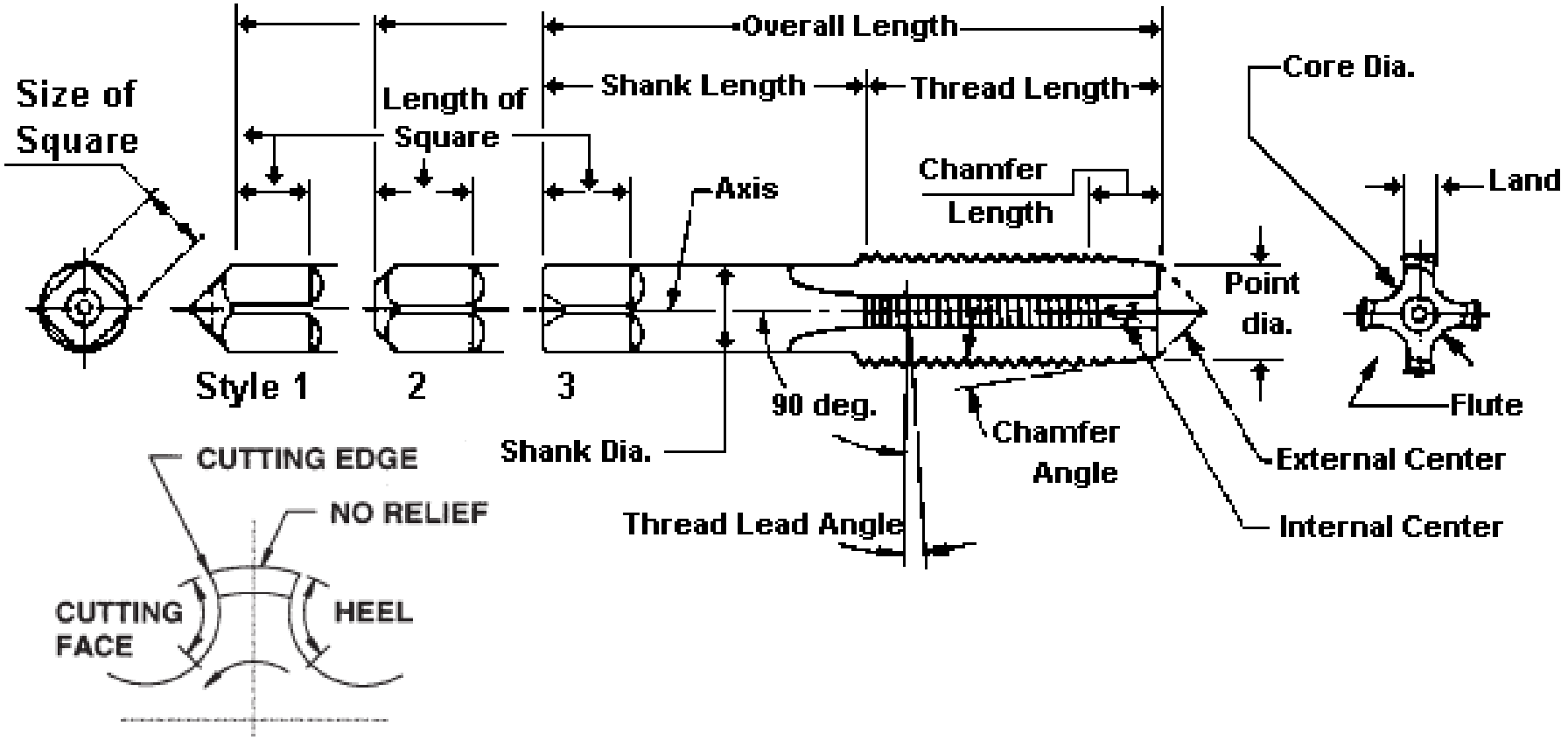
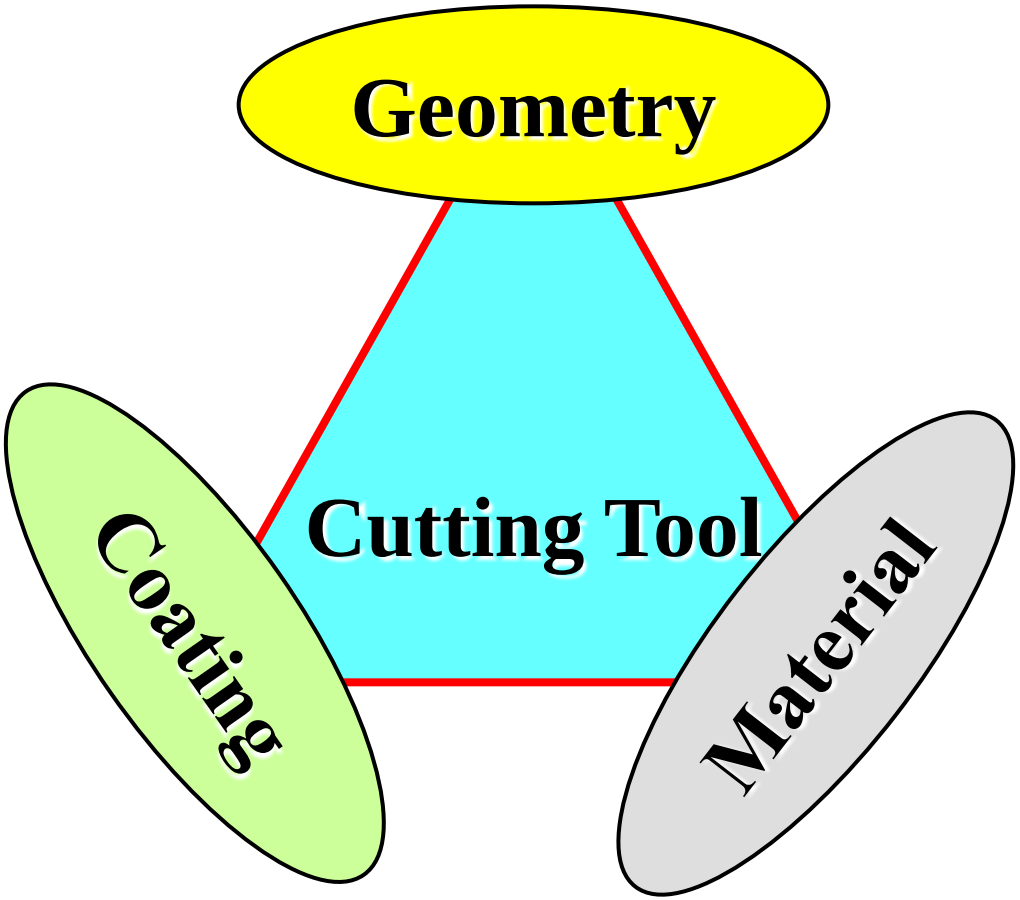
BasicTap Training

Tap Terms

- Cut or Form Internal Threads

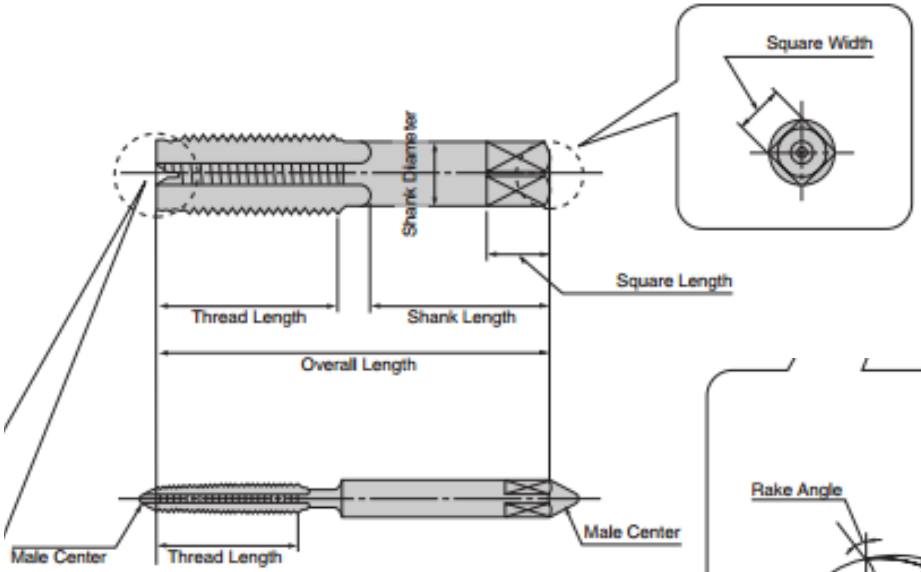


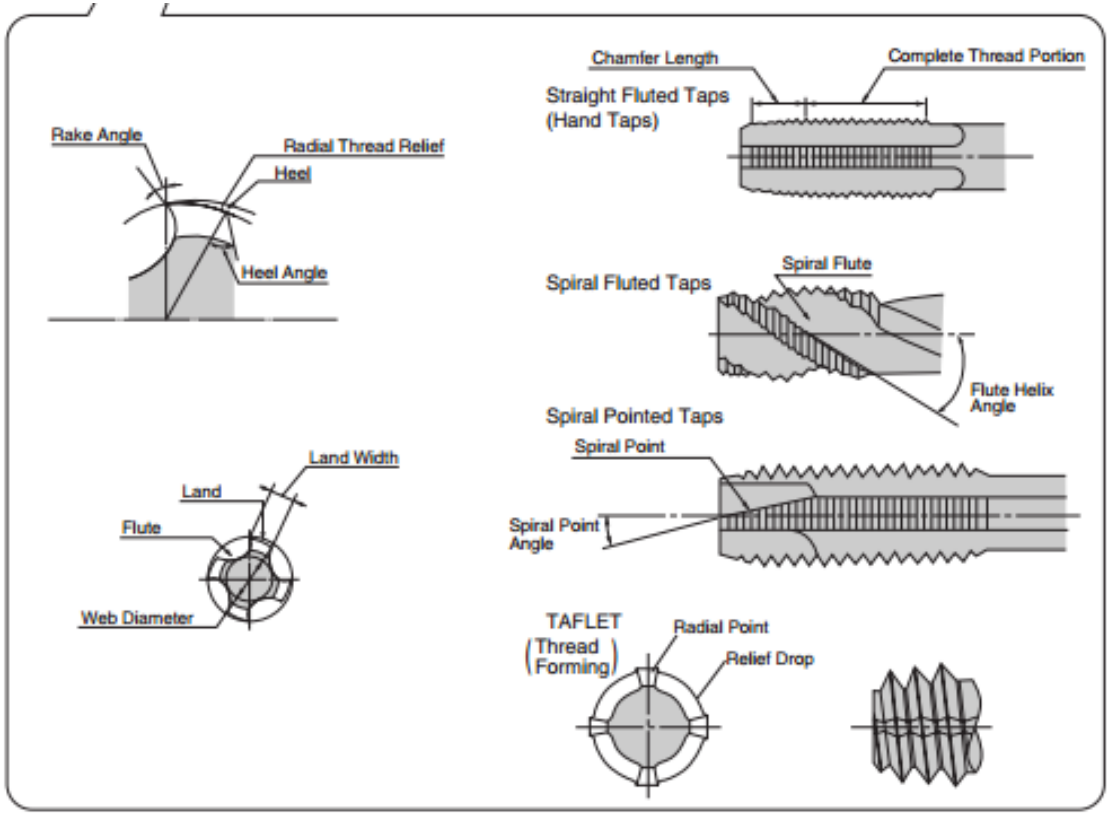
Three Key Elements of a Cutting Tool



- 3 Elements Needed in a Good Cutting Tool
- Well Balanced For Best Performance

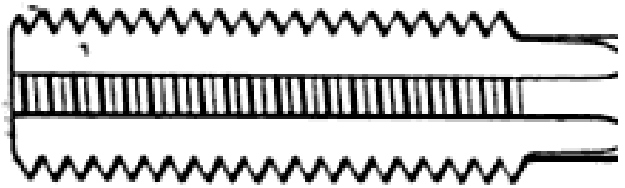
Tap Terms Continued



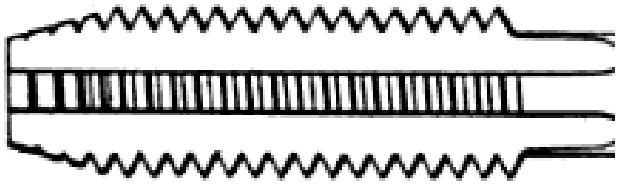


Chamfer Types

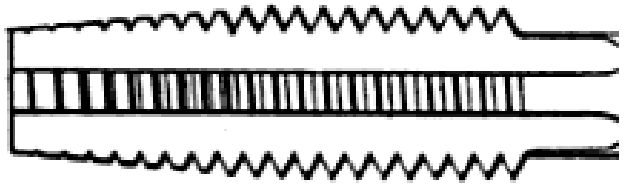
- Bottoming
  - 1.5P
  - Blind Holes



- Modified Bottoming
  - 2.5P-3P

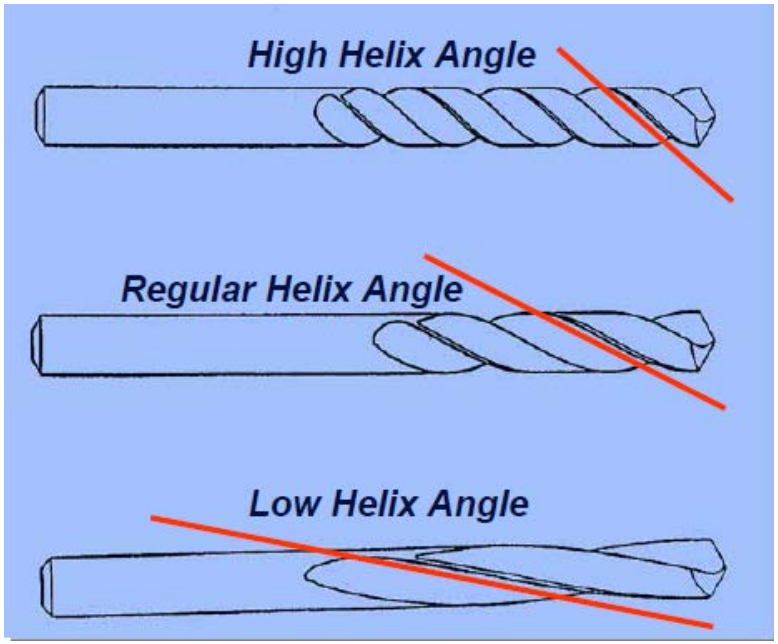


- Plug
  - 4P-5P
  - Through Holes



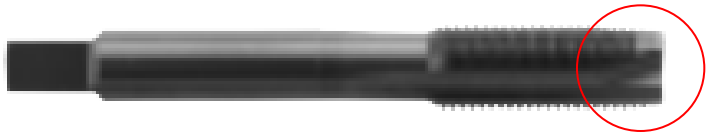
Cut Tap Flutes

- Evacuate Chips
  - Spiral Flute Up (Like a Drill)
  - Spiral Pointed Push Forward
- Varying # of Flutes



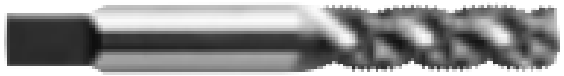
TAPS FLUTE ST
- Straight Flute

TAPS FLUTE SP
- Spiral Pointed



TAPS FLUTE NH
- Normal Helix

TAPS FLUTE HH
- High Helix



TAPS FLUTE L
- Low Helix

Straight Flute Cut Tap

- Generally Hand Taps
- Various Threads Chamfered

B CHAMFER – 1.5P (Blind Holes)

P CHAMFER – 4P-5P (Through Holes)

2.5P CHAMFER – 2.5P Straight Pipe

TAPER PIPE – Taper Pipe

- Chips Stay in Flutes (Not Ejected)

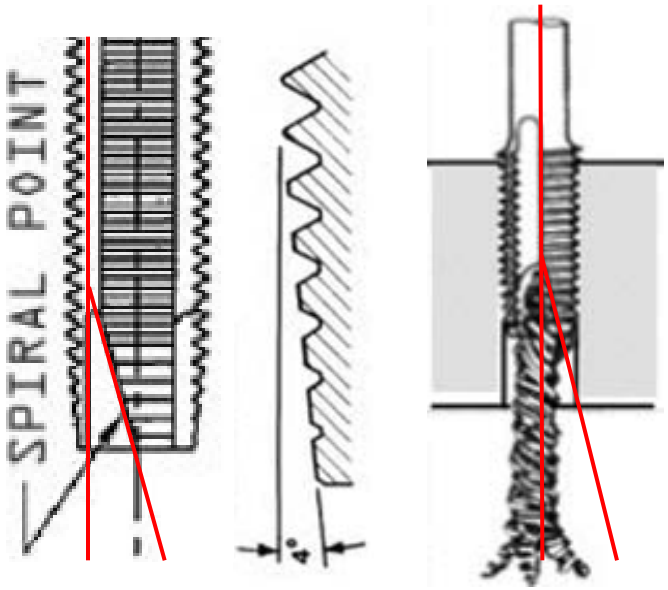
Other Cut Tap Types

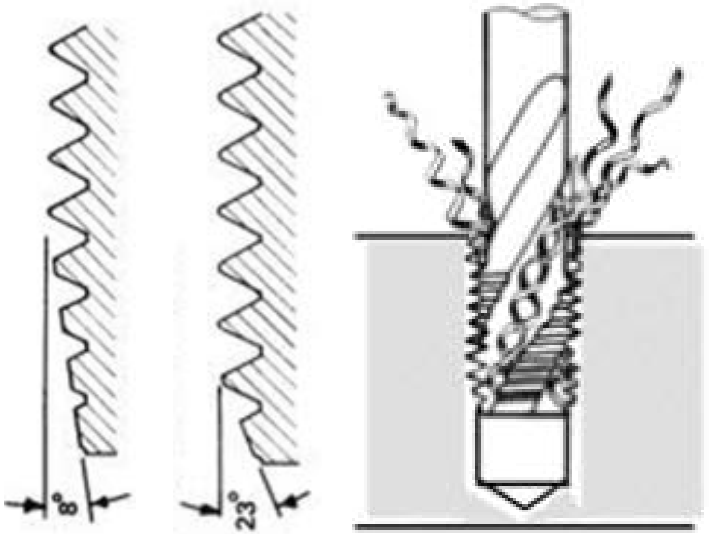
Spiral Point (Plug Tap)

- Thru Holes
- 4-5 Threads Chamfered
- Chips are Pushed Forward
- (Not Always Pointed)

Spiral Fluted

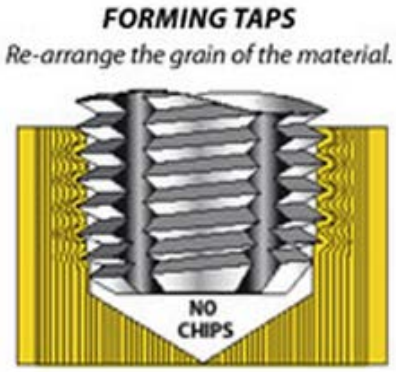
- Blind Holes
- 2-2½ Threads Chamfered (Sometimes Less)
- Chips are Ejected like Drill

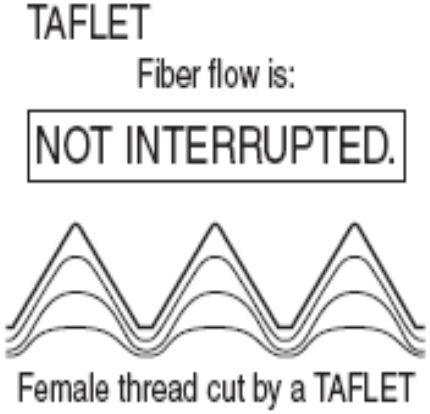


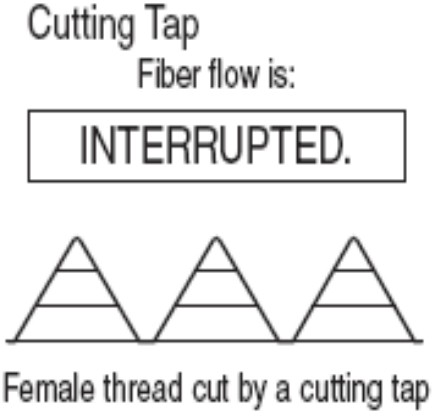


Form Tap

- Oil Grooves Instead of Flutes
- Chip-less Material is Formed (Re-Arranged)
- Usually for Softer Materials/Stringy Chips
- Tap Hole Size More Critical

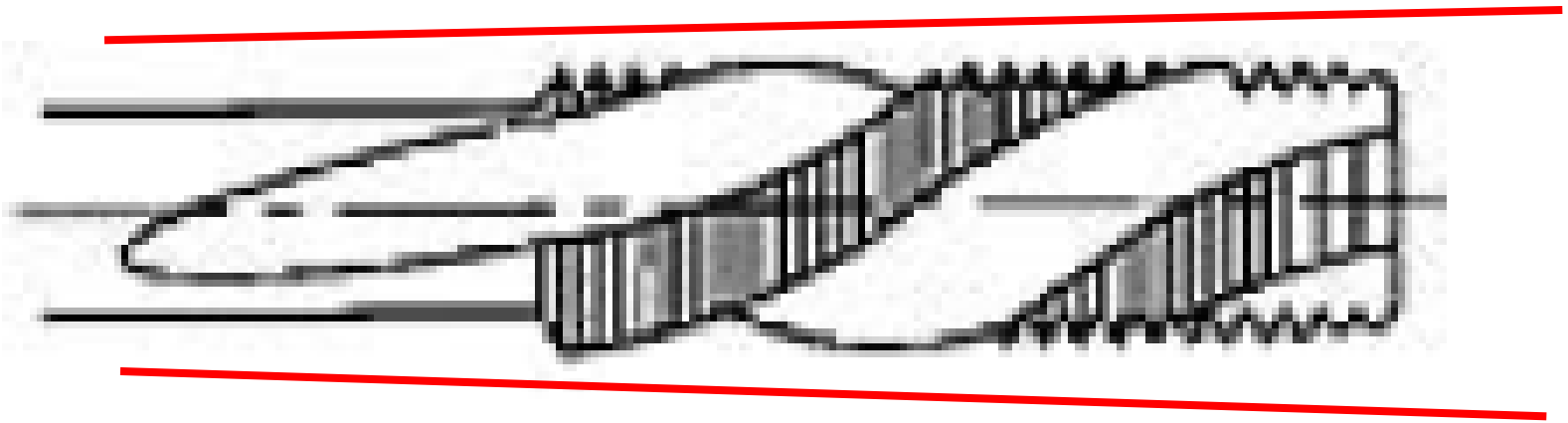






Back Taper

- Tap Ø is Tapered Towards the Shank
- Avoid Excess Rubbing on the Hole Wall
  - Decrease Heat
  - Decrease Friction



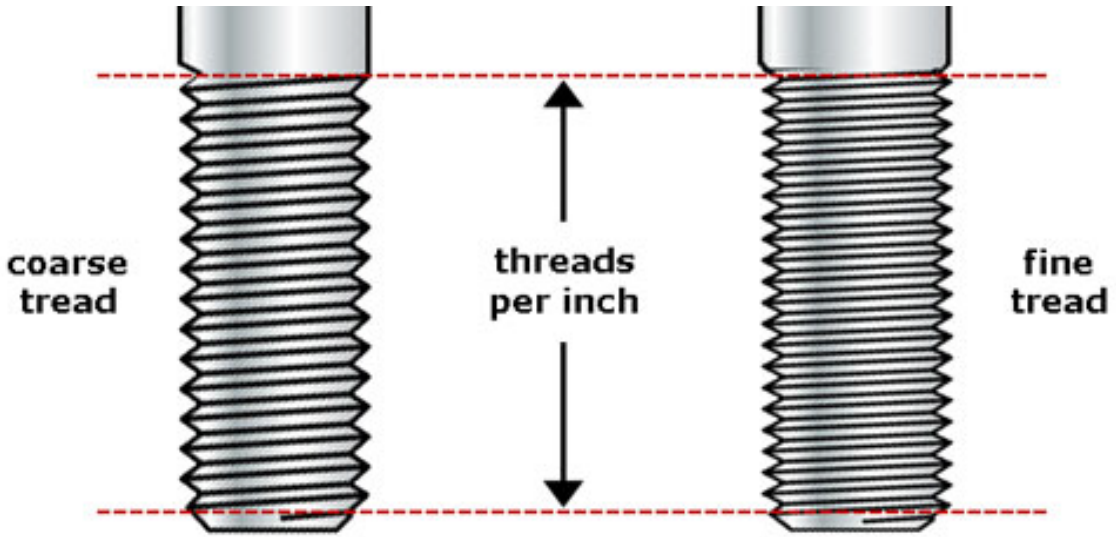
National Standards and Threads Per Inch (TPI)

National Course (NC)

- Courser/Less TPI
- NC Bolts use NC Tapped Holes
- Looser Fit (Less Precise)
- EX – ¼” NC has 20 TPI

National Fine (NF)

- Finer/ More TPI
- NF Bolts use NF Tapped Holes
- Tighter Fit (More Precise)
- EX – ¼” NF has 28 TPI



Visual Index Pg. 8 & 9

	Mark	Explanation
Coating	G	G (TiN) Coating
	UG	UG (TiCN multi layer) Coating
	SG	SG (TiCN multi layer) Coating
	AG	AG (TiAlN multi layer) Coating
	AQ	AQ (TiAlN multi layer) Coating
	X's	X's (TiAlN multi layer) Coating
	GS	GS (TiAlN multi layer) Coating
	DLC	DLC Coating
	DIA	Diamond Coating
Tool Materials	HSS	High Speed Steels
	HSS Co	Cobalt High Speed Steels
	FMX	Fine Melting HSS
	FAX	High Grade Powder HSS
	PREMIUM	Vanadium HSS
	HSS-V	Vanadium HSS
	HSSE	Cobalt/Vanadium HSS
	Carbide	Tungsten Carbide

	Mark	Explanation	
Flutes of Drills	N	Normal Helix Flutes	~ 30°
	H	High Helix Flutes	40° - 45°
	L	Low Helix Flutes	15° - 20°
Drill Dimension	118°	Point Angle of Drills	
		Drill Length is from Center Point	
		Drill Length is from Corner Point	
	OIL HOLE	Oil-hole Drills	
	3FLUTE	Three Flutes Drills	
Lip Relief of Drills		Shape of Lip Relief is Conical	
	RAKE	Shape of Lip Relief is Two Rake	
	RAKE	Shape of Lip Relief is Three Rake	
Thinning of Drills		S-type Thinning	
		Notch Thinning	
		X-type Thinning	
		XH-type Thinning	
	RAKE/X	2Rake Relief & X-type Thinning	
	RAKE/XR	2Rake Relief & XR-type Thinning	
	RAKE/3F	3 Flutes Drills & 3F-type Thinning	

	Mark	Explanation		Mark	Explanation
Tolerance of Drills Dia.	js6	Tolerance of Drills Diameter is js6	Flutes of End Mills		4 Flutes Radius End mills (Center Cut)
	h7	Tolerance of Drills Diameter is h7			2 Flutes Ball Nose End mills (Center Cut)
	h8	Tolerance of Drills Diameter is h8			4 Flutes Ball Nose End mills (Center Cut)
Flutes of End Mills		Sharp corner Type End mills			6 Flutes Ball Nose End mills (Center Cut)
		2 Flutes Square End mills (Center Cut)	Type of Taps		Cutting Taps
		3 Flutes Square End mills (Center Cut)			Forming Taps
		4 Flutes Square End mills (Center Cut)	Flutes of Taps	ST	Straight Flutes Taps
		4 Flutes Square for X's-mill Hard (Center Cut)		SP	Spiral Pointed Taps
		5 Flutes Square End mills (Center Cut)		NH	Normal Helix Flutes Taps
		6 Flutes Square End mills (Center Cut)		HH	High Helix Flutes Taps
		6 Flutes Square for X's-mill Hard & X's-mill Multi Flutes (Center Cut)		L	Low Helix Flutes Taps
		8 Flutes Square for X's-mill Hard & X's-mill Multi Flutes (Center Cut)	Chamfer of Taps	MB	Chamfer Length is 2.5P to 3P
		4 Flutes Square End mills (with Center Hole)		P	Chamfer Length is 4P to 5P (for through hole)
		5 Flutes Square End mills (with Center Hole)		B	Chamfer Length is 1.5P (for blind hole)
		6 Flutes Square End mills (with Center Hole)		2.5P	Chamfer Length is 2.5P
		Multiple Flutes (over 8) Square End mills (with Center Hole)		3.5P	Chamfer Length is 3.5P
		2 Flutes Radius End mills (Center Cut)		TAPER PIPE	Cutting Taps for Taper Pipe

Taps / Visual Index

Type of Tap Coating

Type of Tap Material

Type of Tap – Cutting or Forming

Type of Flute on Taps

Chamfer Length

Specs/Sizes
Speeds/Feeds

P251
P260

Specs/ Sizes

Speeds & Feeds

Nachi Materials

- HSS = High Speed Steel
- General Purpose
- Symbol= HSS

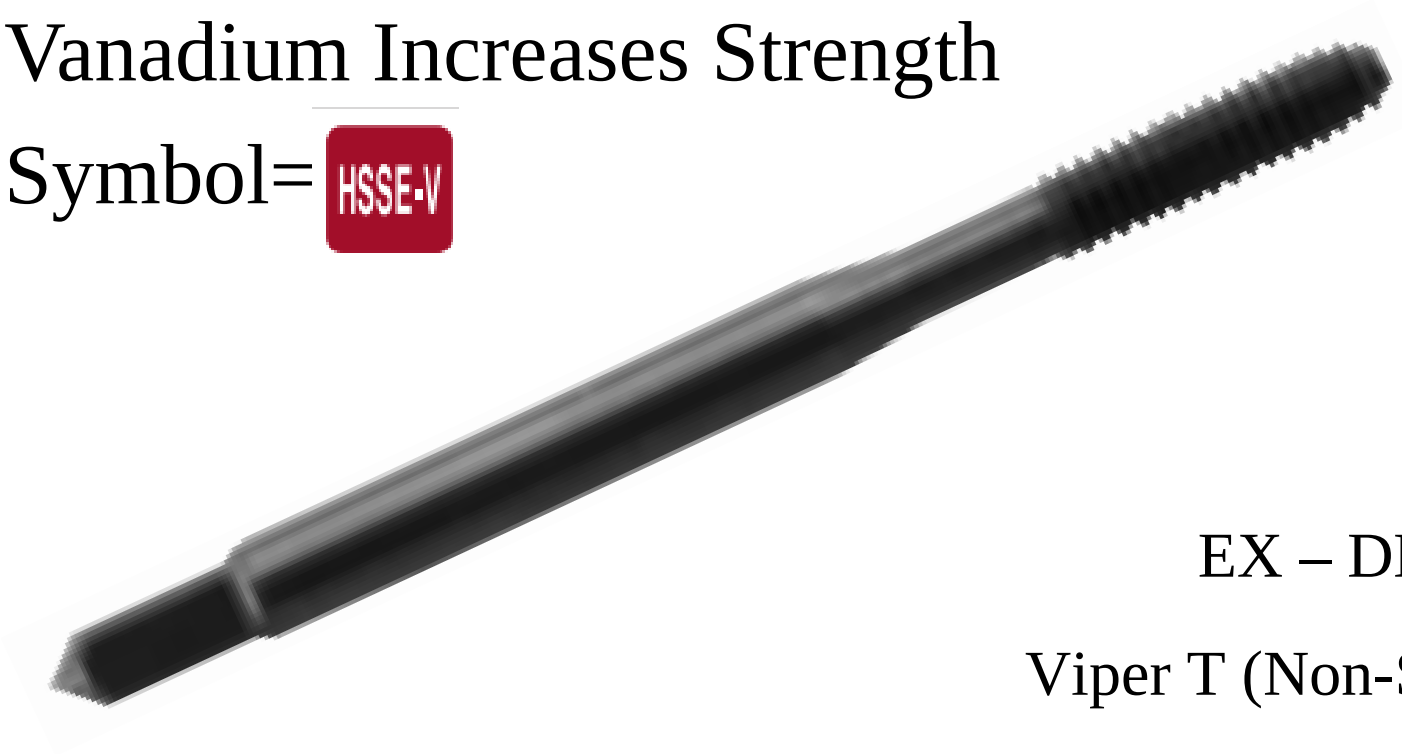
EX – L911P, L913P, L921P,

L923(S & P), L931(H), L933(H),

L915, L925, L941(P & D), L943, L945(D), L910, L920

Nachi Materials

- HSSE-V = Vanadium HSS
- Vanadium Increases Strength
- Symbol= HSSE-V



EX – DLC Taflet,

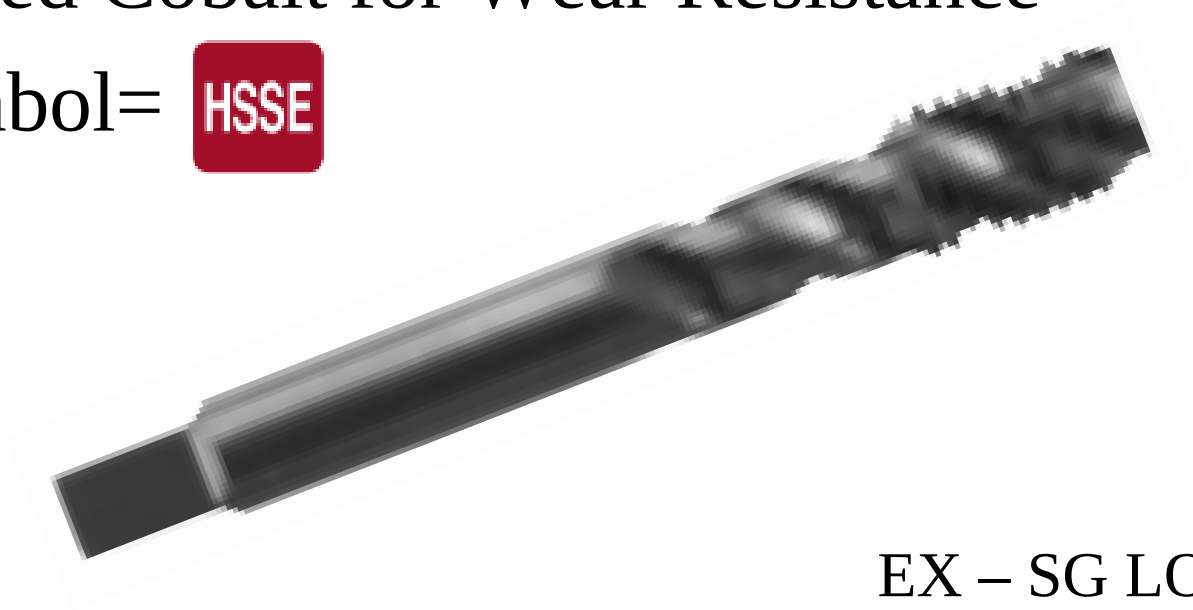
Viper T (Non-Stainless),

Viper Taflet (Steel), L911, L913,

VTP (Non-Roll Form), L921(S), L969, L947(D)

Nachi Materials

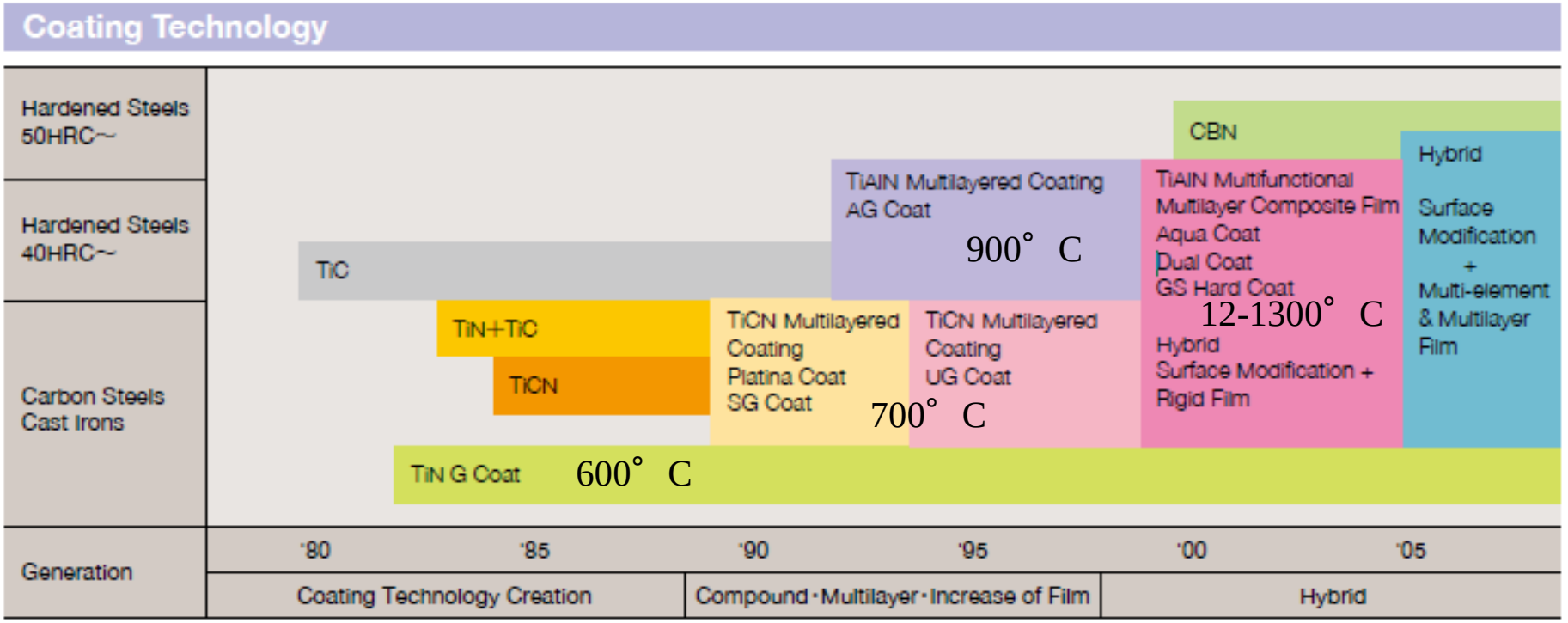
- HSSE = Cobalt/Vanadium HSS
- Added Cobalt for Wear Resistance
- Symbol= HSSE



EX – SG LO-SPIRAL,

VIPER T FOR STAINLESS STEEL

Coatings Development and Approx. Temperature Max



Nachi Coatings

- G-Coating = TiN Coating
- Service Temperature= 600° C
- Color= Bright Gold Yellow
- Symbol= G

EX – L911P, L913P, L921P, L923P

G-Coated (TiN) Taps

- Hand Taps
  - L911P (Fractional)
  - L913P (Machine Screw)
- Spiral Pointed (Plug)
  - L921P (Fractional)
  - L923P (Machine Screw)
- Taper Pipe L941P

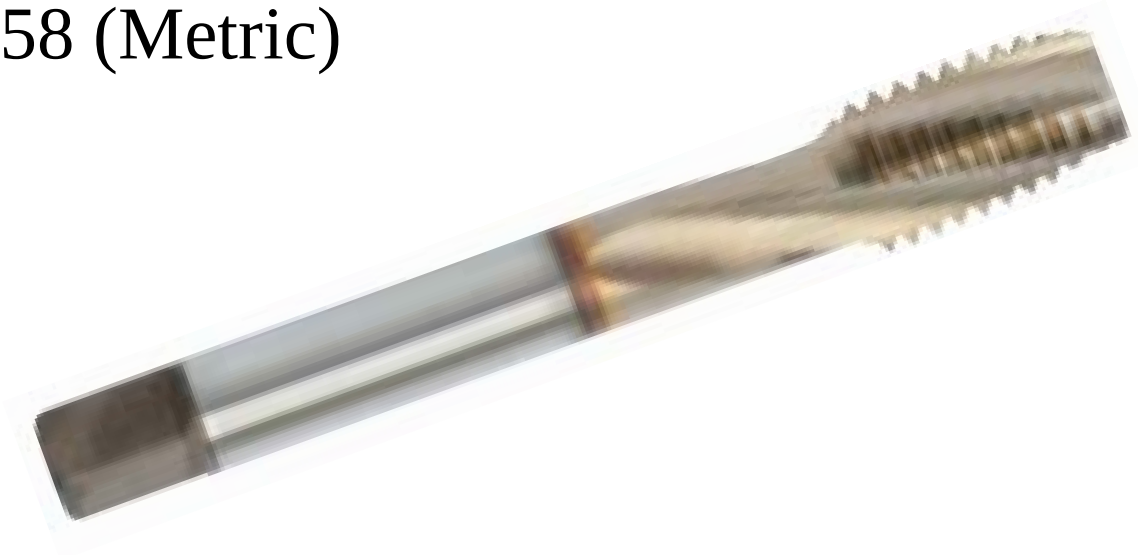
Nachi Coatings

- SG-Coating = Tin + TiCN Coating (Multi-Layer Coating)
- Service Temperature= 700° C
- Color= Gold Yellow
- Symbol= SG

EX – SG Lo-Spiral (L6959 & L6958)

SG-Coating (Tin + TiCN) Coating

- SG Lo-Spiral
  - L6959 (Machine Screw/Fractional)
  - L6958 (Metric)



Nachi Coatings

- DLC-Coating = Diamond Like Carbon
- Service Temperature= 600° C
- Color= Black
- Symbol= DLC

EX – DLC Tafflet L6955-7

DLC-Coating (Diamond Like Carbon)

- DLC Tafflet Thread Forming (Bottoming)
  - L6955 (Fractional)
  - L6956 (Machine Screw)
  - L6957 (Metric)

Cut Tap Drill Sizes Pg. 266

Tap	Tap Drill	Decimal Equiv. of Tap Drill	Probable Hole Size	Percent of Thread	Tap	Tap Drill	Decimal Equiv. of Tap Drill	Probable Hole Size	Percent of Thread	Tap	Tap Drill	Decimal Equiv. of Tap Drill	Probable Hole Size	Percent of Thread
0-80	56	.0465	.0480	74	8-32	29	.1360	.1389	62	3/8-16	5/16	.3125	.3160	72
	3/64	.0469	.0484	71		28	.1405	.1434	51		O	.3160	.3204	68
1-64	54	.0550	.0565	81	8-36	29	.1360	.1389	70		P	.3230	.3274	59
	53	.0595	.0610	59		28	.1405	.1434	57	3/8-24	21/64	.3281	.3325	79
1-72	53	.0595	.0610	67		9/64	.1406	.1435	57		Q	.3320	.3364	71
	1/16	.0625	.0640	50	10-24	27	.1440	.1472	79		R	.3390	.3434	58
2-56	51	.0670	.0687	74		26	.1470	.1502	74	7/16-14	T	.3580	.3626	81
	50	.0700	.0717	62		25	.1495	.1527	69		23/64	.3594	.3640	79
	49	.0730	.0747	49		24	.1520	.1552	64		U	.3680	.3726	70
2-64	50	.0700	.0717	70		23	.1540	.1572	61		3/18	.3750	.3796	62
	49	.0730	.0747	56		5/32	.1563	.1595	56		V	.3770	.3816	60
3-48	48	.0760	.0779	78		22	.1570	.1602	55	7/16-20	W	.3860	.3906	72
	5/64	.0781	.0800	70	10-32	5/32	.1563	.1595	75		25/64	.3906	.3952	65
	47	.0785	.0804	69		22	.1570	.1602	73		X	.3970	.4016	55
	46	.0810	.0829	60		21	.1590	.1622	68	1/2-13	27/64	.4219	.4216	73
	45	.0820	.0839	56		20	.1610	.1642	64		7/16	.4375	.4422	58
3-56	46	.0810	.0829	69		19	.1660	.1692	51	1/2-20	29/64	.4531	.4578	65
	45	.0820	.0839	65	12-24	11/64	.1719	.1754	75	9/16-12	15/32	.4688	.4736	82
	44	.0860	.0879	48		17	.1730	.1765	73		31/64	.4844	.4892	68
4-40	44	.0860	.0880	74		16	.1770	.1805	66	9/16-18	1/2	.5000	.5048	80
	43	.0890	.0910	65		15	.1800	.1835	60		33/64	.5156	.5204	58
	42	.0935	.0955	55		14	.1820	.1855	56	5/8-11	17/32	.5313	.5362	75
	3/32	.0938	.0958	50	12-28	16	.1770	.1805	77		35/64	.5469	.5518	62
4-48	42	.0935	.0955	61		15	.1800	.1835	70	5/8-18	9/16	.5625	.5674	80
	3/32	.0938	.0958	60		14	.1820	.1855	66		37/64	.5781	.5831	58
	41	.0960	.0980	52		13	.1850	.1885	59	3/4-10	41/64	.6406	.6456	80
5-40	40	.0980	.1003	76		3/16	.1875	.1910	54		21/32	.6563	.6613	68
	39	.0995	.1018	71	1/4-20	9	.1960	.1998	77	3/4-16	11/16	.6875	.6925	71
	38	.1015	.1038	65		8	.1990	.2028	73	7/8-9	49/64	.7656	.7708	72
	37	.1040	.1063	58		7	.2010	.2048	70		25/32	.7812	.7864	61
5-44	38	.1015	.1038	72		13/64	.2031	.2069	66	7/8-14	51/64	.7969	.8021	79
	37	.1040	.1063	63		6	.2040	.2078	65		13/16	.8125	.8177	62
	36	.1065	.1088	55		5	.2055	.2093	63	1"-8	55/64	.8594	.8653	83
6-32	37	.1040	.1063	78		4	.2090	.2128	57		7/8	.8750	.8809	73
	36	.1065	.1091	71	1/4-28	3	.2130	.2168	72		57/64	.8906	.8965	64
	7/64	.1094	.1120	64		7/32	.2188	.2226	59		29/32	.9063	.9122	54
	35	.1100	.1126	63		2	.2210	.2248	55	1"-12	29/32	.9063	.9123	81
	34	.1110	.1136	60	5/16-18	F	.2570	.2608	72		59/64	.9219	.9279	67
	33	.1130	.1156	55		G	.2610	.2651	66		15/16	.9375	.9435	52
6-40	34	.1110	.1136	75		17/64	.2656	.2697	59	1"-14	59/64	.9219	.9279	78
	33	.1130	.1156	69		H	.2660	.2701	59		15/16	.9375	.9435	61
	32	.1160	.1186	60	5/16-24	H	.2660	.2701	78					
						I	.2720	.2761	67					

Thread Form Tap Drill Sizes Pg. 267

Nominal Size	Threads per Inch		75% THREAD			70% THREAD			65% THREAD			60% THREAD		
	NC UNC	NF UNF	Theor. Hole Core Size	Nearest Drill Size	Dec. Equly.	Theor. Hole Core Size	Nearest Drill Size	Dec. Equiv.	Theor. Hole Core Size	Nearest Drill Size	Dec. Equly.	Theor. Hole Core Size	Nearest Drill Size	Dec. Equly.
0	—	80	.0536	1.35mm	.0531	.0540	1.35mm	.0531	.0545	—	—	.0549	54	.0550
1	64	—	.0650	1.65mm	.0650	.0655	1.65mm	.0650	.0661	—	—	.0666	—	—
1	—	72	.0659	1.65mm	.0650	.0663	—	—	.0669	1.7mm	.0669	.0673	51	.0670
2	56	—	.0769	1.95mm	.0768	.0774	1.95mm	.0768	.0781	3/64	.0781	.0787	47	.0785
2	—	64	.0780	5/64	.0781	.0785	47	.0785	.0791	2.0mm	.0787	.0796	2.0mm	.0787
3	48	—	.0884	2.25mm	.0886	.0890	43	.0890	.0898	43	.0890	.0905	2.3mm	.0906
3	—	56	.0899	43	.0890	.0904	—	—	.0911	2.3mm	.0906	.0917	2.3mm	.0906
4	40	—	.0993	2.5mm	.0984	.1000	39	.0995	.1010	39	.0995	.1018	38	.1015
4	—	48	.1014	38	.1015	.1020	38	.1015	.1028	2.6mm	.1024	.1035	2.6mm	.1024
5	40	—	.1123	34	.1110	.1130	33	.1130	.1140	33	.1130	.1148	2.9mm	.1142
5	—	44	.1134	33	.1130	.1141	2.9mm	.1142	.1150	2.9mm	.1142	.1157	—	—
6	32	—	.1221	2.1mm	.1220	.1230	3.1mm	.1220	.1243	—	—	.1252	1/8	.1250
6	—	40	.1253	1/8	.1250	.1260	3.2mm	.1260	.1270	3.2mm	.1260	.1278	3.25mm	.1280
8	32	—	.1481	3.75mm	.1476	.1490	—	—	.1503	25	.1495	.1512	3.8mm	.1496
8	—	36	.1498	25	.1495	.1507	3.8mm	.1496	.1518	24	.1520	.1526	24	.1520
10	24	—	.1688	—	—	.1700	18	.1695	.1717	11/64	.1719	.1729	11/64	.1719
10	—	32	.1741	17	.1730	.1750	—	—	.1763	—	—	.1772	16	.1770
12	24	—	.1948	10	.1935	.1960	9	.1960	.1977	5.0mm	.1968	.1989	8	.1990
12	—	28	.1978	5.0mm	.1968	.1989	8	.1990	.2003	8	.1990	.2014	7	.2010
1/4	20	—	.2245	5.7mm	.2244	.2260	—	—	.2280	1	.2280	.2295	1	.2280
1/4	—	28	.2318	—	—	.2329	5.9mm	.2323	.2343	A	.2340	.2354	15/64	.2344
5/16	18	—	.2842	7.2mm	.2835	.2861	7.25mm	.2854	.2879	7.3mm	.2874	.2898	L	.2900
5/16	—	24	.2912	7.4mm	.2913	.2927	—	—	.2941	M	.2950	.2955	7.5mm	.2953
3/8	16	—	.3431	11/32	.3437	.3452	8.75mm	.3445	.3474	S	.3480	.3495	8.9mm	.3504
3/8	—	24	.3537	9.0mm	.3543	.3552	9.0mm	.3543	.3566	—	—	.3580	T	.3580
7/16	14	—	.4011	—	—	.4035	Y	—	.4059	13/32	—	.4084	—	—
7/16	—	20	.4120	Z	—	.4137	10.5mm	—	.4154	—	—	.4171	—	—
1/2	13	—	.4608	—	—	.4634	—	—	.4660	—	—	.4686	15/32	—
1/2	—	20	.4745	—	—	.4762	—	—	.4779	—	—	.4796	—	—
9/16	12	—	.5200	—	—	.5229	—	—	.5257	—	—	.5285	—	—
9/16	—	18	.5342	13.5mm	.5315	.5361	—	—	.5380	—	—	.5398	—	—
5/8	11	—	.5787	37/64	.5781	.5817	37/64	.5781	.5848	—	—	.5879	—	—
5/8	—	18	.5967	19/32	.5937	.5986	—	—	.6004	—	—	.6023	—	—
3/4	10	—	.6990	—	—	.7024	—	—	.7058	45/64	.7031	.7092	18.0mm	.7087
3/4	—	16	.7181	23/32	.7187	.7202	23/32	.7187	.7224	—	—	.7245	—	—

Pipe Taps Drill Sizes Pg. 268

For Pipe Taps

Nominal Pipe Size	Threads Per Inch	NPT–NPTF (When Drilled Only)		NPT–NPTF–ANPT (When Taper Reamed)		NPS–NPSF	
		Dr. Size	Dec. Equiv.	Dr. Size	Dec. Equiv.	Dr. Size	Dec. Equiv.
1/16	27	D	.2460	15/64	.2344	1/4	.2500
1/8	27	R	.3390	21/64	.3281	11/32	.3438
1/4	18	7/16	.4375	27/64	.4219	7/16	.4375
3/8	18	37/64	.5781	9/16	.5625	37/64	.5781
1/2	14	45/64	.7031	11/16	.6875	23/32	.7188
3/4	14	59/64	.9219	57/64	.8906	59/64	.9218
1	11-1/2	1 5/32	1.1562	1 1/8	1.1250	1 5/32	1.1562
1 1/4	11-1/2	1 1/2	1.5000	1 15/32	1.4688		
1 1/2	11-1/2	1 47/64	1.7344	1 45/64	1.7031		
2	11-1/2	2 7/32	2.2188	2 3/16	2.1875		

Metric Tap Drill Sizes Pg. 269

For Cutting Taps

Unit : mm

Nominal size	Pitch	Percentage of thread engagement hole diameter				Minor dia of internal thread
		100%	90%	80%	70%	
M2	0.4	1.57	1.61	1.65	1.7	1.567~1.679
M3	0.5	2.46	2.51	2.57	2.62	2.459~2.599
M3.5	0.6	2.85	2.92	2.98	3.05	2.850~3.010
M4	0.7	3.24	3.32	3.39	3.47	3.242~3.422
M5	0.8	4.13	4.22	4.31	4.39	4.134~4.334
M6	1	4.92	5.03	5.13	5.24	4.917~5.153
M7	1	5.92	6.03	6.13	6.24	5.917~6.153
M8	1.25	6.65	6.78	6.92	7.05	6.647~6.912
	1	6.92	7.03	7.13	7.24	6.917~7.153
M10	1.5	8.38	8.54	8.7	8.86	8.376~8.676
	1.25	8.65	8.78	8.92	9.05	8.647~8.912
M12	1.75	10.11	10.3	10.5	10.7	10.106~10.441
	1.25	10.65	10.78	10.92	11.05	10.647~10.912
M14	2	11.8	12.1	12.3	12.5	11.835~12.210
	1.25	12.65	12.78	12.92	13.05	12.647~19.912
M16	2	13.8	14.1	14.3	14.5	13.835~14.210
	1.5	14.38	14.54	14.7	14.86	14.376~14.676
M18	2.5	15.3	15.6	15.8	16.1	15.294~15.744
	1.5	16.38	16.54	16.7	16.86	16.376~16.676
M20	2.5	17.3	17.6	17.8	18.1	17.294~17.744
	1.5	18.38	18.54	18.7	18.86	18.376~18.676
M22	2.5	19.3	19.6	19.8	20.1	19.264~19.744
	1.5	20.38	20.54	20.7	20.86	20.367~20.676
M24	3	20.8	21.1	21.4	21.7	20.752~21.252
	1.5	22.38	22.54	22.7	22.86	22.376~22.676
M27	3	23.8	24.1	24.4	24.7	23.752~24.252
M30	3.5	26.2	26.6	27.0	27.3	26.211~26.711

For Thread Forming Taps

Unit : mm

Nominal size	Pitch	Percentage of thread engagement hole diameter			
		100%	90%	80%	70%
M2	0.4	1.77	1.80	1.82	1.84
M2.2	0.45	1.94	1.97	2.00	2.02
M2.5	0.45	2.24	2.27	2.30	2.32
M3	0.5	2.72	2.74	2.77	2.80
M3.5	0.6	3.16	3.19	3.23	3.26
M4	0.7	3.60	3.64	3.68	3.72
M4.5	0.75	4.07	4.12	4.16	4.20
M5	0.8	4.55	4.59	4.64	4.68
M6	1	5.43	5.49	5.55	5.60
M7	1	6.43	6.49	6.55	6.60
M8	1.25	7.29	7.36	7.43	7.50
	1	7.43	7.49	7.55	7.60
M10	1.5	9.15	9.23	9.32	9.40
	1.25	9.29	9.36	9.43	9.50
M12	1.75	11.01	11.11	11.21	11.31
	1.25	11.29	11.36	11.43	11.50
M14	2	12.87	12.98	13.09	13.21
	1.5	13.15	13.23	13.32	13.40
M16	2	14.87	14.98	15.09	15.21
	1.5	15.15	15.23	15.32	15.40
M18	2.5	16.58	16.72	16.87	17.01
	1.5	17.15	17.23	17.32	17.40
M20	2.5	18.58	18.72	18.87	19.01
	1.5	19.15	19.23	19.32	19.40

Note:
1.Determine hole diameter by tapping test. The dimensions in this table are for reference only.

Tap Tolerance Conversion Pg. 270 & 271

Convert (Viper-T & VTP) GT to GH

- Uses Nachi's GT Tap Tolerance
- Use the Conversion Table to Convert to H Tolerance
- GT Tolerances Cover Multiple H Tolerance

GT Limits Table

Fractional, Machine screw, and Metric Taps
Over 42 TPI, or less than 0.6mm pitch

Class	MIN	MAX
GT2	0.0002	0.0008
GT3	0.0006	0.0012
GT4	0.0010	0.0016
GT5	0.0014	0.0020
GT6	0.0018	0.0024
GT7	0.0022	0.0028

Fractional, Machine screw, and Metric Taps
Less than 42 TPI, or over 0.6mm pitch

Class	MIN	MAX
GT2	0.0000	0.0008
GT3	0.0004	0.0012
GT4	0.0008	0.0016
GT5	0.0012	0.0020
GT6	0.0016	0.0024
GT7	0.0020	0.0028
GT8	0.0024	0.0031
GT9	0.0028	0.0035
GT10	0.0031	0.0039

TAP SIZE	CLASS 2B H LIMITS	CLASS 2B GT LIMITS	CLASS 3B H LIMITS	CLASS 3B GT LIMITS
2-56	H2	GT3	H1	-
2-64	H2	GT3	H1	-
3-48	H2	GT4	H1	-
3-56	H2	GT3	H1	-
4-40	H2	GT5	H2	-
4-48	H2	GT4	H1	-
5-40	H2	GT5	H2	-
5-44	H2	GT5	H2	-
6-32	H3	GT5	H2	-
6-40	H2	GT5	H2	-
8-32	H3	GT5	H2	-
8-36	H2	GT5	H2	-
10-24	H3	GT6	H3	-
10-32	H3	GT5	H2	-
12-24	H3	GT6	H3	-
12-28	H3	GT6	H3	-
1/4-20	H5	GT7	H3	GT4
1/4-28	H4	GT6	H3	GT4
5/16-18	H5	GT7	H3	GT4
5/16-24	H4	GT7	H3	GT4
3/8-16	H5	GT8	H3	GT4
3/8-24	H4	GT7	H3	GT4
7/16-14	H5	GT8	H3	GT4
7/16-20	H5	GT8	H3	GT4
1/2-13	H5	GT8	H3	GT4
1/2-20	H5	GT8	H3	GT4
9/16-12	H5	GT8	H3	GT4
9/16-18	H5	GT8	H3	GT4
5/8-11	H5	GT9	H3	GT4
5/8-18	H5	GT8	H3	GT4
3/4-10	H5	GT9	H5	GT4
3/4-16	H5	GT8	H3	GT4
7/8-9	H6	GT9	H4	GT5
7/8-14	H6	GT9	H4	GT5
1-8	H6	GT9	H4	GT5
1-12	H6	GT9	H4	GT5

Thank You