

MTT-X

Multi-Application Taps, Material-Specific Taps and Forming Taps
ISO Standard



ST

TiAlN

Super
B

Gold

TiN

Dialub



M

MF

UNC

UNF

G

HSS
XS1

HSCo



DORMER

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MTT-X taps are a range of high performance taps that offer impressive tooling economy and longer tool life. Most materials and applications can be covered by a minimum number of MTT-X taps, so stock holding is reduced.

In the modern world where speed and time-savings are paramount, the cost of the tool can not, of course, be viewed in isolation. A far more realistic yardstick is productivity, or cost per threaded hole produced.

To this end, Dormer has developed the MTT-X tap range, to allow a speedy production process but not at the expense of quality. MTT-X taps are designed specifically to produce high quality threads to correct tolerances in most materials. As a result, cost per threaded hole can be reduced.

MTT-X high performance taps are the optimum tools for threading both blind and through holes. Produced to ISO standard in spiral flute, spiral point, straight flute and with a thread forming option, they come in five different thread forms and seven different finishes to provide the engineer with a greater level of choice.

MTT-X taps supersede Dormer's Vanguard tap ranges, offering improved performance on even the toughest materials. A Vanguard/MTT-X cross-reference chart on page 63 will guide you to the new code for your required thread type, material and hole type. Additional information can be found at the start of each section.

On pages 4-7, the Application Material Group charts show all the MTT-X tap ranges, giving details of their suitability for machining different materials and their recommended speeds. Both cutting taps and forming taps are available, so that you can choose according to your preferred method of producing threads. Taps are listed according to thread form - Metric, Metric Fine, UNC, UNF and G (BSPF).

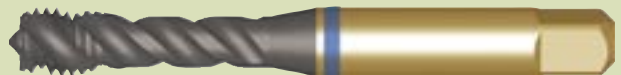
MTT-X Multi-Application Taps

From page 8, you will find detailed information about the ranges of MTT-X Multi-Application taps, a compact range of high performance taps to cover a wide range of applications. Within this range, one tap covers many different materials. A cross-reference list (page 8) shows the old Vanguard tap codes against the new MTT-X codes in this section.



MTT-X Material-Specific Taps

At Dormer, we know that there are times when a material-specific tap is the best solution and for this reason, a combination of material, geometry and surface treatment provide the optimum tap for your particular machining application. Information on these taps can be found in the section "MTT-X Material-Specific Taps" on pages 31 to 52. Again, a cross-reference list (page 31) shows the old Vanguard tap codes against the new MTT-X codes in this section.



MTT-X Forming Taps

The new MTT-X Forming Taps are covered on pages 53 to 62, along with a cross-reference list (page 53) showing the old ISO forming tap codes alongside the new MTT-X codes. Tests of these taps have shown exceptional performance against competitors' forming taps.



MTT-X "Special" Taps

Special taps can be made to customer specifications in instances where the standard ranges of MTT-X taps are not suited to a particular application. To speed up the process of producing "specials", MTT-X ISO blanks are held in stock in most sizes.

Application Material Groups (AMG)



MTT-X

■ Excellent for Application

● Good for Application

Example

25 = Cutting speed in metres/minute +/- 10%



HSS X31	HSS X31	HSS X31
Gold	ST	TiAlN
ISO 529	ISO 529	ISO 529
6H	6H	6H
2.5xC	2.5xC	2.5xC
B 118 - 119	B 118 - 119	B 118 - 119
M3 - M24	M3 - M24	M3 - M20
Broken 2004.09	Broken 2004.09	Broken 2006.06

Application Material Groups (AMG)			Hardness	Tensile Strength N/mm ²	11	12	35
1. Steel	1.1 Magnetic soft steel		<120	<400	■25	■25	■40
	1.2 Structural Steel/ case carburising steel		<200	<700	■22	■22	■40
	1.3 Plain Carbon steel		<250	<850	■18	■18	■32
	1.4 Alloy steel		<250	<850	■16	■16	■30
	1.5 Alloy steel/ Hardened and tempered steel		>250 <350	>850 <1200	■10	■10	■17
	1.6 Alloy steel/ Hardened and tempered steel		>350	>1200 <1620	●5	●5	●11
	1.7 Alloy steel Hardened		49-55HRC	>1620			
	1.8 Alloy steel Hardened		55-63HRC	<1960			
2. Stainless Steel	2.1 Free machining Stainless Steel		<250	<850		●8	
	2.2 Austenitic		<250	<850		●7	
	2.3 Ferritic + Austenitic, Martensitic		<300	<1000		●5	
3. Cast Iron	3.1 Lamellar graphite		<150	<500	●15	●15	●22
	3.2 Lamellar graphite		>150 <300	>500 <1000	●8	●8	●18
	3.3 Nodular graphite/ Malleable Cast Iron		<200	<700	●15	●15	●25
	3.4 Nodular graphite/ Malleable Cast Iron		>200 <300	>700 <1000	●8	●8	●18
4. Titanium	4.1 Titanium, unalloyed		<200	<700	●10		
	4.2 Titanium, alloyed		<270	<900	●5		●7
	4.3 Titanium, alloyed		>270 <350	>900 <1250			
5. Nickel	5.1 Nickel, unalloyed		<150	<500	●12		
	5.2 Nickel, alloyed		<270	<900	●5		●8
	5.3 Nickel, alloyed		>270 <350	>900 <1200			
6. Copper	6.1 Copper		<100	<350	■12		■18
	6.2 β-Brass, Bronze		<200	<700	●30		●45
	6.3 α-Brass		<200	<700	■20		■35
	6.4 High Strength Bronze		<470	<1500			
7. Aluminium Magnesium	7.1 Al, Mg, unalloyed		<100	<350	■16		
	7.2 Al alloyed, Si<0.5%		<150	<500	■35		
	7.3 Al alloyed, Si>0.5%<10%		<120	<400	■20		
	7.4 Al alloyed, Si>10% Whisker reinforced Al-alloys, Mg alloys		<120	<400	■15		
8. Synthetic Materials	8.1 Thermoplastics		---	---	●30		
	8.2 Thermosetting plastics		---	---			
	8.3 Reinforced plastic materials		---	---			
9. Hard Materials	9.1 Cermets (Metal-ceramics)		<550	<1700			
10. Graphite	10.1 Standard graphite		---	<100			

E045	E046	E002	E003	E050	E047	E048	E044	E052	E051	E053	E090	E097	E091	E098	E096	E080	E099	
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
																		
HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	
ST	ST	Gold	ST	TiAlN	ST	ST	Gold	Gold	TiAlN	TiAlN	Gold	CoN	TiN	TiN	TiN	CoN	TiN	
ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	
																		
6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6HXC	6HXC	6HXC	6HXC	6HXC	6HXC	6HXC	
2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2xD	2xD	2.5xC	2xD	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	
B J.B - B	B J.B - B	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	C J.C - J	E J.E - E	C J.C - J	C J.C - J	
																		
M3 - M20	M3 - M20	M3 - M24	M3 - M24	M3 - M20	M3 - M20	M3 - M20	M8 - M20	M3 - M16	M6 - M20	M3 - M20	M2 - M16	M2 - M16	M2 - M16	M3 - M10	M3 - M16	M2 - M8	M4 - M16	
D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2004.09	D-Symbol 2004.09	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	D-Symbol 2006.06	
36	37	13	14	38	39	40	41	42	43	44	57	60	58	61	59	56	62	
		■25	■25	■40			●25	●25	■40		●30	■55	■55	■55	■55		■55	1.1
		■22	■22	■40			●22	●22	■40		●27	■50	■50	■50	■50		■50	1.2
		■18	■18	■32		●32	●18	●18	■32		●23	■45	■45	■45	■45		■45	1.3
		■16	■16	■30		●30	■16	■16	■30		●20	■40	■40	■40	■40		■40	1.4
●10	●17	■10	■10	■17	●10	●17	■10	■10	■17				●20	●20	●20		●20	1.5
●5	●11			●11	●5	●11	■5	●11	●11									1.6
																		1.7
																		1.8
■8	■14		●8		■8	■14						●18	■18	■18	■18		■18	2.1
■7	■10		●7		■7	■10						●15	■15	■15	■15		■15	2.2
■5	■6		●5		■5	■6						●10	●10	●10	●10		●10	2.3
											■22							3.1
											■18							3.2
											■25							3.3
											●18							3.4
	■15	●10										■35	■35	■35	■35		■35	4.1
		●5		●7			●5		●7									4.2
																		4.3
	●15	●12				●15						■20	■20	■20	■20		■20	5.1
	●8	●5		●8		●8	●5					●8	●8	●8	●8		●8	5.2
																		5.3
				■18				●12	■18			●25	●25	●25	●25	■25	●25	6.1
				●45				■30	●45	●30								6.2
				■35				■20	■35			●40	●40	●40	●40	■40	●40	6.3
										●4								6.4
		■16						●16			●22	■40	●40	●40	●40	■40	●40	7.1
	■35							■35			●38	■55	●55	●55	●55	■55	●55	7.2
	■20							■20			●22	■40	■40	■40	■40	■40	■40	7.3
	■15							■15		●20		●25	●25	●25	●25		●25	7.4
																		8.1
										■15								8.2
																		8.3
																		9.1
																		10.1

Application Material Groups (AMG)



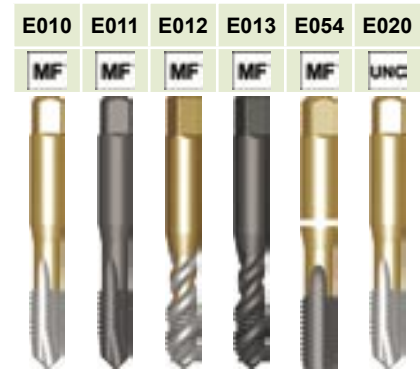
MTT-X

■ Excellent for Application

● Good for Application

Example

25 = Cutting speed in metres/minute +/- 10%



HSS X31	HSS X31	HSS X31	HSS X31	HSS Co	HSS X31
Gold	ST	Gold	ST	TiAlN	Gold
ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529
6H	6H	6H	6H	6H	2B
2.5xC	2.5xC	2.5xC	2.5xC	2xD	2.5xC
B 1.8 - 8	B 1.8 - 8	C 2 - 3	C 2 - 3	C 2 - 3	B 1.8 - 8
M4 - M24	M4 - M24	M4 - M22	M4 - M22	M8 - M16	No.4 - 1"
2004.09	2004.09	2004.09	2004.09	2006.06	2004.09

Application Material Groups (AMG)			Hardness	Tensile Strength N/mm ²	15	16	17	18	45	19
1. Steel	1.1 Magnetic soft steel	<120	<400	■25	■25	■25	■25	■25		■25
	1.2 Structural Steel/ case carburising steel	<200	<700	■22	■22	■22	■22	■22		■22
	1.3 Plain Carbon steel	<250	<850	■18	■18	■18	■18	■18		■18
	1.4 Alloy steel	<250	<850	■16	■16	■16	■16	■16		■16
	1.5 Alloy steel/ Hardened and tempered steel	>250 <350	>850 <1200	■10	■10	■10	■10	■10		■10
	1.6 Alloy steel/ Hardened and tempered steel	>350	>1200 <1620	●5	●5					●5
	1.7 Alloy steel Hardened	49-55HRC	>1620							
	1.8 Alloy steel Hardened	55-63HRC	<1960							
2. Stainless Steel	2.1 Free machining Stainless Steel	<250	<850		●8		●8			
	2.2 Austenitic	<250	<850		●7		●7			
	2.3 Ferritic + Austenitic, Martensitic	<300	<1000		●5		●5			
3. Cast Iron	3.1 Lamellar graphite	<150	<500	●15	●15			■22		●15
	3.2 Lamellar graphite	>150 <300	>500 <1000	●8	●8			■18		●8
	3.3 Nodular graphite/ Malleable Cast Iron	<200	<700	●15	●15			■25		●15
	3.4 Nodular graphite/ Malleable Cast Iron	>200 <300	>700 <1000	●8	●8			■18		●8
4. Titanium	4.1 Titanium, unalloyed	<200	<700	●10		●10				●10
	4.2 Titanium, alloyed	<270	<900	●5		●5				●5
	4.3 Titanium, alloyed	>270 <350	>900 <1250							
5. Nickel	5.1 Nickel, unalloyed	<150	<500	●12		●12				●12
	5.2 Nickel, alloyed	<270	<900	●5		●5				●5
	5.3 Nickel, alloyed	>270 <350	>900 <1200							
6. Copper	6.1 Copper	<100	<350	■12						■12
	6.2 β-Brass, Bronze	<200	<700	●30				●30		●30
	6.3 α-Brass	<200	<700	■20						■20
	6.4 High Strength Bronze	<470	<1500					●4		
7. Aluminium Magnesium	7.1 Al, Mg, unalloyed	<100	<350	■16		■16				■16
	7.2 Al alloyed, Si<0.5%	<150	<500	■35		■35				■35
	7.3 Al alloyed, Si>0.5%<10%	<120	<400	■20		■20				■20
	7.4 Al alloyed, Si>10% Whisker reinforced Al-alloys, Mg alloys	<120	<400	■15		■15		●20		■15
8. Synthetic Materials	8.1 Thermoplastics	---	---	●30		●30				●30
	8.2 Thermosetting plastics	---	---					■15		
	8.3 Reinforced plastic materials	---	---							
9. Hard Materials	9.1 Cermets (Metal-ceramics)	<550	<1700							
10. Graphite	10.1 Standard graphite	---	<100							

E021	E057	E055	E022	E023	E058	E056	E059	E030	E031	E060	E032	E033	E095	E040	E041	E042	E043	
UNC	UNC	UNC	UNC	UNC	UNC	UNC	UNC	UNF	UNF	UNF	UNF	UNF	UNF	G	G	G	G	
HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	HSS X31	
ST	TiAlN	ST	Gold	ST	TiAlN	ST	TiAlN	Gold	ST	ST	Gold	ST	ST	Gold	ST	Gold	ST	
ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	
2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	
2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	2.5xC	
B 3.5 - 8	B 3.5 - 8	B 3.5 - 8	C 7 - 3	C 7 - 3	C 7 - 3	C 7 - 3	C 7 - 3	C 7 - 3	B 3.5 - 8	B 3.5 - 8	B 3.5 - 8	C 7 - 3	C 7 - 3	C 7 - 3	B 3.5 - 8	B 3.5 - 8	C 7 - 3	
No.4 - 1"	No.6 - 3/4	No.4 - 3/4	No.4 - 1"	No.4 - 1"	No.6 - 3/4	No.4 - 3/4	1/4 - 3/4	No.8 - 1"	No.8 - 1"	No.10 - 3/8	No.8 - 1"	No.8 - 1"	No.10 - 1/2	1/8 - 3/4	1/8 - 3/4	1/8 - 3/4	1/8 - 3/4	
D-Broken 2004.09	D-Broken 2006.06	D-Broken 2006.06	D-Broken 2004.09	D-Broken 2004.09	D-Broken 2006.06	D-Broken 2006.06	D-Broken 2006.06	D-Broken 2004.09	D-Broken 2004.09	D-Broken 2006.06	D-Broken 2004.09	D-Broken 2004.09	D-Broken 2006.06	D-Broken 2004.09	D-Broken 2004.09	D-Broken 2004.09	D-Broken 2004.09	
20	46	47	21	22	48	49	50	23	24	51	25	26	52	27	28	29	30	
■25 ■22 ■18 ■16 ■10 ●5	■40 ■40 ■32 ■30 ■17 ●11	●10 ●5	■25 ■22 ■18 ■16 ■10	■25 ■22 ■18 ■16 ■10	■40 ■40 ■32 ■30 ■17 ●11	●10 ●5	●5	■25 ■22 ■18 ■16 ■10 ●5	■25 ■22 ■18 ■16 ■10 ●5	●10 ●5	■25 ■22 ■18 ■16 ■10 ●5	■25 ■22 ■18 ■16 ■10 ●5	●10 ●5	■25 ■22 ■18 ■16 ■10 ●5	■25 ■22 ■18 ■16 ■10 ●5	■25 ■22 ■18 ■16 ■10 ●5	■25 ■22 ■18 ■16 ■10 ●5	1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8
●8 ●7 ●5	■8 ■7 ■5	●8 ●7 ●5	●8 ●7 ●5	■8 ■7 ■5	●8 ●7 ●5	●8 ●7 ●5	●8 ●7 ●5	●8 ●7 ●5	■8 ■7 ■5	●8 ●7 ●5	●8 ●7 ●5	■8 ■7 ■5	●8 ●7 ●5	●8 ●7 ●5	●8 ●7 ●5	●8 ●7 ●5	●8 ●7 ●5	2.1 2.2 2.3
●15 ●8 ●15 ●8	●7	●10 ●5	●10 ●5	●7	●10 ●5	●7	●10 ●5	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	●15 ●8 ●15 ●8	3.1 3.2 3.3 3.4
●8	●12 ●5	●12 ●5	●12 ●5	●8	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	●12 ●5	4.1 4.2 4.3
■18 ●45 ■35	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■18 ●45 ■35	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	■12 ●30 ■20	5.1 5.2 5.3
■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	■16 ■35 ■20 ■15 ●30	6.1 6.2 6.3 6.4
■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	7.1 7.2 7.3 7.4
■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	8.1 8.2 8.3
■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	9.1 10.1

MTT-X Multi-Application ISO Taps



In this section, you will find information relating to Multi-Application ISO taps, a compact range of high performance taps to cover a wide range of applications - one tap will produce high quality threads in many different materials.

Please refer to the Application Material Group charts on pages 4-7. For a complete numerical Vanguard/MTT-X cross reference chart, please see page 63.

Thread Form	MTT-X Code	Page	MTT-X Tap	Obsolete Vanguard Product Code
M	E000	11		 E955,  E964
M	E001	12		
M	E002	13		 E958,  E967
M	E003	14		
MF	E010	15		 E985
MF	E011	16		 E983
MF	E012	17		 E986
MF	E013	18		 E984
UNC	E020	19		 E941
UNC	E021	20		
UNC	E022	21		 E959,  E968,  E944
UNC	E023	22		
UNF	E030	23		 E942
UNF	E031	24		
UNF	E032	25		 E945
UNF	E033	26		
G	E040	27		
G	E041	28		
G	E042	29		 E992,  E994,  E988
G	E043	30		 E990

MATERIAL

MTT-X taps are manufactured from premium quality vanadium powder steel, branded HSS-XS1, for an unbeatable combination of toughness, edge strength and wear resistance. This winning combination enables them to withstand the stresses of threading in tough materials.

SURFACE TREATMENTS

Special gold finish with bright flutes/thread, or steam tempering (blue) guarantee a smooth cutting action with less build up on the cutting edge.

THREAD FORMS

Available in a choice of 5 thread forms, each manufactured with 2 different finishes. Choose from Metric Coarse, Metric Fine, UNC, UNF and G, according to requirement.

SHORT THREAD LENGTH

The short thread length means low torque and better chip evacuation.

HELIX

Specially formulated high helix of 48° to allow adequate room for chip formation and rapid and smooth chip evacuation at high cutting speeds. Ideal for threading blind holes up to 2.5 x diameter of the tap used.

3 RADII FLUTE PROFILE

The design of the flute profile gives a constant rake angle all along the flute length, leading to better control of cutting properties.



GEOMETRY

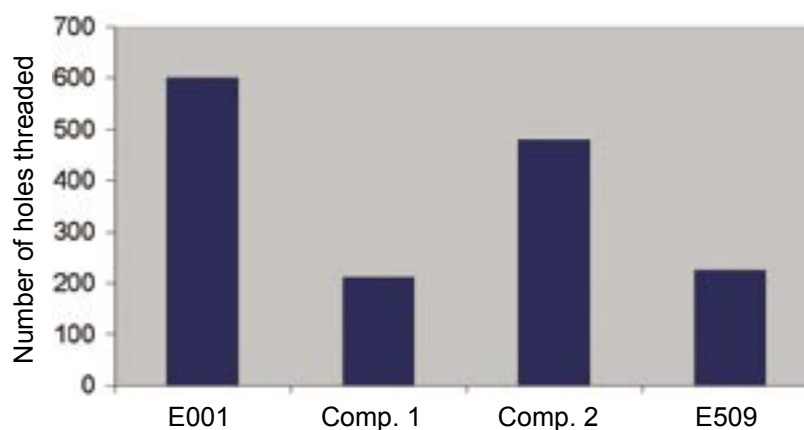
Superior spiral point geometry leads to consistent and long tool life.



Field Test Results Test 1

Tap	E001, M6	Competitor 1, M6	Competitor 2, M6	E509, M6
Material	HSS-XS1	HSSV	HSSV	HSS
Surface Treatment	Steam tempered (blue)	Steam tempered (blue)	Steam tempered (blue)	Steam tempered (blue)
Geometry	Spiral Point	Spiral Point	Spiral Point	Spiral Point

Spiral Point Taps in AMG 1.5, Alloy Steel



Workpiece Material	41CrMo4, SS2244 (AMG 1.5)
Hole Type	Through hole
Vc	10 m/min.
Thread depth	2 x D

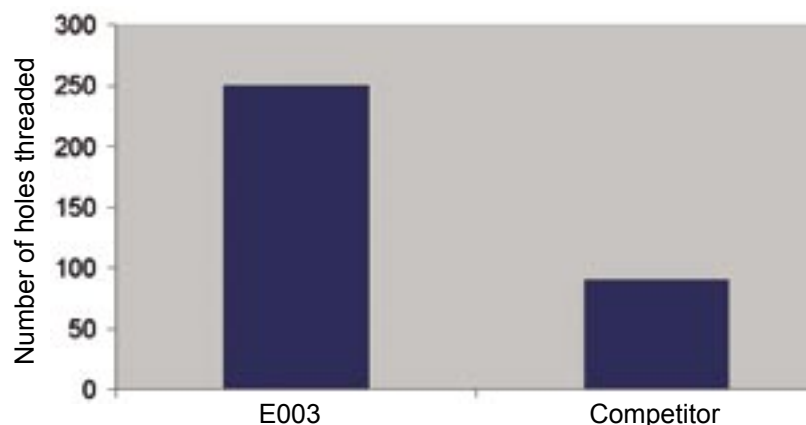
Result:

E001 threaded 28% more holes than its nearest competitor in 41CrMo4/SS2244 (AMG 1.5) Alloy Steel material.

Test 2

Tap	E003, M6	Competitor, M6
Material	HSS-XS1	HSSV
Surface Treatment	Steam tempered (blue)	Steam tempered (blue)
Geometry	48° Spiral Flute	40° Spiral Flute

Spiral Flute Taps in AMG 2.2, Stainless Steel



Workpiece Material	304, SS2333 (AMG 2.2)
Hole Type	Blind hole
Vc	10 m/min.
Thread depth	1.5 x D

Result:

E003 threaded almost 3 times as many holes as its nearest competitor in 304/SS2333 (AMG 2.2) Stainless Steel material.

Machine Taps MTT-X

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Maskingängtappar MTT-X

Konekierretapit MTT-X



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E000



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
●	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E000M3
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E000M3.5
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E000M4
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E000M5
6	1.00	66	13	6.30	5.00	8	3	5.0	26	E000M6
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E000M8
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E000M10
12	1.75	89	22	9.00	7.10	10	3	10.3		E000M12
14	2.00	95	24	11.20	9.00	12	3	12.0		E000M14
16	2.00	102	24	12.50	10.00	13	3	14.0		E000M16
18	2.50	112	29	14.00	11.20	14	4	15.5		E000M18
20	2.50	112	29	14.00	11.20	14	4	17.5		E000M20
22	2.50	118	29	16.00	12.50	16	4	19.5		E000M22
24	3.00	130	35	18.00	14.00	18	4	21.0		E000M24

- Machine Taps MTT-X
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- Konekierretapit MTT-X



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E001



- 1.1 1.2 1.3 1.4 1.5
- 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E001M3
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E001M3.5
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E001M4
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E001M5
6	1.00	66	13	6.30	5.00	8	3	5.0	26	E001M6
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E001M8
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E001M10
12	1.75	89	22	9.00	7.10	10	3	10.3		E001M12
14	2.00	95	24	11.20	9.00	12	3	12.0		E001M14
16	2.00	102	24	12.50	10.00	13	3	14.0		E001M16
18	2.50	112	29	14.00	11.20	14	4	15.5		E001M18
20	2.50	112	29	14.00	11.20	14	4	17.5		E001M20
22	2.50	118	29	16.00	12.50	16	4	19.5		E001M22
24	3.00	130	35	18.00	14.00	18	4	21.0		E001M24

Machine Taps MTT-X

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Maskingängttappar MTT-X

Konekierretapit MTT-X



D-product
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E002



■	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
●	4.1	4.2	5.1	5.2					

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E002M3
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E002M3.5
4	0.70	53	7	4.00	3.15	6	3	3.3	19	E002M4
5	0.80	58	8	5.00	4.00	7	3	4.2	22	E002M5
6	1.00	66	10	6.30	5.00	8	3	5.0	27	E002M6
8	1.25	72	12	8.00	6.30	9	3	6.8	31	E002M8
10	1.50	80	15	10.00	8.00	11	3	8.5	35	E002M10
12	1.75	89	16	9.00	7.10	10	3	10.3		E002M12
14	2.00	95	18	11.20	9.00	12	3	12.0		E002M14
16	2.00	102	18	12.50	10.00	13	4	14.0		E002M16
18	2.50	112	29	14.00	11.20	14	4	15.5		E002M18
20	2.50	112	29	14.00	11.20	14	4	17.5		E002M20
22	2.50	118	29	16.00	12.50	16	4	19.5		E002M22
24	3.00	130	35	18.00	14.00	18	4	21.0		E002M24

- Machine Taps MTT-X
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E003



- 1.1 1.2 1.3 1.4 1.5
- 2.1 2.2 2.3

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E003M3
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E003M3.5
4	0.70	53	7	4.00	3.15	6	3	3.3	19	E003M4
5	0.80	58	8	5.00	4.00	7	3	4.2	22	E003M5
6	1.00	66	10	6.30	5.00	8	3	5.0	27	E003M6
8	1.25	72	12	8.00	6.30	9	3	6.8	31	E003M8
10	1.50	80	15	10.00	8.00	11	3	8.5	35	E003M10
12	1.75	89	16	9.00	7.10	10	3	10.3		E003M12
14	2.00	95	18	11.20	9.00	12	3	12.0		E003M14
16	2.00	102	18	12.50	10.00	13	4	14.0		E003M16
18	2.50	112	29	14.00	11.20	14	4	15.5		E003M18
20	2.50	112	29	14.00	11.20	14	4	17.5		E003M20
22	2.50	118	29	16.00	12.50	16	4	19.5		E003M22
24	3.00	130	35	18.00	14.00	18	4	21.0		E003M24

Machine Taps MTT-X

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E010



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
●	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	l_4 mm	e-Code
4	0.50	53	14	4.00	3.15	6	3	3.5	E010M4X.5
5	0.50	58	11	5.00	4.00	7	3	4.5	E010M5X.5
6	0.50	66	13	6.30	5.00	8	3	5.5	E010M6X.5
6	0.75	66	13	6.30	5.00	8	3	5.3	E010M6X.75
8	0.75	72	16	8.00	6.30	9	3	7.3	E010M8X.75
8	1.00	72	16	8.00	6.30	9	3	7.0	E010M8X1.0
10	1.00	80	18	10.00	8.00	11	3	9.0	E010M10X1.0
10	1.25	80	18	10.00	8.00	11	3	8.8	E010M10X1.25
12	1.00	89	22	9.00	7.10	10	3	11.0	E010M12X1.0
12	1.25	89	22	9.00	7.10	10	3	10.8	E010M12X1.25
12	1.50	89	22	9.00	7.10	10	3	10.5	E010M12X1.5
14	1.00	95	24	11.20	9.00	12	3	13.0	E010M14X1.0
14	1.25	95	24	11.20	9.00	12	3	12.8	E010M14X1.25
14	1.50	95	24	11.20	9.00	12	3	12.5	E010M14X1.5
16	1.00	102	24	12.50	10.00	13	3	15.0	E010M16X1.0
16	1.50	102	24	12.50	10.00	13	3	14.5	E010M16X1.5
18	1.00	112	29	14.00	11.20	14	4	17.0	E010M18X1.0
18	1.50	112	29	14.00	11.20	14	4	16.5	E010M18X1.5
20	1.00	112	29	14.00	11.20	14	4	19.0	E010M20X1.0
20	1.50	112	29	14.00	11.20	14	4	18.5	E010M20X1.5
20	2.00	112	29	14.00	11.20	14	4	18.0	E010M20X2.0
22	1.50	118	29	16.00	12.50	16	4	20.5	E010M22X1.5
24	1.50	130	35	18.00	14.00	18	4	22.5	E010M24X1.5
24	2.00	130	35	18.00	14.00	18	4	22.0	E010M24X2.0

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E011



- 1.1 1.2 1.3 1.4 1.5
- 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E011M4X.5
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E011M5X.5
6	0.50	66	13	6.30	5.00	8	3	5.5	26	E011M6X.5
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E011M6X.75
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E011M8X.75
8	1.00	72	16	8.00	6.30	9	3	7.0	29	E011M8X1.0
10	1.00	80	18	10.00	8.00	11	3	9.0	34	E011M10X1.0
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E011M10X1.25
12	1.00	89	22	9.00	7.10	10	3	11.0		E011M12X1.0
12	1.25	89	22	9.00	7.10	10	3	10.8		E011M12X1.25
12	1.50	89	22	9.00	7.10	10	3	10.5		E011M12X1.5
14	1.00	95	24	11.20	9.00	12	3	13.0		E011M14X1.0
14	1.25	95	24	11.20	9.00	12	3	12.8		E011M14X1.25
14	1.50	95	24	11.20	9.00	12	3	12.5		E011M14X1.5
16	1.00	102	24	12.50	10.00	13	3	15.0		E011M16X1.0
16	1.50	102	24	12.50	10.00	13	3	14.5		E011M16X1.5
18	1.00	112	29	14.00	11.20	14	4	17.0		E011M18X1.0
18	1.50	112	29	14.00	11.20	14	4	16.5		E011M18X1.5
20	1.00	112	29	14.00	11.20	14	4	19.0		E011M20X1.0
20	1.50	112	29	14.00	11.20	14	4	18.5		E011M20X1.5
20	2.00	112	29	14.00	11.20	14	4	18.0		E011M20X2.0
22	1.50	118	29	16.00	12.50	16	4	20.5		E011M22X1.5
24	1.50	130	35	18.00	14.00	18	4	22.5		E011M24X1.5
24	2.00	130	35	18.00	14.00	18	4	22.0		E011M24X2.0

Machine Taps MTT-X

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E012



■	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
●	4.1	4.2	5.1	5.2	8.1				

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		l_4 mm	e-Code
4	0.50	53	7	4.0	3.15	6	3	3.5	19	E012M4X.5
5	0.50	58	8	5.0	4.0	7	3	4.5	22	E012M5X.5
6	0.50	66	10	6.3	5.0	8	3	5.5	27	E012M6X.5
6	0.75	66	10	6.3	5.0	8	3	5.3	27	E012M6X.75
8	0.75	72	12	8.0	6.3	9	3	7.3	31	E012M8X.75
8	1.00	72	12	8.0	6.3	9	3	7.0	31	E012M8X1.0
10	1.00	80	15	10.0	8.0	11	3	9.0	35	E012M10X1.0
10	1.25	80	15	10.0	8.0	11	3	8.8	35	E012M10X1.25
12	1.00	89	16	9.0	7.1	10	3	11.0		E012M12X1.0
12	1.25	89	16	9.0	7.1	10	3	10.8		E012M12X1.25
12	1.50	89	16	9.0	7.1	10	3	10.5		E012M12X1.5
14	1.50	95	18	11.2	9.0	12	3	12.5		E012M14X1.5
16	1.00	102	18	12.5	10.0	13	4	15.0		E012M16X1.0
16	1.50	102	18	12.5	10.0	13	4	14.5		E012M16X1.5
18	1.50	112	29	14.0	11.2	14	4	16.5		E012M18X1.5
20	1.50	112	29	14.0	11.2	14	4	18.5		E012M20X1.5
22	1.50	118	29	16.0	12.5	16	4	20.5		E012M22X1.5

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D-product
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E013



- 1.1 1.2 1.3 1.4 1.5
- 2.1 2.2 2.3

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
4	0.50	53	7	4.0	3.15	6	3	3.5	19	E013M4X.5
5	0.50	58	8	5.0	4.0	7	3	4.5	22	E013M5X.5
6	0.50	66	10	6.3	5.0	8	3	5.5	27	E013M6X.5
6	0.75	66	10	6.3	5.0	8	3	5.3	27	E013M6X.75
8	0.75	72	12	8.0	6.3	9	3	7.3	31	E013M8X.75
8	1.00	72	12	8.0	6.3	9	3	7.0	31	E013M8X1.0
10	1.00	80	15	10.0	8.0	11	3	9.0	35	E013M10X1.0
10	1.25	80	15	10.0	8.0	11	3	8.8	35	E013M10X1.25
12	1.00	89	16	9.0	7.1	10	3	11.0		E013M12X1.0
12	1.25	89	16	9.0	7.1	10	3	10.8		E013M12X1.25
12	1.50	89	16	9.0	7.1	10	3	10.5		E013M12X1.5
14	1.50	95	18	11.2	9.0	12	3	12.5		E013M14X1.5
16	1.00	102	18	12.5	10.0	13	4	15.0		E013M16X1.0
16	1.50	102	18	12.5	10.0	13	4	14.5		E013M16X1.5
18	1.50	112	29	14.0	11.2	14	4	16.5		E013M18X1.5
20	1.50	112	29	14.0	11.2	14	4	18.5		E013M20X1.5
22	1.50	118	29	16.0	12.5	16	4	20.5		E013M22X1.5

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E020



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
●	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E0204-40
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E0206-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0208-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E02010-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02012-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	26	E0201/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	29	E0205/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	32	E0203/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40		E0207/16
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80		E0201/2
5/8	11	15.875	102	24	12.50	10.00	13	3	13.50		E0205/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50		E0203/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50		E0207/8
1"	8	25.400	130	35	18.00	14.00	18	4	22.25		E0201

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E021



- 1.1 1.2 1.3 1.4 1.5
- 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E0214-40
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E0216-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0218-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E02110-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02112-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	26	E0211/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	29	E0215/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	32	E0213/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40		E0217/16
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80		E0211/2
5/8	11	15.875	102	24	12.50	10.00	13	3	13.50		E0215/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50		E0213/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50		E0217/8
1"	8	25.400	130	35	18.00	14.00	18	4	22.25		E0211

Machine Taps MTT-X

MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingängtappar MTT-X

Konekierretapit MTT-X



D-product
2004.09

E022



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
●	4.1	4.2	5.1	5.2	6.2	8.1					

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E0224-40
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E0226-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0228-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E02210-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02212-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	28	E0221/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	31	E0225/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	34	E0223/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40		E0227/16
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80		E0221/2
5/8	11	15.875	102	24	12.50	10.00	13	4	13.50		E0225/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50		E0223/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50		E0227/8
1	8	25.400	130	35	18.00	14.00	18	4	22.25		E0221

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
- MTT-X Tarauds machine
- Maskingängtappar MTT-X
- Konekierretapit MTT-X



D-product
2004.09

E023



- 1.1 1.2 1.3 1.4 1.5
- 2.1 2.2 2.3

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E0234-40
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E0236-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0238-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E02310-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02312-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	28	E0231/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	31	E0235/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	34	E0233/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40		E0237/16
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80		E0231/2
5/8	11	15.875	102	24	12.50	10.00	13	4	13.50		E0235/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50		E0233/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50		E0237/8
1	8	25.400	130	35	18.00	14.00	18	4	22.25		E0231

▪ Machine Taps MTT-X

▪ MTT-X Maschinen-Gewindebohrer

▪ MTT-X Machinetappen

▪ MTT-X Tarauds machine

▪ Maskingängtappar MTT-X

▪ Konekierretapit MTT-X



D-product
2004.09

E030



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
●	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
8	36	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0308-36
10	32	4.826	58	11	5.00	4.00	7	3	4.10	20	E03010-32
1/4	28	6.350	66	13	6.30	5.00	8	3	5.50	26	E0301/4
5/16	24	7.938	72	16	8.00	6.30	9	3	6.90	29	E0305/16
3/8	24	9.525	80	18	10.00	8.00	11	3	8.50	32	E0303/8
7/16	20	11.112	85	19	8.00	6.30	9	3	9.90		E0307/16
1/2	20	12.700	89	22	9.00	7.10	10	3	11.50		E0301/2
9/16	18	14.288	95	24	11.20	9.00	12	3	12.90		E0309/16
5/8	18	15.875	102	24	12.50	10.00	13	3	14.50		E0305/8
3/4	16	19.050	112	29	14.00	11.20	14	4	17.50		E0303/4
7/8	14	22.225	118	29	16.00	12.50	16	4	20.40		E0307/8
1"	12	25.400	130	35	18.00	14.00	18	4	23.25		E0301

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
- MTT-X Tarauds machine
- Maskingångtappar MTT-X
- Konekierretapit MTT-X



D-product
2004.09

E031



- 1.1 1.2 1.3 1.4 1.5
- 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
8	36	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0318-36
10	32	4.826	58	11	5.00	4.00	7	3	4.10	20	E03110-32
1/4	28	6.350	66	13	6.30	5.00	8	3	5.50	26	E0311/4
5/16	24	7.938	72	16	8.00	6.30	9	3	6.90	29	E0315/16
3/8	24	9.525	80	18	10.00	8.00	11	3	8.50	32	E0313/8
7/16	20	11.112	85	19	8.00	6.30	9	3	9.90		E0317/16
1/2	20	12.700	89	22	9.00	7.10	10	3	11.50		E0311/2
9/16	18	14.288	95	24	11.20	9.00	12	3	12.90		E0319/16
5/8	18	15.875	102	24	12.50	10.00	13	3	14.50		E0315/8
3/4	16	19.050	112	29	14.00	11.20	14	4	17.50		E0313/4
7/8	14	22.225	118	29	16.00	12.50	16	4	20.40		E0317/8
1"	12	25.400	130	35	18.00	14.00	18	4	23.25		E0311

Machine Taps MTT-X

MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingängtappar MTT-X

Konekierretapit MTT-X



D-product
2004.09

E032



■	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
●	1.6	4.1	4.2	5.1	5.2	8.1			

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↕	l ₄ mm	e-Code
8	36	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0328-36
10	32	4.826	58	11	5.00	4.00	7	3	4.10	20	E03210-32
1/4	28	6.350	66	13	6.30	5.00	8	3	5.50	28	E0321/4
5/16	24	7.938	72	16	8.00	6.30	9	3	6.90	31	E0325/16
3/8	24	9.525	80	18	10.00	8.00	11	3	8.50	34	E0323/8
7/16	20	11.112	85	19	8.00	6.30	9	3	9.90		E0327/16
1/2	20	12.700	89	22	9.00	7.10	10	3	11.50		E0321/2
9/16	18	14.288	95	24	11.20	9.00	12	3	12.90		E0329/16
5/8	18	15.875	102	24	12.50	10.00	13	4	14.50		E0325/8
3/4	16	19.050	112	29	14.00	11.20	14	4	17.50		E0323/4
7/8	14	22.225	118	29	16.00	12.50	16	4	20.40		E0327/8
1"	12	25.400	130	35	18.00	14.00	18	4	23.25		E0321

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
- MTT-X Tarauds machine
- Maskingängtappar MTT-X
- Konekierretapit MTT-X



D-product
2004.09

E033



- 1.1 1.2 1.3 1.4 1.5
- 1.6 2.1 2.2 2.3

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
8	36	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0338-36
10	32	4.826	58	11	5.00	4.00	7	3	4.10	20	E03310-32
1/4	28	6.350	66	13	6.30	5.00	8	3	5.50	28	E0331/4
5/16	24	7.938	72	16	8.00	6.30	9	3	6.90	31	E0335/16
3/8	24	9.525	80	18	10.00	8.00	11	3	8.50	34	E0333/8
7/16	20	11.112	85	19	8.00	6.30	9	3	9.90		E0337/16
1/2	20	12.700	89	22	9.00	7.10	10	3	11.50		E0331/2
9/16	18	14.288	95	24	11.20	9.00	12	3	12.90		E0339/16
5/8	18	15.875	102	24	12.50	10.00	13	4	14.50		E0335/8
3/4	16	19.050	112	29	14.00	11.20	14	4	17.50		E0333/4
7/8	14	22.225	118	29	16.00	12.50	16	4	20.40		E0337/8
1"	12	25.400	130	35	18.00	14.00	18	4	23.25		E0331

Machine Taps MTT-X

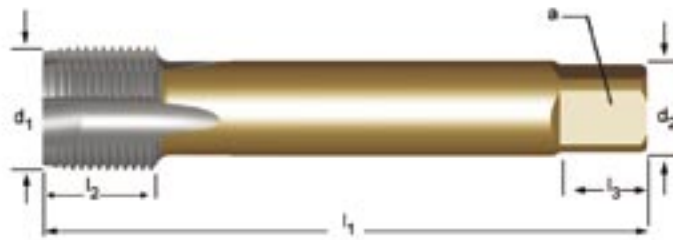
MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingängtappar MTT-X

Konekierretapit MTT-X



D-product
2004.09

E040



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
●	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1

G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		e-Code
1/8	28	9.728	90	15	8	6.3	9	3	8.80	E0401/8
1/4	19	13.157	100	19	10	8	11	3	11.80	E0401/4
3/8	19	16.662	100	21	12.5	10	13	3	15.25	E0403/8
1/2	14	20.955	125	26	16	12.5	16	4	19.00	E0401/2
3/4	14	26.441	140	28	20	16	20	4	24.50	E0403/4

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
- MTT-X Tarauds machine
- Maskingängtappar MTT-X
- Konekierretapit MTT-X



D-product
2004.09

E041



- 1.1 1.2 1.3 1.4 1.5
- 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	e-Code
1/8	28	9.728	90	15	8	6.3	9	3	8.80	E0411/8
1/4	19	13.157	100	19	10	8	11	3	11.80	E0411/4
3/8	19	16.662	100	21	12.5	10	13	3	15.25	E0413/8
1/2	14	20.955	125	26	16	12.5	16	4	19.00	E0411/2
3/4	14	26.441	140	28	20	16	20	4	24.50	E0413/4

Machine Taps MTT-X

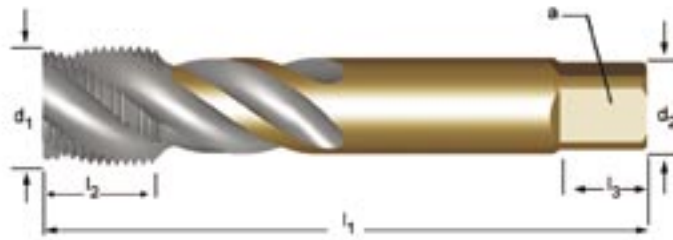
MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingängtappar MTT-X

Konekierretapit MTT-X



D-product
2004.09

E042



■	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
●	4.1	4.2	5.1	5.2	8.1				

G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z		e-Code
1/8	28	9.728	90	15	8	6.3	9	3	8.80	E0421/8
1/4	19	13.157	100	19	10	8	11	3	11.80	E0421/4
3/8	19	16.662	100	21	12.5	10	13	4	15.25	E0423/8
1/2	14	20.955	125	26	16	12.5	16	4	19.00	E0421/2
3/4	14	26.441	140	28	20	16	20	4	24.50	E0423/4

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
- MTT-X Tarauds machine
- Maskingängtappar MTT-X
- Konekierretapit MTT-X



D-product
2004.09

E043



- 1.1 1.2 1.3 1.4 1.5
- 1.6 2.1 2.2 2.3

G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		e-Code
1/8	28	9.728	90	15	8	6.3	9	3	8.80	E0431/8
1/4	19	13.157	100	19	10	8	11	3	11.80	E0431/4
3/8	19	16.662	100	21	12.5	10	13	4	15.25	E0433/8
1/2	14	20.955	125	26	16	12.5	16	4	19.00	E0431/2
3/4	14	26.441	140	28	20	16	20	4	24.50	E0433/4

In this section, you will find information relating to Material-Specific ISO taps. These taps have been developed by combining material, surface treatment and geometry to produce the optimum MTT-X taps for the specific material being threaded. Please refer to the Application Material Group charts on pages 4-7.

For a complete numerical Vanguard/MTT-X cross reference chart, refer to page 63.

Thread Form	MTT-X Code	Page	MTT-X Tap	Obsolete Vanguard Product Code
	E049	35		E920, E922
	E045	36		E949
	E046	37		E995
	E050	38		E919, E921
	E047	39		E952
	E048	40		E982
	E044	41		E946
	E052	42		E924
	E051	43		E998
	E053	44		E930
	E054	45		E927
	E057	46		E928
	E055	47		E950
	E058	48		E929
	E056	49		E953
	E059	50		E931
	E060	51		E951
	E095	52		E954

Features // Benefits

All of the taps in this section have been individually designed, the primary considerations being the properties of the material to be threaded and the subsequent demands on the tool. For each tap, the tap material, coating or surface treatment and geometry have all been carefully balanced and fine-tuned, resulting in the optimum solution for producing high quality threads in even the toughest materials. The higher productivity and long tool life achieved by these taps have the added benefit of significantly reducing cost per hole.

MTT-X TAPS FOR STAINLESS STEEL

MATERIAL

All of the taps specifically for threading Stainless Steel are manufactured from premium quality vanadium powder steel, branded HSS-XS1, for an unbeatable combination of toughness, edge strength and wear resistance when threading in this difficult-to-machine material.

SURFACE TREATMENTS

SUPER B

Super-B is a multi-layer coating, which combines a soft, self-lubricating, low friction coating with a hard, wear-resistant one. It is particularly conducive to threading in tough, long-chipping materials, as it has a high resistance to wear and built-up edges.

Steam tempering facilitates a smooth cutting action, with less build up on the cutting edge.

THREAD FORMS

Available in a choice of Metric Coarse, UNC or UNF.

GEOMETRY - SPIRAL FLUTE

- **Short thread length** means low torque and better chip evacuation.

- **Helix angle** of 48° allows adequate room for chip formation and rapid and smooth chip evacuation, for threading blind holes up to 2.5 x D.

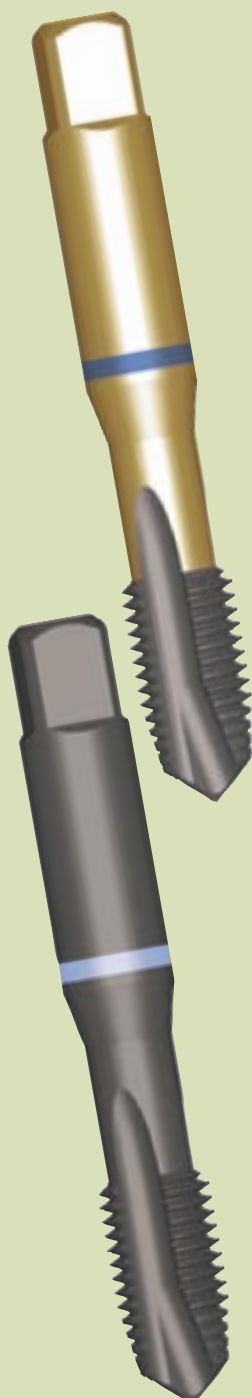
- **3 radii flute profile** to give a constant rake angle all along the flute length, leading to better control of cutting properties.

GEOMETRY - SPIRAL POINT

Superior spiral point geometry leads to consistent and long tool life.

COLOUR RING CODING

The blue ring identifies these taps as the highest performers on Stainless Steel.



MTT-X TAPS FOR CAST IRON



MATERIAL, SURFACE TREATMENTS, GEOMETRY

All of the taps specifically for threading Cast Iron are manufactured from HSCo, which, when combined with the high toughness properties of Titanium Aluminium Nitride (TiAlN) coating, results in a smooth cutting action with reduced build up on the cutting edge, and a long tool life. The straight flute design gives excellent performance when threading in both through and blind holes in short-chipping materials like Cast Iron. They are instantly recognisable by their white ring. Choose from Metric, Metric Fine or UNC.

OTHER MTT-X MATERIAL-SPECIFIC COATED TAPS

MATERIAL

All of the other material-specific taps are manufactured from premium quality vanadium powder steel, branded HSS-XS1, for an unbeatable combination of toughness, edge strength and wear resistance, to enable them to withstand the stresses of threading in tough materials.

SURFACE TREATMENTS

Titanium Aluminium Nitride (TiAlN) coating, gold finish with bright flutes/thread, or steam tempering (blue) guarantee a smooth cutting action with minimal build up on the cutting edge, which promotes a longer tool life.

THREAD FORMS

The material-specific taps without colour rings are available in Metric Coarse or UNC.

GEOMETRY - SPIRAL FLUTE

- **Short thread length** means low torque and better chip evacuation.
- **Helix angle** of 48° allows adequate room for chip formation and rapid and smooth chip evacuation, for threading blind holes up to 2.5 x D.
- **Helix angle** of 15° is applied to certain taps for threading blind holes in short chipping, difficult-to-machine materials.
- **3 radii flute profile** to give a constant rake angle all along the flute length, leading to better control of cutting properties.

GEOMETRY - SPIRAL POINT

Superior spiral point geometry leads to consistent and long tool life.

INTERNAL COOLANT

The design of the E044 (HSCo) and the E051 incorporates internal coolant - this optimises the effective delivery of coolant to the cutting edge, and assists chip removal.

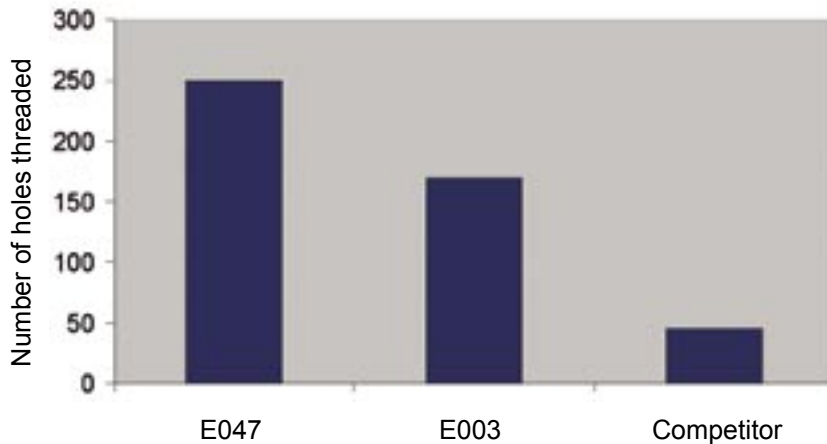


Field Test Results

Test 1

Tap	E047, M10	E003, M10	Competitor, M10
Material	HSS-XS1	HSS-XS1	HSSV
Surface Treatment	Steam tempered (blue)	Steam tempered (blue)	Steam tempered (blue)
Geometry	48° Spiral Flute	48° Spiral Flute	40° Spiral Flute

Spiral Flute Taps in AMG 2.2, Stainless Steel



Workpiece Material	304, SS2333 (AMG 2.2)
Hole Type	Blind hole
Vc	7 m/min.
Thread depth	2.5 x D

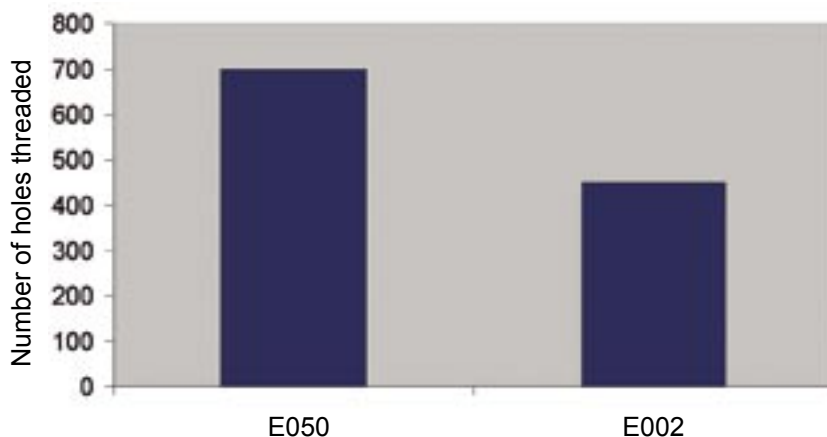
Result:

Tool life on E047 with specialised geometry is 50% longer than that of E003 in 304/SS2333 (AMG 2.2) Stainless Steel material.

Test 2

Tap	E050, M10	E002, M10
Material	HSS-XS1	HSS-XS1
Surface Treatment	TiAlN (Titanium Aluminium Nitride)	Gold with bright flutes/threads
Geometry	48° Spiral Flute	48° Spiral Flute
Vc	17m/min.	10m/min.

48° Spiral Flute Taps in AMG 1.5, Alloy Steel



Workpiece Material	41CrMo4, SS2244 (AMG 1.5)
Hole Type	Blind hole
Thread depth	2.5 x D

Result:

E050 was run at 17m/min, the Dormer recommended speed for 41CrMo4/SS2244 (AMG 1.5) Alloy Steel. This is 70% higher than the recommended speed for E002, so productivity is 70% greater. In addition, tool life is 100% longer than that of E002.

▪ Machine Taps MTT-X

▪ MTT-X Maschinen-Gewindebohrer

▪ MTT-X Machinetappen

▪ MTT-X Tarauds machine

▪ Maskingängtappar MTT-X

▪ Konekierretapit MTT-X



D-product
2006.06

E049



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3	
●	1.6	3.1	3.2	3.3	3.4	4.2	5.2	6.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E049M3
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E049M4
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E049M5
6	1.00	66	13	6.30	5.00	8	3	5.0	26	E049M6
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E049M8
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E049M10
12	1.75	89	22	9.00	7.10	10	3	10.3		E049M12
16	2.00	102	24	12.50	10.00	13	3	14.0		E049M16
20	2.50	112	29	14.00	11.20	14	4	17.5		E049M20

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
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- Konekierretapit MTT-X



D-product
2006.06

E045



- 2.1 2.2 2.3
- 1.5 1.6

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E045M3
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E045M4
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E045M5
6	1.00	66	13	6.30	5.00	8	3	5	26	E045M6
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E045M8
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E045M10
12	1.75	89	22	9.00	7.10	10	4	10.3		E045M12
16	2.00	102	24	12.50	10.00	13	4	14		E045M16
20	2.50	112	29	14.00	11.20	14	4	17.5		E045M20

▪ Machine Taps MTT-X

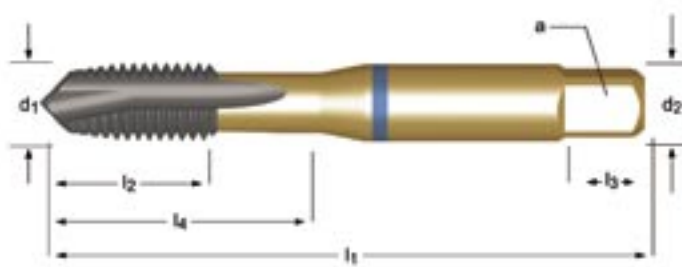
▪ MTT-X Maschinen-Gewindebohrer

▪ MTT-X Machinetappen

▪ MTT-X Tarauds machine

▪ Maskingängtappar MTT-X

▪ Konekierretapit MTT-X



D-product
2006.06

E046



■	2.1	2.2	2.3	4.1
●	1.5	1.6	5.1	5.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E046M3
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E046M4
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E046M5
6	1.00	66	13	6.30	5.00	8	3	5	26	E046M6
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E046M8
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E046M10
12	1.75	89	22	9.00	7.10	10	4	10.3		E046M12
16	2.00	102	24	12.50	10.00	13	4	14		E046M16
20	2.50	112	29	14.00	11.20	14	4	17.5		E046M20

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
- MTT-X Tarauds machine
- Maskingångtappar MTT-X
- Konekierretapit MTT-X



D-product
2006.06

E050



- 1.1 1.2 1.3 1.4 1.5 6.1 6.3
- 4.2 5.2 6.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E050M3
4	0.70	53	7	4.00	3.15	6	3	3.3	19	E050M4
5	0.80	58	8	5.00	4.00	7	3	4.2	22	E050M5
6	1.00	66	10	6.30	5.00	8	3	5.0	27	E050M6
8	1.25	72	12	8.00	6.30	9	3	6.8	31	E050M8
10	1.50	80	15	10.00	8.00	11	3	8.5	35	E050M10
12	1.75	89	16	9.00	7.10	10	3	10.3		E050M12
16	2.00	102	18	12.50	10.00	13	4	14.0		E050M16
20	2.50	112	29	14.00	11.20	14	4	17.5		E050M20

Machine Taps MTT-X

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MTT-X Machinetappen

MTT-X Tarauds machine

Maskingångtappar MTT-X

Konekierretapit MTT-X



D-product
2006.06

E047



■ 2.1 2.2 2.3
● 1.5 1.6

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
3	0.50	48	6	3.15	2.50	5	3	2.5	15	E047M3
4	0.70	53	7	4.00	3.15	6	3	3.3	19	E047M4
5	0.80	58	8	5.00	4.00	7	3	4.2	22	E047M5
6	1.00	66	10	6.30	5.00	8	3	5	27	E047M6
8	1.25	72	12	8.00	6.30	9	3	6.8	31	E047M8
10	1.50	80	15	10.00	8.00	11	3	8.5	35	E047M10
12	1.75	89	16	9.00	7.10	10	3	10.3		E047M12
16	2.00	102	18	12.50	10.00	13	4	14		E047M16
20	2.50	112	22	14.00	11.20	14	4	17.5		E047M20

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
- MTT-X Machinetappen
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- Maskingångtappar MTT-X
- Konekierretapit MTT-X



D-product
2006.06

E048



- 2.1 2.2 2.3
- 1.3 1.4 1.5 1.6 5.1 5.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4	e-Code
3	0.50	48	6	3.15	2.5	5	3	2.5	15	E048M3
4	0.70	53	7	4.0	3.15	6	3	3.3	19	E048M4
5	0.80	58	8	5.0	4.0	7	3	4.2	22	E048M5
6	1.00	66	10	6.3	5.0	8	3	5	27	E048M6
8	1.25	72	12	8.0	6.3	9	3	6.8	31	E048M8
10	1.50	80	15	10.0	8.0	11	3	8.5	35	E048M10
12	1.75	89	16	9.0	7.1	10	3	10.3		E048M12
16	2.00	102	18	12.50	10.0	13	4	14		E048M16
20	2.50	112	22	14	11.2	14	4	17.5		E048M20

Machine Taps MTT-X

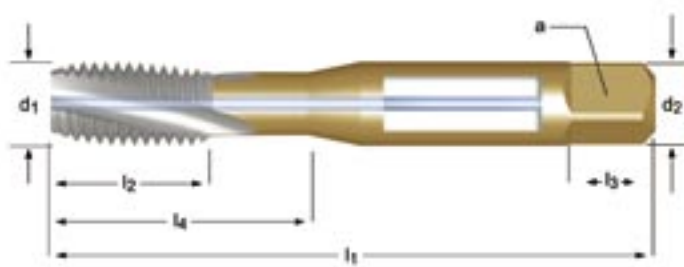
MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingångtappar MTT-X

Konekierretapit MTT-X



D-product
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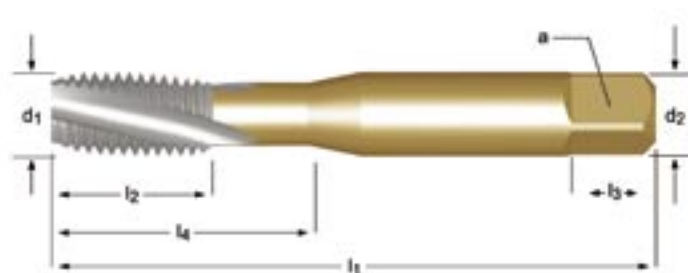
E044



■ 1.4 1.5 1.6
 ● 4.2 5.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
8	1.25	72	17	8.00	6.30	8	3	6.8	32	E044M8
10	1.50	80	20	10.00	8.00	9	3	8.5	36	E044M10
12	1.75	89	22	9.00	7.10	10	3	10.3		E044M12
16	2.00	102	24	12.50	10.00	13	4	14		E044M16
20	2.50	112	29	14.00	11.20	14	4	17.5		E044M20

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
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- Konekierretapit MTT-X



D-product
2006.06

E052



■	1.4	1.5	6.2	6.3	7.2	7.3	7.4
●	1.1	1.2	1.3	6.1	7.1		

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E052M3
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E052M4
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E052M5
6	1.00	66	13	6.30	5.00	8	3	5	26	E052M6
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E052M8
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E052M10
12	1.75	89	22	9.00	7.10	10	3	10.3		E052M12
16	2.00	102	24	12.50	10.00	13	4	14		E052M16

▪ Machine Taps MTT-X

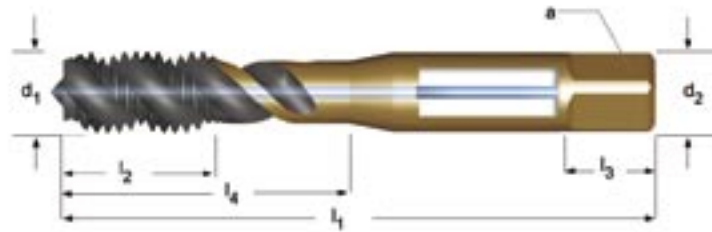
▪ MTT-X Maschinen-Gewindebohrer

▪ MTT-X Machinetappen

▪ MTT-X Tarauds machine

▪ Maskingängtappar MTT-X

▪ Konekierretapit MTT-X



D-product
2006.06

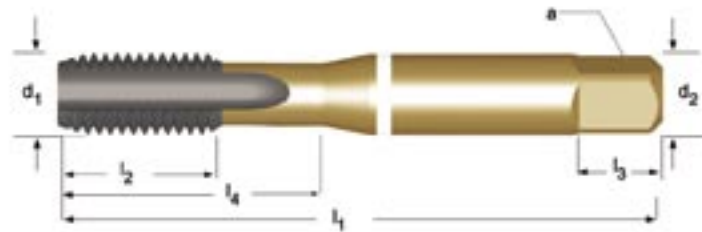
E051



■	1.1	1.2	1.3	1.4	1.5	6.1	6.3
●	1.6	6.2					

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
6	1.00	66	10	6.30	5.00	8	3	5	27	E051M6
8	1.25	72	12	8.00	6.30	9	3	6.8	31	E051M8
10	1.50	80	15	10.0	8.00	11	3	8.5	35	E051M10
12	1.75	89	16	9.00	7.10	10	3	10.3		E051M12
16	2.00	102	18	12.50	10.00	13	4	14		E051M16
20	2.50	112	29	14.00	11.20	14	4	17.5		E051M20

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
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- Konekierretapit MTT-X



D-product
2006.06

E053



■	3.1	3.2	3.3	8.2
●	3.4	6.2	6.4	7.4

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E053M3
4	0.70	53	14	4.00	3.15	6	4	3.3	14	E053M4
5	0.80	58	11	5.00	4.00	7	4	4.2	22	E053M5
6	1.00	66	13	6.30	5.00	8	4	5	26	E053M6
8	1.25	72	16	8.00	6.30	9	4	6.8	29	E053M8
10	1.50	80	18	10.00	8.00	11	4	8.5	34	E053M10
12	1.75	89	22	9.00	7.10	10	4	10.3		E053M12
14	2.00	95	24	11.20	9.00	12	4	12		E053M14
16	2.00	102	24	12.50	10.00	13	4	14		E053M16
20	2.50	112	29	14.00	11.20	14	4	17.5		E053M20

Machine Taps MTT-X

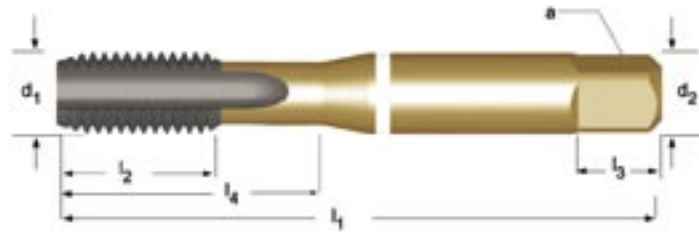
MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingångtappar MTT-X

Konekierretapit MTT-X



D-product
2006.06

E054



■	3.1	3.2	3.3	8.2
●	3.4	6.2	6.4	7.4

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm	z		l_4 mm	e-Code
8	1.00	72	16	8.00	6.30	9	4	7	29	E054M8X1.0
10	1.00	80	18	10.00	8.00	11	4	9	34	E054M10X1.0
10	1.25	80	18	10.00	8.00	11	4	8.8	34	E054M10X1.25
12	1.00	89	22	9.00	7.10	10	4	11		E054M12X1.0
12	1.25	89	22	9.00	7.10	10	4	10.8		E054M12X1.25
12	1.50	89	22	9.00	7.10	10	4	10.5		E054M12X1.5
14	1.25	95	24	11.20	9.00	12	4	12.8		E054M14X1.25
14	1.50	95	24	11.20	9.00	12	4	12.5		E054M14X1.5
16	1.50	102	24	12.50	10.00	13	4	14.5		E054M16X1.5

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
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- Konekierretapit MTT-X



D-product
2006.06

E057



- 1.1 1.2 1.3 1.4 1.5 6.1 6.3
- 1.6 4.2 5.2 6.2

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	e-Code
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E0576-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0578-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E05710-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	26	E0571/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	29	E0575/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	32	E0573/8
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80		E0571/2
5/8	11	15.875	102	24	12.50	10.00	13	3	13.50		E0575/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50		E0573/4

Machine Taps MTT-X

MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingängtappar MTT-X

Konekierretapit MTT-X



D-product
2006.06

E055



■ 2.1 2.2 2.3
● 1.5 1.6

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
4	40	2.85	48	12.5	3.15	2.50	5	3	2.35	12.5	E0554-40
6	32	3.51	50	14	3.55	2.80	5	3	2.85	14	E0556-32
8	32	4.17	53	9.5	4.50	3.55	6	3	3.5	17	E0558-32
10	24	4.83	58	11	5.00	4.00	7	3	3.9	20	E05510-24
1/4	20	6.35	66	13	6.30	5.00	8	3	5.1	26	E0551/4
5/16	18	7.94	72	16	8.00	6.30	9	3	6.6	29	E0555/16
3/8	16	9.53	80	18	10.00	8.00	11	3	8	32	E0553/8
1/2	13	12.70	89	22	9.00	7.10	10	4	10.8		E0551/2
5/8	11	15.88	102	24	12.50	10.00	13	4	13.5		E0555/8
3/4	10	19.05	112	29	14.00	11.20	14	4	16.5		E0553/4

- Machine Taps MTT-X
- MTT-X Maschinen-Gewindebohrer
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- Konekierretapit MTT-X



D-product
2006.06

E058



- 1.1 1.2 1.3 1.4 1.5 6.1 6.3
- 1.6 4.2 5.2 6.2

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	e-Code
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E0586-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0588-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E05810-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	28	E0581/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	31	E0585/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	34	E0583/8
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80		E0581/2
5/8	11	15.875	102	24	12.50	10.00	13	4	13.50		E0585/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50		E0583/4

Machine Taps MTT-X

MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

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Maskingängtappar MTT-X

Konekierretapit MTT-X



D-product
2006.06

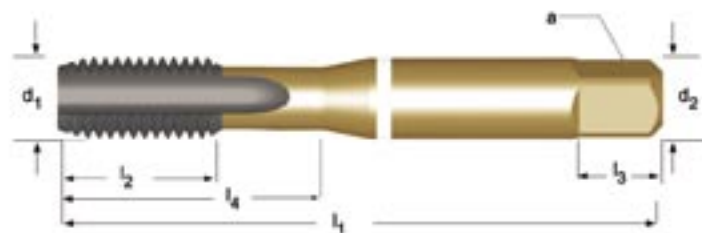
E056



■ 2.1 2.2 2.3
● 1.5 1.6

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	e-Code
4	40	2.84	48	6	3.15	2.50	5	3	2.35	14	E0564-40
6	32	3.51	48	6	3.55	2.80	5	3	2.85	17	E0566-32
8	32	4.17	53	7	4.50	3.55	6	3	3.5	17	E0568-32
10	24	4.83	58	8	5.00	4.00	7	3	3.9	21	E05610-24
1/4	20	6.35	66	10	6.30	5.00	8	3	5.1	27	E0561/4
5/16	18	7.94	72	12	8.00	6.30	9	3	6.6	31	E0565/16
3/8	16	9.53	80	15	10.00	8.00	11	3	8	33	E0563/8
1/2	13	12.70	89	17	9.00	7.10	10	3	10.8		E0561/2
5/8	11	15.88	102	18	12.50	10.00	13	4	13.5		E0565/8
3/4	10	19.05	112	22	14.00	11.20	14	4	16.5		E0563/4

- Machine Taps MTT-X
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- Konekierretapit MTT-X



D-product
2006.06

E059



■	3.1	3.2	3.3	8.2
●	3.4	6.2	6.4	7.4

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
1/4	20	6.35	66	13	6.30	5.00	8	3	5.1	26	E0591/4
5/16	18	7.94	72	16	8.00	6.30	9	3	6.6	29	E0595/16
3/8	16	9.53	80	18	10.00	8.00	11	3	8	32	E0593/8
1/2	13	12.70	89	22	9.00	7.10	10	3	10.8		E0591/2
5/8	11	15.88	102	24	12.50	10.00	13	3	13.5		E0595/8
3/4	10	19.05	112	29	14.00	11.20	14	3	16.5		E0593/4

Machine Taps MTT-X

MTT-X Maschinen-Gewindebohrer

MTT-X Machinetappen

MTT-X Tarauds machine

Maskingängttappar MTT-X

Konekierretapit MTT-X



D-product
2006.06

E060



■ 2.1 2.2 2.3
● 1.5 1.6

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
10	32	4.83	58	11	5.00	4.00	7	3	4.1	20	E06010-32
1/4	28	6.35	66	13	6.30	5.00	8	3	5.5	26	E0601/4
5/16	24	7.94	72	16	8.00	6.30	9	3	6.9	29	E0605/16
3/8	24	9.53	80	18	10.00	8.00	11	3	8.5	32	E0603/8

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E095



- 2.1 2.2 2.3
- 1.5 1.6

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	e-Code
10	32	4.83	58	8	5.00	4.00	7	3	4.1	21	E09510-32
1/4	28	6.35	66	10	6.30	5.00	8	3	5.5	27	E0951/4
5/16	24	7.94	72	12	8.00	6.30	9	3	6.9	31	E0955/16
3/8	24	9.53	80	15	10.00	8.00	11	3	8.5	33	E0953/8
1/2	20	12.70	89	17	9.00	7.10	10	3	11.5		E0951/2

In this section, you will find information relating to ISO Forming taps. These taps show significant improvements over Dormer's previous thread forming ranges. Please refer to the Application Material Group charts on pages 4-7 for recommended speeds on key materials.

Thread Form	MTT-X Code	Page	MTT-X Tap	Obsolete Product Code
	E080	56		E595
	E090	57		E565
	E091	58		E561
	E096	59		E554
	E097	60		E593
	E098	61		E594
	E099	62		E563

MTT-X ISO Forming Taps



Features // Benefits

MATERIAL

MTT-X Forming Taps are manufactured from premium quality vanadium powder steel, branded HSS-XS1, for an unbeatable combination of toughness, edge strength and wear resistance, to enable them to withstand the stresses of threading in tough materials.

SURFACE TREATMENTS

Titanium Nitride (TiN) has high hardness and low friction properties resulting in long tool life and enhanced cutting performance.

Chromium Nitride (CrN) coating is ideal for softer steels and aluminium alloys, as it has a low tendency towards build up on the cutting edge, which promotes a longer tool life.

Dialub coating has an extremely low co-efficient of friction and high hardness, making it particularly effective for forming threads in soft sticky materials, such as aluminium alloys with low silicon content.

THREAD FORMS

The MTT-X Forming Taps are available in Metric Coarse.

GEOMETRY

The new profile of the MTT-X Forming Taps generates 20% less torque than the previous forming tap ranges. The new taps give a smoother surface on the finished thread, a longer tool life and a safer threading process. Oil grooves are available on the E096 to facilitate the flow of coolant to the cutting edge.



Old range with
“flat top” profile



New range with
“round top” profile



INTERNAL COOLANT

The design of the E099 incorporates internal coolant for optimising the effective delivery of coolant to the cutting edge, for an even higher tool life.

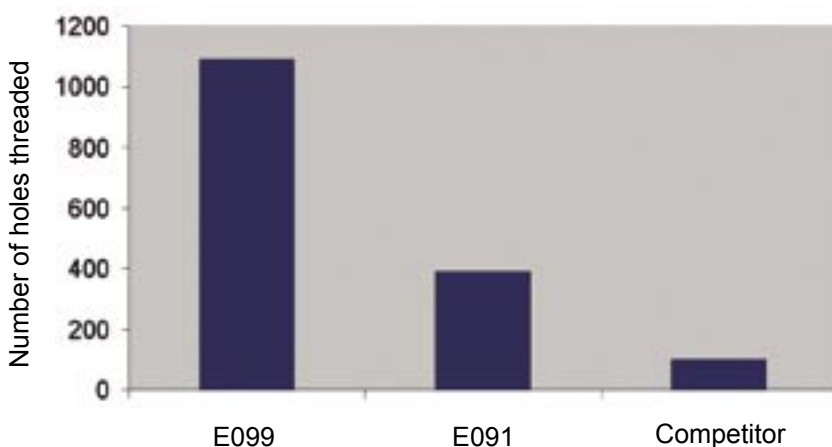
Advantages of Forming Taps compared to Cutting Taps

-  Thread forming is faster than ordinary thread cutting.
-  Thread forming taps often give a longer tool life.
-  One type of tool can be used in different materials and for both through and blind holes.
-  Thread forming taps have a stable design which gives lower risk of breakage.
-  Threads to the correct tolerance are guaranteed.
-  No chips.
-  Stronger thread (higher stripping strength), compared to thread obtained by cutting.
-  Lower surface roughness on thread obtained by forming than by cutting.

Field Test Results

Tap	E099, M8 (int. coolant)	E091, M8 (ext. coolant)	Competitor, M8
Material	HSS-XS1	HSS-XS1	HSSV
Surface Treatment	Titanium Nitride (TiN)	Titanium Nitride (TiN)	Titanium Nitride (TiN)
Geometry	Forming	Forming	Forming

Forming Taps in AMG 1.5, Alloy Steel



Workpiece Material	41CrMo4, SS2244 (AMG 1.5)
Hole Type	Blind hole
Vc	15 m/min.
Thread depth	2.5 x D

Result:

Number of holes threaded in 41CrMo4/SS2244 Alloy Steel material by Dormer's E099 with internal coolant is 14 times higher than the equivalent competitor tap with external coolant. The Dormer E091 (external coolant) threaded 5 times as many holes as the equivalent competitor tap.

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E080



6.1 6.3 7.1 7.2 7.3

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm		l_4 mm	e-Code
2	0.40	41.0	8	2.50	2.00	4	1.8	8	E080M2 ¹⁾
2.5	0.45	44.5	9.5	2.80	2.24	5	2.3	9.5	E080M2.5 ¹⁾
3	0.50	48.0	12.5	3.15	2.50	5	2.8	12.5	E080M3
4	0.70	53.0	14	4.00	3.15	6	3.7	14	E080M4
5	0.80	58.0	11	5.00	4.00	7	4.6	22	E080M5
6	1.00	66.0	13	6.30	5.00	8	5.5	26	E080M6
8	1.25	72.0	16	8.00	6.30	9	7.4	29	E080M8

¹⁾ HSCo

Machine Taps MTT-X

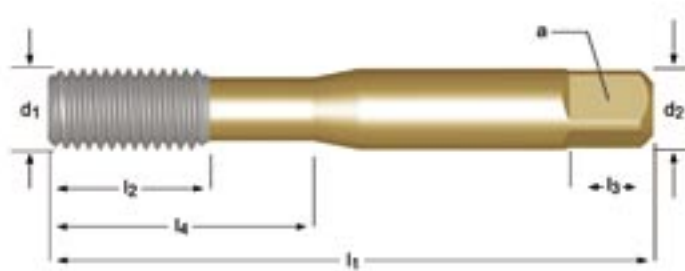
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E090



		l_1	l_2	d_2 Ø	 a	l_3		l_4	
M	P mm	mm	mm	mm	mm	mm		mm	e-Code
2	0.40	41	8	2.50	2.00	4	1.8	8	E090M2
2.5	0.45	44.5	9.5	2.80	2.24	5	2.3	9.5	E090M2.5
3	0.50	48	12.5	3.15	2.50	5	2.8	12.5	E090M3
3.5	0.60	50	14	3.55	2.80	5	3.2	14	E090M3.5
4	0.70	53	14	4.00	3.15	6	3.7	14	E090M4
5	0.80	58	11	5.00	4.00	7	4.6	22	E090M5
6	1.00	66	13	6.30	5.00	8	5.5	26	E090M6
8	1.25	72.0	16	8.00	6.30	9	7.4	29	E090M8
10	1.50	80.0	18	10.00	8.00	11	9.3	34	E090M10
12	1.75	89.0	22	9.00	7.10	10	11.2	-	E090M12
16	2.00	102.0	24	12.50	10.00	13	15.0	-	E090M16

¹⁾ HSCo

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E091



■	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.3
●	1.5	2.3	5.2	6.1	6.3	7.1	7.2	7.4	

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm		l_4 mm	e-Code
2	0.40	41	8	2.50	2.00	4	1.8	8	E091M2 ¹⁾
2.5	0.45	44.5	9.5	2.80	2.24	5	2.3	9.5	E091M2.5 ¹⁾
3	0.50	48	12.5	3.15	2.50	5	2.8	12.5	E091M3
3.5	0.60	50	14	3.55	2.80	5	3.2	14	E091M3.5
4	0.70	53	14	4.00	3.15	6	3.7	14	E091M4
5	0.80	58	11	5.00	4.00	7	4.6	22	E091M5
6	1.00	66	13	6.30	5.00	8	5.5	26	E091M6
8	1.25	72	16	8.00	6.30	9	7.4	29	E091M8
10	1.50	80	18	10.00	8.00	11	9.3	34	E091M10
12	1.75	89	22	9.00	7.10	10	11.2		E091M12
16	2.00	102	24	12.50	10.00	13	15		E091M16

¹⁾ HSCo

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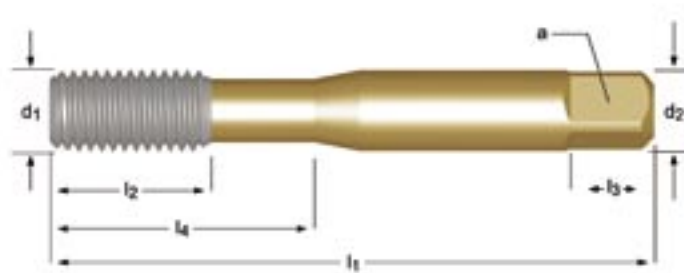
E096



■	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.3
●	1.5	2.3	5.2	6.1	6.3	7.1	7.2	7.4	

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	2.8	E096M3
4	0.70	53	14	4.00	3.15	6	3.7	E096M4
5	0.80	58	11	5.00	4.00	7	4.6	E096M5
6	1.00	66	13	6.30	5.00	8	5.5	E096M6
8	1.25	72	16	8.00	6.30	9	7.4	E096M8
10	1.50	80	18	10.00	8.00	11	9.3	E096M10
12	1.75	89	22	9.00	7.10	10	11.2	E096M12
16	2.00	102	24	12.50	10.00	13	15	E096M16

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E097



■	1.1	1.2	1.3	4.1	5.1	7.1	7.2	7.3
●	1.4	2.1	2.2	5.2	6.1	6.3	7.4	

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm		l_4 mm	e-Code
2	0.40	41	8	2.50	2.00	4	1.8	8	E097M2 ¹⁾
2.5	0.45	44.5	9.5	2.80	2.24	5	2.3	9.5	E097M2.5 ¹⁾
3	0.50	48	12.5	3.15	2.50	5	2.8	12.5	E097M3
4	0.70	53	14	4.00	3.15	6	3.7	14	E097M4
5	0.80	58	11	5.00	4.00	7	4.6	22	E097M5
6	1.00	66	13	6.30	5.00	8	5.5	26	E097M6
8	1.25	72.0	16	8.00	6.30	9	7.4	29	E097M8
10	1.50	80.0	18	10.00	8.00	11	9.3	34	E097M10
12	1.75	89.0	22	9.00	7.10	10	11.2		E097M12
16	2.00	102.0	24	12.50	10.00	13	15		E097M16

¹⁾ HSCo

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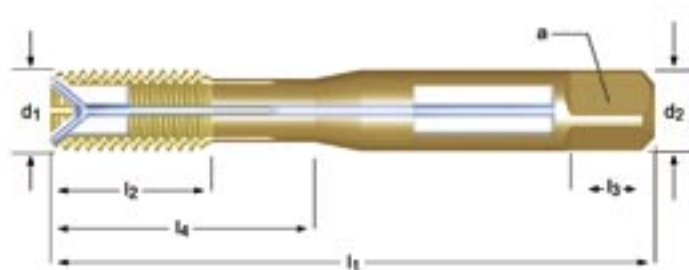
E098



■	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.3
●	1.5	2.3	5.2	6.1	6.3	7.1	7.2	7.4	

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm		l_4 mm	e-Code
3	0.50	48	12.5	3.15	2.50	5	2.8	12.5	E098M3
4	0.70	53	14	4.00	3.15	6	3.7	14	E098M4
5	0.80	58	11	5.00	4.00	7	4.6	22	E098M5
6	1.00	66	13	6.30	5.00	8	5.5	26	E098M6
8	1.25	72	16	8.00	6.30	9	7.4	29	E098M8
10	1.50	80	18	10.00	8.00	11	9.3	34	E098M10

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E099



■	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.3
●	1.5	2.3	5.2	6.1	6.3	7.1	7.2	7.4	

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	$\square$ a mm	l_3 mm		l_4 mm	e-Code
4	0.70	53	14	4.00	3.15	6	3.7	14	E099M4
5	0.80	58	11	5.00	4.00	7	4.6	22	E099M5
6	1.00	66	13	6.30	5.00	8	5.5	26	E099M6
8	1.25	72	16	8.00	6.30	9	7.4	29	E099M8
10	1.50	80	18	10.00	8.00	11	9.3	34	E099M10
12	1.75	89	22	9.00	7.10	10	11.2		E099M12
16	2.00	102	24	12.50	10.00	13	15		E099M16

Vangard Code	MTT-X Code	Other Code	Page number
E919	E050		38
E920	E049		35
E921	E050		38
E922	E049		35
E924	E052		42
E925	-	E354/E355 (Shark - DIN)	283, Dormer 2004 catalogue
E926	-	E352/E353 (Shark - DIN)	259, Dormer 2004 catalogue
E927	E054		45
E928	E057		46
E929	E058		48
E930	E053		44
E931	E059		50
E932	-	Special	
E933	-	E462/E463 (Shark - DIN)	254, Dormer 2004 catalogue
E934	-	E314/E316 (Shark - DIN)	282, Dormer 2004 catalogue
E935	-	E324/E326 (Shark - DIN)	264, Dormer 2004 catalogue
E941	E020		19
E942	E030		23
E944	E022		21
E945	E032		25
E946	E044		41
E949	E045		36
E950	E055		47
E951	E060		51
E952	E047		39
E953	E056		49
E954	E095		52
E955	E000		11
E958	E002		13
E959	E022		21
E964	E000		11
E967	E002		13
E968	E022		21
E976	-	Special	
E979	-	Special	
E982	E048		40
E983	E011		16
E984	E013		18
E985	E010		15
E986	E012		17
E988	E042		29
E990	E043		30
E992	E042		29
E994	E042		29
E995	E046		37
E998	E051		43



For details on the full Dormer product range, please order a copy of our current tooling catalogue.



For correct tool selection and operation, please also refer to our Product Selector CD.



Further useful technical information can be found in our brand new 2005 Technical Handbook.

Dormer Tools Ltd.
Shireoaks Road
Worksop, S80 3HB
UK

T: 0870 850 44 66
F: 0870 850 88 66
dormer.uk@dormertools.com
www.dormertools.com

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