



Industrial Supply Company



Leading Through Innovation



SOLID CARBIDE

THREAD MILLS

GEWINDEFRÄSER

- Threading Large Diameter in High Quality
Available with Chamfer
- Zur Fertigung von Gewinden mit großen Durchmessern in hoher Qualität,
verfügbar mit Fase

SOLID CARBIDE
THREAD
MILLS

Threading Large Diameter in High Quality
Available with Chamfer

◎ : Excellent ○ : Good
Recommended cutting conditions : P.59

						Thread Mill without Coolant Hole			
TYPE									
THREAD FORM						M	MF	UNC	UNF
HOLE TYPE						Max. 2.0xD  Blind/Through Hole	Max. 1.5xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole
TOOL MATERIAL						CARBIDE			
FLUTE TYPE						Helix			
HELIX ANGLE						R15			
SERIES NO.						L1211 (P42)	L1212 (P43)	L1213 (P44)	L1214 (P45)
SURFACE TREATMENT						TiAIN	TiAIN	TiAIN	TiAIN
MODEL									
ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc			
P	1	Non-alloy steel	About 0.15% C	Annealed	125		◎	◎	◎
	2		About 0.45% C	Annealed	190	13	◎	◎	◎
	3		About 0.45% C	Quenched & Tempered	250	25	◎	◎	◎
	4		About 0.75% C	Annealed	270	28	◎	◎	◎
	5		About 0.75% C	Quenched & Tempered	300	32	◎	◎	◎
	6	Low alloy steel		Annealed	180	10	◎	◎	◎
	7			Quenched & Tempered	275	29	◎	◎	◎
	8			Quenched & Tempered	300	32	◎	◎	◎
	9			Quenched & Tempered	350	38	◎	◎	◎
	10	High alloyed steel, and tool steel		Annealed	200	15	◎	◎	◎
	11			Quenched & Tempered	325	35	◎	◎	◎
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○	○
	13		Martensitic	Quenched & Tempered	240	23	○	○	○
	14		Austenitic		180	10	○	○	○
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	◎	◎	◎
	17	Nodular Cast Iron	Ferritic		160	3	◎	◎	◎
	18		Pearlitic		250	25	◎	◎	◎
	19	Malleable cast iron	Ferritic		130		◎	◎	◎
	20		Pearlitic		230	21	◎	◎	◎
N	21	Aluminum-wrought alloy	Not Curable		60		◎	◎	◎
	22		Curable Hardened		100		◎	◎	◎
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		◎	◎	◎
	24		≤ 12% Si, Curable Hardened		90		◎	◎	◎
	25		> 12% Si, Not Curable		130		◎	◎	◎
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		◎	◎	◎
	27		CuZn, CuSnZn (Brass)		90		◎	◎	◎
	28		CuSn, lead-free copper and electrolytic copper		100		◎	◎	◎
	29		Duroplastic, Fiber Reinforced Plastic				◎	◎	◎
	30	Non Metallic Materials	Rubber, Wood, etc.				◎	◎	◎
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15	○	○	○
	32			Cured	280	30	○	○	○
	33		Ni or Co Based	Annealed	250	25	○	○	○
	34			Cured	350	38	○	○	○
	35	Titanium Alloys	Cast		320	34	○	○	○
	36		Pure Titanium		400 Rm		○	○	○
	37		Alpha + Beta Alloys Hardened		1050 Rm		○	○	○
H	38	Hardened steel	Hardened		550	55			
	39		Hardened		630	60			
	40	Chilled Cast Iron	Cast		400	42			
	41	Hardened Cast Iron	Hardened		550	55			

Thread Mill with Coolant Hole			Thread Mill with Coolant Hole & Chamfer					Miniature Thread Mill		Miniature Thread Mill for Hard Materials		Drill & Thread Mill with Chamfer
M	MF	BSP(G)	M	MF	UNC	UNF	NPT	M	UNC	M	UNC	M
Max. 2.0xD  Blind/Through Hole	Max. 1.5xD  Blind/Through Hole	-	Max. 2.0xD  Blind/Through Hole	Max. 1.5xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole	-	Max. 2.0xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole	Max. 2.0xD  Blind/Through Hole
CARBIDE												
Helix			Helix					Helix		Straight		Helix
R15			R15					R15		-		R25
L4211 (P46)	L4212 (P47)	L6215 (P48)	L4271 (P49)	L4272 (P50)	L4273 (P51)	L4274 (P52)	L4276 (P53)	L12D1 (P54)	L12D3 (P55)	L19E1 (P56)	L19E3 (P57)	L41A1/L42A1 (P58)
TiAIN	TiAIN	TiAIN	TiAIN	TiAIN	TiAIN	TiAIN	TiAIN	TiAIN	TiAIN	AlTiN	AlTiN	Bright / TiAIN
												
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			1
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			2
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			3
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			4
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			5
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◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○	7
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◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			21
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			22
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◎	◎	◎	◎	◎	◎	◎	◎	◎	◎			27
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○	○	○	○	○	○	○	○	○	○	◎	◎	32
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										◎	◎	38
										◎	◎	39
										◎	◎	40
										◎	◎	41

M

Solid Carbide Thread Mill for ISO Metric Internal Thread - DIN 13

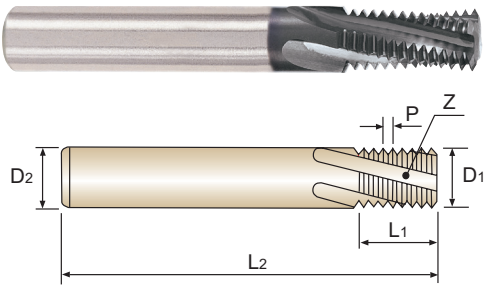
VOLLHARTMETALL GEWINDEFÄHRER für ISO METRISCHES INNENGEWINDE - DIN 13

FRAISES A FILETER CARBURE MONOBLOC POUR FILETAGE ISO INTER MÉTRIQUE - DIN13

Filettature interne, ISO metriche, passo grosso - DIN 13

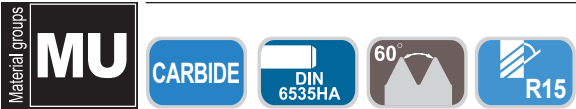
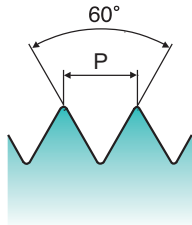
- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.

► Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth

2×D



Recommended Cutting Page : P.59

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	No. of Flute
TIAIN		P	D1	D2	L1	L2	Z
L1211200	M3	0.5	2.2	6	5	57	3
L1211240	M4	0.7	2.9	6	7	57	3
L1211280	M5	0.8	3.8	6	8	57	3
L1211310	M6	1.0	4.5	6	13	57	3
L1211360	M8	1.25	6.0	6	17.5	65	3
L1211420	M10	1.5	7.5	8	21	72	4
L1211500	M12	1.75	9.5	10	26.25	80	4
L1211540	M14	2.0	10.0	10	30	83	4
L1211600	M16	2.0	12.0	12	34	92	4
L1211650	M18	2.5	14.0	14	37.5	92	5
L1211700	M20	2.5	16.0	16	42.5	105	5

* Other coatings are available on your request

MF

Solid Carbide Thread Mill for ISO Metric Internal Thread - DIN 13

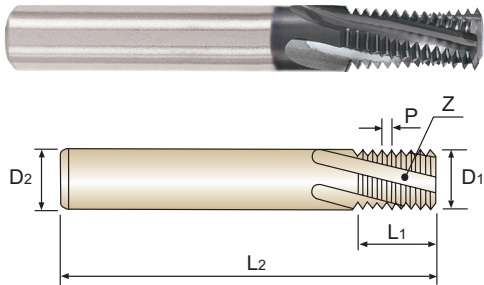
VOLLHARTMETALL GEWINDEFÄHRER für ISO METRISCH - FEIN INNENGEWINDE - DIN 13

FRAISES A FILETER CARBURE MONOBLOC POUR FILETAGE ISO INTER MÉTRIQUE - DIN13

Filettature interne, ISO metriche, passo grosso - DIN 13

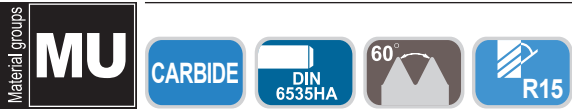
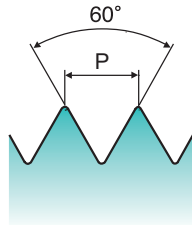
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Thread Depth

1.5×D



Recommended Cutting Page : P.59

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	No. of Flute
TIAIN		P	D1	D2	L1	L2	Z
L1212370	M8	1.0	6.0	6	13	57	3
L1212380	M8	0.75	6.0	6	12.75	57	3
L1212440	M10	1.0	8.0	8	16	63	4
L1212510	M12	1.5	9.5	10	19.5	72	4
L1212520	M12	1.25	9.5	10	18.75	72	4
L1212530	M12	1.0	9.5	10	19	72	4
L1212550	M14	1.5	10.0	10	22.5	83	4
L1212570	M14	1.0	10.0	10	22	83	4
L1212610	M16	1.5	12.0	12	25.5	83	4
L1212620	M16	1.0	12.0	12	25	83	4
L1212670	M18	1.5	14.0	14	28.5	92	5
L1212680	M18	1.0	14.0	14	28	92	5
L1212720	M20	1.5	16.0	16	31.5	92	5
L1212730	M20	1.0	16.0	16	31	92	5

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

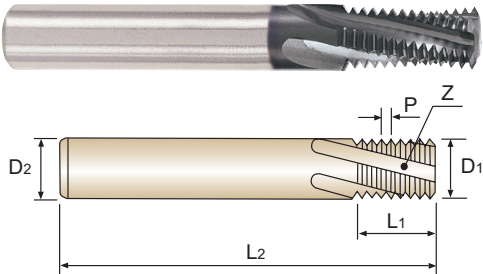
◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

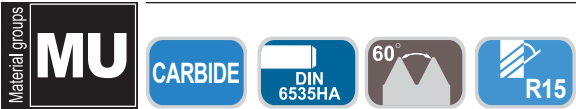
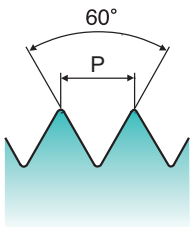
UNC

Solid Carbide Thread Mill for UNC Internal Thread - ANSI B 1.1
● **VOLLHARTMETALL GEWINDEFÄHRER für UNC INNENGEWINDE, ANSI B 1.1**
● **FRAISES A FILETER CARBURE MONOBLOC POUR FILETAGE INTER UNC - ANSI B 1.1**
● **Filettature interne, unificato, passo grosso - ANSI B 1.1**

- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.
- Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth
2×D



Recommended Cutting Page : P.59 Unit : mm

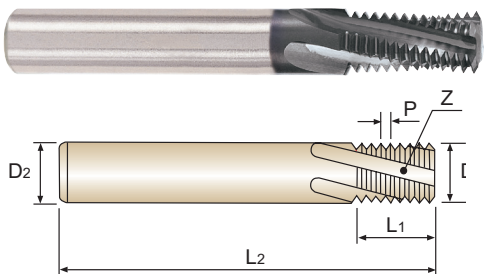
EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter D1	Shank Diameter D2	Thread Length L1	Overall Length L2	No. of Flute Z
TAIIN							
L1213400	1/4	20	4.5	6	14	57	3
L1213440	5/16	18	5.8	6	16.9	65	3
L1213480	3/8	16	7.0	8	20.6	72	4
L1213520	7/16	14	8.0	8	23.6	72	4
L1213560	1/2	13	9.5	10	27.4	80	4
L1213600	9/16	12	10.0	10	31.8	83	4
L1213640	5/8	11	12.0	12	34.6	92	4
L1213700	3/4	10	14.0	14	40.6	104	5

* Other coatings are available on your request

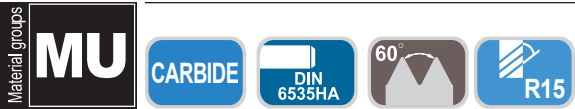
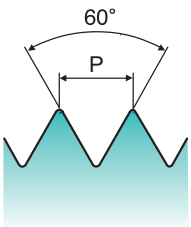
UNF

Solid Carbide Thread Mill for UNF Internal Thread - ANSI B 1.1
● **VOLLHARTMETALL GEWINDEFÄHRER für UNF INNENGEWINDE, ANSI B 1.1**
● **FRAISES A FILETER CARBURE MONOBLOC POUR FILETAGE INTER UNC - ANSI B 1.1**
● **Filettature interne, unificato, passo grosso - ANSI B 1.1**

- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.
- Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth
2×D



Recommended Cutting Page : P.59 Unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter D1	Shank Diameter D2	Thread Length L1	Overall Length L2	No. of Flute Z
TAIIN							
L1214420	1/4	28	5.0	6	13.6	57	3
L1214460	5/16	24	6.0	6	16.9	65	3
L1214500	3/8	24	8.0	8	20.1	72	4
L1214540	7/16	20	8.0	8	24.1	72	4
L1214580	1/2	20	10.0	10	26.7	80	4
L1214620	9/16	18	12.0	12	29.6	83	4
L1214660	5/8	18	12.0	12	33.9	92	4
L1214720	3/4	16	14.0	14	39.7	104	5

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

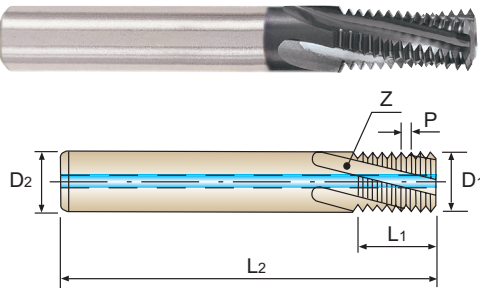
◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

M

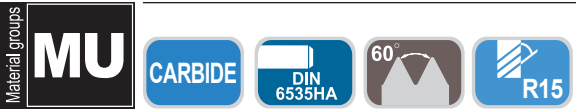
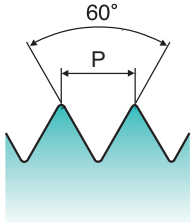
Solid Carbide Thread Mill with Coolant Hole for ISO Metric Internal Thread - DIN 13
VOLLHARTMETALL GEWINDEFÄßER mit KÜHLKANAL für ISO METRISCHES INNENGEWINDE - DIN 13
FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL POUR FILETAGE ISO INTER MÉTRIQUE - DIN13
Con fori di lubrificazione, Filettature interne, ISO metriche, passo grosso - DIN 13

- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.
- Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth

2×D



Recommended Cutting Page : P.59

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	No. of Flute
TAIIN		P	D1	D2	L1	L2	Z
L4211310	M6	1.0	4.5	6	13.0	57	3
L4211360	M8	1.25	6.0	6	17.5	65	3
L4211420	M10	1.5	7.5	8	21.0	72	4
L4211500	M12	1.75	9.5	10	26.25	80	4
L4211540	M14	2.0	10.0	10	30.0	83	4
L4211600	M16	2.0	12.0	12	34.0	92	4
L4211700	M20	2.5	16.0	16	42.5	105	5

* Other coatings are available on your request

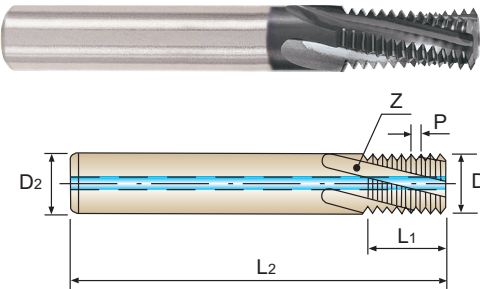
◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	38	10	29	32	38	15	35	15	23	10	26	3	25	21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

MF

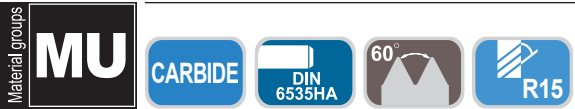
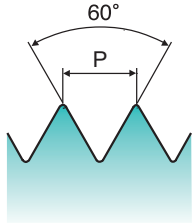
Solid Carbide Thread Mill with Coolant Hole for ISO Metric Internal Thread - DIN 13
VOLLHARTMETALL GEWINDEFÄßER mit KÜHLKANAL für ISO METRISCH - FEIN INNENGEWINDE - DIN 13
FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL POUR FILETAGE ISO INTER MÉTRIQUE - DIN13
Con fori di lubrificazione, Filettature interne, ISO metriche, passo grosso - DIN 13

- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.
- Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth

1.5×D



Recommended Cutting Page : P.59

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	No. of Flute
TAIIN		P	D1	D2	L1	L2	Z
L4212370	M8	1.0	6.0	6	13.0	57	3
L4212380	M8	0.75	6.0	6	12.75	57	3
L4212440	M10	1.0	8.0	8	16.0	63	4
L4212510	M12	1.5	9.5	10	19.5	72	4
L4212520	M12	1.25	9.5	10	18.75	72	4
L4212530	M12	1.0	9.5	10	19.0	72	4
L4212550	M14	1.5	10.0	10	22.5	83	4
L4212570	M14	1.0	10.0	10	22.0	83	4
L4212610	M16	1.5	12.0	12	25.5	83	4
L4212620	M16	1.0	12.0	12	25.0	83	4
L4212670	M18	1.5	14.0	14	28.5	92	5
L4212680	M18	1.0	14.0	14	28.0	92	5
L4212720	M20	1.5	16.0	16	31.5	92	5
L4212730	M20	1.0	16.0	16	31.0	92	5

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	38	10	29	32	38	15	35	15	23	10	26	3	25	21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

BSP(G)

Solid Carbide Thread Mill with Coolant Hole for BSP(G) Internal/External Thread

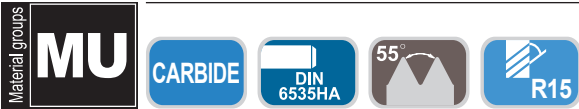
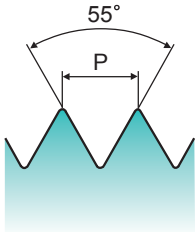
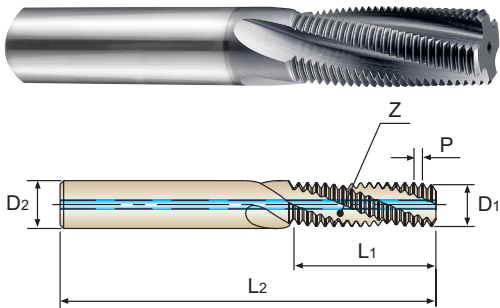
VOLLHARTMETALL GEWINDEFÄSER mit KÜHLKANAL für BSP (G) INNEN- /AUSSENGEWINDE

FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL POUR FILETAGE INTERNE/EXTERNE BSP(G)

Fresa con fori di lubrificazione, filettature interne ed esterne, BSP(G)

- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.

► Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Recommended Cutting Page : P.59

Unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	No. of Flute
TiAIN			D1	D2	L1	L2	Z
L6215020	1/16	28	5.9	6	16.3	65	3
L6215200	1/8	28	7.9	8	20.0	70	4
L6215400	1/4	19	9.9	10	26.7	80	4
L6215480	3/8	19	13.9	14	33.4	92	4
L6215560	1/2	14	15.9	16	43.5	104	5
L6215700	3/4	14	17.9	18	34.5	100	5
L6215780	1	11	19.9	20	34.6	100	5

* Other coatings are available on your request

M

Solid Carbide Thread Mill with Coolant Hole & Chamfer for ISO Metric Internal Thread - DIN 13

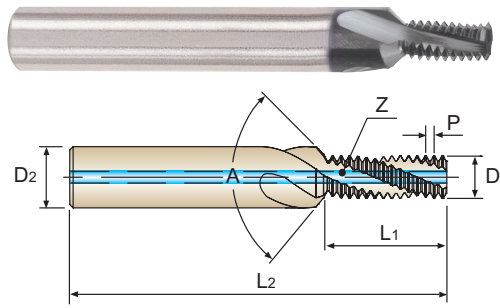
VOLLHARTMETALL GEWINDEFÄSER mit KÜHLKANAL & FASE für METRISCHES INNENGEWINDE - DIN 13

FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL ET CHANFREIN POUR FILETAGE ISO INTER MÉTRIQUE DIN13

Con fori di lubrificazione e taglienti per smussi, filettature interne, ISO metriche - DIN 13

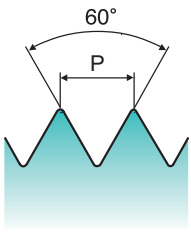
- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.

► Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth

2×D



Recommended Cutting Page : P.60

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	Angle	No. of Flute
TiAIN		P	D1	D2	L1	L2	A	Z
L4271310	M6	1.0	4.8	8	12.4	62	90°	3
L4271360	M8	1.25	6.5	10	16.8	74	90°	3
L4271420	M10	1.5	8.2	12	20.15	80	90°	4
L4271500	M12	1.75	9.9	14	25.25	90	90°	4
L4271540	M14	2.0	11.6	16	28.85	100	90°	4
L4271600	M16	2.0	13.6	18	32.85	102	90°	4

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M					K				
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S					H				
	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M					K				
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S					H				
	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

MF

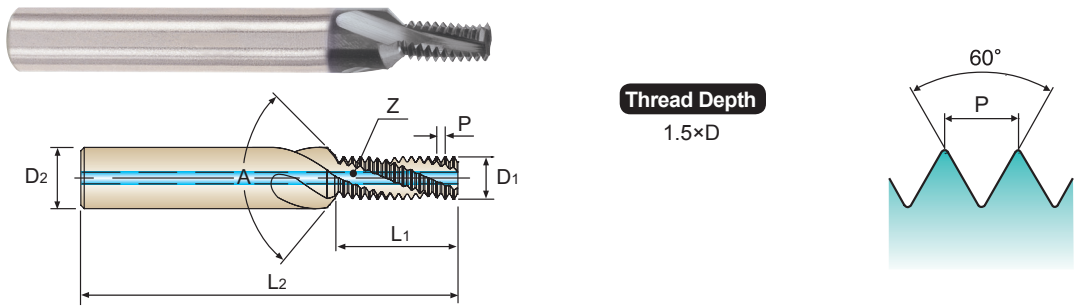
Solid Carbide Thread Mill with Coolant Hole & Chamfer for ISO Metric Internal Thread - DIN 13

VOLLHARTMETALL GEWINDEFÄßER mit KÜHLKANAL & FASE für METRISCH - FEIN INNENGEWINDE - DIN 13

FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL ET CHANFREIN POUR FILETAGE ISO INTER MÉTRIQUE DIN13

Con fori di lubrificazione e taglienti per smussi, filettature interne, ISO metriche, passo fine - DIN 13

- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.
- Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth

1.5×D



Recommended Cutting Page : P.60

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	Angle	No. of Flute
TiAlN		P	D1	D2	L1	L2	A	Z
L4272370	M8	1.0	6.7	10	12.4	74	90°	3
L4272430	M10	1.25	8.3	12	15.9	80	90°	4
L4272440	M10	1.0	8.7	12	15.4	80	90°	4
L4272510	M12	1.5	10.0	14	18.65	90	90°	4
L4272520	M12	1.25	10.3	14	18.3	80	90°	4
L4272530	M12	1.0	10.7	14	18.4	90	90°	4
L4272550	M14	1.5	12.0	16	21.65	100	90°	4
L4272610	M16	1.5	14.0	18	24.65	102	90°	5

* Other coatings are available on your request

UNC

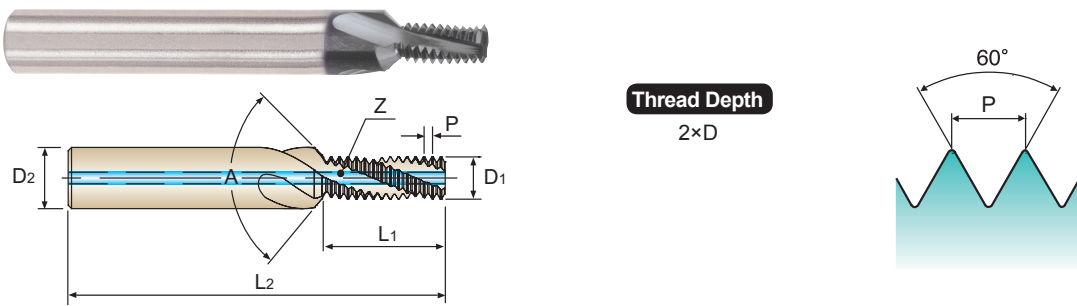
Solid Carbide Thread Mill with Coolant Hole & Chamfer for UNC Internal Thread - ANSI B 1.1

VOLLHARTMETALL GEWINDEFÄßER mit KÜHLKANAL & FASE für UNC INNENGEWINDE - ANSI B 1.1

FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL ET CHANFREIN POUR FILETAGE INTER UNC - ANSI B 1.1

Con fori di lubrificazione e taglienti per smussi, filettature interne, unificato, passo grosso - ANSI B 1.1

- Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.
- Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth

2×D



Recommended Cutting Page : P.60

Unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Overall Length	Angle	No. of Flute
TiAlN			D1	D2	L1	L2	A	Z
L4273400	1/4	20	4.8	8	13.3	62	90°	3
L4273440	5/16	18	6.2	10	16.18	74	90°	3
L4273480	3/8	16	7.6	12	19.8	80	90°	4
L4273520	7/16	14	8.9	12	22.62	80	90°	4
L4273560	1/2	13	10.3	14	26.32	90	90°	4
L4273600	9/16	12	11.7	16	30.63	100	90°	4
L4273640	5/8	11	13.1	18	33.41	102	90°	4
L4273700	3/4	10	16.0	20	39.29	110	90°	5

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M				K			
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S				H			
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M				K			
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S				H			
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

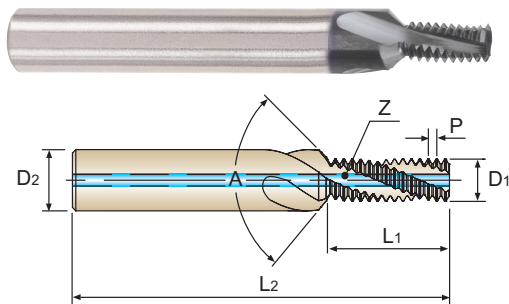
UNF

Solid Carbide Thread Mill with Coolant Hole & Chamfer for UNF Internal Thread - ANSI B 1.1

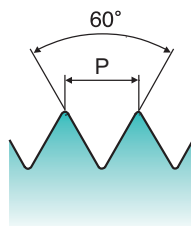
-  **VOLLHARTMETALL GEWINDEFÄHRER mit KÜHLKANAL & FASE für UNF INNENGEWINDE - ANSI B 1.1**
-  **FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL ET CHANFREIN POUR FILETAGE INTER UNC - ANSI B 1.1**
-  **Con fori di lubrificazione e taglienti per smussi, filettature interne, unificato, passo fine - ANSI B 1.1**

► Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.

► Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Thread Depth
2×D



Recommended Cutting Page : P.60

Unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter D1	Shank Diameter D2	Thread Length L1	Overall Length L2	Angle A	No. of Flute Z
TiAIN								
L4274420	1/4	28	5.1	8	13.21	62	90°	3
L4274460	5/16	24	6.5	10	16.37	74	90°	3
L4274500	3/8	24	8.1	12	19.54	80	90°	4
L4274540	7/16	20	9.4	12	22.19	80	90°	4
L4274580	1/2	20	11.0	14	26	90	90°	4
L4274620	9/16	18	12.4	16	28.88	100	90°	4
L4274660	5/8	18	14.0	18	33.12	102	90°	5
L4274720	3/4	16	17.0	20	38.86	110	90°	5

* Other coatings are available on your request

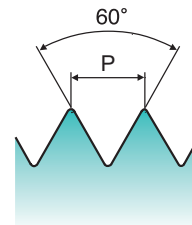
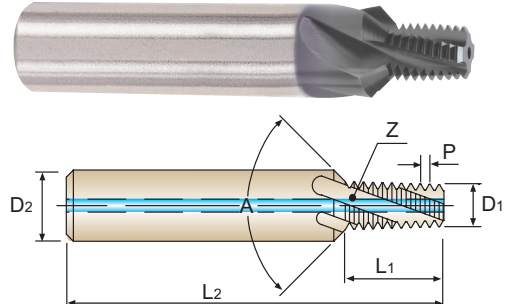
NPT

Solid Carbide Thread Mill with Coolant Hole & Chamfer for NPT Thread - ANSI B 1.20.1

-  **VOLLHARTMETALL GEWINDEFÄHRER mit KÜHLKANAL & FASE für NPT INNENGEWINDE - ANSI B 1.20.1**
-  **FRAISES A FILETER CARBURE MONOBLOC AVEC ARROSAGE CENTRAL ET CHANFREIN POUR FILETAGE INTER NPT - ANSI B 1.20.1**
-  **Con fori di lubrificazione e taglienti per smussi, filettature interne, unificato, passo fine - ANSI B 1.1**

► Easy to cut threads even for exotic materials like Nickel, Titanium and their alloys.

► Problemloses Gewindeschneiden sogar in exotischen Werkstoffen, wie Nickel, Titan und ihre Legierungen.



Recommended Cutting Page : P.60

Unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter D1	Shank Diameter D2	Thread Length L1	Overall Length L2	Angle A	No. of Flute Z
TiAIN								
L4276020	NPT1/16	27	5.9	10	8.9	64	90°	3
L4276200	NPT1/8	27	7.8	12	8.9	70	90°	4
L4276400	NPT1/4	18	10.05	16	13.4	81	90°	4
L4276480	NPT3/8	18	13.45	18	13.4	81	90°	4

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



L12D1 SERIES

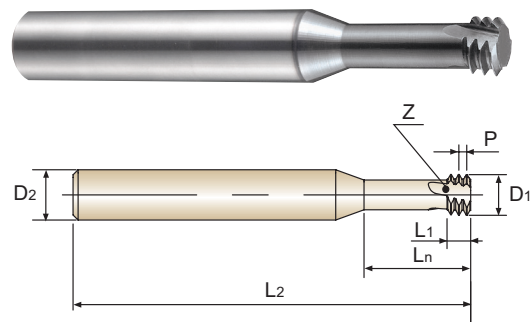
M

Solid Carbide Miniature Thread Mill for ISO Metric Internal Thread - DIN13

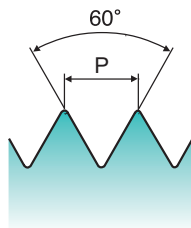
● VOLLHARTMETALL MINI-GEWINDEFÄHRER für ISO METRISCHE INNENGEWINDE - DIN13
● FRAISES A FILETER À TOUBILLONNER CARBURE MONOBLOC POUR FILETAGE ISO INTER MÉTRIQUE - DIN13
● Mini frese per filettature interne ISO metriche passo grosso - DIN 13

► Short thread length

► Kurze Gewindelänge



Thread Depth
2×D



Recommended Cutting Page : P.60

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Neck Length	Overall Length	No. of Flute
TiAlN		P	D1	D2	L1	Ln	L2	Z
L12D1010	M1	0.25	0.70	3	0.75	2.1	30	3
L12D1050	M1.2	0.25	0.90	3	0.75	2.5	30	3
L12D1070	M1.4	0.3	1.04	3	0.90	2.9	30	3
L12D1090	M1.6	0.35	1.18	3	1.05	3.4	30	3
L12D1130	M2	0.4	1.52	6	1.2	4.2	57	3
L12D1150	M2.2	0.45	1.66	6	1.35	4.6	57	3
L12D1170	M2.5	0.45	1.96	6	1.35	5.3	57	3
L12D1200	M3	0.5	2.4	6	1.5	6.3	57	3
L12D1240	M4	0.7	3.16	6	2.1	8.4	57	3
L12D1280	M5	0.8	4.04	6	2.4	10.5	57	3
L12D1310	M6	1.0	4.8	6	3.0	12.6	57	3
L12D1360	M8	1.25	6.5	8	3.75	16.8	63	3
L12D1420	M10	1.5	8.2	10	4.5	21.0	73	3
L12D1500	M12	1.75	9.9	10	5.25	25.2	73	3

* Other coatings are available on your request



THREAD MILLS

L12D3 SERIES

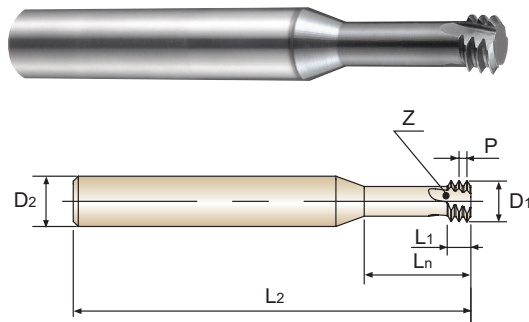
UNC

Solid Carbide Miniature Thread Mill for UNC Internal Thread - ANSI B 1.1

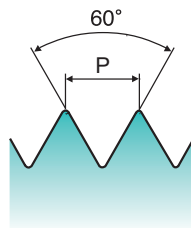
● VOLLHARTMETALL MINI-GEWINDEFÄHRER für UNC INNENGEWINDE - ANSI B 1.1
● FRAISES A FILETER À TOUBILLONNER CARBURE MONOBLOC POUR FILETAGE INTER UNC- ANSI B 1.1
● Mini frese per filettature interne unificato passo grosso - ANSI B 1.1

► Short thread length

► Kurze Gewindelänge



Thread Depth
2×D



Recommended Cutting Page : P.61

Unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Neck Length	Overall Length	No. of Flute
TiAlN			D1	D2	L1	Ln	L2	Z
L12D3040	#1	64	1.38	6	1.19	3.9	57	3
L12D3080	#2	56	1.64	6	1.36	4.6	57	3
L12D3160	#4	40	2.08	6	1.91	6.0	57	3
L12D3240	#6	32	2.55	6	2.38	7.4	57	3
L12D3280	#8	32	3.21	6	2.38	8.7	57	3
L12D3320	#10	24	3.56	6	3.18	10.1	57	3
L12D3360	#12	24	4.22	6	3.18	11.5	57	3
L12D3400	1/4	20	4.83	6	3.81	13.3	57	3
L12D3440	5/16	18	6.24	8	4.23	16.7	63	3
L12D3480	3/8	16	7.62	8	4.76	20.0	63	3
L12D3520	7/16	14	8.94	10	5.44	23.3	73	3

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



L19E1 SERIES

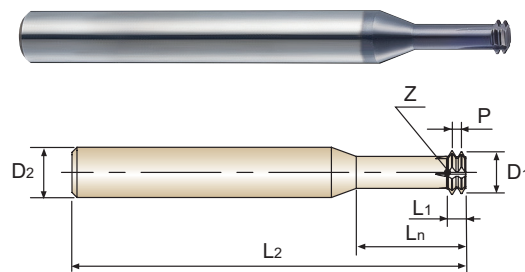
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Solid Carbide Miniature Thread Mill for Hard Materials, ISO Metric Internal Thread - DIN13

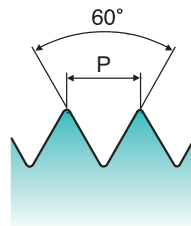
● VOLLHARTMETALL MINI-GEWINDEFÄHRER für GEHÄRTETE MATERIALIEN, ISO METRISCHE INNENGEWINDE - DIN13
● FRAISES À TOURBILLONNER CARBURE MONOBLOC POUR MATÉRIEAUX DURS, FILETAGE ISO INTER MÉTRIQUE - DIN13
● Mini frese per acciai temprati ISO metriche passo grosso - DIN 13

- ▶ Short thread length
- ▶ Straight Flute
- ▶ Left hand Cut (CNC code : M04)
- ▶ The work direction is from top to bottom (Climb Milling)
- ▶ For hard materials up to HRC62

- ▶ Kurze Gewindelänge
- ▶ Linksschneidend, geradegenutet
- ▶ Linksschneidend (CNC Befehl : M04)
- ▶ Die Fräsrictung ist von oben nach unten (Gleichlauf)
- ▶ Für gehärtete Materialien bis zu HRC62



Thread Depth
2×D



Recommended Cutting Page : P.61

Unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Neck Length	Overall Length	No. of Flute
AITIN	[D]	P	D1	D2	L1	Ln	L2	Z
L19E1130	M2	0.4	1.52	6	0.8	4.2	57	4
L19E1150	M2.2	0.45	1.66	6	0.9	4.6	57	4
L19E1170	M2.5	0.45	1.96	6	0.9	5.3	57	4
L19E1200	M3	0.5	2.4	6	1.0	6.3	57	4
L19E1240	M4	0.7	3.16	6	1.4	8.4	57	4
L19E1280	M5	0.8	4.04	6	1.6	10.5	57	4
L19E1310	M6	1.0	4.8	6	2.0	12.6	57	5
L19E1360	M8	1.25	6.5	8	2.5	16.8	63	5
L19E1420	M10	1.5	8.2	10	3.0	21.0	73	6
L19E1500	M12	1.75	9.9	10	3.5	25.2	73	6

* Other coatings are available on your request



THREAD MILLS

L19E3 SERIES

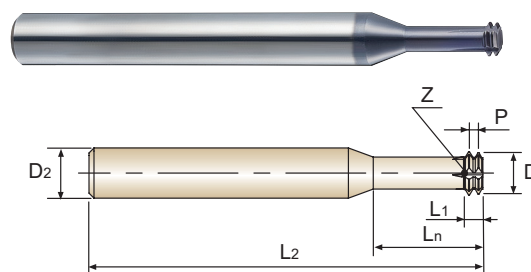
UNC

Solid Carbide Miniature Thread Mill for Hard Materials, UNC Internal Thread - ANSI B 1.1

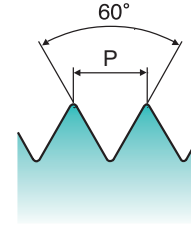
● VOLLHARTMETALL MINI-GEWINDEFÄHRER für GEHÄRTETE MATERIALIEN, UNC INNENGEWINDE - ANSI B 1.1
● FRAISES À TOURBILLONNER CARBURE MONOBLOC POUR MATÉRIEAUX DURS POUR FILETAGE INTER UNC - ANSI B 1.1
● Mini frese per acciai temprati unificato passo grosso - ANSI B 1.1

- ▶ Short thread length
- ▶ Straight Flute
- ▶ Left hand Cut (CNC code : M04)
- ▶ The work direction is from top to bottom (Climb Milling)
- ▶ For hard materials up to HRC62

- ▶ Kurze Gewindelänge
- ▶ Linksschneidend, geradegenutet
- ▶ Linksschneidend (CNC Befehl : M04)
- ▶ Die Fräsrictung ist von oben nach unten (Gleichlauf)
- ▶ Für gehärtete Materialien bis zu HRC62



Thread Depth
2×D



Recommended Cutting Page : P.61

Unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Neck Length	Overall Length	No. of Flute
AITIN	[D]		D1	D2	L1	Ln	L2	Z
L19E3080	#2	56	1.64	6	0.91	4.6	57	4
L19E3160	#4	40	2.08	6	1.27	6.0	57	4
L19E3240	#6	32	2.55	6	1.59	7.4	57	4
L19E3280	#8	32	3.21	6	1.59	8.7	57	4
L19E3320	#10	24	3.56	6	2.12	10.1	57	4
L19E3360	#12	24	4.22	6	2.12	11.5	57	4
L19E3400	1/4	20	4.83	6	2.54	13.3	57	5
L19E3440	5/16	18	6.24	8	2.82	16.7	63	5
L19E3480	3/8	16	7.62	8	3.18	20.0	63	6
L19E3520	7/16	14	8.94	10	3.63	23.3	73	6

* Other coatings are available on your request

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended						○	○	○	○	○	○	○	○	○	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended											◎	◎	◎	◎	◎	○	○	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended						○	○	○	○	○	○	○	○	○	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended											◎	◎	◎	◎	◎	○	○	◎	◎	◎



UNCOATED

L41A1 SERIES

TiAIN

L42A1 SERIES

M

Solid Carbide Drill and Thread Mill with Chamfer for ISO Metric Internal Thread - DIN 13

VOLLHARTMETALL BOHRGEWINDEFÄßER MIT SENKFÄSE für ISO METRISCHE INNENGWINDE - DIN 13

FRAISES À FILETER ET À PERÇER CARBURE MONOBLOC AVEC CHANFREIN POUR FILETAGE INTER - DIN 13

Fresa fora, fileta e smussa, filettature interne, ISO metriche passo grosso - DIN 13

▶ No. of Flute : 2

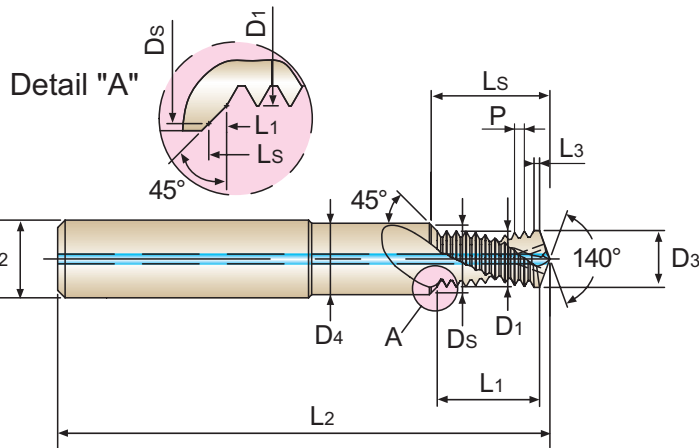
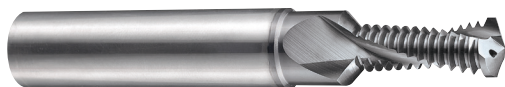
▶ Drill Point : 140° / Countersink : 90°

▶ Drilling, Chamfering and Thread milling

▶ Anz. der Nuten : 2

▶ 140° Spitzenwinkel, 90° Senkwinkel

▶ Bohren, Senken und Gewindefräsen



Thread Depth

2xD

Material groups
GGMaterial groups
AI

CARBIDE

DIN
6535HA

60°

Recommended Cutting Page : P.61

Unit : mm

EDP No.		Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Effect. Diameter	Drill Diameter	Max. C'sink	Thread Length	Effect. Length	Drill Length	Overall Length
Bright	TiAIN	D	P	D1	D2	Ds	D3	D4	L1	Ls	L3	L2
L41A1310	L42A1310	M6	1.0	4.75	8	6.3	5.00	6.6	13.00	14.68	1.00	62
L41A1360	L42A1360	M8	1.25	6.35	10	8.3	6.75	9.0	16.27	18.48	1.25	74
L41A1420	L42A1420	M10	1.5	7.95	12	10.3	8.50	11.0	21.05	23.77	1.50	79
L41A1500	L42A1500	M12	1.75	9.95	14	12.3	10.25	13.5	24.21	27.25	1.50	89
L41A1540	L42A1540	M14	2.0	11.20	16	14.3	12.00	15.5	29.58	33.32	1.50	102

* Other coatings are available on your request



THREAD MILLS

RECOMMENDED CUTTING CONDITIONS

EMPFOHLENE SCHNEIDKONDITIONEN

				L1211	L1212	L1213	L1214	L4211	L4212	L6215
ISO	VDI 3323	Material Description	HB	HRC	Vc (m/min)					
P	1	Non-alloy steel	125		80-120	80-120	80-120	80-120	80-120	80-120
	2		190	13	80-120	80-120	80-120	80-120	80-120	80-120
	3		250	25	80-120	80-120	80-120	80-120	80-120	80-120
	4		270	28	80-120	80-120	80-120	80-120	80-120	80-120
	5		300	32	80-120	80-120	80-120	80-120	80-120	80-120
	6	Low alloy steel	180	10	80-120	80-120	80-120	80-120	80-120	80-120
	7		275	29	80-120	80-120	80-120	80-120	80-120	80-120
	8		300	32	80-120	80-120	80-120	80-120	80-120	80-120
	9		350	38	80-120	80-120	80-120	80-120	80-120	80-120
	10	High alloyed steel, and tool steel	200	15	80-120	80-120	80-120	80-120	80-120	80-120
	11		325	35	80-120	80-120	80-120	80-120	80-120	80-120
M	12	Stainless steel	200	15	40-80	40-80	40-80	40-80	40-80	40-80
	13		240	23	40-80	40-80	40-80	40-80	40-80	40-80
	14		180	10	40-80	40-80	40-80	40-80	40-80	40-80
K	15	Grey cast iron	180	10	50-100	50-100	50-100	50-100	50-100	50-100
	16		260	26	50-100	50-100	50-100	50-100	50-100	50-100
	17	Nodular cast iron	160	3	50-100	50-100	50-100	50-100	50-100	50-100
	18		250	25	50-100	50-100	50-100	50-100	50-100	50-100
	19	Malleable cast iron	130		50-100	50-100	50-100	50-100	50-100	50-100
	20		230	21	50-100	50-100	50-100	50-100	50-100	50-100
N	21	Aluminum-wrought alloy	60		100-300	100-300	100-300	100-300	100-300	100-300
	22		100		100-300	100-300	100-300	100-300	100-300	100-300
	23	Aluminum-cast, alloyed	75		100-300	100-300	100-300	100-300	100-300	100-300
	24		90		100-300	100-300	100-300	100-300	100-300	100-300
	25		130		100-300	100-300	100-300	100-300	100-300	100-300
	26	Copper and Copper Alloys (Bronze / Brass)	110		100-300	100-300	100-300	100-300	100-300	100-300
	27		90		100-300	100-300	100-300	100-300	100-300	100-300
	28		100		100-300	100-300	100-300	100-300	100-300	100-300
	29	Non Metallic Materials			100-300	100-300	100-300	100-300	100-300	100-300
	30				100-300	100-300	100-300	100-300	100-300	100-300
S	31	Heat Resistant Super Alloys	200	15	20-60	20-60	20-60	20-60	20-60	20-60
	32		280	30	20-60	20-60	20-60	20-60	20-60	20-60
	33		250	25	20-60	20-60	20-60	20-60	20-60	20-60
	34		350	38	20-60	20-60	20-60	20-60	20-60	20-60
	35		320	34	20-60	20-60	20-60	20-60	20-60	20-60
	36	Titanium Alloys	400 Rm		20-60	20-60	20-60	20-60	20-60	20-60
	37		1050 Rm		20-60	20-60	20-60	20-60	20-60	20-60
H	38	Hardened steel	550	55						
	39		630	60						
	40	Chilled Cast Iron	400	42						
	41	Hardened Cast Iron	550	55						

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	130	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended										◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC																				
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎										

					L4271	L4272	L4273	L4274	L4276	L12D1
ISO	VDI 3323	Material Description	HB	HRc	Vc (m/min)					
P	1	Non-alloy steel	125		80-120	80-120	80-120	80-120	80-120	80-120
	2		190	13	80-120	80-120	80-120	80-120	80-120	80-120
	3		250	25	80-120	80-120	80-120	80-120	80-120	80-120
	4		270	28	80-120	80-120	80-120	80-120	80-120	80-120
	5		300	32	80-120	80-120	80-120	80-120	80-120	80-120
	6	Low alloy steel	180	10	80-120	80-120	80-120	80-120	80-120	80-120
	7		275	29	80-120	80-120	80-120	80-120	80-120	80-120
	8		300	32	80-120	80-120	80-120	80-120	80-120	80-120
	9		350	38	80-120	80-120	80-120	80-120	80-120	80-120
	10	High alloyed steel, and tool steel	200	15	80-120	80-120	80-120	80-120	80-120	80-120
	11		325	35	80-120	80-120	80-120	80-120	80-120	80-120
M	12	Stainless steel	200	15	40-80	40-80	40-80	40-80	40-80	40-80
	13		240	23	40-80	40-80	40-80	40-80	40-80	40-80
	14		180	10	40-80	40-80	40-80	40-80	40-80	40-80
K	15	Grey cast iron	180	10	50-100	50-100	50-100	50-100	50-100	50-100
	16		260	26	50-100	50-100	50-100	50-100	50-100	50-100
	17	Nodular cast iron	160	3	50-100	50-100	50-100	50-100	50-100	50-100
	18		250	25	50-100	50-100	50-100	50-100	50-100	50-100
	19	Malleable cast iron	130		50-100	50-100	50-100	50-100	50-100	50-100
	20		230	21	50-100	50-100	50-100	50-100	50-100	50-100
N	21	Aluminum-wrought alloy	60		100-300	100-300	100-300	100-300	100-300	100-300
	22		100		100-300	100-300	100-300	100-300	100-300	100-300
	23	Aluminum-cast, alloyed	75		100-300	100-300	100-300	100-300	100-300	100-300
	24		90		100-300	100-300	100-300	100-300	100-300	100-300
	25		130		100-300	100-300	100-300	100-300	100-300	100-300
	26	Copper and Copper Alloys (Bronze / Brass)	110		100-300	100-300	100-300	100-300	100-300	100-300
	27		90		100-300	100-300	100-300	100-300	100-300	100-300
	28		100		100-300	100-300	100-300	100-300	100-300	100-300
	29	Non Metallic Materials			100-300	100-300	100-300	100-300	100-300	100-300
	30				100-300	100-300	100-300	100-300	100-300	100-300
S	31	Heat Resistant Super Alloys	200	15	20-60	20-60	20-60	20-60	20-60	20-60
	32		280	30	20-60	20-60	20-60	20-60	20-60	20-60
	33		250	25	20-60	20-60	20-60	20-60	20-60	20-60
	34		350	38	20-60	20-60	20-60	20-60	20-60	20-60
	35		320	34	20-60	20-60	20-60	20-60	20-60	20-60
	36	Titanium Alloys	400 Rm		20-60	20-60	20-60	20-60	20-60	20-60
	37		1050 Rm		20-60	20-60	20-60	20-60	20-60	20-60
H	38	Hardened steel	550	55						
	39		630	60						
	40	Chilled Cast Iron	400	42						
	41	Hardened Cast Iron	550	55						

					L12D3	L19E1	L19E3	L41A1 L42A1
VDI 3323	Vc (m/min)							
1	80-120							
2	80-120							
3	80-120							
4	80-120							
5	80-120							
6	80-120	80-120	80-120					
7	80-120	80-120	80-120					
8	80-120	80-120	80-120					
9	80-120	80-120	80-120					
10	80-120	80-120	80-120					
11	80-120	80-120	80-120					
12	40-80	40-80	40-80					
13	40-80	40-80	40-80					
14	40-80	40-80	40-80					
15	50-100	50-100	50-100	80-150				
16	50-100	50-100	50-100	80-150				
17	50-100	50-100	50-100	80-150				
18	50-100	50-100	50-100	80-150				
19	50-100	50-100	50-100	80-150				
20	50-100	50-100	50-100	80-150				
21	100-300			100-300				
22	100-300			100-300				
23	100-300			100-300				
24	100-300			100-300				
25	100-300			100-300				
26	100-300			100-300				
27	100-300			100-300				
28	100-300			100-300				
29	100-300			80-150				
30	100-300			80-150				
31	20-60	20-60	20-60					
32	20-60	20-60	20-60					
33	20-60	20-60	20-60					
34	20-60	20-60	20-60					
35	20-60	20-60	20-60					
36	20-60	20-60	20-60					
37	20-60	20-60	20-60					
38		25-60	25-60					
39		25-50	25-50					
40		25-70	25-70					
41		25-60	25-60					

TO CALCULATE SPEED & FEED RATES
SCHNITTGESCHWINDIGKEIT & VORSCHUB KALKULIEREN

Calculate R.P.M of Cutter

$$n = \frac{1000 \times V}{d \times \pi}$$

Calculate Feed per Revolution

$$F_1 = F_z \times Z \times N$$

Finally Calculate Feed at Tool Center Line

$$F_2 = \frac{F_1 \times (D - d)}{D}$$

N	RPM
V	Recommended Cutting Speed
d	Diameter of Cutter
Fz	Recommended Feed per Tooth
Z	Number of Teeth
F2	Feed at Center Line of Cutting
F1	Feed at Cutting Edge
D	Major Diameter of Component

For Thread Mills

unit : mm

Materials	Hardness (HB)	Strength (N/mm ²)	Feed per Tooth (fz)	
			Cutter Diameter ≤Ø8.0	Cutter Diameter >Ø8.0
Low Carbon Steels	≤ 200	≤ 700	0.02 - 0.04	0.04 - 0.10
Medium Carbon Steels High Carbon Steels	≤ 250	≤ 850	0.02 - 0.04	0.04 - 0.10
Alloy Steels	≤ 250	≤ 850	0.02 - 0.04	0.04 - 0.10
Heat Treated Steels	≤ 400	≤ 1400	0.02 - 0.04	0.04 - 0.10
Stainless Steels	≤ 300	≤ 1000	0.01 - 0.02	0.02 - 0.06
Cast Iron	≤ 300	≤ 1000	0.02 - 0.04	0.04 - 0.10
Chrome-Nickel Alloys Titanium Alloys	≤ 350	≤ 1200	0.01 - 0.02	0.02 - 0.06
Non Ferrous Materials	≤ 200	≤ 700	0.03 - 0.07	0.05 - 0.10

For Drill and Thread Mills

unit : mm

Material	Hardness (HB)	Strength (N/mm ²)	Fz(Threading) - Feed per Tooth		Fdr(Drilling) - Feed per revolution	
			Cutter Diameter ≤Ø8.0	Cutter Diameter >Ø8.0	Cutter Diameter ≤Ø8.0	Cutter Diameter >Ø8.0
Cast Iron	≤ 200	≤ 700	0.03-0.08	0.08-0.12	0.10-0.20	0.20-0.25
Aluminium Aluminium-alloy Magnesium	≤ 180	≤ 600	0.05-0.10	0.10-0.15	0.10-0.20	0.20-0.30
Plastics	-	-	0.05-0.10	0.10-0.15	0.10-0.20	0.20-0.30

For Hard Material Miniature Thread Mills

unit : mm

Material	Hardness	Strength (N/mm ²)	Feed(mm/tooth)	
			Cutter Diameter ≤Ø6.0	Cutter Diameter >Ø6.0
Alloy Steel	295-415HB	1000-1400	0.02-0.04	0.04-0.06
Stainless Steel	280-415HB	950-1250	0.02-0.04	0.04-0.06
Cast Iron	≤ HB300	≤ 1000	0.03-0.05	0.05-0.07
Chrome-Nickel Alloys Titanium Alloys	≤ HB445	≤ 1500	0.02-0.03	0.03-0.05
Hardened Material	45-50HRc		0.03-0.05	0.05-0.07
	51-55HRc		0.02-0.04	0.04-0.06
	56-62HRc		0.01-0.03	0.03-0.05