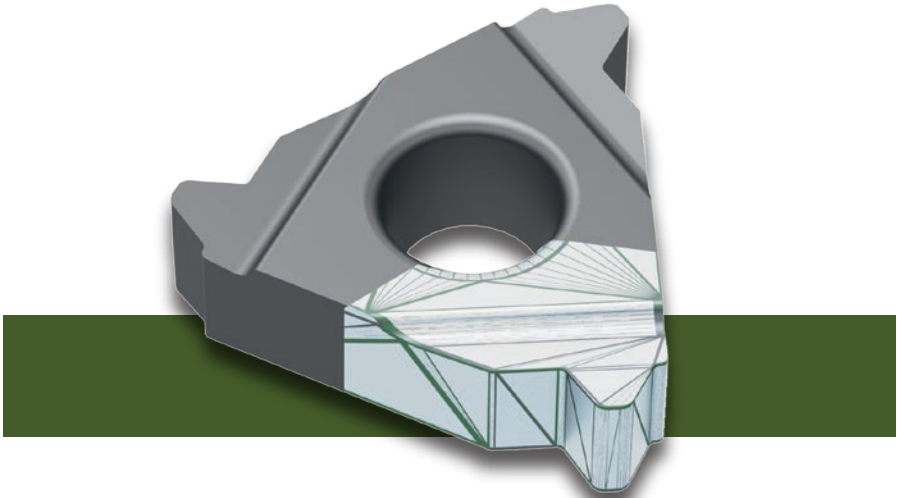


THREAD TURNING



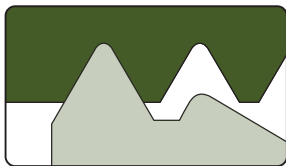
LAMINA
TECHNOLOGIES

Insert Ordering Code

Lamina threading line provides a large range of high quality standard threading inserts.

ISO	1.5	Multitooth	ER	16	V	Grade																																						
Profile Partial Profile 60° 55° Full Profile ISO METRIC UN WHITWORTH BSPT MJ NPT NPTF TRAPEZ ACME STUB ACME AM. BUTTRESS ROUND (DIN 405) DIN 20400 PG SAGENGWINDE UNJ API API ROUND BUT. CASING EXTREME LINE	Pitch Partial Profile <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>mm</th> <th>tpi</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0.5-1.5</td> <td>48-16</td> </tr> <tr> <td>G</td> <td>1.75-3.0</td> <td>14-8</td> </tr> <tr> <td>AG</td> <td>0.5-3.0</td> <td>48-8</td> </tr> <tr> <td>N</td> <td>3.5-5.0</td> <td>7-5</td> </tr> <tr> <td>Q</td> <td>5.5-6.0</td> <td>4.5-4</td> </tr> </tbody> </table> Full Profile <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>mm</th> <th>tpi</th> </tr> </thead> <tbody> <tr> <td></td> <td>0.35-6.0</td> <td>72-4</td> </tr> </tbody> </table>		mm	tpi	A	0.5-1.5	48-16	G	1.75-3.0	14-8	AG	0.5-3.0	48-8	N	3.5-5.0	7-5	Q	5.5-6.0	4.5-4		mm	tpi		0.35-6.0	72-4	Multitooth 2M 3M	Type of insert HER External right handed HEL External left handed HIR Internal right handed HIL Internal left handed	Insert size <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>L</th> <th>I.C.</th> </tr> </thead> <tbody> <tr> <td>06</td> <td>4.00</td> </tr> <tr> <td>08</td> <td>5.00</td> </tr> <tr> <td>11</td> <td>6.35</td> </tr> <tr> <td>16</td> <td>9.525</td> </tr> <tr> <td>22</td> <td>12.70</td> </tr> <tr> <td>27</td> <td>15.875</td> </tr> </tbody> </table>	L	I.C.	06	4.00	08	5.00	11	6.35	16	9.525	22	12.70	27	15.875	Vertical	LT 10
	mm	tpi																																										
A	0.5-1.5	48-16																																										
G	1.75-3.0	14-8																																										
AG	0.5-3.0	48-8																																										
N	3.5-5.0	7-5																																										
Q	5.5-6.0	4.5-4																																										
	mm	tpi																																										
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11	6.35																																											
16	9.525																																											
22	12.70																																											
27	15.875																																											

Partial and Full Profiles

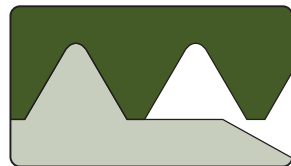


Partial Profile:

Most economical solution.

Used for wide range of pitches.

It is partial because the exterior major or internal minor diameter is not machined.



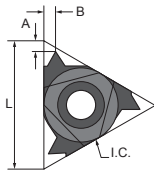
Full profile:

Cuts all thread shapes, according to the requirements.

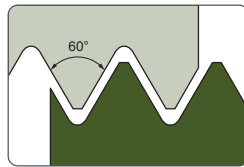
Wide range of inserts needed in order to fit each standard and range of pitches.

Partial Profile 60°

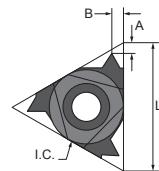
Designation		Pitch Range		Dimensions			Catalog Nr.	
EX / IN	Grade	mm	TPI	L mm	I.C.	A	B	
A60 IR11	LT 10	0.5 - 1.5	48 - 16	11	6.35	0.8	0.9	TH000001
A60 ER16	LT 10	0.5 - 1.5	48 - 16	16	9.525	0.8	0.9	TH000004
A60 IR16	LT 10	0.5 - 1.5	48 - 16	16	9.525	0.8	0.9	TH000007
G60 ER16	LT 10	1.75 - 3.0	14 - 8	16	9.525	1.2	1.7	TH000010
G60 IR16	LT 10	1.75 - 3.0	14 - 8	16	9.525	1.2	1.7	TH000013
AG60 ER16	LT 10	0.5 - 3.0	48 - 8	16	9.525	1.2	1.7	TH000016
AG60 IR16	LT 10	0.5 - 3.0	48 - 8	16	9.525	1.2	1.7	TH000019



External Right



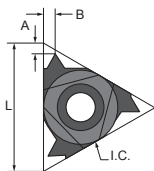
Partial Profile 60°



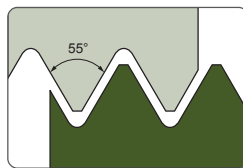
Internal Right

Partial Profile 55°

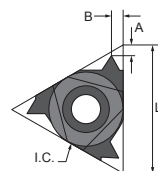
Designation		Pitch Range		Dimensions			Catalog Nr.	
EX / IN	Grade	mm	TPI	L mm	I.C.	A	B	
AG55 ER16	LT 10	0.5 - 3.0	48 - 8	16	9.525	1.2	1.7	TH000022
AG55 IR16	LT 10	0.5 - 3.0	48 - 8	16	9.525	1.2	1.7	TH000025
N55 ER22	LT 10	3.5 - 5.0	7 - 5	22	12.70	1.7	2.5	TH000120
N55 IR22	LT 10	3.5 - 5.0	7 - 5	22	12.70	1.7	2.5	TH000121



External Right

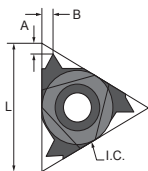


Partial Profile 55°

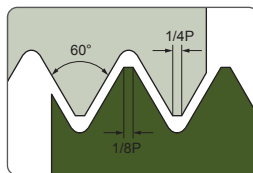


Internal Right

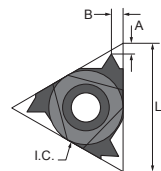
ISO METRIC							
Designation		Pitch	Dimensions			Catalog Nr.	
EX / IN	Grade	mm	L mm	I.C.	A	B	
ISO 0.5 ER16	LT10	0.50	16	9.525	0.6	0.4	TH000122
ISO 0.5 IR16	LT10	0.50	16	9.525	0.6	0.4	TH000128
ISO 0.6 ER16	LT10	0.60	16	9.525	0.6	0.4	TH000123
ISO 0.6 IR16	LT10	0.60	16	9.525	0.6	0.6	TH000129
ISO 0.7 ER16	LT10	0.70	16	9.525	0.6	0.4	TH000124
ISO 0.7 IR16	LT10	0.70	16	9.525	0.6	0.6	TH000130
ISO 0.75 ER16	LT10	0.75	16	9.525	0.6	0.6	TH000125
ISO 0.75 IR16	LT10	0.75	16	9.525	0.6	0.6	TH000131
ISO 0.8 IR16	LT10	0.80	16	9.525	0.6	0.6	TH000132
ISO 1.0 ER16	LT10	1.00	16	9.525	0.7	0.7	TH000037
ISO 1.0 IR11	LT10	1.00	11	6.350	0.7	0.7	TH000028
ISO 1.5 IR11	LT10	1.50	11	6.350	0.8	1.0	TH000031
ISO 2.0 IR11	LT10	2.00	11	6.350	0.8	0.9	TH000034
ISO 1.0 ER16	LT10	1.00	16	9.525	0.7	0.7	TH000037
ISO 1.0 IR16	LT10	1.00	16	9.525	0.7	0.7	TH000040
ISO 1.25 ER16	LT10	1.25	16	9.525	0.8	0.9	TH000043
ISO 1.25 IR16	LT10	1.25	16	9.525	0.8	0.9	TH000046
ISO 1.5 ER16	LT10	1.50	16	9.525	0.8	1.0	TH000049
ISO 1.5 IR16	LT10	1.50	16	9.525	0.8	1.0	TH000052
ISO 1.75 ER16	LT10	1.75	16	9.525	0.9	1.2	TH000055
ISO 1.75 IR16	LT10	1.75	16	9.525	0.9	1.2	TH000056
ISO 2.0 ER16	LT10	2.00	16	9.525	1.0	1.3	TH000058
ISO 2.0 IR16	LT10	2.00	16	9.525	1.0	1.3	TH000061
ISO 2.5 ER16	LT10	2.50	16	9.525	1.1	1.5	TH000064
ISO 2.5 IR16	LT10	2.50	16	9.525	1.1	1.5	TH000067
ISO 3.0 ER16	LT10	3.00	16	9.525	1.2	1.5	TH000070
ISO 3.0 IR16	LT10	3.00	16	9.525	1.2	1.5	TH000073
ISO 3.5 ER22	LT10	3.50	22	12.70	1.6	2.3	TH000126
ISO 4.0 ER22	LT10	4.00	22	12.70	1.6	2.3	TH000127
ISO 4.0 IR22	LT10	4.00	22	12.70	1.6	2.3	TH000133



External Right

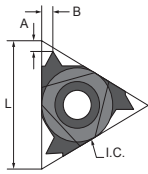


ISO Metric ISO 965-1:1999-11
DIN 13: 2005-08

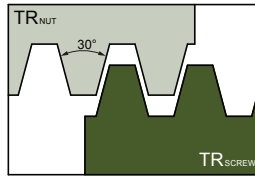


Internal Right

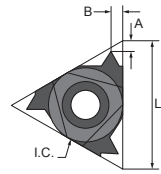
TRAPEZ							
Designation		Pitch	Dimensions			Catalog Nr.	
EX / IN	Grade	mm	L mm	I.C.	A	B	
TR3.0 ER16	LT10	3.00	16	9.525	1.3	1.5	TH000149
TR3.0 IR16	LT10	3.00	16	9.525	1.3	1.5	TH000151
TR4.0 ER22	LT10	4.00	22	12.70	1.7	1.9	TH000150
TR4.0 IR22	LT10	4.00	22	12.70	1.7	1.9	TH000152



External Right

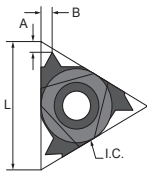


ISO Metric ISO 965-1:1999-11
DIN 13: 2005-08

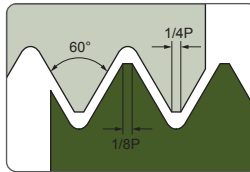


Internal Right

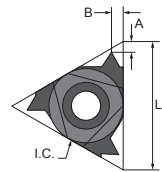
UN							
Designation		Pitch	Dimensions			Catalog Nr.	
EX / IN	Grade	TPI	L mm	I.C.	A	B	
UN 20 ER16	LT10	20	16	9.525	0.8	0.9	TH000076
UN 20 IR16	LT10	20	16	9.525	0.8	0.9	TH000079
UN 16 ER16	LT10	16	16	9.525	0.9	1.1	TH000082
UN 16 IR16	LT10	16	16	9.525	0.9	1.1	TH000085
UN 12 ER16	LT10	12	16	9.525	1.1	1.4	TH000088
UN 12 IR16	LT10	12	16	9.525	1.1	1.4	TH000091



External Right

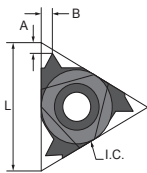


UNC, UNF, UNEF
ANSI B1.1-1982

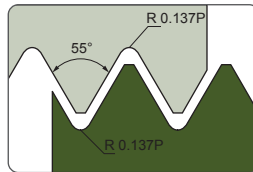


Internal Right

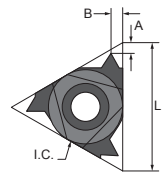
WHITWORTH							
Designation		Pitch	Dimensions			Catalog Nr.	
EX / IN	Grade	TPI	L mm	I.C.	A	B	
W 11 ER16	LT10	11	16	9.525	1.1	1.5	TH000100
W 11 IR16	LT10	11	16	9.525	1.1	1.5	TH000103
W 14 ER16	LT10	14	16	9.525	1.0	1.2	TH000094
W 14 IR16	LT10	14	16	9.525	1.0	1.2	TH000097
W 19 ER16	LT10	19	16	9.525	0.8	1.0	TH000134
W 19 IR16	LT10	19	16	9.525	0.8	1.0	TH000135



External Right

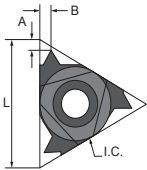


BSW, BSF, BSP
B.S.84: 1956
ISO 228-1: 1994

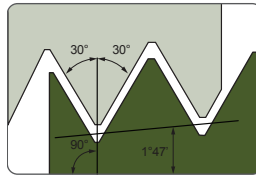


Internal Right

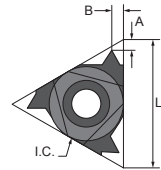
NPT							
Designation		Pitch	Dimensions			Catalog Nr.	
EX / IN	Grade	TPI	L mm	I.C.	A	B	
NPT8 ER16	LT10	8	16	9.525	1.3	1.8	TH000145
NPT8 IR16	LT10	8	16	9.525	1.3	1.8	TH000148
NPT11.5 ER16	LT10	11.5	16	9.525	1.1	1.5	TH000144
NPT11.5 IR16	LT10	11.5	16	9.525	1.1	1.5	TH000147
NPT14 ER16	LT10	14	16	9.525	0.9	1.2	TH000143
NPT14 IR16	LT10	14	16	9.525	0.9	1.2	TH000146
NPT18 ER16	LT10	18	16	9.525	0.8	1.0	TH000142



External Right

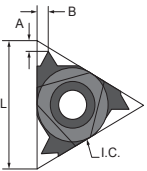


UNC, UNF, UNEF
ANSI B1.1-1982

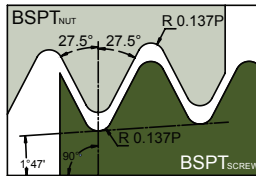


Internal Right

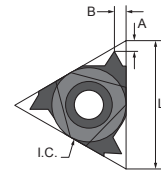
BSPT							
Designation		Pitch	Dimensions			Catalog Nr.	
EX / IN	Grade	TPI	L mm	I.C.	A	B	
BSPT11 ER16	LT10	11	16	9.525	1.1	1.5	TH000138
BSPT11 IR16	LT10	11	16	9.525	1.1	1.5	TH000141
BSPT14 ER16	LT10	14	16	9.525	1.0	1.2	TH000137
BSPT14 IR16	LT10	14	16	9.525	1.0	1.2	TH000140
BSPT19 ER16	LT10	19	16	9.525	0.8	0.9	TH000136
BSPT19 IR16	LT10	19	16	9.525	0.8	0.9	TH000139



External Right



BSW, BSF, BSP B.S.84: 1956
ISO 228-1: 1994



Internal Right

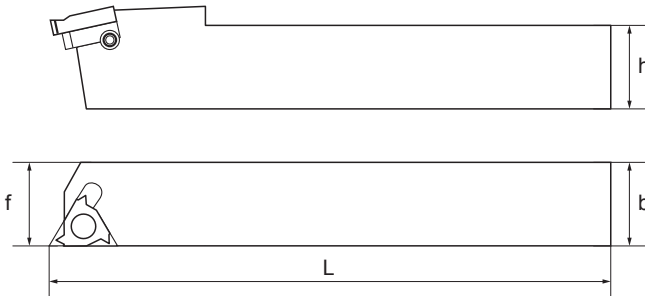
Tool Holder Ordering Code

HER	2020	K	16	
Holder type	Shank	Tool length	Insert size	V-Vertical
HER External right handed	External Toolholders Square Shank			
HEL External left handed	8	H - 100	L I.C.	
	10	K - 125	06 4.00	
	12	L - 140	08 5.00	
HIR Internal right handed	16	M - 150	11 6.35	
	20	P - 170	16 9.525	
	25	R - 200	22 12.70	
HIL Internal left handed	32	S - 250	27 15.875	
	Internal Toolholders round shank	T - 300		
	10			
	12			
	16			
	20			
	25			
	32			
	40			

External Tool Holders ER16

Designation	Insert Type	h	b	f	l	Catalog Nr.
HER 1616 H16	ER16	16	16	16	100	TH200001
HER 2020 K16	ER16	20	20	20	125	TH200004
HER 2525 M16	ER16	25	25	25	150	TH200007

Accessories: On request



The holders are made for 1.5 helix angle. In case higher helix is required, it should be replaced by other shim.

Internal Tool Holders IR11

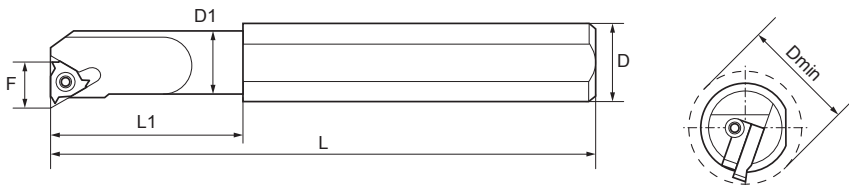
Designation	Insert Type	D	D1	Dmin	L	L1	F	Catalog Nr.
HIR 0010 H11	IR11	10	10	12.5	100	-	7.3	TH200010
HIR 0010 K11	IR11	16	10	12.5	125	25	7.3	TH200013

Accessories: On request

Internal Tool Holders IR16

Designation	Insert Type	D	D1	Dmin	L	L1	F	Catalog Nr.
HIR 0013 M16	IR16	16	13	16.5	150	32	10.4	TH200016
HIR 0016 P16	IR16	20	16	19.5	170	40	11.6	TH200019
HIR 0020 P16	IR16	20	20	23.5	170	-	13.6	TH200022
HIR 0025 R16	IR16	25	25	28.5	200	-	16.3	TH200025

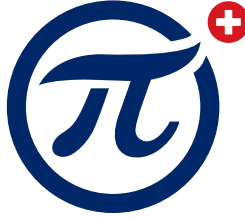
Accessories: On request



The holders are made for 1.5 helix angle. In case higher helix is required, it should be replaced by other shim.

Material Group	Gr. N°	VDI Group	Material Exemples	Hardness	V _c [m/min]			
					min	max		
Stahl	Unlegiert	1	1	C35, Ck45,	125 HB	80	130	
		2	2	1020, 1045,	190 HB	70	110	
		3	3	1060, 28Mn6	250 HB	60	100	
	Niedriglegiert	2	6	4,6	42CrMo4, St50, Ck60,	180 HB	70	110
			4,6	4,6	4140, 4340, 100Cr6	230 HB	70	110
			5,7	5,7		280 HB	60	100
			8	8		350 HB	50	80
	Hochlegiert	3	10	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	70	110
			10	10		280 HB	60	100
			11	11		320 HB	50	80
			11	11		350 HB	50	70
Edelstahl	Austenitisch	4	14	304, 316, X5CrNi18-9	180 HB	70	110	
			14	14		240 HB	60	90
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	60	80	
			14	14		310 HB	60	80
	Ferritisch & Martensitisch	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	70	90	
			13	13		42 HRC	60	80
Gusseisen	Grau	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	60	110	
			15	15		200 HB	70	110
			16	16		250 HB	60	90
	Sphäroguss	8	17,19	17,19	GGG40, GGG70, 50005	150 HB	60	110
			17,19	17,19		200 HB	60	90
			18,20	18,20		250 HB	60	90
Superleg.	Fe, Ni & Co-Basiert	9	31,32	Incoloy 800	240 HB	40	60	
			33	Inconel 700	250 HB	30	50	
			34	Stellite 21	350 HB	20	40	
	Ti-Basiert	10	36	TiAl6V4	-	40	70	
			37	T40	-	25	50	
Gehärtetes Mat.	Stahl	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRc	30	50	
			38	38		50 HRc	25	50
			38	38		55 HRc	25	40
	Schalenhartguss	40	Ni-Hard 2	400 HB	25	40		
	Weißes Guss.	41	G-X300CrMo15	55 HRc	25	40		
NE	Al (>8%Si)	12	25	AlSi12	130 HB	80	300	

Pitch		Passes	
mm	TPI	min	max
0.5	48	4	6
1.0	24	4	9
1.5	16	5	11
2.0	12	7	12
2.5	10	8	15
3.0	8	12	22



LAMINA TECHNOLOGIES

HEADQUARTERS

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