TAP-DRILL SELECTOR

NOTE ON SELECTING TAP-DRILL SIZES: The tap drill sizes shown on this card give the theoretical tap drill size for approximately 60% and 75% of full thread depth. Generally, it is recommended that drill sizes be selected in the 60% range as these sizes will provide about 90% of the potential holding power. Drill sizes in the 75% range are recommended for shallow hole tapping (less than 1½ times the hole diameter in soft metals and mild steel.

FOR 60% THREAD—SELECT DRILL OPPOSITE BLUE TAP SIZE
FOR 75% THREAD—SELECT DRILL OPPOSITE RED TAP SIZE

TAP SIZE		DRILL SIZE
60%	75%	
		48
		1.95mm
		5/64
	3-48	47
		2.00mm
	M2.5x.45	2.05mm
		46
3-48	3-56	45
		2.10mm
M2.5x.45	M2.6x.45	2.15mm
3-56	4-36	44
		2.20mm
M2.6x.45		2.25mm
4-36	4-40	43
		2.30mm
		2.35mm
4-40	4-48	42
		3/32
	M3x.6	2.40mm
4-48		41
		2.45mm
		40
M3x.6	M3x.5	2.50mm
		39
	5-40	38
M3x.5		2.60mm
5-40	5-44	37
		2.70mm
5-44	6-32	36
		2.75mm
		7/64
		35
		2.80mm
		34
6-32	6-40	33
	M3.5x.6	2.90mm
		32
M3.5x.6		3.00mm
6-40		31
		3.10mm
		1/8
		3.20mm
	M4x.75	3.25mm
		30
	M4x.7	3.30mm
M4x.75		3.40mm
M4x.7	8-32	29
		3.50mm
	8-36	28
8-32		9/64
		3.60mm
8-36		27
		3.70mm
		26
	M4.5x.75	3.75mm
	10-24	25
		3.80mm
		24
M4.5x.75		3.90mm
		23
		5/32
10-24		22
	M5x1	4.00mm
	10-32	21
		20
	M5x.9	4.10mm
M5x1	M5x.8	4.20mm
10-32		19
M5x.9		4.25mm
M5x.8		4.30mm

TAP SIZE		DRILL SIZE
60%	75%	
		18
		11/64
		17
		4.40mm
	12-24	16
		4.50mm
		15
	M5.5x.9	4.60mm
12-24	12-28	14
		13
		4.70mm
M5.5x.9		4.75mm
12-28		3/16
		12
		4.80mm
		11
		4.90mm
		10
		9
	M6x1	5.00mm
		8
		5.10mm
	1/4-20	7
		13/64
		6
M6x1		5.20mm
		5
	M6x.75	5.25mm
		5.30mm
1/4-20		4
M6x.75		5.40mm
	1/4-28	3
		5.50mm
		7/32
		5.60mm
1/4-28		2
		5.70mm
		5.75mm
		1
		5.80mm
		5.90mm
		A
		15/64
	M7x1	6.00mm
		B
		6.10mm
		C
M7x1		6.20mm
		D
	M7x.75	6.25mm
		6.30mm
		E
		1/4
M7x.75		6.40mm
		6.50mm
	5/16-18	F
		6.60mm
		G
		6.70mm
		17/64
	M8x1.25	6.75mm
5/16-18		H
		6.80mm
		6.90mm
	5/16-24	I
M8x1.25	M8x1	7.00mm
		J
		7.10mm
5/16-24		K
		9/32

TAP SIZE		DRILL SIZE
60%	75%	
M8x1		7.20mm
		7.25mm
		7.30mm
		L
		7.40mm
		M
		7.50mm
		19/64
		7.60mm
		N
		7.70mm
	M9x1.25	7.75mm
		7.80mm
		7.90mm
	3/8-16	5/16
M9x1.25	M9x1	8.00mm
		O
		8.10mm
M9x1		8.20mm
		P
		8.25mm
		8.30mm
3/8-16	1/8-27NPT	21/64
		8.40mm
	3/8-24	Q
	M10x1.5	8.50mm
		8.60mm
		R
3/8-24		8.70mm
1/8-27NPT		11/32
	M10x1.25	8.75mm
M10x1.5		8.80mm
		S
		8.90mm
M10x1.25	M10x1	9.00mm
		T
		9.10mm
		23/64
M10x1		9.20mm
		9.30mm
	7/16-14	U
		9.40mm
	M11x1.5	9.50mm
		3/8
		V
		9.60mm
		9.70mm
		9.75mm
M11x1.5		9.80mm
7/16-14		W
		9.90mm
	7/16-20	25/64
		10.00mm
7/16-20		X
	M12x1.75	10.20mm
		Y
		13/32
		Z
M12x1.75	M12x1.5	10.50mm
	1/2-13	27/64
M12x1.5	M12x1.25	10.75mm
M12x1.25		11.00mm
1/2-13		7/16
		11.50mm
	1/2-20	29/64
		15/32
		12.00mm
		31/64
		12.50mm
		1/2

2P10799

WARNING: Eye protection and appropriate safety equipment recommended with use of these tools.

BRINEY GROUP

TAP DRILL SIZES

TAP SIZE	PITCH	Form	TAP DRILL 75%
NO. 0 - 80		NF	3/64
1 - 64		NC	53
- 72		NF	53
2 - 56		NC	50
- 64		NF	50
3 - 48		NC	47
- 56		NF	45
4 - 40		NC	43
48		NF	42
5 - 40		NC	38
- 44		NF	37
6 - 32		NC	36
- 40		NF	33
8 - 32		NC	29
- 36		NF	29
10 - 24		NC	25
- 32		NF	21
12 - 24		NC	16
- 28		NF	14
1/4	- 20	NC	7
	28	NF	3
5/16	- 18	NC	F
	24	NF	I
3/8	- 16	NC	5/16
	24	NF	Q
7/16	- 14	NC	U
	20	NF	25/64
1/2	- 13	NC	27/64
	20	NF	29/64
9/16	- 12	NC	31/64
	18	NF	1/2
5/8	- 11	NC	17/32
	18	NF	9/16
11/16	- 11	NS	19/32
	16	NS	5/8
3/4	- 10	NC	21/32
	16	NF	11/16
7/8	- 9	NC	49/64
	14	NF	51/64
1"	- 8	NC	7/8
	12	NF	59/64
	14	NS	59/64
1 1/8	- 7	NC	63/64
	12	NF	1 1/32
1 1/4	- 7	NC	1 7/64
	12	NF	1 11/64
1 1/2	- 6	NC	1 11/32
	12	NF	1 27/64
1 3/4	- 5	NC	1 9/16
2"	- 4 1/2	NC	1 25/32
1/8	- 27	NPSC	11/32
1/4	- 18	NPSC	7/16
3/8	- 18	NPSC	37/64
1/2	- 14	NPSC	23/32
3/4	- 14	NPSC	59/64
1"	- 11 1/2	NPSC	1 5/32
1 1/4	- 11 1/2	NPSC	1 1/2
1 1/2	- 11 1/2	NPSC	1 3/4
2"	- 11 1/2	NPSC	2 7/32
1/16	- 27	NPT/NPTF	C
1/8	- 27	NPT/NPTF	Q
1/4	- 18	NPT/NPTF	7/16
3/8	- 18	NPT/NPTF	9/16
1/2	- 14	NPT/NPTF	45/64
3/4	- 14	NPT/NPTF	29/32
1"	- 11 1/2	NPT/NPTF	1 9/64
1 1/4	- 11 1/2	NPT/NPTF	1 31/64
1 1/2	- 11 1/2	NPT/NPTF	1 23/32
2"	- 11 1/2	NPT/NPTF	2 3/16

TAP DRILL SIZES - METRIC

SIZE MM	PITCH MM	DRILL MM	INCH EQUIV.	DRILL INCH
M1.6	0.35	1.25	.049	
M2	0.4	1.6	.063	1/16
M2.5	0.45	2.05	.081	46
M3	0.5	2.5	.098	40
M4	0.7	3.3	.130	30
M5	0.8	4.2	.165	19
M6	1.0	5.0	.197	9
M7	1.0	6.0	.236	A
M8	1.25	6.8	.266	17/64
M10	1.5	8.5	.335	Q
M12	1.75	10.20	.402	Y
M14	2.0	12.0	.472	15/32
M16	2.0	14.0	.551	35/64
M18	2.5	15.5	.610	39/64
M20	2.5	17.5	.689	11/16
M24	3.0	21.0	.827	53/64
M30	3.5	26.5	1.043	1 3/64
M36	4.0	32.0	1.260	1 17/64

THE BRINEY GROUP

BRINEY SPECIAL TOOLS
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BAD AXE, MI

BRINEY SALES
AXLY TOOL & BUSHINGS, INC.
(313) 548-2621
BAD AXE, MI

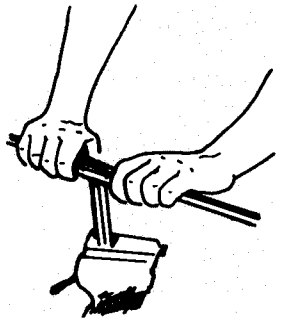
CKS TOOL & ENGINEERING
(517) 269-9702
BAD AXE, MI

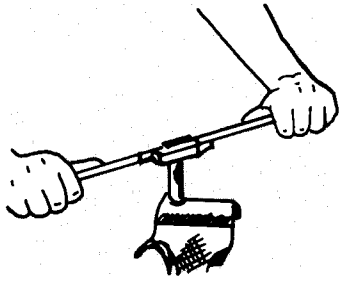
Tips. . .on cutting threads

PROFESSIONAL TAP & DIE SET

STARTING TAP

After hole has been made, hold piece securely with hole upright. Apply cutting oil. Grasp large wrench with both hands near tap and place tap in hole. (Grasp smaller wrenches with hand directly over tap). Press down and start tap clockwise. Relieve resistance by turning back to break chip. Make sure tap is square with surface of the work.



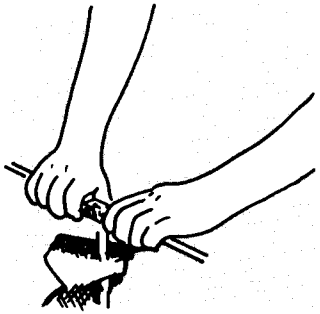


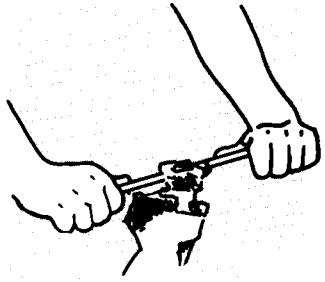
HOLDING TAP WRENCH AFTER THREAD START

Once thread is started properly, tap will draw itself into work. Downward pressure no longer needed. Grasp wrench by both handles and with steady movement continue turning tap. Relieve resistance by turning back to break chip. Do not force tap.

STARTING DIE

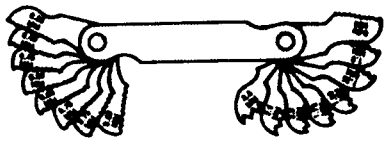
Before cutting threads make small bevel on edge to be threaded. Place die in stock with size marking visible. Tighten set screw(s). Adjust guide by turning cam so guide pins are against work. Apply cutting oil. Grasp stock with both hands near die and place tapered side of die over end. Press down firmly and work die back and forth, just as you work a tap. Be sure die goes on squarely.



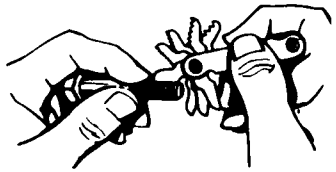


HOLDING DIE STOCK AFTER THREAD START

After thread is started, grasp die stock by handles and with steady back and forth movement continue turning die onto work, advancing slightly with each turn. It is not necessary to press down as die will draw itself onto work.



The quickest and most exact way to find the number of threads per inch on a bolt or nut is with a Screw Pitch Gauge. Measure this "pitch" with either a Metric or U.S. Thread gauge as shown below.



Measuring EXTERNAL Threads

Measuring INTERNAL Threads

SEE REVERSE SIDE FOR TAP-DRILL SELECTOR

BRINEY GROUP

BRINEY GROUP:
(517) 269-9558
FAX: (517) 269-9559

DECIMAL EQUIVALENTS

Inch-Wire	Decimal	Inch-Wire	Decimal	Inch-Wire	Decimal	Inch-Wire	Decimal
.1mm	.0039	45	.0820	5	.2055	29/64	.4531
.2mm	.0079	44	.0860	4	.2090	15/32	.4688
.3mm	.0118	43	.0890	3	.2130	12mm	.4724
80	.0135	42	.0935	7/32	.2188	31/64	.4844
79	.0145	3/32	.0938	2	.2210	1/2	.5000
1/64	.0156	41	.0960	1	.2280	13mm	.5118
.4mm	.0157	40	.0980	A	.2340	33/64	.5156
78	.0160	39	.0995	15/64	.2344	17/32	.5312
77	.0180	38	.1015	6mm	.2362	35/64	.5469
.5mm	.0197	37	.1040	B	.2380	14mm	.5512
76	.0200	36	.1065	C	.2420	9/16	.5625
75	.0210	7/64	.1094	D	.2460	37/64	.5781
74	.0225	35	.1100	1/4	.2500	15mm	.5906
.6mm	.0236	34	.1110	F	.2570	19/32	.5938
73	.0240	33	.1130	G	.2610	39/64	.6094
72	.0250	32	.1160	17/64	.2656	5/8	.6250
71	.0260	3mm	.1181	H	.2660	16mm	.6299
.7mm	.0276	31	.1200	I	.2720	41/64	.6406
70	.0280	1/8	.1250	7mm	.2756	21/32	.6562
69	.0292	30	.1285	J	.2770	17mm	.6693
68	.0310	29	.1360	K	.2810	43/64	.6719
1/32	.0312	28	.1405	9/32	.2812	11/16	.6875
.8mm	.0315	9/64	.1406	L	.2900	45/64	.7031
67	.0320	27	.1440	M	.2950	18mm	.7087
66	.0330	26	.1470	19/64	.2969	23/32	.7188
65	.0350	25	.1495	N	.3020	47/64	.7344
.9mm	.0354	24	.1520	5/16	.3125	19mm	.7480
64	.0360	23	.1540	8mm	.3150	3/4	.7500
63	.0370	5/32	.1562	O	.3160	49/64	.7656
62	.0380	22	.1570	P	.3230	25/32	.7812
61	.0390	4mm	.1575	21/64	.3281	20mm	.7874
1mm	.0394	21	.1590	Q	.3320	51/64	.7969
60	.0400	20	.1610	R	.3390	13/16	.8125
59	.0410	19	.1660	11/32	.3438	21mm	.8268
58	.0420	18	.1695	S	.3480	53/64	.8281
57	.0430	11/64	.1719	9mm	.3543	27/32	.8438
56	.0465	17	.1730	T	.3580	55/64	.8594
3/64	.0469	16	.1770	23/64	.3594	22mm	.8661
55	.0520	15	.1800	U	.3680	7/8	.8750
54	.0550	14	.1820	3/8	.3750	57/64	.8906
53	.0595	13	.1850	V	.3770	23mm	.9055
1/16	.0625	3/16	.1875	W	.3860	29/32	.9062
52	.0635	12	.1890	25/64	.3906	59/64	.9219
51	.0670	11	.1910	10mm	.3937	15/16	.9375
50	.0700	10	.1935	X	.3970	24mm	.9449
49	.0730	9	.1960	Y	.4040	61/64	.9531
48	.0760	5mm	.1968	13/32	.4062	31/32	.9688
5/64	.0781	8	.1990	Z	.4130	25mm	.9842
47	.0785	7	.2010	27/64	.4219	63/64	.9844
2mm	.0787	13/64	.2031	11mm	.4331	1	1.0000
46	.0810	6	.2040	7/16	.4375		