



- 알루미늄, 알루미늄 합금 등 비철 비금속 가공
- 경화강 내 나사 가공을 위한 견고하고 강력한 날 디자인.
- 향상된 절삭 및 칩제거를 통해 공구 성능을 향상 시킵니다.
- 팁 형상은 절삭 저항을 줄이고 공구 구부림을 억제합니다.
- 헬리코일 나사 가공이 가능합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

#### Thread Mills for Aluminum, Aluminum alloys, non-ferrous and non-metallic materials

- Powerful flute design applied for hardened steel.
- Improved cutting and chip removal reduce the risk of tool breaking in holes.
- The tip shape reduces cutting resistance and tool bend.
- It can be used for heli coil threading.
- It can be used for both right and left-handed threading.



521P

#### ISO 측정항목

단위 Unit: mm

Order Number	피치 규격		날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d
	Thread	Pitch						

#### 외부 급유형 (Without coolant)

4STMA 0072 020 S04 M1	M1	0.25	4	3	0.72	2	45	4
4STMA 0072 025 S04 M1	M1	0.25	4	3	0.72	2.5	45	4
4STMA 009 024 S04 M012	M1.2	0.25	4	3	0.9	2.4	45	4
4STMA 009 030 S04 M012	M1.2	0.25	4	3	0.9	3	45	4
4STMA 0095 028 S06 M014	M1.4	0.3	4	3	0.95	2.8	50	6
4STMA 0095 035 S06 M014	M1.4	0.3	4	3	0.95	3.5	50	6
4STMA 011 032 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	3.2	50	6
4STMA 011 040 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	4	50	6
4STMA 012 050 S03 M016	M1.6 ~ 1.8	0.35	4	3	1.2	5	40	3
4STMA 014 040 S06 M2	M2	0.4	4	3	1.4	4	50	6
4STMA 014 050 S06 M2	M2	0.4	4	3	1.4	5	50	6
4STMA 0155 062 S03 M2	M2	0.4	4	3	1.55	6.2	40	3
4STMA 0155 062 S06 M2	M2	0.4	4	3	1.55	6.2	60	6
4STMA 016 044 S06 M022	M2.2	0.45	4	3	1.6	4.4	50	6
4STMA 016 055 S06 M022	M2.2	0.45	4	3	1.6	5.5	50	6
4STMA 018 050 S06 M025	M2.5	0.45	4	3	1.8	5	50	6
4STMA 018 0625 S06 M025	M2.5	0.45	4	3	1.8	6.25	50	6
4STMA 0195 077 S03 M025	M2.5	0.45	4	3	1.95	7.7	40	3
4STMA 0195 077 S06 M025	M2.5	0.45	4	3	1.95	7.7	60	6
4STMA 024 060 S06 M3	M3	0.5	4	3	2.4	6	50	6
4STMA 024 075 S06 M3	M3	0.5	4	3	2.4	7.5	50	6
4STMA 024 092 S03 M3	M3	0.5	4	3	2.4	9.2	40	3
4STMA 024 092 S06 M3	M3	0.5	4	3	2.4	9.2	60	6
4STMA 0275 108 S06 M035	M3.5	0.6	4	3	2.75	10.8	60	6
4STMA 031 080 S06 M4	M4	0.7	4	3	3.1	8	50	6
4STMA 031 100 S06 M4	M4	0.7	4	3	3.1	10	50	6
4STMA 0315 123 S06 M4	M4	0.7	4	3	3.15	12.3	60	6
4STMA 038 100 S06 M5	M5	0.8	4	3	3.8	10	50	6
4STMA 038 125 S06 M5	M5	0.8	4	3	3.8	12.5	50	6
4STMA 0405 154 S06 M5	M5	0.8	4	3	4.05	15.4	60	6
4STMA 046 120 S06 M6	M6	1	4	3	4.6	12	50	6
4STMA 046 150 S06 M6	M6	1	4	3	4.6	15	50	6
4STMA 048 185 S06 M6	M6	1	4	3	4.8	18.5	60	6
4STMA 062 160 S10 M8	M8	1.25	4	3	6.2	16	70	10
4STMA 062 200 S10 M8	M8	1.25	4	3	6.2	20	70	10
4STMA 065 246 S08 M8	M8	1.25	4	3	6.5	24.6	65	8
4STMA 075 200 S10 M10	M10	1.5	4	3	7.5	20	70	10
4STMA 075 250 S10 M10	M10	1.5	4	3	7.5	25	70	10
4STMA 082 308 S10 M10	M10	1.5	4	3	8.2	30.8	80	10
4STMA 090 240 S10 M12	M12	1.75	4	3	9	24	80	10
4STMA 090 300 S10 M12	M12	1.75	4	3	9	30	80	10
4STMA 099 370 S10 M12	M12	1.75	4	3	9.9	37	85	10
4STMA 115 320 S12 M16	M16	2	4	3	11.5	32	100	12
4STMA 115 400 S12 M16	M16	2	4	3	11.5	40	100	12
4STMA 119 490 S12 M16	M16	2	4	3	11.9	49	95	12

ISO 측정항목

단위 Unit: mm

Order Number	피치 규격		날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
	Thread	Pitch						
<b>외부 급유형 (Without coolant)</b>								
4STMA 140 360 S16 M18	M18	2.5	4	3	14	36	135	16
4STMA 140 450 S16 M18	M18	2.5	4	3	14	45	135	16
4STMA 150 400 S16 M20	M20	2.5	4	3	15	40	135	16
4STMA 150 500 S16 M20	M20	2.5	4	3	15	50	135	16
4STMA 159 613 S16 M20	M20	2.5	4	3	15.9	61.3	115	16

<b>내부 급유형 (With coolant)</b>								
4STMA 031 080 S06 M4C	M4	0.7	4	3	3.1	8	50	6
4STMA 031 100 S06 M4C	M4	0.7	4	3	3.1	10	50	6
4STMA 038 100 S06 M5C	M5	0.8	4	3	3.8	10	50	6
4STMA 038 125 S06 M5C	M5	0.8	4	3	3.8	12.5	50	6
4STMA 046 120 S06 M6C	M6	1	4	3	4.6	12	50	6
4STMA 046 150 S06 M6C	M6	1	4	3	4.6	15	50	6
4STMA 048 185 S06 M6C	M6	1	4	3	4.8	18.5	60	6
4STMA 062 160 S10 M8C	M8	1.25	4	3	6.2	16	70	10
4STMA 062 200 S10 M8C	M8	1.25	4	3	6.2	20	70	10
4STMA 065 246 S08 M8C	M8	1.25	4	3	6.5	24.6	65	8
4STMA 075 200 S10 M10C	M10	1.5	4	3	7.5	20	70	10
4STMA 075 250 S10 M10C	M10	1.5	4	3	7.5	25	70	10
4STMA 082 308 S10 M10C	M10	1.5	4	3	8.2	30.8	80	10
4STMA 090 240 S10 M12C	M12	1.75	4	3	9	24	80	10
4STMA 090 300 S10 M12C	M12	1.75	4	3	9	30	80	10
4STMA 099 370 S10 M12C	M12	1.75	4	3	9.9	37	85	10
4STMA 115 320 S12 M16C	M16	2	4	3	11.5	32	100	12
4STMA 115 400 S12 M16C	M16	2	4	3	11.5	40	100	12
4STMA 119 490 S12 M16C	M16	2	4	3	11.9	49	95	12
4STMA 140 360 S16 M18C	M18	2.5	4	3	14	36	135	16
4STMA 140 450 S16 M18C	M18	2.5	4	3	14	45	135	16
4STMA 150 400 S16 M20C	M20	2.5	4	3	15	40	135	16
4STMA 150 500 S16 M20C	M20	2.5	4	3	15	50	135	16
4STMA 159 613 S16 M20C	M20	2.5	4	3	15.9	61.3	115	16

THREAD MILL

American UN

단위 Unit: mm

Order Number	피치규격 Thread			날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF	Pitch						
	<b>외부금유형 (Without coolant)</b>								
4STMA 014 037 S06	No.1-64		64	4	3	1.4	3.7	50	6
4STMA 014 046 S06	No.1-64		64	4	3	1.4	4.6	50	6
4STMA 0165 044 S06	No.2-56		56	4	3	1.65	4.4	50	6
4STMA 0165 055 S06	No.2-56		56	4	3	1.65	5.5	50	6
4STMA 019 050 S06	No. 3-48		48	4	3	1.9	5	50	6
4STMA 019 063 S06	No. 3-48		48	4	3	1.9	6.3	50	6
4STMA 021 057 S06	No. 4-40		40	4	3	2.1	5.7	50	6
4STMA 021 071 S06	No. 4-40		40	4	3	2.1	7.1	50	6
4STMA 0255 070 S06	No. 6-32		32	4	3	2.55	7	50	6
4STMA 0255 088 S06	No. 6-32		32	4	3	2.55	8.8	50	6
4STMA 033 083 S06		No. 8-36	36	4	3	3.3	8.3	50	6
4STMA 033 104 S06		No. 8-36	36	4	3	3.3	10.4	50	6
4STMA 035 097 S06	No. 10-24		24	4	3	3.5	9.7	65	6
4STMA 035 121 S06	No. 10-24		24	4	3	3.5	12.1	65	6
4STMA 0475 127 S06	1/4" x 20		20	4	3	4.75	12.7	65	6
4STMA 0475 159 S06	1/4" x 20		20	4	3	4.75	15.9	65	6
4STMA 050 127 S06		1/4" x 28	28	4	3	5	12.7	65	6
4STMA 050 159 S06		1/4" x 28	28	4	3	5	15.9	65	6
4STMA 060 159 S10	5/16" x 18		18	4	3	6	15.9	80	10
4STMA 060 198 S10	5/16" x 18		18	4	3	6	19.8	80	10
4STMA 067 191 S10	3/8" x 16		16	4	3	6.7	19.1	80	10
4STMA 067 238 S10	3/8" x 16		16	4	3	6.7	23.8	80	10
4STMA 077 222 S10	7/16" x 14		14	4	3	7.7	22.2	80	10
4STMA 077 278 S10	7/16" x 14		14	4	3	7.7	27.8	80	10
4STMA 092 254 S10	1/2" x 13		13	4	3	9.2	25.4	80	10
4STMA 092 318 S10	1/2" x 13		13	4	3	9.2	31.8	80	10
4STMA 105 286 S12	9/16" x 12		12	4	3	10.5	28.6	100	12
4STMA 105 357 S12	9/16" x 12		12	4	3	10.5	35.7	100	12
4STMA 114 318 S12	5/8" x 11		11	4	3	11.4	31.8	100	12
4STMA 14 397 S12	5/8" x 11		11	4	3	11.4	39.7	100	12

<b>내부금유형 (With coolant)</b>									
4STMA 033 083 S06C		No. 8-36	36	4	3	3.3	8.3	50	6
4STMA 033 104 S06C		No. 8-36	36	4	3	3.3	10.4	50	6
4STMA 035 097 S06C	No. 10-24		24	4	3	3.5	9.7	65	6
4STMA 035 121 S06C	No. 10-24		24	4	3	3.5	12.1	65	6
4STMA 0475 127 S06C	1/4" x 20		20	4	3	4.75	12.7	65	6
4STMA 0475 159 S06C	1/4" x 20		20	4	3	4.75	15.9	65	6
4STMA 050 127 S06C		1/4" x 28	28	4	3	5	12.7	65	6
4STMA 050 159 S06C		1/4" x 28	28	4	3	5	15.9	65	6
4STMA 060 159 S10C	5/16" x 18		18	4	3	6	15.9	80	10
4STMA 060 198 S10C	5/16" x 18		18	4	3	6	19.8	80	10
4STMA 067 191 S10C	3/8" x 16		16	4	3	6.7	19.1	80	10
4STMA 067 238 S10C	3/8" x 16		16	4	3	6.7	23.8	80	10
4STMA 077 222 S10C	7/16" x 14		14	4	3	7.7	22.2	80	10
4STMA 077 278 S10C	7/16" x 14		14	4	3	7.7	27.8	80	10
4STMA 092 254 S10C	1/2" x 13		13	4	3	9.2	25.4	80	10
4STMA 092 318 S10C	1/2" x 13		13	4	3	9.2	31.8	80	10
4STMA 105 286 S12C	9/16" x 12		12	4	3	10.5	28.6	100	12
4STMA 105 357 S12C	9/16" x 12		12	4	3	10.5	35.7	100	12
4STMA 114 318 S12C	5/8" x 11		11	4	3	11.4	31.8	100	12
4STMA 114 397 S12C	5/8" x 11		11	4	3	11.4	39.7	100	12

# 추천 절삭조건표

## Recommended Cutting Conditions

### 4STM

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		스테인레스강 Stainless steels SUS304 / SUS316		합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M		열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61	
경도 Hardness					40 ~ 45HRc		55 ~ 62HRc	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
M1 ~ m3	120 ~ 250	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 60	0.01 ~ 0.02	40 ~ 50	0.008 ~ 0.01
M4		0.03 ~ 0.04		0.01 ~ 0.02		0.01 ~ 0.02		0.008 ~ 0.01
M5		0.03 ~ 0.04		0.01 ~ 0.02		0.01 ~ 0.02		0.01 ~ 0.02
M6		0.04 ~ 0.05		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
M8		0.04 ~ 0.05		0.02 ~ 0.03		0.02 ~ 0.03		0.02 ~ 0.03
M10		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
M12		0.06 ~ 0.07		0.05 ~ 0.06		0.02 ~ 0.03		0.02 ~ 0.03
M16 ~ M20		0.06 ~ 0.07		0.05 ~ 0.06		0.03 ~ 0.04		0.03 ~ 0.04

### 4HTM/4LTM

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		스테인레스강 Stainless steels SUS304 / SUS316		합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M		열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61	
경도 Hardness					~ 30HRC		40 ~ 45HRC	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
M3	120 ~ 150	0.02 ~ 0.03	70 ~ 85	0.01 ~ 0.02	50 ~ 65	0.01 ~ 0.02	40 ~ 50	0.008 ~ 0.01
M4		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02		0.008 ~ 0.01
M5		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02		0.01 ~ 0.02
M6		0.03 ~ 0.04		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
M8		0.03 ~ 0.04		0.02 ~ 0.03		0.01 ~ 0.02		0.02 ~ 0.03
M10		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
M12		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
M16 ~ M20		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03

### 4NKTM

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		스테인레스강 Stainless steels SUS304 / SUS316		합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M		열처리 / 고경도강 Heat-treated steels / Hardened Steels SKD11 / SKD61	
경도 Hardness					40 ~ 45HRc		55 ~ 62HRc	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
M3	120 ~ 150	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 65	0.01 ~ 0.02	40 ~ 55	0.008 ~ 0.01
M4		0.03 ~ 0.04		0.01 ~ 0.02		0.01 ~ 0.02		0.008 ~ 0.01
M5		0.03 ~ 0.04		0.01 ~ 0.02		0.01 ~ 0.02		0.01 ~ 0.02
M6		0.04 ~ 0.05		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
M8		0.04 ~ 0.05		0.02 ~ 0.03		0.02 ~ 0.03		0.02 ~ 0.03
M10		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
M12		0.06 ~ 0.07		0.05 ~ 0.06		0.02 ~ 0.03		0.02 ~ 0.03
M16		0.06 ~ 0.07		0.05 ~ 0.06		0.03 ~ 0.04		0.03 ~ 0.04
M20		0.06 ~ 0.07		0.05 ~ 0.06		0.03 ~ 0.04		0.03 ~ 0.04