



TM Solid

Solid Carbide Thread Milling Tools



INCH

A Tool for EVERY Thread Milling Job!

Miniature Threads

MilliPro

MilliPro &
MilliPro EL
From M1.6x0.35 (1-72UNF)

MilliPro HD
Up to 62 HRC

MilliPro Dental
From M1.0x0.25 (0-80UNF)



Long Thread Deep Threading

Full Profile

Partial Profile

Up to 3XDo



Normal Use Straight Flutes



From M4.5x0.75 (No.8-36UNF)

Heavy Duty Helicool



From M3x0.5 (No.10-32UNF)

Radial Coolant Helicool-R (HCR)



From No.10-32UNF

Helicool and Chamfer Helicool-C (HCC)



From No.10-32UNF

Economical Tool He-Lex



From M3x0.5 (No.10-32UNF)

Drill, Thread and Chamfer HTC



From M6x1.0

TM SOLID CATALOG

- **Helicool** - Helical Flute with Axial Coolant Thru Page 4
- **Helicool R (HCR)** - Helical Flute with Radial Coolant Thru Page 11
- **Helicool C (HCC)** - Helical Flute with Axial Coolant Thru and Chamfer Page 12
- **HTC (Thriller)** - Drill, Chamfer and Thread with Coolant Thru Page 13
- **He-Lex** - Helical Flute without Coolant Thru Page 14
- **Deep Threading** - Straight Flutes for Deep Holes Page 17
- **MilliPro** - Miniature Thread Mills Page 19
- **MilliPro Dental** - Miniature Thread Mills for Dental Implants Page 22
- **MilliPro EL** - Miniature Thread Mills, Extra Long Tools Page 23
- **MilliPro HD** - Miniature Thread Mills for Hard Materials Page 24
- **Straight** - Straight Flute Page 26
- **Grades and Their Applications** Page 33
- **Cutting Speeds and Feeds** Page 34

TM Solid Carbide

HC		19	141	L03	-	I	24	UNC	TM		VTH
1	2	3	4	5		6	7	8	9	10	11

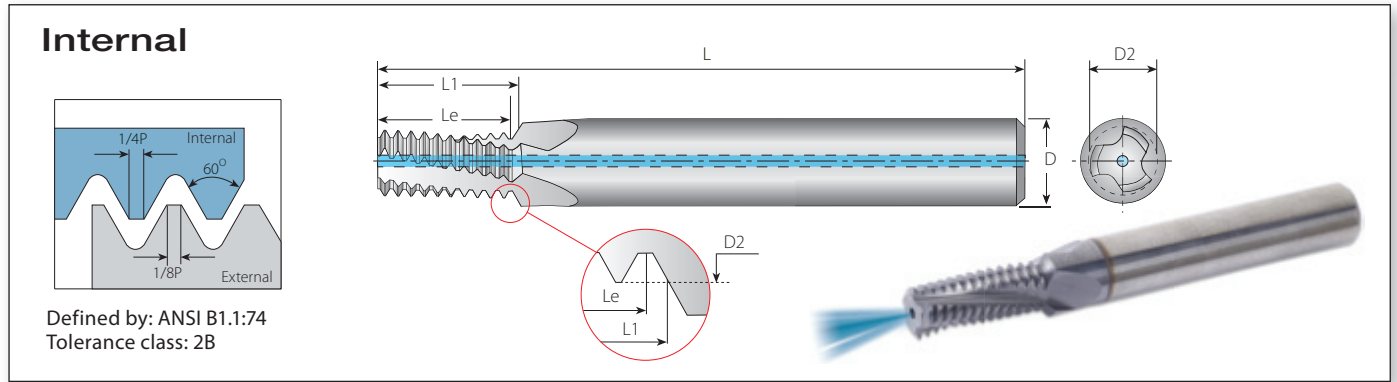
1 - Line HC - Helicool HCR - Helicool R HCC - Helicool C H - Helical S - Straight Flutes D - Deep Threading or MilliPro	2 - No. of Teeth 1T - 1 Tooth 3T - 3 Teeth (MilliPro) 2L - 2 Teeth LH (MilliPro HD)	3 - Shank Dia. 1/8" - 12 3/16" - 19 1/4" - 25 5/16" - 31 3/8" - 37 1/2" - 50 5/8" - 63 3/4" - 75	4 - Cutting Dia. .028 - .746	5 - Tool Cutting Length Up to 3Do	6 - Type of Tool E - External I - Internal EI - External + Internal
---	---	---	--	---	---

7 - Pitch Full Profile - Pitch Range mm tpi 0.25-6.0 80 - 4.5 Partial Profile - Pitch Range mm tpi TA 0.5-0.8 32-56 TB 0.5-1.0 24-56 TC 1.0-1.50 16-24 TD 1.0-1.75 14-24 TF 0.5-1.25 20-48	8 - Standard ISO - ISO Metric UN - American UN UNC - UN Coarse UNF - UN Fine UNEF - UN Extra Fine UNJ - UNJ MJ - MJ BSW - Whit. Coarse BSP - BSP BSF - Whit. Fine BSPT - BSPT NPT - NPT NPTF - NPTF PG - PG	9 - System TM TML - Extra Long	10 - No. of Flutes 3 - 3 Flutes 5 - 5 Flutes Straight Flute, when two options are available	11 - Carbide Grade VTS VTH
--	--	---	---	---

HTC - Thriller

HTC	M6	1.0	2D	VTN
1	2	3	4	5

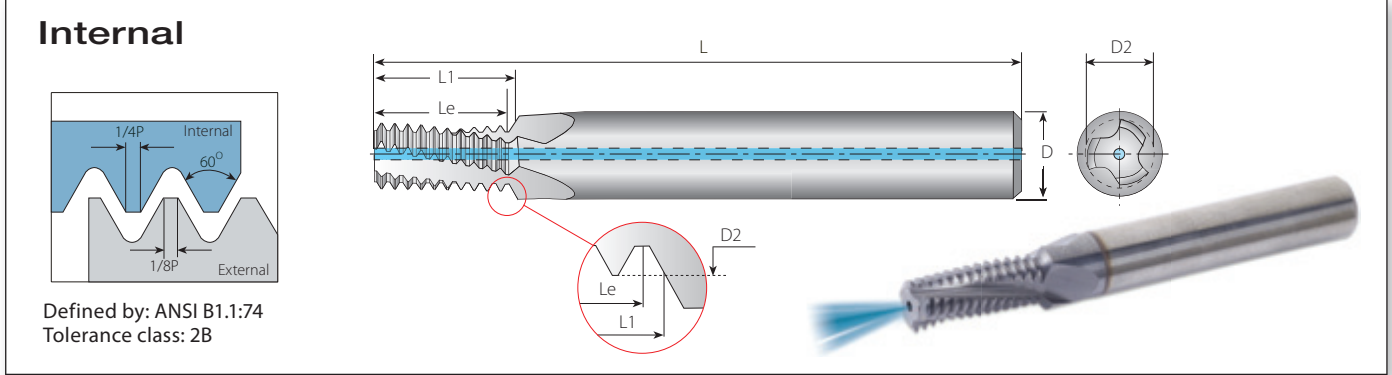
1 - Line HTC - Thriller	2 - Thread Diameter M6 - M12	3 - Pitch 1 - 1.75mm	4 - Thread Length 2D 2.5D	5 - Carbide Grade VTN VTS
-----------------------------------	--	--------------------------------	--	--



Helical Flutes with Thru-Hole Coolant

1.5 x Do (L1 ≤ 1.5 x Thread Diameter)

Thread			Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
No.10-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC19141L03-I24UNC TM...	80360	3/16	.141	1.772	.292	.312	3	7	.150
No.12-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC25163L03-I24UNC TM...	80361	1/4	.163	2.244	.333	.354	3	8	.177
1/4"x20	7/16"; 1/2"x20	3/4"-1"x20	20	HC25192L03-I20UNC TM...	80362	1/4	.192	2.244	.350	.375	3	7	.201
5/16"x18	9/16"; 5/8"x18	11/16"-1 1/16"x18	18	HC31242L04-I18UNC TM...	80363	5/16	.242	2.402	.444	.472	3	8	.260
3/8"x16	3/4"x16		16	HC31301L05-I16UNC TM...	80364	5/16	.301	2.402	.563	.594	3	9	.315
7/16"x14	7/8"x14		14	HC37354L06-I14UNC TM...	80365	3/8	.354	2.874	.643	.678	3	9	.370
1/2"x13			13	HC50407L08-I13UNC TM...	80366	1/2	.407	3.150	.769	.808	4	10	.429
9/16"x12	1"-1 1/2"x12		12	HC50465L08-I12UNC TM...	80367	1/2	.465	3.150	.833	.875	4	10	.484



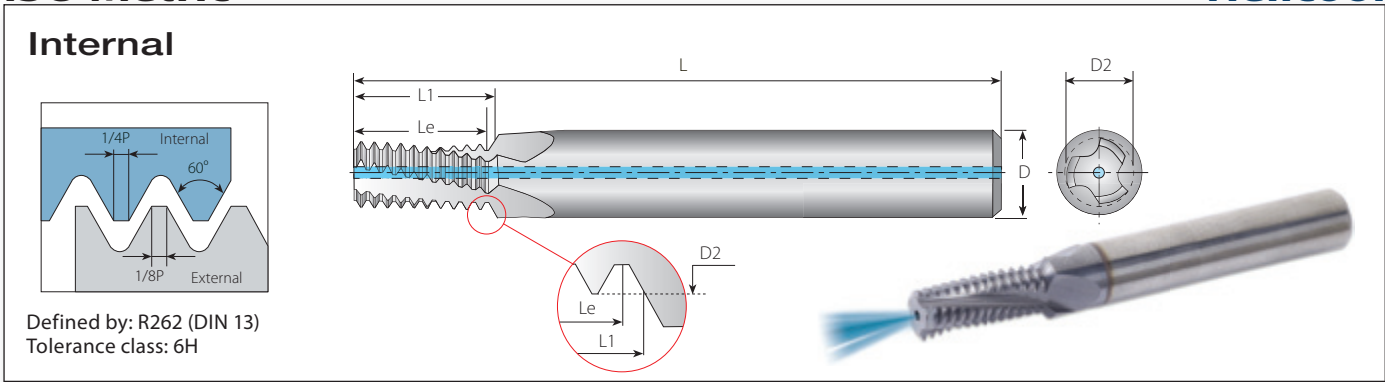
Helical Flutes with Thru-Hole Coolant

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread			Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
	No.10-32	No.12-3/8"x32	32	HC19150L03-I32UNF TM...	80291	3/16	.150	1.772	.375	.391	3	12	.157
		No.12-3/8"x32	32	HC25173L04-I32UNEF TM...	80292	1/4	.173	2.244	.438	.453	3	14	.185
	No.12; 1/4"x28	7/16"; 1/2"x28	28	HC25169L04-I28UNF TM...	80293	1/4	.169	2.244	.429	.446	3	12	.181
	1/4"x28	7/16"; 1/2"x28	28	HC25203L05-I28UNF TM...	80294	1/4	.203	2.244	.500	.518	3	14	.216
		7/16"; 1/2"x28	28	HC37371L08-I28UNEF TM...	80295	3/8	.371	2.874	.857	.875	3	24	.401
No.10-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC19141L04-I24UNC TM...	80296	3/16	.141	1.772	.375	.396	3	9	.150
No.12-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC25163L04-I24UNC TM...	80297	1/4	.163	2.244	.417	.437	3	10	.177
	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC31263L06-I24UNF TM...	80298	5/16	.263	2.402	.625	.646	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HC37323L07-I24UNF TM...	80299	3/8	.323	2.874	.750	.771	3	18	.335
		9/16"-11/16"x24	24	HC50496L11-I24UNEF TM...	80300	1/2	.496	3.150	1.125	1.145	4	27	.520
1/4"x20	7/16"; 1/2"x20	3/4"-1"x20	20	HC25192L05-I20UNC TM...	80301	1/4	.192	2.244	.500	.525	3	10	.201
	7/16"; 1/2"x20	3/4"-1"x20	20	HC37362L08-I20UNF TM...	80302	3/8	.362	2.874	.850	.875	3	17	.390
	1/2"x20	3/4"-1"x20	20	HC50437L10-I20UNF TM...	80303	1/2	.437	3.150	1.000	1.025	3	20	.453
		3/4"-1"x20	20	HC75685L15-I20UNEF TM...	80304	3/4	.685	4.016	1.500	1.525	4	30	.701
5/16"x18	9/16"; 5/8"x18	11/16"-1 11/16"x18	18	HC31242L06-I18UNC TM...	80305	5/16	.242	2.402	.611	.639	3	11	.260
	9/16"; 5/8"x18	11/16"-1 11/16"x18	18	HC50492L11-I18UNF TM...	80306	1/2	.492	3.150	1.111	1.139	4	20	.512
	5/8"x18	11/16"-1 11/16"x18	18	HC63555L12-I18UNF TM...	80307	5/8	.555	3.622	1.222	1.250	4	22	.575
3/8"x16	3/4"x16		16	HC31301L07-I16UNC TM...	80308	5/16	.301	2.402	.750	.781	3	12	.315
	3/4"x16		16	HC75669L15-I16UNF TM...	80309	3/4	.669	4.016	1.500	1.528	4	24	.689
7/16"x14	7/8"x14		14	HC37354L08-I14UNC TM...	80310	3/8	.354	2.874	.857	.893	3	12	.370
	7/8"x14		14	HC75746L17-I14UNF TM...	80311	3/4	.746	4.016	1.714	1.750	4	24	.807
1/2"x13			13	HC50407L10-I13UNC TM...	80312	1/2	.407	3.150	1.000	1.039	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HC50465L11-I12UNC TM...	80313	1/2	.465	3.150	1.084	1.125	4	13	.484
	1"-1 1/2"x12		12	HC75746L20-I12UNF TM...	80314	3/4	.746	4.016	2.000	2.042	4	24	.925
5/8"x11			11	HC63516L13-I11UNC TM...	80315	5/8	.516	3.622	1.273	1.318	4	14	.539
3/4"x10			10	HC63622L15-I10UNC TM...	80316	5/8	.622	3.622	1.500	1.550	4	15	.657
7/8"x9			9	HC75746L18-I9UNC TM...	80317	3/4	.746	4.016	1.778	1.833	4	16	.768
1"x8			8	HC75746L20-I8UNC TM...	80318	3/4	.746	4.016	2.000	2.063	4	16	.866

*Bore Diameter applies to smallest thread Dia.

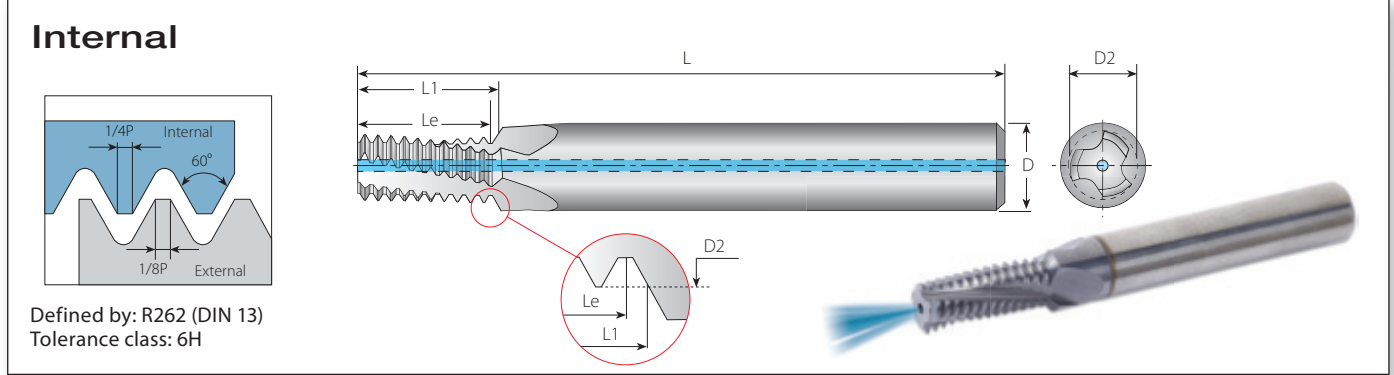
Maximum thread length = L1 - Pitch / 4



Helical Flutes with Thru-Hole Coolant

1.5 x Do (L1 ≤ 1.5 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
M3x0.5	M3.5-M16x0.5	0.5	HC19094L01-I0.50ISO TM...	80337	3/16	.094	1.772	.177	.187	3	9	.098
M4x0.7		0.7	HC19124L02-I0.70ISO TM...	80355	3/16	.124	1.772	.248	.262	3	9	.129
M5x0.8		0.8	HC19159L02-I0.80ISO TM...	80356	3/16	.159	2.244	.283	.299	3	9	.165
M6X1.0	M8-M40x1.0	1.0	HC25189L03-I1.00ISO TM...	80343	1/4	.189	2.244	.354	.374	3	9	.197
M8x1.25		1.25	HC31256L05-I1.25ISO TM...	80357	5/16	.256	2.402	.492	.524	3	10	.268
M10x1.5	M12-M48x1.5	1.5	HC37323L06-I1.50ISO TM...	80346	3/8	.323	2.874	.591	.620	3	10	.335
M12x1.75		1.75	HC37370L07-I1.75ISO TM...	80358	3/8	.370	2.874	.689	.724	4	10	.405
M14x2.0	M17-M80x2.0	2.0	HC50457L08-I2.00ISO TM...	80351	1/2	.457	2.874	.787	.827	4	10	.472
M16x2.0	M17-M80x2.0	2.0	HC63535L09-I2.00ISO TM...	80353	5/8	.535	3.622	.945	.984	4	12	.551



Helical Flutes with Thru-Hole Coolant

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
M3x0.5	M3.5-M16x0.5	0.5	HC19094L02-I0.50ISO TM...	80336	3/16	.094	1.772	.236	.246	3	12	.098
	M4x0.5	0.5	HC19126L03-I0.50ISO TM...	80338	3/16	.126	1.772	.315	.325	3	16	.138
	M5x0.5	0.5	HC25165L04-I0.50ISO TM...	80339	1/4	.165	2.244	.394	.404	3	20	.177
M4x0.7		0.7	HC19124L03-I0.70ISO TM...	80284	3/16	.124	1.772	.331	.344	3	12	.129
	M6x0.75	0.75	HC25197L04-I0.75ISO TM...	80340	1/4	.197	2.244	.472	.487	3	16	.209
M5x0.8		0.8	HC19159L04-I0.80ISO TM...	80341	3/16	.159	2.244	.409	.425	3	13	.165
M6x1.0	M8-M40x1.0	1.0	HC25189L04-I1.00ISO TM...	80342	1/4	.189	2.244	.472	.492	3	12	.197
	M8x1.0	1.0	HC31264L06-I1.00ISO TM...	80344	5/16	.264	2.402	.630	.650	3	16	.276
	M10x1.0	1.0	HC37343L08-I1.00ISO TM...	80285	3/8	.343	2.874	.787	.807	3	20	.354
	M12x1.0	1.0	HC50421L09-I1.00ISO TM...	80286	1/2	.421	2.874	.945	.965	4	24	.433
M8x1.25		1.25	HC31256L06-I1.25ISO TM...	80287	5/16	.256	2.402	.640	.664	3	13	.268
	M10x1.25	1.25	HC37335L08-I1.25ISO TM...	80345	3/8	.335	2.874	.787	.812	3	16	.346
M10x1.5	M12-M48x1.5	1.5	HC37323L07-I1.50ISO TM...	80288	3/8	.323	2.874	.768	.797	3	13	.335
	M12x1.5	1.5	HC37370L09-I1.50ISO TM...	80347	3/8	.370	2.874	.945	.974	4	16	.413
	M14x1.5	1.5	HC50469L11-I1.50ISO TM...	80348	1/2	.469	3.150	1.122	1.152	4	19	.492
	M16x1.5	1.5	HC63547L12-I1.50ISO TM...	80349	5/8	.547	3.150	1.240	1.270	4	21	.571
M12x1.75		1.75	HC37370L09-I1.75ISO TM...	80350	3/8	.370	2.874	.965	.999	4	14	.405
M14x2.0	M17-M80x2.0	2.0	HC50457L11-I2.00ISO TM...	80289	1/2	.457	3.150	1.102	1.142	4	14	.472
	M16x2.0	2.0	HC63535L12-I2.00ISO TM...	80352	5/8	.535	3.622	1.260	1.299	4	16	.551
	M18x2.5	2.5	HC63583L14-I2.50ISO TM...	80354	5/8	.583	3.622	1.378	1.427	4	14	.598
	M20x2.5	2.5	HC75673L16-I2.50ISO TM...	80290	3/4	.673	4.016	1.575	1.624	4	16	.687
	M24x3.0	3.0	HC75746L19-I3.00ISO TM...	80359	3/4	.746	4.016	1.890	1.949	4	16	.827

*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - Pitch/4

NPT

Helicool

External / Internal

Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16"x27	27	HC25232L03-EI27NPT TM...	80321	1/4	.232	2.244	.370	.389	3	10	.244
1/8"x27	27	HC31301L03-EI27NPT TM...	80322	5/16	.301	2.402	.370	.389	3	10	.330
1/4"x18	18	HC37370L05-EI18NPT TM...	80323	3/8	.370	2.874	.556	.583	3	10	.437
3/8"x18	18	HC50439L05-EI18NPT TM...	80324	1/2	.439	2.874	.556	.583	4	10	.562
1/2", 3/4"x14	14	HC63561L07-EI14NPT TM...	80325	5/8	.561	3.150	.714	.750	4	10	.704, .905
1", 1 1/4", 1 1/2", 2"x11.5	11.5	HC75746L09-EI11.5NPT TM...	80326	3/4	.746	4.016	.870	.913	4	10	1.411, 1.484, 1.732, 2.204
2 1/2", 3"x8	8	HC75746L13-EI8NPT TM...	80327	3/4	.746	4.016	1.250	1.313	4	10	2.625, 3.232

NPTF

Helicool

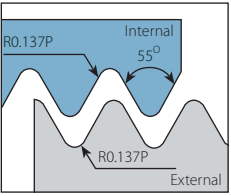
External / Internal

Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF

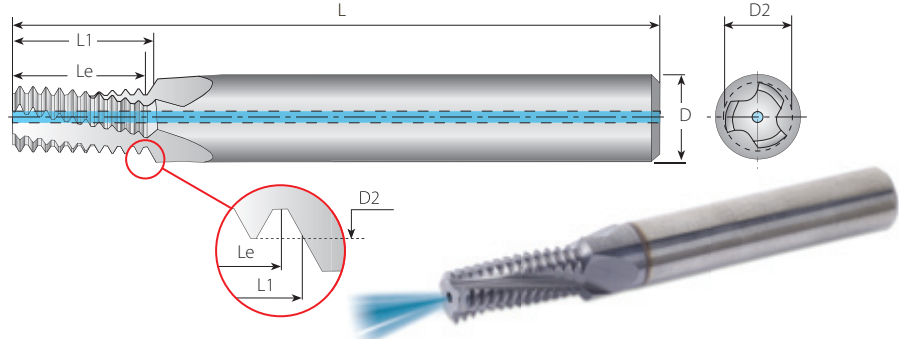
Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16"x27	27	HC25232L03-EI27NPTF TM...	80328	1/4	.232	2.244	.370	.389	3	10	.240
1/8"x27	27	HC31301L03-EI27NPTF TM...	80329	5/16	.301	2.402	.370	.389	3	10	.330
1/4"x18	18	HC37370L05-EI18NPTF TM...	80330	3/8	.370	2.874	.556	.583	3	10	.437
3/8"x18	18	HC50439L05-EI18NPTF TM...	80331	1/2	.439	2.874	.556	.583	4	10	.562
1/2", 3/4"x14	14	HC63561L07-EI14NPTF TM...	80332	5/8	.561	3.150	.714	.750	4	10	.704, .905
1", 1 1/4", 1 1/2", 2"x11.5	11.5	HC75746L09-EI11.5NPTF TM...	80333	3/4	.746	4.016	.870	.913	4	10	1.411, 1.484, 1.720, 2.188
2 1/2"x8; 3"x8	8	HC75746L13-EI8NPTF TM...	80334	3/4	.746	4.016	1.250	1.313	4	10	2.610, 3.232

External / Internal



Defined by: B.S.84:1956,
DIN 259, ISO228/1:1982
Tolerance class: Medium class A



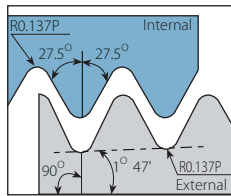
Helical Flutes with Thru-Hole Coolant

2 x Do (L1 ≤ 2 x Thread Diameter)

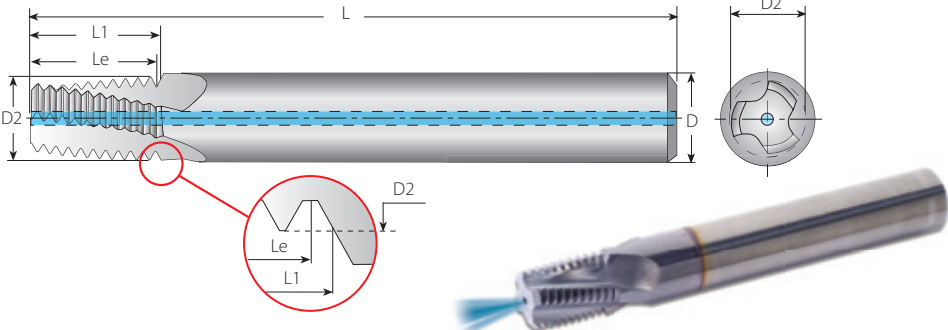
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch						No. of Flutes	Teeth	Bore Dia.*
BSW	BSF	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/4"x26	26	HC25197L05-EI26BSF TM...	80368	1/4	.197	2.244	.500	.519	3	13	.209	
5/16"x22	22	HC31250L06-EI22BSF TM...	80369	5/16	.250	2.402	.636	.659	3	14	.264	
1/4"x20	3/8"x20	20	HC25175L05-EI20BSW TM...	80370	1/4	.175	2.244	.500	.525	3	10	.197
3/8"x20	20	HC31301L07-EI20BSF TM...	80371	5/16	.301	2.402	.750	.775	3	15	.323	
5/16"x18	7/16"x18	18	HC25230L06-EI18BSW TM...	80372	1/4	.230	2.244	.611	.639	3	11	.256
7/16"x18	18	HC37362L09-EI18BSF TM...	80373	3/8	.362	2.874	.889	.917	3	16	.382	
3/8"x16	1/2", 9/16"x16	16	HC31283L07-EI16BSW TM...	80374	5/16	.283	2.402	.750	.781	3	12	.311
1/2", 9/16"x16	16	HC50413L10-EI16BSF TM...	80375	1/2	.413	2.874	1.000	1.031	4	16	.437	
9/16"x16	16	HC50478L11-EI16BSF TM...	80376	1/2	.478	3.150	1.125	1.156	4	18	.496	
7/16"x14	5/8", 11/16"x14	14	HC37335L08-EI14BSW TM...	80377	3/8	.335	2.874	.857	.893	3	12	.362
5/8", 11/16"x14	14	HC63528L12-EI14BSF TM...	80378	5/8	.528	3.150	1.214	1.250	4	17	.551	
11/16"x14	14	HC63591L13-EI14BSF TM...	80379	5/8	.591	3.622	1.357	1.393	4	19	.614	
1/2"x12	3/4"x12	12	HC37362L10-EI12BSW TM...	80380	3/8	.362	2.874	1.000	1.042	3	12	.413
9/16"x12	3/4"x12	12	HC50444L11-EI12BSW TM...	80381	1/2	.444	3.150	1.083	1.125	4	13	.476
3/4"x12	12	HC63622L15-EI12BSF TM...	80382	5/8	.622	3.622	1.500	1.542	4	18	.661	
5/8"x11	7/8"x11	11	HC50496L13-EI11BSW TM...	80383	1/2	.496	3.150	1.273	1.318	4	14	.528
11/16"x11	11	HC63559L14-EI11BSW TM...	80384	5/8	.559	3.622	1.364	1.409	4	15	.591	

BSPT

External / Internal



Defined by: B.S.21:1985
Tolerance class: Standard BSPT

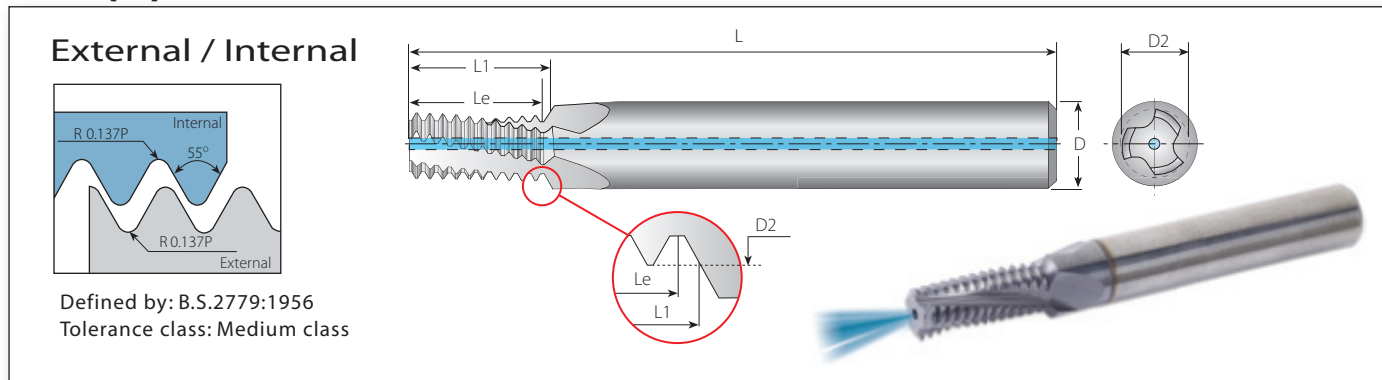


Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch						No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch	
1/16"x28	28	HC25232L03-EI28BSPT TM...	80394	1/4	.232	2.402	.393	.401	3	11	.264	
1/8"x28	28	HC31301L03-EI28BSPT TM...	80320	5/16	.301	2.402	.393	.401	3	11	.342	
1/4"x19	19	HC50400L05-EI19BSPT TM...	80395	1/2	.400	2.874	.579	.605	3	11	.464	
3/8"x19	19	HC50439L05-EI19BSPT TM...	80396	1/2	.439	2.874	.579	.605	4	11	.598	
1/2, 3/4"x14	14	HC63561L08-EI14BSPT TM...	80397	5/8	.561	3.150	.857	.893	4	12	.748	
1", 1 1/2", 2", 2 1/2"x11	11	HC75746L10-EI11BSPT TM...	80398	3/4	.746	4.016	1.091	1.136	4	12	1.209	

*Bore Diameter applies to smallest thread Dia.

Maximum thread length = $L1 - \frac{Pitch}{4}$



Helical Flutes with Thru-Hole Coolant

1.5 x Do (L1 ≤ 1.5 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16", 1/8"x28	28	HC31252L04-EI28BSP TM...	80386	5/16	.252	2.402	.464	.480	3	13	.264
1/8"x28	28	HC37323L05-EI28BSP TM...	80388	3/8	.323	2.874	.571	.591	3	16	.324
1/4", 3/8"x19	19	HC50433L08-EI19BSP TM...	80389	1/2	.433	2.874	.789	.815	4	15	.465
3/8"x19	19	HC63571L10-EI19BSP TM...	80391	5/8	.571	3.622	1.000	1.028	4	19	.602
1"-4"x11	11	HC75746L16-EI11BSP TM...	80393	3/4	.746	4.016	1.636	1.681	4	18	1.208

Helical Flutes with Thru-Hole Coolant

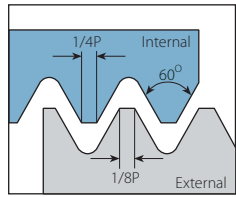
2 x Do (L1 ≤ 2 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16", 1/8"x28	28	HC31252L06-EI28BSP TM...	80385	5/16	.252	2.402	.607	.625	3	17	.264
1/8"x28	28	HC37323L07-EI28BSP TM...	80387	3/8	.323	2.874	.750	.768	3	21	.324
1/4", 3/8"x19	19	HC50433L10-EI19BSP TM...	80319	1/2	.433	3.150	1.053	1.079	4	20	.465
3/8"x19	19	HC63571L13-EI19BSP TM...	80390	5/8	.571	3.622	1.316	1.342	4	25	.602
1/2"-7/8"x14	14	HC75705L16-EI14BSP TM...	80392	3/4	.705	4.016	1.643	1.678	4	23	.752

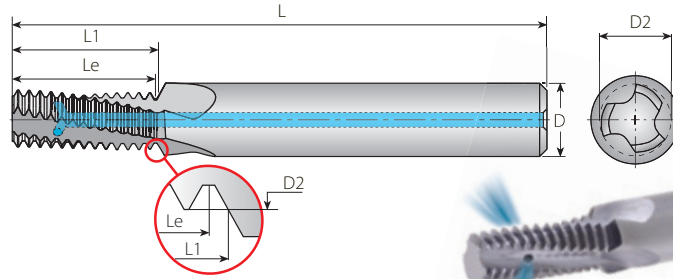
American UN

Helicool-R (HCR)

Internal



Defined by: ANSI B1.1.74
Tolerance class: 2B



HeliCool-R (HCR)

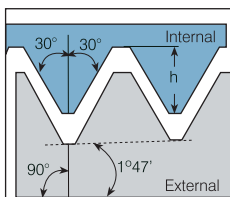
Helical Flutes with Radial Cooling

$2 \times Do$ ($L1 \leq 2 \times$ Thread Diameter)

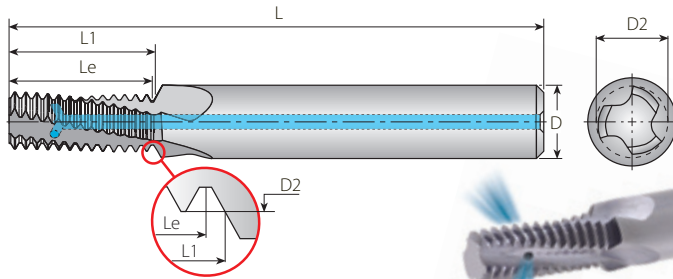
Thread			Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
	No.10-32	No.12-3/8"x32	32	HCR19150L03-I32UNF TM...	80458	3/16	.150	1.772	.375	.391	3	12	.157
	1/4"x28	7/16", 1/2"x28	28	HCR25203L05-I28UNF TM...	80459	1/4	.203	2.244	.500	.518	3	14	.216
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR19141L04-I24UNC TM...	80460	3/16	.141	1.772	.375	.396	3	9	.150
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR19163L04-I24UNC TM...	80461	3/16	.163	1.772	.417	.437	3	10	.177
	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR31263L06-I24UNF TM...	80462	5/16	.263	2.402	.625	.646	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HCR37323L07-I24UNF TM...	80463	3/8	.323	2.874	.750	.771	3	18	.335
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	HCR25192L05-I20UNC TM...	80464	1/4	.192	2.244	.500	.525	3	10	.201
	1/2"x20	3/4"-1"x20	20	HCR50437L10-I20UNF TM...	80465	1/2	.437	3.150	1.000	1.025	4	20	.453
5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	18	HCR31242L16-I18UNC TM...	80466	5/16	.242	2.402	.611	.639	3	11	.260
3/8"x16	3/4"x16		16	HCR31301L07-I16UNC TM...	80467	5/16	.301	2.402	.750	.781	3	12	.315
7/16"x14	7/8"x14		14	HCR37354L08-I14UNC TM...	80468	3/8	.354	2.874	.857	.893	3	12	.370
1/2"x13			13	HCR50407L10-I13UNC TM...	80469	1/2	.407	3.150	1.000	1.039	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HCR50465L11-I12UNC TM...	80470	1/2	.465	3.150	1.084	1.125	4	13	.484

NPT

External / Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



HeliCool-R (HCR)

Helical Flutes with Radial Cooling

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16"x27	27	HCR25232L03-EI27NPT TM...	80573	1/4	.232	2.244	.370	.389	3	10	.244
1/8"x27	27	HCR31301L03-EI27NPT TM...	80574	5/16	.301	2.402	.370	.389	3	10	.330
1/4"x18	18	HCR37370L05-EI18NPT TM...	80575	3/8	.370	2.874	.556	.583	3	10	.437
3/8"x18	18	HCR50439L05-EI18NPT TM...	80576	1/2	.439	2.874	.556	.583	4	10	.562
1/2", 3/4"x14	14	HCR63561L07-EI14NPT TM...	80577	5/8	.561	3.150	.714	.750	4	10	.704, .905
1", 1 1/4", 1 1/2", 2"x11.5	11.5	HCR75746L09-EI11.5NPT TM...	80578	3/4	.746	4.016	.870	.913	4	10	1.411, 1.484, 1.732, 2.204
2 1/2", 3"x8	8	HCR75746L13-EI8NPT TM...	80579	3/4	.746	4.016	1.250	1.313	4	10	2.625, 3.232

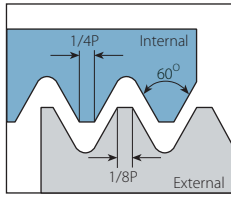
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = $L1 - \frac{\text{Pitch}}{4}$

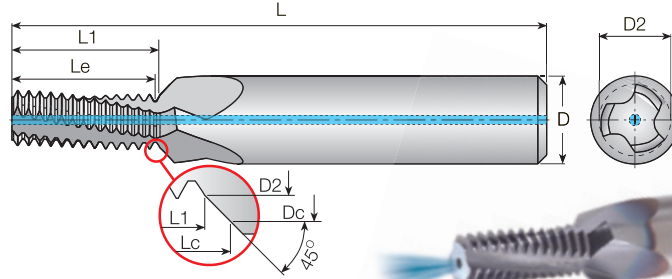
American UN

Helicool-C (HCC)

Internal



Defined by: ANSI B1.1.74
Tolerance class: 2B



Dc = Minimum recommended chamfer diameter

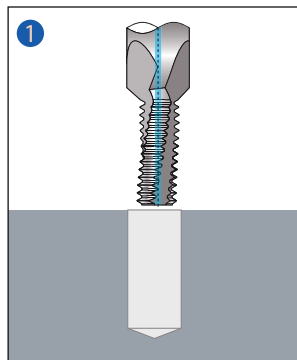
HeliCool-C (HCC)

Helical Flutes with Axial Coolant - Thru & Chamfer

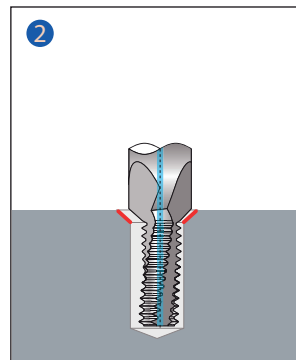
$2 \times D_o$ ($L1 \leq 2 \times \text{Thread Diameter}$)

Thread			Pitch	Ordering Code	EDP No.	Dimensions inch							No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	Dc	L	Le	L1	Lc	Z	Zt	inch
No.10-32	No.12-3/8"x32		32	HCC25150L03-I32UNF TM...	80449	1/4	.150	.202	2.244	.375	.391	.417	3	12	.157
1/4"x28	7/16", 1/2"x28		28	HCC31203L05-I28UNF TM...	80450	5/16	.203	.262	2.402	.500	.518	.549	3	14	.216
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC25141L04-I24UNC TM...	80451	1/4	.141	.202	2.244	.375	.396	.425	3	9	.150
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC25163L04-I24UNC TM...	80452	1/4	.163	.228	2.244	.417	.437	.468	3	10	.177
	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC37263L06-I24UNF TM...	80453	3/8	.263	.324	2.874	.625	.646	.678	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HCC50323L07-I24UNF TM...	80454	1/2	.323	.387	3.150	.750	.771	.804	3	18	.335
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	HCC31192L05-I20UNC TM...	80455	5/16	.192	.262	2.402	.500	.525	.558	3	10	.201
	1/2"x20	3/4"-1"x20	20	HCC63437L10-I20UNF TM...	80456	5/8	.437	.512	3.622	1.000	1.025	1.065	3	20	.453
5/16"x18	9/16", 5/8"x18	11/16"-1 1/16"x18	18	HCC37242L16-I18UNC TM...	80457	3/8	.242	.324	2.874	.611	.639	.676	3	11	.260
3/8"x16	3/4"x16		16	HCC50301L07-I16UNC TM...	80528	1/2	.301	.387	3.150	.750	.781	.814	3	12	.315
7/16"x14	7/8"x14		14	HCC50354L08-I14UNC TM...	80529	1/2	.354	.449	3.150	.857	.893	.937	3	12	.370
1/2"x13			13	HCC63407L10-I13UNC TM...	80530	5/8	.407	.512	3.622	1.000	1.039	1.087	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HCC63465L11-I12UNC TM...	80531	5/8	.465	.574	3.622	1.084	1.125	1.178	4	13	.484

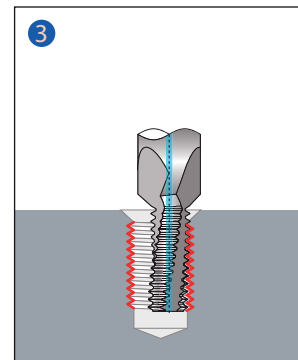
Helicool-C Operating Cycle



Positioning



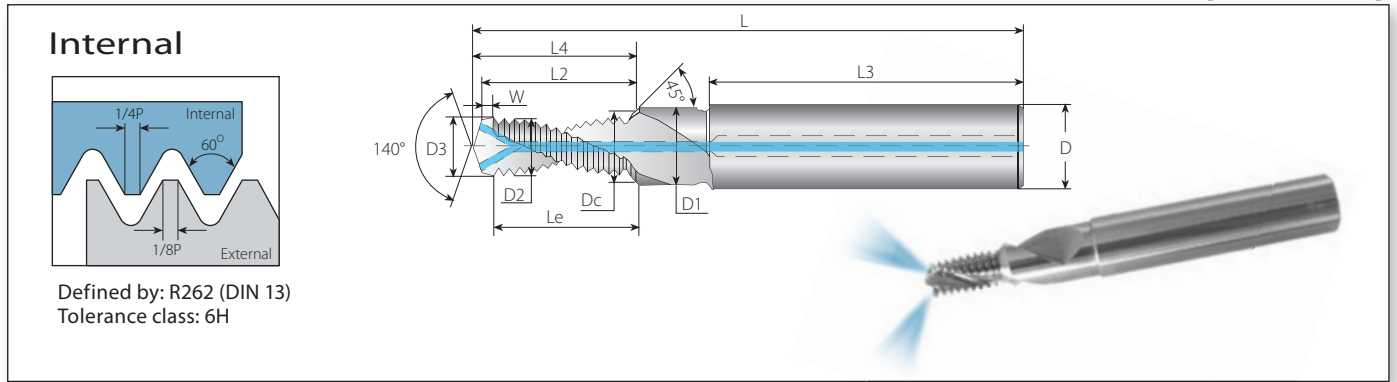
Chamfering



Thread Milling

ISO Metric

HTC (Thriller)



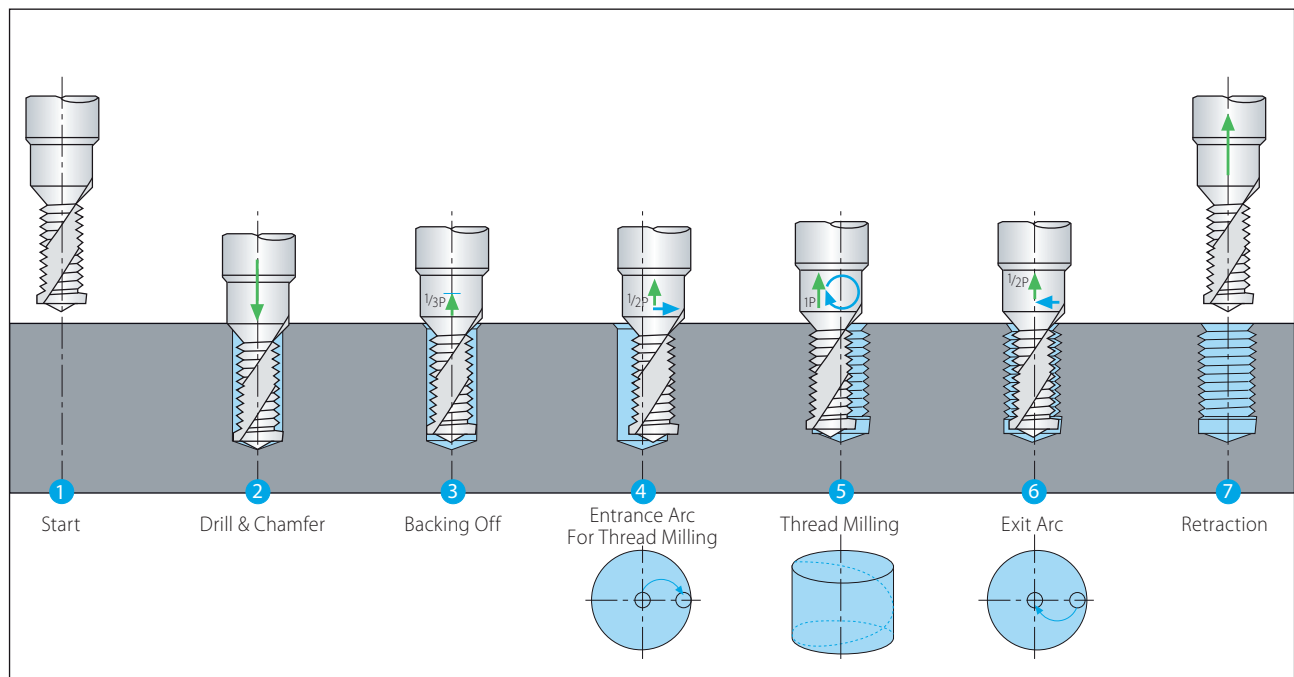
Defined by: R262 (DIN 13)
Tolerance class: 6H

HTC (Thriller)

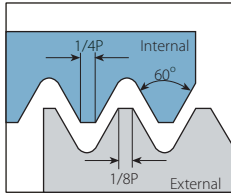
Drill, Chamfer & Thread with Coolant-Thru

Thread	Ordering Code	EDP No.	Pitch	Dimensions inch											No. of Flutes	Teeth	
ISO 2xDo Coarse	Internal	VTS	VTN	mm	L	L4	L2	L3	W	Le	D3	D[mm]	D1	Dc	D2	Z	Zt
M6x1.0	HTC M6x1.0x2D...	80687	80680	1.00	2.441	.571	.539	1.417	.039	.500	.197	8	.260	.248	.191	2	11
M8x1.25	HTC M8x1.25x2D...	80688	80681	1.25	2.913	.717	.673	1.575	.051	.622	.268	10	.354	.327	.254	2	11
M10x1.5	HTC M10x1.5x2D...	80689	80682	1.50	3.110	.921	.870	1.772	.059	.811	.335	12	.433	.406	.318	2	12
M12x1.75	HTC M12x1.75x2D...	80690	80683	1.75	3.504	1.067	1.004	1.772	.059	.945	.406	14	.531	.484	.383	2	12
ISO 2.5xDo Coarse																	
M6x1.0	HTC M6x1.0x2.5D...	80691	80684	1.00	2.441	.650	.618	1.417	.039	.579	.197	8	.260	.248	.191	2	13
M8x1.25	HTC M8x1.25x2.5D...	80692	80685	1.25	2.913	.913	.870	1.575	.051	.819	.268	10	.354	.327	.254	2	15
M10x1.5	HTC M10x1.5x2.5D...	80693	80686	1.50	3.110	1.098	1.047	1.772	.059	.988	.335	12	.433	.406	.318	2	15

HTC - Thriller Operating Cycle



Internal



Defined by: ANSI B1.1.74
Tolerance class: 2A/2B

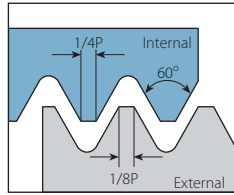


Helical Flutes - Internal

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	Le	Z	Zt	inch
	No.10-32	32	HX1/8".121"-I32UNF TM...	80534	1/8	.121	2.0	.312	3	10	.157
	No.10-28	28	HX1/8".121"-I28UNF TM...	80535	1/8	.121	2.0	.321	3	9	.155
	No.12-28	28	HX3/16".150"-I28UNF TM...	80536	3/16	.150	2.5	.464	3	13	.181
	1/4"x28	28	HX3/16".181"-I28UNF TM...	80537	3/16	.181	2.5	.500	3	14	.217
No.10-24		24	HX1/8".120"-I24UNC TM...	80538	1/8	.120	2.0	.333	3	8	.150
No.12-24		24	HX3/16".138"-I24UNC TM...	80539	3/16	.138	2.5	.458	3	11	.177
	5/16"x24	24	HX1/4".232"-I24UNF TM...	80540	1/4	.232	2.5	.625	3	15	.268
	3/8"x24	24	HX5/16".291"-I24UNF TM...	80541	5/16	.291	3.0	.750	4	18	.335
	1/4"x20	20	HX3/16".181"-I20UNC TM...	80542	3/16	.181	2.5	.500	3	10	.205
	1/2"x20	20	HX3/8".371"-I20UNF TM...	80543	3/8	.371	3.5	1.000	4	20	.453
	7/16"x20	20	HX3/8".335"-I20UNF TM...	80544	3/8	.335	3.5	.900	4	18	.386
	5/16"x18	18	HX1/4".232"-I18UNC TM...	80545	1/4	.232	2.5	.667	3	12	.256
	9/16"x18	18	HX3/8".371"-I18UNF TM...	80546	3/8	.371	3.5	.889	4	16	.504
	5/8"x18	18	HX1/2".496"-I18UNF TM...	80547	1/2	.496	3.5	1.278	4	23	.571
	3/8"x16	16	HX5/16".285"-I16UNC TM...	80548	5/16	.285	3.0	.750	4	12	.315
	3/4"x16	16	HX1/2".496"-I16UNF TM...	80549	1/2	.496	3.5	1.250	4	20	.689
	7/16"x14	14	HX5/16".305"-I14UNC TM...	80550	5/16	.305	3.0	.786	4	11	.366
	1/2"x13	13	HX3/8".350"-I13UNC TM...	80551	3/8	.350	3.5	.923	4	12	.425
	9/16"x12	12	HX3/8".371"-I12UNC TM...	80552	3/8	.371	3.5	.917	4	11	.484
	5/8"x11	11	HX1/2".469"-I11UNC TM...	80553	1/2	.469	3.5	1.273	4	14	.531
	3/4"x10	10	HX1/2".496"-I10UNC TM...	80554	1/2	.496	3.5	1.300	4	13	.650
	7/8"x9	9	HX5/8".621"-I9UNC TM...	80555	5/8	.621	4.0	1.444	4	13	.768
	1"x8	8	HX5/8".621"-I8UNC TM...	80556	5/8	.621	4.0	1.375	4	11	.878

External / Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H

Helical Flutes - External

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	
M Coarse	mm	External	VTH	D[mm]	D2	L	Le	Z	Zt
M3x0.5	0.5	H04039L06-E0.5ISO TM...	80891	4	.154	1.772	.236	3	12
M4.5x0.75	0.75	H04039L09-E0.75ISO TM...	80892	4	.154	1.772	.354	3	12
M6x1.0	1.0	H04039L12-E1.0ISO TM...	80893	4	.154	1.772	.472	3	12
M8x1.25	1.25	H06059L16-E1.25ISO TM...	80894	6	.232	2.244	.640	3	13
M10x1.5	1.5	H08079L21-E1.5ISO TM...	80895	8	.311	2.480	.827	3	14
M14x2.0	2.0	H10099L28-E2.0ISO TM...	80896	10	.390	2.874	1.102	4	14

Helical Flutes - Internal

2 x Do (L1 ≤ 2 x Thread Diameter)

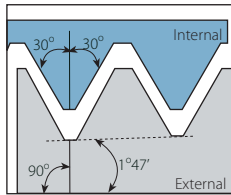
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.*	
M Coarse	M Fine	mm	Internal	VTH	D[mm]	D2	L	Le	Z	Zt	inch
M3x0.5	M3.5-M16x0.5	0.5	H04022L06-I0.5ISO TM...	80897	4	.087	1.772	.236	3	12	.098
	M4x0.5	0.5	H04030L08-I0.5ISO TM...	80898	4	.118	1.772	.315	3	16	.138
	M5x0.5	0.5	H04039L10-I0.5ISO TM...	80899	4	.154	1.772	.394	3	20	.177
M4x0.7		0.7	H04028L08-I0.7ISO TM...	80900	4	.110	1.772	.331	3	12	.130
	M6x0.75	0.75	H04039L12-I0.75ISO TM...	80901	4	.154	1.772	.472	3	16	.209
M5x0.8		0.8	H04035L10-I0.8ISO TM...	80902	4	.138	1.772	.409	3	13	.165
M6x1.0	M8-M40x1.0	1.0	H04039L12-I1.0ISO TM...	80903	4	.154	1.772	.472	3	12	.197
	M8x1.0	1.0	H06059L16-I1.0ISO TM...	80904	6	.232	2.244	.630	3	16	.276
	M10x1.0	1.0	H08079L20-I1.0ISO TM...	80905	8	.311	2.480	.787	3	20	.354
	M12x1.0	1.0	H10099L24-I1.0ISO TM...	80801	10	.390	2.874	.945	4	24	.433
M8x1.25		1.25	H06058L16-I1.25ISO TM...	80907	6	.228	2.244	.640	3	13	.268
	M10x1.25	1.25	H08077L20-I1.25ISO TM...	80908	8	.303	2.480	.787	3	16	.346
M10x1.5	M12-M48x1.5	1.5	H08077L21-I1.5ISO TM...	80909	8	.303	2.480	.827	3	14	.335
	M12x1.5	1.5	H10094L24-I1.5ISO TM...	80910	10	.370	2.874	.945	4	16	.413
	M14x1.5	1.5	H12112L28-I1.5ISO TM...	80911	12	.441	3.268	1.122	4	19	.492
	M16x1.5	1.5	H12119L33-I1.5ISO TM...	80912	12	.469	3.268	1.299	4	22	.571
M12x1.75		1.75	H10087L24-I1.75ISO TM...	80913	10	.343	2.874	.965	4	14	.402
M14x2.0	M17-M80x2.0	2.0	H10099L28-I2.0ISO TM...	80914	10	.390	2.874	1.102	4	14	.472
M16x2.0	M17-M80x2.0	2.0	H12119L32-I2.0ISO TM...	80915	12	.469	3.268	1.260	4	16	.551
M18-M22x2.5		2.5	H16139L40-I2.5ISO TM...	80916	16	.547	3.622	1.575	5	16	.610
M24x3.0		3.0	H16159L42-I3.0ISO TM...	80917	16	.626	3.622	1.654	4	14	.827

*Bore Diameter applies to smallest thread Dia.

NPT

He-Lex

External / Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

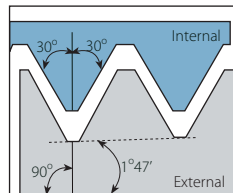
Helical Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	Z	Zt	inch
1/16"x27, 1/8"x27	27	HX1/4".209"-EI27NPT TM...	80562	1/4	.209	2.5	.407	3	11	.248, .335
1/4"x18, 3/8"x18	18	HX5/16".305"-EI18NPT TM...	80563	5/16	.305	3.0	.611	4	11	.437, .571
1/2"x14, 3/4"x14	14	HX1/2".496"-EI14NPT TM...	80564	1/2	.496	3.5	.929	4	13	.697, .906
1"-2"x11.5	11.5	HX5/8".621"-EI11.5NPT TM...	80565	5/8	.621	4.0	1.130	4	13	1.142-2.205
2 1/2"-6"x8	8	HX3/4".746"-EI8NPT TM...	80566	3/4	.746	5.0	1.500	4	12	from 2.618

NPTF

He-Lex

External / Internal



Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF

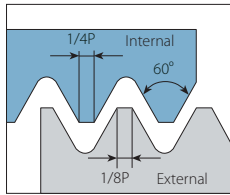
Helical Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	Z	Zt	inch
1/16"x27, 1/8"x27	27	HX1/4".209"-EI27NPTF TM...	80557	1/4	.209	2.5	.407	3	11	.248, .331
1/4"x18, 3/8"x18	18	HX5/16".305"-EI18NPTF TM...	80558	5/16	.305	3.0	.611	4	11	.437, .579
1/2"x14, 3/4"x14	14	HX1/2".496"-EI14NPTF TM...	80559	1/2	.496	3.5	.929	4	13	.705, .921
1"-2"x11.5	11.5	HX5/8".621"-EI11.5NPTF TM...	80560	5/8	.621	4.0	1.130	4	13	1.158-2.213
2 1/2"-6"x8	8	HX3/4".746"-EI8NPTF TM...	80561	3/4	.746	5.0	1.500	4	12	from 2.638

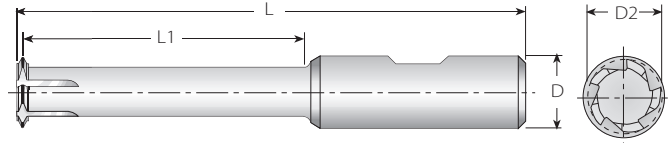
American UN

Deep Threading

Internal



Defined by: ANSI B1.1.74
Tolerance class: 2B



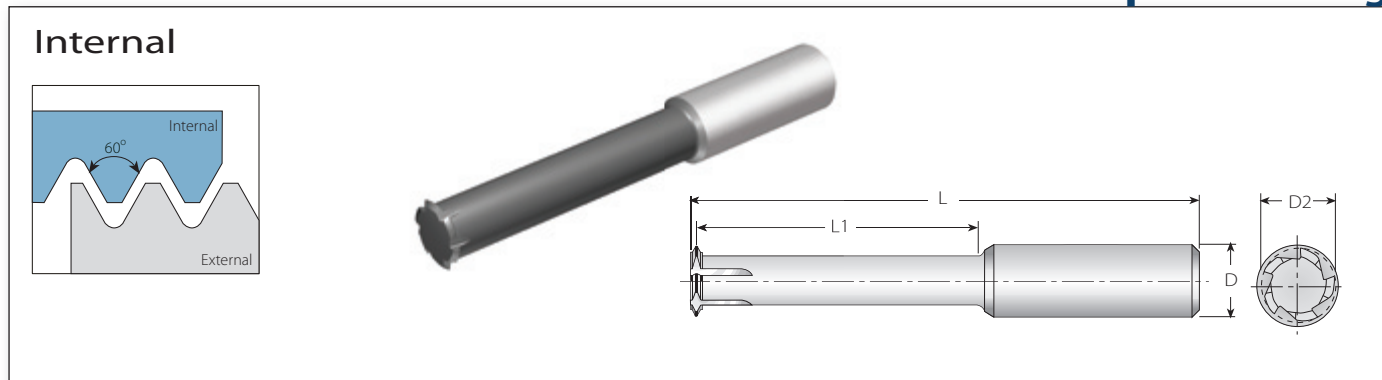
Deep Threading - Long Tools for Deep Holes

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
1/4"x20		20	D1T5/16".157"-I20UNC TM...	80220	5/16	.157	2.480	.787	3	1	.205
	1/4"x28	28	D1T5/16".181"-I28UNF TM...	80271	5/16	.181	2.480	.787	3	1	.217
5/16"x18		18	D1T3/8".205"-I18UNC TM...	80221	3/8	.205	2.874	.984	3	1	.256
	5/16"x24	24	D1T3/8".224"-I24UNF TM...	80272	3/8	.224	2.874	.984	3	1	.268
3/8"x16		16	D1T3/8".264"-I16UNC TM...	80222	3/8	.264	2.874	1.181	3	1	.315
	3/8"x24	24	D1T3/8".291"-I24UNF TM...	80273	3/8	.291	2.874	1.181	3	1	.335
7/16"x14		14	D1T1/2".299"-I14UNC TM...	80274	1/2	.299	3.268	1.378	4	1	.366
	7/16"x20	20	D1T1/2".335"-I20UNF TM...	80275	1/2	.335	3.268	1.378	4	1	.386
1/2"x13		13	D1T1/2".350"-I13UNC TM...	80223	1/2	.350	3.268	1.575	4	1	.425
	1/2"x20	20	D1T1/2".398"-I20UNF TM...	80276	1/2	.398	3.268	1.575	4	1	.453
9/16"x12		12	D1T5/8".406"-I12UNC TM...	80224	5/8	.406	3.780	1.772	4	1	.484
	9/16"x18	18	D1T5/8".445"-I18UNF TM...	80277	5/8	.445	3.780	1.772	4	1	.504
5/8"x11		11	D1T5/8".433"-I11UNC TM...	80225	5/8	.433	3.976	1.969	4	1	.531
	5/8"x18	18	D1T5/8".504"-I18UNF TM...	80278	5/8	.504	3.976	1.969	4	1	.571
3/4"x10		10	D1T5/8".531"-I10UNC TM...	80226	5/8	.531	4.370	2.362	5	1	.650
	3/4"x16	16	D1T5/8".610"-I16UNF TM...	80227	5/8	.610	4.370	2.362	5	1	.689

Partial Profile 60°

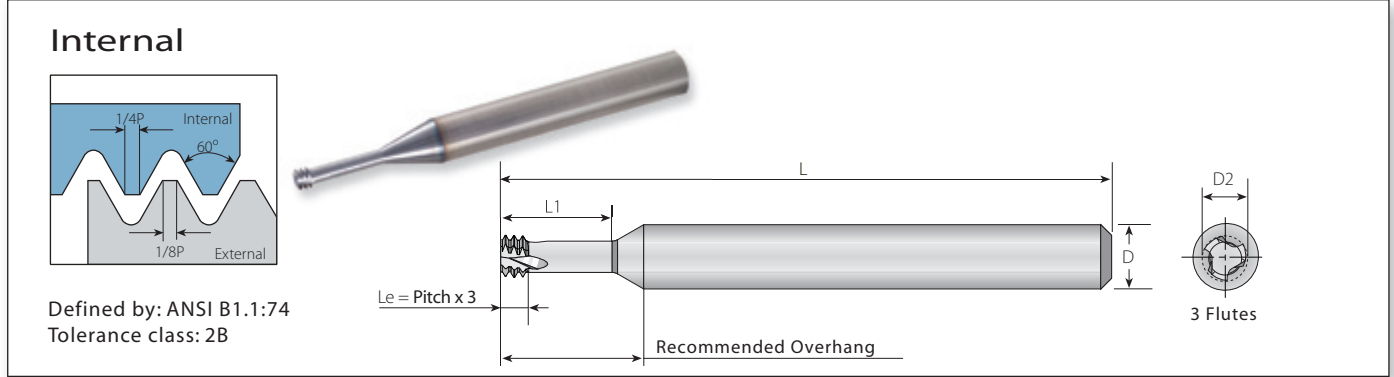
Deep Threading



Deep Threading - Long Tools for Deep Holes

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch							
M coarse	M fine	UN, UNS, UNF, UNEF	mm	tpi	Internal	VTH	D	D2	L	L1	Z	Zt
M5x0.8	M5x0.5, M5X0.75	No.10-56UNS, No.10-48UNS, No.10-40UNS, No.10-36UNS, No.10-32UNF	0.5-0.8	32-56	D1T19154L063-ITA60 TM...	80414	3/16	.154	1.750	.63	4	1
M6x1.0	M6x0.5, M6X0.75	No.12-56UNS, No.12-48UNS, 1/4-40UNS, 1/4-36UNS, 1/4-32UNEF, 1/4-28UNF, 1/4-27UNS, 1/4-24UNS	0.5-1.0	24-56	D1T25191L079-ITB60 TM...	80415	1/4	.191	2.000	.79	5	1
M8x1.25	M7x0.5, M7x0.75, M7.5x1.0	3/16-48UNS, 3/16-40UNS, 3/16-36UNS, 3/16-32UNEF, 3/16-28UN, 3/16-27UNS, 3/16-24UNS, 3/16-20UN	0.5-1.25	20-48	D1T25232L100-ITF60 TM...	80416	1/4	.232	2.500	1.00	5	1
-	M10.5x0.5, M11x0.75, M11x1.0	7/16-32UN, 7/16-28UNEF, 7/16-27UNS, 7/16-24UNS	0.5-1.0	24-56	D1T37370L138-ITB60 TM...	80417	3/8	.370	3.000	1.38	6	1
M10x1.5	M10x1.0, M10X1.25	3/8-24UNF, 3/8-20UN, 7/16-18UNS, 7/16-16UN	1.0-1.50	16-24	D1T31307L126-ITC60 TM...	80423	5/16	.307	2.500	1.26	6	1
M12x1.75	M12x1.0, M12X1.25, M12x1.5	1/2-24UNS, 1/2-20UNS, 1/2-18UNS, 1/2-16UNS, 1/2-14UNS	1.0-1.75	14-24	D1T37370L150-ITD60 TM...	80424	3/8	.370	3.000	1.50	6	1
-	M13.5x1.0, M14x1.25, M14x1.5	9/16-24UNEF	1.0-1.75	14-24	D1T50469L177-ITD60 TM...	80425	1/2	.469	3.250	1.77	6	1



MilliPro

Miniature Thread Mills

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
	No.1-72	72	D3T25057L154-I72UN TM...	80215	1/4	.057	2.244	.154	3	3	.059
No.1-64	No.2-64	64	D3T25055L165-I64UN TM...	80214	1/4	.055	2.244	.165	3	3	.059
No.2-56	No.3-56	56	D3T25065L197-I56UN TM...	80216	1/4	.065	2.244	.197	3	3	.071
No.3-48	No.4-48	48	D3T25075L236-I48UN TM...	80217	1/4	.075	2.244	.236	3	3	.079
No.4, No.5-40	No.6-40	40	D3T25083L236-I40UN TM...	80218	1/4	.083	2.244	.236	3	3	.090
No.5-40	No.6-40	40	D3T25096L283-I40UN TM...	80219	1/4	.096	2.244	.283	3	3	.102
	No.8-36	36	D3T25130L343-I36UN TM...	80240	1/4	.130	2.244	.343	3	3	.138
No.6, No.8-32	No.10-32	32	D3T25100L292-I32UN TM...	80241	1/4	.100	2.244	.292	3	3	.110
No.8-32	No.10-32	32	D3T25126L394-I32UN TM...	80242	1/4	.126	2.244	.394	3	3	.134
	1/4"x28	28	D3T25207L520-I28UN TM...	80243	1/4	.207	2.244	.520	3	3	.216
No.10-24	5/16"x24	24	D3T25141L402-I24UN TM...	80244	1/4	.141	2.244	.402	3	3	.150
	5/16"x24	24	D3T31263L650-I24UN TM...	80245	5/16	.263	2.480	.650	3	3	.272
1/4"x20	7/16"x20	20	D3T25192L528-I20UN TM...	80246	1/4	.192	2.244	.528	3	3	.201
	7/16"x20	20	D3T37375L906-I20UN TM...	80247	3/8	.375	2.874	.906	3	3	.390
3/8"x16		16	D3T31264L752-I16UN TM...	80279	5/16	.264	2.480	.752	3	3	.315
7/16"x14		14	D3T37354L917-I14UN TM...	80248	3/8	.354	2.874	.917	3	3	.370

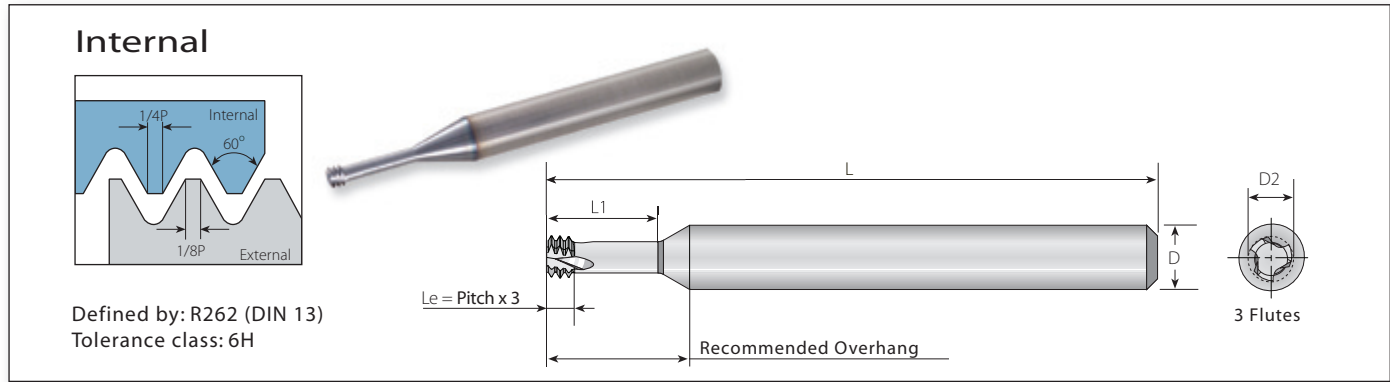
MilliPro

Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
	No.1-72	72	D3T25057L226-I72UN TM...	80443	1/4	.057	2.244	.226	3	3	.059
No.4, No.5-40	No.6-40	40	D3T25083L354-I40UN TM...	80263	1/4	.083	2.244	.354	3	3	.091
No.5-40	No.6-40	40	D3T25096L394-I40UN TM...	80249	1/4	.096	2.244	.394	3	3	.102
No.6, No.8-32	No.10-32	32	D3T25100L433-I32UN TM...	80264	1/4	.100	2.244	.433	3	3	.110
No.8-32	No.10-32	32	D3T25126L512-I32UN TM...	80250	1/4	.126	2.244	.512	3	3	.134
	1/4"x28	28	D3T25207L772-I28UN TM...	80251	1/4	.207	2.244	.772	3	3	.216
	5/16"x24	24	D3T31263L965-I24UN TM...	80252	5/16	.263	2.480	.965	3	3	.272
1/4"x20	7/16"x20	20	D3T25192L780-I20UN TM...	80253	1/4	.192	2.244	.780	3	3	.201

*Bore Diameter applies to smallest thread Dia.



MilliPro

Miniature Thread Mills

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	inch
M1.6x0.35		0.35	D3T12047L134-I0.35ISO TM...	80660	1/8	.047	1.181	.134	3	3	.049
M2x0.4		0.4	D3T25061L165-I0.4ISO TM...	80661	1/4	.061	2.244	.165	3	3	.063
M2.2x0.45		0.45	D3T25065L181-I0.45ISO TM...	80662	1/4	.065	2.244	.181	3	3	.069
M2.5x0.45		0.45	D3T25077L205-I0.45ISO TM...	80663	1/4	.077	2.244	.205	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L244-I0.5ISO TM...	80664	1/4	.094	2.244	.244	3	3	.098
M3.5x0.6		0.6	D3T25108L287-I0.6ISO TM...	80665	1/4	.108	2.244	.287	3	3	.114
M4x0.7		0.7	D3T25124L327-I0.7ISO TM...	80666	1/4	.124	2.244	.327	3	3	.130
M5x0.8		0.8	D3T25159L409-I0.8ISO TM...	80667	1/4	.159	2.244	.409	3	3	.165
M6x1.0	M8-M40x1.0	1.0	D3T25189L492-I1.0ISO TM...	80668	1/4	.189	2.244	.492	3	3	.197
M8x1.25		1.25	D3T31256L654-I1.25ISO TM...	80669	5/16	.256	2.480	.654	3	3	.268
M10x1.5	M12-M48x1.5	1.50	D3T37323L819-I1.50ISO TM...	80670	3/8	.323	2.874	.819	3	3	.335
M12x1.75		1.75	D3T37371L984-I1.75ISO TM...	80671	3/8	.371	2.874	.984	3	3	.406

MilliPro

Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	inch
M1.6x0.35		0.35	D3T12047L197-I0.35ISO TM...	80672	1/8	.047	1.181	.197	3	3	.049
M2x0.4		0.4	D3T25061L244-I0.4ISO TM...	80673	1/4	.061	2.244	.244	3	3	.063
M2.5x0.45		0.45	D3T25077L276-I0.45ISO TM...	80674	1/4	.077	2.244	.276	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L362-I0.5ISO TM...	80675	1/4	.094	2.244	.362	3	3	.098
M4x0.7		0.7	D3T25124L484-I0.7ISO TM...	80676	1/4	.124	2.244	.484	3	3	.130
M5x0.8		0.8	D3T25159L606-I0.8ISO TM...	80677	1/4	.159	2.244	.606	3	3	.165
M6x1.0	M8-M40 x1.0	1.0	D3T25189L728-I1.0ISO TM...	80678	1/4	.189	2.244	.728	3	3	.197
M8x1.25		1.25	D3T31256L969-I1.25ISO TM...	80679	5/16	.256	2.480	.969	3	3	.268

Internal

Defined by: MIL-S-8879C
Tolerance class: 3A/3B

MilliPro - Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.*		
UNJC	UNJF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
0.138" (#6)	0.190" (#10)	32	D3T25106L043-I32UNJ TM...	80436	1/4	.106	2.244	.433	3	3	.110
	0.250" (1/4")	28	D3T25213L076-I28UNJ TM...	80437	1/4	.213	2.244	.768	3	3	.220
0.190" (#10)		24	D3T25146L058-I24UNJ TM...	80438	1/4	.146	2.244	.587	3	3	.157
	0.3125" (5/16")	24	D3T31264L094-I24UNJ TM...	80439	5/16	.264	2.480	.949	3	3	.276
0.250" (1/4")		20	D3T25197L076-I20UNJ TM...	80445	1/4	.197	2.244	.768	3	3	.209
	0.4375" (7/16")	20	D3T37371L131-I20UNJ TM...	80446	3/8	.371	2.874	1.319	3	3	.394
0.3125" (5/16")	0.5625" (9/16")	18	D3T31252L094-I18UNJ TM...	80961	5/16	.252	2.480	.949	3	3	.266
0.375" (3/8")	0.750" (3/4")	16	D3T31303L114-I16UNJ TM...	80879	5/16	.303	2.480	1.142	3	3	.319
0.4375" (7/16")	0.875" (7/8")	14	D3T37362L131-I14UNJ TM...	80880	3/8	.362	2.874	1.319	3	3	.374
0.500" (1/2")		13	D3T37371L151-I13UNJ TM...	80881	3/8	.371	2.874	1.516	3	3	.433

Internal

Defined by: ISO 5855
Tolerance class: 4h/6h-4H/5H

MilliPro - Miniature Thread Mills

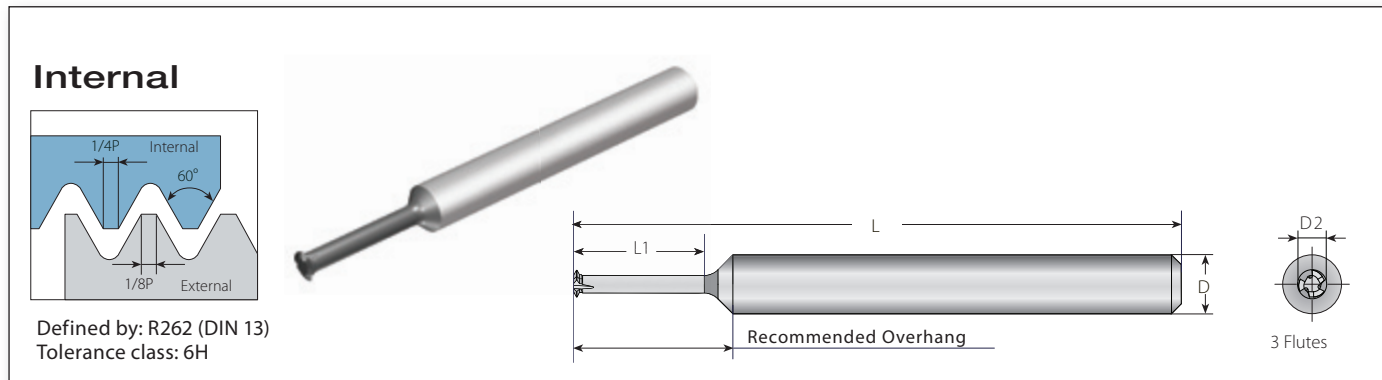
3 x Do (L1 ≤ 3 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.	
Standard	mm	Internal	VTH	D	D2	L	L1	Z	Zt	inch
MJ3x0.5	0.5	D3T25094L036-I0.5MJ TM...	80882	1/4	.094	2.244	0.362	3	3	.102
MJ3.5x0.6	0.6	D3T25112L043-I0.6MJ TM...	80883	1/4	.112	2.244	0.433	3	3	.118
MJ4x0.7	0.7	D3T25124L048-I0.7MJ TM...	80884	1/4	.124	2.244	0.484	3	3	.134
MJ5x0.8	0.8	D3T25159L060-I0.8MJ TM...	80885	1/4	.159	2.244	0.606	3	3	.169
MJ6x1.0	1.0	D3T25189L072-I1.0MJ TM...	80886	1/4	.189	2.244	0.728	3	3	.201
MJ8x1.25	1.25	D3T31256L096-I1.25MJ TM...	80887	5/16	.256	2.480	0.969	3	3	.272
MJ10x1.5	1.50	D3T37323L121-I1.50MJ TM...	80888	3/8	.323	2.874	1.213	3	3	.343
MJ12x1.75	1.75	D3T37371L145-I1.75MJ TM...	80889	3/8	.371	2.874	1.457	3	3	.409
MJ14x2	2.0	D3T50469L167-I2.0MJ TM...	80890	1/2	.469	3.268	1.673	3	3	.482

*Bore Diameter applies to smallest thread Dia.

ISO Metric

MilliPro Dental



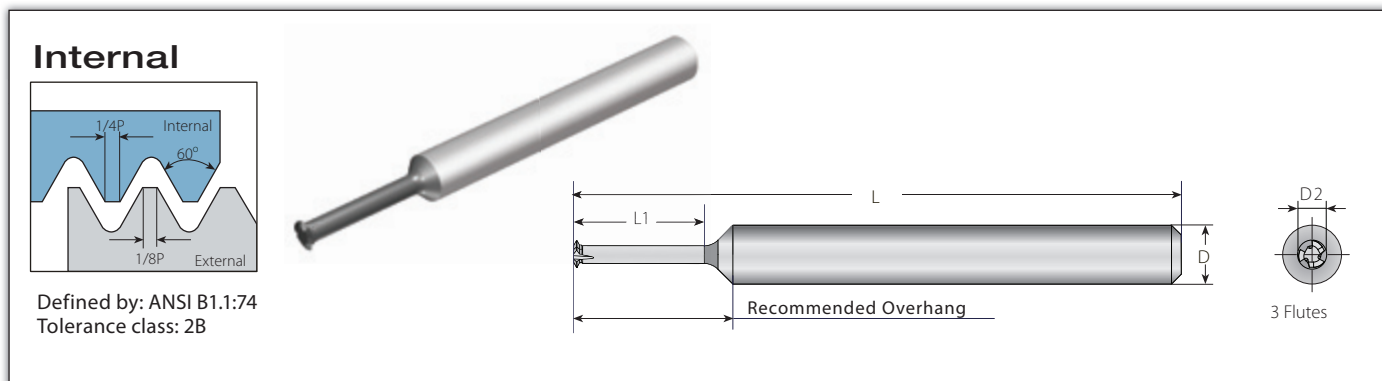
MilliPro Dental

Miniature Thread Mills for Dental Implants

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.	
M Coarse	M Fine	mm	Internal	VTH	D[mm]	D2	L	L1	Z	Zt	Inch
M1.0x0.25	M1.4x0.25	0.25	D1T03007L031-I0.25ISO TM...	80210	3	.028	1.220	.122	3	1	.030
M1.2x0.25	M1.4x0.25	0.25	D1T03009L038-I0.25ISO TM...	80211	3	.035	1.220	.150	3	1	.037
M1.4x0.3	-	0.30	D1T03011L044-I0.30ISO TM...	80212	3	.041	1.220	.173	3	1	.045
M1.6x0.35	-	0.35	D1T03012L050-I0.35ISO TM...	80213	3	.047	1.220	.197	3	1	.051
M1.8x0.35	M2.0x0.35	0.35	D1T03014L056-I0.35ISO TM...	80280	3	.055	1.220	.220	3	1	.059
M2.0x0.4	-	0.40	D1T03015L062-I0.40ISO TM...	80281	3	.059	1.220	.244	3	1	.065
M2.5x0.45	-	0.45	D1T03019L077-I0.45ISO TM...	80282	3	.077	1.220	.303	3	1	.083

American UN

MilliPro Dental



MilliPro Dental

Miniature Thread Mills for Dental Implants

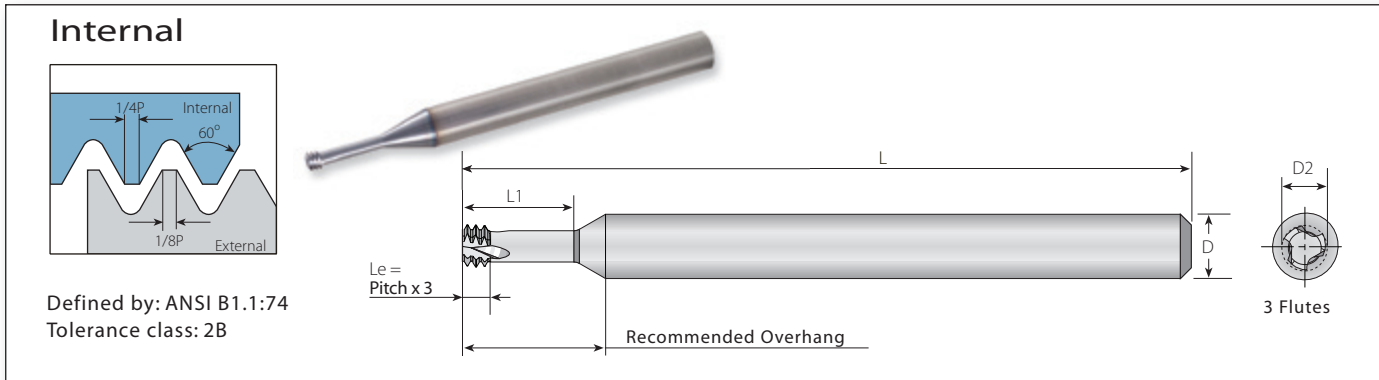
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.	
UNF		tpi	Internal	VTH	D[mm]	D2	L	L1	Z	Zt	Inch
0-80		80	D1T03011L046-I80UN TM...	80283	3	.045	1.220	.181	3	1	.051
1-72		72	D1T03014L065-I72UN TM...	80413	3	.057	1.220	.256	3	1	.063

The MilliPro Dental line was specially designed for machining Titanium and Stainless Steel in high RPM.

MilliPro Dental D1T tools are also suitable for general use applications

American UN

MilliPro EL



MilliPro EL

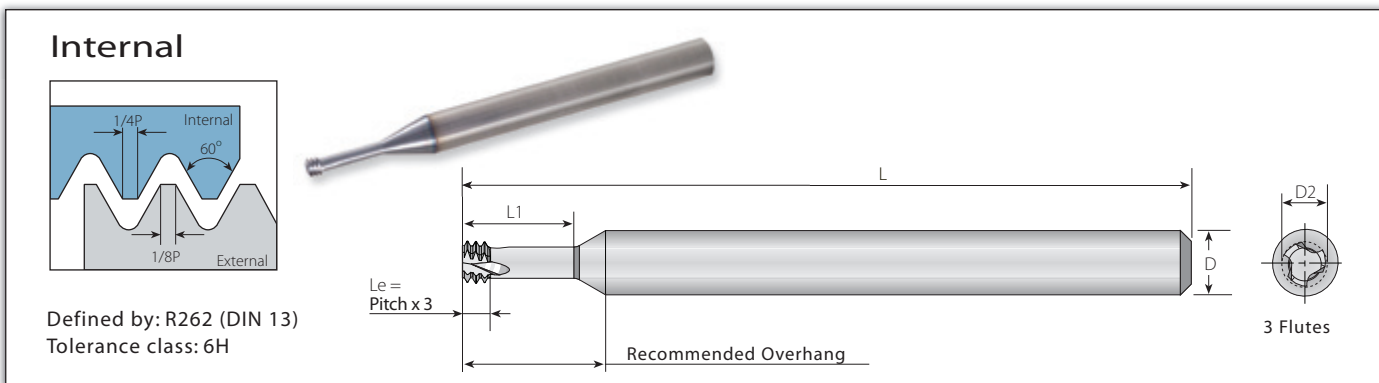
Miniature Thread Mills, Extra Long Tools

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.*	
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.2-56	No.3-56	56	D3T25065L197-I56UN TML...	80430	1/4	.065	3.937	.197	3	3	.071
No.4, No.5-40	No.6-40	40	D3T25083L236-I40UN TML...	80431	1/4	.083	3.937	.236	3	3	.091
No.6, No.8-32	No.10-32	32	D3T25100L291-I32UN TML...	80432	1/4	.100	3.937	.291	3	3	.110
No.8-32	No.10-32	32	D3T25126L394-I32UN TML...	80433	1/4	.126	3.937	.394	3	3	.134

ISO Metric

MilliPro EL



MilliPro EL

Miniature Thread Mills , Extra Long Tools

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.*	
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
M2x0.4		0.4	D3T25061L165-I0.4ISO TML...	80426	1/4	.061	3.937	.165	3	3	.063
M2.5x0.45		0.45	D3T25077L205-I0.45ISO TML...	80428	1/4	.077	3.937	.205	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L244-I0.5ISO TML...	80429	1/4	.094	3.937	.244	3	3	.098

*Bore Diameter applies to smallest thread Dia.

Internal

Defined by: ANSI B1.1:74
Tolerance class: 2B

Left Hand Tool

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRC

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.*	
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.2-56	No.3-56	56	S2L25065L197-I56UN TM...	80936	1/4"	.065	3.00	.210	4	2	.071
No.3-48	No.4-48	48	S2L25075L236-I48UN TM...	80937	1/4"	.075	3.00	.260	4	2	.083
No.4-40, No.5-40	No.6-40	40	S2L25083L236-I40UN TM...	80938	1/4"	.083	3.00	.260	4	2	.093
No.5-40	No.6-40	40	S2L25096L283-I40UN TM...	80939	1/4"	.096	3.00	.310	4	2	.104
	No.8-36	36	S2L25130L343-I36UN TM...	80940	1/4"	.130	3.00	.370	4	2	.140
No.6-32, No.8-32	No.10-32	32	S2L25100L292-I32UN TM...	80941	1/4"	.100	3.00	.320	4	2	.112
No.8-32	No.10-32	32	S2L25126L394-I32UN TM...	80942	1/4"	.126	3.00	.420	4	2	.138
	No.10-32	32	S2L25146L394-I32UN TM...	80943	1/4"	.146	3.00	.430	4	2	.164
	1/4"x28	28	S2L25207L520-I28UN TM...	80944	1/4"	.207	3.00	.560	5	2	.219
No.10-24	5/16"x24	24	S2L25141L402-I24UN TM...	80945	1/4"	.141	3.00	.440	4	2	.154
	5/16"x24	24	S2L31263L650-I24UN TM...	80946	5/16"	.263	3.15	.690	5	2	.276
1/4"-20	7/16"x20	20	S2L25192L528-I20UN TM...	80947	1/4"	.192	3.00	.580	5	2	.205
	7/16"x20	20	S2L37372L906-I20UN TM...	80948	3/8"	.372	4.00	.960	6	2	.390
3/8"x16		16	S2L31301L776-I16UN TM...	80949	5/16"	.301	3.15	.840	5	2	.315
7/16"x14		14	S2L37354L917-I14UN TM...	80950	3/8"	.354	4.00	.990	6	2	.374
1/2"x13		13	S2L37390L101-I13UN TM...	80951	3/8"	.390	4.00	1.080	6	2	.429

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRC

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.*	
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.4-40, No.5-40	No.6-40	40	S2L25083L354-I40UN TM...	80952	1/4"	.083	3.00	.380	4	2	.093
No.5-40	No.6-40	40	S2L25096L394-I40UN TM...	80953	1/4"	.096	3.00	.410	4	2	.104
No.6-32, No.8-32	No.10-32	32	S2L25100L433-I32UN TM...	80954	1/4"	.100	3.00	.460	4	2	.111
No.8-32	No.10-32	32	S2L25126L512-I32UN TM...	80955	1/4"	.126	3.00	.540	4	2	.136
	1/4"x28	28	S2L25207L772-I28UN TM...	80956	1/4"	.207	3.00	.810	5	2	.219
	5/16"x24	24	S2L31263L965-I24UN TM...	80957	5/16"	.263	3.15	1.010	5	2	.272
1/4"x20	7/16"x20	20	S2L25192L780-I20UN TM...	80958	1/4"	.192	3.00	.830	5	2	.204
7/16"x14		14	S2L37354L131-I14UN TM...	80959	3/8"	.354	4.00	1.390	6	2	.375

Roughing (Partial Profile)

Finish (Full Profile)

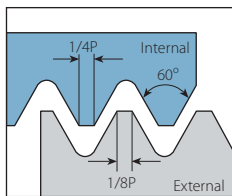
Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

The work direction should be from the top to the bottom (Climb Milling).

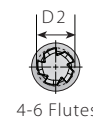
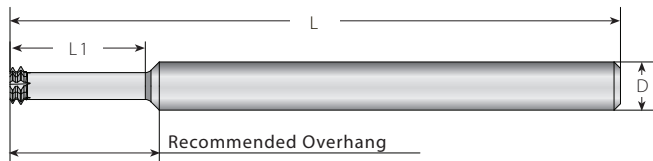
1 Pitch

MilliPro HD Tools are left handed. For CNC use M04 code.

Internal



Defined by: R262 (DIN 13)
Tolerance class: 6H



Left Hand Tool

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRC

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
M2x0.4		0.4	S2L25061L165-I0.4ISO TM...	80918	1/4	.061	2.99	.18	4	2	.063
M2.2x0.45		0.45	S2L25065L181-I0.45ISO TM...	80919	1/4	.065	2.99	.20	4	2	.071
M2.5x0.45		0.45	S2L25077L204-I0.45ISO TM...	80920	1/4	.077	2.99	.22	4	2	.081
M3x0.5	M3.5-M16x0.5	0.5	S2L25094L244-I0.5ISO TM...	80921	1/4	.094	2.99	.27	4	2	.101
M3.5x0.6		0.6	S2L25108L287-I0.6ISO TM...	80922	1/4	.108	2.99	.31	4	2	.116
M4x0.7		0.7	S2L25124L326-I0.7ISO TM...	80923	1/4	.124	2.99	.36	4	2	.132
M5x0.8		0.8	S2L25159L409-I0.8ISO TM...	80924	1/4	.159	2.99	.44	4	2	.169
M6x1.0	M8-M40x1.0	1.0	S2L25189L492-I1.0ISO TM...	80925	1/4	.189	2.99	.53	5	2	.201
M8x1.25		1.25	S2L31256L653-I1.25ISO TM...	80926	5/16	.256	3.15	.70	5	2	.268
M10x1.5	M12-M48x1.50	1.50	S2L31308L818-I1.50ISO TM...	80927	5/16	.308	3.15	.88	6	2	.339
M12x1.75		1.75	S2L37371L984-I1.75ISO TM...	80928	3/8	.371	3.98	1.05	6	2	.409

MilliPro HD

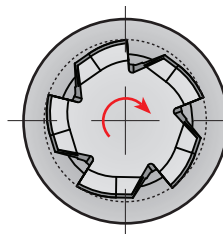
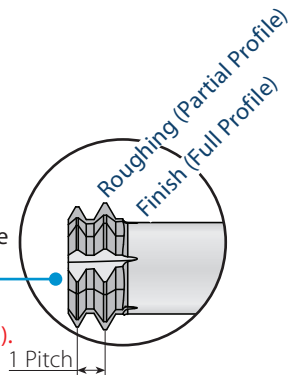
Miniature Thread Mills for Hard Materials Up to 62HRC

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	inch
M2x0.4		0.4	S2L25061L244-I0.4ISO TM...	80929	1/4	.061	2.99	.26	4	2	.063
M2.5x0.45		0.45	S2L25077L303-I0.45ISO TM...	80930	1/4	.077	2.99	.32	4	2	.081
M3x0.5	M3.5-M16x0.5	0.5	S2L25094L362-I0.5ISO TM...	80931	1/4	.094	2.99	.38	4	2	.101
M4x0.7		0.7	S2L25124L484-I0.7ISO TM...	80932	1/4	.124	2.99	.51	4	2	.132
M5x0.8		0.8	S2L25159L606-I0.8ISO TM...	80933	1/4	.159	2.99	.64	4	2	.169
M6x1.0	M8-M40x1.0	1.0	S2L25189L728-I1.0ISO TM...	80934	1/4	.189	2.99	.77	5	2	.201
M8x1.25		1.25	S2L31256L968-I1.25ISO TM...	80935	5/16	.256	3.15	1.02	5	2	.268

Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

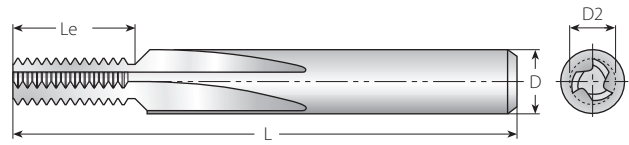
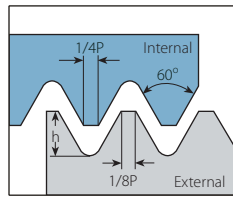
The work direction should be from the top to the bottom (Climb Milling).



MilliPro HD Tools are left handed. For CNC use M04 code.

*Bore Diameter applies to smallest thread Dia.

External

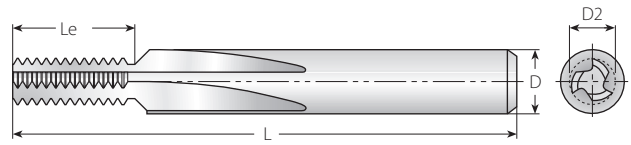
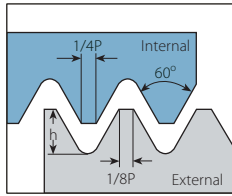


Defined by: ANSI B1.1:74
Tolerance class: 2A/2B

Straight Flutes - External

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External	VTS	D	D2	L	Le	Z	Zt	h inch
No.6	32	S1/4".240"-E32UN TM...	80026	1/4	.240	2.244	.562	3	18	.019
No.12	28	S5/16".310"-E28UN TM3...	80027	5/16	.310	2.480	.786	3	22	.022
No.12	28	S5/16".310"-E28UN TM5...	80408	5/16	.310	2.480	.786	5	22	.022
1/4"	20	S3/8".370"-E20UN TM...	80028	3/8	.370	2.835	.900	5	18	.031
5/16"	18	S3/8".370"-E18UN TM...	80029	3/8	.370	2.835	.944	5	17	.034
3/8"	16	S1/2".470"-E16UN TM...	80030	1/2	.470	3.268	1.125	5	18	.038
9/16"	12	S1/2".470"-E12UN TM...	80031	1/2	.470	3.268	1.167	5	14	.051
1"	8	S5/8".620"-E8UN TM...	80032	5/8	.620	3.622	1.500	5	12	.077
1 3/8"	6	S5/8".620"-E6UN TM...	80033	5/8	.620	3.622	1.500	5	9	.102

Internal

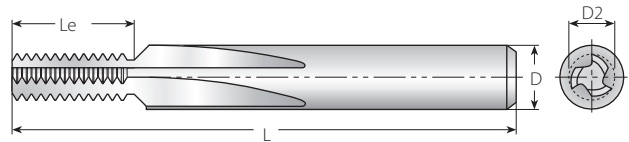
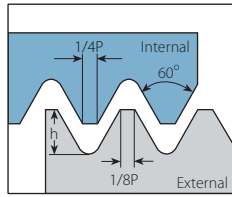


Defined by: ANSI B1.1:74
Tolerance class: 2A/2B

Straight Flutes - Internal

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	Internal	VTS	D	D2	L	Le	Z	Zt	h inch
No.8	36	S1/8".120"-I36UN TM...	80034	1/8	.120	1.654	.250	3	9	.016
No.8	32	S1/8".120"-I32UN TM...	80035	1/8	.120	1.654	.250	3	8	.018
5/16"	32	S1/4".240"-I32UN TM...	80036	1/4	.240	2.244	.562	3	18	.018
No.12	28	S3/16".145"-I28UN TM...	80037	3/16	.145	1.654	.321	3	9	.021
7/16"	28	S5/16".310"-I28UN TM3...	80038	5/16	.310	2.480	.786	3	22	.021
7/16"	28	S5/16".310"-I28UN TM5...	80441	5/16	.310	2.480	.786	5	22	.021
No.12	24	S3/16".160"-I24UN TM...	80039	3/16	.160	2.244	.333	3	8	.024
1/4"	20	S3/16".160"-I20UN TM...	80040	3/16	.160	2.244	.400	3	8	.029
9/16"	20	S3/8".370"-I20UN TM...	80041	3/8	.370	2.835	.900	5	18	.029
5/16"	18	S1/4".200"-I18UN TM...	80440	1/4	.200	2.244	.500	3	9	.033
9/16"	18	S3/8".370"-I18UN TM...	80043	3/8	.370	2.835	.944	5	17	.033
3/8"	16	S1/4".240"-I16UN TM...	80044	1/4	.240	2.244	.562	3	9	.037
13/16"	16	S1/2".470"-I16UN TM...	80045	1/2	.470	3.268	1.125	5	18	.037
7/16"	14	S5/16".310"-I14UN TM3...	80046	5/16	.310	2.480	.714	3	10	.042
7/16"	14	S5/16".310"-I14UN TM5...	80238	5/16	.310	2.480	.714	5	10	.042
1/2"	13	S5/16".310"-I13UN TM3...	80047	5/16	.310	2.480	.769	3	10	.045
1/2"	13	S5/16".310"-I13UN TM5...	80237	5/16	.310	2.480	.769	5	10	.045
9/16"	12	S3/8".370"-I12UN TM...	80048	3/8	.370	2.835	.917	5	11	.049
1"	12	S1/2".470"-I12UN TM...	80049	1/2	.470	3.268	1.167	5	14	.049
5/8"	11	S3/8".370"-I11UN TM...	80050	3/8	.370	2.835	.909	5	10	.053
3/4"	10	S1/2".470"-I10UN TM...	80051	1/2	.470	3.268	1.100	5	11	.059
7/8"	9	S5/8".620"-I9UN TM...	80442	5/8	.620	3.622	1.333	5	12	.065
1"	8	S5/8".620"-I8UN TM...	80053	5/8	.620	3.622	1.500	5	12	.073
1 1/8"	7	S5/8".620"-I7UN TM...	80054	5/8	.620	3.622	1.429	5	10	.084
1 3/8"	6	S3/4".745"-I6UN TM...	80055	3/4	.745	4.095	1.500	5	9	.098
1 3/4"	5	S3/4".745"-I5UN TM...	80057	3/4	.745	4.095	1.600	5	8	.117
2"	4.5	S3/4".745"-I4.5UN TM...	80058	3/4	.745	4.095	1.555	5	7	.130

External / Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H

Straight Flutes - External

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	mm	External	VTS	D	D2	L	Le	Z	Zt	h inch
M3	0.50	S1/4".240"-E0.5ISO TM...	80000	1/4	.240	2.244	.591	3	30	.012
M4.5	0.75	S5/16".310"-E0.75ISO TM3...	80001	5/16	.310	2.480	.610	3	26	.019
M4.5	0.75	S5/16".310"-E0.75ISO TM5...	80444	5/16	.310	2.480	.610	5	26	.019
M6	1.00	S3/8".370"-E1.0ISO TM...	80002	3/8	.370	2.835	.945	5	24	.025
M10	1.50	S1/2".470"-E1.5ISO TM...	80003	1/2	.470	3.268	1.181	5	20	.037
M14	2.00	S1/2".470"-E2.0ISO TM...	80004	1/2	.470	3.268	1.181	5	15	.050
M24	3.00	S5/8".620"-E3.0ISO TM...	80005	5/8	.620	3.622	1.417	5	12	.075
M36	4.00	S5/8".620"-E4.0ISO TM...	80006	5/8	.620	3.622	1.575	5	10	.100
M64	6.00	S3/4".745"-E6.0ISO TM...	80007	3/4	.745	4.095	1.417	5	6	.149

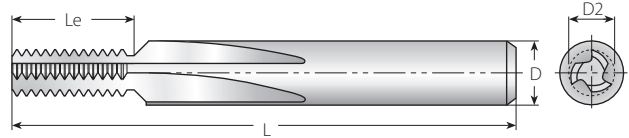
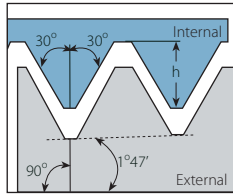
Straight Flutes - Internal

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	mm	Internal	VTS	D	D2	L	Le	Z	Zt	h inch
M4.5	0.75	S1/8".120"-I0.75ISO TM...	80008	1/8	.120	1.496	.270	3	9	.017
M8	0.75	S1/4".240"-I0.75ISO TM...	80009	1/4	.240	2.244	.591	3	20	.017
M5	0.80	S3/16".145"-I0.8ISO TM...	80010	3/16	.145	1.654	.315	3	10	.018
M6	1.00	S3/16".160"-I1.0ISO TM...	80011	3/16	.160	1.654	.354	3	9	.023
M12	1.00	S5/16".310"-I1.0ISO TM3...	80012	5/16	.310	2.480	.787	3	20	.023
M12	1.00	S5/16".310"-I1.0ISO TM5...	80239	5/16	.310	2.480	.787	5	20	.023
M8	1.25	S1/4".200"-I1.25ISO TM...	80013	1/4	.200	2.244	.492	3	10	.029
M10	1.50	S1/4".240"-I1.5ISO TM...	80014	1/4	.240	2.244	.591	3	10	.035
M14	1.50	S3/8".370"-I1.5ISO TM...	80015	3/8	.370	2.835	.945	5	16	.035
M18	1.50	S1/2".470"-I1.5ISO TM...	80016	1/2	.470	3.268	1.181	5	20	.035
M12	1.75	S5/16".310"-I1.75ISO TM3...	80017	5/16	.310	2.480	.758	3	11	.040
M12	1.75	S5/16".310"-I1.75ISO TM5...	80236	5/16	.310	2.480	.758	5	11	.040
M16	2.00	S3/8".370"-I2.0ISO TM...	80018	3/8	.370	2.835	.944	5	12	.046
M18	2.00	S1/2".470"-I2.0ISO TM...	80019	1/2	.470	3.268	1.181	5	15	.046
M20	2.50	S1/2".470"-I2.5ISO TM...	80020	1/2	.470	3.268	1.181	5	12	.058
M24	3.00	S5/8".620"-I3.0ISO TM...	80021	5/8	.620	3.622	1.417	5	12	.069
M30	3.50	S5/8".620"-I3.5ISO TM...	80022	5/8	.620	3.622	1.516	5	11	.081
M36	4.00	S5/8".620"-I4.0ISO TM...	80023	5/8	.620	3.622	1.575	5	10	.092
M48	5.00	S3/4".745"-I5.0ISO TM...	80024	3/4	.745	4.095	1.575	5	8	.116
M64	6.00	S3/4".745"-I6.0ISO TM...	80025	3/4	.745	4.095	1.417	5	6	.139

NPT

Straight

External / Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

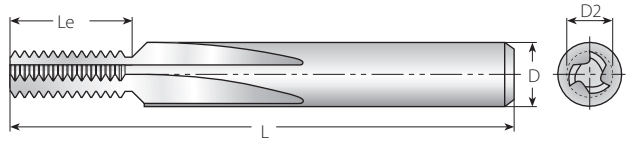
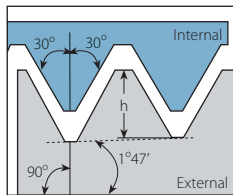
Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth		
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/16"	27	S1/4".240"-EI27NPT TM...	80080	1/4	.240	2.244	.370	3	10	.030
1/4"	18	S5/16".310"-EI18NPT TM3...	80081	5/16	.310	2.480	.555	3	10	.044
1/4"	18	S5/16".310"-EI18NPT TM5...	80190	5/16	.310	2.480	.555	5	10	.044
1/2"	14	S1/2".470"-EI14NPT TM...	80082	1/2	.470	3.268	.786	5	11	.057
1"	11.5	S5/8".620"-EI11.5NPT TM...	80083	5/8	.620	3.622	1.043	5	12	.070
2 1/2"	8	S5/8".620"-EI8NPT TM...	80084	5/8	.620	3.622	1.500	5	12	.100

NPTF

Straight

External / Internal

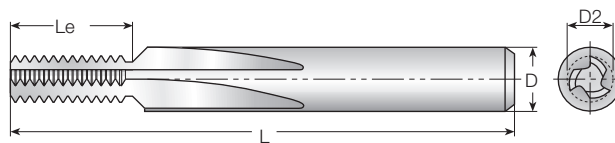
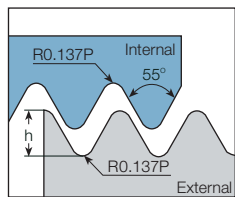


Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF

Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth		
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/16"	27	S1/4".240"-EI27NPTF TM...	80085	1/4	.240	2.244	.370	3	10	.030
1/4"	18	S5/16".310"-EI18NPTF TM3...	80086	5/16	.310	2.480	.555	3	10	.044
1/4"	18	S5/16".310"-EI18NPTF TM5...	80233	5/16	.310	2.480	.555	5	10	.044
1/2"	14	S1/2".470"-EI14NPTF TM...	80087	1/2	.470	3.268	.786	5	11	.057
1"	11.5	S5/8".620"-EI11.5NPTF TM...	80088	5/8	.620	3.622	1.043	5	12	.070
2 1/2"	8	S5/8".620"-EI8NPTF TM...	80089	5/8	.620	3.622	1.500	5	12	.100

External / Internal

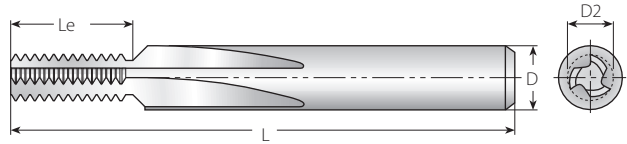
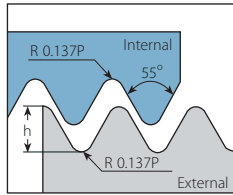


Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium class A

Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/4"	20	S3/16".160"-EI20BSW TM...	80059	3/16	.160	1.654	.400	3	8	.032
5/16"	18	S1/4".200"-EI18BSW TM...	80060	1/4	.200	2.244	.444	3	8	.035
3/8"	16	S1/4".240"-EI16BSW TM...	80061	1/4	.240	2.244	.562	3	9	.040
7/16"	14	S5/16".310"-EI14BSW TM3...	80062	5/16	.310	2.480	.714	3	10	.046
7/16"	14	S5/16".310"-EI14BSW TM5...	80232	5/16	.310	2.480	.714	5	10	.046
1/2"	12	S5/16".310"-EI12BSW TM3...	80063	5/16	.310	2.480	.750	3	9	.053
1/2"	12	S5/16".310"-EI12BSW TM5...	80447	5/16	.310	2.480	.750	5	9	.053
5/8"	11	S3/8".370"-EI11BSW TM...	80064	3/8	.370	2.835	.909	5	10	.058
3/4"	10	S1/2".470"-EI10BSW TM...	80065	1/2	.470	3.268	1.100	5	11	.064
7/8"	9	S1/2".470"-EI9BSW TM...	80066	1/2	.470	3.268	1.111	5	10	.071
1"	8	S5/8".620"-EI8BSW TM...	80067	5/8	.620	3.622	1.500	5	12	.080
1 1/8"	7	S5/8".620"-EI7BSW TM...	80068	5/8	.620	3.622	1.429	5	10	.091
1 3/8"	6	S5/8".620"-EI6BSW TM...	80069	5/8	.620	3.622	1.500	5	9	.107
1 5/8"	5	S3/4".745"-EI5BSW TM...	80070	3/4	.745	4.095	1.600	5	8	.128
1 7/8"	4.5	S3/4".745"-EI4.5BSW TM...	80071	3/4	.745	4.095	1.555	5	7	.142

External / Internal



Defined by: B.S.2779:1956
Tolerance class: Medium class

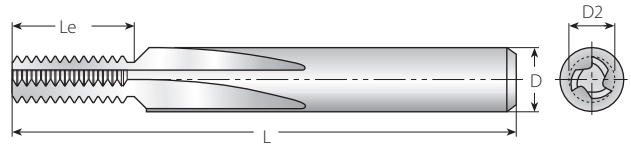
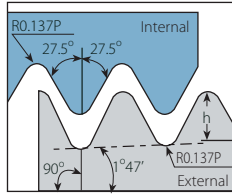
Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/16"	28	S1/4".240"-EI28BSP TM...	80076	1/4	.240	2.244	.571	3	16	.023
1/4"	19	S5/16".310"-EI19BSP TM3...	80073	5/16	.310	2.480	.737	3	14	.034
1/4"	19	S5/16".310"-EI19BSP TM5...	80234	5/16	.310	2.480	.737	5	14	.034
1/2"	14	S1/2".470"-EI14BSP TM...	80074	1/2	.470	3.268	1.143	5	16	.046
1"	11	S5/8".620"-EI11BSP TM...	80075	5/8	.620	3.622	1.364	5	15	.058

BSPT

Straight

External / Internal



Defined by: B.S.21:1985
Tolerance class: Standard BSPT

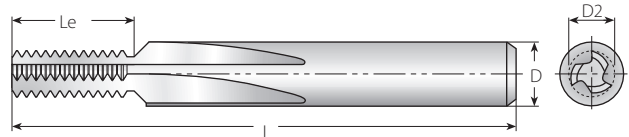
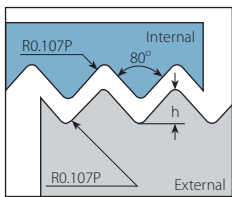
Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
				Min. Dia.	tpi	External / Internal	VTS		D	D2
1/16"	28	S1/4".240"-EI28BSPT TM...	8 0072	1/4	.240	2.244	.393	3	11	.023
1/4"	19	S5/16".310"-EI19BSPT TM3...	80077	5/16	.310	2.480	.579	3	11	.034
1/4"	19	S5/16".310"-EI19BSPT TM5...	80235	5/16	.310	2.480	.579	5	11	.034
1/2"	14	S1/2".470"-EI14BSPT TM...	80078	1/2	.470	3.268	.786	5	11	.046
1"	11	S5/8".620"-EI11BSPT TM...	80079	5/8	.620	3.622	1.545	5	17	.058

Pg

Straight

External / Internal



Defined by: DIN 40430
Tolerance class: Standard

Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
				Min. Dia.	tpi	External / Internal	VTS		D	D2
Pg7	20	S5/16".310"-EI20PG TM3...	80090	5/16	.310	2.480	.750	3	15	.024
Pg7	20	S5/16".310"-EI20PG TM5...	80448	5/16	.310	2.480	.750	5	15	.024
Pg9, 11, 13.5, 16	18	S3/8".370"-EI18PG TM...	80091	3/8	.370	2.835	.944	5	17	.026
Pg21, 29, 36, 42, 48	16	S1/2".470"-EI16PG TM...	80092	1/2	.470	3.268	1.125	5	18	.030

Grades and Their Applications

VTH

- A general-purpose, heavy duty thread milling grade
- TiCN coated for high resistance to wear

VTS

Straight

- A general-purpose grade, specially designed for TM Solid Straight Flute cutters
- TiAlN coated for high resistance to wear

VTS

HTC (Thriller)

- TiAlN coated grade
- First choice for Cast iron and general use

VTN

HTC (Thriller)

- Uncoated grade
- First choice for Aluminium and general use



TM Gen Software and updated versions can be downloaded from www.vargususa.com

Cutting Speeds Vc [ft/min] and Feed f [inch/tooth] (Not Including HTC & MilliPro HD)

Material Group	Vardex No.	Material	Hardness Brinell HB	Vc [ft/min]			Feed [inch/tooth]					
				Helicoil, HCR, HCC, Helical, Sraight, Deep Threading		MilliPro	He-Lex	Straight	Deep Threading	Helicoil HCC HCR	MilliPro	
				VTH	VTS	VTH						
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	262-820	164-590	197-394	.0012-.0059	.0004-.0039	.0039-.0138	.001-.0118	.0008-.0063
	2		Medium carbon (C=0.25-0.55%)	150	262-754	164-459	197-394	.0012-.0039	.0004-.0031	.0031-.0118	.0008-.0102	.0008-.0063
	3		High Carbon (C=0.55-0.85%)	170	262-656	164-394	197-295	.0012-.0031	.0004-.0024	.0031-.0118	.0008-.0091	.0008-.0063
	4	Low alloy steel (alloying elements ≤5%)	Non hardened	180	197-590	197-558	197-295	.0012-.0039	.0012-.0028	.0031-.0118	.0008-.0087	.0006-.0063
	5		Hardened	275	197-558	197-525	164-262	.0012-.0028	.0012-.0028	.0031-.0118	.0004-.0059	.0006-.0028
	6		Hardened	350	197-525	197-492	164-262	.0004-.0012	.0002-.0004	.002-.0059	.0004-.0039	.0006-.0012
	7	High alloy steel (alloying elements >5%)	Annealed	200	131-328	131-295	164-262	.0012-.002	.0004-.0012	.0039-.0094	.0004-.0051	.0006-.0035
	8		Hardened	325	98-262	98-230	164-262	.0004-.0012	.0002-.0004	.002-.0059	.0004-.0047	.0006-.0012
	9	Cast steel	Low alloy (alloying elements <5%)	200	262-820	230-656	230-295	.0012-.0039	.0004-.0012	.0031-.0118	.0004-.0059	.0006-.0063
	10		High alloy (alloying elements >5%)	225	197-558	197-492	197-262	.0004-.0012	.0002-.0004	.002-.0059	.0004-.0039	.0006-.0012
M Stainless Steel	11	Stainless steel Ferritic	Non hardened	200	197-492	164-459	197-295	.0016-.0039	.0004-.002	.0043-.0138	.0004-.0051	.0006-.0063
	12		Hardened	330	197-394	164-361	164-262	.0004-.002	.0002-.0004	.002-.0094	.0004-.0047	.0006-.0012
	13	Stainless steel Austenitic	Austenitic	180	197-459	197-426	197-295	.0016-.0039	.0003-.0008	.0043-.0138	.0004-.0047	.0006-.0063
	14		Super Austenitic	200	197-426	164-394	164-262	.0016-.0039	.0003-.0008	.0043-.0138	.0004-.0039	.0006-.0063
	15	Stainless steel Cast Ferritic	Non hardened	200	197-525	164-492	197-295	.0016-.0039	.0004-.0012	.0043-.0138	.0004-.0059	.0006-.0063
	16		Hardened	330	197-361	164-328	164-262	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0039	.0006-.0012
	17	Stainless steel Cast austenitic	Austenitic	200	197-492	164-459	197-295	.0016-.0039	.0004-.0012	.0043-.0138	.0004-.0047	.0006-.0063
	18		Hardened	330	197-328	164-295	164-262	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0039	.0006-.0012
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	197-230	197-492	164-262	.0004-.0012	.0003-.0008	.002-.0059	.0004-.0059	.0006-.0012
	29		Pearlitic (long chips)	230	197-492	262-328	197-295	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0047	.0008-.0047
	30	Grey cast iron	Low tensile strength	180	230-525	164-459	230-328	.0008-.0039	.0003-.0008	.0035-.0098	.0004-.0051	.0008-.0063
	31		High tensile strength	260	131-394	131-361	197-295	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0047	.0008-.0047
	32	Nodular SG iron	Ferritic	160	131-361	131-328	230-328	.002-.0039	.0003-.0008	.0035-.0098	.0004-.0051	.0008-.0063
33	Pearlitic		260	131-328	131-295	197-295	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0047	.0008-.0047	
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	66-984	49-820	197-820	.0039-.0098	.002-.0059	.0047-.0157	.0016-.0157	.001-.0059
	35		Aged	100	49-820	33-722	197-492	.0039-.0079	.0012-.0039	.0039-.0126	.0012-.0142	.001-.0063
	36	Aluminium alloys	Cast	75	33-656	262-492	197-820	.0039-.0079	.002-.0059	.0039-.0126	.0012-.0142	.001-.0063
	37		Cast & aged	90	39-722	295-525	197-492	.0039-.0059	.0012-.0039	.0039-.0118	.0039-.0118	.0006-.0063
	38		Cast Si 13-22%	130	66-984	49-820	820	.0039-.0079	.002-.0059	.0039-.0126	.0012-.0142	.0012-.0059
	39	Copper and copper alloys	Brass	90	66-984	49-820	197-820	.0039-.0098	.002-.0059	.0047-.0157	.0016-.0169	
	40		Bronze and non leaded copper	100	49-820	33-722	197-492	.0039-.0079	.0012-.0039	.0039-.0126	.0012-.0142	.0012-.0059
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	98-197	98-164	197	.0016-.0039	.0003-.0008	.0043-.0138	.0003-.0035	.0006-.0063
	20		Aged (Iron based)	280	66-164	66-131	164	.0004-.0012	.0002-.0004	.002-.0059	.0002-.0028	.0006-.0012
	21		Annealed (Nickel or Cobalt based)	250	49-115	49-98	115	.0004-.0012	.0002-.0004	.002-.0059	.0002-.0024	.0006-.0012
	22		Aged (Nickel or Cobalt based)	350	49-98	49-82	98	.0004-.0012	.0002-.0004	.002-.0059	.0002-.0024	.0006-.0012
	23	Titanium alloys	Pure 99.5 Ti	400Rm	131-262	98-230	98-164	.0012-.002	.0003-.0008	.0039-.0094	.0002-.0028	.0006-.0028
24	α+β alloys		1050Rm	66-164	66-148	82-115	.0012-.002	.0003-.0008	.0039-.0094	.0002-.0028	.0006-.0028	
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	49-148	49-115	148	.0002-.0004	.0001-.0002	.001-.0024	.0002-.0016	.0004-.0016
	26			51-55HRc	49-131	49-98	98	.0002-.0004	.0001-.0002	.001-.0024	.0002-.0016	-

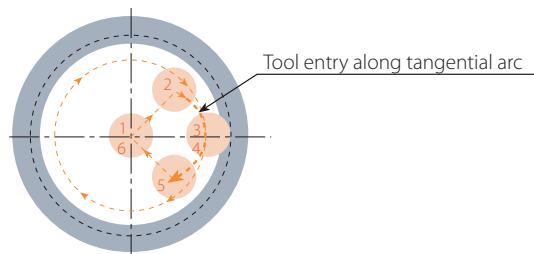
*** Recommendation:**

At tool entry, set the Feed f [inch/tooth] to 70% lower than the threading Feed.

Example:

Threading Feed: .012[inch/tooth]

Tool entry Feed: .0035[inch/tooth]



MilliPro HD Cutting Speeds Vc [ft/min] and Feed f [inch/tooth]

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]		Feed f [inch/tooth] by Cutting Dia.=D2				
					VTH		.06-.10	.10-.20	.20-.30	.30-.35	.35-.45
P Steel	6	Low alloy steel (alloying elements≤5%)	Hardened	350	82-525	.0016	.0020	.0024	.0028	.0031	
	8	High alloy steel (alloying elements>5%)	Hardened	325	82-590						
M Stainless Steel	12	Stainless steel Ferritic	Hardened	330	82-394	.0016	.0020	.0024	.0028	.0031	
	16	Stainless steel Cast Ferritic	Hardened	330	82-361						
	18	Stainless steel Cast Austenitic	Hardened	330	82-328						
K Cast Iron	28	Malleable cast iron	Ferritic (short chips)	130	82-525	.0020	.0024	.0028	.0031	.0039	
	29		Pearlitic (long chips)	230	82-492	.0016	.0020	.0024	.0028	.0031	
	30	Grey cast iron	Low tensile strength	180	82-426	.0020	.0024	.0028	.0031	.0039	
	31		High tensile strength	260	82-328	.0016	.0020	.0024	.0028	.0031	
	32	Nodular SG iron	Ferritic	160	82-410	.0016	.0020	.0024	.0028	.0035	
	33		Pearlitic	260	82-295	.0012	.0016	.0020	.0024	.0028	
S(M) Heat Resistant Material	21	High temperature alloys	Annealed (Nickel or Cobalt based)	250	49-115	.0012	.0016	.0020	.0024	.0028	
	22		Aged (Nickel or Cobalt based)	350	49-98						
	23	Titanium alloys	Pure 99.5 Ti	400Rm	82-230						
	24		α+β alloys	1050Rm	82-164						
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	82-230	.0016	.0020	.0024	.0028	.0031	
	26			51-55HRc	82-197	.0012	.0016	.0020	.0024	.0028	
	27			56-62HRc	82-164	.0008	.0012	.0016	.0020	.0024	

HTC Recommended Grades, Cutting Speed and Feed

Material Group	Material		Hardness Brinell HB	Strength (N-mm ²)	Vc[ft/min]		fb[inch/rev]		fz[inch/tooth]	
					VTN	VTS	≤.24 inch	≤.47 inch	≤.24 inch	≤.47 inch
K Cast Iron	Cast Iron	Grey cast iron	≤150	≤500	165-260	260-390	.004-.006	.006-.009	.001-.002	.002-.004
		Grey cast iron, heat treated	150-300	500-1000	165-260	260-390	.004-.006	.006-.009	0.02-0.05	.002-.004
		Spher. graph. Cast Iron	≤200	≤700	165-260	260-390	.004-.006	.006-.009	0.02-0.05	.002-.004
	Copper	Short Chips, Brass, Bronze, Red Brass	≤200	≤700	330-980	—	.004-.012	.002-.004	.001-.002	.002-.004
N(K) Non-Ferrous Metals	Aluminium/Magnesium	Aluminium, Magnesium non-alloy	≤100	≤350	330-1310	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Wrought Alloy, Breaking Strain (A5) < 14%	≤180	≤600	330-1310	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Wrought Alloy, Breaking Strain (A5) ≥ 14%	≤180	≤600	330-1310	330-1310	.001-.002	.002-.005	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si<10%	≤180	≤600	330-980	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si≥10%	≤180	≤600	—	330-980	.004-.010	.010-.012	.001-.002	.002-.004
K Cast Iron	Plastic	Thermoplastics	—	—	195-390	195-390	.004-.010	.010-.012	.001-.002	.002-.004
		Thermosetting Plastic	—	—	195-330	195-330	.004-.010	.010-.012	.001-.002	.002-.004
		Fibre Reinforce Plastic	—	—	130-195	195-260	.004-.006	.006-.009	.001-.002	.002-.004

Vc - Cutting Speed [ft/min]

fb (Drilling) - Feed per Revolution [inch/rev]

fz (Threading) - Feed per Tooth [inch/tooth]



Solid Carbide
Solid Carbide Thread Milling

VARDEX
Advanced Threading Solutions

maXmark
min. 0.001



Vargus USA
1149 Barberry Drive
Janesville, WI 53545 U.S.A

Tel: +1-800-828-8765
+1-608-756-4930
Fax: +1-608-741-7125

sales@vargususa.com
www.vargususa.com

221-00950
INCH EE
11/2009
EDITION 01