.6250	402627	—
1-12	UNF 1.0000	2.5000	.7500	402837	—
1-12	UNF 1.0000	3.0000	1.0000	402910	—
1-14	UNF 1.0000	2.0000	.6250	402630	—
1-1/8-7	UNC 1.1250	3.0000	1.0000	402936	—
1-1/8-12	UNF 1.1250	3.0000	1.0000	402944	—
1-1/4-7	UNC 1.2500	3.0000	1.0000	402951	—
1-1/4-12	UNF 1.2500	3.0000	1.0000	402969	—
1-3/8-6	UNC 1.3750	3.0000	1.0000	402977	—
1-3/8-12	UNF 1.3750	3.0000	1.0000	402985	—
1-1/2-6	UNC 1.5000	3.0000	1.0000	402993	—
1-1/2-12	UNF 1.5000	3.0000	1.0000	403009	—

pipe and metric sizes continued on next page

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

**Pipe - Round Adjustable Dies**  
**383 - Carbon Steel / 6382 - HSS**
**Round Adjustable Dies****Styles: 383**

die diameter TPI & series	decimal equiv.	outside dia in	thickness in	order number <b>style 383</b> carbon steel
1/8-27	NPT	.1250	1.0000	.3750 405202
1/8-27	NPT	.1250	1.5000	.5000 405251
1/4-18	NPT	.2500	1.5000	.5000 405269
1/4-18	NPT	.2500	2.0000	.6250 405301
3/8-18	NPT	.3750	1.5000	.5000 405277
3/8-18	NPT	.3750	2.0000	.6250 405319
1/2-14	NPT	.5000	2.0000	.6250 405327

Pipe size round adjustable dies are not split.

**Metric - Round Adjustable Dies****6382 - HSS****Styles: 6382 (continued)**

die diameter TPI & series	decimal equiv.	mm equiv.	outside dia in	thickness in	order number <b>style 6382</b> high-speed steel
M2.5 x 0.45	.0984	2.50	.8125	.2500	415721
M3 x 0.5	.1181	3.00	.8125	.2500	415724
M3.5 x 0.6	.1378	3.50	.8125	.2500	415732
M4 x 0.7	.1575	4.00	.8125	.2500	415737
M4.5 x 0.75	.1772	4.50	.8125	.2500	415742
M5 x 0.8	.1969	5.00	.8125	.2500	415747
M6 x 1	.2362	6.00	.8125	.2500	415757
M6 x 1	.2362	6.00	1.0000	.3750	415801
M7 x 1	.2756	7.00	1.0000	.3750	415807
M8 x 1.25	.3150	8.00	1.0000	.3750	415813
M10 x 1.5	.3937	10.00	1.0000	.3750	415824
M12 x 1.75	.4724	12.00	1.0000	.3750	415833
M14 x 2	.5512	14.00	1.5000	.5000	415880
M16 x 2	.6300	16.00	1.5000	.5000	415889
M18 x 2.5	.7087	18.00	1.5000	.5000	415896
M20 x 2.5	.7874	20.00	1.5000	.5000	415901

**Die Stock****Round Adjustable Dies****Styles: 1750 and 1790**

Style 1750 holds round adjustable dies with three adjusting screws.

Style 1790 stocks have built-in workpiece guide and lock in place with two set screws.



product number	die o.d.	overall length	order no. <b>style 1750</b>
#1851	13/16	7	420514
#2	13/16	6-1/4	423008
#1852	1	10-1/2	420522
#3	1	9	423009
#1853	1-1/2	14-1/2	420548
#5	1-1/2	13-7/8	423010
#6	2	23	420555
#7	2-1/2	29	420563
#8	3	40	420571

product number	die o.d.	overall length	order no. <b>style 1790</b>
#13	13/16	6-1/4	423011
#14	1	13	423012
#15	1-1/2	17-3/4	423013
#16	2	26	423014



# Little Giant®<sup>®</sup>

## Two-Piece Die System

### Die Systems



**Styles: 380, 1383, 1384, 1385, 1386**

**Carbon Steel**    **Bright**

- Little Giant® Two-Piece Die System consists of these parts  
Series 380 — Die  
Series 1383 — Cap  
Series 1384 — Guide  
Series 1385 — Collet
- Inch sizes are sold as a complete assembly or in their component parts.
- Metric sizes are sold in their component parts only.

- Use with Style 1381 Little Giant® die stocks.
- Collet assembly for use with Little Giant® dies consists of a cap and a guide; order cap and guide separately, or assembled as a collet.
- Die halves are seated in the beveled cap slot and held in place by the guide, which screws into the underside of the cap.
- Die is adjusted by the set screws at either end of the slot.

- Caps of a given outside diameter are made with several different sizes of slots.
- Separate guide is required for each cutting size.
- To order separate guides, specify cutting size of the die and the size of the collet for 1/4" through 1/2" dies.
- For metric sizes where guide and collet assembly are not available, use Style 1382 Little Giant® Jr. die stock to hold dies.

*Style 1386*



*Style 380*



*Style 1385  
(combined Cap and Guide)*



*Style 1383*



*Style 1384*



### Inch Sizes

nominal size tpi and series	decimal equiv.	style 1386	style 380	style 1385	style 1383	style 1384
4-40	UNC .1120	423019	A1	423058	A1	423100
6-32	UNC .1380	423020	A1	423059	A1	423101
8-32	UNC .1640	423021	A1	423060	A1	423102
10-24	UNC .1900	423022	A1	423061	A1	423103
10-32	UNF .1900	423023	A1	423062	A1	423103
12-24	UNC .2160	423024	A1	423063	A1	423104
1/4-20	UNC .2500	423025	A1	423064	A1	423105
1/4-20	UNC .2500	423026	A	423065	1	423106
1/4-20	UNC .2500	423027	A	423065	5	423107
1/4-28	UNF .2500	423028	A1	423067	A1	423105
1/4-28	UNF .2500	423029	A	423068	1	423106
1/4-28	UNF .2500	423030	A	423068	5	423107
5/16-18	UNC .3125	423031	A	423069	1	423108
5/16-18	UNC .3125	423032	A	423069	5	423109
5/16-24	UNF .3125	423033	A	423070	1	423108
5/16-24	UNF .3125	423034	A	423070	5	423109
3/8-16	UNC .3750	423035	B	423071	1	423110
3/8-16	UNC .3750	423036	B	423071	5	423111
3/8-24	UNF .3750	423037	B	423072	1	423110
3/8-24	UNF .3750	423038	B	423072	5	423111
7/16-14	UNC .4375	423039	B	423073	1	423112
7/16-14	UNC .4375	423040	B	423073	5	423113
7/16-20	UNF .4375	423041	B	423074	1	423112
7/16-20	UNF .4375	423042	B	423074	5	423113
1/2-13	UNC .5000	423043	B	423075	1	423114
1/2-13	UNC .5000	423044	C	423076	5	423115
1/2-20	UNF .5000	423045	B	423077	1	423114
1/2-20	UNF .5000	423046	C	423078	5	423115
9/16-12	UNC .5625	423047	C	423079	5	423116
9/16-18	UNF .5625	423048	C	423080	5	423116
5/8-11	UNC .6250	423049	C	423081	5	423117
5/8-18	UNF .6250	423050	C	423082	5	423117
3/4-10	UNC .7500	423051	C	423083	5	423118
3/4-16	UNF .7500	423052	C	423084	5	423118
7/8-9	UNC .8750	423053	D	423085	5	423119
7/8-14	UNF .8750	423054	D	423086	5	423119
1-8	UNC 1.0000	423055	D	423087	5	423120
1-12	UNF 1.0000	423056	D	423088	5	423120
1-14	UNS 1.0000	423057	D	423089	5	423120



## Die Systems

## Styles: 1386 (continued)

Metric - Little Giant®  
Two-Piece Die System

nominal size and tpi	decimal equiv.	mm equiv.	style 380		style 1385		style 1383		style 1384
			die blank	die order number	collet assembly no.	order no.	cap o.d.	cap order no.	guide order no.
M6 x 1	.2362	6.00	A	423090	5	*	2.750	*	423149
M8 x 1.25	.3150	8.00	A	423091	5	*	2.750	*	423150
M10 x 1.5	.3937	10.00	B	423092	5	*	2.750	*	423151
M12 x 1.75	.4724	12.00	B	423093	5	*	2.750	*	423152
M14 x 2	.5512	14.00	C	423094	5	423115	2.750	423126	423153
M16 x 2	.6300	16.00	C	423095	5	423116	2.750	423126	423154
M18 x 2.5	.7087	18.00	C	423096	5	423117	2.750	423126	423155
M20 x 2.5	.7874	20.00	C	423097	5	423118	2.750	423126	423156
M22 x 2.5	.8661	22.00	D	423098	5	423119	2.750	423127	423157
M24 x 3	.9449	24.00	D	423099	5	423120	2.750	423127	423158

\*Use Style 382 Quick-Set Jr. die stock instead of collet assembly for these sizes.

SET

Style: 1386

## Little Giant®

## Two-Piece Die System Set

## Tap &amp; Die Sets with Collet

- Carbon steel two-piece dies and collets
- Hand taps
- Tap wrench, die stock

set no.	no. of sizes	tap & die sizes	collet no.	tap wrench	die stock	order no.	
59	7	4-40 NC 6-32 NC 8-32 NC 1/4-20 NC	10-24 NC 10-32 NF 12-24 NC	A1	T9, A1	A1	423159
510	5	1/4-20 NC 5/16-18 NC 3/8-16 NC	7/16-14 NC 1/2-13 NC	1	#5	#1	423160
511	10	1/4-20 NC 5/16-18 NC 3/8-16 NC 7/16-14 NC 1/2-13 NC	9/16-18 NC 5/8-18 NC 3/4-16 NC 7/8-14 NC 1-8 NC	5	#5, #7	5A	423161
512	10	1/4-20 NC 5/16-18 NC 3/8-16 NC 7/16-14 NC 1/2-13 NC	1/4-28 NF 5/16-24 NF 3/8-24 NF 7/16-20 NF 1/2-20 NF	1	#5	#1	423162
513	20	1/4-20 NC 5/16-18 NC 3/8-16 NC 7/16-14 NC 1/2-13 NC 9/16-12 NC 5/8-11 NC 3/4-10 NC 7/8-9 NC 1-8 NC	1/4-28 NF 5/16-24 NF 3/8-24 NF 7/16-20 NF 1/2-20 NF 9/16-18 NF 5/8-18 NF 3/4-16 NF 7/8-14 NF 1-14 NS	1.5	#5, #7	#1, #5B	423163
514	7	M6 x 1 M8 x 1.25 M10 x 1.5 M12 x 1.75	M14 x 2 M16 x 2 M18 x 2.5	5	#6	#5	423164

## Tap &amp; Die Set without Collet

- Carbon steel Quick-Set two-piece dies and guides.
- HSS production hand taps
- Tap wrenches
- Die stock to hold dies without collet

set no.	# of sizes	tap & die sizes	tap wrench	die stock	order no.
58	20	1/4-20 NC 5/16-18 NC 3/8-16 NC 7/16-14 NC 1/2-13 NC 9/16-12 NC 5/8-11 NC 3/4-10 NC 7/8-9 NC 1-8 NC	1/4-28 NF 5/16-24 NF 3/8-24 NF 7/16-20 NF 1/2-20 NF 9/16-18 NF 5/8-18 NF 3/4-16 NF 7/8-14 NF 1-14 NS	#5, #7 #1, #5	423165

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies  
Technical Info

Sets

Index

**Little Giant® Accessories**

Two-Piece Die with collet

Style: 1381

[Carbon Steel](#)
[Steam Oxide](#)

- Use with all Series 1386 Little Giant collets with two-piece dies.
- Little Giant die stocks have center holes corresponding to the outside diameter of the Little Giant collets.



stock no.	collet no.	collet capacity	length of stock	order number
#A1	A1	1-1/4	7-1/2	423166
#1	1	2	14-1/2	423167
#5	5	2-3/4	23	423168
#5A	5	2-3/4	26	423169
#5B	5	2-3/4	29	423170

**Little Giant Jr.® Accessories**

Two-Piece Die without collet

Style: 1382

[Carbon Steel](#)
[Steam Oxide](#)

- Use with all Series 380 Little Giant two-piece dies without collet.
- Little Giant Jr. die stocks are designed to use Little Giant dies without collets.
- Double slots enable use of two different size blanks in the same stock.
- Dies fit directly into the stock and are held in place by a screw guide.



stock no.	cutting size	die blank size	guide no.	cutting size range	length of stock	order number
#1	1/4 to 5/16 3/8 to 1/2	A B	1	1/4 to 1/2	14-1/2	423171
#5	9/16 to 3/4 7/8 to 1	C D	5	9/16 to 1	26	423172

**Little Giant® Accessories**

Spanner Wrench

Style: A1

- Because A1 guides are so small and round instead of square, a standard wrench cannot be used.
- Fits into two holes to turn guide.

stock no.	collet no.	collet capacity	order number
#A1	A1	1-1/4	423173



## Accessories

## Style: 300

Dies - Tap Wrenches  
Standard Straight**Note**

Used for hand tapping



product number	mach screw	tap size ranges fractional	metric	pipe	overall length	order number
0	0 to 14	1/16 to 1/4	M1.5 to M6.3		7	420910
14	0 to 14	1/16 to 3/8	M1.5 to M10	—	9	423015
5	8 to 14	5/32 to 1/2	M4 to M12.5	1/8	11	420936
6	8 to 14	5/32 to 3/4	M4 to M19	1/8 to 1/4	15	420944
7	—	1/4 to 1-1/8	M12 to M28	1/8 to 3/4	19	420951
8	—	3/4 to 1-5/8	M19 to M40	3/8 to 1-1/4	40	420977
22	—	1 to 2-1/2	M25 to M56	3/4 to 2	54	423016

## Style: 330

Dies - Tap Wrenches  
Plain T-Handle**Note**

Used for hand tapping in out-in-the-open jobs



product number	mach screw	tap size ranges fractional	metric	overall length	order number
T9	0 to 14	1/16 to 1/4	M1.5 to M6.3	2-3/4	420845
T10	12 to 14	7/32 to 1/2	M5.5 to M12.5	3-5/8	421852

**Note**

Used for hand tapping or in difficult spaces requiring a slip handle



product number	mach screw	tap size ranges fractional	metric	overall length	order number
T11	0 to 14	1/16 to 1/4	M1.5 to M6.3	2-3/4	420803
T12	12 to 14	7/32 to 1/2	M5.5 to M12.5	3-5/8	420829

**Note**

Used for hand tapping in difficult spaces needing ratchet drive



product number	mach screw	tap size ranges fractional	metric	overall length	order number
T13	0 to 14	1/16 to 1/4	M1.5 to M6.3	3-3/4	420860
T14	12 to 14	7/32 to 1/2	M5.5 to M12.5	5	420878

**Note**

Used for hand tapping where extra reach is required



product number	mach screw	tap size ranges fractional	metric	overall length	order number
T16	0 to 14	1/16 to 1/4	M1.5 to M6.3	8-3/4	423017
T17	12 to 14	7/32 to 1/2	M5.5 to M12.5	10-5/8	423018

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

## Accessories



## Screw Extractors

Style: 335



extractor number	small end	large end	OAL	screw & bolt size	pipe size	drill size	order number
# 1	1/16	1/8	2	3/16 - 1/4	-	5/64	421909
# 2	3/32	13/64	2-3/8	1/4 - 5/16	-	7/64	421917
# 3	1/8	1/4	2-11/16	5/16 - 7/16	-	5/32	421925
# 4	3/16	11/32	3	7/16 - 9/16	-	1/4	421933
# 5	1/4	7/16	3-3/8	9/16 - 3/4	1/8, 1/4	9/32	421941
# 6	3/8	19/32	3-3/4	3/4 - 1	3/8	13/32	421958
# 7	1/2	25/32	4-1/8	1 - 1-3/8	-	17/32	421966

## Accessories

## Screw Extractors

SET

Style: 335

extractor number	order number
# 15 Set 5 pieces sizes # 1 thru # 5	422006

Machine Taps

Spiral Point Taps

Spiral Flute Taps

Thread Forming Taps

Pipe Taps

Dies

Technical Info

Sets

Index



## Tapping Speeds

Consider these factors when trying to determine the best tapping speeds.

- Material to be tapped
- Length of chamfer on tap
- Percentage of full thread to be cut
- Length of hole (depth of thread)
- Pitch of thread
- Cutting fluids
- Machine equipment
- Horizontal or vertical tapping

The best and most efficient operating speeds for taps cannot be calculated with the same certainty as for many other metalcutting tools. With other tools, the feed per revolution can be set at any desired point and can be varied as conditions demand. Taps, on the other hand, must always be advanced at a rate equal to one pitch for every revolution. The style of tap may vary the conditions. For example, with a bottoming tap, the first thread on each land cuts the full height of thread, while, with a taper or starting tap, a number of threads do their share of the cutting before the full height of thread is reached.

The depth of thread also varies, depending on the pitch. The coarser the thread, the greater the advance of the tap per revolution and the greater the amount of material removed.

The method of feeding the tap, and the type of equipment for driving, also influence the permissible speeds. If taps are mechanically fed at the proper rate of advance, they can be operated at higher speeds than if they are required to feed themselves and pull some part of the machine along with them.

Speeds may be modified to take into account any or all of the factors listed above. Speeds must be lowered as the length of thread increases, because, in deep thread holes, the accumulated chips increase friction and interfere with lubrication.

Bottoming taps must be run slower than plug taps.

Tapping of full height of thread calls for slower speed than if the commercial 75% height only is required.

Coarse-thread taps in the larger diameters should be run more slowly than fine-thread taps of the same diameters.

The quantity and quality of cutting fluid may affect the permissible speeds as much as 100%.

Taper threaded taps, such as pipe taps, should be operated from 1/2 to 3/4 the speed of a straight thread tap of comparable major diameter.

## Tapping Definitions

SFM = Surface Feet per Minute

RPM = Revolutions Per Minute

IPM = Inches Per Minute

TPI = Threads Per Inch

S m/m = Surface Meters per Minute

p = 3.1416

mm/m = Millimeters per Minute

P = Pitch (1/ No of Threads Per Inch)

## Suggested Speeds for Uncoated and Coated Taps

Work Material	Speed-feet-per-minute	Uncoated Tap	Coated Tap
<b>Alloy Steels:</b>			
125-225 Bhn . . . . .	30-60 . . . . .	60-120	
225-325 Bhn . . . . .	20-45 . . . . .	40-90	
325-425 Bhn . . . . .	10-35 . . . . .	20-70	
Aluminum Alloys . . . . .	75-150 . . . . .	150-300	
<b>Carbon Steels, 225 Bhn or less:</b>			
low carbon (.10-.25C) . . . . .	50-75 . . . . .	100-150	
medium carbon (.30-.55C) . . . . .	40-65 . . . . .	80-130	
high carbon (.60-.95C) . . . . .	30-55 . . . . .	90-110	
<b>Cast Iron</b>			
ductile, annealed . . . . .	40-60 . . . . .	80-120	
ductile, as cast . . . . .	20-45 . . . . .	40-90	
gray (class 20, 25) . . . . .	40-80 . . . . .	80-160	
gray (class 30-50) . . . . .	25-50 . . . . .	50-100	
malleable, 200 Bhn or less . . . . .	30-60 . . . . .	60-120	
Copper Alloys . . . . .	40-100 . . . . .	80-200	
Graphites & Carbons . . . . .	5-10 . . . . .	10-20	
<b>High-Temperature Alloys:</b>			
cobalt base (Haynes alloys) . . . . .	3-8 . . . . .	5-16	
iron base (Incoloy, A-286) . . . . .	7-15 . . . . .	15-30	
nickel base (Hastelloy, Inconel) . . . . .	4-10 . . . . .	8-20	
Magnesium . . . . .	100-150 . . . . .	150-200	
Plastics . . . . .	25-50 . . . . .	50-100	
Stainless Steels . . . . .	15-35 . . . . .	30-70	
<b>Titanium:</b>			
pure . . . . .	25-55 . . . . .	50-110	
alloys (Ti-6A1-4V) . . . . .	10-25 . . . . .	20-50	
<b>Tool Steels:</b>			
200-275 Bhn . . . . .	15-30 . . . . .	30-60	
300-350 Bhn . . . . .	10-25 . . . . .	20-50	
40-50 Rc . . . . .	5-15 . . . . .	10-30	
Zinc Alloys . . . . .	100-150 . . . . .	150-250	

\*Success of coated taps in non-ferrous materials depends on the machining conditions used.

## Tapping Formula

### Inch Sizes

$$\text{SFM} = (\text{RPM} \times \text{tool diameter}) / 3.82$$

or  $0.26 \times \text{RPM} \times \text{tool diameter}$

$$\text{RPM} = (3.82 \times \text{SFM}) / \text{tool diameter}$$

$$\text{IPM} = \text{RPM} / \text{TPI}^*$$

or  $*\text{P} \times \text{RPM}$

### Metric Sizes

$$\text{S m/m} = (\text{P} \times \text{tool diameter} \times \text{RPM}) / 1000$$

$$\text{RPM} = (\text{m/m} \times 1000) / \text{P} \times \text{tool diameter}$$

$$\text{mm/m} = \text{mm P} \times \text{RPM}$$





## Tapping Information (continued)

Use this table to match the hardness of your workpiece material to the correct tap.

10 M/M Ball 3000 Kg	120° Cone 150 Kg	1/16" Ball 100 Kg	Model C	1000 Lb. per Sq. In.	10 M/M Ball 3000 Kg	120° Cone 150 Kg	1/16" Ball 100 Kg	Model C	1000 Lb. per Sq. In.
Brinell	Rockwell C	Rockwell B	Shore Scleroscope	Tensile Strength	Brinell	Rockwell C	Rockwell B	Shore Scleroscope	Tensile Strength
800	72	—	100	—	276	30	105	42	136
780	71	—	99	—	269	29	104	41	132
760	70	—	98	—	261	28	103	40	129
745	68	—	97	367	258	27	102	39	127
725	67	—	96	357	255	26	102	39	125
712	66	—	95	350	249	25	101	38	123
682	65	—	93	337	245	24	100	37	119
668	64	—	91	326	240	23	99	36	117
652	63	—	89	318	237	23	99	35	115
626	62	—	87	306	229	22	98	34	113
614	61	—	85	299	224	21	97	33	110
601	60	—	83	292	217	20	96	33	107
590	59	—	81	290	211	19	95	32	104
576	57	—	79	281	206	18	94	32	102
552	56	—	76	270	203	17	94	31	100
545	55	—	75	268	200	16	93	31	98
529	54	—	74	259	196	15	92	30	96
514	53	120	72	254	191	14	92	30	94
502	52	119	70	247	187	13	91	29	92
495	51	119	69	244	185	12	91	29	91
477	49	118	67	233	183	11	90	28	90
461	48	117	66	227	180	10	89	28	89
451	47	117	65	223	175	9	88	27	86
444	46	116	64	219	170	7	87	27	84
427	45	115	62	209	167	6	87	27	82
415	44	115	60	204	165	5	86	26	81
401	43	114	58	196	163	4	85	26	80
388	42	114	57	191	160	3	84	25	78
375	41	113	55	184	156	2	83	25	76
370	40	112	54	182	154	1	82	25	75
362	39	111	53	179	152	—	82	24	74
351	38	111	51	173	150	—	81	24	74
346	37	110	50	170	147	—	80	24	72
341	37	110	49	168	145	—	79	23	71
331	36	109	47	163	143	—	79	23	70
323	35	109	46	158	141	—	78	23	69
311	34	108	46	153	140	—	77	22	69
301	33	107	45	148	135	—	75	22	67
293	32	106	44	144	130	—	72	22	65
285	31	105	43	140					

**Definitions****Nomenclature**Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

**Tap Nomenclature****Bottoming Tap**

A tap having a chamfer length of 1-2 threads.

**Chamfer**

The tapering of the threads at the front end of each land of a chaser, tap or die by cutting away and relieving the crest of the first few teeth to distribute the cutting action over several teeth.

**Chamfer Angle**

The angle formed between the chamfer and the axis of the tap or die by cutting away and relieving the crest of the first few teeth to distribute the cutting action over several teeth.

**Crest**

The surface of the thread which joins the flanks of the thread and is farthest from the cylinder or cone from which the thread projects.

**Flank**

The part of a helical thread surface which connects the crest and the root and which is theoretically a straight line in an axial plane section.

**Flute**

The longitudinal channel formed in a tap to create cutting edges on the thread profile and to provide chip spaces and cutting fluid passage.

**Hand of Threads**

A thread, when viewed axially, winds in a clockwise and receding direction for LEFT-HAND THREADS and counter-clockwise and receding direction for RIGHT-HAND THREADS.

**Hook, Chordal**

A concave face having an angle of inclination specified between a chord passing through the root and crest of a thread form at the cutting face, and a radial line through the crest at the cutting edge.

**Hook, Tangential**

A concave face having an angle of inclination specified between a line tangent to the hook surface at the cutting edge and a radial line to the same point.

**Hook Angle**

The angle of inclination of a concave face, usually specified either as CHORDAL HOOK or TANGENTIAL HOOK.

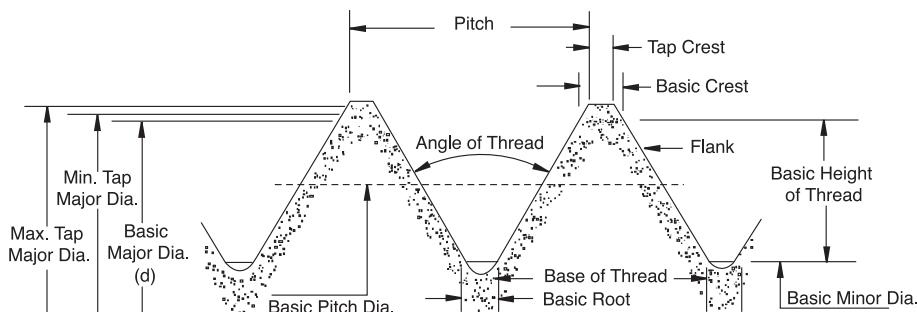
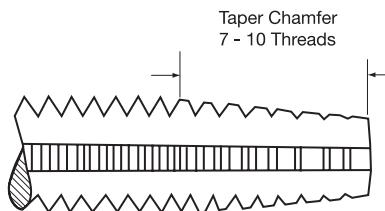
**Interrupted Thread Tap**

A tap having an odd number of lands with alternate teeth in the thread helix removed. In some cases alternate teeth are removed only for a portion of the thread length.

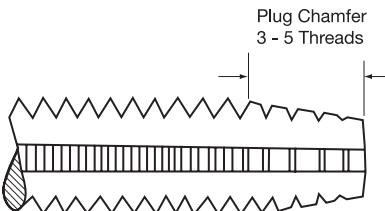
**Land**

One of the threaded sections between the flutes of a tap.

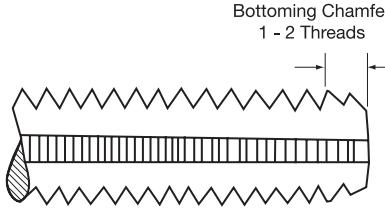
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**Illustration of Tap Terms****Tap Chamfers**

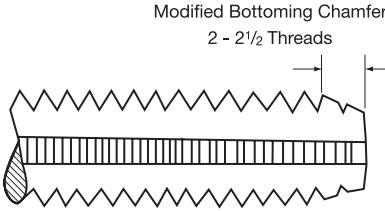
**Taper (7 to 10 pitches)** – The taper chamfer has the longest standard chamfer ensuring easier starting. It requires less tapping torque because of more working teeth.



**Plug (3 to 5 pitches)** – The most common chamfer for use by hand or machine in through or blind holes. This chamfer is more efficient than a bottoming or modified-bottoming chamfer.



**Bottoming (1 to 2 pitches)** – For threading close to the bottom of blind holes, the bottoming chamfer is the least efficient chamfer available.



**Modified-Bottoming (2 to 2 1/2 pitches)** – This short chamfer allows for threading close to the bottom of blind holes. Due to the slightly longer chamfer and more working teeth, this chamfer is more efficient than a bottoming chamfer.

**Lead of Thread**

The distance a screw thread advances axially in one complete turn. On a single start tap the lead and pitch are identical. On a multiple start tap the lead is the multiple of the pitch.

**Major Diameter**

The diameter of the major cylinder or cone, at a given position on the axis, that bounds the crests of an external thread or the roots of an internal thread.

**Minor Diameter**

The diameter of the minor cylinder or cone, at a given position on the axis, that bounds the roots of an external thread or the crests of an internal thread.

**Pitch Diameter**

The diameter of an imaginary cylinder or cone, at a given point on the axis, of such a diameter and location of its axis that its surface would pass through the thread in such a manner as to make the thread ridge and the thread groove equal and, therefore, is located equidistant between the sharp major and minor cylinders or cones of a given thread form. On a theoretically perfect thread, these widths are equal to one half of the basic pitch (measured parallel to the axis). See illustration below

**Plug Tap**

A tap with 3 to 5 chamfered threads.

**Spiral Point**

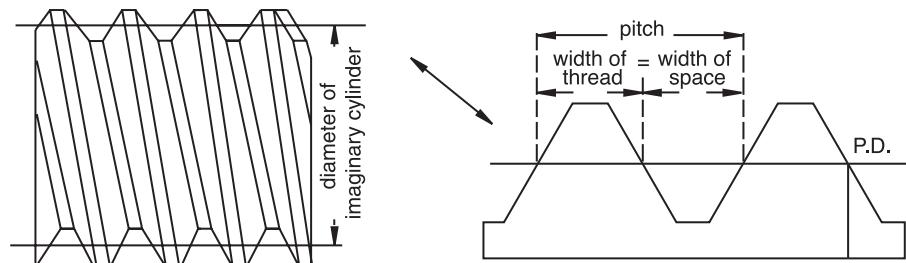
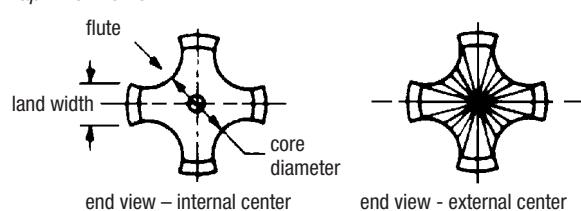
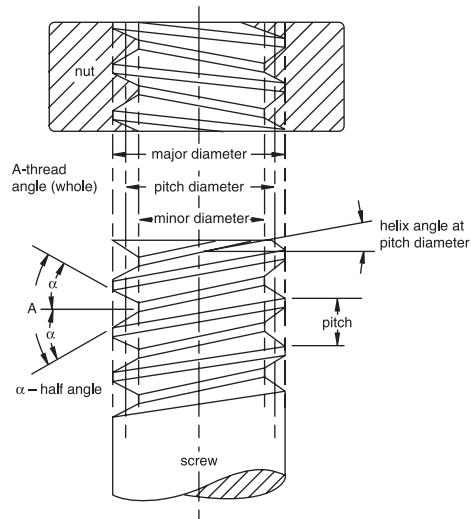
The angular fluting in the cutting face of the land at the chamfered end. It is formed at an angle with respect to the tap axis of opposite hand to that of rotation. Its length is usually greater than the chamfer length and its angle with respect to the tap axis is usually made great enough to direct the chips ahead of the tap. The tap may or may not have longitudinal flutes.

**Square**

Four driving flats parallel to the axis on a tap shank forming a square or square with round corners.

**Taper Tap**

A tap having a chamfer length of 7 to 10 threads.

*Pitch Diameter**Tap End Views***Screw Thread Tolerances**

It is generally recognized that, in mass production, it is impossible to reproduce in exact detail the theoretically perfect product as laid out on the drawing board. The allowed slight variation between the theoretically perfect product and each unit of the actual product is called the **TOLERANCE**.

**Allowance**

An intentional difference in correlated dimensions of mating parts. It is the minimum clearance or maximum interference between such parts.

**Angle of Thread**

The angle included between the flanks of the thread measured in an axial plane.

**Half Angle of Thread**

The angle included between a flank of the thread and the normal ( $90^\circ$ ) to the axis, measured in an axial plane.

**Lead of Thread**

The distance a screw thread advances axially in one turn. On a single-thread screw the lead and pitch are identical. On a double thread the lead is 2X pitch, on a triple thread the lead is 3X pitch, etc.

**Major Diameter**

The largest diameter of a straight screw thread.

**Minor Diameter**

The smallest diameter of a straight screw thread.

**Pitch**

The distance from a point on a screw thread to a corresponding point on the next thread measured parallel to the axis. The pitch in inches =  $\frac{1}{\text{no. of threads per inch}}$

**Definitions****Standard Tap Marking System**Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

Taps, dies, and other threading tools will be marked with the nominal size, number of threads per inch, and the proper symbol to identify the thread form. The symbols below are

Symbol	Reference
ACME-C	Acme Thread-Centralizing
ACME-G	Acme Thread-General Purpose
AMO	American Standard Microscope Objective Thread
ANPT	Aeronautical National Form Taper Pipe Thread (Ground Thread Tap marked NPT)
BA	British Association Standard Thread
BSF	British Standard Fine Thread Series
BSPP	British Standard Pipe (Parallel) Thread
BSPT	British Standard Taper Pipe Thread
BSW	British Standard Whitworth Coarse Thread Series
M	Metric Standard Threads
N	American National 8, 12 and 16 Thread Series (8N, 12N, 16N)
N BUTT	American Buttress Thread
NC	American National Coarse Thread Series
NEF	American National Extra-Fine Thread Series
NF	American National Fine Thread Series
NGO	National Gas Outlet Thread (specify right or left hand)
NGS	National Gas Straight Thread
NGT	National Gas Taper Thread (See also "SGT")
NH	American National Hose Coupling & Firehose Coupling Threads
NPS	For Tap marking Only (See NPSC, NPSM)
NPSC	American National Standard Straight Pipe Thread in Pipe Couplings (Tap Marked NPS)
NPSF	Dryseal American National Standard Fuel Internal Straight Pipe Thread
NPSH	American National Standard Straight Pipe Thread for Hose Couplings
NPSI	Dryseal American National Standard Intermediate Internal Straight Pipe Thread
NPSL	American National Standard Straight Pipe Thread for Loose-Fitting Mechanical Joints with locknuts.
NPSM	American National Standard Straight Pipe Threads for Free-Fitting Mechanical Joints for Fixtures (Tap Marked NPS)
NPT	American National Standard Taper Pipe Thread (see ANPT, NPTR)

in agreement with the ASME B1.7 1965 (R 1972) Standard  
on nomenclature, definitions and letter symbols for screw  
threads and other national standards.

Symbol	Reference
NPTF	Dryseal American National Standard Taper Pipe
Thread	
NPTR	American National Standard Taper Pipe Thread for Railing Joints (Tap Marked NPT)
NR	American National Thread with a 0.108p to 0.144p Controlled Root Radius
NS	American National Thread-Special
PTF-SAE	Short Dryseal SAE Short Taper Pipe Thread
SGT	Special Gas Taper Thread
SPL-PTF	Dryseal Special Taper Pipe Thread
STI	Special Thread for Helical Coil Wire Screw Thread Inserts
Stub Acme	Stub Acme Thread
*UN	Unified Constant-Pitch Thread Series
*UNC	Unified Coarse Thread Series
*UNEF	Unified Extra-Fine Thread Series
*UNF	Unified Fine Thread Series
UNJ	Unified Thread Series with a 0.150lp to 0.18042p Controlled Root Radius on External Thread only.
UNJC	Unified Coarse Thread Series with a 0.150lp to 0.18042p Controlled Root Radius on External Thread only.
UNJF	Unified Fine Thread Series with a 0.150lp to 0.18042p Controlled Root Radius on External Thread only.
UNM	Unified Miniature Thread Series
UNR	Unified Constant-pitch Thread Series with a 0.108p to 0.144p Controlled Root Radius
UNRC	Unified Coarse Thread Series with a 0.108p to 0.144p Controlled Root Radius
UNRF	Unified Fine Thread Series with a 0.108p to 0.144p Controlled Root Radius
*UNS	Unified Thread-Special
V	A 60 "V" thread with Truncated Crest and Root. The theoretical "V" Form is usually flattened to the user's specifications.

\*Taps are not marked with "U", but with the symbol for the corresponding American Standard thread form with which it is compatible.

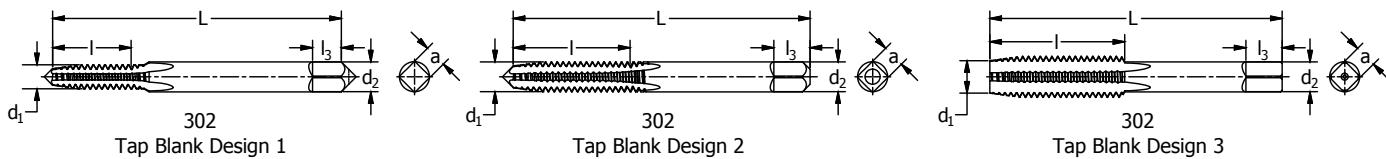


## Technical Information

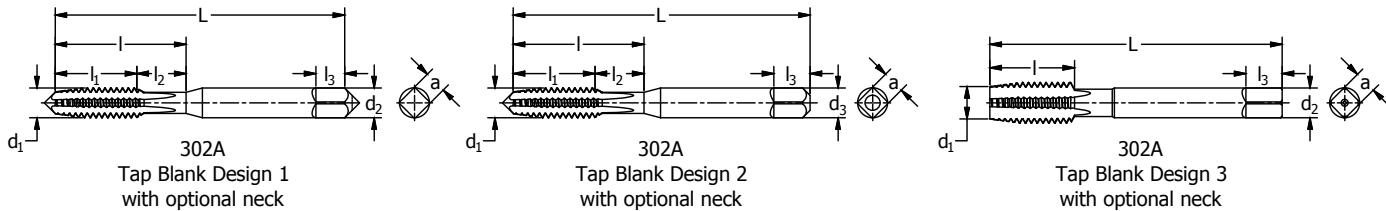
## 302 / 302A Specifications

Standard Tap Dimensions  
Ground Thread

USCTI Table 302



USCTI Table 302A



## Fractional Sizes

nominal inch diameter <b>d1</b> fractional decimal	nominal diameter range over      to (inclusive)	tap blank design (see above)	overall length <b>L</b>	thread length <b>l</b>	optional length short thd <b>l1</b>	optional length neck <b>l2</b>	square length <b>l3</b>	shank diameter <b>d2</b>	square size <b>a</b>
1/4 .2500	.223 .260	2	2.500	1.000	.630	.380	.310	.255	.191
5/16 .3125	.260 .323	2	2.719	1.125	.690	.440	.380	.318	.238
3/8 .3750	.323 .395	2	2.938	1.250	.750	.500	.440	.381	.286
7/16 .4375	.395 .448	3	3.156	1.438	.880	—	.410	.323	.242
1/2 .5000	.448 .510	3	3.375	1.656	.940	—	.440	.367	.275
9/16 .5625	.510 .573	3	3.594	1.656	.000	—	.500	.429	.322
5/8 .6250	.573 .635	3	3.813	1.813	.090	—	.560	.480	.360
11/16 .6875	.635 .709	3	4.031	1.813	1.090	—	.630	.542	.406
3/4 .7500	.709 .760	3	4.250	2.000	1.220	—	.690	.590	.442
13/16 .8125	.760 .823	3	4.470	2.000	1.220	—	.690	.652	.489
7/8 .8750	.823 .885	3	4.688	2.219	1.340	—	.750	.697	.523
15/16 .9375	.885 .948	3	4.910	2.220	1.340	—	.750	.760	.570
1 1.0000	.948 1.010	3	5.125	2.500	1.500	—	.810	.800	.600
1-1/16 1.0625	1.010 1.073	3	5.130	2.500	—	—	.880	.896	.672
1-1/8 1.1250	1.073 1.135	3	5.438	2.563	—	—	.880	.896	.672
1-3/16 1.1875	1.135 1.198	3	5.440	2.560	—	—	1.000	1.021	.766
1-1/4 1.2500	1.198 1.260	3	5.750	2.563	—	—	1.000	1.021	.766
1-5/16 1.3125	1.260 1.323	3	5.750	2.560	—	—	1.060	1.108	.831
1-3/8 1.3750	1.323 1.385	3	6.063	3.000	—	—	1.060	1.108	.831
1-7/16 1.4375	1.358 1.448	3	6.060	3.000	—	—	1.130	1.233	.925
1-1/2 1.5000	1.448 1.510	3	6.375	3.000	—	—	1.130	1.233	.925
1-5/8 1.6250	1.510 1.635	3	6.690	3.190	—	—	1.130	1.305	.979
1-3/4 1.7500	1.635 1.760	3	7.000	3.190	—	—	1.250	1.430	1.072
1-7/8 1.8750	1.760 1.885	3	7.310	3.560	—	—	1.250	1.519	1.139
2 2.0000	1.885 2.010	3	7.630	3.560	—	—	1.380	1.644	1.233

## Machine Screw Sizes

nominal inch diameter <b>d1</b> MS# decimal	nominal diameter range over      to (inclusive)	tap blank design (see above)	overall length <b>L</b>	thread length <b>l</b>	optional length short thd <b>l1</b>	optional length neck <b>l2</b>	square length <b>l3</b>	shank diameter <b>d2</b>	square size <b>a</b>
0 .0600	.052 .065	1	1.625	.313	—	—	.190	.141	.110
1 .0730	.065 .078	1	1.688	.375	—	—	.190	.141	.110
2 .0860	.078 .091	1	1.750	.438	—	—	.190	.141	.110
3 .0990	.091 .104	1	1.813	.500	—	—	.190	.141	.110
4 .1120	.104 .117	1	1.875	.563	.310	.250	.190	.141	.110
5 .1250	.117 .130	1	1.938	.625	.310	.310	.190	.141	.110
6 .1380	.130 .145	1	2.000	.688	.380	.310	.190	.141	.110
8 .1640	.145 .171	1	2.125	.750	.380	.380	.250	.168	.131
10 .1900	.171 .197	1	2.375	.875	.500	.380	.250	.194	.152
12 .2160	.197 .223	1	2.375	.938	.500	.440	.280	.220	.165

Spiral Flute Taps

Thread Forming Taps

Technical Info

Sets

Index


**Standard Tap Dimensions**  
*Ground Thread*
**Metric / Tolerances**
Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

**Metric Sizes**

mm	decimal	nominal diameter range		tap blank design (see above)	overall length <b>L</b>	thread length <b>l</b>	optional length		square length <b>l<sub>3</sub></b>	shank diameter <b>d<sub>2</sub></b>	square size <b>a</b>
		over	to (inclusive)				short thd <b>l<sub>1</sub></b>	neck <b>l<sub>2</sub></b>			
M1.6	.063	.052	.065	1	1.625	.313	—	—	.190	.141	.110
M1.8	.071	.065	.078	1	1.688	.375	—	—	.190	.141	.110
M2	.079	.078	.091	1	1.750	.438	—	—	.190	.141	.110
M2.2	.087	.078	.091	1	1.750	.438	—	—	.190	.141	.110
M2.5	.098	.091	.104	1	1.813	.500	—	—	.190	.141	.110
M3	.118	.117	.130	1	1.938	.625	.310	.310	.190	.141	.110
M3.5	.138	.130	.145	1	2.000	.688	.380	.310	.190	.141	.110
M4	.158	.145	.171	1	2.125	.750	.380	.380	.250	.168	.131
M4.5	.177	.171	.197	1	2.375	.875	.500	.380	.250	.194	.152
M5	.197	.171	.197	1	2.375	.875	.500	.440	.250	.194	.152
M6	.236	.223	.260	2	2.500	1.000	.630	.380	.310	.255	.191
M7	.276	.260	.323	2	2.719	1.125	.690	.440	.380	.318	.238
M8	.315	.260	.323	2	2.719	1.125	.690	.440	.380	.318	.238
M10	.394	.323	.395	2	2.938	1.250	.750	.500	.440	.381	.286
M12	.472	.448	.510	3	3.375	1.656	.940	—	.440	.367	.275
M14	.551	.510	.573	3	3.594	1.656	1.000	—	.500	.429	.322
M16	.630	.573	.635	3	3.813	1.813	1.090	—	.560	.480	.360
M18	.709	.635	.709	3	4.031	1.813	1.090	—	.630	.542	.406
M20	.787	.760	.823	3	4.469	2.000	1.220	—	.690	.652	.489
M22	.866	.823	.885	3	4.690	2.220	1.340	—	.750	.697	.523
M24	.945	.885	.948	3	4.906	2.219	1.340	—	.750	.760	.570
M25	.984	.948	1.010	3	5.130	2.500	1.500	—	.810	.800	.600
M27	1.063	1.010	1.073	3	5.130	2.500	—	—	.880	.896	.672
M30	1.181	1.135	1.198	3	5.438	2.563	—	—	1.000	1.021	.766

**Standard Tap Dimension Tolerances**

nominal diameter range (in.)		overall length <b>L</b>	thread length <b>l</b>	tolerances (in.)		
over	to (inc.)			square length <b>l<sub>3</sub></b>	shank diameter <b>d<sub>2</sub></b>	square size <b>a</b>
.0520	.2230	+/- .031	+/- .047	+/- .031	-.0015	-.004
.2230	.5100	+/- .031	+/- .063	+/- .031	-.0015	-.004
.5100	.6350	+/- .031	+/- .094	+/- .031	-.0015	-.006
.6350	1.0100	+/- .031	+/- .094	+/- .031	-.0020	-.006
1.0100	1.5100	+/- .063	+/- .094	+/- .063	-.0020	-.008
1.5100	2.0100	+/- .063	+/- .125	+/- .063	-.0030	-.008
2.0100	4.0100	+/- .063	+/- .125	+/- .063	-.0030	-.010

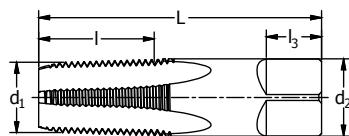
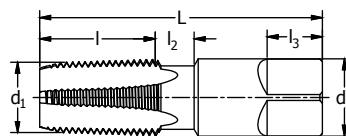
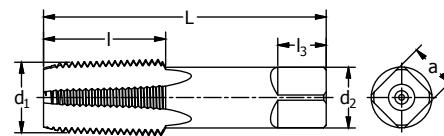


## Technical Information

## 311 Specifications

## Standard Tap Dimensions

Ground Thread Straight &amp; Taper Pipe Taps

311  
Pipe Tap Blank Design 1311  
Pipe Tap Blank Design 2  
with optional neck311  
Pipe Tap Blank Design 3

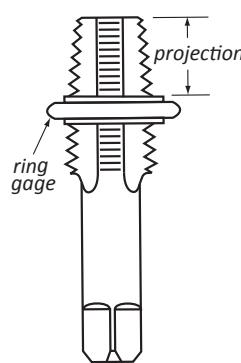
## Inch Pipe Tap Sizes

	nominal inch diameter <b>d1</b> fractional	tap blank design (see above)	overall length <b>L</b>	thread length <b>l</b>	optional neck length <b>l2</b>	square length <b>l3</b>	shank diameter <b>d2</b>	square size <b>a</b>
1/16	.0625	1 or 2	2.130	.690	.375	.380	.3125	.234
1/8	.1250	1	2.130	.750	—	.380	.3125	.234
1/8	.1250	1 or 2	2.130	.750	.375	.380	.4375	.328
1/4	.2500	1 or 2	2.440	1.060	.375	.440	.5625	.421
3/8	.3750	1 or 2	2.560	1.060	.375	.500	.7000	.531
1/2	.5000	1	3.130	1.380	—	.630	.6875	.515
3/4	.7500	1	3.250	1.380	—	.690	.9063	.679
1	1.0000	1	3.750	1.750	—	.810	1.1250	.843
1-1/4	1.2500	1	4.000	1.750	—	.940	1.3125	.984
1-1/2	1.5000	1	4.250	1.750	—	1.000	1.5000	1.125
2	2.0000	3	4.500	1.750	—	1.130	1.8750	1.406

## Standard Pipe Tap Dimension Tolerances

	nominal inch diameter <b>d1</b> fractional	overall length <b>L</b>	thread length <b>l</b>	square length <b>l3</b>	shank diameter <b>d2</b>	square size <b>a</b>
1/16	.0625	+/- .031	+/- .063	+/- .031	-.0015	-.004
1/8	.1250	+/- .031	+/- .063	+/- .031	-.0015	-.004
1/8	.1250	+/- .031	+/- .063	+/- .031	-.0015	-.004
1/4	.2500	+/- .031	+/- .063	+/- .031	-.0020	-.006
3/8	.3750	+/- .031	+/- .063	+/- .031	-.0020	-.006
1/2	.5000	+/- .031	+/- .063	+/- .031	-.0020	-.006
3/4	.7500	+/- .031	+/- .063	+/- .031	-.0020	-.006
1	1.0000	+/- .063	+/- .094	+/- .063	-.0020	-.008
1-1/4	1.2500	+/- .063	+/- .094	+/- .063	-.0030	-.008
1-1/2	1.5000	+/- .063	+/- .125	+/- .063	-.0030	-.008
2	2.0000	+/- .063	+/- .125	+/- .063	-.0030	-.008

## Thread Limits – Taper Pipe Taps – Ground Thread



nominal tap size (inch)	threads per inch	projection (inch)	projection tolerance +/- inch	taper per foot (inch) min.	taper per foot (inch) max	ring gage thickness	tap drill size NPT,ANPT,NFTF
1/16	27	.312	.063	.719	.781	.160	C
1/8	27	.312	.063	.719	.781	.1615	Q
1/4	18	.459	.063	.719	.781	.2278	7/16
3/8	18	.454	.063	.719	.781	.240	9/16
1/2	14	.579	.063	.719	.781	.320	45/64
3/4	14	.565	.063	.719	.781	.339	29/32
1	11-1/2	.678	.094	.719	.781	.400	1 9/64
1-1/4	11-1/2	.686	.094	.719	.781	.420	1 31/64
1-1/2	11-1/2	.699	.094	.719	.781	.420	1 23/32
2	11-1/2	.667	.094	.719	.781	.436	2 3/16

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Sets

Index

Technical Info



**Lead Tolerance**

A maximum lead error of + / - .0005" in 1" of thread is permitted.

**Pitch Diameter Limits**

H1 = basic to basic + .0005" to basic + .001"

H2 = basic + .0005" to basic + .001"

H3 = basic + .001" to basic + .0015"

H7 = basic + .003" to basic + .0035"

**Angle Tolerance**

Threads Per Inch  
20 to 80 inclusive

Error in Half Angle  
30° + / -

**Formulae**

Max. Major Diameter= Basic Major Diameter + A  
Min. Major Diameter= Max. Major Diameter - B

*A* = Constant to add: 45% of the theoretical  
truncation to nearest .0005"

*B* = Major diameter tolerance.

**Thread Limits**

nom size	threads per inch				basic pitch dia	pitch diameter limits							
	NC UNC	NF UNF	NS UNS	major diameter		H1 limit min	H1 limit max	H2 limit min	H2 limit max	H3 limit min	H3 limit max	H7 limit min	H7 limit max
0	-	80	-	.0600	.0605	.0615	.0519	.0519	.0524	.0524	.0529	-	-
1	64	-	-	.0730	.0735	.0745	.0629	.0629	.0634	.0634	.0639	-	-
1	-	72	-	.0730	.0735	.0745	.0640	.0640	.0645	.0645	.0650	-	-
2	56	-	-	.0860	.0865	.0875	.0744	.0744	.0749	.0749	.0754	-	-
2	-	64	-	.0860	.0865	.0875	.0759	-	-	.0764	.0769	-	-
3	48	-	-	.0990	.1000	.1010	.0855	.0855	.0860	.0860	.0865	-	-
3	-	56	-	.0990	.0995	.1005	.0874	.0874	.0879	.0879	.0884	-	-
4	-	-	36	.1120	.1135	.1145	.0940	-	-	.0945	.0950	-	-
4	40	-	-	.1120	.1135	.1145	.0958	.0958	.0963	.0963	.0968	-	-
4	-	48	-	.1120	.1130	.1140	.0985	.0985	.0990	.0990	.0995	-	-
5	40	-	-	.1250	.1265	.1275	.1088	.1088	.1093	.1093	.1098	-	-
5	-	44	-	.1250	.1260	.1270	.1102	-	-	.1107	.1112	-	-
6	32	-	-	.1380	.1400	.1410	.1177	.1177	.1182	.1182	.1187	.1187	.1207
6	-	40	-	.1380	.1395	.1405	.1218	.1218	.1223	.1223	.1228	-	-
8	32	-	-	.1640	.1660	.1670	.1437	.1437	.1442	.1442	.1447	.1447	.1452
8	-	36	-	.1640	.1655	.1665	.1460	-	-	.1465	.1470	-	-
10	24	-	-	.1900	.1930	.1940	.1629	.1629	.1634	.1634	.1639	.1639	.1644
10	-	32	-	.1900	.1920	.1930	.1697	.1697	.1702	.1702	.1707	.1707	.1712
12	24	-	-	.2160	.2190	.2200	.1889	-	-	-	.1899	.1904	-
12	-	28	-	.2160	.2185	.2195	.1928	-	-	-	.1938	.1943	-











## Ground Thread

## Quick Shipment Program - Special Taps

Machine  
TapsSpiral Point  
TapsSpiral Flute  
TapsThread Forming  
Taps

Pipe Taps

Dies

Technical Info

Sets

Index

Prices for special taps are available upon request. Special taps can be furnished in quantities to meet your specific requirements. All special metric taps will produce internal threads which conform to ISO, ISO modified, and the

obsolete OMFS thread systems and are manufactured to USCTI standard blank dimensions to fit the tap holders and machine spindles now in use in the USA.

Call Customer Service at 800.348.2885 for your quote.

### General

The following tables and formulae are used in determining the limits and tolerances for ground thread taps having special diameter or special pitch or both and having a thread lead angle not in excess of 5%, unless otherwise specified. This table does not apply to the diameter and pitch combinations shown in Tables 327 and 329.

Note: When the tap major diameter must be determined from a specific tap pitch diameter, the maximum major diameter = the minimum specified pitch diameter - constant C, + constant A.

### Lead Tolerance

A maximum lead error of + / - .0005" in 1" of thread is permitted.

### Angle Tolerance

Threads Per Inch	Error in Half Angle
4 to 5-1/2 inclusive	20° + / -
6 to 9 inclusive	25° + / -
10 to 80 inclusive	30° + / -

### Formulae

$$\begin{aligned} \text{Max. Major Diameter} &= \text{Basic Major Diameter} + A \\ \text{Min. Major Diameter} &= \text{Max. Major Diameter} - B \\ \text{Max. Pitch Diameter} &= \text{Min. Pitch Diameter} + D \\ \text{Min. Pitch Diameter} &= \text{Basic Pitch Diameter} + C \end{aligned}$$

A = constant to add:

35% of the theoretical truncation for 4 to 5 threads per inch  
40% for 5-1/2 to 12 threads per inch  
45% for 13 to 80 threads per inch  
to nearest .005" for 8 or more threads per inch

B = Major diameter tolerance

C = Amount over basic for minimum pitch diameter

D = Pitch diameter tolerance

### Values for A, B, C, and D

threads per inch	A	B	C thru 5/8"	C over 5/8" thru 2-1/2"	C over 2-1/2"	D thru 1"	D over 1" thru 1-1/2"	D over 1-1/2" thru 2-1/2"	D over 2-1/2"
80	.0015	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
56	.0015	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
48	.0020	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
44	.0020	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
40	.0025	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
36	.0025	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
32	.0030	.0010	.0010	.0010	.0015	.0005	.0010	.0010	.0015
28	.0035	.0010	.0010	.0010	.0015	.0005	.0010	.0010	.0015
24	.0040	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0015
20	.0050	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0015
18	.0055	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0015
16	.0060	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0020
14	.0070	.0010	.0010	.0015	.0015	.0005	.0010	.0015	.0020
13	.0075	.0010	.0010	.0015	.0015	.0005	.0010	.0015	.0020
12	.0075	.0010	.0010	.0015	.0015	.0005	.0010	.0015	.0020
11	.0080	.0010	.0010	.0015	.0020	.0005	.0010	.0015	.0020
10	.0090	.0015	-	.0015	.0020	.0005	.0010	.0015	.0020
9	.0100	.0015	-	.0015	.0020	.0005	.0010	.0015	.0020
8	.0110	.0015	-	.0015	.0020	.0005	.0010	.0015	.0020
7	.0120	.0020	-	.0015	.0020	.0010	.0010	.0020	.0025
6	.0140	.0020	-	.0015	.0020	.0010	.0010	.0020	.0025
5 1/2	.0160	.0025	-	.0015	.0020	.0010	.0015	.0020	.0025
5	.0160	.0025	-	.0015	.0020	.0010	.0015	.0020	.0025
4 1/2	.0170	.0025	-	.0015	.0020	.0010	.0015	.0020	.0025
4	.0190	.0025	-	.0015	.0020	.0010	.0015	.0020	.0025

For intermediate pitches use value for next coarser pitch



## Greenfield Threading Sets

## Sets

Sets  
Cost Saving / Organize

See product specific page for additional information

set number	no. of pieces	H-limit / flutes	sizes	case type	order number
<b>Hand Tap - Straight Flute, General Purpose</b>					
	3		See product page for set - Includes Taper, Plug, and Bottoming Tap		see product page
<b>Plug Hand Tap</b>					
303SET	10	H3, 4	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20	metal	330082
<b>Jobber Drill (Bright), Plug Hand Tap</b>					
HT18	18	H3, 4	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 6-32, 8-32, 10-24, 10-32		330083
		Jobber	5/16, 27/64, LET-F, LET-U, #7, #21, #25, #29, #36		
<b>Jobber Drill (Titanium), Plug Hand Tap - TiN</b>					
HT18T	18	H3, 4	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 6-32, 8-32, 10-24, 10-32		330084
		Jobber	5/16, 27/64, #7, #21, #25, #29, #36, LET-F, LET-U		
<b>Jobber Drill (Bright), Plug Spiral PT Tap</b>					
GT18	18	H3, 2	1/4-20, 5/16-18, 6-32, 8-32, 10-24, 10-32		330085
		H3, 3	3/8-16, 7/16-14, 1/2-13		
		Jobber	5/16, 27/64, LET-F, LET-U, #7, #21, #25, #29, #36		
<b>Jobber Drill (Bright), Plug NC/NF Hand Tap</b>					
HT36	36	H2, 3	6-40		330086
		H2, 4	8-36		
		H3, 4	6-32		
		H3, 3	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 8-32, 10-24, 10-32, 12-24, 12-28		
		Jobber	5/16, 25/64, 27/64, 29/64, LET-F, LET-I, LET-Q, LET-U, #3, #7, #15, #16, #21, #25, #29, #33, #36		
<b>Screw Machine Drill (Bright), Plug Hand Tap</b>					
68	20	H2, 3	4-40, 5-40		330087
		H3, 3	6-32		
		H3, 4	1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 8-32, 10-24		
		Screw Machine	5/16, 27/64, #7, #25, #29, #36, #39, #44, LET-F, LET-U		
<b>Jobber Drill (Black Oxide), Plug Hand Tap</b>					
HM18	18	D3, 3	M2.5x0.45, M3x0.5		330088
		D4, 3	M3.5x0.6, M4x0.7		
		D4, 4	M5x0.8		
		D5, 4	M6X1.0, M8X1.25		
		D6, 4	M10x1.5, M12x1.75		
		Jobber	2.05, 2.50, 2.90, 3.30, 4.20, 5.00, 6.70, 8.5, 10.20		
set number	no. of sizes		die sizes	case type	order number
<b>Taper Pipe Sets - NPT/NPTF Medium Hook</b>					
			NPT Pipe Tap: 1/8 - 1" NPT	wood	
<b>Re-threading Dies - Carbon Steel</b>					
481	8		Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10	metal	403512
482	10		Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8	metal	403553
490	10		Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20	metal	403520
492	20		Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, 7/8-14, 1-14	metal	403595
485	7		M6 x 1, M8 x 1.25, M10 x 1.5, M12 x 1.75, M14 x 2, M16 x 2, M20 x 2.5	metal	403522



## Greenfield Threading Sets



## Sets

## Cost Saving / Organize

## Set (continued)

See product specific page for additional information

Machine Taps

Spiral Point Taps

Spiral Flute Taps

Thread Forming Taps

Pipe Taps

Dies

Technical Info

Sets

Index

## Cost Saving / Organize

## Sets

## Cost Saving / Organize

set number	no. of sizes	tap & die sizes	tap wrench	die stock	order number	
<b>OK Jr. Tap &amp; Die Sets:</b> HSS Production Hand Taps / Carbon Steel Round Adjustable Dies - Inch						
17	7	Course Thrd (UNC): 4-40, 6-32, 8-32, 10-24, 12-24, 1/4-20 Fine Thrd (UNF): 10-32	329	13	423001	
18	5	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	333	14	423002	
25	8	Course Thrd (UNC): 2-56, 3-48, 4-40, 6-32, 8-32, 10-24 Fine Thrd (UNF): 0-80, 1-72	329	13	423003	
T4	8	Course Thrd (UNC): 2-56, 3-48, 4-40, 6-32, 8-32, 10-24, 12-24 Fine Thrd (UNF): 10-32	0	1851	420359	
26	10	Course Thrd (UNC): 4-40 Fine Thrd (UNF): 4-48	329	13	420361	
T6	20	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-18, 7/8-14, 1-12	7	1852	420363	
28	11	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20 Pipe Size (Short shank): 1/8-27	333	1	423004	
32	21	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, 7/8-14 UNS: 1-14	15	14	423005	
33	28 Taps 15 Dies	Pipe Size (Long shank): 1/8-27 Course Thrd (UNC): 4-40, 6-32, 8-32, 10-24, 12-24, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12 Fine Thrd (UNF): 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, 7/8-14 UNS: 1-14 Pipe Size: 1/8-27, 1/4-18, 3/8-18, 1/2-14	329	14	423006	
48	7	<b>Tap &amp; Die Set:</b> with Production Hand Taps and HSS Round Adjustable Dies - Metric M2.5 x 0.45, M3 x 0.5, M3.5 x 0.6, M4 x 0.7, M4.5 x 0.75, M5 x 0.8, M6 x 1.0 Screwdriver: 300	333	1790	420365	
49	5	M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75 Screwdriver: 300	333	1790	420367	
49D	5	<b>Tap &amp; Die Set:</b> with Production Hand Taps, Black Oxide Jobber Length Drills, and HSS Round Adjustable Dies - Metric M6 x 1.0, M7 x 1.0, M8 x 1.25, M10 x 1.5, M12 x 1.75 Drill Sizes: 5.0, 6.0, 6.7, 8.5, 10.2 Screwdriver: 300	333	1790	420368	
set number	no. of sizes	tap & die sizes	collet number	tap wrench	die stock	
<b>Tap &amp; Die Set:</b> without Collet						
59	7	Course Thrd (UNC): 4-40, 6-32, 8-32, 10-24, 12-24, 1/4-20 NC Fine Thrd (UNF): 10-32	A1	T9, A1	A1	423159
510	5	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	1	#5, #7	#1	423160
511	10	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-18, 5/8-18, 3/4-16, 7/8-14, 1-8	5	#5	5A	423173
512	10	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20	1	#5	#1	423162
513	20	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, 7/8-14, 1-14	1, 5	#5 #7	#1 #5B	423163
514	7	M6 x 1, M8 x 1.25, M10 x 1.5, M12 x 1.75, M14 x 2, M16 x 2, M18 x 2.5	5	#6	#5	423164
58	20	Course Thrd (UNC): 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13, 9/16-12, 5/8-11, 3/4-10, 7/8-9, 1-8 Fine Thrd (UNF): 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20, 9/16-18, 5/8-18, 3/4-16, 7/8-14 UNS: 1-14	—	#5 #7	#1 #5	423165
<b>Screw Extractors</b>						Style: 335
15 Set	5 pcs.	Sizes: #1 through #5	—	—	—	422006















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