



TM Solid

Solid Carbide Thread Milling Tools

INCH

TM Solid Carbide Program



Miniature Threads MilliPro

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

MilliPro HD
Up to 62 HRC



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

Long Thread Deep Threading

Full Profile



Partial Profile

Up to 3XDo

Normal Use Straight Flutes

Taper
For Bone Plate Applications
From Pitch 0.3-0.6mm



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

Heavy Duty Helicool



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

Radial Coolant Helicool-R (HCR)



From No.10-32UNF (M6x1.0)

Helicool and Chamfer Helicool-C (HCC)



From No.10-32UNF (M6x1.0)

Economical Tool He-Lex

Taper
For Bone Plate Applications
From Pitch 0.3-0.6mm



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

Drill, Thread and Chamfer HTC



From M6x1.0



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Vardex Ordering Code System

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

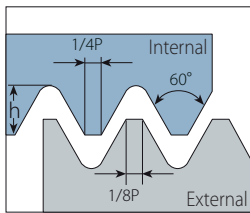
7 - Pitch	8 - Standard	9 - System	11 - Carbide Grade
Full Profile - Pitch Range mm TPI 0.25-6.0 80 - 4.5	60 - Partial Profile 60° ISO - ISO Metric UN - American UN UNC - UN Coarse UNF - UN Fine UNEF - UN Extra Fine UNJ - UNJ MJ - MJ BSW - Whitworth Coarse BSP - BSP	BSF - Whitworth Fine BSPT - BSPT NPT - NPT ANPT - ANPT NPTF - NPTF NPS - NPS PG - PG TP60 - Taper 60° TP55 - Taper 55°	TM TML - Extra Long
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			
		10 - No. of Flutes 3 - 3 Flutes 5 - 5 Flutes * For straight flutes only.	VT VTH

■ HTC Thriller

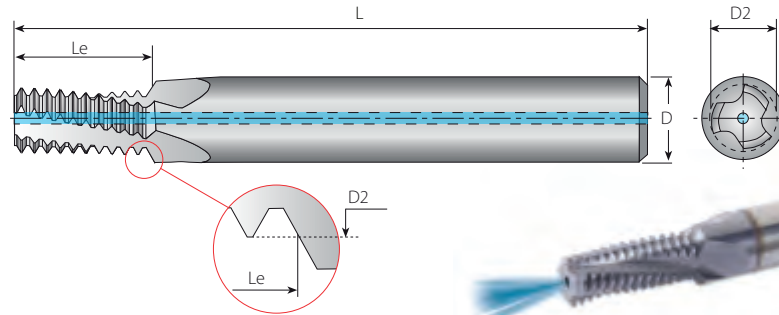
HTC	M6	1.0	2D	VTN
1	2	3	4	5

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

Internal



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



Helical Flutes with Thru-Hole Coolant

1.5 x Do ($Le \leq 1.5 \times \text{Thread Diameter}$)

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	Z	Zt	Inch
M3x0.5	M3.5-M16x0.5	0.5	HC19094L01-I0.50ISOTM...	80337	3/16	.094	1.772	.187	3	9	.098
M4x0.7		0.7	HC19124L02-I0.70ISOTM...	80355	3/16	.124	1.772	.262	3	9	.129
M5x0.8		0.8	HC19159L02-I0.80ISOTM...	80356	3/16	.159	2.244	.299	3	9	.165
M6x1.0	M8-M40x1.0	1.0	HC25189L03-I1.00ISOTM...	80343	1/4	.189	2.244	.374	3	9	.197
M8x1.25		1.25	HC31256L05-I1.25ISOTM...	80357	5/16	.256	2.402	.524	3	10	.268
M10x1.5	M12-M48x1.5	1.5	HC37323L06-I1.50ISOTM...	80346	3/8	.323	2.874	.620	3	10	.335
M12x1.75		1.75	HC37370L07-I1.75ISOTM...	80358	3/8	.370	2.874	.724	4	10	.405
M14x2.0	M17-M80x2.0	2.0	HC50457L08-I2.00ISOTM...	80351	1/2	.457	2.874	.827	4	10	.472
M16x2.0	M17-M80x2.0	2.0	HC63535L09-I2.00ISOTM...	80353	5/8	.535	3.622	.984	4	12	.551

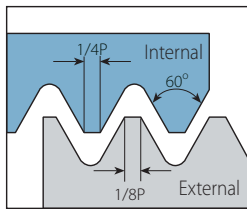
Helical Flutes with Thru-Hole Coolant

2 x Do ($Le \leq 2 \times \text{Thread Diameter}$)

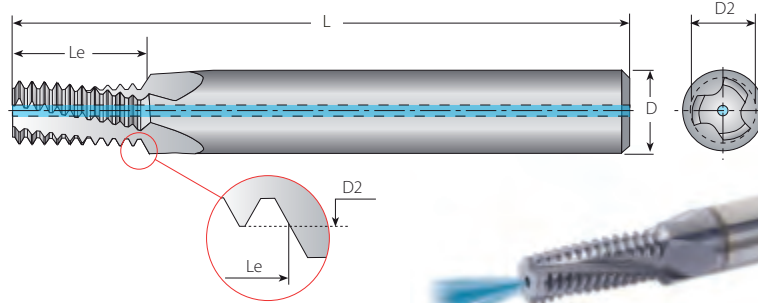
Thread		Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	Le	Z	Zt	Inch
M3x0.5	M3.5-M16x0.5	0.5	HC19094L02-I0.50ISOTM...	80336	3/16	.094	1.772	.246	3	12	.098
	M4x0.5	0.5	HC19126L03-I0.50ISOTM...	80338	3/16	.126	1.772	.325	3	16	.138
	M5x0.5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

*Bore diameter applies to smallest thread dia.

Internal



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



Helical Flutes with Thru-Hole Coolant

1.5 x Do (Le ≤ 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	Z	Zt	Inch
No.10-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC19141L03-I24UNCTM...	80360	3/16	.141	1.772	.312	3	7	.150
No.12-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC25163L03-I24UNCTM...	80361	1/4	.163	2.244	.354	3	8	.177
1/4"x20	7/16"; 1/2"x20	3/4"-1"x20	20	HC25192L03-I20UNCTM...	80362	1/4	.192	2.244	.375	3	7	.201
5/16"x18	9/16"; 5/8"x18	11/16"-1 1/16"x18	18	HC31242L04-I18UNCTM...	80363	5/16	.242	2.402	.472	3	8	.260
3/8"x16	3/4"x16		16	HC31301L05-I16UNCTM...	80364	5/16	.301	2.402	.594	3	9	.315
7/16"x14	7/8"x14		14	HC37354L06-I14UNCTM...	80365	3/8	.354	2.874	.678	3	9	.370
1/2"x13			13	HC50407L08-I13UNCTM...	80366	1/2	.407	3.150	.808	4	10	.429
9/16"x12	1"-1 1/2"x12		12	HC50465L08-I12UNCTM...	80367	1/2	.465	3.150	.875	4	10	.484

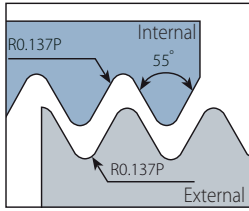
Helical Flutes with Thru-Hole Coolant

2 x Do (Le ≤ 2 x Thread Diameter)

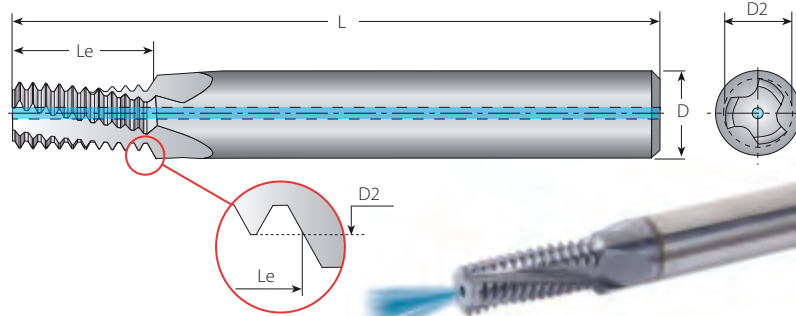
Thread			Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	TPI	Internal	VTH	D	D2	L	Le	Z	Zt	Inch
	No.10-32	No.12-3/8"x32	32	HC19150L03-I32UNFTM...	80291	3/16	.150	1.772	.391	3	12	.157
		No.12-3/8"x32	32	HC25173L04-I32UNEFTM...	80292	1/4	.173	2.244	.453	3	14	.185
	No.12; 1/4"x28	7/16"; 1/2"x28	28	HC25169L04-I28UNFTM...	80293	1/4	.169	2.244	.446	3	12	.181
	1/4"x28	7/16"; 1/2"x28	28	HC25203L05-I28UNFTM...	80294	1/4	.203	2.244	.518	3	14	.216
		7/16"; 1/2"x28	28	HC37371L08-I28UNEFTM...	80295	3/8	.371	2.874	.875	3	24	.401
No.10-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC19141L04-I24UNCTM...	80296	3/16	.141	1.772	.396	3	9	.150
No.12-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC25163L04-I24UNCTM...	80297	1/4	.163	2.244	.437	3	10	.177
	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC31263L06-I24UNFTM...	80298	5/16	.263	2.402	.646	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HC37323L07-I24UNFTM...	80299	3/8	.323	2.874	.771	3	18	.335
		9/16"-11/16"x24	24	HC50496L11-I24UNEFTM...	80300	1/2	.496	3.150	1.145	4	27	.520
1/4"x20	7/16"; 1/2"x20	3/4"-1"x20	20	HC25192L05-I20UNCTM...	80301	1/4	.192	2.244	.525	3	10	.201
	7/16"; 1/2"x20	3/4"-1"x20	20	HC37362L08-I20UNFTM...	80302	3/8	.362	2.874	.875	3	17	.390
	1/2"x20	3/4"-1"x20	20	HC50437L10-I20UNFTM...	80303	1/2	.437	3.150	1.025	4	20	.453
		3/4"-1"x20	20	HC75685L15-I20UNEFTM...	80304	3/4	.685	4.016	1.525	4	30	.701
5/16"x18	9/16"; 5/8"x18	11/16"-1 11/16"x18	18	HC31242L06-I18UNCTM...	80305	5/16	.242	2.402	.639	3	11	.260
	9/16"; 5/8"x18	11/16"-1 11/16"x18	18	HC50492L11-I18UNFTM...	80306	1/2	.492	3.150	1.139	4	20	.512
	5/8"x18	11/16"-1 11/16"x18	18	HC63555L12-I18UNFTM...	80307	5/8	.555	3.622	1.250	4	22	.575
3/8"x16	3/4"x16		16	HC31301L07-I16UNCTM...	80308	5/16	.301	2.402	.781	3	12	.315
	3/4"x16		16	HC75669L15-I16UNFTM...	80309	3/4	.669	4.016	1.528	4	24	.689
7/16"x14	7/8"x14		14	HC37354L08-I14UNCTM...	80310	3/8	.354	2.874	.893	3	12	.370
	7/8"x14		14	HC75746L17-I14UNFTM...	80311	3/4	.746	4.016	1.750	4	24	.807
1/2"x13			13	HC50407L10-I13UNCTM...	80312	1/2	.407	3.150	1.039	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HC50465L11-I12UNCTM...	80313	1/2	.465	3.150	1.125	4	13	.484
	1"-1 1/2"x12		12	HC75746L20-I12UNFTM...	80314	3/4	.746	4.016	2.042	4	24	.925
5/8"x11			11	HC63516L13-I11UNCTM...	80315	5/8	.516	3.622	1.318	4	14	.539
3/4"x10			10	HC63622L15-I10UNCTM...	80316	5/8	.622	3.622	1.550	4	15	.657
7/8"x9			9	HC75746L18-I9UNCTM...	80317	3/4	.746	4.016	1.833	4	16	.768
1"x8			8	HC75746L20-I8UNCTM...	80318	3/4	.746	4.016	2.063	4	16	.866

* Bore diameter applies to smallest thread dia.

External / Internal



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

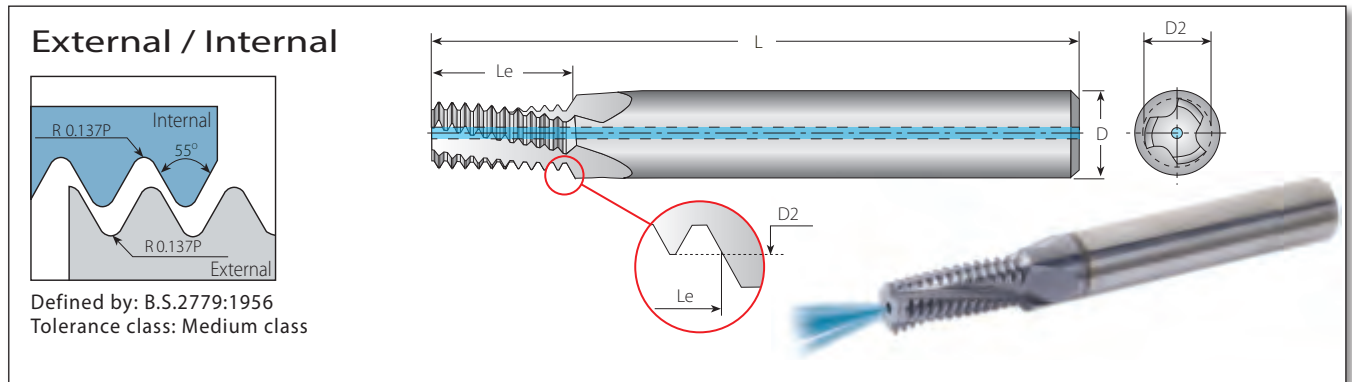


Helical Flutes with Thru-Hole Coolant

2 x Do (Le ≤ 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	Z	Zt	Inch
	1/4"x26	26	HC25197L05-EI26BSFTM...	80368	1/4	.197	2.244	.519	3	13	.209
	5/16"x22	22	HC31250L06-EI22BSFTM...	80369	5/16	.250	2.402	.659	3	14	.264
1/4"x20	3/8"x20	20	HC25175L05-EI20BSWTM...	80370	1/4	.175	2.244	.525	3	10	.197
	3/8"x20	20	HC31301L07-EI20BSFTM...	80371	5/16	.301	2.402	.775	3	15	.323
5/16"x18	7/16"x18	18	HC25230L06-EI18BSWTM...	80372	1/4	.230	2.244	.639	3	11	.256
	7/16"x18	18	HC37362L09-EI18BSFTM...	80373	3/8	.362	2.874	.917	3	16	.382
3/8"x16	1/2", 9/16"x16	16	HC31283L07-EI16BSWTM...	80374	5/16	.283	2.402	.781	3	12	.311
	1/2", 9/16"x16	16	HC50413L10-EI16BSFTM...	80375	1/2	.413	2.874	1.031	4	16	.437
	9/16"x16	16	HC50478L11-EI16BSFTM...	80376	1/2	.478	3.150	1.156	4	18	.496
7/16"x14	5/8", 11/16"x14	14	HC37335L08-EI14BSWTM...	80377	3/8	.335	2.874	.893	3	12	.362
	5/8", 11/16"x14	14	HC63528L12-EI14BSFTM...	80378	5/8	.528	3.150	1.250	4	17	.551
	11/16"x14	14	HC63591L13-EI14BSFTM...	80379	5/8	.591	3.622	1.393	4	19	.614
1/2"x12	3/4"x12	12	HC37362L10-EI12BSWTM...	80380	3/8	.362	2.874	1.042	3	12	.413
9/16"x12	3/4"x12	12	HC50444L11-EI12BSWTM...	80381	1/2	.444	3.150	1.125	4	13	.476
	3/4"x12	12	HC63622L15-EI12BSFTM...	80382	5/8	.622	3.622	1.542	4	18	.661
5/8"x11	7/8"x11	11	HC50496L13-EI11BSWTM...	80383	1/2	.496	3.150	1.318	4	14	.528
11/16"x11		11	HC63559L14-EI11BSWTM...	80384	5/8	.559	3.622	1.409	4	15	.591

* Bore diameter applies to smallest thread dia.



Helical Flutes with Thru-Hole Coolant

1.5 x Do ($Le \leq 1.5 \times \text{Thread Diameter}$)

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
Standard	TPI	External / Internal	VTH	D	D2	L	Le	Z	Zt	Inch
1/16", 1/8"x28	28	HC31252L04-EI28BSPTM...	80386	5/16	.252	2.402	.480	3	13	.264
1/8"x28	28	HC37323L05-EI28BSPTM...	80388	3/8	.323	2.874	.591	3	16	.324
1/4", 3/8"x19	19	HC50433L08-EI19BSPTM...	80389	1/2	.433	2.874	.815	4	15	.465
3/8"x19	19	HC63571L10-EI19BSPTM...	80391	5/8	.571	3.622	1.028	4	19	.602
1"-4"x11	11	HC75746L16-EI11BSPTM...	80393	3/4	.746	4.016	1.681	4	18	1.208

Helical Flutes with Thru-Hole Coolant

2 x Do ($Le \leq 2 \times \text{Thread Diameter}$)

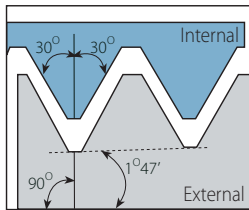
Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
Standard	TPI	External / Internal	VTH	D	D2	L	Le	Z	Zt	Inch
1/16", 1/8"x28	28	HC31252L06-EI28BSPTM...	80385	5/16	.252	2.402	.625	3	17	.264
1/8"x28	28	HC37323L07-EI28BSPTM...	80387	3/8	.323	2.874	.768	3	21	.324
1/4", 3/8"x19	19	HC50433L10-EI19BSPTM...	80319	1/2	.433	3.150	1.079	4	20	.465
3/8"x19	19	HC63571L13-EI19BSPTM...	80390	5/8	.571	3.622	1.342	4	25	.602
1/2"-7/8"x14	14	HC75705L16-EI14BSPTM...	80392	3/4	.705	4.016	1.678	4	23	.752

* Bore diameter applies to smallest thread dia.

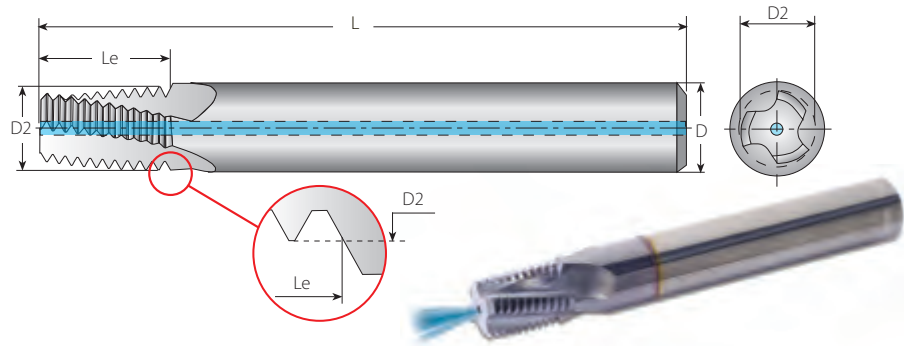
NPT

Helicool

External / Internal



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



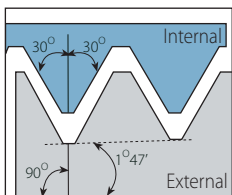
Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
Standard	TPI	External / Internal	VTH	D	D2	L	Le	Z	Zt	Inch
1/16"x27	27	HC25232L03-EI27NPT-TM...	80321	1/4	.232	2.244	.389	3	10	.244
1/8"x27	27	HC31301L03-EI27NPT-TM...	80322	5/16	.301	2.402	.389	3	10	.330
1/4"x18	18	HC37370L05-EI18NPT-TM...	80323	3/8	.370	2.874	.583	3	10	.437
3/8"x18	18	HC50439L05-EI18NPT-TM...	80324	1/2	.439	2.874	.583	4	10	.562
1/2", 3/4"x14	14	HC63561L07-EI14NPT-TM...	80325	5/8	.561	3.150	.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	.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	1.313	4	10	2.625, 3.232

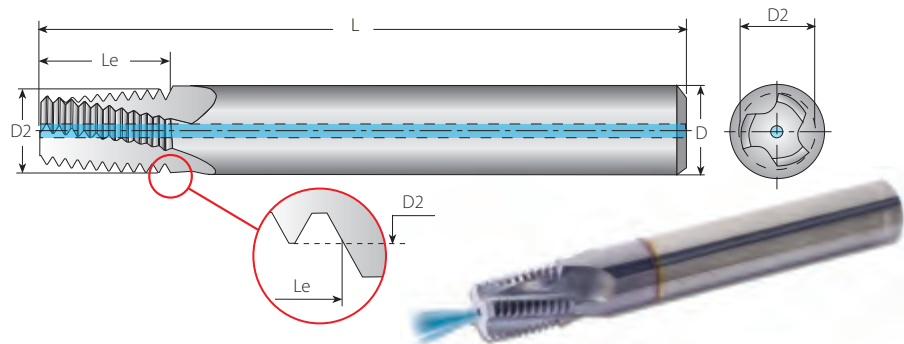
ANPT

Helicool

External / Internal



Defined by: MIL-P-7105B
Tolerance class: Standard ANPT



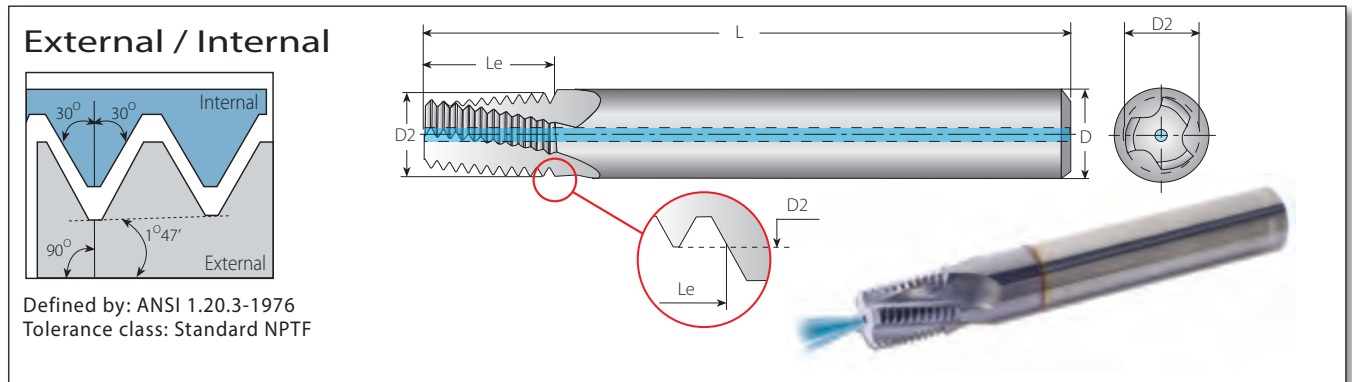
Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
Standard	TPI	External / Internal	VTH	D	D2	L	Le	Z	Zt	Inch
1/4"x18	18	HC37370L05-EI18ANPT-TM...	81054	3/8	.370	2.874	.583	3	10	.437
1/2", 3/4"x14	14	HC63561L07-EI14ANPT-TM...	81055	5/8	.561	3.150	.750	4	10	.704, .905

* Bore diameter applies to smallest thread dia.

NPTF

Helicool

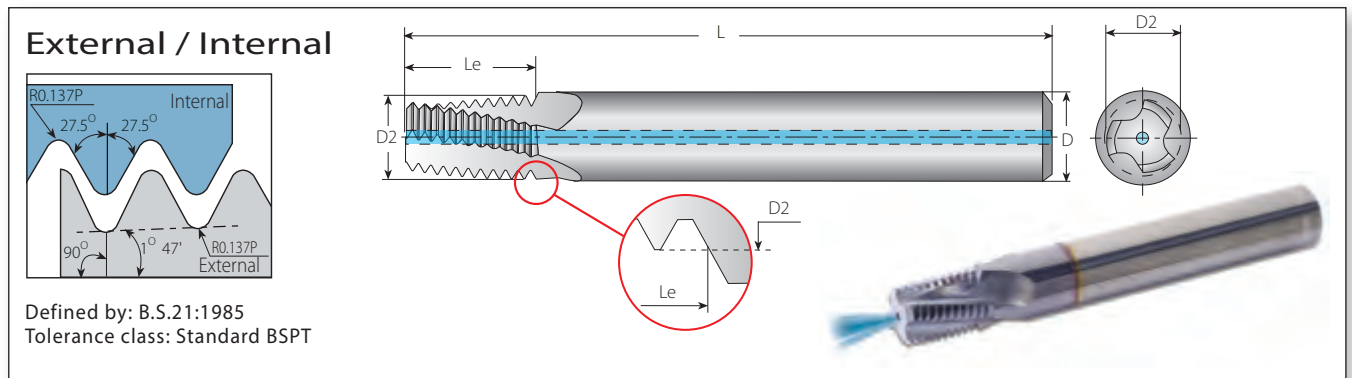


Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
Standard	TPI	External / Internal	VTH	D	D2	L	Le	Z	Zt	Inch
1/16"x27	27	HC25232L03-EI27NPTFTM...	80328	1/4	.232	2.244	.389	3	10	.240
1/8"x27	27	HC31301L03-EI27NPTFTM...	80329	5/16	.301	2.402	.389	3	10	.330
1/4"x18	18	HC37370L05-EI18NPTFTM...	80330	3/8	.370	2.874	.583	3	10	.437
3/8"x18	18	HC50439L05-EI18NPTFTM...	80331	1/2	.439	2.874	.583	4	10	.562
1/2", 3/4"x14	14	HC63561L07-EI14NPTFTM...	80332	5/8	.561	3.150	.750	4	10	.704, .905
1", 1 1/4", 1 1/2", 2"x11.5	11.5	HC75746L09-EI11.5NPTFTM...	80333	3/4	.746	4.016	.913	4	10	1.411, 1.484, 1.720, 2.188
2 1/2"x8; 3"x8	8	HC75746L13-EI8NPTFTM...	80334	3/4	.746	4.016	1.313	4	10	2.610, 3.232

BSPT

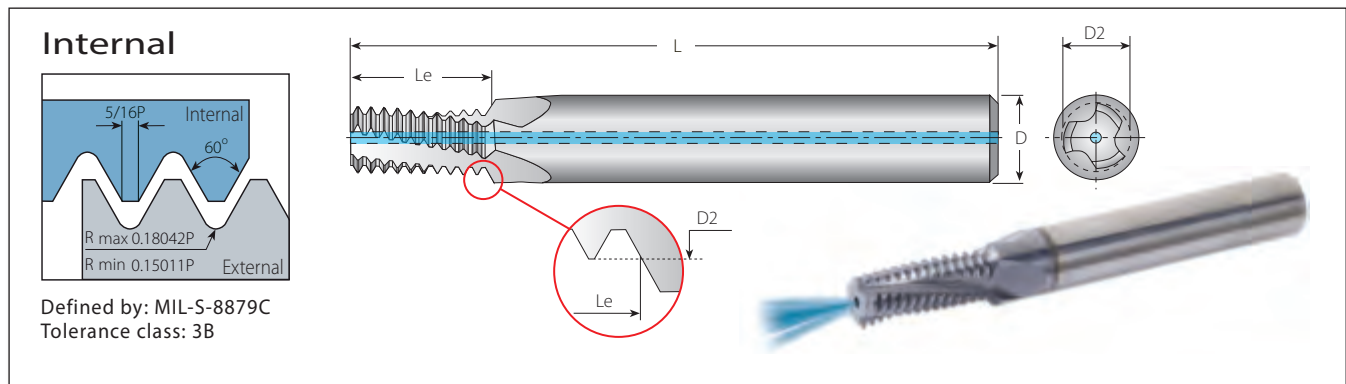
Helicool



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	Z	Zt	Inch
1/16"x28	28	HC25232L03-EI28BSPT-TM...	80394	1/4	.232	2.402	.401	3	11	.264
1/8"x28	28	HC31301L03-EI28BSPT-TM...	80320	5/16	.301	2.402	.401	3	11	.342
1/4"x19	19	HC50400L05-EI19BSPT-TM...	80395	1/2	.400	2.874	.605	3	11	.464
3/8"x19	19	HC50439L05-EI19BSPT-TM...	80396	1/2	.439	2.874	.605	4	11	.598
1/2, 3/4"x14	14	HC63561L08-EI14BSPT-TM...	80397	5/8	.561	3.150	.893	4	12	.748
1", 1 1/2", 2", 2 1/2"x11	11	HC75746L10-EI11BSPT-TM...	80398	3/4	.746	4.016	1.136	4	12	1.209

* Bore diameter applies to smallest thread dia.



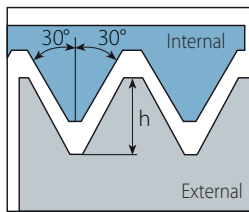
Helical Flutes with Thru-Hole Coolant

2 x Do (Le ≤ 2 x Thread Diameter)

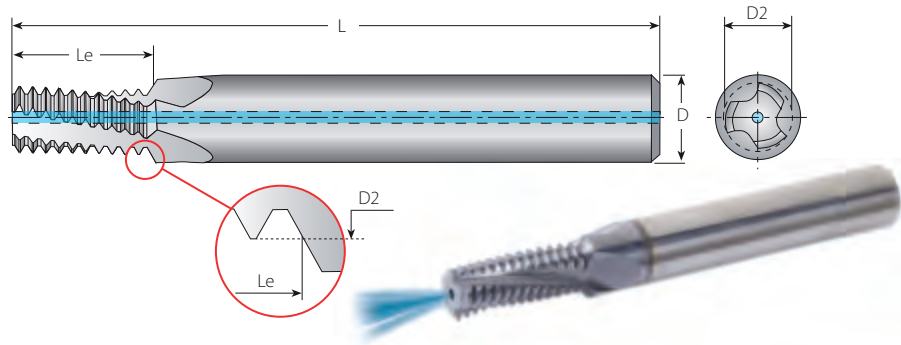
Thread				Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
UNJC	UNJF	UNJEF	UNJ	TPI	Internal	VTH	D	D2	L	Le	Z	Zt	mm
0.138" (#6)	0.190" (#10)	0.216" (#12)	0.4375 (7/16")	32	HC19106L02-I32UNJTM...	80106	3/16	.106	1.772	.297	3	9	.110
-	0.250" (1/4")	0.4375" (7/16")	0.5625" (9/16")	28	HC25213L05-I28UNJTM...	81110	1/4	.213	2.244	.518	3	14	.220
0.190" (#10)	0.3125" (5/16")	0.5625" (9/16")	-	24	HC19146L03-I24UNJTM...	80108	3/16	.146	1.772	.396	3	9	.157
-	0.3125" (5/16")	0.5625" (9/16")	-	24	HC31264L06-I24UNJTM...	80109	5/16	.264	2.402	.646	3	15	.276
0.250" (1/4")	0.4375" (7/16")	0.750" (3/4")	0.3125" (5/16")	20	HC25197L05-I20UNJTM...	80110	1/4	.197	2.244	.525	3	10	.209
-	0.4375" (7/16")	0.750" (3/4")	0.5625" (9/16")	20	HC37371L08-I20UNJTM...	80111	3/8	.371	2.874	.875	4	17	.394
0.3125" (5/16")	0.5625" (9/16")	1.0625" (1 1/16")	-	18	HC31252L06-I18UNJTM...	80112	5/16	.252	2.402	.639	3	11	.266
0.375" (3/8")	0.750" (3/4")	-	0.4375" (7/16")	16	HC31303L07-I16UNJTM...	80113	5/16	.303	2.402	.781	3	12	.319
0.4375" (7/16")	0.875" (7/8")	-	-	14	HC37362L08-I14UNJTM...	80114	3/8	.362	2.874	.893	4	12	.374
0.500" (1/2")	-	-	-	13	HC37371L10-I13UNJTM...	80115	3/8	.371	2.874	1.039	4	13	.433

* Bore diameter applies to smallest thread dia.

External / Internal



Defined by: USA NBS H28 (1957)
Tolerance class: Standard NPS



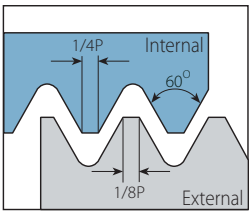
Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
Standard	TPI	External / Internal	VTH	D	D2	L	Le	Z	Zt	Inch
1/8"	27	HC31301L03-EI27NPSTM...	80116	5/16	.301	2.402	.389	3	10	.330
1/4"	18	HC37370L05-EI18NPSTM...	80117	3/8	.370	2.874	.583	3	10	.437
3/8"	18	HC50439L05-EI18NPSTM...	80118	1/2	.439	2.874	.583	4	10	.562
1/2", 3/4"	14	HC63561L07-EI14NPSTM...	80119	5/8	.561	3.150	.750	4	10	.704, .905
1", 2"	11.5	HC75746L08-EI11.5NPSTM...	80120	3/4	.746	4.016	.913	4	10	1.411, 2.204

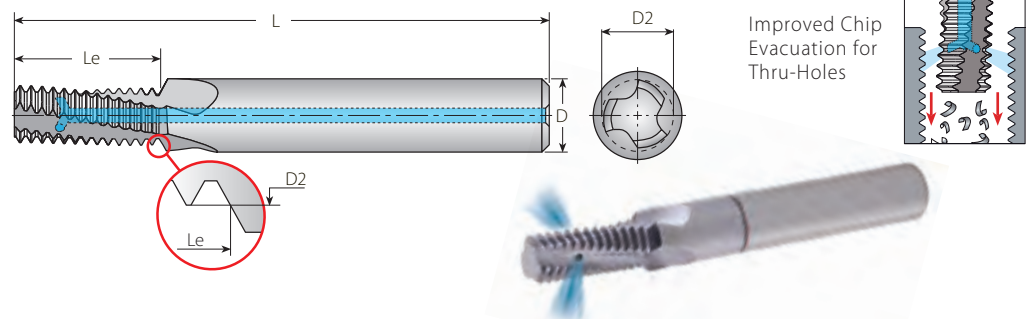
American UN

Helicool-R (HCR)

Internal



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



HeliCool-R (HCR)

Helical Flutes with Radial Cooling

2 x Do (Le ≤ 2 x Thread Diameter)

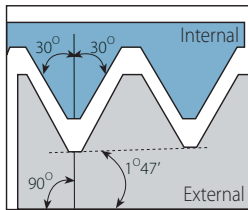
Thread			Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	TPI	Internal	VTH	D	D2	L	Le	Z	Zt	Inch
	No.10-32	No.12-3/8"x32	32	HCR19150L03-I32UNFTM...	80458	3/16	.150	1.772	.391	3	12	.157
	1/4"x28	7/16", 1/2"x28	28	HCR25203L05-I28UNFTM...	80459	1/4	.203	2.244	.518	3	14	.216
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR19141L04-I24UNCTM...	80460	3/16	.141	1.772	.396	3	9	.150
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR19163L04-I24UNCTM...	80461	3/16	.163	1.772	.437	3	10	.177
	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR31263L06-I24UNFTM...	80462	5/16	.263	2.402	.646	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HCR37323L07-I24UNFTM...	80463	3/8	.323	2.874	.771	3	18	.335
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	HCR25192L05-I20UNCTM...	80464	1/4	.192	2.244	.525	3	10	.201
	1/2"x20	3/4"-1"x20	20	HCR50437L10-I20UNFTM...	80465	1/2	.437	3.150	1.025	4	20	.453
5/16"x18	9/16", 5/8"x18	11/16"-1 1/16"x18	18	HCR31242L06-I18UNCTM...	80466	5/16	.242	2.402	.639	3	11	.260
3/8"x16	3/4"x16		16	HCR31301L07-I16UNCTM...	80467	5/16	.301	2.402	.781	3	12	.315
7/16"x14	7/8"x14		14	HCR37354L08-I14UNCTM...	80468	3/8	.354	2.874	.893	3	12	.370
1/2"x13			13	HCR50407L10-I13UNCTM...	80469	1/2	.407	3.150	1.039	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HCR50465L11-I12UNCTM...	80470	1/2	.465	3.150	1.125	4	13	.484

* Bore diameter applies to smallest thread dia.

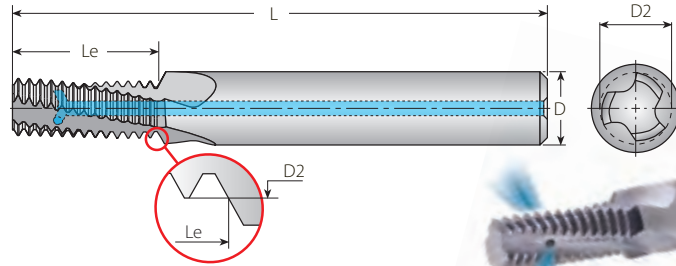
NPT

Helicool-R (HCR)

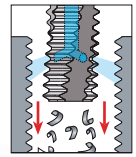
External / Internal



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



Improved Chip
Evacuation for
Thru-Holes



Helicool-R (HCR)

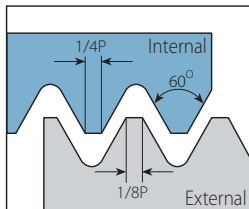
Helical Flutes with Radial Cooling

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

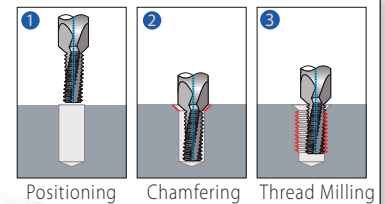
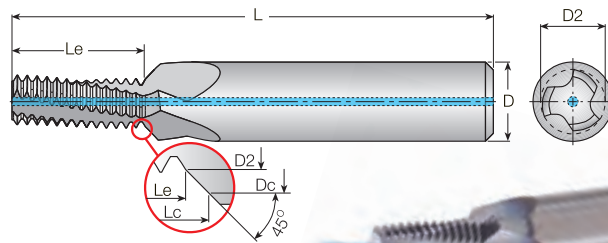
American UN

Helicool-C (HCC)

Internal



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



Dc = Minimum recommended chamfer diameter

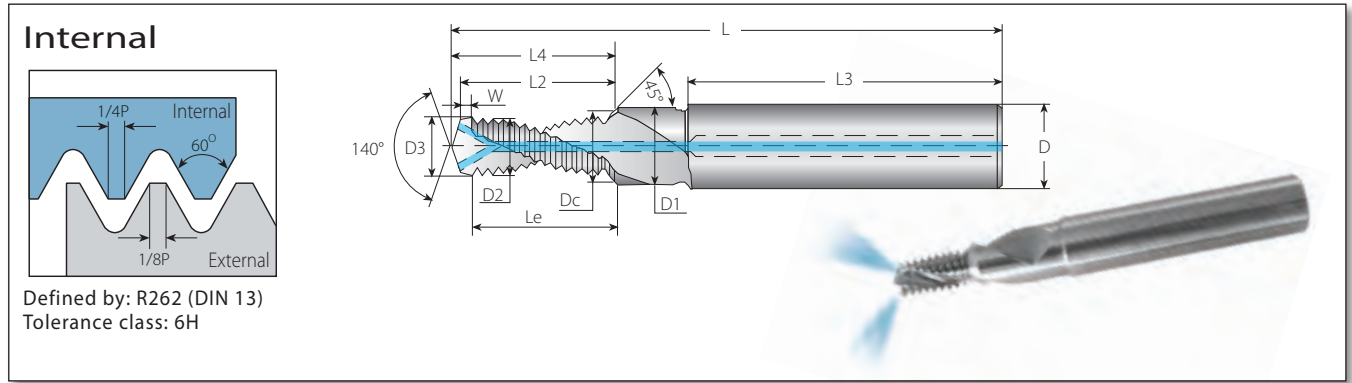
Helicool-C (HCC)

Helical Flutes with Axial Coolant - Thru & Chamfer

2 x Do (Le ≤ 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	Dc	inch
No.10-32	No.12-3/8"x32	32	HCC25150L03-I32UNFTM...	80449	1/4	.150	.202	2.244	.391
1/4"x28	7/16", 1/2"x28	28	HCC31203L05-I28UNFTM...	80450	5/16	.203	.262	2.402	.518
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC25141L04-I24UNCTM...	80451	1/4	.141	.202	.396
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC25163L04-I24UNCTM...	80452	1/4	.163	.228	.437
	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC37263L06-I24UNFTM...	80453	3/8	.263	.324	.646
	3/8"x24	9/16"-11/16"x24	24	HCC50323L07-I24UNFTM...	80454	1/2	.323	.387	.771
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	HCC31192L05-I20UNCTM...	80455	5/16	.192	.262	.525
	1/2"x20	3/4"-1"x20	20	HCC63437L10-I20UNFTM...	80456	5/8	.437	.512	1.025
5/16"x18	9/16", 5/8"x18	11/16"-1 1/16"x18	18	HCC37242L16-I18UNCTM...	80457	3/8	.242	.324	.639
3/8"x16	3/4"x16		16	HCC50301L07-I16UNCTM...	80528	1/2	.301	.387	.781
7/16"x14	7/8"x14		14	HCC50354L08-I14UNCTM...	80529	1/2	.354	.449	.893
1/2"x13			13	HCC63407L10-I13UNCTM...	80530	5/8	.407	.512	1.039
9/16"x12	1"-1 1/2"x12		12	HCC63465L11-I12UNCTM...	80531	5/8	.465	.574	1.125

* Bore diameter applies to smallest thread dia.

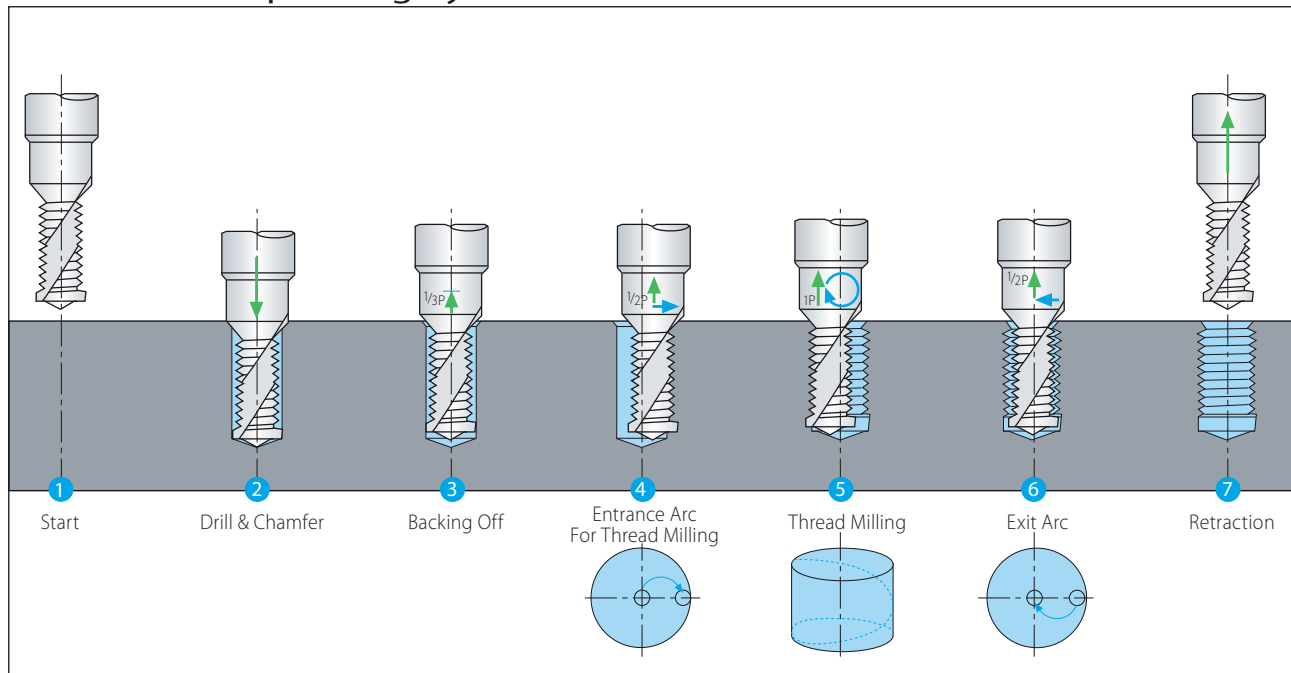


HTC (Thriller)

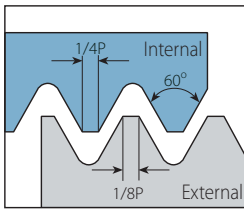
Drill, Chamfer & Thread with Coolant-Thru

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	HTCM6x1.0x2D...	80687	80680	1.00	2.441	.571	.539	1.417	.039	.500	.197	8	.260	.248	.191	2	11		
M8x1.25	HTCM8x1.25x2D...	80688	80681	1.25	2.913	.717	.673	1.575	.051	.622	.268	10	.354	.327	.254	2	11		
M10x1.5	HTCM10x1.5x2D...	80689	80682	1.50	3.110	.921	.870	1.772	.059	.811	.335	12	.433	.406	.318	2	12		
M12x1.75	HTCM12x1.75x2D...	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	HTCM6x1.0x2.5D...	80691	80684	1.00	2.441	.650	.618	1.417	.039	.579	.197	8	.260	.248	.191	2	13		
M8x1.25	HTCM8x1.25x2.5D...	80692	80685	1.25	2.913	.913	.870	1.575	.051	.819	.268	10	.354	.327	.254	2	15		
M10x1.5	HTCM10x1.5x2.5D...	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



External / Internal



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



Helical Flutes - External (D-mm shank)

2 x Do (Le ≤ 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	Zt
M3x0.5	0.5	H04039L06-E0.5ISOTM...	80891	4	.154	1.772	.236	3
M4.5x0.75	0.75	H04039L09-E0.75ISOTM...	80892	4	.154	1.772	.354	3
M6x1.0	1.0	H04039L12-E1.0ISOTM...	80893	4	.154	1.772	.472	3
M8x1.25	1.25	H06059L16-E1.25ISOTM...	80894	6	.232	2.244	.640	3
M10x1.5	1.5	H08079L21-E1.5ISOTM...	80895	8	.311	2.480	.827	3
M14x2.0	2.0	H10099L28-E2.0ISOTM...	80896	10	.390	2.874	1.102	4

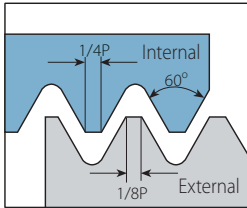
Helical Flutes - Internal (D-mm shank)

2 x Do (Le ≤ 2 x Thread Diameter)

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

* Bore diameter applies to smallest thread dia.

Internal



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



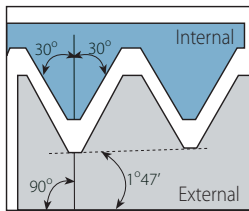
Helical Flutes - Internal

2 x Do (Le ≤ 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"-I32UNFTM...	80534	1/8	.121	2.0	.312	3	10	.157
	No.10-28	28	HX1/8".121"-I28UNFTM...	80535	1/8	.121	2.0	.321	3	9	.155
	No.12-28	28	HX3/16".150"-I28UNFTM...	80536	3/16	.150	2.5	.464	3	13	.181
	1/4"x28	28	HX3/16".181"-I28UNFTM...	80537	3/16	.181	2.5	.500	3	14	.217
No.10-24		24	HX1/8".120"-I24UNCTM...	80538	1/8	.120	2.0	.333	3	8	.150
No.12-24		24	HX3/16".138"-I24UNCTM...	80539	3/16	.138	2.5	.458	3	11	.177
	5/16"x24	24	HX1/4".232"-I24UNFTM...	80540	1/4	.232	2.5	.625	3	15	.268
	3/8"x24	24	HX5/16".291"-I24UNFTM...	80541	5/16	.291	3.0	.750	4	18	.335
1/4"x20		20	HX3/16".181"-I20UNCTM...	80542	3/16	.181	2.5	.500	3	10	.205
	1/2"x20	20	HX3/8".371"-I20UNFTM...	80543	3/8	.371	3.5	1.000	4	20	.453
	7/16"x20	20	HX3/8".335"-I20UNFTM...	80544	3/8	.335	3.5	.900	4	18	.386
5/16"x18		18	HX1/4".232"-I18UNCTM...	80545	1/4	.232	2.5	.667	3	12	.256
	9/16"x18	18	HX3/8".371"-I18UNFTM...	80546	3/8	.371	3.5	.889	4	16	.504
	5/8"x18	18	HX1/2".496"-I18UNFTM...	80547	1/2	.496	3.5	1.278	4	23	.571
3/8"x16		16	HX5/16".285"-I16UNCTM...	80548	5/16	.285	3.0	.750	4	12	.315
	3/4"x16	16	HX1/2".496"-I16UNFTM...	80549	1/2	.496	3.5	1.250	4	20	.689
7/16"x14		14	HX5/16".305"-I14UNCTM...	80550	5/16	.305	3.0	.786	4	11	.366
1/2"x13		13	HX3/8".350"-I13UNCTM...	80551	3/8	.350	3.5	.923	4	12	.425
9/16"x12		12	HX3/8".371"-I12UNCTM...	80552	3/8	.371	3.5	.917	4	11	.484
5/8"x11		11	HX1/2".469"-I11UNCTM...	80553	1/2	.469	3.5	1.273	4	14	.531
3/4"x10		10	HX1/2".496"-I10UNCTM...	80554	1/2	.496	3.5	1.300	4	13	.650
7/8"x9		9	HX5/8".621"-I9UNCTM...	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

* Bore diameter applies to smallest thread dia.

External / Internal



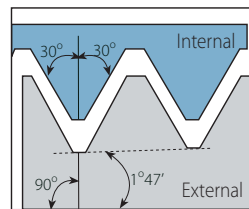
Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



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

External / Internal



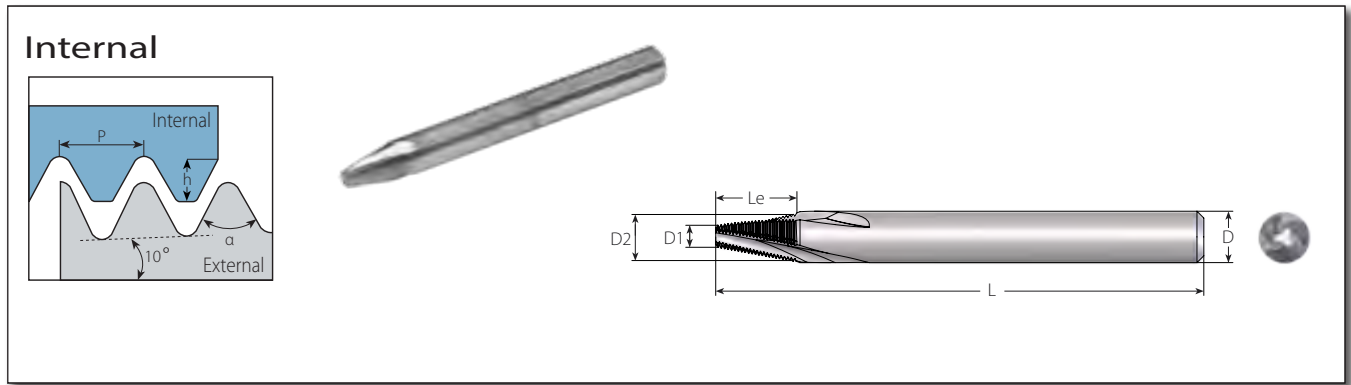
Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF



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"-EI27NPTFTM...	80557	1/4	.209	2.5	.407	3	11	.248, .331
1/4"x18, 3/8"x18	18	HX5/16".305"-EI18NPTFTM...	80558	5/16	.305	3.0	.611	4	11	.437, .579
1/2"x14, 3/4"x14	14	HX1/2".496"-EI14NPTFTM...	80559	1/2	.496	3.5	.929	4	13	.705, .921
1"-2"x11.5	11.5	HX5/8".621"-EI11.5NPTFTM...	80560	5/8	.621	4.0	1.130	4	13	1.158-2.213
2 1/2"-6"x8	8	HX3/4".746"-EI8NPTFTM...	80561	3/4	.746	5.0	1.500	4	12	from 2.638

* Bore diameter applies to smallest thread dia.



Helical Flutes - Taper 60°

TM Solid Helical Flutes for Bone Plate Applications

Pitch	Ordering Code	Taper	Thread Angle	Profile Height	Dimensions Inch					No. of Flutes	Teeth
mm	Internal		α	h	D (mm)	D2	D1	L	Le	Z	Zt
0.4	H06059L080-I0.4TAP60TM...	20°	60°	.008	6	.232	.126	2.244	.315	3	20
0.5	H06059L090-I0.5TAP60TM...	20°	60°	.010	6	.232	.114	2.244	.354	3	18

Helical Flutes - Taper 55°

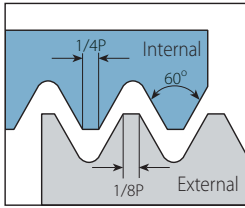
TM Solid Helical Flutes for Bone Plate Applications

Pitch	Ordering Code	Taper	Thread Angle	Profile Height	Dimensions Inch					No. of Flutes	Teeth
mm	Internal		α	h	D (mm)	D2	D1	L	Le	Z	Zt
0.3	H03028L039-I0.3TAP55TM...	20°	55°	.007	3	.110	.059	1.496	.154	3	13
0.35	H04039L063-I0.35TAP55TM...	20°	55°	.008	4	.154	.071	1.772	.248	3	18
0.4	H06059L100-I0.4TAP55TM...	20°	55°	.011	6	.232	.098	2.244	.394	3	25
0.5	H06059L090-I0.5TAP55TM...	20°	55°	.013	6	.232	.114	2.244	.354	3	18
0.6	H06059L066-I0.6TAP55TM...	20°	55°	.019	6	.232	.150	2.244	.260	3	11

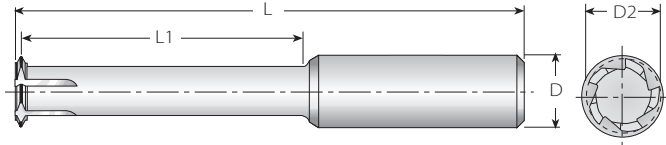
American UN

Deep Threading

Internal



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



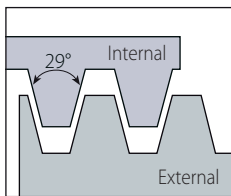
Deep Threading - Long Tools for Deep Holes

3 x Do ($L1 \leq 3 \times \text{Thread Diameter}$)

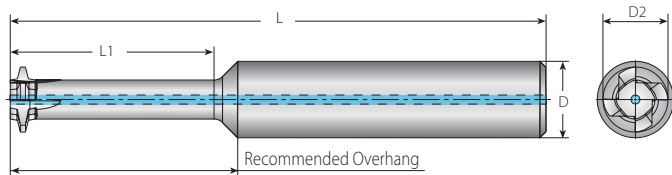
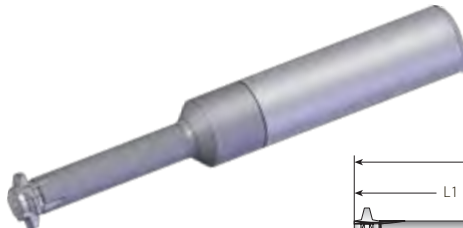
Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.	
UNC	UNF	TPI	Internal	VTH	D	D2	L	L1	Z	Zt	inch
1/4"x20		20	D1T5/16".157"-I20UNCTM...	80220	5/16	.157	2.480	.787	3	1	.205
	1/4"x28	28	D1T5/16".181"-I28UNFTM...	80271	5/16	.181	2.480	.787	3	1	.217
5/16"x18		18	D1T3/8".205"-I18UNCTM...	80221	3/8	.205	2.874	.984	3	1	.256
	5/16"x24	24	D1T3/8".224"-I24UNFTM...	80272	3/8	.224	2.874	.984	3	1	.268
3/8"x16		16	D1T3/8".264"-I16UNCTM...	80222	3/8	.264	2.874	1.181	3	1	.315
	3/8"x24	24	D1T3/8".291"-I24UNFTM...	80273	3/8	.291	2.874	1.181	3	1	.335
7/16"x14		14	D1T1/2".299"-I14UNCTM...	80274	1/2	.299	3.268	1.378	4	1	.366
	7/16"x20	20	D1T1/2".335"-I20UNFTM...	80275	1/2	.335	3.268	1.378	4	1	.386
1/2"x13		13	D1T1/2".350"-I13UNCTM...	80223	1/2	.350	3.268	1.575	4	1	.425
	1/2"x20	20	D1T1/2".398"-I20UNFTM...	80276	1/2	.398	3.268	1.575	4	1	.453
9/16"x12		12	D1T5/8".406"-I12UNCTM...	80224	5/8	.406	3.780	1.772	4	1	.484
	9/16"x18	18	D1T5/8".445"-I18UNFTM...	80277	5/8	.445	3.780	1.772	4	1	.504
5/8"x11		11	D1T5/8".433"-I11UNCTM...	80225	5/8	.433	3.976	1.969	4	1	.531
	5/8"x18	18	D1T5/8".504"-I18UNFTM...	80278	5/8	.504	3.976	1.969	4	1	.571
3/4"x10		10	D1T5/8".531"-I10UNCTM...	80226	5/8	.531	4.370	2.362	5	1	.650
	3/4"x16	16	D1T5/8".610"-I16UNFTM...	80227	5/8	.610	4.370	2.362	5	1	.689

American ACME (2G)

Internal



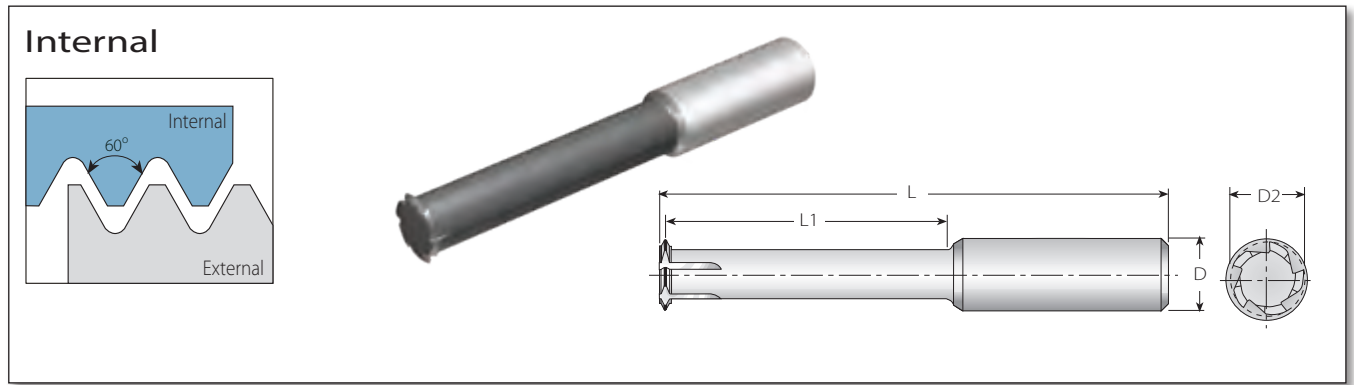
Defined by: ANSI B1.5:1988
Tolerance class: 2G



Deep Threading - Long Tools for Deep Holes

3 x Do ($L1 \leq 3 \times \text{Thread Diameter}$)

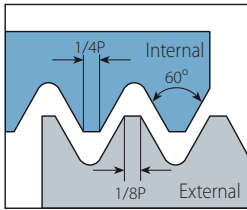
Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.
UNC	TPI	Internal	VTH	D	D2	L	L1	Z	Zt	inch
3/8"-12	12	S1LC25024L075-I12ACME-2G...	81058	1/4	.240	2.520	.811	3	1	.354
1/2"-10	10	S1LC37032L100-I10ACME-2G...	81059	3/8	.327	2.990	1.071	3	1	.400
5/8"-8	8	S1LC50042L125-I8ACME-2G...	81060	1/2	.425	3.500	1.330	4	1	.500
3/4"-6	6	S1LC50049L150-I6ACME-2G...	81061	1/2	.488	3.500	1.600	5	1	.583
1"-5	5	S1LC63057L200-I5ACME-2G...	81062	5/8	.571	4.015	2.110	5	1	.800



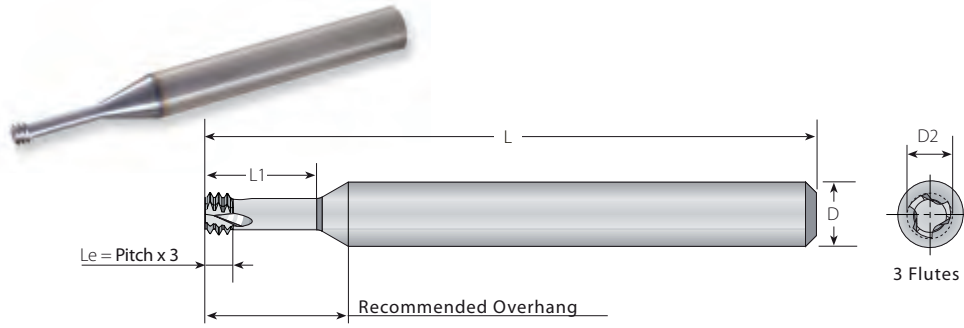
Deep Threading - Long Tools for Deep Holes

Thread		Min. Thread	Pitch		Ordering Code	EDP No.	Dimensions Inch						
M Coarse	M Fine	UN, UNS, UNF, UNEF	mm	TPI	Internal		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-ITA60TM...	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-ITB60TM...	80415	1/4	.191	2.000	.79	5	1	
M8x1.25	M7x0.5, M7x0.75, M7.5x1.0	5/16-48UNS, 5/16-40UNS, 5/16-36UNS, 5/16-32UNEF, 5/16-28UN, 5/16-27UNS, 5/16-24UNS, 5/16-20UN	0.5-1.25	20-48	D1T25232L100-ITF60TM...	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-ITB60TM...	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-ITC60TM...	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-ITD60TM...	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-ITD60TM...	80425	1/2	.469	3.250	1.77	6	1	

Internal



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



MilliPro

Miniature Thread Mills

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

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	mm
M1.6x0.35		0.35	D3T12047L134-I0.35ISOTM...	80660	1/8	.047	1.181	.134	3	3	.049
M2x0.4		0.4	D3T25061L165-I0.4ISOTM...	80661	1/4	.061	2.244	.165	3	3	.063
M2.2x0.45		0.45	D3T25065L181-I0.45ISOTM...	80662	1/4	.065	2.244	.181	3	3	.069
M2.5x0.45		0.45	D3T25077L205-I0.45ISOTM...	80663	1/4	.077	2.244	.205	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L244-I0.5ISOTM...	80664	1/4	.094	2.244	.244	3	3	.098
M3.5x0.6		0.6	D3T25108L287-I0.6ISOTM...	80665	1/4	.108	2.244	.287	3	3	.114
M4x0.7		0.7	D3T25124L327-I0.7ISOTM...	80666	1/4	.124	2.244	.327	3	3	.130
M5x0.8		0.8	D3T25159L409-I0.8ISOTM...	80667	1/4	.159	2.244	.409	3	3	.165
M6x1.0	M8-M40x1.0	1.0	D3T25189L492-I1.0ISOTM...	80668	1/4	.189	2.244	.492	3	3	.197
M8x1.25		1.25	D3T31256L654-I1.25ISOTM...	80669	5/16	.256	2.480	.654	3	3	.268
M10x1.5	M12-M48x1.50	1.50	D3T37323L819-I1.50ISOTM...	80670	3/8	.323	2.874	.819	3	3	.335
M12x1.75		1.75	D3T37371L984-I1.75ISOTM...	80671	3/8	.371	2.874	.984	3	3	.406

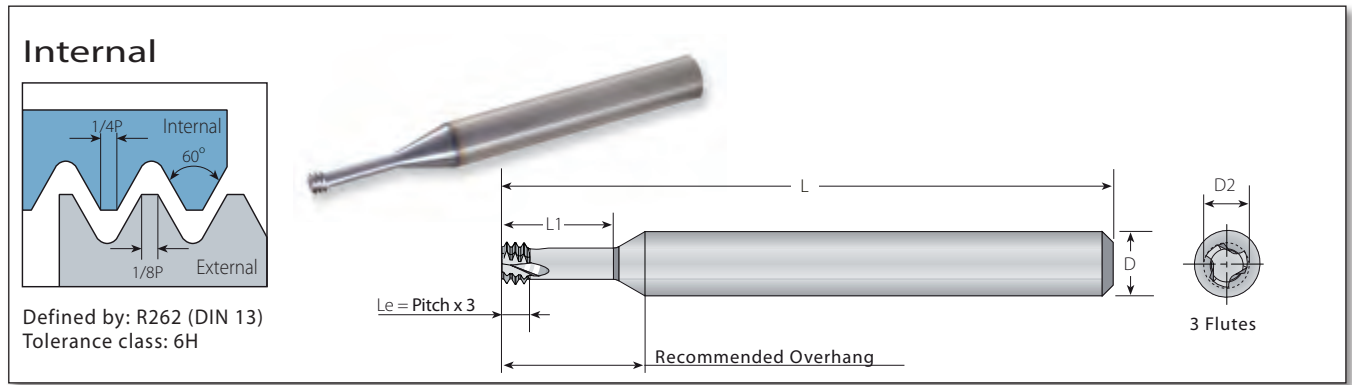
MilliPro

Miniature Thread Mills

3 x Do ($L1 \leq 3 \times \text{Thread Diameter}$)

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-I0.35ISOTM...	80672	1/8	.047	1.181	.197	3	3	.049
M2x0.4		0.4	D3T25061L244-I0.4ISOTM...	80673	1/4	.061	2.244	.244	3	3	.063
M2.5x0.45		0.45	D3T25077L276-I0.45ISOTM...	80674	1/4	.077	2.244	.276	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L362-I0.5ISOTM...	80675	1/4	.094	2.244	.362	3	3	.098
M4x0.7		0.7	D3T25124L484-I0.7ISOTM...	80676	1/4	.124	2.244	.484	3	3	.130
M5x0.8		0.8	D3T25159L606-I0.8ISOTM...	80677	1/4	.159	2.244	.606	3	3	.165
M6x1.0	M8-M40 x1.0	1.0	D3T25189L728-I1.0ISOTM...	80678	1/4	.189	2.244	.728	3	3	.197
M8x1.25		1.25	D3T31256L969-I1.25ISOTM...	80679	5/16	.256	2.480	.969	3	3	.268

* Bore diameter applies to smallest thread dia.



MilliPro (D-mm shank) Miniature Thread Mills

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

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	L1	Z	Zt	Inch
M1.6x0.35		0.35	D3T03012L034-I0.35ISOTM...	80420	3	.05	1.18	.13	3	3	.05
M2x0.4		0.4	D3T06015L042-I0.4ISOTM...	80254	6	.06	2.24	.17	3	3	.06
M2.2x0.45		0.45	D3T06016L046-I0.45ISOTM...	80255	6	.06	2.24	.18	3	3	.07
M2.5x0.45		0.45	D3T06019L052-I0.45ISOTM...	80256	6	.08	2.24	.20	3	3	.08
M3x0.5	M3.5-M16x0.5	0.5	D3T06024L062-I0.5ISOTM...	80257	6	.09	2.24	.24	3	3	.10
M3.5x0.6		0.6	D3T06027L073-I0.6ISOTM...	80258	6	.11	2.24	.29	3	3	.11
M4x0.7		0.7	D3T06031L083-I0.7ISOTM...	80259	6	.12	2.24	.33	3	3	.13
M5x0.8		0.8	D3T06040L104-I0.8ISOTM...	80260	6	.16	2.24	.41	3	3	.17
M6x1.0	M8-M40x1.0	1.0	D3T06048L125-I1.0ISOTM...	80261	6	.19	2.24	.49	3	3	.20
M8x1.25		1.25	D3T08065L166-I1.25ISOTM...	80262	8	.26	2.48	.65	3	3	.27
M10x1.5	M12-M48x1.50	1.50	D3T10082L208-I1.50ISOTM...	80418	10	.32	2.87	.82	3	3	.33
M12x1.75		1.75	D3T10099L250-I1.75ISOTM...	80419	10	.39	2.87	.98	3	3	.41
M16x2.0		2.0	D3T12119L330-I2.0ISOTM...	80963	12	.47	3.27	1.30	3	3	.55
M20x2.5		2.50	D3T16159L413-I2.5ISOTM...	80962	16	.63	3.62	1.63	3	3	.69

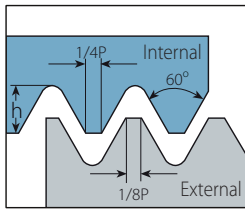
MilliPro (D-mm shank) Miniature Thread Mills

3 x Do ($L1 \leq 3 \times \text{Thread Diameter}$)

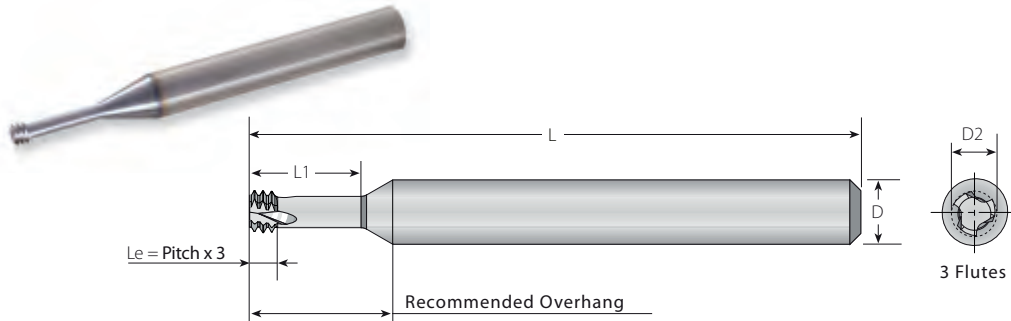
Thread		Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D(mm)	D2	L	L1	Z	Zt	Inch
M1.6X0.35		0.35	D3T03012L050-I0.35ISOTM...	80421	3	.05	1.18	.20	3	3	.05
M2x0.4		0.4	D3T03015L062-I0.4ISOTM...	80966	3	.06	1.18	.24	3	3	.06
M2X0.4		0.4	D3T06015L062-I0.4ISOTM...	80422	6	.06	2.24	.24	3	3	.06
M2.5x0.45		0.45	D3T03019L077-I0.45ISOTM...	80964	3	.08	1.18	.30	3	3	.08
M2.5x0.45		0.45	D3T06019L077-I0.45ISOTM...	80265	6	.08	2.24	.30	3	3	.08
M3X0.5	M3.5-M16x0.5	0.5	D3T03024L092-I0.5ISOTM...	80965	3	.09	1.18	.36	3	3	.10
M3x0.5	M3.5-M16x0.5	0.5	D3T06024L092-I0.5ISOTM...	80266	6	.09	2.24	.36	3	3	.10
M4x0.7		0.7	D3T06031L123-I0.7ISOTM...	80267	6	.12	2.24	.48	3	3	.13
M5x0.8		0.8	D3T06040L154-I0.8ISOTM...	80268	6	.16	2.24	.61	3	3	.17
M6x1.0	M8-M40x1.0	1.00	D3T06048L185-I1.0ISOTM...	80269	6	.19	2.24	.73	3	3	.20
M8x1.25		1.25	D3T08065L246-I1.25ISOTM...	80270	8	.26	2.48	.97	3	3	.27

* Bore diameter applies to smallest thread dia.

Internal



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



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-I72UNTM...	80215	1/4	.057	2.244	.154	3	3	.059
No.1-64	No.2-64	64	D3T25055L165-I64UNTM...	80214	1/4	.055	2.244	.165	3	3	.059
No.2-56	No.3-56	56	D3T25065L197-I56UNTM...	80216	1/4	.065	2.244	.197	3	3	.071
No.3-48	No.4-48	48	D3T25075L236-I48UNTM...	80217	1/4	.075	2.244	.236	3	3	.079
No.4, No.5-40	No.6-40	40	D3T25083L236-I40UNTM...	80218	1/4	.083	2.244	.236	3	3	.090
No.5-40	No.6-40	40	D3T25096L283-I40UNTM...	80219	1/4	.096	2.244	.283	3	3	.102
	No.8-36	36	D3T25130L343-I36UNTM...	80240	1/4	.130	2.244	.343	3	3	.138
No.6, No.8-32	No.10-32	32	D3T25100L292-I32UNTM...	80241	1/4	.100	2.244	.292	3	3	.110
No.8-32	No.10-32	32	D3T25126L394-I32UNTM...	80242	1/4	.126	2.244	.394	3	3	.134
	No.10-32	32	D3T25150L406-I32UNTM...	80694	1/4	.150	2.244	.406	3	3	.157
	1/4"x28	28	D3T25207L520-I28UNTM...	80243	1/4	.207	2.244	.520	3	3	.216
No.10-24	5/16"x24	24	D3T25141L402-I24UNTM...	80244	1/4	.141	2.244	.402	3	3	.150
	5/16"x24	24	D3T31263L650-I24UNTM...	80245	5/16	.263	2.480	.650	3	3	.272
1/4"x20	7/16"x20	20	D3T25192L528-I20UNTM...	80246	1/4	.192	2.244	.528	3	3	.201
	7/16"x20	20	D3T37375L906-I20UNTM...	80247	3/8	.375	2.874	.906	3	3	.390
5/16"x18		18	D3T31242L650-I18UNTM...	80121	5/16	.242	2.480	.650	3	3	.256
3/8"x16		16	D3T31264L752-I16UNTM...	80279	5/16	.264	2.480	.752	3	3	.315
7/16"x14		14	D3T37354L917-I14UNTM...	80248	3/8	.354	2.874	.917	3	3	.370

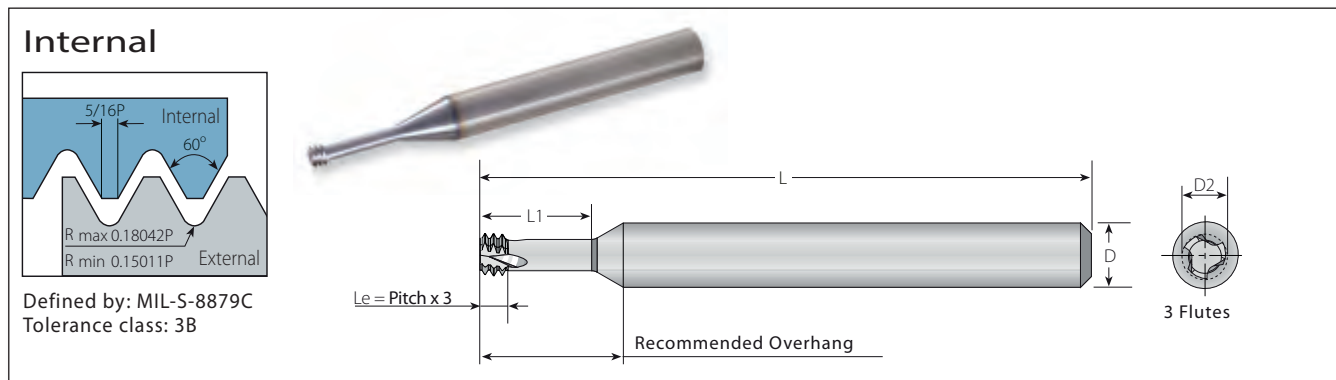
MilliPro

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	mm
	No.1-72	72	D3T25057L226-I72UNTM...	80443	1/4	.057	2.244	.226	3	3	.059
No.4, No.5-40	No.6-40	40	D3T25083L354-I40UNTM...	80263	1/4	.083	2.244	.354	3	3	.091
No.5-40	No.6-40	40	D3T25096L394-I40UNTM...	80249	1/4	.096	2.244	.394	3	3	.102
No.6, No.8-32	No.10-32	32	D3T25100L433-I32UNTM...	80264	1/4	.100	2.244	.433	3	3	.110
No.8-32	No.10-32	32	D3T25126L512-I32UNTM...	80250	1/4	.126	2.244	.512	3	3	.134
	No.10-32	32	D3T25150L594-I32UNTM...	80695	1/4	.150	2.244	.594	3	3	.157
	1/4"x28	28	D3T25207L772-I28UNTM...	80251	1/4	.207	2.244	.772	3	3	.216
	5/16"x24	24	D3T31263L965-I24UNTM...	80252	5/16	.263	2.480	.965	3	3	.272
1/4"x20	7/16"x20	20	D3T25192L780-I20UNTM...	80253	1/4	.192	2.244	.780	3	3	.201
5/16"x18		18	D3T31242L944-I18UNTM...	80122	5/16	.242	2.480	.944	3	3	.256

* Bore diameter applies to smallest thread dia.



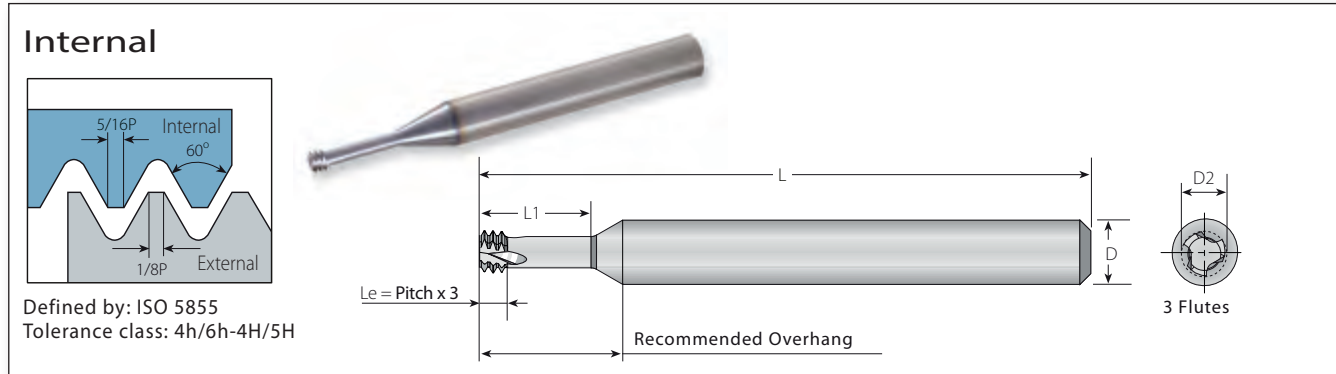
MilliPro - Miniature Thread Mills

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-I32UNJTM...	80436	1/4	.106	2.244	.433	3	3	.110
	0.250" (1/4")	28	D3T25213L076-I28UNJTM...	80437	1/4	.213	2.244	.768	3	3	.220
0.190" (#10)		24	D3T25146L058-I24UNJTM...	80438	1/4	.146	2.244	.587	3	3	.157
	0.3125" (5/16")	24	D3T31264L094-I24UNJTM...	80439	5/16	.264	2.480	.949	3	3	.276
0.250" (1/4")		20	D3T25197L076-I20UNJTM...	80445	1/4	.197	2.244	.768	3	3	.209
	0.4375" (7/16")	20	D3T37371L131-I20UNJTM...	80446	3/8	.371	2.874	1.319	3	3	.394
0.3125" (5/16")	0.5625" (9/16")	18	D3T31252L094-I18UNJTM...	80961	5/16	.252	2.480	.949	3	3	.266
0.375" (3/8")	0.750" (3/4")	16	D3T31303L114-I16UNJTM...	80879	5/16	.303	2.480	1.142	3	3	.319
0.4375" (7/16")	0.875" (7/8")	14	D3T37362L131-I14UNJTM...	80880	3/8	.362	2.874	1.319	3	3	.374
0.500" (1/2")		13	D3T37371L151-I13UNJTM...	80881	3/8	.371	2.874	1.516	3	3	.433

MJ

MilliPro



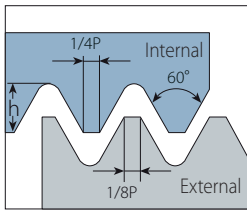
MilliPro - Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

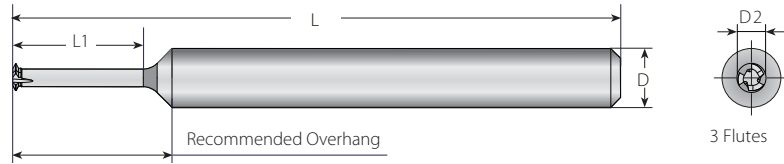
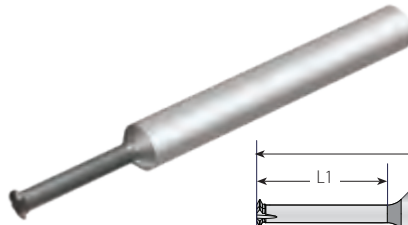
Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.
MJ	mm	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
MJ3x0.5	0.5	D3T25094L036-I0.5MJTM...	80882	1/4	.094	2.244	.362	3	3	.102
MJ3.5x0.6	0.6	D3T25112L043-I0.6MJTM...	80883	1/4	.112	2.244	.433	3	3	.118
MJ4x0.7	0.7	D3T25124L048-I0.7MJTM...	80884	1/4	.124	2.244	.484	3	3	.134
MJ5x0.8	0.8	D3T25159L060-I0.8MJTM...	80885	1/4	.159	2.244	.606	3	3	.169
MJ6x1.0	1.0	D3T25189L072-I1.0MJTM...	80886	1/4	.189	2.244	.728	3	3	.201
MJ8x1.25	1.25	D3T31256L096-I1.25MJTM...	80887	5/16	.256	2.480	.969	3	3	.272
MJ10x1.5	1.50	D3T37323L121-I1.50MJTM...	80888	3/8	.323	2.874	1.213	3	3	.343
MJ12x1.75	1.75	D3T37371L145-I1.75MJTM...	80889	3/8	.371	2.874	1.457	3	3	.409
MJ14x2	2.0	D3T50469L167-I2.0MJTM...	80890	1/2	.469	3.268	1.673	3	3	.482

* Bore diameter applies to smallest thread dia.

Internal



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



MilliPro Dental

Miniature Thread Mills for Dental Implants

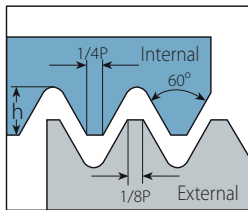
3xDo (L1 ≤ 3 x Thread Diameter)

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

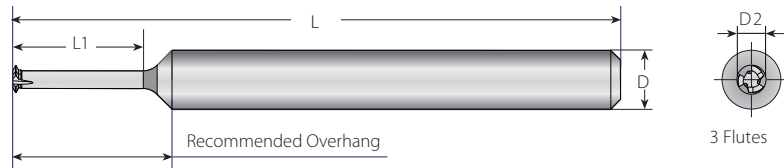
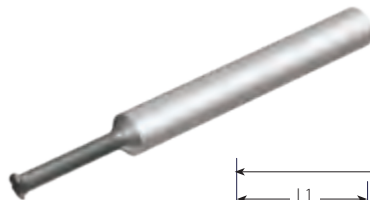
American UN

MilliPro Dental

Internal



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



MilliPro Dental

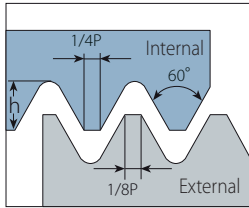
Miniature Thread Mills for Dental Implants

3xDo (L1 ≤ 3 x Thread Diameter)

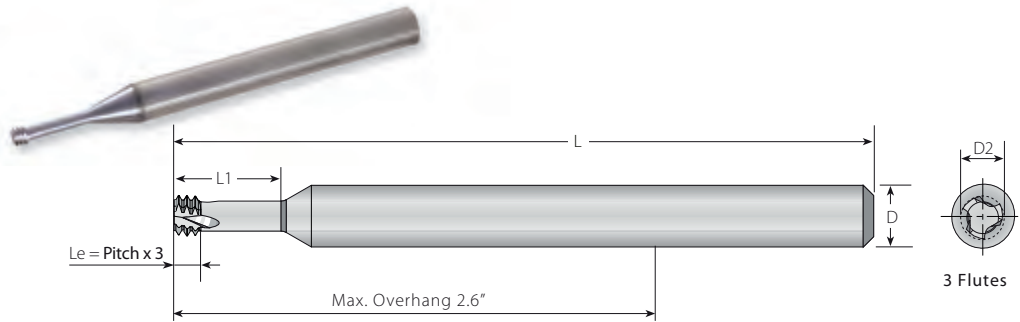
Thread		Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.
UNF	TPI		Internal	VTH	D(mm)	D2	L	L1	Z	Zt	Inch
0-80	80		D1T03011L046-I80UNTM...	80283	3	.045	1.220	.181	3	1	.051
1-72	72		D1T03014L065-I72UNTM...	80413	3	.057	1.220	.256	3	1	.063

The MilliPro Dental line was specially designed for machining Titanium and Stainless Steel in high RPM. MilliPro Dental DIT tools are also suitable for general use applications.

Internal



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



MilliPro EL

Miniature Thread Mills , Extra Long Tools

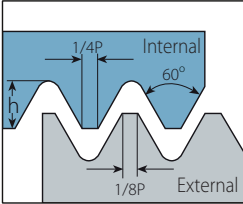
2 x Do ($L1 \leq 2 \times \text{Thread Diameter}$)

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-I0.4ISOTML...	80426	1/4	.061	3.937	.165	3	3	.063
M2.5x0.45		0.45	D3T25077L205-I0.45ISOTML...	80428	1/4	.077	3.937	.205	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L244-I0.5ISOTML...	80429	1/4	.094	3.937	.244	3	3	.098

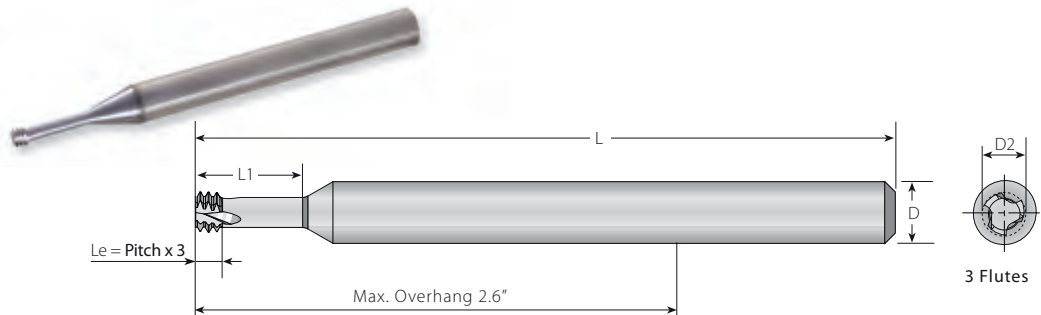
American UN

MilliPro EL

Internal



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



MilliPro EL

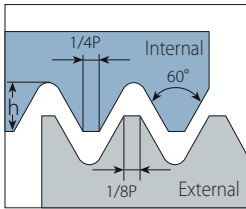
Miniature Thread Mills, Extra Long Tools

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

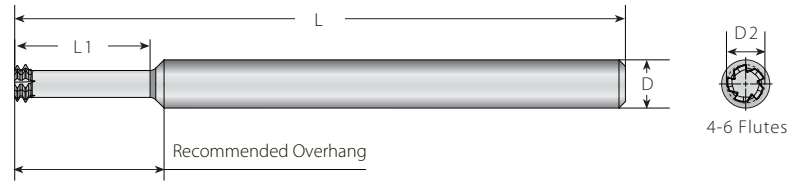
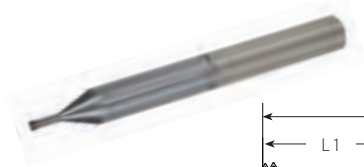
Thread		Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	TPI	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
No.2-56	No.3-56	56	D3T25065L197-I56UNTML...	80430	1/4	.065	3.937	.197	3	3	.071
No.4, No.5-40	No.6-40	40	D3T25083L236-I40UNTML...	80431	1/4	.083	3.937	.236	3	3	.091
No.6, No.8-32	No.10-32	32	D3T25100L291-I32UNTML...	80432	1/4	.100	3.937	.291	3	3	.110
No.8-32	No.10-32	32	D3T25126L394-I32UNTML...	80433	1/4	.126	3.937	.394	3	3	.134

* Bore diameter applies to smallest thread dia.

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

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-I0.4ISOTM...	80918	1/4	.061	2.99	.18	4	2	.063
M2.2x0.45		0.45	S2L25065L181-I0.45ISOTM...	80919	1/4	.065	2.99	.20	4	2	.071
M2.5x0.45		0.45	S2L25077L204-I0.45ISOTM...	80920	1/4	.077	2.99	.22	4	2	.081
M3x0.5	M3.5-M16x0.5	0.5	S2L25094L244-I0.5ISOTM...	80921	1/4	.094	2.99	.27	4	2	.101
M3.5x0.6		0.6	S2L25108L287-I0.6ISOTM...	80922	1/4	.108	2.99	.31	4	2	.116
M4x0.7		0.7	S2L25124L326-I0.7ISOTM...	80923	1/4	.124	2.99	.36	4	2	.132
M5x0.8		0.8	S2L25159L409-I0.8ISOTM...	80924	1/4	.159	2.99	.44	4	2	.169
M6x1.0	M8-M40x1.0	1.0	S2L25189L492-I1.0ISOTM...	80925	1/4	.189	2.99	.53	5	2	.201
M8x1.25		1.25	S2L31256L653-I1.25ISOTM...	80926	5/16	.256	3.15	.70	5	2	.268
M10x1.5	M12-M48x1.50	1.50	S2L31308L818-I1.50ISOTM...	80927	5/16	.308	3.15	.88	6	2	.339
M12x1.75		1.75	S2L37371L984-I1.75ISOTM...	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 ($L1 \leq 3 \times \text{Thread Diameter}$)

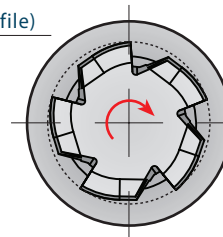
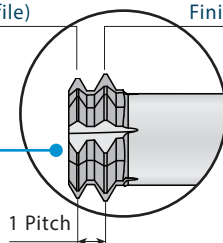
Thread		Pitch	Ordering Code	EDP No.	Dimensions mm				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
M2x0.4		0.4	S2L25061L244-I0.4ISOTM...	80929	1/4	.061	2.99	.26	4	2	.063
M2.5x0.45		0.45	S2L25077L303-I0.45ISOTM...	80930	1/4	.077	2.99	.32	4	2	.081
M3x0.5	M3.5-M16x0.5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

Roughing (Partial Profile)

Finish (Full Profile)

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

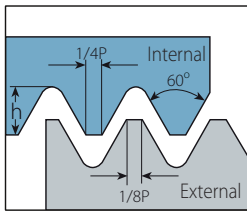
The work direction should be from the top to the bottom (Climb Milling).



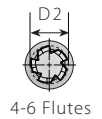
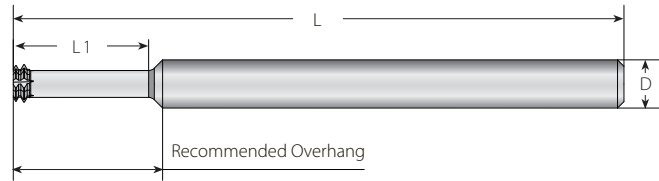
MilliPro HD Tools are left handed. For CNC use M04 code.

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

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-I56UNTM...	80936	1/4"	.065	3.00	.210	4	2	.071
No.3-48	No.4-48	48	S2L25075L236-I48UNTM...	80937	1/4"	.075	3.00	.260	4	2	.083
No.4-40, No.5-40	No.6-40	40	S2L25083L236-I40UNTM...	80938	1/4"	.083	3.00	.260	4	2	.093
No.5-40	No.6-40	40	S2L25096L283-I40UNTM...	80939	1/4"	.096	3.00	.310	4	2	.104
	No.8-36	36	S2L25130L343-I36UNTM...	80940	1/4"	.130	3.00	.370	4	2	.140
No.6-32, No.8-32	No.10-32	32	S2L25100L292-I32UNTM...	80941	1/4"	.100	3.00	.320	4	2	.112
No.8-32	No.10-32	32	S2L25126L394-I32UNTM...	80942	1/4"	.126	3.00	.420	4	2	.138
	No.10-32	32	S2L25146L394-I32UNTM...	80943	1/4"	.146	3.00	.430	4	2	.164
	1/4"x28	28	S2L25207L520-I28UNTM...	80944	1/4"	.207	3.00	.560	5	2	.219
No.10-24	5/16"x24	24	S2L25141L402-I24UNTM...	80945	1/4"	.141	3.00	.440	4	2	.154
	5/16"x24	24	S2L31263L650-I24UNTM...	80946	5/16"	.263	3.15	.690	5	2	.276
1/4"-20	7/16"x20	20	S2L25192L528-I20UNTM...	80947	1/4"	.192	3.00	.580	5	2	.205
	7/16"x20	20	S2L37372L906-I20UNTM...	80948	3/8"	.372	4.00	.960	6	2	.390
5/16"x18		18	S2L25242L630-I18UNTM...	80123	1/4"	.242	3.00	.715	4	2	.256
3/8"x16		16	S2L31301L776-I16UNTM...	80949	5/16"	.301	3.15	.840	5	2	.315
7/16"x14		14	S2L37354L917-I14UNTM...	80950	3/8"	.354	4.00	.990	6	2	.374
1/2"x13		13	S2L37372L101-I13UNTM...	80951	3/8"	.362	4.00	1.080	6	2	.429

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRC

3 x Do ($L1 \leq 3 \times \text{Thread Diameter}$)

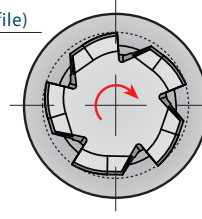
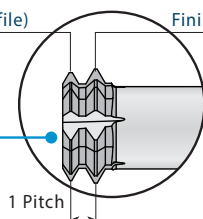
Thread		Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	TPI	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
No.4-40, No.5-40	No.6-40	40	S2L25083L354-I40UNTM...	80952	1/4"	.083	3.00	.380	4	2	.093
No.5-40	No.6-40	40	S2L25096L394-I40UNTM...	80953	1/4"	.096	3.00	.410	4	2	.104
No.6-32, No.8-32	No.10-32	32	S2L25100L433-I32UNTM...	80954	1/4"	.100	3.00	.460	4	2	.111
No.8-32	No.10-32	32	S2L25126L512-I32UNTM...	80955	1/4"	.126	3.00	.540	4	2	.136
	1/4"x28	28	S2L25207L772-I28UNTM...	80956	1/4"	.207	3.00	.810	5	2	.219
	5/16"x24	24	S2L31263L965-I24UNTM...	80957	5/16"	.263	3.15	1.010	5	2	.272
1/4"x20	7/16"x20	20	S2L25192L780-I20UNTM...	80958	1/4"	.192	3.00	.830	5	2	.204
5/16"x18		18	S2L25242L945-I18UNTM...	80124	1/4"	.242	3.00	1.030	4	2	.256
7/16"x14		14	S2L37354L131-I14UNTM...	80959	3/8"	.354	4.00	1.390	6	2	.375

Roughing (Partial Profile)

Finish (Full Profile)

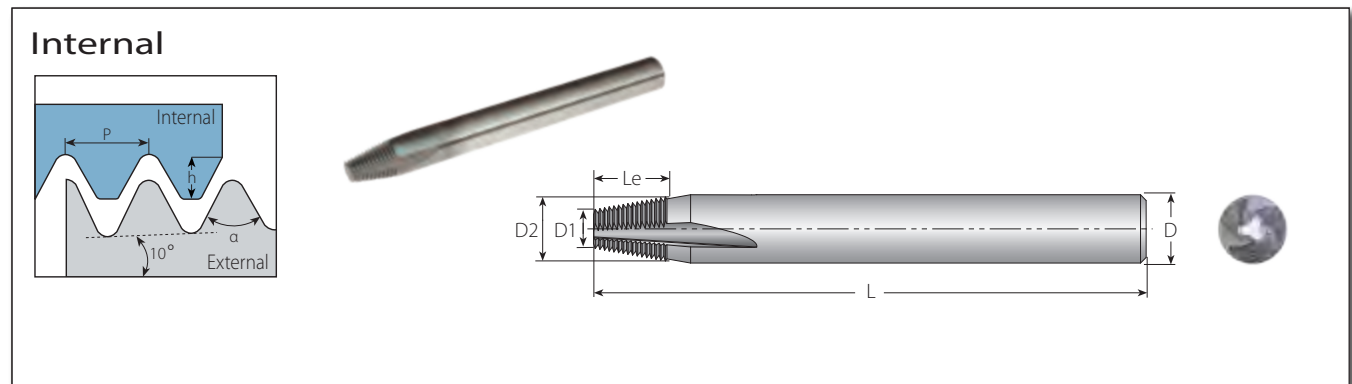
Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

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



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

* Bore diameter applies to smallest thread dia.



Straight Flutes - Taper 60°

TM Solid Straight Flutes for Bone Plate Applications

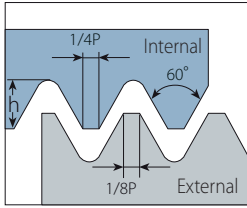
Pitch	Ordering Code	EDP No.	Taper	Thread Angle	Profile Height	Dimensions Inch					No. of Flutes	Teeth
mm	Internal	VTs		α	h	D	D2	D1	L	Le	Z	Zt
0.4	S1/4".232"L315-I0.4TAP60TM...	80975	20°	60°	.008	1/4	.232	.126	2.244	.315	3	20
0.5	S1/4".232"L354-I0.5TAP60TM...	80976	20°	60°	.010	1/4	.232	.114	2.244	.354	3	18

Straight Flutes - Taper 55°

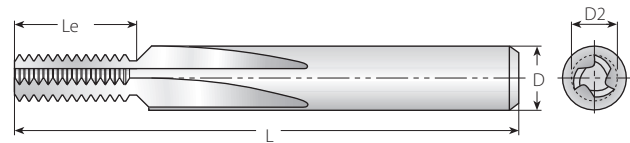
TM Solid Straight Flutes for Bone Plate Applications

Pitch	Ordering Code	EDP No.	Taper	Thread Angle	Profile Height	Dimensions Inch					No. of Flutes	Teeth
mm	Internal	VTs		α	h	D	D2	D1	L	Le	Z	Zt
0.3	S1/8".110"L154-I0.3TAP55TM...	80977	20°	55°	.007	1/8	.110	.059	1.496	.154	3	13
0.35	S3/16".154"L248-I0.35TAP55TM...	80978	20°	55°	.008	3/16	.154	.071	1.772	.248	3	18
0.4	S1/4".232"L394-I0.4TAP55TM...	80979	20°	55°	.011	1/4	.232	.098	2.244	.394	3	25
0.5	S1/4".232"L354-I0.5TAP55TM...	80980	20°	55°	.013	1/4	.232	.114	2.244	.354	3	18
0.6	S1/4".232"L260-I0.6TAP55TM...	80981	20°	55°	.019	1/4	.232	.150	2.244	.260	3	11

External / Internal



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



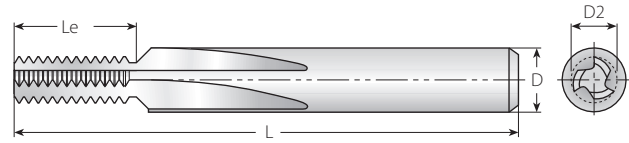
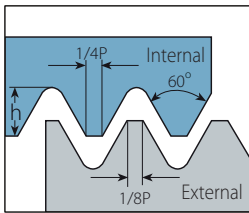
Straight Flutes - External

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	
Min. Dia.	mm	External	VTS	D	D2	L	Le	Z	Zt	h
M3	0.50	S1/4".240"-E0.5ISOTM...	80000	1/4	.240	2.244	.591	3	30	.012
M4.5	0.75	S5/16".310"-E0.75ISOTM3...	80001	5/16	.310	2.480	.610	3	26	.019
M4.5	0.75	S5/16".310"-E0.75ISOTM5...	80444	5/16	.310	2.480	.610	5	26	.019
M6	1.00	S3/8".370"-E1.0ISOTM...	80002	3/8	.370	2.835	.945	5	24	.025
M10	1.50	S1/2".470"-E1.5ISOTM...	80003	1/2	.470	3.268	1.181	5	20	.037
M14	2.00	S1/2".470"-E2.0ISOTM...	80004	1/2	.470	3.268	1.181	5	15	.050
M24	3.00	S5/8".620"-E3.0ISOTM...	80005	5/8	.620	3.622	1.417	5	12	.075
M36	4.00	S5/8".620"-E4.0ISOTM...	80006	5/8	.620	3.622	1.575	5	10	.100
M64	6.00	S3/4".745"-E6.0ISOTM...	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
M4.5	0.75	S1/8".120"-I0.75ISOTM...	80008	1/8	.120	1.496	.270	3	9	.017
M8	0.75	S1/4".240"-I0.75ISOTM...	80009	1/4	.240	2.244	.591	3	20	.017
M5	0.80	S3/16".145"-I0.8ISOTM...	80010	3/16	.145	1.654	.315	3	10	.018
M6	1.00	S3/16".160"-I1.0ISOTM...	80011	3/16	.160	1.654	.354	3	9	.023
M12	1.00	S5/16".310"-I1.0ISOTM3...	80012	5/16	.310	2.480	.787	3	20	.023
M12	1.00	S5/16".310"-I1.0ISOTM5...	80239	5/16	.310	2.480	.787	5	20	.023
M8	1.25	S1/4".200"-I1.25ISOTM...	80013	1/4	.200	2.244	.492	3	10	.029
M10	1.50	S1/4".240"-I1.5ISOTM...	80014	1/4	.240	2.244	.591	3	10	.035
M14	1.50	S3/8".370"-I1.5ISOTM...	80015	3/8	.370	2.835	.945	5	16	.035
M18	1.50	S1/2".470"-I1.5ISOTM...	80016	1/2	.470	3.268	1.181	5	20	.035
M12	1.75	S5/16".310"-I1.75ISOTM3...	80017	5/16	.310	2.480	.758	3	11	.040
M12	1.75	S5/16".310"-I1.75ISOTM5...	80236	5/16	.310	2.480	.758	5	11	.040
M16	2.00	S3/8".370"-I2.0ISOTM...	80018	3/8	.370	2.835	.944	5	12	.046
M18	2.00	S1/2".470"-I2.0ISOTM...	80019	1/2	.470	3.268	1.181	5	15	.046
M20	2.50	S1/2".470"-I2.5ISOTM...	80020	1/2	.470	3.268	1.181	5	12	.058
M24	3.00	S5/8".620"-I3.0ISOTM...	80021	5/8	.620	3.622	1.417	5	12	.069
M30	3.50	S5/8".620"-I3.5ISOTM...	80022	5/8	.620	3.622	1.516	5	11	.081
M36	4.00	S5/8".620"-I4.0ISOTM...	80023	5/8	.620	3.622	1.575	5	10	.092
M48	5.00	S3/4".745"-I5.0ISOTM...	80024	3/4	.745	4.095	1.575	5	8	.116
M64	6.00	S3/4".745"-I6.0ISOTM...	80025	3/4	.745	4.095	1.417	5	6	.139

External / Internal



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

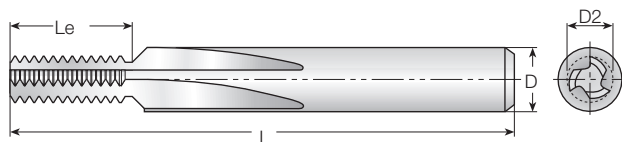
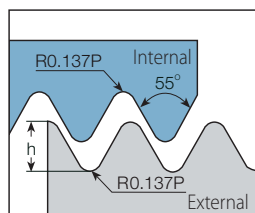
Straight Flutes - External

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	
Min. Dia.	TPI	External	VTS	D	D2	L	Le	Z	Zt	h
No.6	32	S1/4".240"-E32UNTM...	80026	1/4	.240	2.244	.562	3	18	.019
No.12	28	S5/16".310"-E28UNTM3...	80027	5/16	.310	2.480	.786	3	22	.022
No.12	28	S5/16".310"-E28UNTM5...	80408	5/16	.310	2.480	.786	5	22	.022
1/4"	20	S3/8".370"-E20UNTM...	80028	3/8	.370	2.835	.900	5	18	.031
5/16"	18	S3/8".370"-E18UNTM...	80029	3/8	.370	2.835	.944	5	17	.034
3/8"	16	S1/2".470"-E16UNTM...	80030	1/2	.470	3.268	1.125	5	18	.038
9/16"	12	S1/2".470"-E12UNTM...	80031	1/2	.470	3.268	1.167	5	14	.051
1"	8	S5/8".620"-E8UNTM...	80032	5/8	.620	3.622	1.500	5	12	.077
1 3/8"	6	S5/8".620"-E6UNTM...	80033	5/8	.620	3.622	1.500	5	9	.102

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
No.8	36	S1/8".120"-I36UNTM...	80034	1/8	.120	1.654	.250	3	9	.016
No.8	32	S1/8".120"-I32UNTM...	80035	1/8	.120	1.654	.250	3	8	.018
5/16"	32	S1/4".240"-I32UNTM...	80036	1/4	.240	2.244	.562	3	18	.018
No.12	28	S3/16".145"-I28UNTM...	80037	3/16	.145	1.654	.321	3	9	.021
7/16"	28	S5/16".310"-I28UNTM3...	80038	5/16	.310	2.480	.786	3	22	.021
7/16"	28	S5/16".310"-I28UNTM5...	80441	5/16	.310	2.480	.786	5	22	.021
No.12	24	S3/16".160"-I24UNTM...	80039	3/16	.160	2.244	.333	3	8	.024
1/4"	20	S3/16".160"-I20UNTM...	80040	3/16	.160	2.244	.400	3	8	.029
9/16"	20	S3/8".370"-I20UNTM...	80041	3/8	.370	2.835	.900	5	18	.029
5/16"	18	S1/4".200"-I18UNTM...	80440	1/4	.200	2.244	.500	3	9	.033
9/16"	18	S3/8".370"-I18UNTM...	80043	3/8	.370	2.835	.944	5	17	.033
3/8"	16	S1/4".240"-I16UNTM...	80044	1/4	.240	2.244	.562	3	9	.037
13/16"	16	S1/2".470"-I16UNTM...	80045	1/2	.470	3.268	1.125	5	18	.037
7/16"	14	S5/16".310"-I14UNTM3...	80046	5/16	.310	2.480	.714	3	10	.042
7/16"	14	S5/16".310"-I14UNTM5...	80238	5/16	.310	2.480	.714	5	10	.042
1/2"	13	S5/16".310"-I13UNTM3...	80047	5/16	.310	2.480	.769	3	10	.045
1/2"	13	S5/16".310"-I13UNTM5...	80237	5/16	.310	2.480	.769	5	10	.045
9/16"	12	S3/8".370"-I12UNTM...	80048	3/8	.370	2.835	.917	5	11	.049
1"	12	S1/2".470"-I12UNTM...	80049	1/2	.470	3.268	1.167	5	14	.049
5/8"	11	S3/8".370"-I11UNTM...	80050	3/8	.370	2.835	.909	5	10	.053
3/4"	10	S1/2".470"-I10UNTM...	80051	1/2	.470	3.268	1.100	5	11	.059
7/8"	9	S5/8".620"-I9UNTM...	80442	5/8	.620	3.622	1.333	5	12	.065
1"	8	S5/8".620"-I8UNTM...	80053	5/8	.620	3.622	1.500	5	12	.073
1 1/8"	7	S5/8".620"-I7UNTM...	80054	5/8	.620	3.622	1.429	5	10	.084
1 3/8"	6	S3/4".745"-I6UNTM...	80055	3/4	.745	4.095	1.500	5	9	.098
1 3/4"	5	S3/4".745"-I5UNTM...	80057	3/4	.745	4.095	1.600	5	8	.117
2"	4.5	S3/4".745"-I4.5UNTM...	80058	3/4	.745	4.095	1.555	5	7	.130

External / Internal

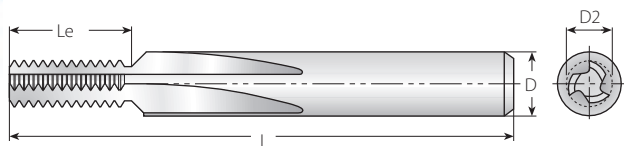
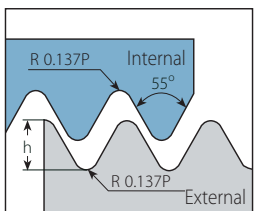


Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium class A

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
1/4"	20	S3/16".160"-EI20BSWTM...	80059	3/16	.160	1.654	.400	3	8	.032
5/16"	18	S1/4".200"-EI18BSWTM...	80060	1/4	.200	2.244	.444	3	8	.035
3/8"	16	S1/4".240"-EI16BSWTM...	80061	1/4	.240	2.244	.562	3	9	.040
7/16"	14	S5/16".310"-EI14BSWTM3...	80062	5/16	.310	2.480	.714	3	10	.046
7/16"	14	S5/16".310"-EI14BSWTM5...	80232	5/16	.310	2.480	.714	5	10	.046
1/2"	12	S5/16".310"-EI12BSWTM3...	80063	5/16	.310	2.480	.750	3	9	.053
1/2"	12	S5/16".310"-EI12BSWTM5...	80447	5/16	.310	2.480	.750	5	9	.053
5/8"	11	S3/8".370"-EI11BSWTM...	80064	3/8	.370	2.835	.909	5	10	.058
3/4"	10	S1/2".470"-EI10BSWTM...	80065	1/2	.470	3.268	1.100	5	11	.064
7/8"	9	S1/2".470"-EI9BSWTM...	80066	1/2	.470	3.268	1.111	5	10	.071
1"	8	S5/8".620"-EI8BSWTM...	80067	5/8	.620	3.622	1.500	5	12	.080
1 1/8"	7	S5/8".620"-EI7BSWTM...	80068	5/8	.620	3.622	1.429	5	10	.091
1 3/8"	6	S5/8".620"-EI6BSWTM...	80069	5/8	.620	3.622	1.500	5	9	.107
1 5/8"	5	S3/4".745"-EI5BSWTM...	80070	3/4	.745	4.095	1.600	5	8	.128
1 7/8"	4.5	S3/4".745"-EI4.5BSWTM...	80071	3/4	.745	4.095	1.555	5	7	.142

External / Internal



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

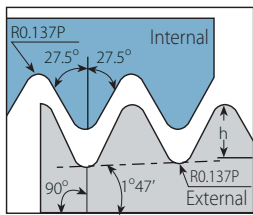
Straight Flutes

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
1/16"	28	S1/4".240"-EI28BSPTM...	80076	1/4	.240	2.244	.571	3	16	.023
1/4"	19	S5/16".310"-EI19BSPTM3...	80073	5/16	.310	2.480	.737	3	14	.034
1/4"	19	S5/16".310"-EI19BSPTM5...	80234	5/16	.310	2.480	.737	5	14	.034
1/2"	14	S1/2".470"-EI14BSPTM...	80074	1/2	.470	3.268	1.143	5	16	.046
1"	11	S5/8".620"-EI11BSPTM...	80075	5/8	.620	3.622	1.364	5	15	.058

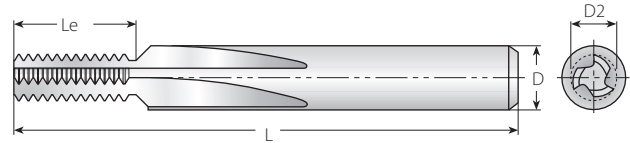
BSPT

Straight

External / Internal



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



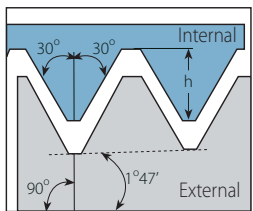
Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	
Min. Dia.	TPI	External / Internal	VTs	D	D2	L	Le	Z	Zt	h
1/16"	28	S1/4".240"-EI28BSPT-TM...	80072	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

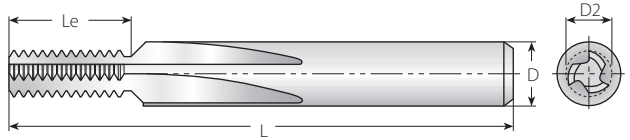
NPT

Straight

External / Internal



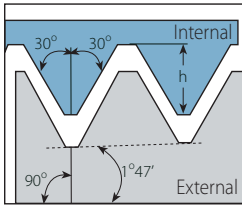
Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



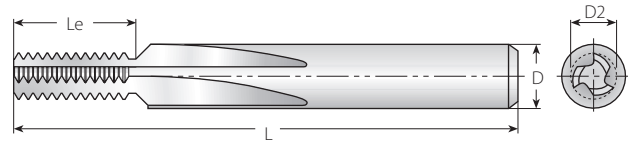
Straight Flutes

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
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

External / Internal



Defined by: MIL-P-7105B
Tolerance class: Standard ANPT



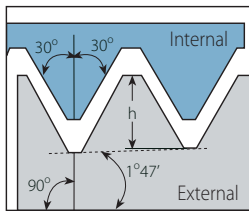
Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	
Min. Dia.	TPI	External / Internal		D	D2	L	Le	Z	Zt	h
1/4"	18	S5/16".310"-EI18ANPT-TM...	81056	5/16	.310	2.480	.555	5	10	.044
1/2"	14	S1/2".470"-EI14ANPT-TM...	81057	1/2	.470	3.268	.786	5	11	.057

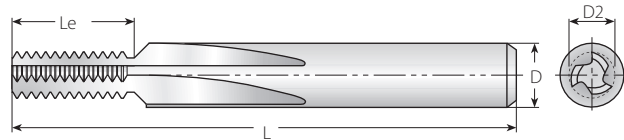
NPTF

Straight

External / Internal



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



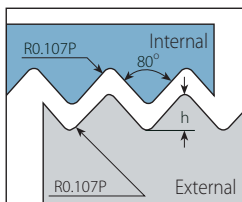
Straight Flutes

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
1/16"	27	S1/4".240"-EI27NPTFTM...	80085	1/4	.240	2.244	.370	3	10	.030
1/4"	18	S5/16".310"-EI18NPTFTM3...	80086	5/16	.310	2.480	.555	3	10	.044
1/4"	18	S5/16".310"-EI18NPTFTM5...	80233	5/16	.310	2.480	.555	5	10	.044
1/2"	14	S1/2".470"-EI14NPTFTM...	80087	1/2	.470	3.268	.786	5	11	.057
1"	11.5	S5/8".620"-EI11.5NPTFTM...	80088	5/8	.620	3.622	1.043	5	12	.070
2 1/2"	8	S5/8".620"-EI8NPTFTM...	80089	5/8	.620	3.622	1.500	5	12	.100

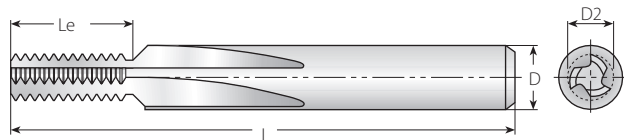
Pg

Straight

External / Internal



Defined by: DIN 40430
Tolerance class: Standard



Straight Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions Inch				No. of Flutes	Teeth	
	TPI	External / Internal	VTs	D	D2	L	Le	Z	Zt	h
Pg7	20	S5/16".310"-EI20PGTM3...	80090	5/16	.310	2.480	.750	3	15	.024
Pg7	20	S5/16".310"-EI20PGTM5...	80448	5/16	.310	2.480	.750	5	15	.024
Pg9, 11, 13.5, 16	18	S3/8".370"-EI18PGTM...	80091	3/8	.370	2.835	.944	5	17	.026
Pg21, 29, 36, 42, 48	16	S1/2".470"-EI16PGTM...	80092	1/2	.470	3.268	1.125	5	18	.030

Grades and Their Applications

VTH

Helicool

HCR

HCC

MilliPro

MilliPro Dental

MilliPro HD

MilliPro EL

Deep Threading

Helical

- 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



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

Material Group	Vargus No.	Material	Hardness Brinell HB	Vc [ft/min]			Feed [inch/tooth]					
				Helicoil, HCR, HCC, Helical, Straight, Deep Threading			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	197-393	.0012-.0031	.0012-.0031	.0039-.0138	.0012-.0031	.0008-.0063
	2		Medium Carbon (C=0.25-0.55%)	150	262-754	164-459	197-393	.0012-.0031	.0012-.0031	.0031-.0118	.0012-.0031	.0008-.0063
	3		High Carbon (C=0.55-0.85%)	170	262-656	164-393	197-295	.0012-.0031	.0012-.0024	.0031-.0118	.0012-.0031	.0008-.0063
	4	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	197-590	197-557	197-295	.0012-.0031	.0012-.0028	.0031-.0118	.0012-.0031	.0008-.0063
	5		Hardened	275	197-557	197-525	164-262	.0012-.0028	.0012-.0028	.0031-.0118	.0012-.0028	.0008-.0028
	6		Hardened	350	197-525	197-492	164-262	.0008-.002	.0008-.0016	.002-.0059	.0008-.0024	.0008-.0012
	7	High Alloy Steel (alloying elements>5%)	Annealed	200	131-328	131-295	164-262	.0012-.0028	.0012-.0028	.0039-.0094	.0012-.0028	.0008-.0035
	8		Hardened	325	98-262	98-230	164-262	.0008-.0016	.0008-.002	.002-.0059	.0012-.0024	.0008-.0012
	9	Cast Steel	Low Alloy (alloying elements <5%)	200	262-820	230-656	230-295	.0012-.0031	.0012-.0024	.0031-.0118	.0012-.0028	.0008-.0063
	10		High Alloy (alloying elements >5%)	225	197-557	197-492	197-262	.0012-.002	.0012-.0024	.002-.0059	.0012-.0028	.0008-.0012
M Stainless Steel	11	Stainless Steel Ferritic	Non Hardened	200	197-492	164-459	197-295	.0016-.0028	.0008-.002	.0043-.0138	.0012-.0031	.0008-.0063
	12		Hardened	330	197-393	164-361	164-262	.0008-.0024	.0004-.0012	.002-.0094	.0012-.0024	.0008-.0012
	13	Stainless Steel Austenitic	Austenitic	180	197-459	197-426	197-295	.0012-.0031	.0008-.002	.0043-.0138	.0012-.0031	.0008-.0063
	14		Super Austenitic	200	197-426	164-393	164-262	.0012-.0031	.0008-.002	.0043-.0138	.0012-.0024	.0008-.0063
	15	Stainless Steel Cast Ferritic	Non Hardened	200	197-525	164-492	197-295	.0012-.0031	.0008-.002	.0043-.0138	.0012-.0024	.0008-.0063
	16		Hardened	330	197-361	164-328	164-262	.0008-.002	.0008-.0012	.0039-.0094	.0008-.002	.0008-.0012
	17	Stainless Steel Cast Austenitic	Austenitic	200	197-492	164-459	197-295	.0012-.0031	.0008-.0024	.0043-.0138	.0008-.002	.0008-.0063
	18		Hardened	330	197-328	164-295	164-262	.0008-.002	.0004-.0012	.0039-.0094	.0008-.0016	.0008-.0012
K Cast Iron	28	Malleable Cast Iron	Ferritic (short chips)	130	197-230	197-492	164-262	.0012-.0031	.0012-.0031	.002-.0059	.0012-.0031	.0008-.0012
	29		Pearlitic (long chips)	230	197-492	262-328	197-295	.0012-.0031	.0012-.0024	.0039-.0094	.0012-.0028	.0008-.0047
	30	Grey Cast Iron	Low Tensile Strength	180	230-525	164-459	230-328	.0012-.0031	.0012-.0024	.0035-.0098	.0012-.0028	.0008-.0063
	31		High Tensile Strength	260	131-393	131-361	197-295	.0008-.0024	.0008-.002	.0039-.0094	.0012-.0028	.0008-.0047
	32	Nodular Sg Iron	Ferritic	160	131-361	131-328	230-328	.0012-.0031	.0012-.0028	.0035-.0098	.0012-.0031	.0008-.0063
	33		Pearlitic	260	131-328	131-295	197-295	.0008-.0024	.0008-.002	.0039-.0094	.0012-.0028	.0008-.0047
N Non-Ferrous Metals	34	Aluminium Alloys Wrought	Non Aging	60	656-984	492-820	197-820	.002-.0047	.002-.0059	.0047-.0157	.0016-.0039	.0012-.0059
	35		Aged	100	492-820	328-721	197-492	.002-.0047	.0012-.0039	.0039-.0126	.0012-.0039	.0012-.0063
	36	Aluminium Alloys	Cast	75	328-656	262-492	197-820	.002-.0047	.002-.0059	.0039-.0126	.0012-.0039	.0012-.0063
	37		Cast & Aged	90	393-721	295-525	197-492	.002-.0047	.0012-.0039	.0039-.0118	.0024-.0047	.0008-.0063
	38	Aluminium Alloys	Cast Si 13-22%	130	656-984	492-820	820	.002-.0047	.002-.0059	.0039-.0126	.002-.0047	.0012-.0059
	39	Copper and Copper Alloys	Brass	90	656-984	492-820	197-820	.0024-.0051	.002-.0059	.0047-.0157	.002-.0047	.0012-.0063
	40		Bronze And Non Leaded Copper	100	492-820	328-721	197-492	.002-.0047	.0012-.0039	.0039-.0126	.002-.0047	.0012-.0059
S Heat Resistant Material	19	High Temperature Alloys	Annealed (iron based)	200	98-197	98-164	197	.0012-.0028	.0008-.0016	.0043-.0138	.0012-.0276	.0008-.0063
	20		Aged (iron based)	280	66-164	66-131	164	.0008-.0016	.0004-.0012	.002-.0059	.0012-.0024	.0008-.0012
	21		Annealed (nickel or cobalt based)	250	49-115	49-98	115	.0008-.0016	.0004-.0012	.002-.0059	.0012-.0024	.0008-.0012
	22		Aged (nickel or cobalt based)	350	49-98	49-82	98	.0008-.0016	.0004-.0012	.002-.0059	.0008-.002	.0008-.0012
	23	Titanium Alloys	Pure 99.5 Ti	400Rm	131-262	98-230	98-164	.0008-.0016	.0004-.0012	.0039-.0094	.0008-.002	.0008-.0028
	24		α+β Alloys	1050Rm	66-164	66-148	82-115	.0008-.0016	.0004-.0008	.0039-.0094	.0008-.0016	.0008-.0028
H Hardened Material	25	Extra Hard Steel	Hardened & Tempered	45-50Hrc	49-148	49-115	148	.0008-.0012	.0008	.0012-.0024	.0008-.0012	-
	26			51-55Hrc	49-131	49-98	98	.0008-.0012	.0004	.0012-.0024	.0008-.0012	-

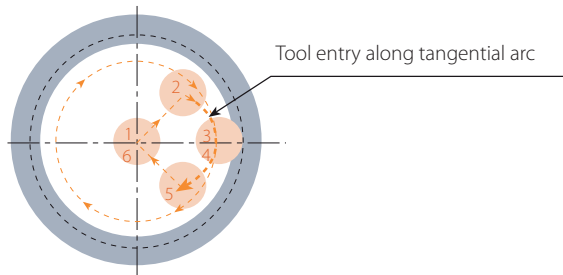
Recommendation:

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	Vargus 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	82-591					
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	82-427	.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 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 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	164-262	262-394	.004-.006	.006-.009	.001-.002	.002-.004
		Grey Cast Iron, Heat Treated	150-300	500-1000	164-262	262-394	.004-.006	.006-.009	.001-.002	.002-.004
		Spher. Graph. Cast Iron	≤200	≤700	164-262	262-394	.004-.006	.006-.009	.001-.002	.002-.004
	Copper	Short Chips, Brass, Bronze, Red Brass	≤200	≤700	328-984	—	.002-.004	.004-.012	.001-.002	.002-.004
N Non-Ferrous Metals	Aluminium/Magnesium	Aluminium, Magnesium Non-Alloy	≤100	≤350	328-1,312	328-1,312	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Wrought Alloy, Breaking Strain (A5) < 14%	≤180	≤600	328-1,312	328-1,312	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Wrought Alloy, Breaking Strain (A5) ≥ 14%	≤180	≤600	328-1,312	328-1,312	.001-.002	.002-.005	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si<10%	≤180	≤600	328-984	328-1,312	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si≥10%	≤180	≤600	—	328-984	.004-.010	.010-.012	.001-.002	.002-.004
		Thermo Plastics	—	—	197-394	197-394	.004-.010	.010-.012	.001-.002	.002-.004
K	Plastic	Thermosetting Plastic	—	—	197-328	197-328	.004-.010	.010-.012	.001-.002	.002-.004
		Fiber Reinforced Plastic	—	—	131-197	197-262	.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]

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