

TMSD DEEP HOLE INDEXABLE THREAD MILLS

A multi-flute, highly productive and economical solution for milling threads in deep holes.

There are two types of TMSD thread milling options

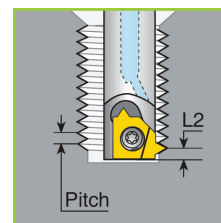
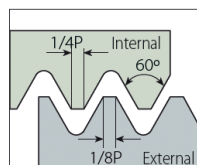
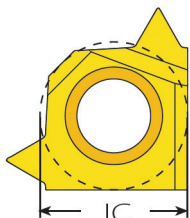
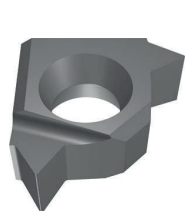
- ▶ L-Style - For small bores and short L2 (reach)
- ▶ U-Style - For large pitches

Grade	Application
VBX	TiCN coated carbide grade. Excellent grade for steels and general use.
VTX	TiAlN coated carbide grade. Ideal for stainless steels.



M METRIC DEEP HOLE INDEXABLE THREAD MILL INSERTS L STYLE

Metric Inserts For Deep Hole Thread Milling

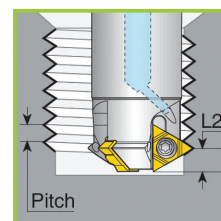
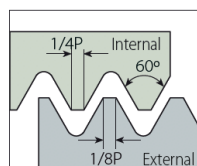
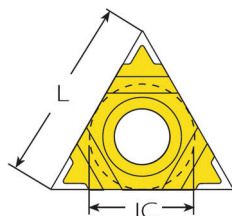
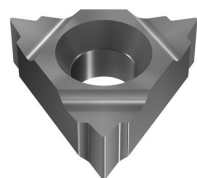


For small bores and short L2 (reach).

Insert Size	Pitch	Designation	ORDER CODE	PRICE	Toolholder
IC	mm				
5.0L (MINI L)	1.0	5L11.0ISOTM	088-00175	£21.11	TM.SC...5L CTM.SC...5L
	1.5	5L11.5ISOTM	088-00177	£21.11	
	2.0	5L12.0ISOTM	088-00179	£21.11	

M METRIC DEEP HOLE INDEXABLE THREAD MILL INSERTS U STYLE

Metric Inserts for Deep Hole Thread Milling



For large pitches

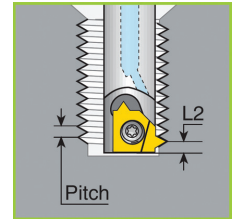
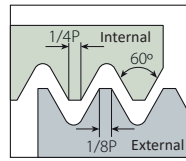
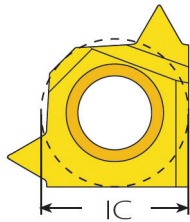
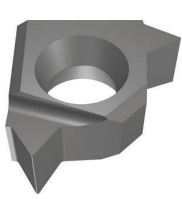
* Correct the toolholder cutting diameter D2 according to adjustment, as indicated in the below table.

Insert Size		Pitch	Designation	ORDER CODE	PRICE	Toolholder	Toolholder Cutting Diameter D2 (mm)
IC	L mm	mm					* Adjusted D2
1/4"U	11	14	2U11.5ISOTM	088-00159	£12.24	TM2SC25W23-70-2U; TM3SC25W26-80-2U; TM4SC32W31-95-2U; TM2SC18C23-86-2U; TM3SC20C26-105-2U; TM4SC25C31-115-2U; CTM3SC20C26-110-2U; CTM4SC25C31-135-2U	For 1.5ISO change D2 to D2-1.0
		12	2U12.0ISOTM	088-00161	£12.24		For 2.0ISO change D2 to D2-1.15

UNC/UNF UNIFIED DEEP HOLE INDEXABLE THREAD MILL INSERTS L STYLE

Unified Inserts for Deep Hole Thread Milling

VARDEX

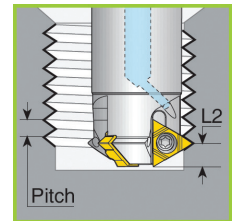
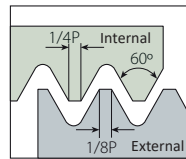
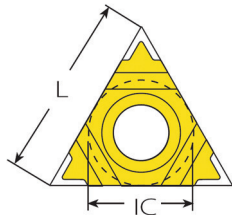
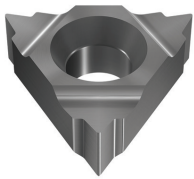


For small bores and short L2 (reach).

Insert Size		Pitch	Designation	ORDER CODE	PRICE	Toolholder
IC	TPI					
5.0L (MINI L)	18	5L118UNTM	088-00153	£21.11	TM.SC...5L CTM.SC...5L	
	16	5L116UNTM	088-00185	£21.11		
	14	5L114UNTM	088-00183	£21.11		
	12	5L112UNTM	088-00181	£21.11		

UNC/UNF UNIFIED DEEP HOLE INDEXABLE THREAD MILL INSERTS U STYLE

Unified Inserts for Deep Hole Thread Milling



For large pitches

* Correct the toolholder cutting diameter D2 according to adjustment, as indicated in the below table.

Insert Size		Pitch	Designation	ORDER CODE	PRICE	Toolholder	Toolholder Cutting Diameter D2 (mm)
IC	L mm	mm					* Adjusted D2
1/4"U	11	14	2UI14UNTM	088-00165	£12.24	TM2SC25W23-70-2U; TM3SC25W26-80-2U; TM4SC32W31-95-2U; TM2SC18C23-86-2U; TM3SC20C26-105-2U; TM4SC25C31-115-2U; CTM3SC20C26-110-2U; CTM4SC25C31-135-2U	For 14UN change D2 to D2-1.06
		12	2UI12UNTM	088-00163	£12.24		For 12UN change D2 to D2-1.15

VARGUS GENIUS Tool Selector and CNC Program Generator



Vargus GENIUS Software Using the VARDEX Thread Milling system is easy. Vargus has developed a multi-lingual software for CNC programming.

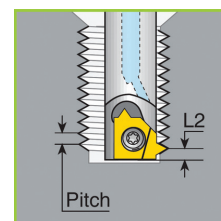
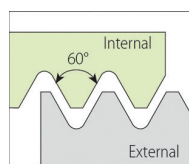
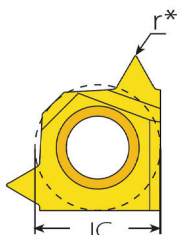
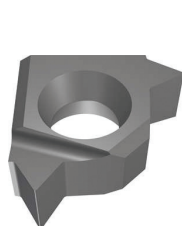
All the operator has to do is enter the basic thread parameters and then follow the computer instructions, which lead the operator to the correct choice of tool for the job on hand. The software will then generate the helical interpolation for the CNC program.

It couldn't be simpler!

60° PARTIAL PROFILE DEEP HOLE INDEXABLE THREAD MILL INSERTS L STYLE

Partial Profile Inserts for Deep Hole Thread Milling

VARDEX



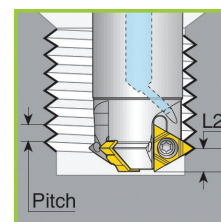
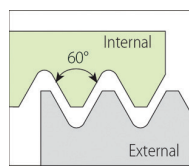
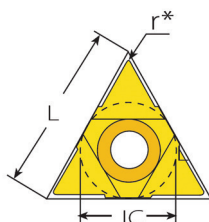
For small bores and short L2 (reach).

Insert Size		Pitch		r*	Designation	ORDER CODE	PRICE	Toolholder
IC		mm	TPI					
5.0L (MINI L)		0.5-1.5	48-16	0.04	5LIDA60TM	088-00050	£21.11	TM.SC5L CTM. SC5L
		1.0-2.0	24-11	0.06	5LIDN60TM	088-00052	£21.11	

* The indicated radius (r) refers to the insert nose radius only.

60° PARTIAL PROFILE DEEP HOLE INDEXABLE THREAD MILL INSERTS U STYLE

Partial Profile Inserts for Deep Hole Thread Milling



For large pitches

Insert Size		Pitch		r*	Designation	ORDER CODE	PRICE	Toolholder
IC	L mm	mm	TPI					
1/4"U	11	0.5-1.5	48-16	0.05	2UIDA60TM	088-00034	£12.23	TM.SC2U CTM. SC2U
		1.5-2.0	16-12	0.06	2UIDB60TM	088-00009	£12.23	
		2.0-2.5	9-12	0.11	2UIDD60TM	088-00058	£12.23	CTM2SC 14C17-65-2U
		2.5	10	0.11	2UIDM60TM	088-00040	£12.23	
		2.5-4.0	10-6	0.14	2UIDC60TM	088-00010	£12.23	
3/8"U	16	1.5-2.0	16-12	0.06	3UIDB60TM	088-00019	£12.79	TM.SC3U
		2.5-3.5	10-7	0.14	3UIDE60TM	088-00020	£12.79	
		4.0-6.0	6-4	0.25	3UIDH60TM	088-00021	£12.79	
1/2"U	22	6.0-8.0	4-3	0.30	4UIDK60TM	088-00027	£22.13	TM.SC D4U

* The indicated radius (r) refers to the insert nose radius only.

We offer **FREE** morning delivery on orders over **£79*** placed before 6pm.

*Exclusions apply.

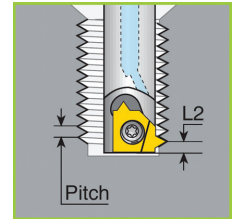
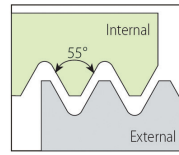
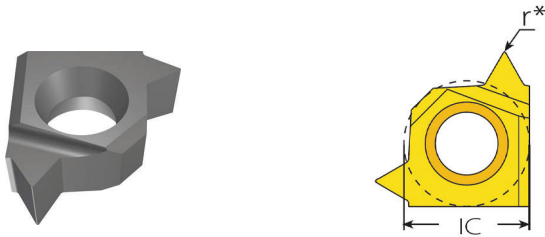


55° PARTIAL PROFILE DEEP HOLE INDEXABLE THREAD MILL INSERTS U STYLE

Partial Profile Inserts for Deep Hole Thread Milling

VARDEX

THREAD & GROOVE MILLING
INDEXABLE THREAD MILLS



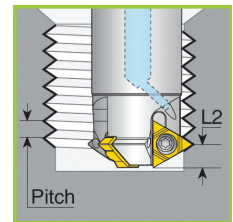
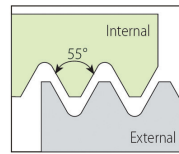
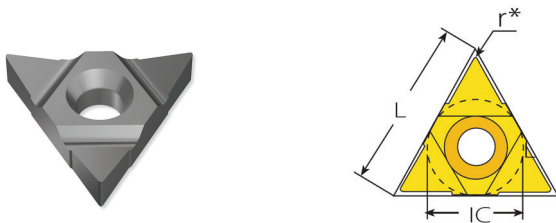
For small bores and short L2 (reach).

Insert Size		Pitch	r*	Designation	ORDER CODE	PRICE	Toolholder
IC	(MINI L)	TPI					
	5.0L (MINI L)	26-14	0.10	5LIDR55TM	088-00046	£21.11	TM.SC5L CTM. SC5L

* The indicated radius (r) refers to the insert nose radius only.

55° PARTIAL PROFILE DEEP HOLE INDEXABLE THREAD MILL INSERTS U STYLE

Partial Profile Inserts for Deep Hole Thread Milling

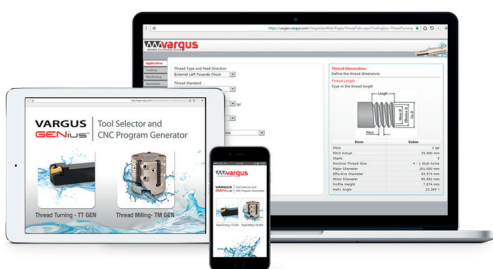


For large pitches

Insert Size		Pitch	r*	Designation	ORDER CODE	PRICE	Toolholder
IC	L mm	TPI					
1/4"U	11	48-16	0.11	2UIDA55TM	088-00030	£12.23	TM.SC2U CTM. SC2U
		16-12	0.08	2UIDB55TM	088-00011	£12.23	
		11-7	0.24	2UIDL55TM	088-00012	£12.23	
3/8"U	16	16-12	0.08	3UIDB55TM	088-00022	£12.79	TM.SC3U
		11-7	0.24	3UIDL55TM	088-00023	£12.79	
		6-4	0.27	3UIDH55TM	088-00024	£12.79	
1/2"U	22	4-3	0.50	4UIDK55TM	088-00028	£22.13	TM.SC D4U

* The indicated radius (r) refers to the insert nose radius only.

VARGUS GENiUS Tool Selector and CNC Program Generator



Vargus GENiUS Software Using the VARDEX Thread Milling system is easy. Vargus has developed a multi-lingual software for CNC programming.

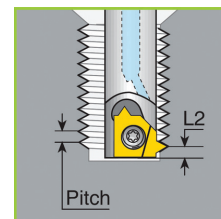
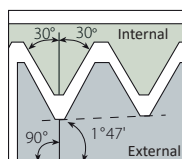
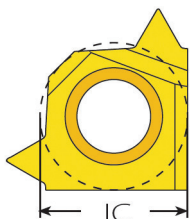
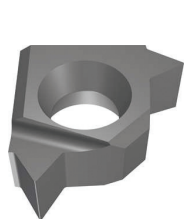
All the operator has to do is enter the basic thread parameters and then follow the computer instructions, which lead the operator to the correct choice of tool for the job on hand. The software will then generate the helical interpolation for the CNC program.

It couldn't be simpler!

NPT DEEP HOLE INDEXABLE THREAD MILL INSERTS L STYLE

Partial Profile Inserts for Deep Hole Thread Milling

VARDEX

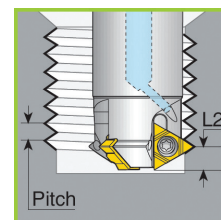
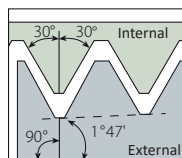
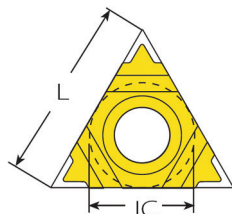
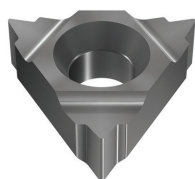


For small bores and short L2 (reach).

Insert Size		Pitch	Designation	ORDER CODE	PRICE	Toolholder
IC	TPI					
5.0L (MINI L)	18		5LEI18NPT-TM	088-00173	£21.11	TM.SC...5L CTM. SC...5L

NPT DEEP HOLE INDEXABLE THREAD MILL INSERTS U STYLE

Partial Profile Inserts for Deep Hole Thread Milling



For large pitches

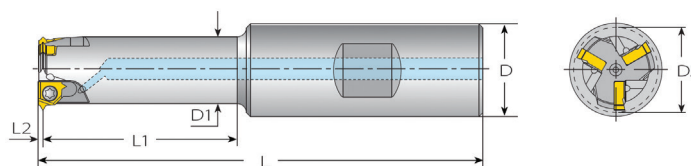
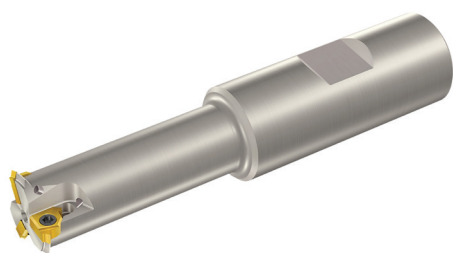
* Correct the toolholder cutting diameter D2 according to adjustment, as indicated in the below table.

Insert Size		Pitch	Designation	ORDER CODE	PRICE	Toolholder	Toolholder Cutting Diameter D2 (mm)
IC	L mm	TPI					* Adjusted D2
1/4"U	11	14	2UEI14NPT-TM	088-00157	£12.24	TM1SC16W15-40-2U; CTM1SC08C15-40-2U; CTM1SC11C15-60-2U	14.59
		11.5	2UEI11.5NPT-TM	088-00155	£12.24	TM2SC25W23-70-2U; TM2SC18C23-86-2U	20.49
	16	11.5	3UEI11.5NPT-TM	088-00169	£12.79	TM3SC32W36-95-3U; TM3SC32W36-145-3U; TM3SC25C36-125-3U; TM3SC28C36-144-3U	22.63
		8	3UEI8NPT-TM	088-00167	£12.79	TM4SC40W42-120-3U; TM4SCD42-16-3U	25.63
3/8"U	16	11.5	3UEI11.5NPT-TM	088-00169	£12.79	TM3SC32W36-95-3U; TM3SC32W36-145-3U; TM3SC25C36-125-3U; TM3SC28C36-144-3U	30.63
		8	3UEI8NPT-TM	088-00167	£12.79	TM4SC40W42-120-3U; TM4SCD42-16-3U	35.65
		8	3UEI8NPT-TM	088-00167	£12.79	TM4SC40W42-120-3U; TM4SCD42-16-3U	41.15
	22	8	4UEI8NPT-TM	088-00171	£22.13	TM5SCD48-22-3U	47.15
		8	4UEI8NPT-TM	088-00171	£22.13	TM6SC-D48-22-3U	55.15
1/2"U	22	8	4UEI8NPT-TM	088-00171	£22.13	TM6SC-D88-27-4U	88.06
		8	4UEI8NPT-TM	088-00171	£22.13	TM7SC-D98-32-4U	98.06

STEEL SHANK DEEP HOLE INDEXABLE THREAD MILL HOLDER L STYLE

L-Style Toolholder for Deep Hole Thread Milling

VARDEX

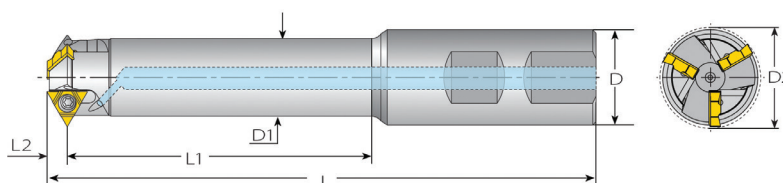


Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

Insert Size IC	L	L1	L2	D	D1	D2	No. Flutes	Designation	ORDER CODE	PRICE	Spare	
											Insert Screw	Torx Key
5.0L (Mini L)	81	29		16	9.8	13.0	1	TM1SC16W13-29-5L	073-00037	£62.07	SN5LTR	K7T
	85	33	1.1	16	10.3	13.5	2	TM2SC16W14-33-5L	073-00030	£79.78		
	96	42		20	14.3	17.7	3	TM3SC20W18-42-5L	073-00040	£107.02		

STEEL SHANK DEEP HOLE INDEXABLE THREAD MILL HOLDER U STYLE

U-Style Toolholder for Deep Hole Thread Milling



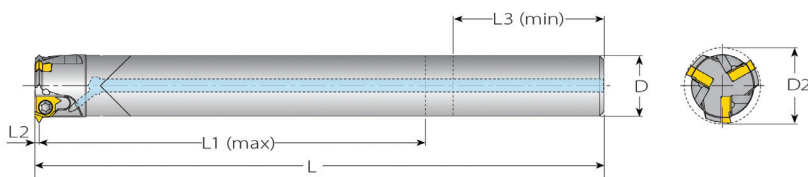
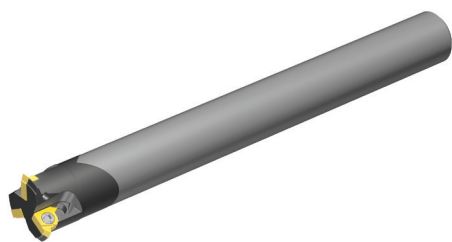
Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

Insert Size IC	L	L1	L2	D	D1	D2	No. Flutes	Designation	ORDER CODE	PRICE	Spare	
											Insert Screw	Torx Key
Flat Shank												
1/4"U	95	40		16	11	14.75*	1	TM1SC16W15-40-2U	073-00020	£110.59	SN2T	HK2T
	123	60		25	16	20.65*	2	TM2SC25W21-60-2U	073-00021	£130.13		
	135	70	5.4	25	17.7	23	2	TM2SC25W23-70-2U	073-00014	£131.66		
	147	80		25	20.4	26	3	TM3SC25W26-80-2U	073-00006	£149.52		
	164	95		32	25.7	31	4	TM4SC32W31-95-2U	073-00013	£203.25		
3/8"U	166	95		32	29	36.5	3	TM3SC32W36-95-3U	073-00007	£180.57	SA3T	HK3T
	225	145	8.0	32	28	36.5	3	TM3SC32W36-145-3U	073-00048	£180.57		
	201	120		40	34.2	42	4	TM4SC40W42-120-3U	073-00011	£226.33		
Plain Shank											SN3T	
1/4"U	166	86		18	-	23.3	2	TM2SC18C23-86-2U	073-00002	£145.05	SN2T	HK2T
	186	105	5.4	20	-	26	3	TM3SC20C26-105-2U	073-00005	£166.97		
	196	115		25	-	31	4	TM4SC25C31-115-2U	073-00015	£230.75		
3/8"U	193	125	8.0	25	-	36.5	3	TM3SC25C36-125-3U	073-00053	£188.66	SA3T	HK3T
	222	144		28	-	36.5	3	TM3SC28C36-144-3U	073-00010	£221.85		

CARBIDE SHANK DEEP HOLE INDEXABLE THREAD MILL HOLDER L STYLE

L-Style Toolholder for Deep Hole Thread Milling

VARDEX

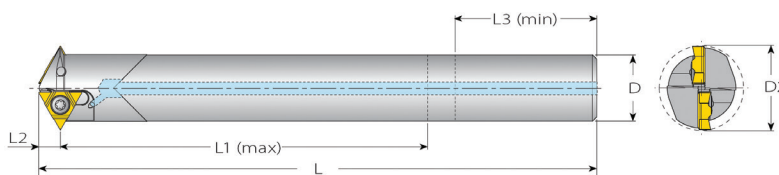
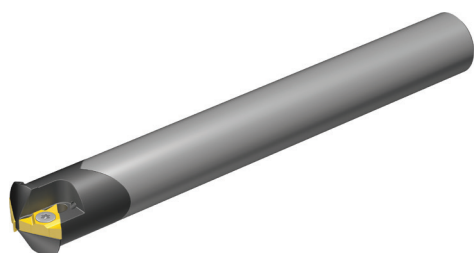


Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

Insert Size IC	L	L1 (max)	L2	L3 (min)	D	D2	No. Flutes	Designation	ORDER CODE	PRICE	Spare	
											Insert Screw	Torx Key
5.0L (Mini L)	109	43		20	9.5	13	1	CTM1SC09C13-43-5L	073-00035	£212.67	SN5LTR	K7T
	116	50	1.1	22	10	13.5	2	CTM2SC10C14-50-5L	073-00034	£212.67		
	132	65		30	14	17.7	3	CTM3SC14C18-65-5L	073-00033	£370.95		

CARBIDE SHANK DEEP HOLE INDEXABLE THREAD MILL HOLDER U STYLE

U-Style Toolholder for Deep Hole Thread Milling



Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

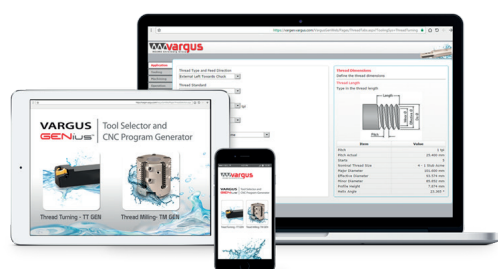
Insert Size IC	L	L1 (max)	L2	L3 (min)	D	D2	No. Flutes	Designation	ORDER CODE	PRICE	Spare	
											Insert Screw	Torx Key
1/4"U	109	40	5.4	18	8	14.75*	1	CTM1SC08C15-40-2U	073-00016	£119.45	SN2T	HK2T
	120	60		25	10.7	14.75*	1	CTM1SC11C15-60-2U	073-00017	£192.30		
	132	65	3.4	30	14	17.9**	2	CTM2SC14C17-65-2U**	073-00029	£341.23		
	136	65		30	14	20.65*	2	CTM2SC14C21-65-2U	073-00018	£341.23		
	135	80	5.4	34	16	20.65*	2	CTM2SC16C21-80-2U	073-00019	£354.74		
	165	110		40	20	26.0*	3	CTM3SC20C26-110-2U	073-00052	£569.25		
	186	135		46	25	31.0*	4	CTM4SC25C31-135-2U	073-00054	£711.58		

* For TR inserts use the CNC program (D2+0.25mm).

** To be used only with inserts 2UIDD60TM... or 2UIDM60TM...

For insert 2UIDD60 TM... use the CNC program (D2+0.7mm).

VARGUS GENIUS Tool Selector and CNC Program Generator



Vargus GENIUS Software Using the VARDEX Thread Milling system is easy. Vargus has developed a multi-lingual software for CNC programming.

All the operator has to do is enter the basic thread parameters and then follow the computer instructions, which lead the operator to the correct choice of tool for the job on hand. The software will then generate the helical interpolation for the CNC program.

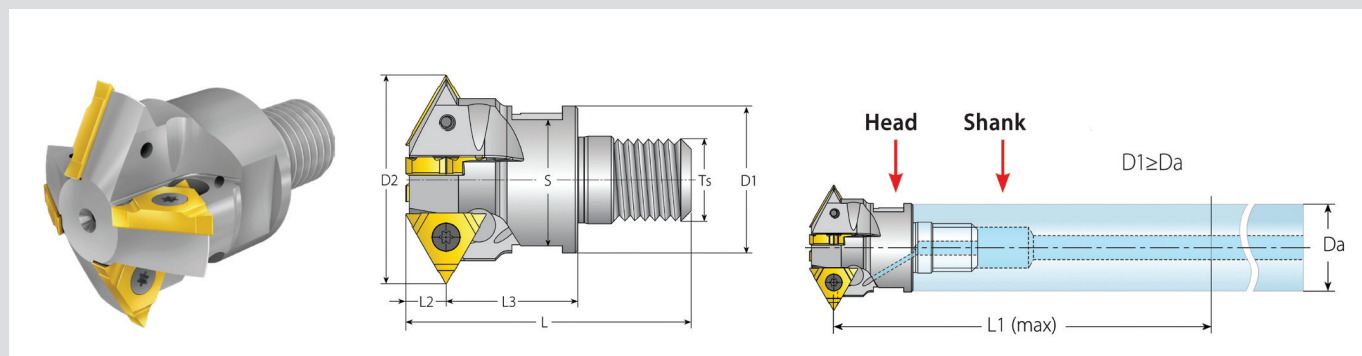
It couldn't be simpler!

SCREWED SHANK DEEP HOLE INDEXABLE THREAD MILL HOLDER U STYLE

Modular U-Style Toolholder for Deep Hole Thread Milling

VARDEX

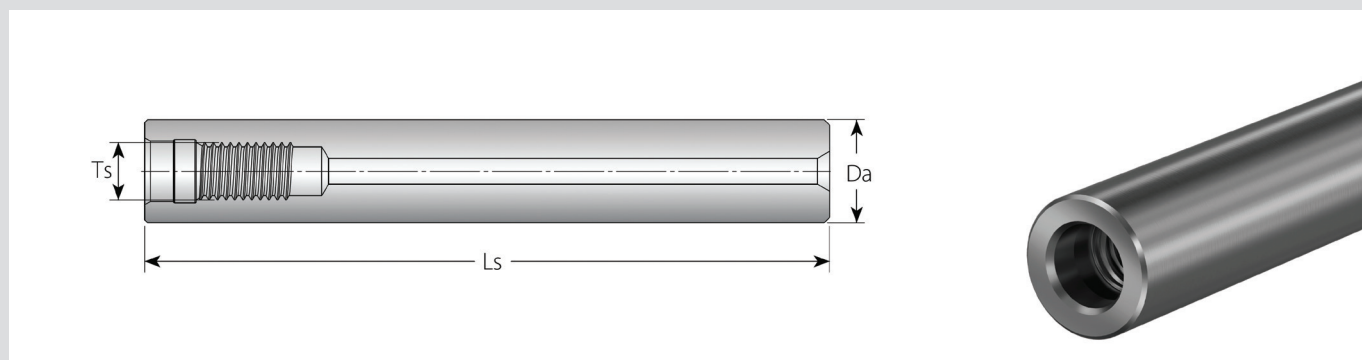
THREAD & GROOVE MILLING
INDEXABLE THREAD MILLS



Insert Size IC	D1	D2	L	L1 (max for Steel Shank)	L1 (max for Carbide Shank)	L2	L3	Ts	S	Z	Designation	ORDER CODE	PRICE	Spare	
														Insert Screw	Torx Key
1/4"U	10.6	14.75	33	48	57.5	5.4	15	M06	9	1	TM1SC-D15-M06-2U	172-00009	£127.10	SN2T	HK2T
	13	16.75	37	60	72			M08	11	1	TM1SC-D17-M08-2U	172-00010	£129.54		
	14.1	20.65	34	72	86			M08	12	2	TM2SC-D21-M08-2U	172-00011	£148.23		
	18	22.65	38	86	103			M10	16	2	TM2SC-D23-M10-2U	172-00012	£147.30		
	21	26.6	48	105	125			M12	18	3	TM3SC-D26-M12-2U	172-00013	£165.10		
	25	31	51	115	138			M12	22	4	TM4SC-D31-M12-2U	172-00014	£221.93		
3/8"U	29	36.5	55	125	150	8	25	M16	25	4	TM3SC-D36-M16-3U	172-00015	£219.40	SA3T	HK3T
	29	42	55	144	172			M16	25	3	TM4SC-D42-M16-3U	172-00016	£247.57		

STEEL SHANK DEEP HOLE MODULAR TOOL HOLDER HEADS

Modular U-Style Toolholder for Deep Hole Thread Milling



Da	Ls	Ts	Designation	ORDER CODE	PRICE
10.6	75	M06	STMC-C10.6L075M06	172-00023	£87.59
13	85	M08	STMC-C13.0L085M08	172-00017	£87.59
14.1	105	M08	STMC-C14.1L105M08	172-00018	£87.59
18	120	M10	STMC-C18.0L120M10	172-00019	£96.58
21	135	M12	STMC-C21.0L135M12	172-00020	£96.58
25	140	M12	STMC-C25.0L140M12	172-00021	£107.05
29	180	M16	STMC-C29.0L180M16	172-00022	£107.05

VARDEX STANDARD TM INDEXABLE THREAD MILLS

CUTTING DATA

THREAD MILLING

Material	Group	Workpiece		Vc [m/min]			Feed fz [mm/tooth]
		Detail	Hardness Brinell HB	VBX	VTX	VK2	
P STEEL	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	100-120	90-180		0.05-0.3
		Medium Carbon (C=0.25-0.55%)	150	100-180	90-170		0.05-0.25
		High Carbon (C=0.55-0.85%)	170	100-170	90-160		0.05-0.2
	Low Alloy Steel (Alloying Elements <5%)	Non Hardened	180	90-160	90-155		0.05-0.25
		Hardened	275	80-180	80-160		0.05-0.2
		Hardened	350	70-140	70-150		0.05-0.15
	High Alloy Steel (Alloying Elements>5%)	Annealed	200	60-130	70-115		0.05-0.2
		Hardened	325	70-110	60-100		0.05-0.1
	Cast Steel	Low Alloy (Alloying Elements <5%)	200	100-170	100-170	100-150	0.05-0.15
		High Alloy (Alloying Elements >5%)	225	70-120	70-130	60-130	0.05-0.1
M STAINLESS STEEL	Stainless Steel Ferritic	Non Hardened	200	100-170	120-180		0.05-0.15
		Hardened	330	100-170	120-180		0.05-0.1
	Stainless Steel Austenitic	Austenitic	180	70-140	100-140		0.05-0.15
		Super Austenitic	200	70-140	100-140		0.05-0.1
	Stainless Steel Cast Ferritic	Non Hardened	200	70-140	100-140		0.05-0.15
		Hardened	330	70-140	100-140		0.05-0.1
	Stainless Steel Cast Austenitic	Austenitic	200	70-120	100-120		0.05-0.15
		Hardened	330	70-120	100-120		0.05-0.1
K CAST IRON	Malleable	Ferritic (Short Chips)	130	60-130	100-120		0.02-0.8
	Cast Iron	Pearlitic (Long Chips)	230	60-120	80-100		0.02-0.05
	Grey Cast Iron	Low Tensile Strength	180	60-130	80-100		0.05-0.15
		High Tensile Strength	260	60-100	80-100		0.05-0.1
	Nodular Sg Iron	Ferritic	160	60-125	80-100		0.05-0.15
		Pearlitic	260	50-90	60-90		0.05-0.1
N NON-FERROUS METALS	Aluminium Alloys Wrought	Non Aging	60	100-250		200-300	0.1-0.4
		Aged	100	100-180		60-110	0.1-0.3
	Aluminium Alloys	Cast	75	150-400		60-120	0.1-0.3
		Cast & Aged	90	150-280		60-100	0.05-0.25
	Aluminium Alloys	Cast Si 13-22%	130	80-150		20-50	0.1-0.3
	Copper & Copper Alloys	Brass	90	120-210	100-200	50-70	0.1-0.3
		Bronze & Non Leaded Copper	100	120-210	100-200	50-70	0.05-0.25
S HEAT RESISTANT MATERIAL	High Temperature Alloys	Annealed (Iron Based)	200	20-45	20-40	20-30	0.05-0.1
		Aged (Iron Based)	280	20-30	20-30	15-25	0.02-0.05
		Annealed (Nickel Or Cobalt Based)	250	20-50	15-20	15-20	0.02-0.05
		Aged (Nickel Or Cobalt Based)	350	10-15	10-15	10-15	0.02-0.05
	Titanium Alloys	Pure 99.5 Ti	400Rm	70-140	70-120	40-60	0.02-0.05
		A+B Alloys	1050Rm	20-50	20-50	20-40	0.02-0.05
	H HARDENED	Extra Hard Steel	Hardened & Tempered	45-50HRc	20-45	20-45	
			51-55HRc	20-45	20-45		0.01-0.02

VARDEX TMSD INDEXABLE THREAD MILLS

CUTTING DATA

THREAD MILLING

Material	Workpiece			Vc [m/min]		Feed* f [mm/tooth] by Cutting Dia. (d2)			
	Group	Detail	Hardness Brinell HB	VBX	VBX	13-23	24-42	Shell Mill	
P STEEL	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	100-210	90-180	0.20-0.32	0.30-0.50	0.30-0.75	
		Medium Carbon (C=0.25-0.55%)	150	100-180	90-170	0.20-0.32	0.30-0.50	0.30-0.75	
		High Carbon (C=0.55-0.85%)	170	100-170	90-160	0.15-0.23	0.25-0.35	0.25-0.52	
	Low Alloy Steel (Alloying Elements <5%)	Non Hardened	180	60-90	90-155	0.17-0.28	0.28-0.45	0.28-0.67	
		Hardened	275	80-150	80-160	0.15-0.28	0.25-0.45	0.25-0.67	
		Hardened	350	70-140	70-150	0.15-0.25	0.25-0.40	0.25-0.60	
	High Alloy Steel (Alloying Elements >5%)	Annealed	200	60-130	70-115	0.15-0.22	0.20-0.30	0.20-0.45	
		Hardened	325	70-110	60-100	0.13-0.21	0.18-0.30	0.18-0.45	
	Cast Steel	Low Alloy (Alloying Elements <5%)	200	100-170	100-170	0.15-0.22	0.20-0.30	0.20-0.45	
		High Alloy (Alloying Elements >5%)	225	70-120	70-130	0.12-0.22	0.17-0.30	0.17-0.45	
M STAINLESS STEEL	Stainless Steel Ferritic	Non Hardened	200	100-170	120-180	0.15-0.22	0.22-0.34	0.22-0.50	
		Hardened	330	100-170	120-180	0.16-0.23	0.21-0.32	0.21-0.48	
	Stainless Steel Austenitic	Austenitic	180	70-140	100-140	0.15-0.25	0.25-0.40	0.25-0.60	
		Super Austenitic	200	70-140	100-140	0.12-0.20	0.17-0.26	0.17-0.39	
	Stainless Steel Cast Ferritic	Non Hardened	200	70-140	100-140	0.16-0.24	0.25-0.37	0.25-0.55	
		Hardened	330	70-140	100-140	0.12-0.20	0.17-0.26	0.17-0.39	
	Stainless Steel Cast Austenitic	Austenitic	200	70-120	100-120	0.15-0.22	0.20-0.30	0.20-0.45	
		Hardened	330	70-120	100-120	0.12-0.20	0.17-0.26	0.17-0.39	
K CAST IRON	Malleable	Ferritic (Short Chips)	130	60-130	100-120	0.16-0.24	0.25-0.37	0.25-0.55	
	Cast Iron	Pearlitic (Long Chips)	230	60-120	80-100	0.15-0.22	0.20-0.30	0.20-0.45	
	Grey Cast Iron	Low Tensile Strength	180	60-130	80-100	0.15-0.22	0.22-0.34	0.22-0.50	
		High Tensile Strength	260	60-100	80-100	0.15-0.22	0.20-0.30	0.20-0.45	
	Nodular Sg Iron	Ferritic	160	60-125	80-100	0.10-0.20	0.15-0.25	0.15-0.37	
		Pearlitic	260	50-90	60-90	0.15-0.22	0.20-0.30	0.20-0.45	
N NON-FERROUS METALS	Aluminium Alloys Wrought	Non Aging	60	100-250	-	0.30-0.50	0.60-1.00	0.60-1.50	
		Aged	100	100-180	-	0.28-0.50	0.50-0.90	0.50-1.20	
	Aluminium Alloys	Cast	75	150-400	-	0.28-0.50	0.50-0.90	0.50-1.20	
		Cast & Aged	90	150-280	-	0.25-0.40	0.40-0.60	0.40-0.90	
	Aluminium Alloys	Cast Si 13-22%	130	80-150	-	0.28-0.50	0.50-0.90	0.50-1.20	
		Copper & Copper Alloys	Brass	90	120-210	100-200	0.30-0.50	0.60-1.00	0.60-1.50
			Bronze & Non Lead Copper	100	120-210	100-200	0.28-0.50	0.50-0.90	0.50-1.20
S HEAT RESISTANT MATERIAL	High Temperature Alloys	Annealed (Iron Based)	200	20-45	20-40	0.09-0.15	0.12-0.22	0.12-0.33	
		Aged (Iron Based)	280	20-30	20-30	0.07-0.13	0.10-0.20	0.10-0.30	
		Annealed (Nickel Or Cobalt Based)	250	15-20	15-20	0.08-0.15	0.08-0.20	0.08-0.30	
		Aged (Nickel Or Cobalt Based)	350	10-15	10-15	0.08-0.15	0.08-0.20	0.08-0.30	
	Titanium Alloys	Pure 99.5 Ti	400Rm	70-140	70-120	0.07-0.13	0.10-0.20	0.10-0.30	
		A+B Alloys	1050Rm	20-50	20-50	0.07-0.13	0.10-0.20	0.10-0.30	
H HARDENED	Extra Hard Steel	Hardened & Tempered	45-50HRc	15-45	15-45	0.05-0.12	0.05-0.18	0.05-0.27	
		Hardened & Tempered	51-55HRc	15-40	15-40	0.05-0.12	0.05-0.18	0.05-0.27	

* When using a Shell Mill toolholder, the feed can be increased by 50%.
* For 3/8" L it is recommended to machine in two passes and decrease the feed by 40%.