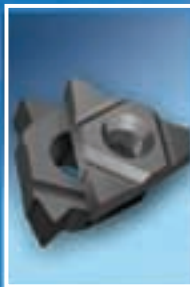




TMSD

Thread Mill for Deep Holes

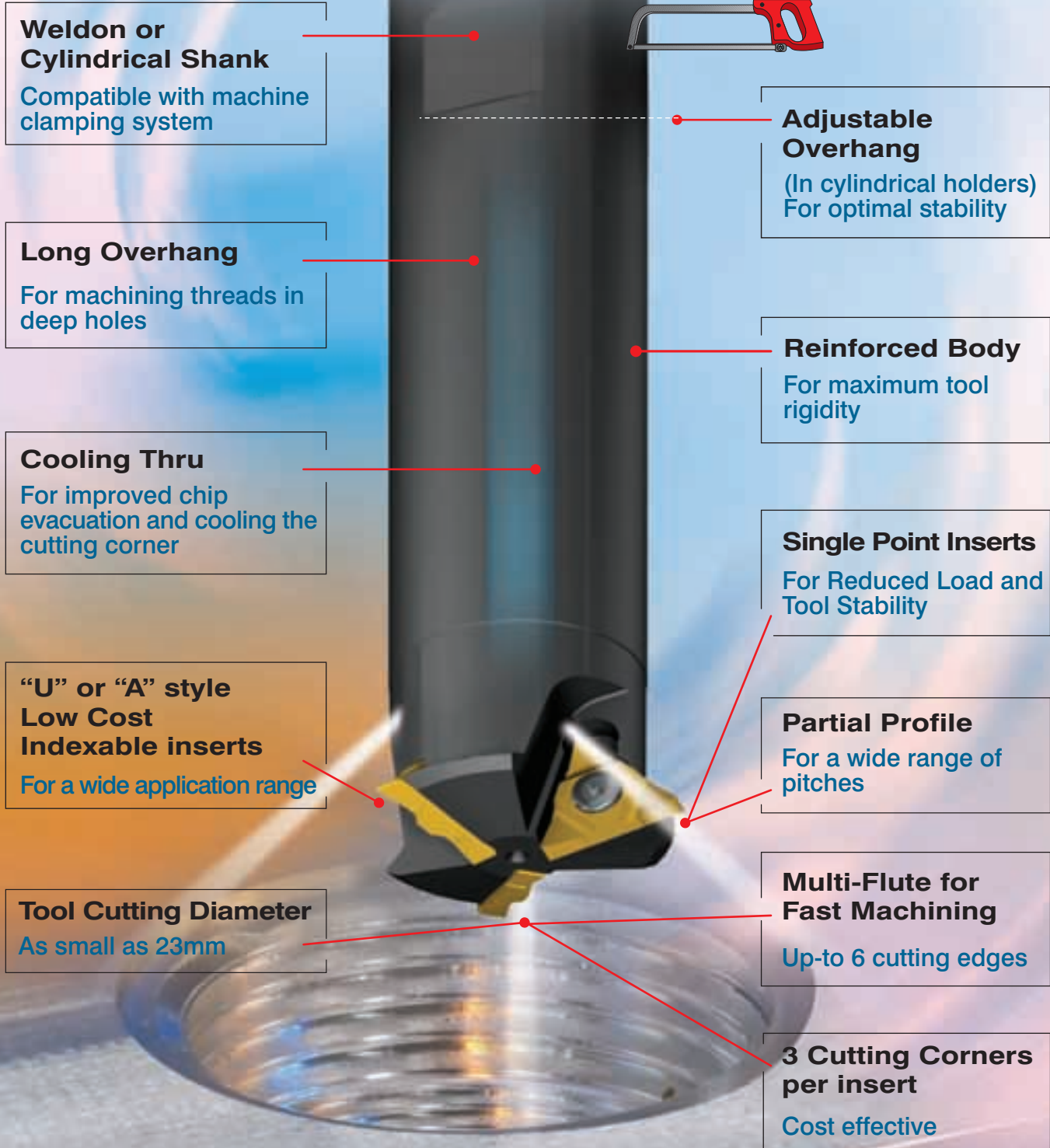


VARDEX Threading Solutions

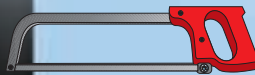
Inch

Thread Mill for Deep Holes

A multi-flute, high-productivity, and economical solution for milling threads in the deepest holes



Weldon or Cylindrical Shank
Compatible with machine clamping system



Adjustable Overhang
(In cylindrical holders)
For optimal stability

Long Overhang
For machining threads in deep holes

Reinforced Body
For maximum tool rigidity

Cooling Thru
For improved chip evacuation and cooling the cutting corner

Single Point Inserts
For Reduced Load and Tool Stability

“U” or “A” style Low Cost Indexable inserts
For a wide application range

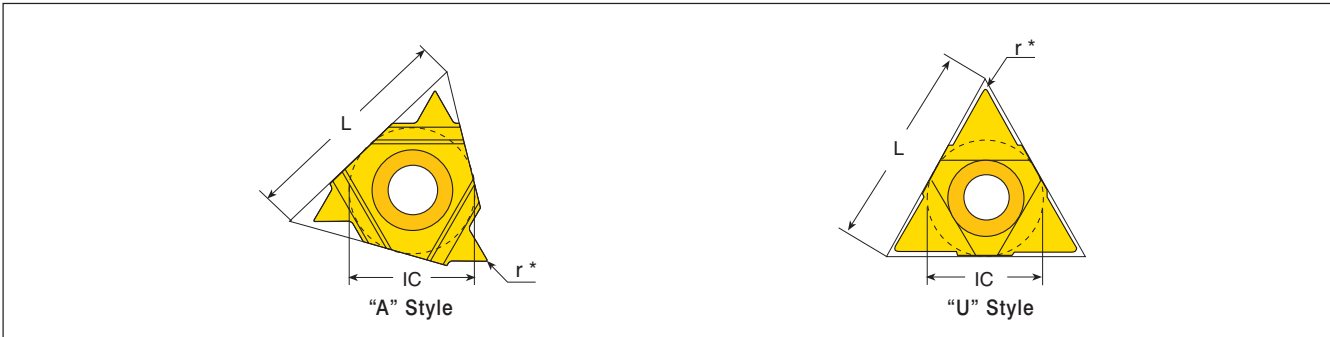
Partial Profile
For a wide range of pitches

Tool Cutting Diameter
As small as 23mm

Multi-Flute for Fast Machining
Up-to 6 cutting edges

3 Cutting Corners per insert
Cost effective

TMSD - Inserts



U style - Partial Profile 60°

Insert size	Pitch		Ordering Code		EDP No.			Dimension (Inch)	Toolholder
	IC	L	mm	tpi	Internal	VBX	VTX	r	
1/4"U	.43	1.5-2.0	16-12	2UIDB60 TM...	50008	50018	.002	TM.SC...2U	
		2.5-4.0	10-6	2UIDC60 TM...	50026	50033	.006		
3/8"U	.63	1.5-2.0	16-12	3UIDB60 TM...	50034	50040	.002	TM.SC...3U	
		2.5-3.5	10-7	3UIDE60 TM...	50041	50044	.006		
		4.0-6.0	6-4	3UIDH60 TM...	50045	50048	.010		
1/2"U	.87	6.0-8.0	4-3	4UIDK60 TM...	50049	50052	.012	TM.SC...4U	

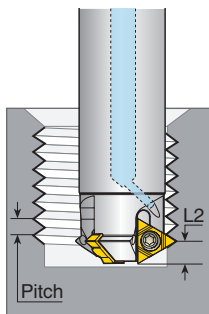
U style - Partial Profile 55°

Insert size	Pitch		Ordering Code		EDP No.			Dimension (Inch)	Toolholder
	IC	L	mm	tpi	Internal	VBX	VTX	r	
1/4"U	.43	-	16-12	2UIDB55 TM...	50053	50055	.003	TM.SC...2U	
		-	11-7	2UIDL55 TM...	50056	50061	.010		
3/8"U	.63	-	16-12	3UIDB55 TM...	50062	50067	.003	TM.SC...3U	
		-	11-7	3UIDL55 TM...	50068	50091	.010		
		-	6-4	3UIDH55 TM...	50233	50148	.011		
1/2"U	.87	-	4-3	4UIDK55 TM...	50189	50190	.020	TM.SC...4U	

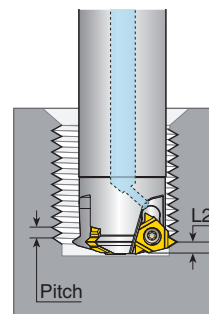
A style - Partial Profile 60°

Insert size	Pitch		Ordering Code		EDP No.			Dimension (Inch)	Toolholder
	IC	L	mm	tpi	Internal	VBX	VTX	r	
1/4"A	.43	1.5-3.0	16-8	2AIDP60 TM...	50200	50219	.002	TM.SC...2A	
3/8"A	.63	2.0-4.0	12-6	3AIDT60 TM...	50226	50227	.003	TM.SC...3A	

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

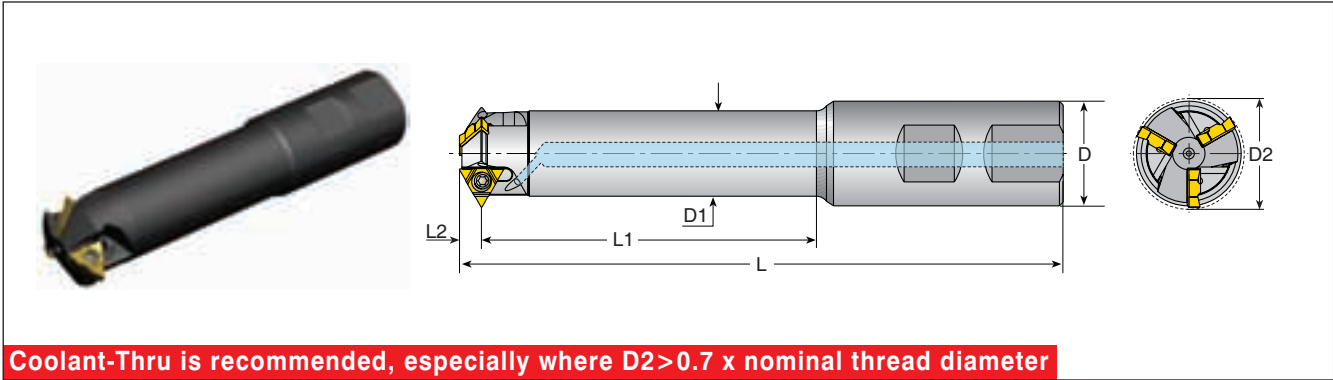


"U" style - For Large Pitches





"A" style - For Shorter L2

TMSD Standard Toolholder - Weldon shank (U-Style)



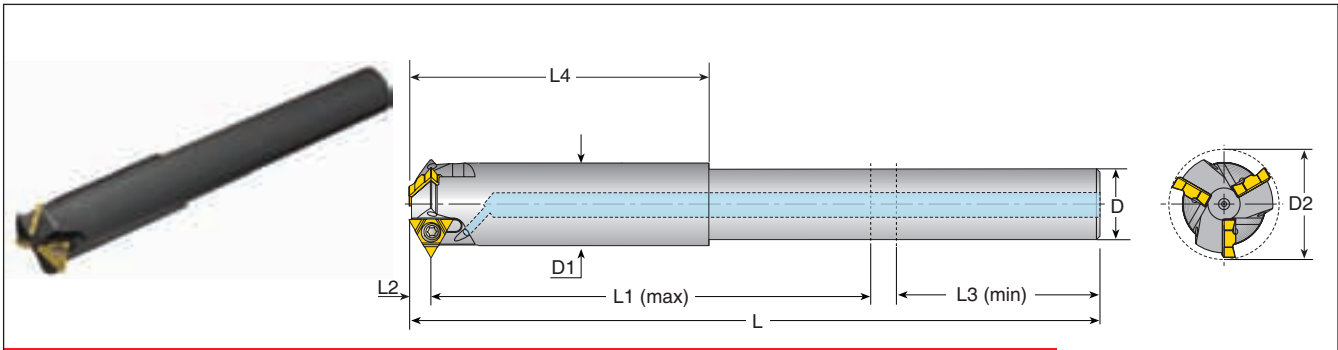
Weldon Shank for U-Style Inserts

									Spare Parts (Ordering Code & EDP No.)		
Ordering Code		EDP No.	Dimensions (Inch)				No. of Flutes				
IC			L	L1	L2	D	D1	D2	Z	Insert Screw	Torx Key
1/4"U	TM2SC 100W090-275-2U	67722	5.38	2.75	.21	1.00	.697	.906	2	SN2T (70036)	HK2T (70227)
	TM3SC 100W102-315-2U	67724	5.79	3.15	.21	1.00	.803	1.024	3		
	TM4SC 125W122-374-2U	67725	6.37	3.74	.21	1.25	1.012	1.220	4		
3/8"U	TM3SC 125W143-374-3U	67742	6.45	3.74	.32	1.25	1.142	1.437	3	SA3T (70028)	HK3T (70228)
	TM4SC 150W165-472-3U	67743	7.82	4.72	.32	1.50	1.346	1.656	4	SN3T (70038)	

Thread Application for U-Style Toolholders (Weldon Shank)

Toolholder	Min. Thread Ø						
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°
TM2SC 100W090-275-2U	.906	M27x3.0 ; M30x3.5; M36x4.0	M26x1.5, M26x2.0, M27x2.5	1 1/8 - 7UNC,	1-16UNS, 1-14UNS, 1 1/16-16UN, 1 1/16-8UN,	3/4-14BSP, 1-11BSP	1 1/8-16, 1 1/8-12, 1 1/8-9, 1 1/8-7
TM3SC 100W102-315-2U	1.024	M30x3.5, M36x4.0	M28x1.5, M29x2.0, M30x2.5, M30x3.0	1 1/4 - 7UNC, 1 3/8 - 6UNC	1 1/8-16UN, 1 1/8-14UNS, 1 3/16-12UN, 1 1/4-10UNS, 1 3/16-8UN	7/8-14BSP, 1-11BSP	1 3/16-16, 1 3/16-12, 1 3/16-8, 1 1/4-7
TM4SC 125W122-374-2U	1.220	M36x4.0	M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	1 1/2 - 6UNC	1 3/8-16UN, 1 3/8-14UNS, 1 3/8-12UNF, 1 3/8-10UNS, 1 7/16-8UN	1 1/8-11BSP	1 3/8-16, 1 3/8-12, 1 7/16-8
TM3SC 125W143-374-3U	1.437	M42x4.5, M48x5.0, M56x5.5, M64x6.0	M39x1.5, M39x2.0, M40x2.5, M41x3.0, M42x3.5, M42x4.0	1 3/4 - 5UNC, 2 - 4.5UNC, 2 1/2 - 4UNC	1 9/16-16UN, 1 5/8-14UNS, 1 9/16-12UN, 1 5/8-10UNS, 1 5/8-8UN, 1 5/8-6UN	1 1/4-11BSP	1 5/8-16, 1 5/8-12, 1 5/8-8, 2 1/4-6, 1 3/4-5
TM4SC 150W165-472-3U	1.656	M48x5.0, M56x5.5, M64x6.0	M45x1.5, M45x2.0, M46x2.5, M48x3.0, M48x3.5, M48x4.0	2 - 4.5UNC, 2 1/2 - 4UNC	1 3/4-16UN, 1 3/4-14UNS, 1 13/16-12UN, 1 13/16-8UN, 1 15/16-6UN	1 1/2-11BSP	1 7/8-16, 1 7/8-12, 1 7/8-8, 1 7/8-6, 2-4.5

TMSD Standard Toolholder - Cylindrical shank (U-Style)



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

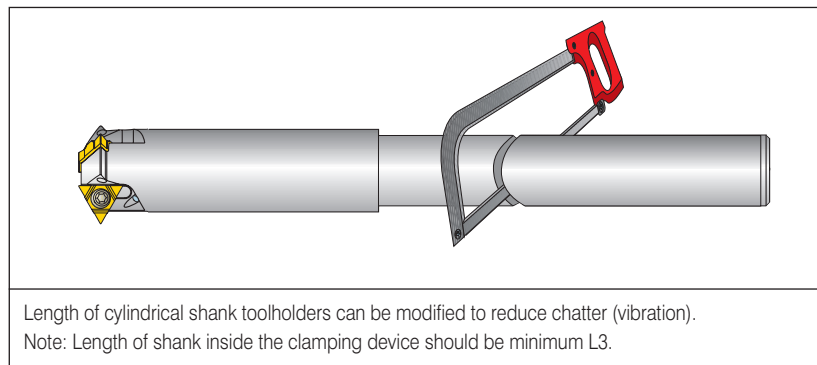
Cylindrical Shank (for Collet) for U-Style Inserts

Spare Parts (Ordering Code & EDP No.)

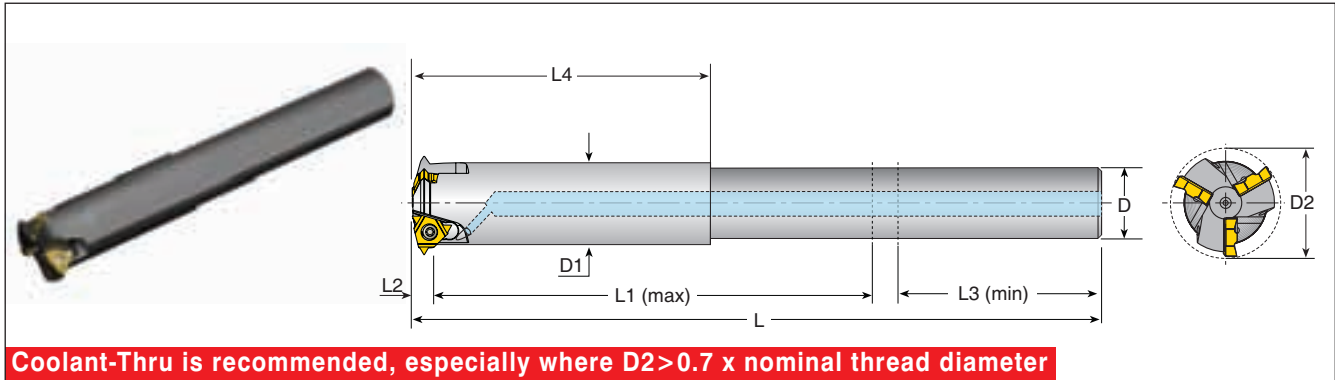
IC	Ordering Code	EDP No.	Dimensions (inch)								No. of Flutes	Insert Screw	Torx Key
			L	L1 (max)	L2	L3 (min)	L4	D	D1	D2			
1/4"U	TM2SC 062C090-300-2U	67744	5.60	3.00	.21	1.35	2.16	.625	.697	.905	2	SN2T (70036)	HK2T (70227)
	TM3SC 075C102-415-2U	67745	7.20	4.15	.21	1.57	-	.75	.750	1.024	3		
	TM4SC 100C122-452-2U	67746	7.70	4.52	.21	1.80	-	1.00	1.000	1.220	4		
3/8"U	TM3SC 100C143-512-3U	67747	8.35	5.12	.31	1.80	3.08	1.00	1.142	1.437	3	SA3T (70028)	HK3T (70228)

Thread Application for U-Style Toolholders (Cylindrical Shank)

Toolholder	Min. Thread \emptyset						
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°
TM2SC 062C090-300-2U	.905	M27x3.0 ; M30x3.5; M36x4.0	M26x1.5, M26x2.0, M27x2.5	1 $\frac{1}{8}$ - 7UNC,	1-16UNS, 1-14UNS, 1 $\frac{1}{16}$ -16UN, 1 $\frac{1}{16}$ -8UN,	3/4-14BSP, 1-11BSP	1 $\frac{1}{8}$ -16, 1 $\frac{1}{8}$ -12, 1 $\frac{1}{8}$ -9, 1 $\frac{1}{8}$ -7
TM3SC 075C102-415-2U	1.024	M30x3.5, M36x4.0	M28x1.5, M29x2.0, M30x2.5, M30x3.0	1 $\frac{1}{4}$ - 7UNC, 1 $\frac{3}{8}$ - 6UNC	1 $\frac{1}{8}$ -16UN, 1 $\frac{1}{8}$ -14UNS, 1 $\frac{3}{16}$ -12UN, 1 $\frac{1}{4}$ -10UNS, 1 $\frac{3}{16}$ -8UN	7/8-14BSP, 1-11BSP	1 $\frac{3}{16}$ -16, 1 $\frac{3}{16}$ -12, 1 $\frac{3}{16}$ -8, 1 $\frac{1}{4}$ -7
TM4SC 100C122-452-2U	1.220	M36x4.0	M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	1 $\frac{1}{2}$ - 6UNC	1 $\frac{3}{8}$ -16UN, 1 $\frac{3}{8}$ -14UNS, 1 $\frac{3}{8}$ -12UNF, 1 $\frac{3}{8}$ -10UNS, 1 $\frac{7}{16}$ -8UN	1 $\frac{1}{8}$ -11BSP	1 $\frac{3}{8}$ -16, 1 $\frac{3}{8}$ -12, 1 $\frac{7}{16}$ -8
TM3SC 100C143-512-3U	1.437	M42x4.5, M48x5.0, M56x5.5, M64x6.0	M39x1.5, M39x2.0, M40x2.5, M41x3.0, M42x3.5, M42x4.0	1 $\frac{3}{4}$ - 5UNC 2 - 4.5UNC 2 $\frac{1}{2}$ - 4UNC	1 $\frac{9}{16}$ -16UN, 1 $\frac{5}{8}$ -14UNS, 1 $\frac{9}{16}$ -12UN, 1 $\frac{5}{8}$ -10UNS, 1 $\frac{5}{8}$ -8UN, 1 $\frac{5}{8}$ -6UN	1 $\frac{1}{4}$ -11BSP	1 $\frac{5}{8}$ -16, 1 $\frac{5}{8}$ -12, 1 $\frac{5}{8}$ -8, 2 $\frac{1}{4}$ -6, 1 $\frac{3}{4}$ -5



TMSD Standard Toolholder - Cylindrical shank (A-Style)



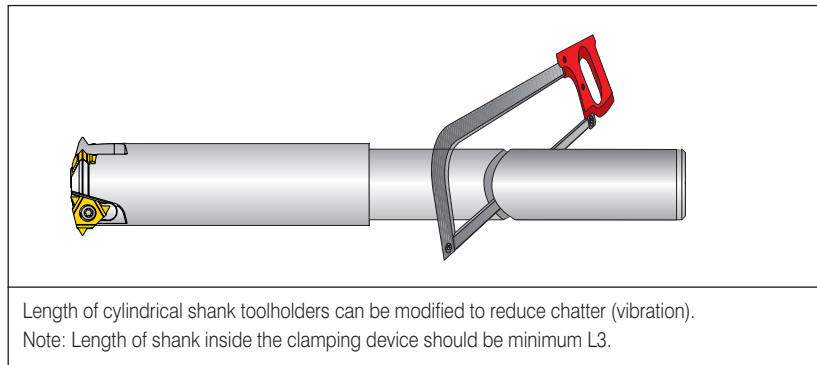
Cylindrical Shank (for Collet) for A-Style Inserts

Spare Parts (Ordering Code & EDP No.)

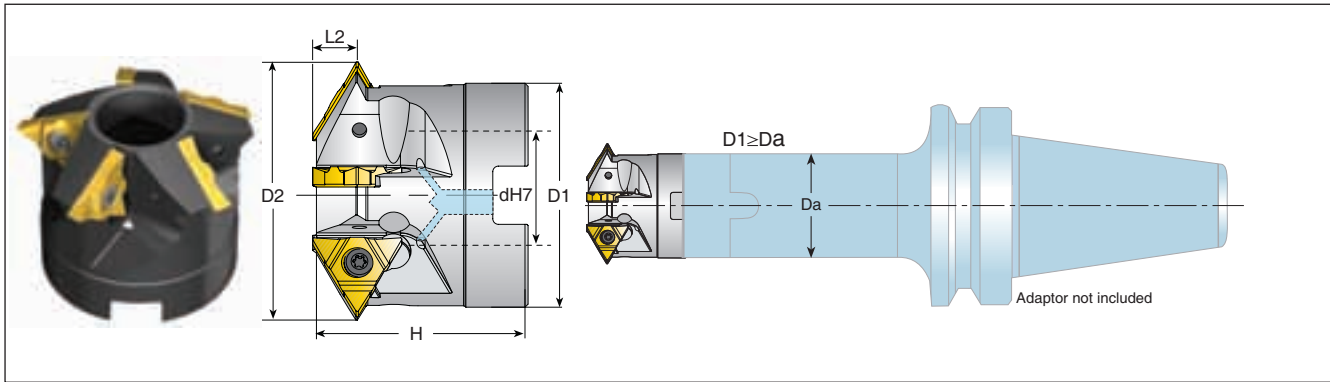
IC	Ordering Code	EDP No.	Dimensions (inch)							No. of Flutes	Spare Parts (Ordering Code & EDP No.)		
			L	L1 (max)	L2	L3 (min)	L4	D	D1		D2	Z	Insert Screw
1/4"A	TM3SC 075C102-415-2A	67748	7.20	4.15	.12	1.57	-	.75	.750	1.024	3	SN2T (70036)	HK2T (70227)
3/8"A	TM3SC 100C138-512-3A	67749	8.35	5.12	.16	1.80	3.08	1.00	1.114	1.389	3	SA3T (70028)	HK3T (70228)

Thread Application for A-Style Toolholders (Cylindrical Shank)

Toolholder	Min. Thread Ø					
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)
TM3SC 075C102-415-2A	1.024	-	M28x1.5, M29x2.0, M30x2.5, M30x3.0	-	1 1/8-16UN, 1 1/8-14UNS, 1 3/16-12UN, 1 1/4-10UNS, 1 3/16-8UN	-
TM3SC 100C138-512-3A	1.389	-	M38x2.0, M39x2.5, M39x3.0, M40x4.0	-	1 9/16-12UN, 1 5/8-10UNS, 1 5/8-8UN, 1 5/8-6UN	-



TMSD - Shell Mill (U-Style)



Shell Mill for U-style Inserts

IC	Ordering Code	EDP No.	Dimensions (inch)				No. of Flutes	Spare Parts (Ordering Code & EDP No.)				
			D1	D2	dh7	H		L2	Z	Insert Screw	Torx Key	Holder Screw
3/8"U	TM4SC D169-050-3U	67750	1.378	1.692	.50	1.575	.31	4	SN3T (70038)	HK3T (70228)	1/4-28x1.25 (70222)	TK5T(72006)
	TM5SC D208-075-3U	67751	1.772	2.087	.75	1.575	.31	5			3/8-24x1.25 (70223)	-
1/2"U	TM6SC D346-100-4U	67752	2.992	3.465	1.0	2.000	.39	6	SA4T (70032)	HK4T (70241)	1/2-20x1.5 (70224)	-





Thread Application U-Style Shell Mill

Toolholder	Min. Thread Ø						
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°
TM4SC D169-050-3U	1.692	M56x5.5 M64x6.0	M45x1.5, M48x2.0 M48x3.0, M48x4.0	2-4.5UNC, 2 1/2 - 4UNC	1 13/16-16 UN; 1 7/8-14 UNS; 1 13/16-12 UN; 1 7/8 -10 UNS; 1 7/8-8 UN; 1 15/16-6 UN	1 1/2 - 11BSP	1 7/8-16 ; 1 7/8-12; 1 7/8-8; 2 1/8-6; 2- 4.5; 2 1/4 - 4
TM5SC D208-075-3U	2.087	M64x6.0	M55x1.5, M56x2.0, M58x3.0, M58x4.0	2 1/2 - 4UNC	2 1/4-16 UN; 2 1/4-14 UNS; 2 1/4-12 UN; 2 1/4-10 UNS; 2 1/4-8 UN; 2 3/8-6 UN	2 - 11BSP	2 1/4-16; 2 1/4-12; 2 3/8-8; 2 3/8-6; 3-5; 3 1/2-4.5
TM6SC D346-100-4U	3.465	-	M115x6, M130x8	4 - 4UNC		3 1/2 - 11BSP	4 1/4-4,4-3

Recommended Cutting Speed and Feed

Material	Hardness Brinell HB	Vc[ft/min]		Feed f		
		Indexable Inserts		[inch/tooth] *		
		Coated		Peripheral Feed		
VBX	VTX					
P	Unalloyed steel	Low carbon (C=0.1-0.25 %)	125	328-689	295-591	.0094-.0142
		Medium carbon (C=0.25-0.55 %)	150	328-591	295-558	.0094-.0142
		High carbon (C=0.55-0.85 %)	170	328-558	295-525	.0087-.0130
	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	295-525	295-509	.0087-.0130
		Hardened	275	262-492	262-525	.0079-.0118
		Hardened	350	230-459	230-492	.0055-.0083
	High alloy steel (alloying elements > 5%)	Annealed	200	197-427	230-377	.0071-.0106
		Hardened	325	230-361	197-328	.0063-.0094
	Cast steel	Low alloy (alloying elements ≤5%)	200	328-558	328-558	.0079-.0118
		High alloy (alloying elements >5%)	225	230-394	230-427	.0055-.0083
M	Stainless steel Ferritic	Non hardened	200	328-558	394-591	.0071-.0106
		Hardened	330	328-558	394-591	.0067-.0102
	Stainless steel Austenitic	Austenitic	180	230-459	328-459	.0063-.0094
		Super austenitic	200	230-459	328-459	.0055-.0083
	Stainless steel Cast ferritic	Non hardened	200	230-459	328-394	.0079-.0118
		Hardened	330	230-459	328-394	.0055-.0083
	Stainless steel Cast austenitic	Austenitic	200	230-394	328-394	.0063-.0094
		Hardened	330	230-394	328-394	.0055-.0083
	High temperature alloys	Annealed (Iron based)	200	66-148	66-131	.0047-.0071
		Aged (Iron based)	280	66-98	66-98	.0039-.0059
		Annealed (Nickel or Cobalt based)	250	49-66	49-66	.0031-.0047
		Aged (Nickel or Cobalt based)	350	33-49	33-49	.0031-.0047
	Titanium alloys	Pure 99.5 Ti	-	230-459	230-394	.0039-.0059
		α + β alloys	-	66-164	66-164	.0039-.0059
	K	Extra hard steel	Hardened & tempered	55HRc	66-148	66-148
Malleable cast iron			Ferritic (short chips)	130	197-427	328-394
		Pearlitic (long chips)	230	197-394	262-328	.0063-.0094
Grey cast iron		Low tensile strength	180	197-427	262-328	.0071-.0106
		High tensile strength	260	197-328	262-328	.0063-.0094
Nodular SG iron		Ferritic	160	197-410	262-328	.0047-.0071
		Pearlitic	260	164-295	197-295	.0063-.0094
Aluminium alloys Wrought		non aging	60	328-820	-	.0236-.0354
		Aged	100	328-591	-	.0197-.0295
Aluminium alloys		Cast	75	492-1312	-	.0197-.0295
		Cast & aged	90	492-919	-	.0157-.0236
Aluminium alloys		Cast Si 13-22%	130	262-492	-	.0197-.0295
Copper and copper alloys	Brass	90	394-689	328-656	.0236-.0354	
	Bronze and non leaded copper	100	394-689	328-656	.0197-.0295	

Grades

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



* When using a Shell Mill Holder, Feed can be increased by 50%.

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