

고 품질의 효율적인 가공!
드릴링, 나사가공,
챔퍼링을 한번에 -

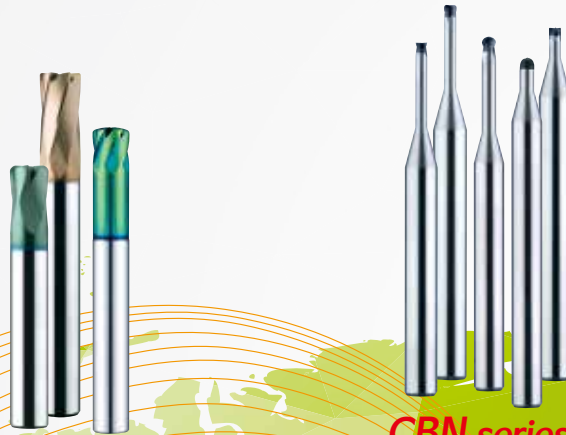
Carbide **THREAD** **MILLS** **1931**

Where Variety Meets Precision.

Drilling, Threading and Chamfering in one tool
operation without changing tools.

High-quality and efficient machining !





HARD series
고이송용 엔드밀 시리즈
High Speed EndMills Series

CBN series
CBN 엔드밀 시리즈
CBN EndMills Series



JJ series
고경도용 엔드밀 시리즈
EndMills for Hardened Steel



HARD series
고속가공용 엔드밀 시리즈
High Speed EndMills Series



G series
범용 엔드밀 시리즈
EndMills for General purpose



E series
강력절삭 엔드밀 시리즈
EndMills for Heavy Cuts



V series
고능률 범용 엔드밀
Various Symmetry EndMills



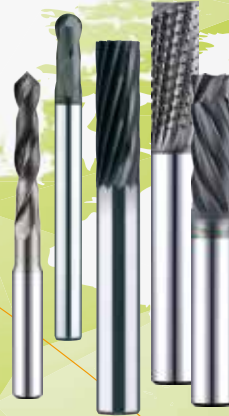
FOR SUS & TITANIUM
SUS, 티타늄 가공용 엔드밀 시리즈
EndMills for SUS & Inconel



FOR GRAPHITE
흑연가공용 엔드밀 시리즈
EndMills for Graphite



R-TAC
R-TAC 코팅 엔드밀 시리즈
R-TAC Coated EndMills Series



FOR COMPOSITE
복합소재 가공용 엔드밀 시리즈
EndMills for Composite



FOR ALUMINUM
알루미늄 가공용 엔드밀 시리즈
EndMills for Aluminum

**Globally exporting the
Outstanding quality**

세계로 수출하는 명품 엔드밀

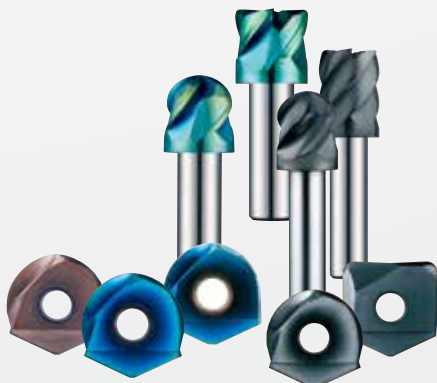
JJTTOOLS

지속적인 신제품 개발과 품질 향상으로 고객의 믿음을 이어가겠습니다.

We are doing our best for customers' productivity improvement via continual efforts for quality innovation and applying the newly qualified technology to the products.



Drills
드릴 시리즈



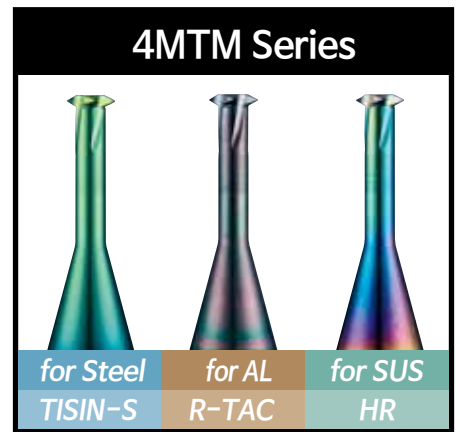
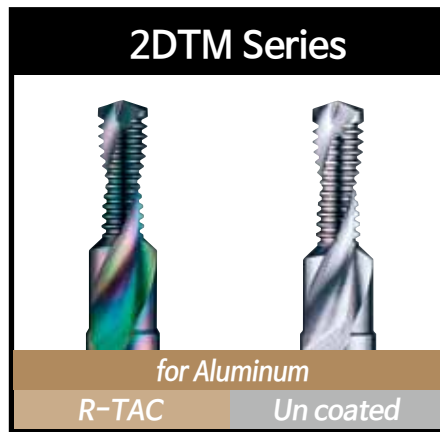
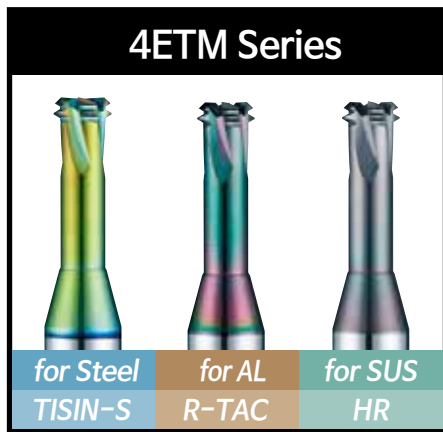
Inserts
인서트 시리즈



PCD series
PCD 엔드밀 시리즈

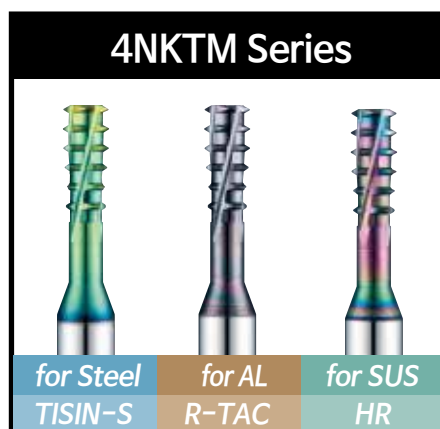
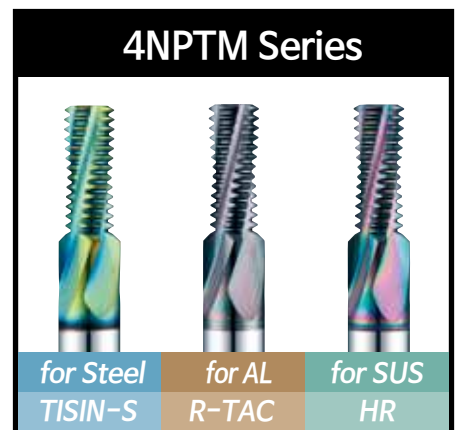
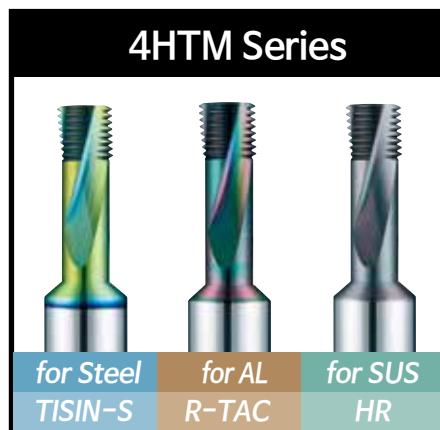
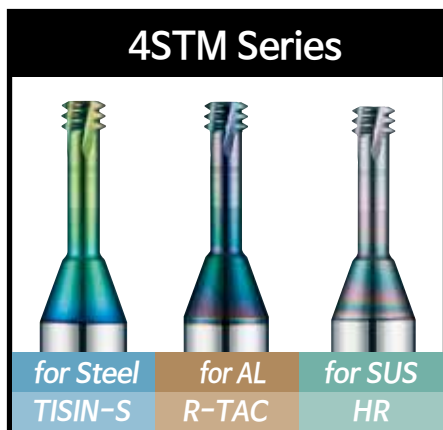


Thread Mills
쓰레드밀 시리즈



***Lineup optimized for threading
suitable for various work materials.***

다양한 피삭재에 맞춘 나사가공에 최적화된 라인업 !

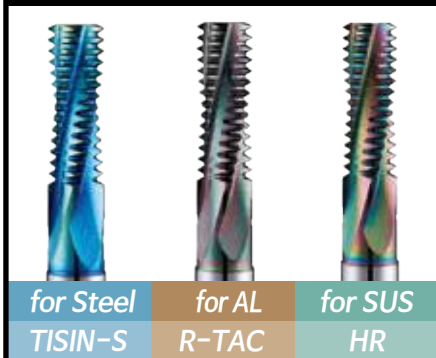


New

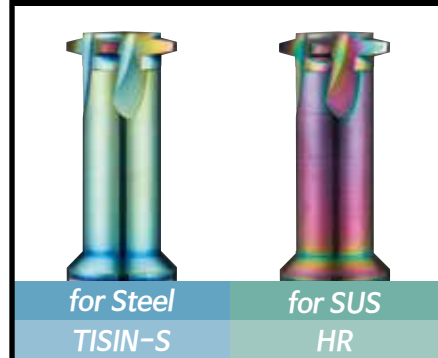
4ETMR Series



4LTM Series



TRTM Series

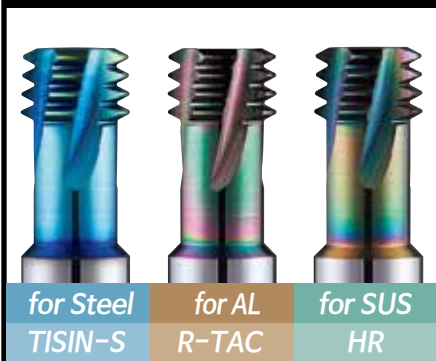


**Various Products
Lineup !**

THREAD MILLS

- High-precision chucking system, which has same or higher level of clamping power as shrink-fit chuck or hydraulic chuck, is recommended for thread milling operations below M6.
- M6 이하의 쓰레드밀 작업시 열박음척, 유압척 이상의 고정밀 척킹 시스템을 권장합니다.

4BSP Series



4HBSP Series



4BSPT Series



4NPTS Series



드릴링 및 나사 가공이 한번에!

Drilling and Thread milling are performed simultaneously !

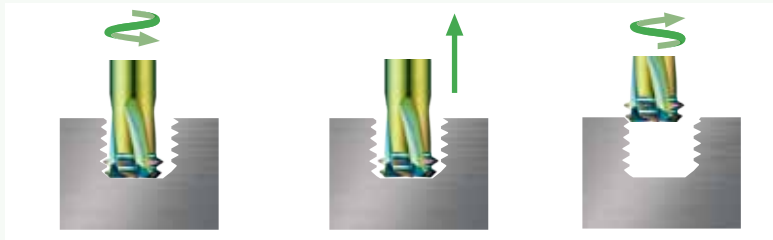
4날 범용 다기능 쓰레드밀

4Flutes Multi-functional Thread mills for Generality

4ETM

**TISIN-S
coating**

- HRc 40이하의 고경도강, 프리하든강, 합금강, 탄소강 주철 가공
- 드릴링 및 나사산 밀링이 동시에 수행되며 챔퍼링으로 나사산 작업이 마무리 됩니다.
- 공구는 왼쪽 회전이며, 오른쪽 나사 및 왼쪽 나사 작업이 모두 가능합니다.
- Thread Mills for Hardened steels (HRc~40), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons.
- Drilling and thread milling are performed simultaneously, finishing with chamfer process.
- All tools are left-handed, thread mills capable of right-handed rotation and left-handed rotation.



드릴 & 나사 가공
Drill & thread

나사가공 완료 후 가운데로 나옵니다.
When desired thread is complete, move to center, then exit hole

면취
Chamfer

나사 가공시간 단축을 위한 !

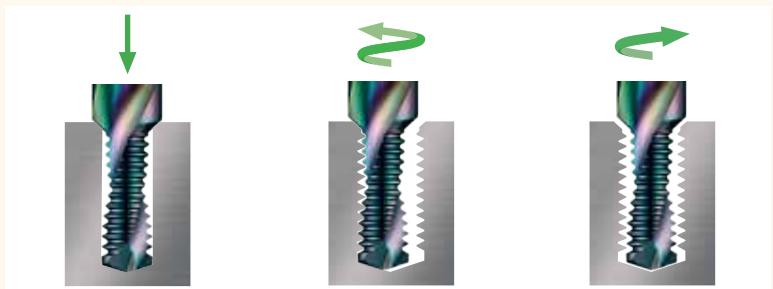
For shortening thread milling time !

2날 비철금속 전용 다기능 쓰레드밀

2Flutes Multi-functional Thread Mills for Non-ferrous Metal

2DTM

- 알루미늄, 알루미늄 합금 등 비철 비금속 가공
- 톨 교체 없이 하나의 공구로 진행되어 가공시간을 단축 시킵니다.
- 비철금속에 권장합니다.
- Thread Mills for Aluminum alloys, Non-ferrous and Non-metallic materials
- One tool operation method without changing tool, it enables to save machining time.
- Recommended for non-ferrous metals.



드릴, 면취
Drill & Chamfer

헬리스 각 360°로 역방향
회전시켜 나사 밀링 가공
Thread milling with a reverse
helix angle of 360°

진출 커브
Advance curve

드릴링, 나사가공,면취가공이 동시에 !

Drilling, Threading and chamfering
in one tool operation !



높은 절삭 속도와 날 당 높은 이송 !

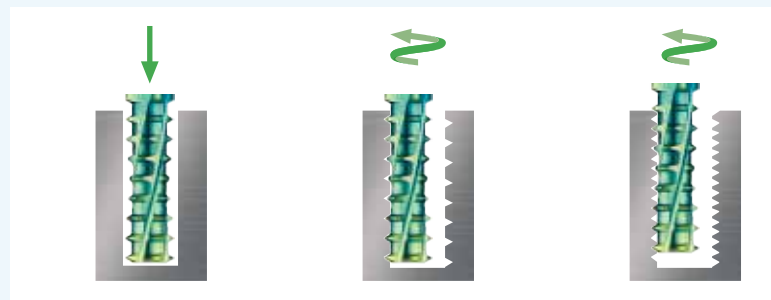
High spindle speed and feed per tooth are available !

4날 범용 헬릭스 니크 타입 쓰레드밀

4Flutes Helic Nick Type Thread Mills for Generality

4NKTM

- HRc 62이하의 열처리강, 프리하든강, 합금강, 탄소강 주철 가공
- 더 깊은 나사가공을 위한 헬리컬 리브 타입을 채용하였습니다.
- 공구는 오른나사 및 왼나사 작업이 모두 가능합니다.
- Thread Mills for Hardened steels (HRc ~62), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons.
- Rib type helical design is applied for deep threading.
- Both right and left threading are available.



헬리컬 시작
위치로 이동
Move to helical
starting position

헬릭스 각 360° 로 역방향
회전시켜 나사 밀링 가공
Thread milling with a reverse
helix angle of 360°

반복작업
Repeat task



낮은 절삭부하를 위한 !

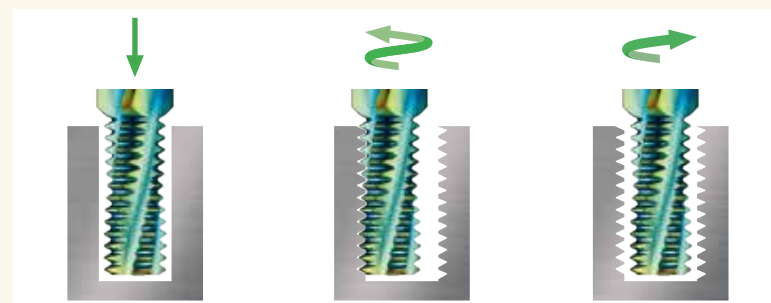
For low cutting forces over load !

4날 범용 관용 테이퍼 나사 가공 쓰레드밀

4Flutes Pipe Taper Thread mills for Generality

4NPTM

- HRc 48이하의 고경도강, 프리하든강, 합금강, 탄소강 주철 가공
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 공구는 오른나사 및 왼나사 작업이 모두 가능합니다.
- Thread Mills for Hardened steels (HRc ~48), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons.
- Using taper endmill is recommended to reduce cutting wear.
- Both right and left threading are available

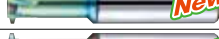
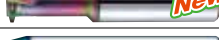
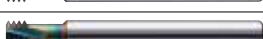


드릴, 챔퍼
Move to helical
starting position

헬릭스 각 360° 로 역방향
회전시켜 나사 밀링 가공
Thread milling with a reverse
helix angle of 360°

진출 커브
Advance curve

Carbide End Mills INDEX

시리즈 SERIES	제품 IMAGE	품명 MODEL NO.	크기 SIZE Ø (mm)	페이지 PAGE	분류 TYPE
THREAD MILL 쓰레드밀		4ETM	M3~M23 NO.4~40 ~ 3/8"~16	12	Multi-functional Thread Mills 범용 다기능 쓰레드밀 (L Rotation)
		4ETMA	M1.4~M23 NO.4~40 ~ 3/8"~16	14	Thread Mills for Aluminum 알루미늄용 다기능 쓰레드밀 (L Rotation)
		4ETMS	M3~M23 NO.4~40 ~ 3/8"~16	16	Multi-functional Thread Mills for SUS SUS용 다기능 쓰레드밀 (L Rotation)
		4ETMR	M3~M23	18	for multi-functional engraving/router 범용 다기능 조각기용 (R Rotation)
		4ETMRA	M1.4~M23	19	for Aluminum engraving/router 알루미늄 전용 다기능 조각기용 (R Rotation)
		4ETMRS	M3~M23	20	Multi-functional engraving/router for SUS SUS용 가공용 다기능 조각기용 (R Rotation)
		2DTM	M1.4~M16	21	Thread Mills for Non-ferrous Metal 비철금속용 다기능 쓰레드밀
		4TRTM	Tr8~ Tr26	22	TR Thread Mills TR나사 쓰레드밀
		4TRTMS	Tr8~ Tr26	23	TR Thread Mills for SUS SUS용 TR나사 쓰레드밀
		4MTM	M1~M18	24	Thread Mills with One Thread 범용 다기능 쓰레드밀 (1나사산)
		4MTMA	M1~M18	25	Thread Mills with One Thread for Aluminum 알루미늄용 쓰레드밀 (1나사산)
		4MTMS	M1~M18	26	Thread Mills with One Thread for SUS SUS용 쓰레드밀 (1나사산)
		4STM	M1~M20 UNC, UNF	27	Short Flute Thread Mills for Multi Purpose 범용 짧은 날 쓰레드밀
		4STMA	M1~M20 UNC, UNF	30	Short Flute Thread Mills for Aluminum 알루미늄용 짧은 날 쓰레드밀
		4STMS	M1~M20 UNC, UNF	33	Short Flute Thread Mills for SUS SUS용 짧은 날 쓰레드밀
		4BSP	1/16" ~ 2 1/2"	36	Pipe Short Parallel Thread Mills for Multi Purpose 범용 파이프 짧은 날 평행 나사 가공
		4BSPA	1/16" ~ 2 1/2"	37	Pipe Short Parallel Thread Mills for Aluminum 알루미늄 파이프 짧은 날 평행 나사 가공
		4BSPS	1/16" ~ 2 1/2"	38	Pipe Short Parallel Thread Mill for SUS SUS 파이프 짧은 날 평행 나사 가공
		4HTM	M3~M16 UNC, UNF	39	Helix Thread Mills For Multi Purpose 범용 헬릭스 쓰레드밀
		4HTMA	M3~M16 UNC, UNF	41	Helix Thread Mills for Aluminum 알루미늄용 헬릭스 쓰레드밀
		4HTMS	M3~M16 UNC, UNF	43	Helix Thread Mills for SUS SUS용 헬릭스 쓰레드밀
		4HBSP	1/16" ~ 2 1/2"	45	Pipe Parallel Thread Mills for Multi Purpose 범용 파이프 평행 나사 가공
		4HBSPA	1/16" ~ 2 1/2"	46	Pipe Parallel Thread Mills for Aluminum 알루미늄 파이프 평행 나사 가공
		4HBSPS	1/16" ~ 2 1/2"	47	Pipe Parallel Thread Mills for SUS SUS 파이프 평행 나사 가공
		4LTM	M3~M20 UNC, UNF, UNEF	48	Helix Long Thread Mills For Multi Purpose 범용 헬릭스 긴 길이 쓰레드밀
		4LTMA	M3~M20 UNC, UNF, UNEF	51	Helix Long Thread Mills for Aluminum 알루미늄용 헬릭스 긴 길이 쓰레드밀
		4LTMS	M3~M20 UNC, UNF, UNEF	54	Helix Long Thread Mills for SUS SUS용 헬릭스 긴 길이 쓰레드밀

■ 상기 제품의 주문번호 및 사양은 품질개선으로 인해 예고없이 변경될 수 있습니다.

★ 최적 Most Suitable / ◎ 적합 Suitable / ○ 가능 Available

프리하든강 Pre-hardened Steel	고경도강 Hardened Steel ~ HRC55 HRC55~65		합금강/공구강 Alloy Steel Tool Steel	내열 합금강 Heat Resistance Alloy	티타늄 Titanium	스테인레스강 Stainless Steel	알루미늄 Aluminum	구리 Copper	탄소강 Carbon Steel	흑연 Graphite	복합소재 CFRP GFRP	A.B.S수지 Resin
★			★						★			
							★	★				◎
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★			★						★			
							★	★				◎
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							★	★				◎
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						★			○			
★	★	◎	★						★			
							★	★				◎
◎			◎	◎	◎	★			◎			
★	◎	○	★						★			
							★	★				◎
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							★	★				◎
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★	○		★						★			
							★	★				◎
○						★			○			
★			★						★			
							★	★				◎
○			○			★			○			

■ EDP. Number and Specifications are can be changed without notification for quality improvement.

Carbide End Mills INDEX

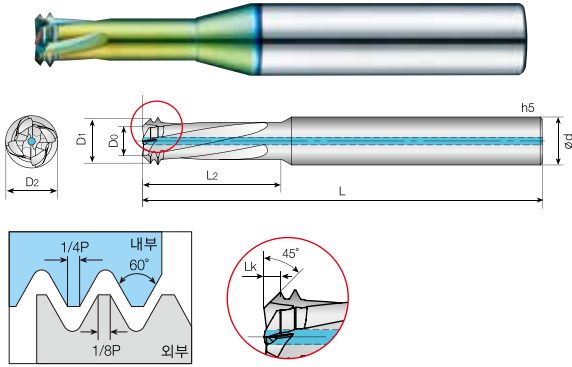
시리즈 SERIES	제품 IMAGE	품명 MODEL NO.	크기 SIZE Ø (mm)	페이지 PAGE	분류 TYPE
THREAD MILL 쓰레드밀		4NKTM	M3~M20	57	Helix Nick Type Thread Mills for Multi Purpose 범용 헬릭스 니크 타입 쓰레드밀
		4NKTMA	M3~M20	61	Helix Nick Type Thread Mills for Aluminum 알루미늄 헬릭스 니크 타입 쓰레드밀
		4NKTMS	M3~M20	65	Helix Nick Type Thread Mills for SUS SUS용 헬릭스 니크 타입 쓰레드밀
		4BSPT	1/16"~2"	69	Pipe Taper Short Thread Mills for Multi Purpose 범용 파이프 짧은 날 테이퍼 나사 가공
		4BSPTA	1/16"~2"	70	Pipe Taper Short Thread Mills for Aluminum 알루미늄 파이프 짧은 날 테이퍼 나사 가공
		4BSPTS	1/16"~2"	71	Pipe Taper Short Thread Mills for SUS SUS 파이프 짧은 날 테이퍼 나사 가공
		4NPTS	1/16"~2"	72	Pipe Taper Short Thread Mills for Multi Purpose 범용 파이프 짧은 날 테이퍼 나사 가공
		4NPTSA	1/16"~2"	73	Pipe Taper Short Thread Mills for Aluminum 알루미늄 파이프 짧은 날 테이퍼 나사 가공
		4NPTSS	1/16"~2"	74	Pipe Taper Short Thread Mills for SUS SUS 파이프 짧은 날 테이퍼 나사 가공
		4BSTM	1/16"~2"	75	Pipe Taper Thread Mills for Multi Purpose 범용 파이프 테이퍼 나사 가공
		4BSTMA	1/16"~2"	76	Pipe Taper Thread Mills for Aluminum 알루미늄 파이프 테이퍼 나사 가공
		4BSTMS	1/16"~2"	77	Pipe Taper Thread Mills for SUS SUS 파이프 테이퍼 나사 가공
		4NPTM	1/16"~2"	78	Pipe Taper Thread Mills for Multi Purpose 범용 파이프 테이퍼 나사 가공
		4NPTMA	1/16"~2"	79	Pipe Taper Thread Mills for Aluminum 알루미늄 파이프 테이퍼 나사 가공
		4NPTMS	1/16"~2"	80	Pipe Taper Thread Mills for SUS SUS 파이프 테이퍼 나사 가공
		4IMTM	M1.2~M2.5	81	for Dental Implants (Three Thread) 치과 임플란트용 (3나사산)
		4IMTM	M0.8~M2.6	81	for Dental Implants (Three Thread) 치과 임플란트용 (3나사산)

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프리하든강 Pre-hardened Steel	하든강 Hardened Steel ~ HRC55 HRC55~ 65		합금강/공구강 Alloy Steel Tool Steel	내열 합금강 Heat Resistance Alloy	티타늄 Titanium	스테인레스강 Stainless Steel	알루미늄 Aluminum	구리 Copper	탄소강 Carbon Steel	흑연 Graphite	복합소재 CFRP GFRP	A.B.S수지 Resin
★	★	★	★						★			
							★	★				
◎			◎	◎	★	★			◎			
★	◎	○	★						★			
							★	★				
○			○	○	◎	★			○			
★	◎	○	★						★			
							★	★				
○			○	○	◎	★			○			
★	○		★						★			
							★	★				
○						★			○			
★	○		★						★			
							★	★				
○						★			○			
				○	★	◎						
				○	★	◎						

■ EDP. Number and Specifications are can be changed without notification for quality improvement.

4날 범용 다기능 쓰레드밀(역회전)



ISO 측정항목

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- **HRc 400이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철가공**
- 4ETM 공구는 하나의 공구로 드릴, 나사 및 챔퍼 작업을 모두 수행합니다.
- 탭 가공을 위한 기조 홀 작업은 더 이상 필요하지 않습니다.
- 다기능 공구로 막힌구멍, 관통구멍, 경사진 곡면에서도 사용이 가능합니다.
- 원활한 칩 배출을 위해 2D이상의 기조홀이 없는 경우 내부 급유원을 추천 합니다.
- 헬리코일 나사 가공이 가능합니다.
- 공구의 추축회전은 역 방향(M4)이고, 진행방향은 정 방향으로 진행 됩니다.

- **Thread Mills for Hardened steels (HRC ~40), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons**
- With one 4ETM tool, it's available for drilling, threading and chamfering all together.
- Pre-drilling for tapping is no longer needed.
- It can also be used on blocked holes, penetrating holes, and sloping curved surfaces as multi-function tool.
- If the diameter of hole is longer than 2D without pre-drilled hole, use the tool with coolant for the better chip emission.
- It can be used for heli coil threading.
- The main direction of tool rotation is left-handed (M4) and the direction of threading is right-handed.

단위 Unit: mm

[illegible]

내부급유형 (With coolant)

[illegible]

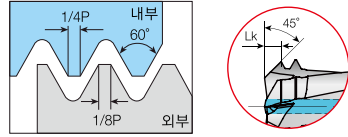
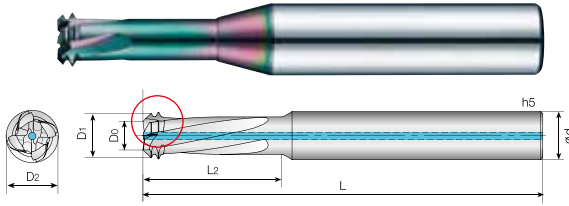
American UN

단위 Unit: mm

[illegible]

내부급유형 (With coolant)

[illegible]



ISO 측정항목

96P

단위 Unit: mm

Order Number	나사 가능 규격	피치규격	날수		날경			유효장	길이	전장	샹크
	Thread	Pitch	Flutes	Teeth	Diameter			Effective Length L2	Lk	Overall Length L	Shank Dia d
			Z	Zt	D0	D1	D2				
외부 급유형 (Without coolant)											
4ETMA 0105 033 S04 M014	M1.4	0.3	4	2	0.61	0.95	1.05	3.3	0.17	45	4
4ETMA 0105 040 S04 M014	M1.4	0.3	4	2	0.61	0.95	1.05	4	0.17	45	4
4ETMA 012 037 S04 M016	M1.6~M1.8	0.35	4	2	0.65	1.04	1.2	3.7	0.195	45	4
4ETMA 012 045 S04 M016	M1.6~M1.8	0.35	4	2	0.65	1.04	1.2	4.5	0.195	45	4
4ETMA 0155 045 S04 M2	M2	0.4	4	2	0.94	1.4	1.55	4.5	0.23	45	4
4ETMA 0155 055 S04 M2	M2	0.4	4	2	0.94	1.4	1.55	5.5	0.23	45	4
4ETMA 020 055 S04 M025	M2.5~M2.6	0.45	4	2	1.16	1.85	2	5.5	0.345	45	4
4ETMA 020 0675 S04 M025	M2.5~M2.6	0.45	4	2	1.16	1.85	2	6.75	0.345	45	4
4ETMA 024 070 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	7	0.4	60	6
4ETMA 024 085 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	8.5	0.4	60	6
4ETMA 032 092 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	9.2	0.57	60	6
4ETMA 032 112 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	11.2	0.57	60	6
4ETMA 039 115 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	11.5	0.7	60	6
4ETMA 039 144 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	14.4	0.7	60	6
4ETMA 047 140 S06 M6	M6~M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4ETMA 047 170 S06 M6	M6~M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4ETMA 061 180 S08 M8	M8~M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4ETMA 061 220 S08 M8	M8~M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4ETMA 078 230 S08 M10	M10~M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4ETMA 078 280 S08 M10	M10~M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4ETMA 090 260 S10 M12	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4ETMA 090 330 S10 M12	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4ETMA 118 350 S12 M16	M16~M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4ETMA 118 430 S12 M16	M16~M23	2	4	2	7.4	11.4	11.8	43	2	100	12

내부 급유형 (With coolant)

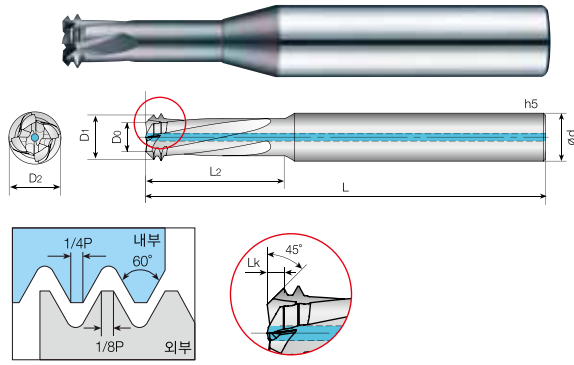
4ETMA 047 140 S06 M6C	M6~M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4ETMA 047 170 S06 M6C	M6~M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4ETMA 061 180 S08 M8C	M8~M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4ETMA 061 220 S08 M8C	M8~M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4ETMA 078 230 S08 M10C	M10~M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4ETMA 078 280 S08 M10C	M10~M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4ETMA 090 260 S10 M12C	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4ETMA 090 330 S10 M12C	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4ETMA 118 350 S12 M16C	M16~M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4ETMA 118 430 S12 M16C	M16~M23	2	4	2	7.4	11.4	11.8	43	2	100	12

단위 Unit: mm

[illegible]

내부급유형 (With coolant)

[illegible]



ISO 측정항목

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단위 Unit: mm

Order Number	나사 가능 규격	피치규격	날수	산수	날경			유효장	길이	전장	샹크
	Thread	Pitch	Flutes Z	Teeth Zt	D0	D1	D2	Effective Length L2	Lk	Overall Length L	Shank Dia d
외부 급유형 (Without coolant)											
4ETMS 024 070 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	7	0.4	60	6
4ETMS 024 085 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	8.5	0.4	60	6
4ETMS 032 092 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	9.2	0.57	60	6
4ETMS 032 112 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	11.2	0.57	60	6
4ETMS 039 115 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	11.5	0.7	60	6
4ETMS 039 144 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	14.4	0.7	60	6
4ETMS 047 140 S06 M6	M6 ~ M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4ETMS 047 170 S06 M6	M6 ~ M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4ETMS 061 180 S08 M8	M8 ~ M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4ETMS 061 220 S08 M8	M8 ~ M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4ETMS 078 230 S08 M10	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4ETMS 078 280 S08 M10	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4ETMS 090 260 S10 M12	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4ETMS 090 330 S10 M12	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4ETMS 118 350 S12 M16	M16 ~ M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4ETMS 118 430 S12 M16	M16 ~ M23	2	4	2	7.4	11.4	11.8	43	2	100	12

내부 급유형 (With coolant)

4ETMS 047 140 S06 M6C	M6~M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4ETMS 047 170 S06 M6C	M6~M9	1	4	2	2.82	4.4	4.7	17	0.79	60	6
4ETMS 061 180 S08 M8C	M8~M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4ETMS 061 220 S08 M8C	M8~M12	1.25	4	2	4	5.8	6.1	22	0.9	65	8
4ETMS 078 230 S08 M10C	M10~M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4ETMS 078 280 S08 M10C	M10~M15	1.5	4	2	5.16	7.4	7.8	28	1.12	65	8
4ETMS 090 260 S10 M12C	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4ETMS 090 330 S10 M12C	M12	1.75	4	2	6.2	8.6	9	33	1.2	80	10
4ETMS 118 350 S12 M16C	M16~M23	2	4	2	7.4	11.4	11.8	35	2	100	12
4ETMS 118 430 S12 M16C	M16~M23	2	4	2	7.4	11.4	11.8	43	2	100	12

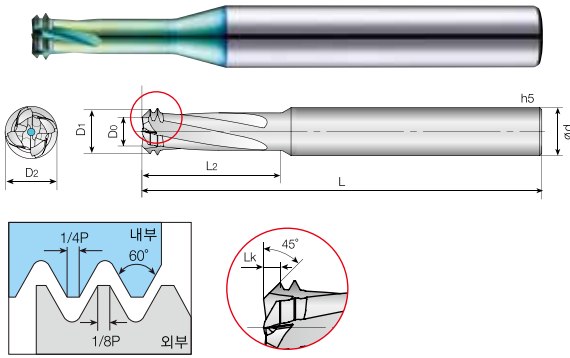
단위 Unit: mm

[illegible]

내부급유형 (With coolant)

[illegible]

범용 다기능 조각기용 쓰레드밀 (정회전)



- **HRC 40이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철가공**
 - 4ETMR 공구는 하나의 공구로 드릴, 나사 및 챔퍼 작업 모두 수행합니다.
 - 조각가공으로 공구의 주축회전과 진행방향 모두 정 방향(M3)으로 진행 됩니다.
 - 탭 가공을 위한 기초 홀 작업은 더 이상 필요하지 않습니다.
 - 다기능 공구로 막힌구멍, 관통구멍, 경사진 곡면에서도 사용이 가능합니다.
 - 헬리코일 나사 가공이 가능합니다.
- **Thread Mills for Hardened steels (HRC ~40), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons**
 - With one 4ETMR tool, it's available for drilling, threading, and chamfering all together.
 - For engraving purpose, the main direction of tool rotation and the direction of threading are right-handed (M3).
 - Pre-drilling for tapping is no longer needed.
 - It can also be used on blocked holes, penetrating holes, and sloping curved surfaces as multi-function tool.
 - It can be used for heli coil threading.



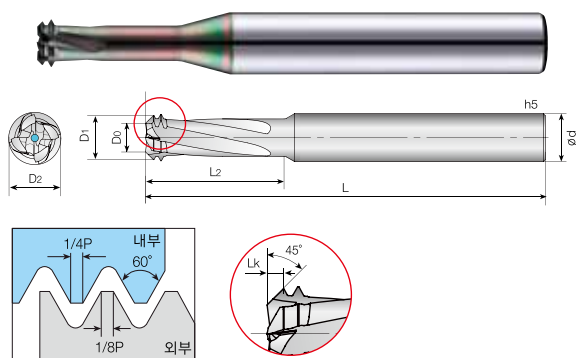
96P

ISO 측정항목

단위 Unit: mm

[illegible]

알루미늄 전용 다기능 조각기용 쓰레드밀 (정회전)



- **알루미늄, 알루미늄 합금 등 비철 비금속 가공**
- 4ETMRA 공구는 하나의 공구로 드릴, 나사 및 챔퍼 작업 모두 수행합니다.
- 조각가공으로 공구의 주축회전과 진행방향 모두 정 방향(M3)으로 진행 됩니다.
- 탭가공을 위한 기조 홀 작업은 더 이상 필요하지 않습니다.
- 다기능 공구로 막힌구멍, 판통구멍, 경사진 곡면에서도 사용이 가능합니다.
- 헬리코일 나사 가공이 가능합니다.

- Thread Mills for Aluminum, Aluminum alloys, Non-ferrous, and Non-metallic materials

- With one 4ETMRA tool, it's available for drilling, threading, and chamfering all together.
- For engraving purpose, the main direction of tool rotation and the direction of threading are right-handed (M3).
- Pre-drilling for tapping is no longer needed.
- It can also be used on blocked holes, penetrating holes, and sloping curved surfaces as multi-function tool.
- It can be used for heli coil threading.



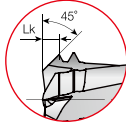
96P

ISO 측정항목

단위 Unit: mm

[illegible]

SUS용 다기능 조각기용 쓰레드밀 (정회전)

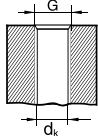
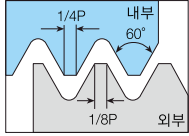
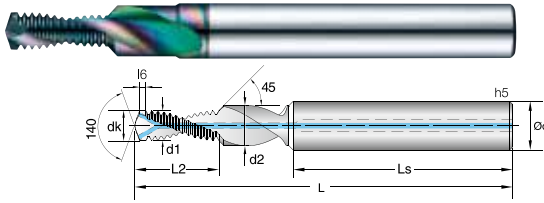


ISO 측정항목

Order Number	나사 가능 규격	피치규격	날수		날경			유효장	길이	전장	샙크
	Thread	Pitch	Flutes	Teeth	Diameter			Effective Length	Lk	Overall Length	Shank Dia
			Z	Zt	D0	D1	D2	L2		L	d
외부 급유형 (Without coolant)											
4ETMRS 024 070 S06 M3	M3	0.5	4	2	1.37	2.17	2.4	7	0.4	60	6
4ETMRS 032 092 S06 M4	M4	0.7	4	2	1.74	2.88	3.2	9.2	0.57	60	6
4ETMRS 039 115 S06 M5	M5	0.8	4	2	2.21	3.61	3.9	11.5	0.7	60	6
4ETMRS 047 140 S06 M6	M6 ~ M9	1	4	2	2.82	4.4	4.7	14	0.79	60	6
4ETMRS 061 180 S08 M8	M8 ~ M12	1.25	4	2	4	5.8	6.1	18	0.9	65	8
4ETMRS 078 230 S08 M10	M10 ~ M15	1.5	4	2	5.16	7.4	7.8	23	1.12	65	8
4ETMRS 090 260 S10 M12	M12	1.75	4	2	6.2	8.6	9	26	1.2	80	10
4ETMRS 118 350 S12 M16	M16 ~ M23	2	4	2	7.4	11.4	11.8	35	2	100	12

외부 급유형 (Without coolant)

[illegible]



ISO 측정항목

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알루미늄, 알루미늄 합금 등 비철 비금속 가공

- 2DTM 공구는 하나의 공구로 드릴가공과 나사가공, 챔퍼가공까지 모두 가능합니다.
- 톨 교체 없이 하나의 공구로 진행되어 가공시간을 단축 시킵니다.
- 나사부 이후로 챔퍼가공이 가능하게 구성되어, 유효장 이상 만큼의 깊이 가공 시 챔퍼량이 정해집니다.

Thread Mills for Aluminum, Aluminum alloys, Non-ferrous and Non-metallic materials

- With one 2DTM tool, it's available for drilling, threading and chamfering all together.
- One tool operation method without changing tool, it enables to save machining time.
- Chamfering is possible after effective length, Chamfering size is set once machining longer than effective length.

단위 Unit: mm

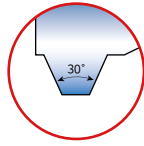
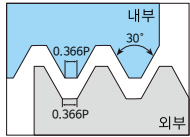
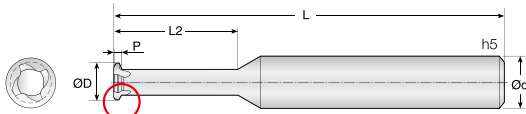
Order Number		나사규격	피치규격	드릴직경	외경	목부직경	유효장	생크길이	드릴길이	전장	생크
		Thread	Pitch	Drill Dia dk	Cutter Dia d1	Max. C sink d2	Effective Length L2	Shank Length Ls	Drill Length l6	Overall Length L	Shank Dia d
비코팅 Un coated	코팅 Coated										

외부 급유형 (Without coolant)

2DTM 011 0276 M014	2DTMC 011 0276 M014	M1.4	0.3	1.1	1.05	1.55	2.76	33	0.2	45	4
2DTM 011 0367 M014	2DTMC 011 0367 M014	M1.4	0.3	1.1	1.05	1.55	3.67	33	0.2	45	4
2DTM 0125 032 M016	2DTMC 0125 032 M016	M1.6	0.35	1.25	1.2	1.75	3.2	33	0.25	45	4
2DTM 0125 0425 M016	2DTMC 0125 0425 M016	M1.6	0.35	1.25	1.2	1.75	4.25	33	0.25	45	4
2DTM 0145 0358 M018	2DTMC 0145 0358 M018	M1.8	0.35	1.45	1.4	2	3.58	33	0.25	45	4
2DTM 0145 0463 M018	2DTMC 0145 0463 M018	M1.8	0.35	1.45	1.4	2	4.63	33	0.25	45	4
2DTM 016 0448 M2	2DTMC 016 0448 M2	M2	0.4	1.6	1.55	2.25	4.48	32	0.3	45	4
2DTM 016 0568 M2	2DTMC 016 0568 M2	M2	0.4	1.6	1.55	2.25	5.68	32	0.3	45	4
2DTM 0205 0554 M025	2DTMC 0205 0554 M025	M2.5	0.45	2.05	2	2.85	5.54	30.5	0.35	45	4
2DTM 0205 0689 M025	2DTMC 0205 0689 M025	M2.5	0.45	2.05	2	2.85	6.89	30.5	0.35	45	4
2DTM 0215 0554 M026	2DTMC 0215 0554 M026	M2.6	0.45	2.15	2.1	2.95	5.54	30.5	0.35	45	4
2DTM 0215 0691 M026	2DTMC 0215 0691 M026	M2.6	0.45	2.15	2.1	2.95	6.91	30.5	0.35	45	4
2DTM 025 067 S06 M3	2DTMC 025 067 S06 M3	M3	0.5	2.5	2.45	3.4	6.7	36	0.4	50	6
2DTM 025 082 S06 M3	2DTMC 025 082 S06 M3	M3	0.5	2.5	2.45	3.4	8.2	36	0.4	50	6
2DTM 033 087 S06 M4	2DTMC 033 087 S06 M4	M4	0.7	3.3	3.25	4.5	8.7	36	0.6	50	6
2DTM 033 108 S06 M4	2DTMC 033 108 S06 M4	M4	0.7	3.3	3.25	4.5	10.8	36	0.6	50	6
2DTM 042 109 S06 M5	2DTMC 042 109 S06 M5	M5	0.8	4.2	4	5.5	10.9	36	0.7	55	6
2DTM 042 133 S06 M5	2DTMC 042 133 S06 M5	M5	0.8	4.2	4	5.5	13.3	36	0.7	55	6
2DTM 050 137 S08 M6	2DTMC 050 137 S08 M6	M6	1	5	4.75	6.6	13.7	36	1	60	8
2DTM 050 167 S08 M6	2DTMC 050 167 S08 M6	M6	1	5	4.75	6.6	16.7	36	1	60	8
2DTM 068 184 S10 M8	2DTMC 068 184 S10 M8	M8	1.25	6.8	6.35	9	18.4	40	1.2	75	10
2DTM 068 221 S10 M8	2DTMC 068 221 S10 M8	M8	1.25	6.8	6.35	9	22.1	40	1.2	75	10
2DTM 085 222 S12 M10	2DTMC 085 222 S12 M10	M10	1.5	8.5	7.95	11	22.2	45	1.5	80	12
2DTM 085 267 S12 M10	2DTMC 085 267 S12 M10	M10	1.5	8.5	7.95	11	26.7	45	1.5	80	12
2DTM 102 255 S14 M12	2DTMC 102 255 S14 M12	M12	1.75	10.2	9.95	13.5	25.5	45	1.5	90	14
2DTM 102 308 S14 M12	2DTMC 102 308 S14 M12	M12	1.75	10.2	9.95	13.5	30.8	45	1.5	90	14
2DTM 120 312 S16 M14	2DTMC 120 312 S16 M14	M14	2	12	11.2	15.5	31.2	48	1.5	100	16
2DTM 120 392 S16 M14	2DTMC 120 392 S16 M14	M14	2	12	11.2	15.5	39.2	48	1.5	100	16
2DTM 140 355 S18 M16	2DTMC 140 355 S18 M16	M16	2	14	13.2	17.5	35.5	48	1.5	100	18
2DTM 140 435 S18 M16	2DTMC 140 435 S18 M16	M16	2	14	13.2	17.5	43.5	55.7	1.5	115	18

내부 급유형 (With coolant)

2DTM 042 109 S06 M5C	2DTMC 042 109 S06 M5C	M5	0.8	4.2	4	5.5	10.9	36	0.7	55	6
2DTM 042 133 S06 M5C	2DTMC 042 133 S06 M5C	M5	0.8	4.2	4	5.5	13.3	36	0.7	55	6
2DTM 050 137 S08 M6C	2DTMC 050 137 S08 M6C	M6	1	5	4.75	6.6	13.7	36	1	60	8
2DTM 050 167 S08 M6C	2DTMC 050 167 S08 M6C	M6	1	5	4.75	6.6	16.7	36	1	60	8
2DTM 068 184 S10 M8C	2DTMC 068 184 S10 M8C	M8	1.25	6.8	6.35	9	18.4	40	1.2	75	10
2DTM 068 221 S10 M8C	2DTMC 068 221 S10 M8C	M8	1.25	6.8	6.35	9	22.1	40	1.2	75	10
2DTM 085 222 S12 M10C	2DTMC 085 222 S12 M10C	M10	1.5	8.5	7.95	11	22.2	45	1.5	80	12
2DTM 085 267 S12 M10C	2DTMC 085 267 S12 M10C	M10	1.5	8.5	7.95	11	26.7	45	1.5	80	12
2DTM 102 255 S14 M12C	2DTMC 102 255 S14 M12C	M12	1.75	10.2	9.95	13.5	25.5	45	1.5	90	14
2DTM 102 308 S14 M12C	2DTMC 102 308 S14 M12C	M12	1.75	10.2	9.95	13.5	30.8	45	1.5	90	14
2DTM 120 312 S16 M14C	2DTMC 120 312 S16 M14C	M14	2	12	11.2	15.5	31.2	48	1.5	100	16
2DTM 120 392 S16 M14C	2DTMC 120 392 S16 M14C	M14	2	12	11.2	15.5	39.2	48	1.5	100	16
2DTM 140 355 S18 M16C	2DTMC 140 355 S18 M16C	M16	2	14	13.2	17.5	35.5	48	1.5	100	18
2DTM 140 435 S18 M16C	2DTMC 140 435 S18 M16C	M16	2	14	13.2	17.5	43.5	55.7	1.5	115	18



나사산 확대



96P

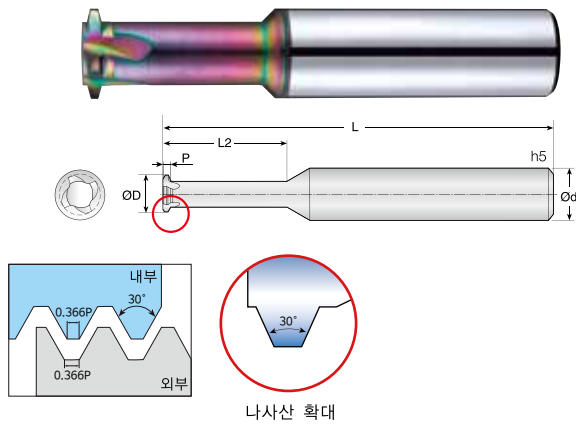
ISO 측정항목

단위 Unit: mm

Order Number	나사가능규격	피치규격	날수	산수	날경	유효장	전장	샙크
	Thread	Pitch	Flutes	Teeth	Diameter	Effective Length	Overall Length	Shank Dia
			Z	Zt	D1	L2	L	d

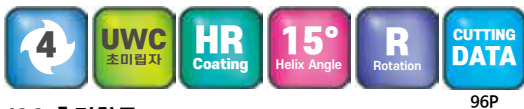
외부급유형 (Without coolant)

4TRTM 055 135 S06	Tr8, Tr9	1,5	4	1	5.5	13.5	60	6
4TRTM 066 210 S08	Tr10, Tr11	2	4	1	6.6	21	65	8
4TRTM 070 250 S08	Tr12	3	4	1	7	25	65	8
4TRTM 086 250 S10	Tr12, Tr14	2	4	1	8.6	25	75	10
4TRTM 089 290 S10	Tr14, Tr22	3	4	1	8.9	29	75	10
4TRTM 092 330 S10	Tr16, Tr18, Tr20	4	4	1	9.2	33	75	10
4TRTM 135 450 S14	Tr22, Tr24, Tr26	5	4	1	13.5	45	105	14



- **SUS, 티타늄합금 가공**
- 동력 전달용 미터계 30° 사다리꼴 나사 가공 전용
- 소구경 크기의 깊은홀의 나사가공에 사용할 수 있습니다.
- 포로파일에 따라 나사산 깊이는 최대가 될 수 있습니다.
- 하나의 나사산으로 구성되어 다양한 PITCH의 나사 가공이 가능합니다.
- 다양한 피삭재의 하나의 나사산으로 여러번의 절삭이 가능하여 안정적입니다.

- **Thread Mills for SUS and Titanium alloys**
- For power transmission meter 30° trapezoidal thread milling.
- It can be used for threading deep holes the size of a small diameter.
- Depending on the profile, thread depth can be maximum
- Composed of a single thread, it performs various pitch thread milling.
- Available for multiple milling of various materials with one thread ensuring stability



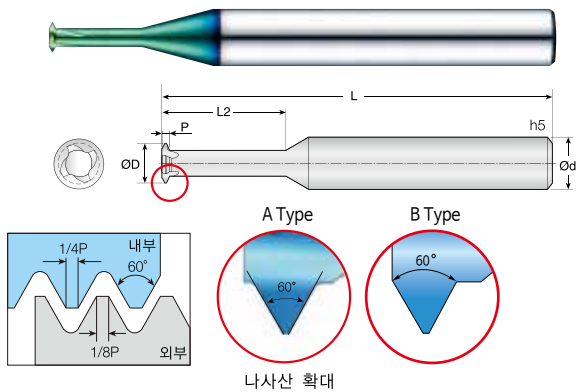
ISO 측정항목

96P

단위 Unit: mm

[illegible]

4날 범용 다기능 쓰레드밀 (1나사산)

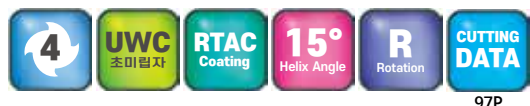
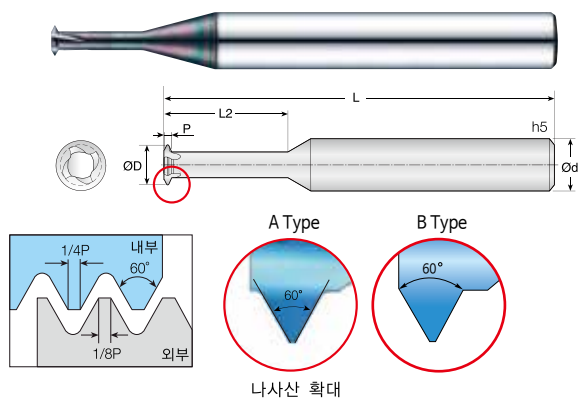


ISO 측정항목 / American UN

단위 Unit: mm

[illegible]

4날 알루미늄 전용 다기능 쓰레드밀(1나사산)

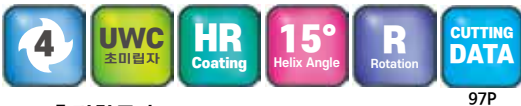
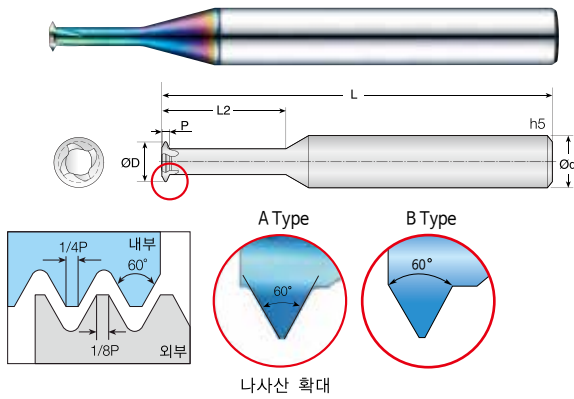


ISO 측정항목 / American UN

단위 Unit: mm

[illegible]

4날 SUS 가공용 다기능 쓰레드밀(1나사산)



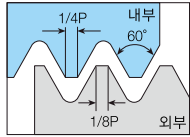
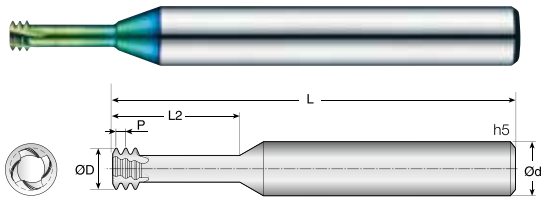
ISO 측정항목 / American UN

단위 Unit: mm

[illegible]

4STM 4 Flutes Short Flute Thread Mills for Multi Purpose

4날 범용 짧은 날 쓰레드밀



98P

ISO 측정항목

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날 수 Flutes Z	산 수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부급유형 (Without coolant)

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

ISO 측정항목

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d
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외부 급유형 (Without coolant)

4STM 140 360 S16 M18	M18	2.5	4	3	14	36	135	16
4STM 140 450 S16 M18	M18	2.5	4	3	14	45	135	16
4STM 150 400 S16 M20	M20	2.5	4	3	15	40	135	16
4STM 150 500 S16 M20	M20	2.5	4	3	15	50	135	16
4STM 159 613 S16 M20	M20	2.5	4	3	15.9	61.3	115	16

내부 급유형 (With coolant)

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

American UN

단위 Unit: mm

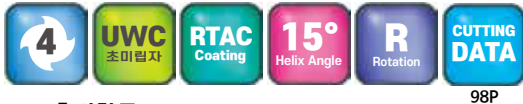
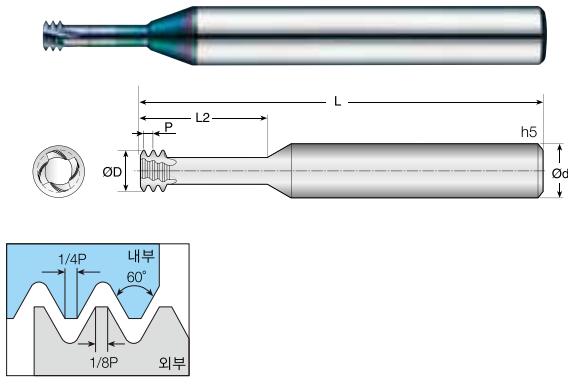
Order Number	나사 가능 규격 Thread		피치규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF							

외부급유형 (Without coolant)

4STM 014 037 S06	No.1-64		64	4	3	1.4	3.7	50	6
4STM 014 046 S06	No.1-64		64	4	3	1.4	4.6	50	6
4STM 0165 044 S06	No.2-56		56	4	3	1.65	4.4	50	6
4STM 0165 055 S06	No.2-56		56	4	3	1.65	5.5	50	6
4STM 019 050 S06	No. 3-48		48	4	3	1.9	5	50	6
4STM 019 063 S06	No. 3-48		48	4	3	1.9	6.3	50	6
4STM 021 057 S06	No. 4-40		40	4	3	2.1	5.7	50	6
4STM 021 071 S06	No. 4-40		40	4	3	2.1	7.1	50	6
4STM 0255 070 S06	No. 6-32		32	4	3	2.55	7	50	6
4STM 0255 088 S06	No. 6-32		32	4	3	2.55	8.8	50	6
4STM 033 083 S06		No. 8-36	36	4	3	3.3	8.3	50	6
4STM 033 104 S06		No. 8-36	36	4	3	3.3	10.4	50	6
4STM 035 097 S06	No. 10-24		24	4	3	3.5	9.7	65	6
4STM 035 121 S06	No. 10-24		24	4	3	3.5	12.1	65	6
4STM 0475 127 S06	1/4" x 20		20	4	3	4.75	12.7	65	6
4STM 0475 159 S06	1/4" x 20		20	4	3	4.75	15.9	65	6
4STM 050 127 S06		1/4" x 28	28	4	3	5	12.7	65	6
4STM 050 159 S06		1/4" x 28	28	4	3	5	15.9	65	6
4STM 060 159 S10	5/16" x 18		18	4	3	6	15.9	80	10
4STM 060 198 S10	5/16" x 18		18	4	3	6	19.8	80	10
4STM 067 191 S10	3/8" x 16		16	4	3	6.7	19.1	80	10
4STM 067 238 S10	3/8" x 16		16	4	3	6.7	23.8	80	10
4STM 077 222 S10	7/16" x 14		14	4	3	7.7	22.2	80	10
4STM 077 278 S10	7/16" x 14		14	4	3	7.7	27.8	80	10
4STM 092 254 S10	1/2" x 13		13	4	3	9.2	25.4	80	10
4STM 092 318 S10	1/2" x 13		13	4	3	9.2	31.8	80	10
4STM 105 286 S12	9/16" x 12		12	4	3	10.5	28.6	100	12
4STM 105 357 S12	9/16" x 12		12	4	3	10.5	35.7	100	12
4STM 114 318 S12	5/8" x 11		11	4	3	11.4	31.8	100	12
4STM 114 397 S12	5/8" x 11		11	4	3	11.4	39.7	100	12

내부급유형 (With coolant)

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



ISO 측정항목

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단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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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	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d
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외부 급유형 (Without coolant)

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

내부 급유형 (With coolant)

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

American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread		피치규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF							

외부급유형 (Without coolant)

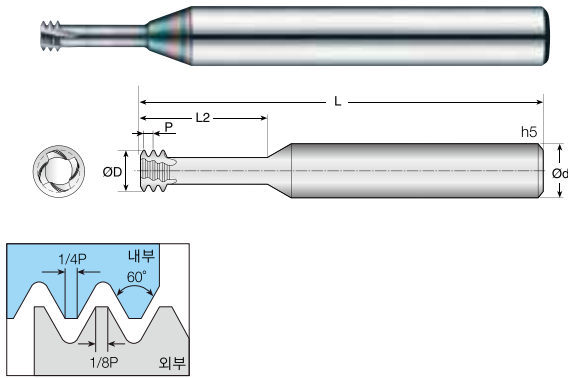
4STMA 014 037 S06	No. 1-64		64	4	3	1.4	3.7	50	6
4STMA 014 046 S06	No. 1-64		64	4	3	1.4	4.6	50	6
4STMA 0165 044 S06	No. 2-56		56	4	3	1.65	4.4	50	6
4STMA 0165 055 S06	No. 2-56		56	4	3	1.65	5.5	50	6
4STMA 019 050 S06	No. 3-48		48	4	3	1.9	5	50	6
4STMA 019 063 S06	No. 3-48		48	4	3	1.9	6.3	50	6
4STMA 021 057 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 114 397 S12	5/8" x 11		11	4	3	11.4	39.7	100	12

내부급유형 (With coolant)

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

4STMS 4 Flutes Short Flute Thread Mills for Stainless Steels

4날 SUS 가공용 짧은 날 쓰레드밀



ISO 측정항목

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단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4STMS 0072 020 S04 M1	M1	0.25	4	3	0.72	2	45	4
4STMS 0072 025 S04 M1	M1	0.25	4	3	0.72	2.5	45	4
4STMS 009 024 S04 M012	M1.2	0.25	4	3	0.9	2.4	45	4
4STMS 009 030 S04 M012	M1.2	0.25	4	3	0.9	3	45	4
4STMS 0095 028 S06 M014	M1.4	0.3	4	3	0.95	2.8	50	6
4STMS 0095 035 S06 M014	M1.4	0.3	4	3	0.95	3.5	50	6
4STMS 011 032 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	3.2	50	6
4STMS 011 040 S06 M016	M1.6 ~ 1.8	0.35	4	3	1.1	4	50	6
4STMS 012 050 S03 M016	M1.6 ~ 1.8	0.35	4	3	1.2	5	40	3
4STMS 014 040 S06 M2	M2	0.4	4	3	1.4	4	50	6
4STMS 14 050 S06 M2	M2	0.4	4	3	1.4	5	50	6
4STMS 0155 062 S03 M2	M2	0.4	4	3	1.55	6.2	40	3
4STMS 0155 062 S06 M2	M2	0.4	4	3	1.55	6.2	60	6
4STMS 016 044 S06 M022	M2.2	0.45	4	3	1.6	4.4	50	6
4STMS 016 055 S06 M022	M2.2	0.45	4	3	1.6	5.5	50	6
4STMS 018 050 S06 M025	M2.5	0.45	4	3	1.8	5	50	6
4STMS 018 0625 S06 M025	M2.5	0.45	4	3	1.8	6.25	50	6
4STMS 0195 077 S03 M025	M2.5	0.45	4	3	1.95	7.7	40	3
4STMS 0195 077 S06 M025	M2.5	0.45	4	3	1.95	7.7	60	6
4STMS 024 060 S06 M3	M3	0.5	4	3	2.4	6	50	6
4STMS 024 075 S06 M3	M3	0.5	4	3	2.4	7.5	50	6
4STMS 024 092 S03 M3	M3	0.5	4	3	2.4	9.2	40	3
4STMS 024 092 S06 M3	M3	0.5	4	3	2.4	9.2	60	6
4STMS 0275 108 S06 M3.5	M3.5	0.6	4	3	2.75	10.8	60	6
4STMS 031 080 S06 M4	M4	0.7	4	3	3.1	8	50	6
4STMS 031 100 S06 M4	M4	0.7	4	3	3.1	10	50	6
4STMS 0315 123 S06 M4	M4	0.7	4	3	3.15	12.3	60	6
4STMS 038 100 S06 M5	M5	0.8	4	3	3.8	10	50	6
4STMS 038 125 S06 M5	M5	0.8	4	3	3.8	12.5	50	6
4STMS 0405 154 S06 M5	M5	0.8	4	3	4.05	15.4	60	6
4STMS 046 120 S06 M6	M6	1	4	3	4.6	12	50	6
4STMS 046 150 S06 M6	M6	1	4	3	4.6	15	50	6
4STMS 048 185 S06 M6	M6	1	4	3	4.8	18.5	60	6
4STMS 062 160 S10 M8	M8	1.25	4	3	6.2	16	70	10
4STMS 062 200 S10 M8	M8	1.25	4	3	6.2	20	70	10
4STMS 065 246 S08 M8	M8	1.25	4	3	6.5	24.6	65	8
4STMS 075 200 S10 M10	M10	1.5	4	3	7.5	20	70	10
4STMS 075 250 S10 M10	M10	1.5	4	3	7.5	25	70	10
4STMS 082 308 S10 M10	M10	1.5	4	3	8.2	30.8	80	10
4STMS 090 240 S10 M12	M12	1.75	4	3	9	24	80	10
4STMS 090 300 S10 M12	M12	1.75	4	3	9	30	80	10
4STMS 099 370 S10 M12	M12	1.75	4	3	9.9	37	85	10
4STMS 115 320 S12 M16	M16	2	4	3	11.5	32	100	12
4STMS 115 400 S12 M16	M16	2	4	3	11.5	40	100	12
4STMS 119 490 S12 M16	M16	2	4	3	11.9	49	95	12

ISO 측정항목

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d
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외부 급유형 (Without coolant)

4STMS 140 360 S16 M18	M18	2.5	4	3	14	36	135	16
4STMS 140 450 S16 M18	M18	2.5	4	3	14	45	135	16
4STMS 150 400 S16 M20	M20	2.5	4	3	15	40	135	16
4STMS 150 500 S16 M20	M20	2.5	4	3	15	50	135	16
4STMS 159 613 S16 M20	M20	2.5	4	3	15.9	61.3	115	16

내부 급유형 (With coolant)

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

American UN

단위 Unit: mm

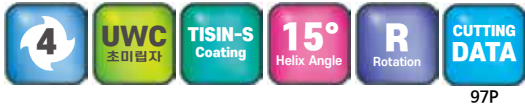
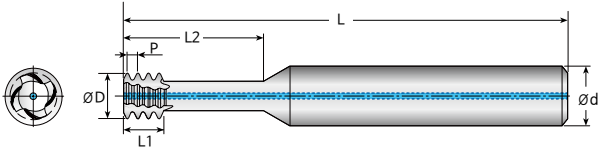
Order Number	나사 가능 규격 Thread		피치규격 Pitch	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF							

외부급유형 (Without coolant)

4STMS 014 037 S06	No.1-64		64	4	3	1.4	3.7	50	6
4STMS 014 046 S06	No.1-64		64	4	3	1.4	4.6	50	6
4STMS 0165 044 S06	No.2-56		56	4	3	1.65	4.4	50	6
4STMS 0165 055 S06	No.2-56		56	4	3	1.65	5.5	50	6
4STMS 019 050 S06	No. 3-48		48	4	3	1.9	5	50	6
4STMS 019 063 S06	No. 3-48		48	4	3	1.9	6.3	50	6
4STMS 021 057 S06	No. 4-40		40	4	3	2.1	5.7	50	6
4STMS 021 071 S06	No. 4-40		40	4	3	2.1	7.1	50	6
4STMS 0255 070 S06	No. 6-32		32	4	3	2.55	7	50	6
4STMS 0255 088 S06	No. 6-32		32	4	3	2.55	8.8	50	6
4STMS 033 083 S06		No. 8-36	36	4	3	3.3	8.3	50	6
4STMS 033 104 S06		No. 8-36	36	4	3	3.3	10.4	50	6
4STMS 035 097 S06	No. 10-24		24	4	3	3.5	9.7	65	6
4STMS 035 121 S06	No. 10-24		24	4	3	3.5	12.1	65	6
4STMS 0475 127 S06	1/4" x 20		20	4	3	4.75	12.7	65	6
4STMS 0475 159 S06	1/4" x 20		20	4	3	4.75	15.9	65	6
4STMS 050 127 S06		1/4" x 28	28	4	3	5	12.7	65	6
4STMS 050 159 S06		1/4" x 28	28	4	3	5	15.9	65	6
4STMS 060 159 S10	5/16" x 18		18	4	3	6	15.9	80	10
4STMS 060 198 S10	5/16" x 18		18	4	3	6	19.8	80	10
4STMS 067 191 S10	3/8" x 16		16	4	3	6.7	19.1	80	10
4STMS 067 238 S10	3/8" x 16		16	4	3	6.7	23.8	80	10
4STMS 077 222 S10	7/16" x 14		14	4	3	7.7	22.2	80	10
4STMS 077 278 S10	7/16" x 14		14	4	3	7.7	27.8	80	10
4STMS 092 254 S10	1/2" x 13		13	4	3	9.2	25.4	80	10
4STMS 092 318 S10	1/2" x 13		13	4	3	9.2	31.8	80	10
4STMS 105 286 S12	9/16" x 12		12	4	3	10.5	28.6	100	12
4STMS 105 357 S12	9/16" x 12		12	4	3	10.5	35.7	100	12
4STMS 114 318 S12	5/8" x 11		11	4	3	11.4	31.8	100	12
4STMS 14 397 S12	5/8" x 11		11	4	3	11.4	39.7	100	12

내부급유형 (With coolant)

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



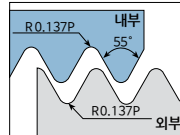
American UN

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- HRc 58이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철 가공
- 경화강 내 나사 가공을 위한 견고하고 강력한 날 디자인.
- 향상된 절삭 및 칩 제거를 통해 공구 성능을 향상 시킵니다.
- 팁 형상은 절삭 저항을 줄이고 공구 구부림을 억제합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

Thread Mills for Hardened steels(HRc ~58), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons

- Rigid and powerful flutes design for inside hardening steel.
- Enhanced threading enables chip removal smoothly to reduce possible breakage of tool inside hole.
- The shape of tip reduces fraction and prevent tool bending.
- Both right and left threading are available.

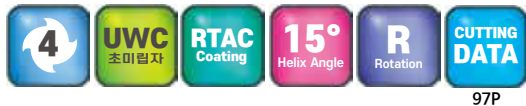
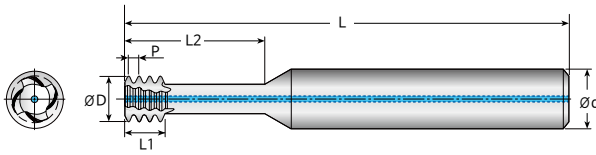


- 규격 정의 : B.S.2779:1956
- 공차 등급 : Medium class

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)									
4BSP 060 095 S06	1/16", 1/8"	28	4	4	6	3.66	9.5	60	6
4BSP 060 158 S06	1/16", 1/8"	28	4	4	6	3.66	15.8	60	6
4BSP 080 140 S08	1/4", 3/8"	19	4	4	8	5.38	14	65	8
4BSP 100 206 S10	1/4", 3/8"	19	4	4	10	5.38	20.6	75	10
4BSP 120 265 S12	1/2", 5/8", 3/4"	14	4	4	12	7.29	26.5	80	12
4BSP 140 260 S14	3/8"	19	4	4	14	5.38	26	85	14
4BSP 140 334 S16	1/2", 5/8", 3/4", 7/8"	14	4	4	16	7.29	33.4	95	16
4BSP 160 380 S16	1", 1 1/4", 1 1/2", 2"	11	4	4	16	9.27	38	105	16
4BSP 160 517 S16	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	4	16	9.27	51.7	120	16

내부 급유형 (With coolant)									
4BSP 060 095 S06C	1/16", 1/8"	28	4	4	6	3.66	9.5	60	6
4BSP 060 158 S06C	1/16", 1/8"	28	4	4	6	3.66	15.8	60	6
4BSP 080 140 S08C	1/4", 3/8"	19	4	4	8	5.38	14	65	8
4BSP 100 206 S10C	1/4", 3/8"	19	4	4	10	5.38	20.6	75	10
4BSP 120 265 S12C	1/2", 5/8", 3/4"	14	4	4	12	7.29	26.5	80	12
4BSP 140 260 S14C	3/8"	19	4	4	14	5.38	26	85	14
4BSP 140 334 S16C	1/2", 5/8", 3/4", 7/8"	14	4	4	16	7.29	33.4	95	16
4BSP 160 380 S16C	1", 1 1/4", 1 1/2", 2"	11	4	4	16	9.27	38	105	16
4BSP 160 517 S16C	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	4	16	9.27	51.7	120	16



American UN

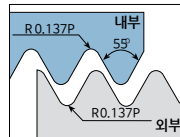
97P

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.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

Thread Mills for Aluminum, Aluminum alloys, Non-ferrous, and Non-metallic materials

- Rigid and powerful flutes design for inside hardening steel.
- Enhanced threading enables chip removal smoothly to reduce possible breakage of tool inside hole.
- The shape of tip reduces fraction and prevent tool bending.
- Both right and left threading are available.

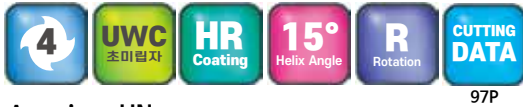
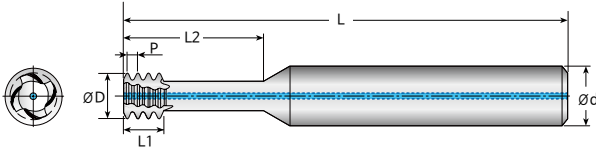


- 규격 정의 : B.S.2779:1956
- 공차 등급 : Medium class

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샤프크 Shank Dia d
외부 급유형 (Without coolant)									
4BSPA 060 095 S06	1/16", 1/8"	28	4	4	6	3.66	9.5	60	6
4BSPA 060 158 S06	1/16", 1/8"	28	4	4	6	3.66	15.8	60	6
4BSPA 080 140 S08	1/4", 3/8"	19	4	4	8	5.38	14	65	8
4BSPA 100 206 S10	1/4", 3/8"	19	4	4	10	5.38	20.6	75	10
4BSPA 120 265 S12	1/2", 5/8", 3/4"	14	4	4	12	7.29	26.5	80	12
4BSPA 140 260 S14	3/8"	19	4	4	14	5.38	26	85	14
4BSPA 140 334 S16	1/2", 5/8", 3/4", 7/8"	14	4	4	16	7.29	33.4	95	16
4BSPA 160 380 S16	1", 1 1/4", 1 1/2", 2"	11	4	4	16	9.27	38	105	16
4BSPA 160 517 S16	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	4	16	9.27	51.7	120	16

내부 급유형 (With coolant)									
4BSPA 060 095 S06C	1/16", 1/8"	28	4	4	6	3.66	9.5	60	6
4BSPA 060 158 S06C	1/16", 1/8"	28	4	4	6	3.66	15.8	60	6
4BSPA 080 140 S08C	1/4", 3/8"	19	4	4	8	5.38	14	65	8
4BSPA 100 206 S10C	1/4", 3/8"	19	4	4	10	5.38	20.6	75	10
4BSPA 120 265 S12C	1/2", 5/8", 3/4"	14	4	4	12	7.29	26.5	80	12
4BSPA 140 260 S14C	3/8"	19	4	4	14	5.38	26	85	14
4BSPA 140 334 S16C	1/2", 5/8", 3/4", 7/8"	14	4	4	16	7.29	33.4	95	16
4BSPA 160 380 S16C	1", 1 1/4", 1 1/2", 2"	11	4	4	16	9.27	38	105	16
4BSPA 160 517 S16C	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	4	16	9.27	51.7	120	16



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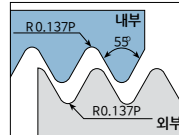
American UN

• SUS, 티타늄 합금 가공

- 경화강 내 나사 가공을 위한 견고하고 강력한 날 디자인.
- 향상된 절삭 및 칩 제거를 통해 공구 성능을 향상 시킵니다.
- 팁 형상은 절삭 저항을 줄이고 공구 구부림을 억제합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

• Thread Mills for SUS and Titanium alloys

- Rigid and powerful flutes design for inside hardening steel.
- Enhanced threading enables chip removal smoothly to reduce possible breakage of tool inside hole.
- The shape of tip reduces fraction and prevent tool bending.
- Both right and left threading are available.



- 규격 정의 : B.S.2779:1956
- 공차 등급 : Medium class

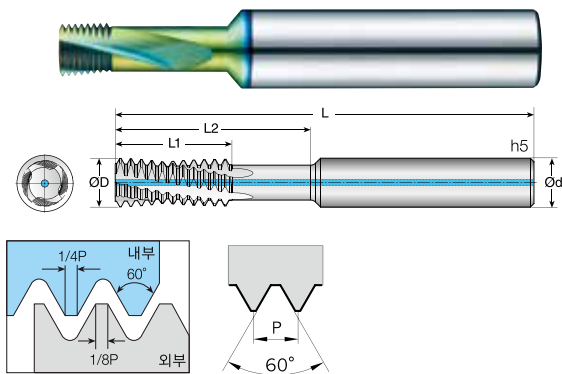
단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샅크 Shank Dia d
외부 급유형 (Without coolant)									
4BSPS 060 095 S06	1/16", 1/8"	28	4	4	6	3.66	9.5	60	6
4BSPS 060 158 S06	1/16", 1/8"	28	4	4	6	3.66	15.8	60	6
4BSPS 080 140 S08	1/4", 3/8"	19	4	4	8	5.38	14	65	8
4BSPS 100 206 S10	1/4", 3/8"	19	4	4	10	5.38	20.6	75	10
4BSPS 120 265 S12	1/2", 5/8", 3/4"	14	4	4	12	7.29	26.5	80	12
4BSPS 140 260 S14	3/8"	19	4	4	14	5.38	26	85	14
4BSPS 140 334 S16	1/2", 5/8", 3/4", 7/8"	14	4	4	16	7.29	33.4	95	16
4BSPS 160 380 S16	1", 1 1/4", 1 1/2", 2"	11	4	4	16	9.27	38	105	16
4BSPS 160 517 S16	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	4	16	9.27	51.7	120	16

내부 급유형 (With coolant)									
4BSPS 060 095 S06C	1/16", 1/8"	28	4	4	6	3.66	9.5	60	6
4BSPS 060 158 S06C	1/16", 1/8"	28	4	4	6	3.66	15.8	60	6
4BSPS 080 140 S08C	1/4", 3/8"	19	4	4	8	5.38	14	65	8
4BSPS 100 206 S10C	1/4", 3/8"	19	4	4	10	5.38	20.6	75	10
4BSPS 120 265 S12C	1/2", 5/8", 3/4"	14	4	4	12	7.29	26.5	80	12
4BSPS 140 260 S14C	3/8"	19	4	4	14	5.38	26	85	14
4BSPS 140 334 S16C	1/2", 5/8", 3/4", 7/8"	14	4	4	16	7.29	33.4	95	16
4BSPS 160 380 S16C	1", 1 1/4", 1 1/2", 2"	11	4	4	16	9.27	38	105	16
4BSPS 160 517 S16C	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	4	16	9.27	51.7	120	16

4HTM 4 Flutes Helix Thread Mills for Multi Purpose

4날 범용 헬릭스 스레드밀



- HRc 48이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철 가공
- 깊은 나사 가공을 위한 쿨런트 타입 헬릭컬 날
- 다중 날 로 구성되어 한번에 여러 나사산 생성으로 시간단축이 가능합니다.
- 최대 나사 가공길이 : 3xD2 (나사가공 직경)
- 헬리코일 나사 가공이 가능합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.
- Thread Mills for Hardened steels(HRc ~48), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons
- Coolant type of helix flutes for deep threading.
- With multiple flutes composition, it shortens threading time.
- Maximum drilling depth: 3*D2 (Threading diameter)
- It can be used for heli coil threading.
- Both right and left threading are available.



ISO 측정항목

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단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	기초홀 직경 Guide Hole mm	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d
외부 급유형 (Without coolant)								
4HTM 0315 120 S04 M4	M4	0.7	3.3	3.15	6.6	12	45	4
4HTM 039 150 S04 M5	M5	0.8	4.2	3.9	7.6	15	50	4
4HTM 048 180 S06 M6	M6	1	5	4.8	9.5	18	60	6
4HTM 065 240 S08 M8	M8	1.25	6.8	6.5	13.1	24	65	8
4HTM 082 300 S10 M10	M10	1.5	8.5	8.2	15.7	30	75	10
4HTM 099 360 S10 M12	M12	1.75	10.2	9.9	18.4	36	85	10
4HTM 116 420 S12 M14	M14	2	12	11.6	21	42	90	12
4HTM 136 480 S14 M16	M16	2	14	13.6	25	48	100	14

내부 급유형 (With coolant)								
4HTM 0315 120 S04 M4C	M4	0.7	3.3	3.15	6.6	12	45	4
4HTM 039 150 S04 M5C	M5	0.8	4.2	3.9	7.6	15	50	4
4HTM 048 180 S06 M6C	M6	1	5	4.8	9.5	18	60	6
4HTM 065 240 S08 M8C	M8	1.25	6.8	6.5	13.1	24	65	8
4HTM 082 300 S10 M10C	M10	1.5	8.5	8.2	15.7	30	75	10
4HTM 099 360 S10 M12C	M12	1.75	10.2	9.9	18.4	36	85	10
4HTM 116 420 S12 M14C	M14	2	12	11.6	21	42	90	12
4HTM 136 480 S14 M16C	M16	2	14	13.6	25	48	100	14



4 Flutes Helix Thread Mills for Multi Purpose

4날 범용 헬릭스 스레드밀

American UN

단위 Unit: mm

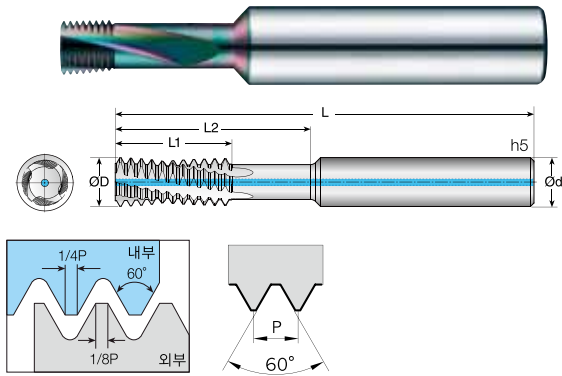
Order Number	나사 가능 규격 Thread		피치 규격 Pitch	날경 Diameter D	나사부 길이 Thread Length L1	나사 산수 Number of threads	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d
	UNC	UNF							

외부 급유형 (Without coolant)

4HTM 0358 1585 S04	No.10-24		24	3.58	8.46	8	15.85	45	4
4HTM 0414 1798 S06	No.12-24		24	4.14	9.6	9	17.98	65	6
4HTM 0488 1905 S06	1/4" x 20		20	4.88	10.21	8	19.05	65	6
4HTM 0516 1905 S06		1/4" x 28	28	5.16	10.01	11	19.05	65	6
4HTM 0615 2398 S08	5/16" x 18		18	6.15	12.7	9	23.98	65	8
4HTM 0765 3018 S08	3/8" x 16		16	7.65	15.9	10	30.18	65	8
4HTM 0899 3444 S10	7/16 x 14		14	8.99	18.16	10	34.44	75	10
4HTM 1034 4105 S12	1/2" x 13		13	10.34	19.58	10	41.05	80	12
4HTM 1181 4445 S12	9/16" x 12		12	11.81	23.29	11	44.45	80	12

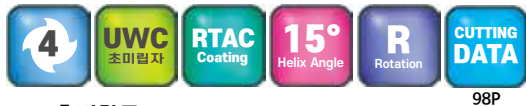
내부 급유형 (With coolant)

4HTM 0358 1585 S04C	No.10-24		24	3.58	8.46	8	15.85	45	4
4HTM 0414 1798 S06C	No.12-24		24	4.14	9.6	9	17.98	65	6
4HTM 0488 1905 S06C	1/4" x 20		20	4.88	10.21	8	19.05	65	6
4HTM 0516 1905 S06C		1/4" x 28	28	5.16	10.01	11	19.05	65	6
4HTM 0615 2398 S08C	5/16" x 18		18	6.15	12.7	9	23.98	65	8
4HTM 0765 3018 S08C	3/8" x 16		16	7.65	15.9	10	30.18	65	8
4HTM 0899 3444 S10C	7/16 x 14		14	8.99	18.16	10	34.44	75	10
4HTM 1034 4105 S12C	1/2" x 13		13	10.34	19.58	10	41.05	80	12
4HTM 1181 4445 S12C	9/16" x 12		12	11.81	23.29	11	44.45	80	12



- 알루미늄, 알루미늄 합금 등 비철 비금속 가공
- 깊은 나사 가공을 위한 쿨런트 타입 헬릭컬 날
- 다중 날 로 구성되어 한번에 여러 나사산 생성으로 시간단축이 가능합니다.
- 최대 나사 가공길이 : 3xD2 (나사가공 직경)
- 헬리코일 나사 가공이 가능합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

- Thread Mills for Aluminum, Aluminum alloys, Non-ferrous and Non-metallic materials
- Coolant type of helix flutes for deep threading.
- With multiple flutes composition, it shortens threading time.
- Maximum drilling depth: 3*D2 (Threading diameter)
- It can be used for heli coil threading.
- Both right and left threading are available.



ISO 측정항목

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단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	기초홀 직경 Guide Hole mm	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)								
4HTMA 0315 120 S04 M4	M4	0.7	3.3	3.15	6.6	12	45	4
4HTMA 039 150 S04 M5	M5	0.8	4.2	3.9	7.6	15	50	4
4HTMA 048 180 S06 M6	M6	1	5	4.8	9.5	18	60	6
4HTMA 065 240 S08 M8	M8	1.25	6.8	6.5	13.1	24	65	8
4HTMA 082 300 S10 M10	M10	1.5	8.5	8.2	15.7	30	75	10
4HTMA 099 360 S10 M12	M12	1.75	10.2	9.9	18.4	36	85	10
4HTMA 116 420 S12 M14	M14	2	12	11.6	21	42	90	12
4HTMA 136 480 S14 M16	M16	2	14	13.6	25	48	100	14

내부 급유형 (With coolant)								
4HTMA 0315 120 S04 M4C	M4	0.7	3.3	3.15	6.6	12	45	4
4HTMA 039 150 S04 M5C	M5	0.8	4.2	3.9	7.6	15	50	4
4HTMA 048 180 S06 M6C	M6	1	5	4.8	9.5	18	60	6
4HTMA 065 240 S08 M8C	M8	1.25	6.8	6.5	13.1	24	65	8
4HTMA 082 300 S10 M10C	M10	1.5	8.5	8.2	15.7	30	75	10
4HTMA 099 360 S10 M12C	M12	1.75	10.2	9.9	18.4	36	85	10
4HTMA 116 420 S12 M14C	M14	2	12	11.6	21	42	90	12
4HTMA 136 480 S14 M16C	M16	2	14	13.6	25	48	100	14

American UN

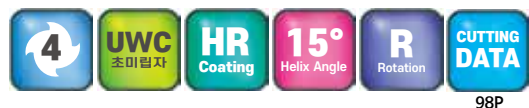
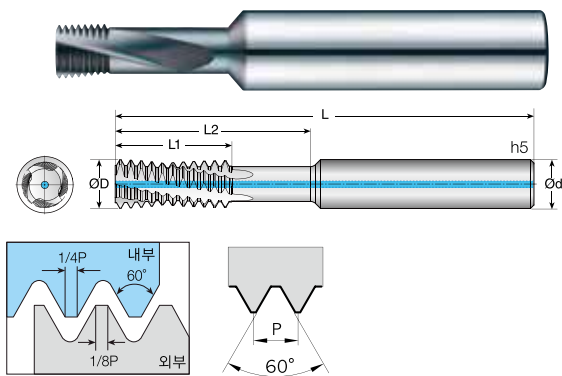
단위 Unit: mm

Order Number	나사 가능 규격 Thread		피치 규격 Pitch	날경 Diameter D	나사부 길이 Thread Length L1	나사 산수 Number of threads	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d
	UNC	UNF							
외부 급유형 (Without coolant)									
4HTMA 0358 1585 S04	No.10-24		24	3.58	8.46	8	15.85	45	4
4HTMA 0414 1798 S06	No.12-24		24	4.14	9.6	9	17.98	65	6
4HTMA 0488 1905 S06	1/4" x 20		20	4.88	10.21	8	19.05	65	6
4HTMA 0516 1905 S06		1/4" x 28	28	5.16	10.01	11	19.05	65	6
4HTMA 0615 2398 S08	5/16" x 18		18	6.15	12.7	9	23.98	65	8
4HTMA 0765 3018 S08	3/8" x 16		16	7.65	15.9	10	30.18	65	8
4HTMA 0899 3444 S10	7/16 x 14		14	8.99	18.16	10	34.44	75	10
4HTMA 1034 4105 S12	1/2" x 13		13	10.34	19.58	10	41.05	80	12
4HTMA 1181 4445 S12	9/16" x 12		12	11.81	23.29	11	44.45	80	12

내부 급유형 (With coolant)									
4HTMA 0358 1585 S04C	No.10-24		24	3.58	8.46	8	15.85	45	4
4HTMA 0414 1798 S06C	No.12-24		24	4.14	9.6	9	17.98	65	6
4HTMA 0488 1905 S06C	1/4" x 20		20	4.88	10.21	8	19.05	65	6
4HTMA 0516 1905 S06C		1/4" x 28	28	5.16	10.01	11	19.05	65	6
4HTMA 0615 2398 S08C	5/16" x 18		18	6.15	12.7	9	23.98	65	8
4HTMA 0765 3018 S08C	3/8" x 16		16	7.65	15.9	10	30.18	65	8
4HTMA 0899 3444 S10C	7/16 x 14		14	8.99	18.16	10	34.44	75	10
4HTMA 1034 4105 S12C	1/2" x 13		13	10.34	19.58	10	41.05	80	12
4HTMA 1181 4445 S12C	9/16" x 12		12	11.81	23.29	11	44.45	80	12

4HTMS 4 Flutes Helix Thread Mills for Stainless Steels

4날 SUS 가공용 헬릭스 쓰레드밀



ISO 측정항목

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단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	기초홀 직경 Guide Hole mm	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)								
4HTMS 0315 120 S04 M4	M4	0.7	3.3	3.15	6.6	12	45	4
4HTMS 039 150 S04 M5	M5	0.8	4.2	3.9	7.6	15	50	4
4HTMS 048 180 S06 M6	M6	1	5	4.8	9.5	18	60	6
4HTMS 065 240 S08 M8	M8	1.25	6.8	6.5	13.1	24	65	8
4HTMS 082 300 S10 M10	M10	1.5	8.5	8.2	15.7	30	75	10
4HTMS 099 360 S10 M12	M12	1.75	10.2	9.9	18.4	36	85	10
4HTMS 116 420 S12 M14	M14	2	12	11.6	21	42	90	12
4HTMS 136 480 S14 M16	M16	2	14	13.6	25	48	100	14

내부 급유형 (With coolant)								
4HTMS 0315 120 S04 M4C	M4	0.7	3.3	3.15	6.6	12	45	4
4HTMS 039 150 S04 M5C	M5	0.8	4.2	3.9	7.6	15	50	4
4HTMS 048 180 S06 M6C	M6	1	5	4.8	9.5	18	60	6
4HTMS 065 240 S08 M8C	M8	1.25	6.8	6.5	13.1	24	65	8
4HTMS 082 300 S10 M10C	M10	1.5	8.5	8.2	15.7	30	75	10
4HTMS 099 360 S10 M12C	M12	1.75	10.2	9.9	18.4	36	85	10
4HTMS 116 420 S12 M14C	M14	2	12	11.6	21	42	90	12
4HTMS 136 480 S14 M16C	M16	2	14	13.6	25	48	100	14

American UN

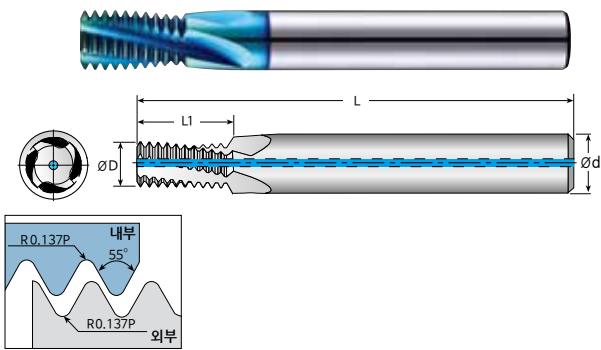
단위 Unit: mm

Order Number	나사 가능 규격 Thread		피치 규격 Pitch	날경 Diameter D	나사부 길이 Thread Length L1	나사 산수 Number of threads	유효장 Effective Length L2	전장 Overall Length L	생크 Shank Dia d
	UNC	UNF	Pitch	D	L1		L2	L	d
외부 급유형 (Without coolant)									
4HTMS 0358 1585 S04	No.10-24		24	3.58	8.46	8	15.85	45	4
4HTMS 0414 1798 S06	No.12-24		24	4.14	9.6	9	17.98	65	6
4HTMS 0488 1905 S06	1/4" x 20		20	4.88	10.21	8	19.05	65	6
4HTMS 0516 1905 S06		1/4" x 28	28	5.16	10.01	11	19.05	65	6
4HTMS 0615 2398 S08	5/16" x 18		18	6.15	12.7	9	23.98	65	8
4HTMS 0765 3018 S08	3/8" x 16		16	7.65	15.9	10	30.18	65	8
4HTMS 0899 3444 S10	7/16 x 14		14	8.99	18.16	10	34.44	75	10
4HTMS 1034 4105 S12	1/2" x 13		13	10.34	19.58	10	41.05	80	12
4HTMS 1181 4445 S12	9/16" x 12		12	11.81	23.29	11	44.45	80	12

내부 급유형 (With coolant)									
4HTMS 0358 1585 S04C	No.10-24		24	3.58	8.46	8	15.85	45	4
4HTMS 0414 1798 S06C	No.12-24		24	4.14	9.6	9	17.98	65	6
4HTMS 0488 1905 S06C	1/4" x 20		20	4.88	10.21	8	19.05	65	6
4HTMS 0516 1905 S06C		1/4" x 28	28	5.16	10.01	11	19.05	65	6
4HTMS 0615 2398 S08C	5/16" x 18		18	6.15	12.7	9	23.98	65	8
4HTMS 0765 3018 S08C	3/8" x 16		16	7.65	15.9	10	30.18	65	8
4HTMS 0899 3444 S10C	7/16 x 14		14	8.99	18.16	10	34.44	75	10
4HTMS 1034 4105 S12C	1/2" x 13		13	10.34	19.58	10	41.05	80	12
4HTMS 1181 4445 S12C	9/16" x 12		12	11.81	23.29	11	44.45	80	12

4 Flutes Pipe Parallel Thread Mills for Multi Purpose

4날 범용 관용 평행 나사 가공 쓰레드밀



- 규격 정의 : B.S.2779:1956
- 공차 등급 : Medium class



97P

American UN

단위 Unit: mm

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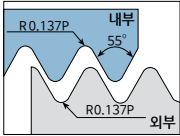
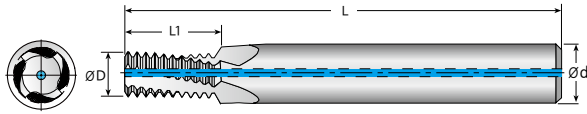
내부 급유형 (With coolant)

[illegible]

4HBSPA

4 Flutes Pipe Parallel Thread Mills for Aluminum

4날 알루미늄 관용 평행 나사 가공 쓰레드밀



- 규격 정의 : B.S.2779:1956
- 공차 등급 : Medium class



97P

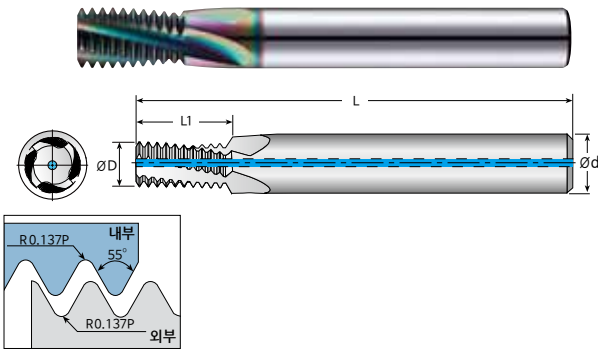
American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)								
4HBSPA 060 0942 S06	1/16", 1/8"	28	4	10	6	9.42	60	6
New 4HBSPA 060 1577 S06	1/16", 1/8"	28	4	17	6	15.77	60	6
4HBSPA 080 1387 S08	1/4", 3/8"	19	4	10	8	13.87	65	8
New 4HBSPA 100 2055 S10	1/4", 3/8"	19	4	15	10	20.55	75	10
4HBSPA 120 1882 S12	1/2", 5/8", 3/4"	14	4	10	12	18.82	80	12
New 4HBSPA 140 259 S14	3/8"	19	4	19	14	25.9	85	14
4HBSPA 160 378 S16	1", 1 1/4", 1 1/2", 2"	11	4	16	16	37.8	105	16
New 4HBSPA 160 3333 S16	1/2", 5/8", 3/4", 7/8"	14	4	18	16	33.33	95	16
New 4HBSPA 160 5165 S16	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	22	16	51.65	120	16

내부 급유형 (With coolant)								
4HBSPA 060 0942 S06C	1/16", 1/8"	28	4	10	6	9.42	60	6
New 4HBSPA 060 1577 S06C	1/16", 1/8"	28	4	17	6	15.77	60	6
4HBSPA 080 1387 S08C	1/4", 3/8"	19	4	10	8	13.87	65	8
New 4HBSPA 100 2055 S10C	1/4", 3/8"	19	4	15	10	20.55	75	10
4HBSPA 120 1882 S12C	1/2", 5/8", 3/4"	14	4	10	12	18.82	80	12
New 4HBSPA 140 259 S14C	3/8"	19	4	19	14	25.9	85	14
4HBSPA 160 378 S16C	1", 1 1/4", 1 1/2", 2"	11	4	16	16	37.8	105	16
New 4HBSPA 160 3333 S16C	1/2", 5/8", 3/4", 7/8"	14	4	18	16	33.33	95	16
New 4HBSPA 160 5165 S16C	1", 1 1/4", 1 1/2", 2", 2 1/2"	11	4	22	16	51.65	120	16

4날 SUS 관용 평행 나사 가공 쓰레드밀



- 규격 정의 : B.S.2779:1956
- 공차 등급 : Medium class



97P

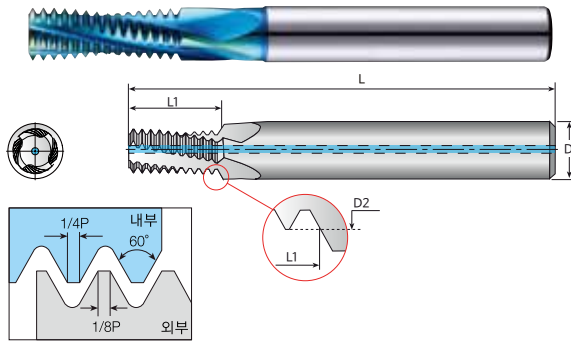
American UN

단위 Unit: mm

[illegible]

내부 급유형 (With coolant)

[illegible]



• 규격 정의 : R262 (DN 13)
• 공차 등급 : 6H



98P

ISO 측정항목

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4LTM 022 060 S06 M3	M3	0.5	4	2.2	6	60	6
4LTM 022 075 S06 M3	M3	0.5	4	2.2	7.5	60	6
4LTM 029 084 S06 M4	M4	0.7	4	2.9	8.4	60	6
4LTM 029 105 S06 M4	M4	0.7	4	2.9	10.5	60	6
4LTM 038 104 S06 M5	M5	0.8	4	3.8	10.4	60	6
4LTM 038 128 S06 M5	M5	0.8	4	3.8	12.8	60	6
4LTM 045 120 S06 M6	M6	1	4	4.5	12	60	6
4LTM 045 150 S06 M6	M6	1	4	4.5	15	60	6
4LTM 060 1625 S06 M8	M8	1.25	4	6	16.25	65	6
4LTM 060 200 S06 M8	M8	1.25	4	6	20	65	6
4LTM 075 210 S08 M10	M10	1.5	4	7.5	21	75	8
4LTM 075 255 S08 M10	M10	1.5	4	7.5	25.5	80	8
4LTM 095 245 S10 M12	M12	1.75	4	9.5	24.5	85	10
4LTM 095 315 S10 M12	M12	1.75	4	9.5	31.5	85	10
4LTM 100 280 S10 M14	M14	2	4	10	28	90	10
4LTM 100 360 S10 M14	M14	2	4	10	36	95	10
4LTM 120 320 S12 M16	M16	2	4	12	32	100	12
4LTM 120 400 S12 M16	M16	2	4	12	40	105	12
4LTM 140 375 S14 M18	M18	2.5	4	14	37.5	100	14
4LTM 140 450 S14 M18	M18	2.5	4	14	45	110	14
4LTM 160 400 S16 M20	M20	2.5	4	16	40	110	16
4LTM 160 500 S16 M20	M20	2.5	4	16	50	120	16

내부 급유형 (With coolant)

4LTM 045 120 S06 M6C	M6	1	4	4.5	12	60	6
4LTM 045 150 S06 M6C	M6	1	4	4.5	15	60	6
4LTM 060 1625 S06 M8C	M8	1.25	4	6	16.25	65	6
4LTM 060 200 S06 M8C	M8	1.25	4	6	20	65	6
4LTM 075 210 S08 M10C	M10	1.5	4	7.5	21	75	8
4LTM 075 255 S08 M10C	M10	1.5	4	7.5	25.5	80	8
4LTM 095 245 S10 M12C	M12	1.75	4	9.5	24.5	85	10
4LTM 095 315 S10 M12C	M12	1.75	4	9.5	31.5	85	10
4LTM 100 280 S10 M14C	M14	2	4	10	28	90	10
4LTM 100 360 S10 M14C	M14	2	4	10	36	95	10
4LTM 120 320 S12 M16C	M16	2	4	12	32	100	12
4LTM 120 400 S12 M16C	M16	2	4	12	40	105	12
4LTM 140 375 S14 M18C	M18	2.5	4	14	37.5	100	14
4LTM 140 450 S14 M18C	M18	2.5	4	14	45	110	14
4LTM 160 400 S16 M20C	M20	2.5	4	16	40	110	16
4LTM 160 500 S16 M20C	M20	2.5	4	16	50	120	16

American UN

단위 Unit: mm

Order Number	UNC	UNF	UNEF	피치규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
외부금유형 (Without coolant)										
New 4LTM 0165 045 S04	No.2	No.3		56	4	10	1.65	4.5	45	4
New 4LTM 0165 054 S04	No.2	No.3		56	4	12	1.65	5.4	45	4
New 4LTM 019 053 S04	No.3	No.4		48	4	10	1.9	5.3	45	4
New 4LTM 019 063 S04	No.3	No.4		48	4	12	1.9	6.3	45	4
4LTM 021 060 S04	No.4, No.5	No.6		40	4	9	2.1	6	45	4
4LTM 021 079 S04	No.4, No.5	No.6		40	4	12	2.1	7.9	45	4
4LTM 0255 075 S04	No.6, No.8	No.10	No.12	32	4	9	2.55	7.5	45	4
4LTM 0255 099 S04	No.6, No.8	No.10	No.12	32	4	12	2.55	9.9	45	4
4LTM 033 088 S04		No.8		36	4	12	3.3	8.8	45	4
4LTM 033 109 S04		No.8		36	4	15	3.3	10.9	45	4
4LTM 0358 099 S04	No.10, No.12	5/16"		24	4	9	3.58	9.9	45	4
4LTM 0358 131 S04	No.10, No.12	5/16"		24	4	12	3.58	13.1	45	4
4LTM 038 099 S04		No.10	No.12, 5/16"	32	4	12	3.8	9.9	45	4
4LTM 038 130 S04		No.10	No.12, 5/16"	32	4	16	3.8	13	50	4
4LTM 0415 110 S06	No.12	5/16", 3/8"		24	4	10	4.15	11	60	6
4LTM 0415 152 S06	No.12	5/16", 3/8"		24	4	14	4.15	15.2	60	6
4LTM 043 112 S06		No.12, 1/4"	7/16"	28	4	12	4.3	11.2	60	6
4LTM 043 149 S06		No.12, 1/4"	7/16"	28	4	16	4.3	14.9	60	6
4LTM 044 114 S06			No.12, 1/4", 5/16"	32	4	14	4.4	11.4	60	6
4LTM 044 154 S06			No.12, 1/4", 5/16"	32	4	19	4.4	15.4	60	6
4LTM 0488 132 S06	1/4"	7/16", 1/2"		20	4	10	4.88	13.2	60	6
4LTM 0488 170 S06	1/4"	7/16", 1/2"		20	4	13	4.88	17	60	6
4LTM 0515 131 S06		1/4"	7/16", 1/2"	28	4	14	5.15	13.1	60	6
4LTM 0515 167 S06		1/4"	7/16", 1/2"	28	4	18	5.15	16.7	60	6
4LTM 0615 160 S08	5/16"	9/16", 5/8"		18	4	11	6.15	16	65	8
4LTM 0615 217 S08	5/16"	9/16", 5/8"		18	4	15	6.15	21.7	75	8
4LTM 0668 163 S08		5/16", 3/8"	9/16"	24	4	15	6.68	16.3	65	8
4LTM 0668 205 S08		5/16", 3/8"	9/16"	24	4	19	6.68	20.5	75	8
4LTM 0765 196 S08	3/8"	3/4"		16	4	12	7.65	19.6	65	8
4LTM 0765 244 S08	3/8"	3/4"		16	4	15	7.65	24.4	75	8
4LTM 082 195 S10		3/8"	9/16", 5/8"	24	4	18	8.2	19.5	80	10
4LTM 082 247 S10		3/8"	9/16", 5/8"	24	4	23	8.2	24.7	80	10
4LTM 090 224 S10	7/16"	7/8"		14	4	12	9	22.4	75	10
4LTM 090 297 S10	7/16"	7/8"		14	4	16	9	29.7	80	10
4LTM 096 221 S10		7/16", 1/2"	3/4"	20	4	17	9.6	22.1	75	10
4LTM 096 284 S10		7/16", 1/2"	3/4"	20	4	22	9.6	28.4	80	10
4LTM 099 221 S10			7/16", 1/2"	28	4	24	9.9	22.1	75	10
4LTM 099 285 S10			7/16", 1/2"	28	4	31	9.9	28.5	80	10
4LTM 1035 261 S12	1/2"			13	4	13	10.35	26.1	80	12
4LTM 1035 339 S12	1/2"			13	4	17	10.35	33.9	90	12
4LTM 111 259 S12		1/2"	3/4", 13/16"	20	4	20	11.1	25.9	80	12
4LTM 111 322 S12		1/2"	3/4", 13/16"	20	4	25	11.1	32.2	90	12
4LTM 118 283 S12	9/16"	1", 1-1/8"		12	4	13	11.8	28.3	80	12
4LTM 118 367 S12	9/16"	1", 1-1/8"		12	4	17	11.8	36.7	90	12
4LTM 125 287 S14		9/16", 5/8"	11/16"	18	4	20	12.5	28.7	95	14
4LTM 125 372 S14		9/16", 5/8"	11/16"	18	4	26	12.5	37.2	100	14
4LTM 129 290 S14			9/16", 5/8", 11/16"	24	4	27	12.9	29	95	14
4LTM 129 364 S14			9/16", 5/8", 11/16"	24	4	34	12.9	36.4	100	14
4LTM 131 331 S14	5/8"			11	4	14	13.1	33.1	95	14
4LTM 131 424 S14	5/8"			11	4	18	13.1	42.4	105	14
4LTM 141 316 S16		5/8"	11/16", 1-1/8"	18	4	22	14.1	31.6	95	16
4LTM 141 414 S16		5/8"	11/16", 1-1/8"	18	4	29	14.1	41.4	105	16
4LTM 159 390 S16	3/4"			10	4	15	15.9	39	100	16
4LTM 159 491 S16	3/4"			10	4	19	15.9	49.1	110	16
4LTM 160 387 S16		3/4"		16	4	24	16	38.7	105	16
4LTM 160 482 S16		3/4"		16	4	30	16	48.2	115	16
4LTM 160 386 S16			3/4", 13/16", 7/8"	20	4	30	16	38.6	105	16
4LTM 160 487 S16			3/4", 13/16", 7/8"	20	4	38	16	48.7	115	16
4LTM 160 461 S16	7/8"			9	4	16	16	46.1	110	16
4LTM 160 442 S16		7/8"		14	4	24	16	44.2	110	16
4LTM 160 519 S16	1"			8	4	16	16	51.9	120	16
4LTM 160 515 S16		1", 1-1/8", 1-1/2"		12	4	24	16	51.5	120	16

American UN

단위 Unit: mm

Order Number	나사 가능 규격			피치규격	날수	산수	날경	나사부 길이	전장	샹크
	UNC	UNF	UNEF							
				Pitch (TPI)	Flutes Z	Teeth Zt	Diameter D	Thread Length L1	Overall Length L	Shank Dia d

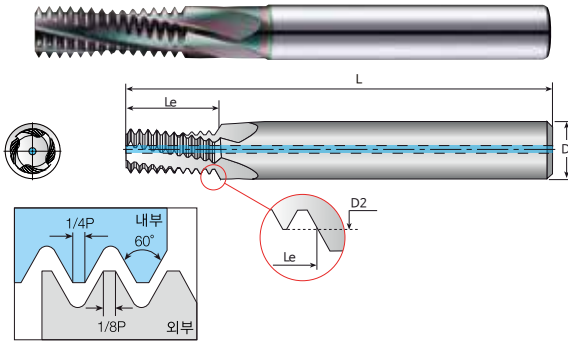
내부 급유형 (With coolant)

4LTM 0358 099 S04C	No.10, No.12	5/16"		24	4	9	3.58	9.9	45	4
4LTM 0358 131 S04C	No.10, No.12	5/16"		24	4	12	3.58	13.1	45	4
4LTM 038 099 S04C		No.10	No.12, 5/16"	32	4	12	3.8	9.9	45	4
4LTM 038 130 S04C		No.10	No.12, 5/16"	32	4	16	3.8	13	50	4
4LTM 0415 110 S06C	No.12	5/16", 3/8"		24	4	10	4.15	11	60	6
4LTM 0415 152 S06C	No.12	5/16", 3/8"		24	4	14	4.15	15.2	60	6
4LTM 043 112 S06C		No.12, 1/4"	7/16"	28	4	12	4.3	11.2	60	6
4LTM 043 149 S06C		No.12, 1/4"	7/16"	28	4	16	4.3	14.9	60	6
4LTM 044 114 S06C			No.12, 1/4", 5/16"	32	4	14	4.4	11.4	60	6
4LTM 044 154 S06C			No.12, 1/4", 5/16"	32	4	19	4.4	15.4	60	6
4LTM 0488 132 S06C	1/4"	7/16", 1/2"		20	4	10	4.88	13.2	60	6
4LTM 0488 170 S06C	1/4"	7/16", 1/2"		20	4	13	4.88	17	60	6
4LTM 0515 131 S06C		1/4"	7/16", 1/2"	28	4	14	5.15	13.1	60	6
4LTM 0515 167 S06C		1/4"	7/16", 1/2"	28	4	18	5.15	16.7	60	6
4LTM 0615 160 S08C	5/16"	9/16", 5/8"		18	4	11	6.15	16	65	8
4LTM 0615 217 S08C	5/16"	9/16", 5/8"		18	4	15	6.15	21.7	75	8
4LTM 0668 163 S08C		5/16", 3/8"	9/16"	24	4	15	6.68	16.3	65	8
4LTM 0668 205 S08C		5/16", 3/8"	9/16"	24	4	19	6.68	20.5	75	8
4LTM 0765 196 S08C	3/8"	3/4"		16	4	12	7.65	19.6	65	8
4LTM 0765 244 S08C	3/8"	3/4"		16	4	15	7.65	24.4	75	8
4LTM 082 195 S10C		3/8"	9/16", 5/8"	24	4	18	8.2	19.5	80	10
4LTM 082 247 S10C		3/8"	9/16", 5/8"	24	4	23	8.2	24.7	80	10
4LTM 090 224 S10C	7/16"	7/8"		14	4	12	9	22.4	75	10
4LTM 090 297 S10C	7/16"	7/8"		14	4	16	9	29.7	80	10
4LTM 096 221 S10C		7/16", 1/2"	3/4"	20	4	17	9.6	22.1	75	10
4LTM 096 284 S10C		7/16", 1/2"	3/4"	20	4	22	9.6	28.4	80	10
4LTM 099 221 S10C			7/16", 1/2"	28	4	24	9.9	22.1	75	10
4LTM 099 285 S10C			7/16", 1/2"	28	4	31	9.9	28.5	80	10
4LTM 1035 261 S12C	1/2"			13	4	13	10.35	26.1	80	12
4LTM 1035 339 S12C	1/2"			13	4	17	10.35	33.9	90	12
4LTM 111 259 S12C		1/2"	3/4", 13/16"	20	4	20	11.1	25.9	80	12
4LTM 111 322 S12C		1/2"	3/4", 13/16"	20	4	25	11.1	32.2	90	12
4LTM 118 283 S12C	9/16"	1", 1-1/8"		12	4	13	11.8	28.3	80	12
4LTM 118 367 S12C	9/16"	1", 1-1/8"		12	4	17	11.8	36.7	90	12
4LTM 125 287 S14C		9/16", 5/8"	11/16"	18	4	20	12.5	28.7	95	14
4LTM 125 372 S14C		9/16", 5/8"	11/16"	18	4	26	12.5	37.2	100	14
4LTM 129 290 S14C			9/16", 5/8", 11/16"	24	4	27	12.9	29	95	14
4LTM 129 364 S14C			9/16", 5/8", 11/16"	24	4	34	12.9	36.4	100	14
4LTM 131 331 S14C	5/8"			11	4	14	13.1	33.1	95	14
4LTM 131 424 S14C	5/8"			11	4	18	13.1	42.4	105	14
4LTM 141 316 S16C		5/8"	11/16", 1-1/8"	18	4	22	14.1	31.6	95	16
4LTM 141 414 S16C		5/8"	11/16", 1-1/8"	18	4	29	14.1	41.4	105	16
4LTM 159 390 S16C	3/4"			10	4	15	15.9	39	100	16
4LTM 159 491 S16C	3/4"			10	4	19	15.9	49.1	110	16
4LTM 160 387 S16C		3/4"		16	4	24	16	38.7	105	16
4LTM 160 482 S16C		3/4"		16	4	30	16	48.2	115	16
4LTM 160 386 S16C			3/4", 13/16", 7/8"	20	4	30	16	38.6	105	16
4LTM 160 487 S16C			3/4", 13/16", 7/8"	20	4	38	16	48.7	115	16
4LTM 160 461 S16C	7/8"			9	4	16	16	46.1	110	16
4LTM 160 442 S16C		7/8"		14	4	24	16	44.2	110	16
4LTM 160 519 S16C	1"			8	4	16	16	51.9	120	16
4LTM 160 515 S16C		1", 1-1/8", 1-1/2"		12	4	24	16	51.5	120	16

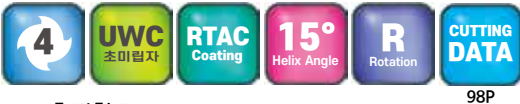
4LTMA

4 Flutes Helix Long Thread Mills For Aluminum

4날 알루미늄용 헬릭스 긴 길이 쓰레드밀



- 규격 정의 : R262 (DN 13)
- 공차 등급 : 6H



ISO 측정항목

98P

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4LTMA 022 060 S06 M3	M3	0.5	4	2.2	6	60	6
4LTMA 022 075 S06 M3	M3	0.5	4	2.2	7.5	60	6
4LTMA 029 084 S06 M4	M4	0.7	4	2.9	8.4	60	6
4LTMA 029 105 S06 M4	M4	0.7	4	2.9	10.5	60	6
4LTMA 038 104 S06 M5	M5	0.8	4	3.8	10.4	60	6
4LTMA 038 128 S06 M5	M5	0.8	4	3.8	12.8	60	6
4LTMA 045 120 S06 M6	M6	1	4	4.5	12	60	6
4LTMA 045 150 S06 M6	M6	1	4	4.5	15	60	6
4LTMA 060 1625 S06 M8	M8	1.25	4	6	16.25	65	6
4LTMA 060 200 S06 M8	M8	1.25	4	6	20	65	6
4LTMA 075 210 S08 M10	M10	1.5	4	7.5	21	75	8
4LTMA 075 255 S08 M10	M10	1.5	4	7.5	25.5	80	8
4LTMA 095 245 S10 M12	M12	1.75	4	9.5	24.5	85	10
4LTMA 095 315 S10 M12	M12	1.75	4	9.5	31.5	85	10
4LTMA 100 280 S10 M14	M14	2	4	10	28	90	10
4LTMA 100 360 S10 M14	M14	2	4	10	36	95	10
4LTMA 120 320 S12 M16	M16	2	4	12	32	100	12
4LTMA 120 400 S12 M16	M16	2	4	12	40	105	12
4LTMA 140 375 S14 M18	M18	2.5	4	14	37.5	100	14
4LTMA 140 450 S14 M18	M18	2.5	4	14	45	110	14
4LTMA 160 400 S16 M20	M20	2.5	4	16	40	110	16
4LTMA 160 500 S16 M20	M20	2.5	4	16	50	120	16

내부 급유형 (With coolant)

4LTMA 045 120 S06 M6C	M6	1	4	4.5	12	60	6
4LTMA 045 150 S06 M6C	M6	1	4	4.5	15	60	6
4LTMA 060 1625 S06 M8C	M8	1.25	4	6	16.25	65	6
4LTMA 060 200 S06 M8C	M8	1.25	4	6	20	65	6
4LTMA 075 210 S08 M10C	M10	1.5	4	7.5	21	75	8
4LTMA 075 255 S08 M10C	M10	1.5	4	7.5	25.5	80	8
4LTMA 095 245 S10 M12C	M12	1.75	4	9.5	24.5	85	10
4LTMA 095 315 S10 M12C	M12	1.75	4	9.5	31.5	85	10
4LTMA 100 280 S10 M14C	M14	2	4	10	28	90	10
4LTMA 100 360 S10 M14C	M14	2	4	10	36	95	10
4LTMA 120 320 S12 M16C	M16	2	4	12	32	100	12
4LTMA 120 400 S12 M16C	M16	2	4	12	40	105	12
4LTMA 140 375 S14 M18C	M18	2.5	4	14	37.5	100	14
4LTMA 140 450 S14 M18C	M18	2.5	4	14	45	110	14
4LTMA 160 400 S16 M20C	M20	2.5	4	16	40	110	16
4LTMA 160 500 S16 M20C	M20	2.5	4	16	50	120	16

American UN

단위 Unit: mm

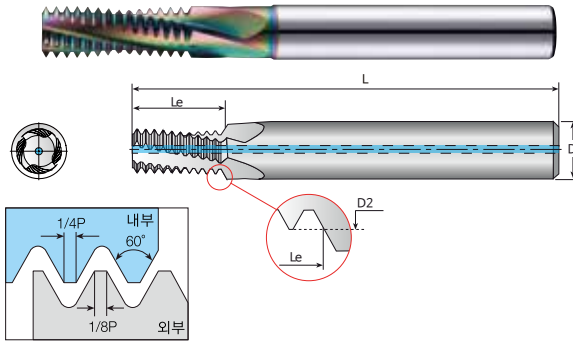
Order Number	나사 가능 규격 Thread			피치규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF	UNEF							
외부 급유형(Without coolant)										
New 4LTMA 0165 045 S04	No.2	No.2		56	4	10	1.65	4.5	45	4
New 4LTMA 0165 054 S04	No.2	No.2		56	4	12	1.65	5.4	45	4
New 4LTMA 019 053 S04	No.3	No.3		48	4	10	1.9	5.3	45	4
New 4LTMA 019 063 S04	No.3	No.3		48	4	12	1.9	6.3	45	4
4LTMA 021 060 S04	No.4, No.5	No.6		40	4	9	2.1	6	45	4
4LTMA 021 079 S04	No.4, No.5	No.6		40	4	12	2.1	7.9	45	4
4LTMA 0255 075 S04	No.6, No.8	No.10	No.12	32	4	9	2.55	7.5	45	4
4LTMA 0255 099 S04	No.6, No.8	No.10	No.12	32	4	12	2.55	9.9	45	4
4LTMA 033 088 S04		No.8		36	4	12	3.3	8.8	45	4
4LTMA 033 109 S04		No.8		36	4	15	3.3	10.9	45	4
4LTMA 0358 099 S04	No.10, No.12	5/16"		24	4	9	3.58	9.9	45	4
4LTMA 0358 131 S04	No.10, No.12	5/16"		24	4	12	3.58	13.1	45	4
4LTMA 038 099 S04		No.10	No.12, 5/16"	32	4	12	3.8	9.9	45	4
4LTMA 038 130 S04		No.10	No.12, 5/16"	32	4	16	3.8	13	50	4
4LTMA 0415 110 S06	No.12	5/16", 3/8"		24	4	10	4.15	11	60	6
4LTMA 0415 152 S06	No.12	5/16", 3/8"		24	4	14	4.15	15.2	60	6
4LTMA 043 112 S06		No.12, 1/4"	7/16"	28	4	12	4.3	11.2	60	6
4LTMA 043 149 S06		No.12, 1/4"	7/16"	28	4	16	4.3	14.9	60	6
4LTMA 044 114 S06			No.12, 1/4", 5/16"	32	4	14	4.4	11.4	60	6
4LTMA 044 154 S06			No.12, 1/4", 5/16"	32	4	19	4.4	15.4	60	6
4LTMA 0488 132 S06	1/4"	7/16", 1/2"		20	4	10	4.88	13.2	60	6
4LTMA 0488 170 S06	1/4"	7/16", 1/2"		20	4	13	4.88	17	60	6
4LTMA 0515 131 S06		1/4"	7/16", 1/2"	28	4	14	5.15	13.1	60	6
4LTMA 0515 167 S06		1/4"	7/16", 1/2"	28	4	18	5.15	16.7	60	6
4LTMA 0615 160 S08	5/16"	9/16", 5/8"		18	4	11	6.15	16	65	8
4LTMA 0615 217 S08	5/16"	9/16", 5/8"		18	4	15	6.15	21.7	75	8
4LTMA 0668 163 S08		5/16", 3/8"	9/16"	24	4	15	6.68	16.3	65	8
4LTMA 0668 205 S08		5/16", 3/8"	9/16"	24	4	19	6.68	20.5	75	8
4LTMA 0765 196 S08	3/8"	3/4"		16	4	12	7.65	19.6	65	8
4LTMA 0765 244 S08	3/8"	3/4"		16	4	15	7.65	24.4	75	8
4LTMA 082 195 S10		3/8"	9/16", 5/8"	24	4	18	8.2	19.5	80	10
4LTMA 082 247 S10		3/8"	9/16", 5/8"	24	4	23	8.2	24.7	80	10
4LTMA 090 224 S10	7/16"	7/8"		14	4	12	9	22.4	75	10
4LTMA 090 297 S10	7/16"	7/8"		14	4	16	9	29.7	80	10
4LTMA 096 221 S10		7/16", 1/2"	3/4"	20	4	17	9.6	22.1	75	10
4LTMA 096 284 S10		7/16", 1/2"	3/4"	20	4	22	9.6	28.4	80	10
4LTMA 099 221 S10			7/16", 1/2"	28	4	24	9.9	22.1	75	10
4LTMA 099 285 S10			7/16", 1/2"	28	4	31	9.9	28.5	80	10
4LTMA 1035 261 S12	1/2"			13	4	13	10.35	26.1	80	12
4LTMA 1035 339 S12	1/2"			13	4	17	10.35	33.9	90	12
4LTMA 111 259 S12		1/2"	3/4", 13/16"	20	4	20	11.1	25.9	80	12
4LTMA 111 322 S12		1/2"	3/4", 13/16"	20	4	25	11.1	32.2	90	12
4LTMA 118 283 S12	9/16"	1", 1-1/8"		12	4	13	11.8	28.3	80	12
4LTMA 118 367 S12	9/16"	1", 1-1/8"		12	4	17	11.8	36.7	90	12
4LTMA 125 287 S14		9/16", 5/8"	11/16"	18	4	20	12.5	28.7	95	14
4LTMA 125 372 S14		9/16", 5/8"	11/16"	18	4	26	12.5	37.2	100	14
4LTMA 129 290 S14			9/16", 5/8", 11/16"	24	4	27	12.9	29	95	14
4LTMA 129 364 S14			9/16", 5/8", 11/16"	24	4	34	12.9	36.4	100	14
4LTMA 131 331 S14	5/8"			11	4	14	13.1	33.1	95	14
4LTMA 131 424 S14	5/8"			11	4	18	13.1	42.4	105	14
4LTMA 141 316 S16		5/8"	11/16", 1-1/8"	18	4	22	14.1	31.6	95	16
4LTMA 141 414 S16		5/8"	11/16", 1-1/8"	18	4	29	14.1	41.4	105	16
4LTMA 159 390 S16	3/4"			10	4	15	15.9	39	100	16
4LTMA 159 491 S16	3/4"			10	4	19	15.9	49.1	110	16
4LTMA 160 387 S16		3/4"		16	4	24	16	38.7	105	16
4LTMA 160 482 S16		3/4"		16	4	30	16	48.2	115	16
4LTMA 160 386 S16			3/4", 13/16", 7/8"	20	4	30	16	38.6	105	16
4LTMA 160 487 S16			3/4", 13/16", 7/8"	20	4	38	16	48.7	115	16
4LTMA 160 461 S16	7/8"			9	4	16	16	46.1	110	16
4LTMA 160 442 S16		7/8"		14	4	24	16	44.2	110	16
4LTMA 160 519 S16	1"			8	4	16	16	51.9	120	16
4LTMA 160 515 S16		1", 1-1/8", 1-1/2"		12	4	24	16	51.5	120	16

4날 알루미늄용 헬릭스 긴 길이 쓰레드밀

American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread			피치규격 Pitch (TPI)	날수 Z	산수 Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF	UNEF							
내부 급유형 (With coolant)										
4LTMA 0358 099 S04C	No.10, No.12	5/16"		24	4	9	3.58	9.9	45	4
4LTMA 0358 131 S04C	No.10, No.12	5/16"		24	4	12	3.58	13.1	45	4
4LTMA 038 099 S04C		No.10	No.12, 5/16"	32	4	12	3.8	9.9	45	4
4LTMA 038 130 S04C		No.10	No.12, 5/16"	32	4	16	3.8	13	50	4
4LTMA 0415 110 S06C	No.12	5/16", 3/8"		24	4	10	4.15	11	60	6
4LTMA 0415 152 S06C	No.12	5/16", 3/8"		24	4	14	4.15	15.2	60	6
4LTMA 043 112 S06C		No.12, 1/4"	7/16"	28	4	12	4.3	11.2	60	6
4LTMA 043 149 S06C		No.12, 1/4"	7/16"	28	4	16	4.3	14.9	60	6
4LTMA 044 114 S06C			No.12, 1/4", 5/16"	32	4	14	4.4	11.4	60	6
4LTMA 044 154 S06C			No.12, 1/4", 5/16"	32	4	19	4.4	15.4	60	6
4LTMA 0488 132 S06C	1/4"	7/16", 1/2"		20	4	10	4.88	13.2	60	6
4LTMA 0488 170 S06C	1/4"	7/16", 1/2"		20	4	13	4.88	17	60	6
4LTMA 0515 131 S06C		1/4"	7/16", 1/2"	28	4	14	5.15	13.1	60	6
4LTMA 0515 167 S06C		1/4"	7/16", 1/2"	28	4	18	5.15	16.7	60	6
4LTMA 0615 160 S08C	5/16"	9/16", 5/8"		18	4	11	6.15	16	65	8
4LTMA 0615 217 S08C	5/16"	9/16", 5/8"		18	4	15	6.15	21.7	75	8
4LTMA 0668 163 S08C		5/16", 3/8"	9/16"	24	4	15	6.68	16.3	65	8
4LTMA 0668 205 S08C		5/16", 3/8"	9/16"	24	4	19	6.68	20.5	75	8
4LTMA 0765 196 S08C	3/8"	3/4"		16	4	12	7.65	19.6	65	8
4LTMA 0765 244 S08C	3/8"	3/4"		16	4	15	7.65	24.4	75	8
4LTMA 082 195 S10C		3/8"	9/16", 5/8"	24	4	18	8.2	19.5	80	10
4LTMA 082 247 S10C		3/8"	9/16", 5/8"	24	4	23	8.2	24.7	80	10
4LTMA 090 224 S10C	7/16"	7/8"		14	4	12	9	22.4	75	10
4LTMA 090 297 S10C	7/16"	7/8"		14	4	16	9	29.7	80	10
4LTMA 096 221 S10C		7/16", 1/2"	3/4"	20	4	17	9.6	22.1	75	10
4LTMA 096 284 S10C		7/16", 1/2"	3/4"	20	4	22	9.6	28.4	80	10
4LTMA 099 221 S10C			7/16", 1/2"	28	4	24	9.9	22.1	75	10
4LTMA 099 285 S10C			7/16", 1/2"	28	4	31	9.9	28.5	80	10
4LTMA 1035 261 S12C	1/2"			13	4	13	10.35	26.1	80	12
4LTMA 1035 339 S12C	1/2"			13	4	17	10.35	33.9	90	12
4LTMA 111 259 S12C		1/2"	3/4", 13/16"	20	4	20	11.1	25.9	80	12
4LTMA 111 322 S12C		1/2"	3/4", 13/16"	20	4	25	11.1	32.2	90	12
4LTMA 118 283 S12C	9/16"	1", 1-1/8"		12	4	13	11.8	28.3	80	12
4LTMA 118 367 S12C	9/16"	1", 1-1/8"		12	4	17	11.8	36.7	90	12
4LTMA 125 287 S14C		9/16", 5/8"	11/16"	18	4	20	12.5	28.7	95	14
4LTMA 125 372 S14C		9/16", 5/8"	11/16"	18	4	26	12.5	37.2	100	14
4LTMA 129 290 S14C			9/16", 5/8", 11/16"	24	4	27	12.9	29	95	14
4LTMA 129 364 S14C			9/16", 5/8", 11/16"	24	4	34	12.9	36.4	100	14
4LTMA 131 331 S14C	5/8"			11	4	14	13.1	33.1	95	14
4LTMA 131 424 S14C	5/8"			11	4	18	13.1	42.4	105	14
4LTMA 141 316 S16C		5/8"	11/16", 1-1/8"	18	4	22	14.1	31.6	95	16
4LTMA 141 414 S16C		5/8"	11/16", 1-1/8"	18	4	29	14.1	41.4	105	16
4LTMA 159 390 S16C	3/4"			10	4	15	15.9	39	100	16
4LTMA 159 491 S16C	3/4"			10	4	19	15.9	49.1	110	16
4LTMA 160 387 S16C		3/4"		16	4	24	16	38.7	105	16
4LTMA 160 482 S16C		3/4"		16	4	30	16	48.2	115	16
4LTMA 160 386 S16C			3/4", 13/16", 7/8"	20	4	30	16	38.6	105	16
4LTMA 160 487 S16C			3/4", 13/16", 7/8"	20	4	38	16	48.7	115	16
4LTMA 160 461 S16C	7/8"			9	4	16	16	46.1	110	16
4LTMA 160 442 S16C		7/8"		14	4	24	16	44.2	110	16
4LTMA 160 519 S16C	1"			8	4	16	16	51.9	120	16
4LTMA 160 515 S16C		1", 1-1/8", 1-1/2"		12	4	24	16	51.5	120	16
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• 규격 정의 : R262 (DN 13)
• 공차 등급 : 6H



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ISO 측정항목

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	생크 Shank Dia d
외부 급유형 (Without coolant)							
4LTMS 022 060 S06 M3	M3	0.5	4	2.2	6	60	6
4LTMS 022 075 S06 M3	M3	0.5	4	2.2	7.5	60	6
4LTMS 029 084 S06 M4	M4	0.7	4	2.9	8.4	60	6
4LTMS 029 105 S06 M4	M4	0.7	4	2.9	10.5	60	6
4LTMS 038 104 S06 M5	M5	0.8	4	3.8	10.4	60	6
4LTMS 038 128 S06 M5	M5	0.8	4	3.8	12.8	60	6
4LTMS 045 120 S06 M6	M6	1	4	4.5	12	60	6
4LTMS 045 150 S06 M6	M6	1	4	4.5	15	60	6
4LTMS 060 1625 S06 M8	M8	1.25	4	6	16.25	65	6
4LTMS 060 200 S06 M8	M8	1.25	4	6	20	65	6
4LTMS 075 210 S08 M10	M10	1.5	4	7.5	21	75	8
4LTMS 075 255 S08 M10	M10	1.5	4	7.5	25.5	80	8
4LTMS 095 245 S10 M12	M12	1.75	4	9.5	24.5	85	10
4LTMS 095 315 S10 M12	M12	1.75	4	9.5	31.5	85	10
4LTMS 100 280 S10 M14	M14	2	4	10	28	90	10
4LTMS 100 360 S10 M14	M14	2	4	10	36	95	10
4LTMS 120 320 S12 M16	M16	2	4	12	32	100	12
4LTMS 120 400 S12 M16	M16	2	4	12	40	105	12
4LTMS 140 375 S14 M18	M18	2.5	4	14	37.5	100	14
4LTMS 140 450 S14 M18	M18	2.5	4	14	45	110	14
4LTMS 160 400 S16 M20	M20	2.5	4	16	40	110	16
4LTMS 160 500 S16 M20	M20	2.5	4	16	50	120	16

내부 급유형 (With coolant)

4LTMS 045 120 S06 M6C	M6	1	4	4.5	12	60	6
4LTMS 045 150 S06 M6C	M6	1	4	4.5	15	60	6
4LTMS 060 1625 S06 M8C	M8	1.25	4	6	16.25	65	6
4LTMS 060 200 S06 M8C	M8	1.25	4	6	20	65	6
4LTMS 075 210 S08 M10C	M10	1.5	4	7.5	21	75	8
4LTMS 075 255 S08 M10C	M10	1.5	4	7.5	25.5	80	8
4LTMS 095 245 S10 M12C	M12	1.75	4	9.5	24.5	85	10
4LTMS 095 315 S10 M12C	M12	1.75	4	9.5	31.5	85	10
4LTMS 100 280 S10 M14C	M14	2	4	10	28	90	10
4LTMS 100 360 S10 M14C	M14	2	4	10	36	95	10
4LTMS 120 320 S12 M16C	M16	2	4	12	32	100	12
4LTMS 120 400 S12 M16C	M16	2	4	12	40	105	12
4LTMS 140 375 S14 M18C	M18	2.5	4	14	37.5	100	14
4LTMS 140 450 S14 M18C	M18	2.5	4	14	45	110	14
4LTMS 160 400 S16 M20C	M20	2.5	4	16	40	110	16
4LTMS 160 500 S16 M20C	M20	2.5	4	16	50	120	16

American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread			피치규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF	UNEF							

외부 급유형 (Without coolant)

New 4LTMS 0165 045 S04	No.2	No.3		56	4	10	1.65	4.5	45	4
New 4LTMS 0165 054 S04	No.2	No.3		56	4	12	1.65	5.4	45	4
New 4LTMS 019 053 S04	No.3	No.4		48	4	10	1.9	5.3	45	4
New 4LTMS 019 063 S04	No.3	No.4		48	4	12	1.9	6.3	45	4
4LTMS 021 060 S04	No.4, No.5	No.6		40	4	9	2.1	6	45	4
4LTMS 021 079 S04	No.4, No.5	No.6		40	4	12	2.1	7.9	45	4
4LTMS 0255 075 S04	No.6, No.8	No.10	No.12	32	4	9	2.55	7.5	45	4
4LTMS 0255 099 S04	No.6, No.8	No.10	No.12	32	4	12	2.55	9.9	45	4
4LTMS 033 088 S04		No.8		36	4	12	3.3	8.8	45	4
4LTMS 033 109 S04		No.8		36	4	15	3.3	10.9	45	4
4LTMS 0358 099 S04	No.10, No.12	5/16"		24	4	9	3.58	9.9	45	4
4LTMS 0358 131 S04	No.10, No.12	5/16"		24	4	12	3.58	13.1	45	4
4LTMS 038 099 S04		No.10	No.12, 5/16"	32	4	12	3.8	9.9	45	4
4LTMS 038 130 S04		No.10	No.12, 5/16"	32	4	16	3.8	13	50	4
4LTMS 0415 110 S06	No.12	5/16", 3/8"		24	4	10	4.15	11	60	6
4LTMS 0415 152 S06	No.12	5/16", 3/8"		24	4	14	4.15	15.2	60	6
4LTMS 043 112 S06		No.12, 1/4"	7/16"	28	4	12	4.3	11.2	60	6
4LTMS 043 149 S06		No.12, 1/4"	7/16"	28	4	16	4.3	14.9	60	6
4LTMS 044 114 S06			No.12, 1/4", 5/16"	32	4	14	4.4	11.4	60	6
4LTMS 044 154 S06			No.12, 1/4", 5/16"	32	4	19	4.4	15.4	60	6
4LTMS 0488 132 S06	1/4"	7/16", 1/2"		20	4	10	4.88	13.2	60	6
4LTMS 0488 170 S06	1/4"	7/16", 1/2"		20	4	13	4.88	17	60	6
4LTMS 0515 131 S06		1/4"	7/16", 1/2"	28	4	14	5.15	13.1	60	6
4LTMS 0515 167 S06		1/4"	7/16", 1/2"	28	4	18	5.15	16.7	60	6
4LTMS 0615 160 S08	5/16"	9/16", 5/8"		18	4	11	6.15	16	65	8
4LTMS 0615 217 S08	5/16"	9/16", 5/8"		18	4	15	6.15	21.7	75	8
4LTMS 0668 163 S08		5/16", 3/8"	9/16"	24	4	15	6.68	16.3	65	8
4LTMS 0668 205 S08		5/16", 3/8"	9/16"	24	4	19	6.68	20.5	75	8
4LTMS 0765 196 S08	3/8"	3/4"		16	4	12	7.65	19.6	65	8
4LTMS 0765 244 S08	3/8"	3/4"		16	4	15	7.65	24.4	75	8
4LTMS 082 195 S10		3/8"	9/16", 5/8"	24	4	18	8.2	19.5	80	10
4LTMS 082 247 S10		3/8"	9/16", 5/8"	24	4	23	8.2	24.7	80	10
4LTMS 090 224 S10	7/16"	7/8"		14	4	12	9	22.4	75	10
4LTMS 090 297 S10	7/16"	7/8"		14	4	16	9	29.7	80	10
4LTMS 096 221 S10		7/16", 1/2"	3/4"	20	4	17	9.6	22.1	75	10
4LTMS 096 284 S10		7/16", 1/2"	3/4"	20	4	22	9.6	28.4	80	10
4LTMS 099 221 S10			7/16", 1/2"	28	4	24	9.9	22.1	75	10
4LTMS 099 285 S10			7/16", 1/2"	28	4	31	9.9	28.5	80	10
4LTMS 1035 261 S12	1/2"			13	4	13	10.35	26.1	80	12
4LTMS 1035 339 S12	1/2"			13	4	17	10.35	33.9	90	12
4LTMS 111 259 S12		1/2"	3/4", 13/16"	20	4	20	11.1	25.9	80	12
4LTMS 111 322 S12		1/2"	3/4", 13/16"	20	4	25	11.1	32.2	90	12
4LTMS 118 283 S12	9/16"	1", 1-1/8"		12	4	13	11.8	28.3	80	12
4LTMS 118 367 S12	9/16"	1", 1-1/8"		12	4	17	11.8	36.7	90	12
4LTMS 125 287 S14		9/16", 5/8"	11/16"	18	4	20	12.5	28.7	95	14
4LTMS 125 372 S14		9/16", 5/8"	11/16"	18	4	26	12.5	37.2	100	14
4LTMS 129 290 S14			9/16", 5/8", 11/16"	24	4	27	12.9	29	95	14
4LTMS 129 364 S14			9/16", 5/8", 11/16"	24	4	34	12.9	36.4	100	14
4LTMS 131 331 S14	5/8"			11	4	14	13.1	33.1	95	14
4LTMS 131 424 S14	5/8"			11	4	18	13.1	42.4	105	14
4LTMS 141 316 S16		5/8"	11/16", 1-1/8"	18	4	22	14.1	31.6	95	16
4LTMS 141 414 S16		5/8"	11/16", 1-1/8"	18	4	29	14.1	41.4	105	16
4LTMS 159 390 S16	3/4"			10	4	15	15.9	39	100	16
4LTMS 159 491 S16	3/4"			10	4	19	15.9	49.1	110	16
4LTMS 160 387 S16		3/4"		16	4	24	16	38.7	105	16
4LTMS 160 482 S16		3/4"		16	4	30	16	48.2	115	16
4LTMS 160 386 S16			3/4", 13/16", 7/8"	20	4	30	16	38.6	105	16
4LTMS 160 487 S16			3/4", 13/16", 7/8"	20	4	38	16	48.7	115	16
4LTMS 160 461 S16	7/8"			9	4	16	16	46.1	110	16
4LTMS 160 442 S16		7/8"		14	4	24	16	44.2	110	16
4LTMS 160 519 S16	1"			8	4	16	16	51.9	120	16
4LTMS 160 515 S16		1", 1-1/8", 1-1/2"		12	4	24	16	51.5	120	16

단위 Unit: mm

내부 급유형 (With coolant)

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4날 범용 헬릭스 니크 타입 쓰레드밀

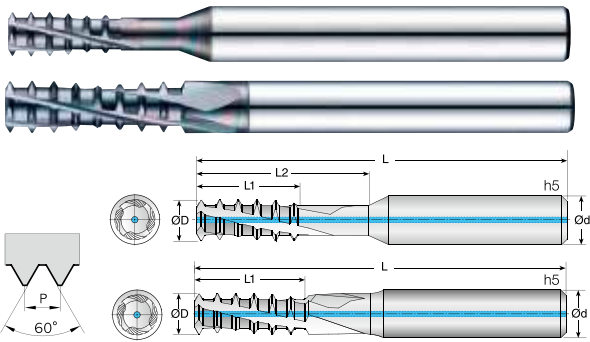
단위 Unit: mm

내부 급유형 (With coolant)

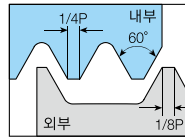
단위 Unit: mm

외부 급유형 (Without coolant)

4날 알루미늄 전용 헬릭스 니크 타입 쓰레드밀



- **알루미늄, 알루미늄 합금 등 비철 비금속 가공**
 - 높은 절삭 속도와 날 당 높은 이송이 가능합니다.
 - 최대 나사가공 길이 : 2xD, 2.5xD, 3xD(나사가공 직경)
 - 더 깊은 나사가공을 위한 헬리컬 리브 타입을 채용하였습니다.
 - 헬리코일 나사 가공이 가능합니다.
 - 오른나사 및 왼나사 작업이 모두 가능합니다.
-
- **Thread Mills for Aluminum, Aluminum alloys, Non-ferrous, and Non-metallic materials**
 - High spindle speed and feed per tooth are available.
 - Maximum drilling depth : 2xD, 2.5xD, 3xD(threading diameter)
 - Rib type helical design is applied for deep threading.
 - It can be used for heli coil threading.
 - Both right and left threading are available.



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ISO 측정항목

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	날경 Diameter D	나사부길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d
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외부 급유형 (Without coolant)

4NKTMA 022 060 S06 M3	M3	0.5	4	2.2	6	-	60	6
4NKTMA 022 080 S06 M3	M3	0.5	4	2.2	8	-	60	6
4NKTMA 024 090 S04 M3	M3	0.5	4	2.4	5.47	9	45	4
4NKTMA 029 084 S06 M4	M4	0.7	4	2.9	8.4	-	60	6
4NKTMA 029 112 S06 M4	M4	0.7	4	2.9	11.2	-	60	6
4NKTMA 0315 120 S04 M4	M4	0.7	4	3.15	7.64	12	45	4
4NKTMA 038 112 S06 M5	M5	0.8	4	3.8	11.2	-	60	6
4NKTMA 038 128 S06 M5	M5	0.8	4	3.8	12.8	-	60	6
4NKTMA 039 150 S04 M5	M5	0.8	4	3.9	8.73	15	50	4
4NKTMA 045 120 S06 M6	M6	1	4	4.5	12	-	60	6
4NKTMA 045 160 S06 M6	M6	1	4	4.5	16	-	60	6
4NKTMA 048 180 S06 M6	M6	1	4	4.8	10.9	18	60	6
4NKTMA 060 175 S06 M8	M8	1.25	4	6	17.5	-	65	6
4NKTMA 060 200 S06 M8	M8	1.25	4	6	20	-	65	6
4NKTMA 065 240 S08 M8	M8	1.25	4	6.5	13.62	24	65	8
4NKTMA 075 210 S08 M10	M10	1.5	4	7.5	21	-	75	8
4NKTMA 075 270 S08 M10	M10	1.5	4	7.5	27	-	75	8
4NKTMA 082 300 S10 M10	M10	1.5	4	8.2	16.34	30	75	10
4NKTMA 095 245 S10 M12	M12	1.75	4	9.5	24.5	-	80	10
4NKTMA 095 315 S10 M12	M12	1.75	4	9.5	31.5	-	80	10
4NKTMA 099 360 S10 M12	M12	1.75	4	9.9	19.06	36	85	10
4NKTMA 100 280 S10 M14	M14	2	4	10	28	-	85	10
4NKTMA 100 360 S10 M14	M14	2	4	10	36	-	90	10
4NKTMA 116 420 S12 M14	M14	2	4	11.6	21.75	42	90	12
4NKTMA 120 320 S12 M16	M16	2	4	12	32	-	95	12
4NKTMA 120 400 S12 M16	M16	2	4	12	40	-	100	12
4NKTMA 136 480 S14 M16	M16	2	4	13.6	25.75	48	100	14
4NKTMA 140 400 S14 M18	M18	2.5	4	14	40	-	95	14
4NKTMA 140 450 S14 M18	M18	2.5	4	14	45	-	105	14
4NKTMA 160 400 S16 M20	M20	2.5	4	16	40	-	105	16
4NKTMA 160 500 S16 M20	M20	2.5	4	16	50	-	115	16

ISO 측정항목

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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내부 급유형 (With coolant)

4NKTMA 045 120 S06 M6C	M6	1	4	4.5	12	-	60	6
4NKTMA 045 160 S06 M6C	M6	1	4	4.5	16	-	60	6
4NKTMA 048 180 S06 M6C	M6	1	4	4.8	10.9	18	60	6
4NKTMA 060 175 S06 M8C	M8	1.25	4	6	17.5	-	65	6
4NKTMA 060 200 S06 M8C	M8	1.25	4	6	20	-	65	6
4NKTMA 065 240 S08 M8C	M8	1.25	4	6.5	13.62	24	65	8
4NKTMA 075 210 S08 M10C	M10	1.5	4	7.5	21	-	75	8
4NKTMA 075 270 S08 M10C	M10	1.5	4	7.5	27	-	75	8
4NKTMA 082 300 S10 M10C	M10	1.5	4	8.2	16.34	30	75	10
4NKTMA 095 245 S10 M12C	M12	1.75	4	9.5	24.5	-	80	10
4NKTMA 095 315 S10 M12C	M12	1.75	4	9.5	31.5	-	80	10
4NKTMA 099 360 S10 M12C	M12	1.75	4	9.9	19.06	36	85	10
4NKTMA 100 280 S10 M14C	M14	2	4	10	28	-	85	10
4NKTMA 100 360 S10 M14C	M14	2	4	10	36	-	90	10
4NKTMA 116 420 S12 M14C	M14	2	4	11.6	21.75	42	90	12
4NKTMA 120 320 S12 M16C	M16	2	4	12	32	-	95	12
4NKTMA 120 400 S12 M16C	M16	2	4	12	40	-	100	12
4NKTMA 136 480 S14 M16C	M16	2	4	13.6	25.75	48	100	14
4NKTMA 140 400 S14 M18C	M18	2.5	4	14	40	-	95	14
4NKTMA 140 450 S14 M18C	M18	2.5	4	14	45	-	105	14
4NKTMA 160 400 S16 M20C	M20	2.5	4	16	40	-	105	16
4NKTMA 160 500 S16 M20C	M20	2.5	4	16	50	-	115	16

American UN

단위 Unit: mm

Order Number	나사 가능 규격			피치규격 Pitch (TPI)	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
	UNC	UNF	UNEF							

외부 급유형 (Without coolant)

NEW	4NKTMA 0165 045 S06	No.2	No.3		56	5	1.65	4.5	-	50	6
NEW	4NKTMA 0165 054 S06	No.2	No.3		56	6	1.65	5.4	-	50	6
NEW	4NKTMA 0165 066 S06	No.2	No.3		56	4	1.65	3.2	6.6	50	6
NEW	4NKTMA 019 053 S06	No.3	No.4		48	5	1.9	5.3	-	50	6
NEW	4NKTMA 019 063 S06	No.3	No.4		48	6	1.9	6.3	-	50	6
NEW	4NKTMA 019 075 S06	No.3	No.4		48	4	1.9	3.7	7.5	50	6
NEW	4NKTMA 021 063 S06	No.4, No.5	No.6		40	5	2.1	6.3	-	50	6
NEW	4NKTMA 021 076 S06	No.4, No.5	No.6		40	6	2.1	7.6	-	50	6
NEW	4NKTMA 021 085 S06	No.4, No.5	No.6		40	4	2.1	4.4	8.5	50	6
NEW	4NKTMA 0244 063 S06	No.5	No.6		40	5	2.44	6.3	-	50	6
NEW	4NKTMA 0244 076 S06	No.5	No.6		40	6	2.44	7.6	-	50	6
NEW	4NKTMA 0244 095 S06	No.5	No.6		40	4	2.44	4.4	9.5	50	6
NEW	4NKTMA 0255 079 S06	No.6, No.8	No.10	No.12	32	5	2.55	7.9	-	50	6
NEW	4NKTMA 0255 095 S06	No.6, No.8	No.10	No.12	32	6	2.55	9.5	-	50	6
NEW	4NKTMA 0255 105 S06	No.6, No.8	No.10	No.12	32	4	2.55	5.6	10.5	50	6
NEW	4NKTMA 0321 095 S06	No.8	No.10	No.12, 1/4"	32	6	3.21	9.5	-	50	6
NEW	4NKTMA 0321 111 S06	No.8	No.10	No.12, 1/4"	32	7	3.21	11.1	-	50	6
NEW	4NKTMA 0321 125 S06	No.8	No.10	No.12, 1/4"	32	4	3.21	5.6	12.5	50	6
NEW	4NKTMA 033 084 S06		No.8		36	6	3.3	8.4	-	50	6
NEW	4NKTMA 033 113 S06		No.8		36	8	3.3	11.3	-	50	6
NEW	4NKTMA 033 125 S06		No.8		36	5	3.3	6.3	12.5	50	6
NEW	4NKTMA 0359 106 S06	No.10, No.12	5/16"		24	5	3.59	10.6	-	50	6
NEW	4NKTMA 0359 127 S06	No.10, No.12	5/16"		24	6	3.59	12.7	-	50	6
NEW	4NKTMA 0359 145 S06	No.10, No.12	5/16"		24	4	3.59	7.4	14.5	50	6
NEW	4NKTMA 038 095 S06		No.10	No.12, 1/4", 5/16"	32	6	3.8	9.5	-	50	6
NEW	4NKTMA 038 127 S06		No.10	No.12, 1/4", 5/16"	32	8	3.8	12.7	-	50	6
NEW	4NKTMA 038 145 S06		No.10	No.12, 1/4", 5/16"	32	5	3.8	7	14.5	50	6
NEW	4NKTMA 0425 106 S06	No.12	5/16", 3/8"		24	5	4.25	10.6	-	60	6
NEW	4NKTMA 0425 148 S06	No.12	5/16", 3/8"		24	7	4.25	14.8	-	60	6
NEW	4NKTMA 0425 165 S06	No.12	5/16", 3/8"		24	4	4.25	7.4	16.5	60	6
NEW	4NKTMA 048 127 S06	1/4"	7/16", 1/2"		20	5	4.8	12.7	-	65	6
NEW	4NKTMA 048 178 S06	1/4"	7/16", 1/2"		20	7	4.8	17.8	-	65	6
NEW	4NKTMA 048 190 S06	1/4"	7/16", 1/2"		20	4	4.8	8.9	19	65	6
NEW	4NKTMA 052 127 S06		1/4"	7/16", 1/2"	28	7	5.2	12.7	-	65	6
NEW	4NKTMA 052 163 S06		1/4"	7/16", 1/2"	28	9	5.2	16.3	-	65	6
NEW	4NKTMA 052 190 S06		1/4"	7/16", 1/2"	28	6	5.2	9.8	19	65	6
NEW	4NKTMA 062 169 S08	5/16"	9/16", 5/8"		18	6	6.2	16.9	-	80	8
NEW	4NKTMA 062 226 S08	5/16"	9/16", 5/8"		18	8	6.2	22.6	-	80	8
NEW	4NKTMA 062 240 S08	5/16"	9/16", 5/8"		18	5	6.2	12.7	24	80	8
NEW	4NKTMA 066 169 S08		5/16", 3/8"	9/16", 5/8"	24	8	6.6	16.9	-	80	8
NEW	4NKTMA 066 211 S08		5/16", 3/8"	9/16", 5/8"	24	10	6.6	21.1	-	80	8
NEW	4NKTMA 066 240 S08		5/16", 3/8"	9/16", 5/8"	24	6	6.6	11.5	24	80	8
NEW	4NKTMA 069 190 S08	3/8"	3/4"		16	6	6.9	19	-	80	8
NEW	4NKTMA 069 254 S08	3/8"	3/4"		16	8	6.9	25.4	-	80	8
NEW	4NKTMA 069 286 S08	3/8"	3/4"		16	5	6.9	14	28.6	80	8
NEW	4NKTMA 085 218 S10	7/16"	7/8"		14	6	8.5	21.8	-	85	10
NEW	4NKTMA 085 290 S10	7/16"	7/8"		14	8	8.5	29	-	85	10
NEW	4NKTMA 085 334 S10	7/16"	7/8"		14	5	8.5	16.3	33.4	85	10
NEW	4NKTMA 092 273 S12	1/2"			13	7	9.2	27.3	-	100	12
NEW	4NKTMA 092 380 S12	1/2"			13	6	9.2	21.5	38	100	12
NEW	4NKTMA 108 296 S12	9/16"	1", 1-1/8"		12	7	10.8	29.6	-	100	12
NEW	4NKTMA 108 427 S12	9/16"	1", 1-1/8"		12	6	10.8	22.9	42.7	100	12
NEW	4NKTMA 114 323 S12	5/8"			11	7	11.4	32.3	-	100	12
NEW	4NKTMA 114 476 S12	5/8"			11	6	11.4	25.4	47.6	100	12

American UN

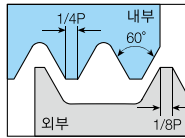
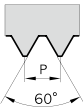
단위 Unit: mm

Order Number	피치규격 Thread			피치규격 Pitch (TPI)	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d
	UNC	UNF	UNEF							

내부 급유형 (With coolant)

NEW	4NKTMA 0359 106 S06C	No.10, No.12	5/16"		24	5	3.59	10.6	-	50	6
NEW	4NKTMA 0359 127 S06C	No.10, No.12	5/16"		24	6	3.59	12.7	-	50	6
NEW	4NKTMA 0359 145 S06C	No.10, No.12	5/16"		24	4	3.59	7.4	14.5	50	6
NEW	4NKTMA 038 095 S06C		No.10	No.12, 1/4", 5/16"	32	6	3.8	9.5	-	50	6
NEW	4NKTMA 038 127 S06C		No.10	No.12, 1/4", 5/16"	32	8	3.8	12.7	-	50	6
NEW	4NKTMA 038 145 S06C		No.10	No.12, 1/4", 5/16"	32	5	3.8	7	14.5	50	6
NEW	4NKTMA 0425 106 S06C	No.12	5/16", 3/8"		24	5	4.25	10.6	-	60	6
NEW	4NKTMA 0425 148 S06C	No.12	5/16", 3/8"		24	7	4.25	14.8	-	60	6
NEW	4NKTMA 0425 165 S06C	No.12	5/16", 3/8"		24	4	4.25	7.4	16.5	60	6
NEW	4NKTMA 048 127 S06C	1/4"	7/16", 1/2"		20	5	4.8	12.7	-	65	6
NEW	4NKTMA 048 178 S06C	1/4"	7/16", 1/2"		20	7	4.8	17.8	-	65	6
NEW	4NKTMA 048 190 S06C	1/4"	7/16", 1/2"		20	4	4.8	8.9	19	65	6
NEW	4NKTMA 052 127 S06C		1/4"	7/16", 1/2"	28	7	5.2	12.7	-	65	6
NEW	4NKTMA 052 163 S06C		1/4"	7/16", 1/2"	28	9	5.2	16.3	-	65	6
NEW	4NKTMA 052 190 S06C		1/4"	7/16", 1/2"	28	6	5.2	9.8	19	65	6
NEW	4NKTMA 062 169 S08C	5/16"	9/16", 5/8"		18	6	6.2	16.9	-	75	8
NEW	4NKTMA 062 226 S08C	5/16"	9/16", 5/8"		18	8	6.2	22.6	-	75	8
NEW	4NKTMA 062 240 S08C	5/16"	9/16", 5/8"		18	5	6.2	12.7	24	75	8
NEW	4NKTMA 066 169 S08C		5/16", 3/8"	9/16", 5/8"	24	8	6.6	16.9	-	75	8
NEW	4NKTMA 066 211 S08C		5/16", 3/8"	9/16", 5/8"	24	10	6.6	21.1	-	75	8
NEW	4NKTMA 066 240 S08C		5/16", 3/8"	9/16", 5/8"	24	6	6.6	11.5	24	75	8
NEW	4NKTMA 069 190 S08C	3/8"	3/4"		16	6	6.9	19	-	75	8
NEW	4NKTMA 069 254 S08C	3/8"	3/4"		16	8	6.9	25.4	-	75	8
NEW	4NKTMA 069 286 S08C	3/8"	3/4"		16	5	6.9	14	28.6	75	8
NEW	4NKTMA 085 218 S10C	7/16"	7/8"		14	6	8.5	21.8	-	75	10
NEW	4NKTMA 085 290 S10C	7/16"	7/8"		14	8	8.5	29	-	75	10
NEW	4NKTMA 085 334 S10C	7/16"	7/8"		14	5	8.5	16.3	33.4	75	10
NEW	4NKTMA 092 273 S12C	1/2"			13	7	9.2	27.3	-	100	12
NEW	4NKTMA 092 380 S12C	1/2"			13	6	9.2	21.5	38	100	12
NEW	4NKTMA 108 296 S12C	9/16"	1", 1-1/8"		12	7	10.8	29.6	-	100	12
NEW	4NKTMA 108 427 S12C	9/16"	1", 1-1/8"		12	6	10.8	22.9	42.7	100	12
NEW	4NKTMA 114 323 S12C	5/8"			11	7	11.4	32.3	-	100	12
NEW	4NKTMA 114 476 S12C	5/8"			11	6	11.4	25.4	47.6	100	12

4날 SUS 가공용 헬릭스 니크 타입 쓰레드밀



98P

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch	날수 Flutes Z	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

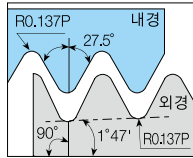
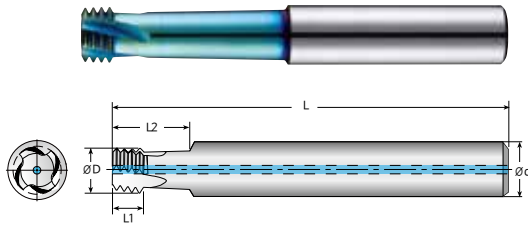
4NKTMS 022 060 S06 M3	M3	0.5	4	2.2	6	-	60	6
4NKTMS 022 080 S06 M3	M3	0.5	4	2.2	8	-	60	6
4NKTMS 024 090 S04 M3	M3	0.5	4	2.4	5.47	9	45	4
4NKTMS 029 084 S06 M4	M4	0.7	4	2.9	8.4	-	60	6
4NKTMS 029 112 S06 M4	M4	0.7	4	2.9	11.2	-	60	6
4NKTMS 0315 120 S04 M4	M4	0.7	4	3.15	7.64	12	45	4
4NKTMS 038 112 S06 M5	M5	0.8	4	3.8	11.2	-	60	6
4NKTMS 038 128 S06 M5	M5	0.8	4	3.8	12.8	-	60	6
4NKTMS 039 150 S04 M5	M5	0.8	4	3.9	8.73	15	50	4
4NKTMS 045 120 S06 M6	M6	1	4	4.5	12	-	60	6
4NKTMS 045 160 S06 M6	M6	1	4	4.5	16	-	60	6
4NKTMS 048 180 S06 M6	M6	1	4	4.8	10.9	18	60	6
4NKTMS 060 175 S06 M8	M8	1.25	4	6	17.5	-	65	6
4NKTMS 060 200 S06 M8	M8	1.25	4	6	20	-	65	6
4NKTMS 065 240 S08 M8	M8	1.25	4	6.5	13.62	24	65	8
4NKTMS 075 210 S08 M10	M10	1.5	4	7.5	21	-	75	8
4NKTMS 075 270 S08 M10	M10	1.5	4	7.5	27	-	75	8
4NKTMS 082 300 S10 M10	M10	1.5	4	8.2	16.34	30	75	10
4NKTMS 095 245 S10 M12	M12	1.75	4	9.5	24.5	-	80	10
4NKTMS 095 315 S10 M12	M12	1.75	4	9.5	31.5	-	80	10
4NKTMS 099 360 S10 M12	M12	1.75	4	9.9	19.06	36	85	10
4NKTMS 100 280 S10 M14	M14	2	4	10	28	-	85	10
4NKTMS 100 360 S10 M14	M14	2	4	10	36	-	90	10
4NKTMS 116 420 S12 M14	M14	2	4	11.6	21.75	42	90	12
4NKTMS 120 320 S12 M16	M16	2	4	12	32	-	95	12
4NKTMS 120 400 S12 M16	M16	2	4	12	40	-	100	12
4NKTMS 136 480 S14 M16	M16	2	4	13.6	25.75	48	100	14
4NKTMS 140 400 S14 M18	M18	2.5	4	14	40	-	95	14
4NKTMS 140 450 S14 M18	M18	2.5	4	14	45	-	105	14
4NKTMS 160 400 S16 M20	M20	2.5	4	16	40	-	105	16
4NKTMS 160 500 S16 M20	M20	2.5	4	16	50	-	115	16

단위 Unit: mm

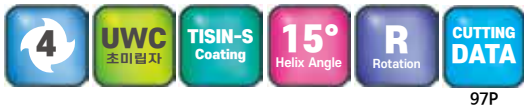
내부 급유형 (With coolant)

단위 Unit: mm

외부 급유형 (Without coolant)www.jjtools.co.kr | 67



규격 정의 : B.S.21:1985
공차 등급 : 표준 BSPT(PT)



American UN

97P

- HRc 58 이하의 고경도강, 프리하드강, 합금강, 탄소강, 주철 가공
- 내부 홀을 통한 효과적인 냉각수 공급이 가능합니다.
- 절삭 영역으로 직접 절삭유를 공급합니다.
- 외부 냉각을 사용할 수 없거나 효과가 없을 때 탁월 합니다.
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

- Thread Mills for Hardened steels(HRc ~58), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons
- Effective cooling water supply is possible with coolant.
- Direct oil supplying is possible to cutting area.
- More effective when you cannot use outer coolant.
- Recommend to us Taper Endmill for low machining load.
- Both right and left threading are available.

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d
4BSPT 055 200 S06	1/16", 1/8"	28	4	4	5.5	3.6	20	60	6
4BSPT 0931 335 S10	1/4", 3/8"	19	4	4	9.31	5.2	33.5	70	10
4BSPT 1334 440 S16	1/2", 3/4"	14	4	4	13.34	7.1	44	90	16
4BSPT 1484 420 S16	1", 1 1/4", 1 1/2", 2"	11	4	4	14.84	9.1	42	105	16

외부 급유형 (Without coolant)

4BSPT 055 200 S06C	1/16", 1/8"	28	4	4	5.5	3.6	20	60	6
4BSPT 0931 335 S10C	1/4", 3/8"	19	4	4	9.31	5.2	33.5	70	10
4BSPT 1334 440 S16C	1/2", 3/4"	14	4	4	13.34	7.1	44	90	16
4BSPT 1484 420 S16C	1", 1 1/4", 1 1/2", 2"	11	4	4	14.84	9.1	42	105	16

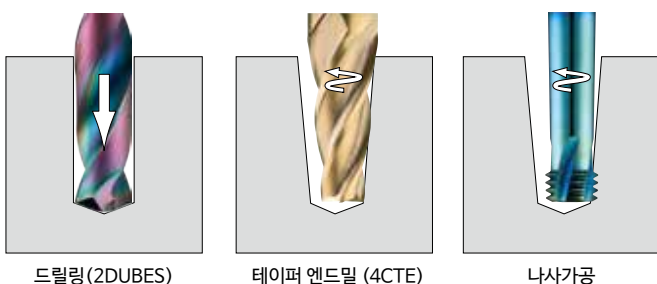
내부 급유형 (With coolant)

나사공구이와수 4 → 나사공구이와수 3
경사각도 1.78991 경사각도 1.78991



- 나사산 가공시에 4산 기준으로 프로그램 설정하면 게이지 측정이 불가하므로, 3산으로 설정하여 사용하십시오.
- When threading, it is not possible to measure the gauge when setting the program based on 4 threads, so set it to 3 threads and use it.

■ 테이퍼 나사가공 순서



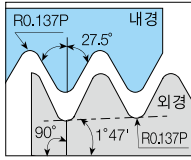
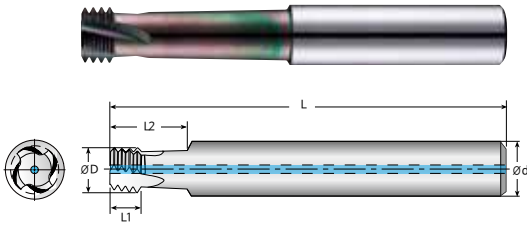
1. 드릴링으로 구멍을 뚫어준다.
2. 테이퍼 엔드밀로 1°47'를 절삭한다.
3. 쓰레드밀로 나사가공을 진행한다.

1. Drill holes using drilling.
2. Cut with a taper end mill at 1°47'.
3. Thread milling for threading operations.

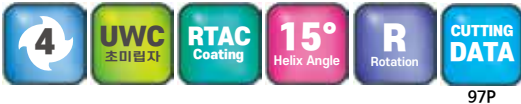
4BSPTA

4 Flutes Pipe Taper Short Thread Mills for Aluminum

4날 알루미늄 관용 테이퍼 나사 가공 짧은 날 쓰레드밀



규격 정의 : B.S.21:1985
공차 등급 : 표준 BSPT(PT)



97P

American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4BSPTA 055 200 S06	1/16", 1/8"	28	4	4	5.5	3.6	20	60	6
4BSPTA 0931 335 S10	1/4", 3/8"	19	4	4	9.31	5.2	33.5	70	10
4BSPTA 1334 440 S16	1/2", 3/4"	14	4	4	13.34	7.1	44	90	16
4BSPTA 1484 420 S16	1", 1 1/4", 1 1/2", 2"	11	4	4	14.84	9.1	42	105	16

내부 급유형 (With coolant)

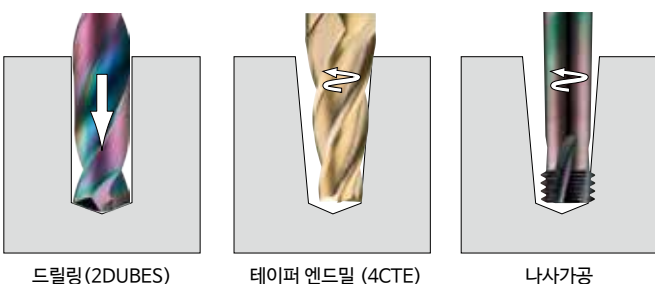
4BSPTA 055 200 S06C	1/16", 1/8"	28	4	4	5.5	3.6	20	60	6
4BSPTA 0931 335 S10C	1/4", 3/8"	19	4	4	9.31	5.2	33.5	70	10
4BSPTA 1334 440 S16C	1/2", 3/4"	14	4	4	13.34	7.1	44	90	16
4BSPTA 1484 420 S16C	1", 1 1/4", 1 1/2", 2"	11	4	4	14.84	9.1	42	105	16

나사공구이의수 4 → 나사공구이의수 3
경사각도 1.78991 경사각도 1.78991



- 나사산 가공시에 4산 기준으로 프로그램 설정하면 게이지 측정이 불가하므로, 3산으로 설정하여 사용하십시오.
- When threading, it is not possible to measure the gauge when setting the program based on 4 threads, so set it to 3 threads and use it.

테이퍼 나사가공 순서

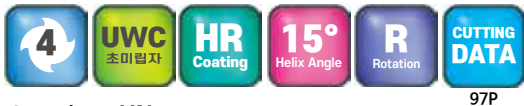
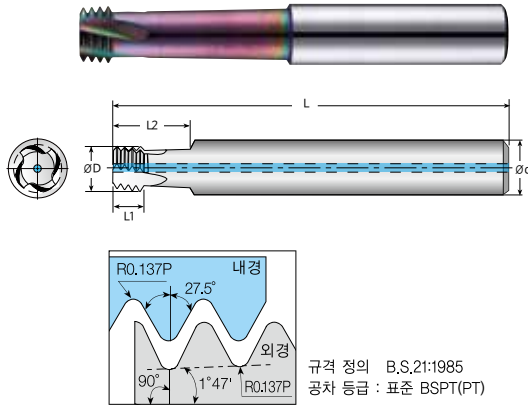


1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.

4BSPTS

4 Flutes Pipe Taper Short Thread Mills for Stainless Steels

4날 SUS 관용 테이퍼 나사 가공 짧은 날 쓰레드밀



American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4BSPTS 055 200 S06	1/16", 1/8"	28	4	4	5.5	3.6	20	60	6
4BSPTS 0931 335 S10	1/4", 3/8"	19	4	4	9.31	5.2	33.5	70	10
4BSPTS 1334 440 S16	1/2", 3/4"	14	4	4	13.34	7.1	44	90	16
4BSPTS 1484 420 S16	1", 1 1/4", 1 1/2", 2"	11	4	4	14.84	9.1	42	105	16

내부 급유형 (With coolant)

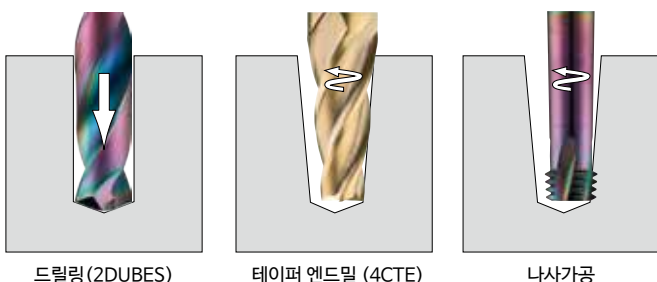
4BSPTS 055 200 S06C	1/16", 1/8"	28	4	4	5.5	3.6	20	60	6
4BSPTS 0931 335 S10C	1/4", 3/8"	19	4	4	9.31	5.2	33.5	70	10
4BSPTS 1334 440 S16C	1/2", 3/4"	14	4	4	13.34	7.1	44	90	16
4BSPTS 1484 420 S16C	1", 1 1/4", 1 1/2", 2"	11	4	4	14.84	9.1	42	105	16

나사공구이와수 4 → 나사공구이와수 3
경사각도 1.78991 경사각도 1.78991

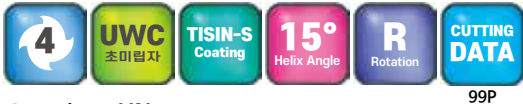
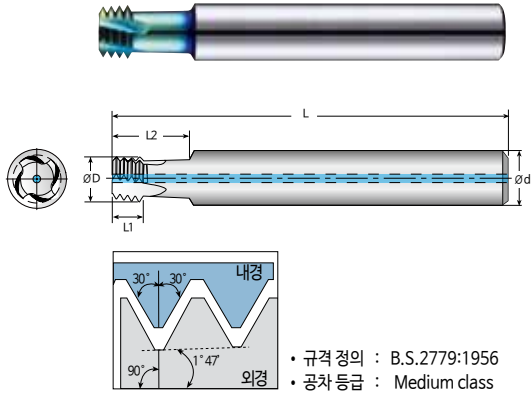


- 나사산 가공시에 4산 기준으로 프로그램 설정하면 게이지 측정이 불가하므로, 3산으로 설정하여 사용하십시오.
- When threading, it is not possible to measure the gauge when setting the program based on 4 threads, so set it to 3 threads and use it.

■ 테이퍼 나사가공 순서



1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.



American UN

99P

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4NPTS 0555 105 S06	1/16", 1/8"	27	4	4	5.55	3.8	10.5	60	6
4NPTS 0937 155 S10	1/4", 3/8"	18	4	4	9.37	5.6	15.5	70	10
4NPTS 1357 260 S16	1/2", 5/8", 3/4"	14	4	4	13.57	7.3	26	90	16
4NPTS 1489 335 S16	1", 1 1/4", 1 1/2", 2"	11.5	4	4	14.89	8.9	33.5	105	16

내부 급유형 (With coolant)

4NPTS 0555 105 S06C	1/16", 1/8"	27	4	4	5.55	3.8	10.5	60	6
4NPTS 0937 155 S10C	1/4", 3/8"	18	4	4	9.37	5.6	15.5	70	10
4NPTS 1357 260 S16C	1/2", 5/8", 3/4", 7/8"	14	4	4	13.57	7.3	26	90	16
4NPTS 1489 335 S16C	1", 1 1/4", 1 1/2", 2"	11.5	4	4	14.89	8.9	33.5	105	16

나사공구이와수

4

나사공구이와수

3

경사각도

1.78991

경사각도

1.78991

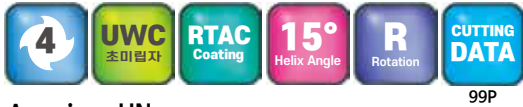
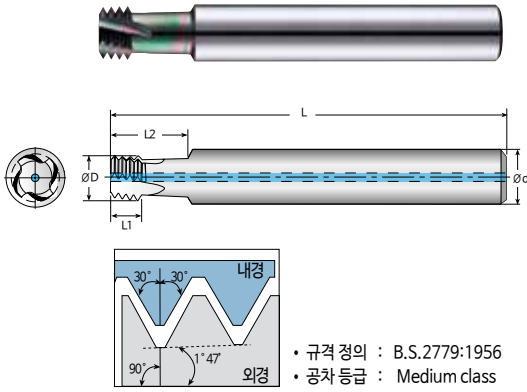


- 나사산 가공시에 4산 기준으로 프로그램 설정하면 게이지 측정이 불가 하므로, 3산으로 설정하여 사용 하십시오.
- When threading, it is not possible to measure the gauge when setting the program based on 4 threads, so set it to 3 threads and use it.

테이퍼 나사가공 순서



1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.



American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4NPTSA 0555 105 S06	1/16", 1/8"	27	4	4	5.55	3.8	10.5	60	6
4NPTSA 0937 155 S10	1/4", 3/8"	18	4	4	9.37	5.6	15.5	70	10
4NPTSA 1357 260 S16	1/2", 5/8", 3/4"	14	4	4	13.57	7.3	26	90	16
4NPTSA 1489 335 S16	1", 1 1/4", 1 1/2", 2"	11.5	4	4	14.89	8.9	33.5	105	16

내부 급유형 (With coolant)

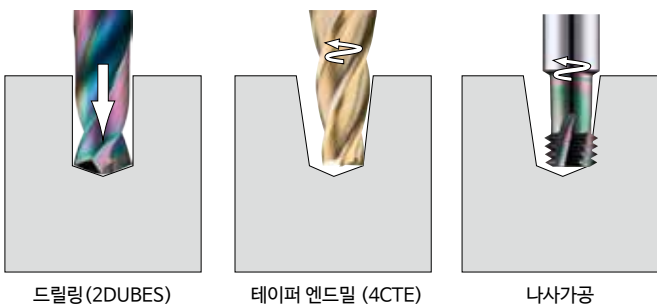
4NPTSA 0555 105 S06C	1/16", 1/8"	27	4	4	5.55	3.8	10.5	60	6
4NPTSA 0937 155 S10C	1/4", 3/8"	18	4	4	9.37	5.6	15.5	70	10
4NPTSA 1357 260 S16C	1/2", 5/8", 3/4", 7/8"	14	4	4	13.57	7.3	26	90	16
4NPTSA 1489 335 S16C	1", 1 1/4", 1 1/2", 2"	11.5	4	4	14.89	8.9	33.5	105	16

나사공구이와수 4 → 나사공구이와수 3
경사각도 1.78991 경사각도 1.78991

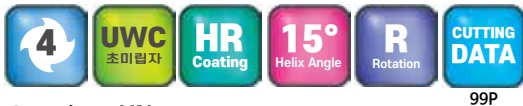
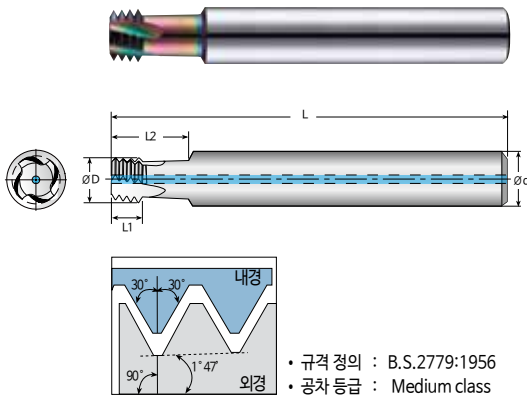


- 나사산 가공시에 4산 기준으로 프로그램 설정하면 게이지 측정이 불가하므로, 3산으로 설정하여 사용하십시오.
- When threading, it is not possible to measure the gauge when setting the program based on 4 threads, so set it to 3 threads and use it.

■ 테이퍼 나사가공 순서



1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.



American UN

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	유효장 Effective Length L2	전장 Overall Length L	샹크 Shank Dia d
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외부 급유형 (Without coolant)

4NPTSS 0555 105 S06	1/16", 1/8"	27	4	4	5.55	3.8	10.5	60	6
4NPTSS 0937 155 S10	1/4", 3/8"	18	4	4	9.37	5.6	15.5	70	10
4NPTSS 1357 260 S16	1/2", 5/8", 3/4"	14	4	4	13.57	7.3	26	90	16
4NPTSS 1489 335 S16	1", 1 1/4", 1 1/2", 2"	11.5	4	4	14.89	8.9	33.5	105	16

내부 급유형 (With coolant)

4NPTSS 0555 105 S06C	1/16", 1/8"	27	4	4	5.55	3.8	10.5	60	6
4NPTSS 0937 155 S10C	1/4", 3/8"	18	4	4	9.37	5.6	15.5	70	10
4NPTSS 1357 260 S16C	1/2", 5/8", 3/4", 7/8"	14	4	4	13.57	7.3	26	90	16
4NPTSS 1489 335 S16C	1", 1 1/4", 1 1/2", 2"	11.5	4	4	14.89	8.9	33.5	105	16

나사공구이외수 4 → 나사공구이외수 3
경사각도 1.78991 경사각도 1.78991

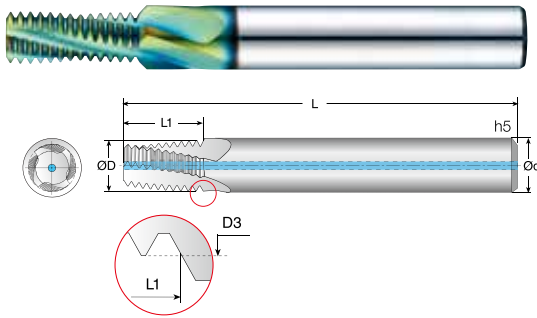


- 나사산 가공시에 4산 기준으로 프로그램 설정하면 게이지 측정이 불가 하므로, 3산으로 설정하여 사용 하십시오.
- When threading, it is not possible to measure the gauge when setting the program based on 4 threads, so set it to 3 threads and use it.

테이퍼 나사가공 순서



1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.

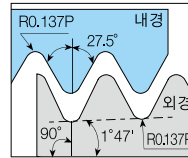


American UN

- HRc 48 이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철 가공
- 내부 홀 을 통한 효과적인 냉각수 공급이 가능합니다.
- 절삭 영역으로 직접 절삭유를 공급하여 칩의 용착 현상을 제거합니다.
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

Thread Mills for Hardened steels (HRc ~48), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons

- Effective cooling water supply is possible with coolant.
- With coolant, it removes chip sticking.
- Using taper endmill is recommended to reduce cutting wear.
- Both right and left threading are available.



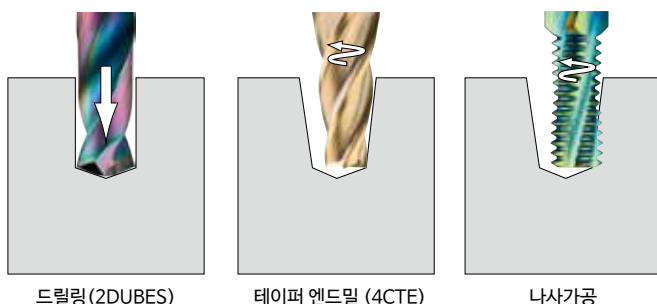
규격 정의 : B.S.21:1985
공차 등급 : 표준 BSPT

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)								
4BSTM 059 103 S06	1/16", 1/8"	28	4	11	5.9	10.3	60	6
4BSTM 0765 103 S08	1/8"	28	4	11	7.65	10.3	60	8
4BSTM 099 152 S10	1/4", 3/8"	19	4	11	9.9	15.2	70	10
4BSTM 1115 152 S12	3/8"	19	4	11	11.15	15.2	70	12
4BSTM 1425 224 S16	1/2", 3/4"	14	4	12	14.25	22.4	90	16
4BSTM 160 285 S16	1", 1 1/4", 1 1/2", 2"	11	4	12	16	28.5	105	16

내부 급유형 (With coolant)								
4BSTM 059 103 S06C	1/16", 1/8"	28	4	11	5.9	10.3	60	6
4BSTM 0765 103 S08C	1/8"	28	4	11	7.65	10.3	60	8
4BSTM 099 152 S10C	1/4", 3/8"	19	4	11	9.9	15.2	70	10
4BSTM 1115 152 S12C	3/8"	19	4	11	11.15	15.2	70	12
4BSTM 1425 224 S16C	1/2", 3/4"	14	4	12	14.25	22.4	90	16
4BSTM 160 285 S16C	1", 1 1/4", 1 1/2", 2"	11	4	12	16	28.5	105	16

■ 테이퍼 나사가공 순서

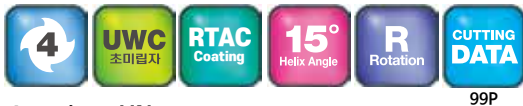
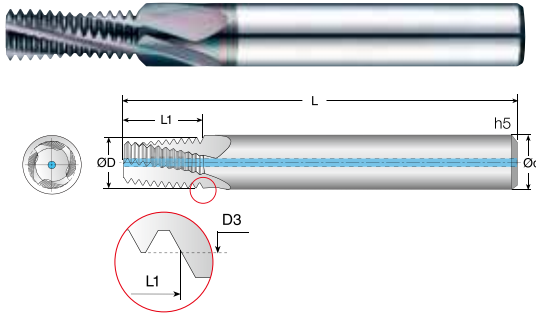


1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.

4BSTMA

4 Flutes Pipe Taper Thread Mills for Aluminum

4날 알루미늄 관용 테이퍼 나사 가공 쓰레드밀



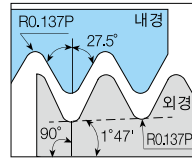
American UN

99P

- 알루미늄, 알루미늄 합금 등 비철 비금속 가공
- 내부 홀을 통한 효과적인 냉각수 공급이 가능합니다.
- 절삭 영역으로 직접 절삭유를 공급하여 칩의 용착 현상을 제거합니다.
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

Thread Mills for Aluminum, Aluminum alloys, Non-ferrous, Non-metallic materials.

- Effective cooling water supply is possible with coolant.
- With coolant, it removes chip sticking.
- Using taper endmill is recommended to reduce cutting wear.
- Both right and left threading are available.



규격 정의 : B.S.21:1985
공차 등급 : 표준 BSPT

단위 Unit: mm

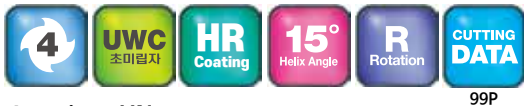
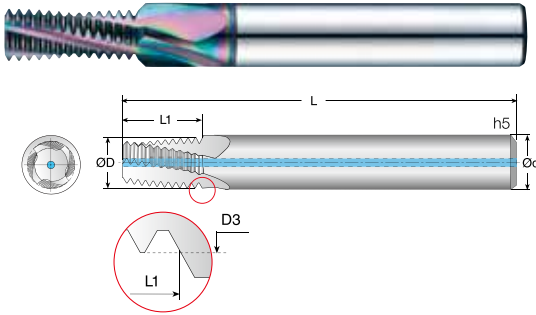
Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)								
4BSTMA 059 103 S06	1/16 ~, 1/8 ~	28	4	11	5.9	10.3	60	6
4BSTMA 0765 103 S08	1/8 ~	28	4	11	7.65	10.3	60	8
4BSTMA 099 152 S10	1/4 ~, 3/8 ~	19	4	11	9.9	15.2	70	10
4BSTMA 1115 152 S12	3/8 ~	19	4	11	11.15	15.2	70	12
4BSTMA 1425 224 S16	1/2 ~, 3/4 ~	14	4	12	14.25	22.4	90	16
4BSTMA 160 285 S16	1", 1 1/4", 1 1/2", 2"	11	4	12	16	28.5	105	16

내부 급유형 (With coolant)								
4BSTMA 059 103 S06C	1/16 ~, 1/8 ~	28	4	11	5.9	10.3	60	6
4BSTMA 0765 103 S08C	1/8 ~	28	4	11	7.65	10.3	60	8
4BSTMA 099 152 S10C	1/4 ~, 3/8 ~	19	4	11	9.9	15.2	70	10
4BSTMA 1115 152 S12C	3/8 ~	19	4	11	11.15	15.2	70	12
4BSTMA 1425 224 S16C	1/2 ~, 3/4 ~	14	4	12	14.25	22.4	90	16
4BSTMA 160 285 S16C	1", 1 1/4", 1 1/2", 2"	11	4	12	16	28.5	105	16

테이퍼 나사가공 순서



- 1. 드릴링으로 구멍을 뚫어준다.
- 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
- 3. 쓰레드밀로 나사가공을 진행한다.
- 1. Drill holes using drilling.
- 2. Cut with a taper end mill at 1°47'.
- 3. Thread milling for threading operations.



American UN

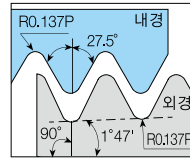
99P

• SUS, 티타늄 합금 가공

- 내부 홀을 통한 효과적인 냉각수 공급이 가능합니다.
- 절삭 영역으로 직접 절삭유를 공급하여 칩의 용착 현상을 제거합니다.
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

• Thread Mills for SUS, Titanium alloys

- Effective cooling water supply is possible with coolant.
- With coolant, it removes chip sticking.
- Using taper endmill is recommended to reduce cutting wear.
- Both right and left threading are available.



규격 정의 : B.S.21:1985
공차 등급 : 표준 BSPT

단위 Unit: mm

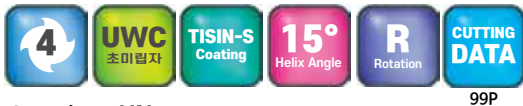
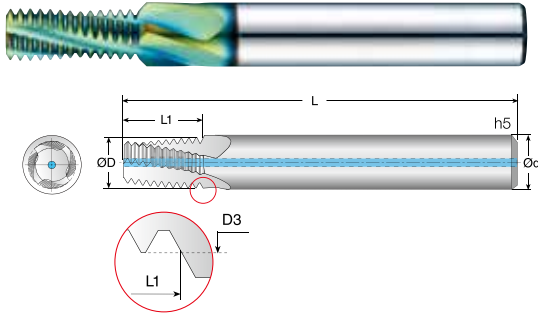
Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)								
4BSTMS 059 103 S06	1/16 ~, 1/8 ~	28	4	11	5.9	10.3	60	6
4BSTMS 0765 103 S08	1/8 ~	28	4	11	7.65	10.3	60	8
4BSTMS 099 152 S10	1/4 ~, 3/8 ~	19	4	11	9.9	15.2	70	10
4BSTMS 1115 152 S12	3/8 ~	19	4	11	11.15	15.2	70	12
4BSTMS 1425 224 S16	1/2 ~, 3/4 ~	14	4	12	14.25	22.4	90	16
4BSTMS 160 285 S16	1", 1 1/4", 1 1/2", 2"	11	4	12	16	28.5	105	16

내부 급유형 (With coolant)								
4BSTMS 059 103 S06C	1/16 ~, 1/8 ~	28	4	11	5.9	10.3	60	6
4BSTMS 0765 103 S08C	1/8 ~	28	4	11	7.65	10.3	60	8
4BSTMS 099 152 S10C	1/4 ~, 3/8 ~	19	4	11	9.9	15.2	70	10
4BSTMS 1115 152 S12C	3/8 ~	19	4	11	11.15	15.2	70	12
4BSTMS 1425 224 S16C	1/2 ~, 3/4 ~	14	4	12	14.25	22.4	90	16
4BSTMS 160 285 S16C	1", 1 1/4", 1 1/2", 2"	11	4	12	16	28.5	105	16

■ 테이퍼 나사가공 순서



1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.



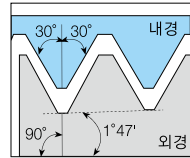
American UN

99P

- HRc 48 이하의 고경도강, 프리하든강, 합금강, 탄소강, 주철 가공
- 내부 홀을 통한 효과적인 냉각수 공급이 가능합니다.
- 절삭 영역으로 직접 절삭유를 공급하여 칩의 용착 현상을 제거합니다.
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

Thread Mills for Hardened steels (HRc ~48), Pre-hardened steels, Alloy steels, Carbon steels, Cast irons

- Effective cooling water supply is possible with coolant.
- With coolant, it removes chip sticking.
- Using taper endmill is recommended to reduce cutting wear.
- Both right and left threading are available.



규격 정의 : USAS B2.1:1968
공차 등급 : 표준 NPT

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샤프트 Shank Dia d
외부 급유형 (Without coolant)								
4NPTM 059 098 S06	1/16 ~, 1/8 ~	27	4	10	5.9	9.8	60	6
4NPTM 0765 098 S08	1/8 ~	27	4	10	7.65	9.8	60	8
4NPTM 099 147 S10	1/4 ~, 3/8 ~	18	4	10	9.9	14.7	70	10
4NPTM 1115 147 S12	3/8 ~	18	4	10	11.15	14.7	70	12
4NPTM 1425 189 S16	1/2 ~, 3/4 ~	14	4	10	14.25	18.9	90	16
4NPTM 160 275 S16	1", 1 1/4", 1 1/2", 2"	11.5	4	12	16	27.5	105	16

내부 급유형 (With coolant)								
4NPTM 059 098 S06C	1/16 ~, 1/8 ~	27	4	10	5.9	9.8	60	6
4NPTM 0765 098 S08C	1/8 ~	27	4	10	7.65	9.8	60	8
4NPTM 099 147 S10C	1/4 ~, 3/8 ~	18	4	10	9.9	14.7	70	10
4NPTM 1115 147 S12C	3/8 ~	18	4	10	11.15	14.7	70	12
4NPTM 1425 189 S16C	1/2 ~, 3/4 ~	14	4	10	14.25	18.9	90	16
4NPTM 160 275 S16C	1", 1 1/4", 1 1/2", 2"	11.5	4	12	16	27.5	105	16

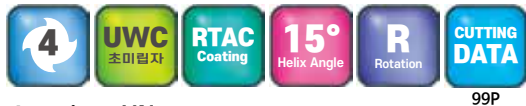
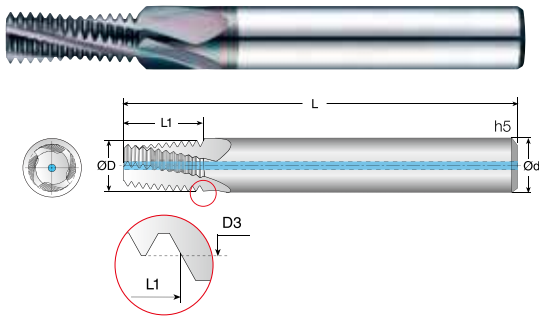
테이퍼 나사가공 순서



1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.

4NPTMA 4 Flutes Pipe Taper Thread Mills for Aluminum

4날 알루미늄 관용 테이퍼 나사 가공 쓰레드밀



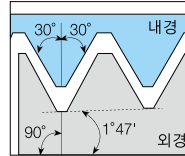
American UN

99P

- 알루미늄, 알루미늄 합금 등 비철 비금속 가공
- 내부 홀을 통한 효과적인 냉각수 공급이 가능합니다.
- 절삭 영역으로 직접 절삭유를 공급하여 칩의 용착 현상을 제거합니다.
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

Thread Mills for Aluminum, Aluminum alloys, Non-ferrous, Non-metallic materials

- Effective cooling water supply is possible with coolant.
- With coolant, it removes chip sticking.
- Using taper endmill is recommended to reduce cutting wear.
- Both right and left threading are available.



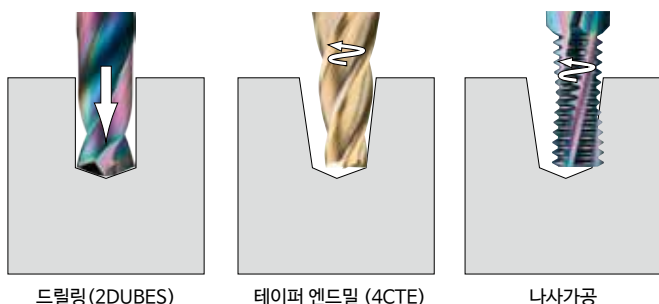
규격 정의 : USAS B2.1:1968
공차 등급 : 표준 NPT

단위 Unit: mm

Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샹크 Shank Dia d
외부 급유형 (Without coolant)								
4NPTMA 059 098 S06	1/16 ~, 1/8 ~	27	4	10	5.9	9.8	60	6
4NPTMA 0765 098 S08	1/8 ~	27	4	10	7.65	9.8	60	8
4NPTMA 099 147 S10	1/4 ~, 3/8 ~	18	4	10	9.9	14.7	70	10
4NPTMA 1115 147 S12	3/8 ~	18	4	10	11.15	14.7	70	12
4NPTMA 1425 189 S16	1/2 ~, 3/4 ~	14	4	10	14.25	18.9	90	16
4NPTMA 160 275 S16	1", 1 1/4", 1 1/2", 2"	11.5	4	12	16	27.5	105	16

내부 급유형 (With coolant)								
4NPTMA 059 098 S06C	1/16 ~, 1/8 ~	27	4	10	5.9	9.8	60	6
4NPTMA 0765 098 S08C	1/8 ~	27	4	10	7.65	9.8	60	8
4NPTMA 099 147 S10C	1/4 ~, 3/8 ~	18	4	10	9.9	14.7	70	10
4NPTMA 1115 147 S12C	3/8 ~	18	4	10	11.15	14.7	70	12
4NPTMA 1425 189 S16C	1/2 ~, 3/4 ~	14	4	10	14.25	18.9	90	16
4NPTMA 160 275 S16C	1", 1 1/4", 1 1/2", 2"	11.5	4	12	16	27.5	105	16

■ 테이퍼 나사가공 순서

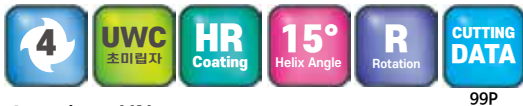
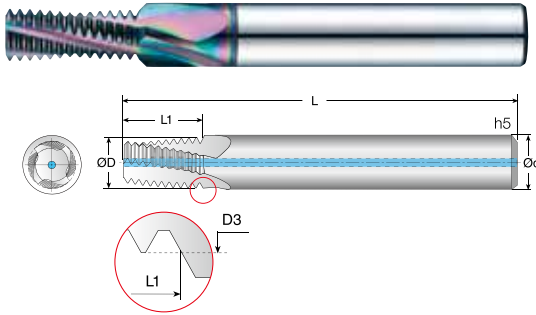


1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
 3. 쓰레드밀로 나사가공을 진행한다.
1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.

4NPTMS

4 Flutes Pipe Taper Thread Mills for Stainless Steels

4날 SUS 관용 테이퍼 나사 가공 쓰레드밀



American UN

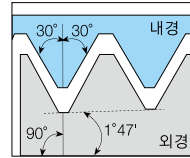
99P

SUS, 티타늄 합금 가공

- 내부 홀을 통한 효과적인 냉각수 공급이 가능합니다.
- 절삭 영역으로 직접 절삭유를 공급하여 칩의 용착 현상을 제거합니다.
- 낮은 절삭부하를 위해 테이퍼 엔드밀 사용을 권장 합니다.
- 오른나사 및 왼나사 작업이 모두 가능합니다.

Thread Mills for SUS, Titanium alloys

- Effective cooling water supply is possible with coolant.
- With coolant, it removes chip sticking.
- Using taper endmill is recommended to reduce cutting wear.
- Both right and left threading are available.



규격 정의 : USAS B2.1:1968
공차 등급 : 표준 NPT

단위 Unit: mm

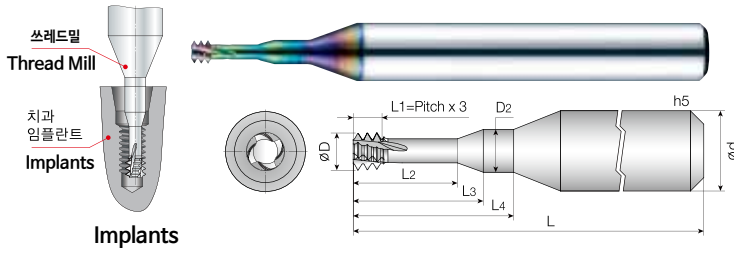
Order Number	나사 가능 규격 Thread	피치 규격 Pitch (TPI)	날수 Flutes Z	산수 Teeth Zt	날경 Diameter D	나사부 길이 Thread Length L1	전장 Overall Length L	샙크 Shank Dia d
외부 급유형 (Without coolant)								
4NPTMS 059 098 S06	1/16", 1/8"	27	4	10	5.9	9.8	60	6
4NPTMS 0765 098 S08	1/8"	27	4	10	7.65	9.8	60	8
4NPTMS 099 147 S10	1/4", 3/8"	18	4	10	9.9	14.7	70	10
4NPTMS 1115 147 S12	3/8"	18	4	10	11.15	14.7	70	12
4NPTMS 1425 189 S16	1/2", 3/4"	14	4	10	14.25	18.9	90	16
4NPTMS 160 275 S16	1", 1 1/4", 1 1/2", 2"	11.5	4	12	16	27.5	105	16

내부 급유형 (With coolant)								
4NPTMS 059 098 S06C	1/16", 1/8"	27	4	10	5.9	9.8	60	6
4NPTMS 0765 098 S08C	1/8"	27	4	10	7.65	9.8	60	8
4NPTMS 099 147 S10C	1/4", 3/8"	18	4	10	9.9	14.7	70	10
4NPTMS 1115 147 S12C	3/8"	18	4	10	11.15	14.7	70	12
4NPTMS 1425 189 S16C	1/2", 3/4"	14	4	10	14.25	18.9	90	16
4NPTMS 160 275 S16C	1", 1 1/4", 1 1/2", 2"	11.5	4	12	16	27.5	105	16

테이퍼 나사가공 순서



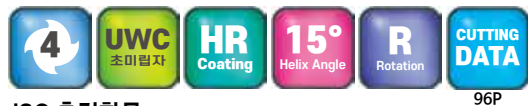
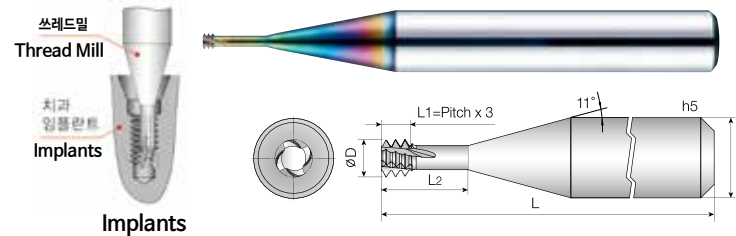
1. 드릴링으로 구멍을 뚫어준다.
 2. 테이퍼 엔드밀로 1°47'를 절삭한다.
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1. Drill holes using drilling.
 2. Cut with a taper end mill at 1°47'.
 3. Thread milling for threading operations.



ISO 측정항목

Order Number	나사 가능 규격	피치 규격	날수	산수	날경	목부경	유효장			전장	샹크
	Thread	Pitch	Flutes Z	Teeth Zt	Diameter D	Neck Diameter D2	L2	L3	L4	Overall Length L	Shank Dia d
단위 Unit: mm											
4IMTM 009 025 S03 M012	M1.2	0.25	4	3	0.9	0.95	2.5	3.3	4.3	40	3
4IMTM 0105 028 S03 M014	M1.4	0.3	4	3	1.05	1.1	2.8	3.5	5	40	3
4IMTM 012 033 S03 M016	M1.6	0.35	4	3	1.2	1.25	3.3	4.2	5.9	40	3
4IMTM 014 038 S03 M018	M1.8	0.35	4	3	1.4	1.45	3.8	4.7	6.6	40	3
4IMTM 0154 039 S03 M2	M2	0.4	4	3	1.54	1.7	3.9	4.9	6.7	40	3
4IMTM 0196 048 S03 M025	M2.5	0.45	4	3	1.96	2	4.8	5.8	8.2	40	3

외부 급유형 (Without coolant)

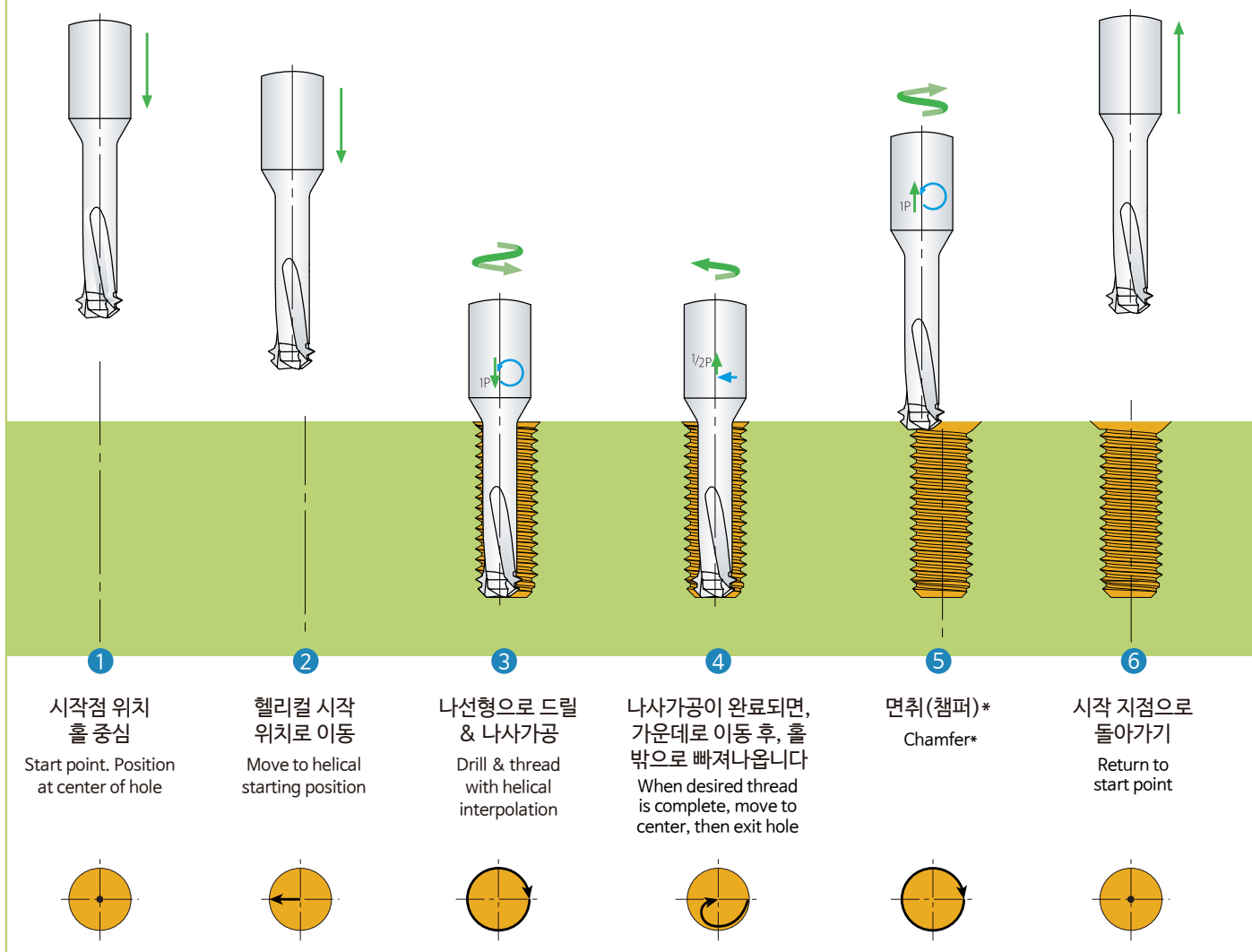


ISO 측정항목

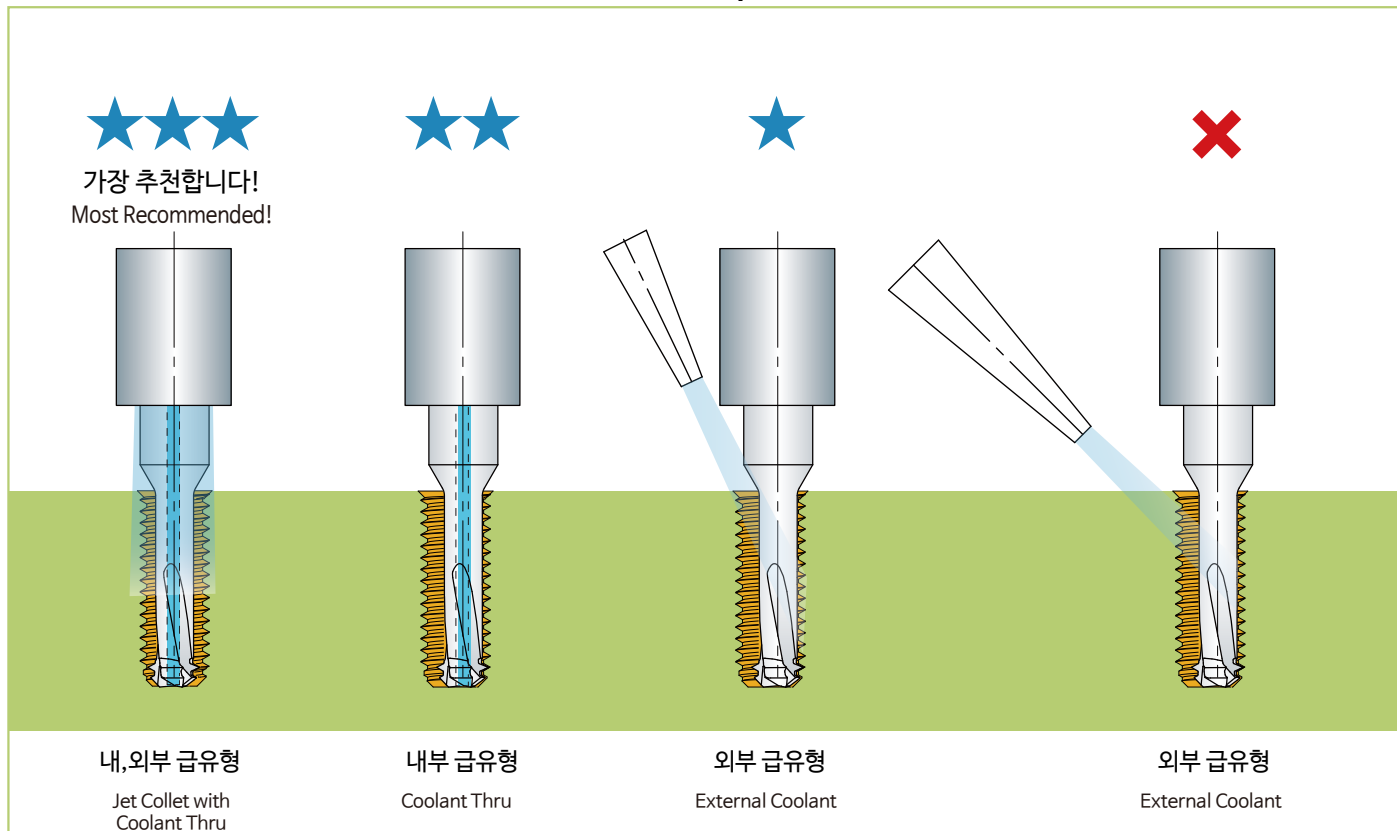
Order Number	나사 가능 규격	피치 규격	날수	산수	날경	유효장	전장	샹크
	Thread	Pitch	Flutes Z	Teeth Zt	Diameter D	Effective Length L2	Overall Length L	Shank Dia d
단위 Unit: mm								
4IMTM 0057 023 S06 M008	M0.8	0.2	4	3	0.57	2.3	50	6
4IMTM 0064 026 S06 M009	M0.9	0.225	4	3	0.64	2.6	50	6
4IMTM 0071 029 S06 M1	M1	0.25	4	3	0.71	2.9	50	6
4IMTM 0091 034 S06 M012	M1.2	0.25	4	3	0.91	3.4	50	6
4IMTM 0105 039 S06 M014	M1.4	0.3	4	3	1.05	3.9	50	6
4IMTM 012 045 S06 M016	M1.6	0.35	4	3	1.2	4.5	50	6
4IMTM 014 050 S06 M018	M1.8	0.35	4	3	1.4	5	50	6
4IMTM 0154 056 S06 M2	M2	0.4	4	3	1.54	5.6	50	6
4IMTM 0184 063 S06 M023	M2.3	0.4	4	3	1.84	6.3	50	6
4IMTM 0198 069 S06 M025	M2.5	0.45	4	3	1.98	6.9	50	6
4IMTM 0208 071 S06 M026	M2.6	0.45	4	3	2.08	7.1	50	6

외부 급유형 (Without coolant)

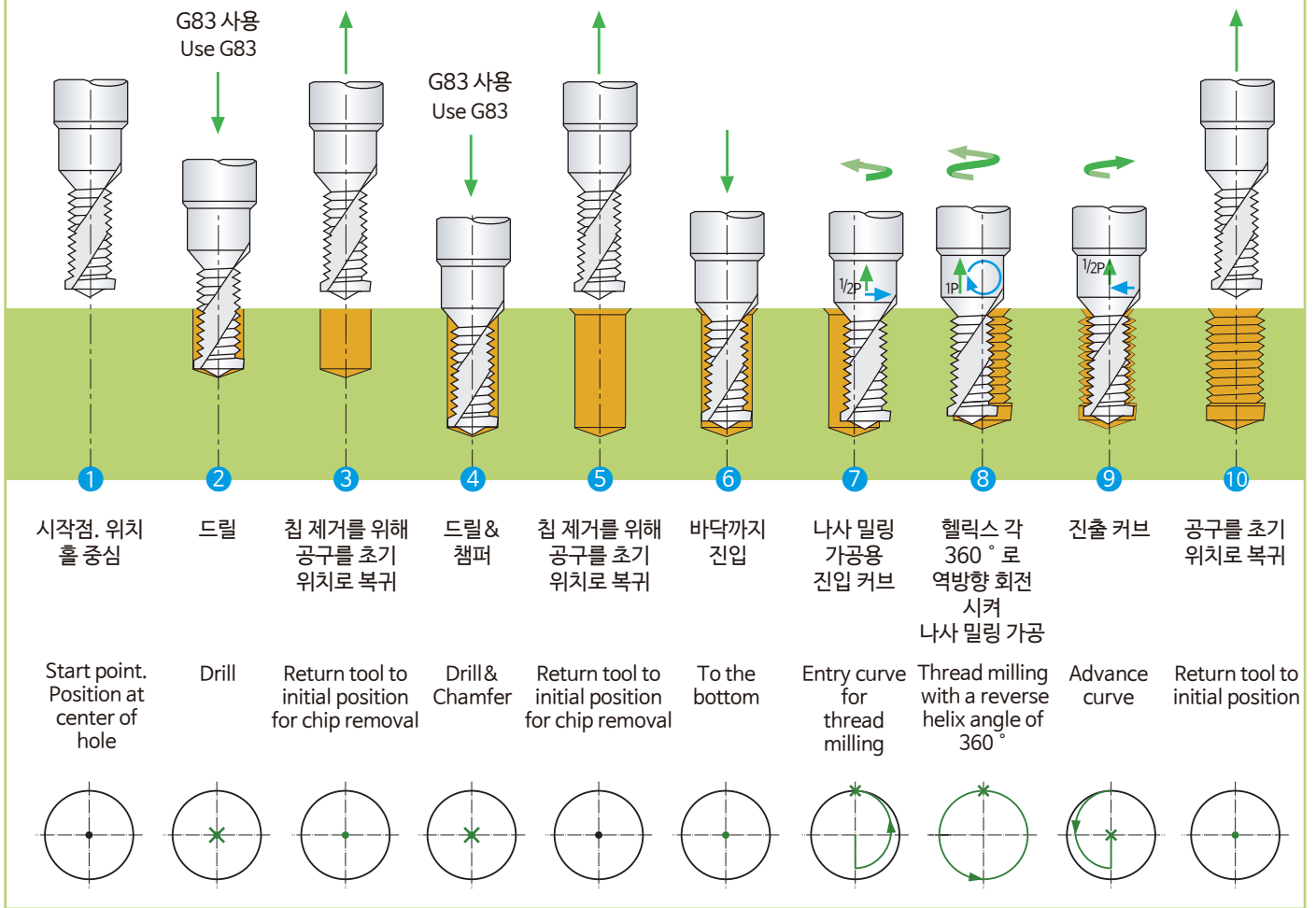
동작주기 Operating Cycle



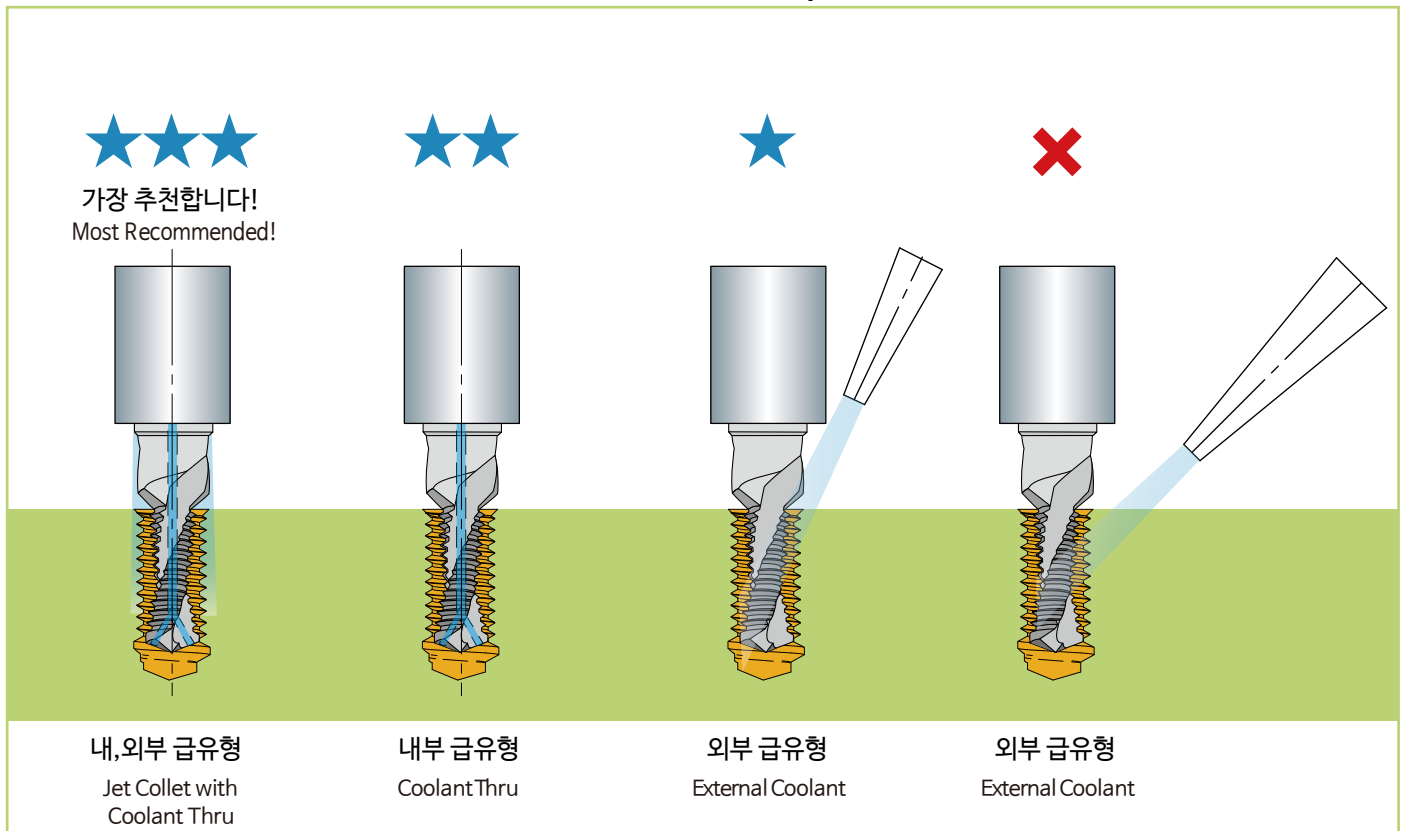
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



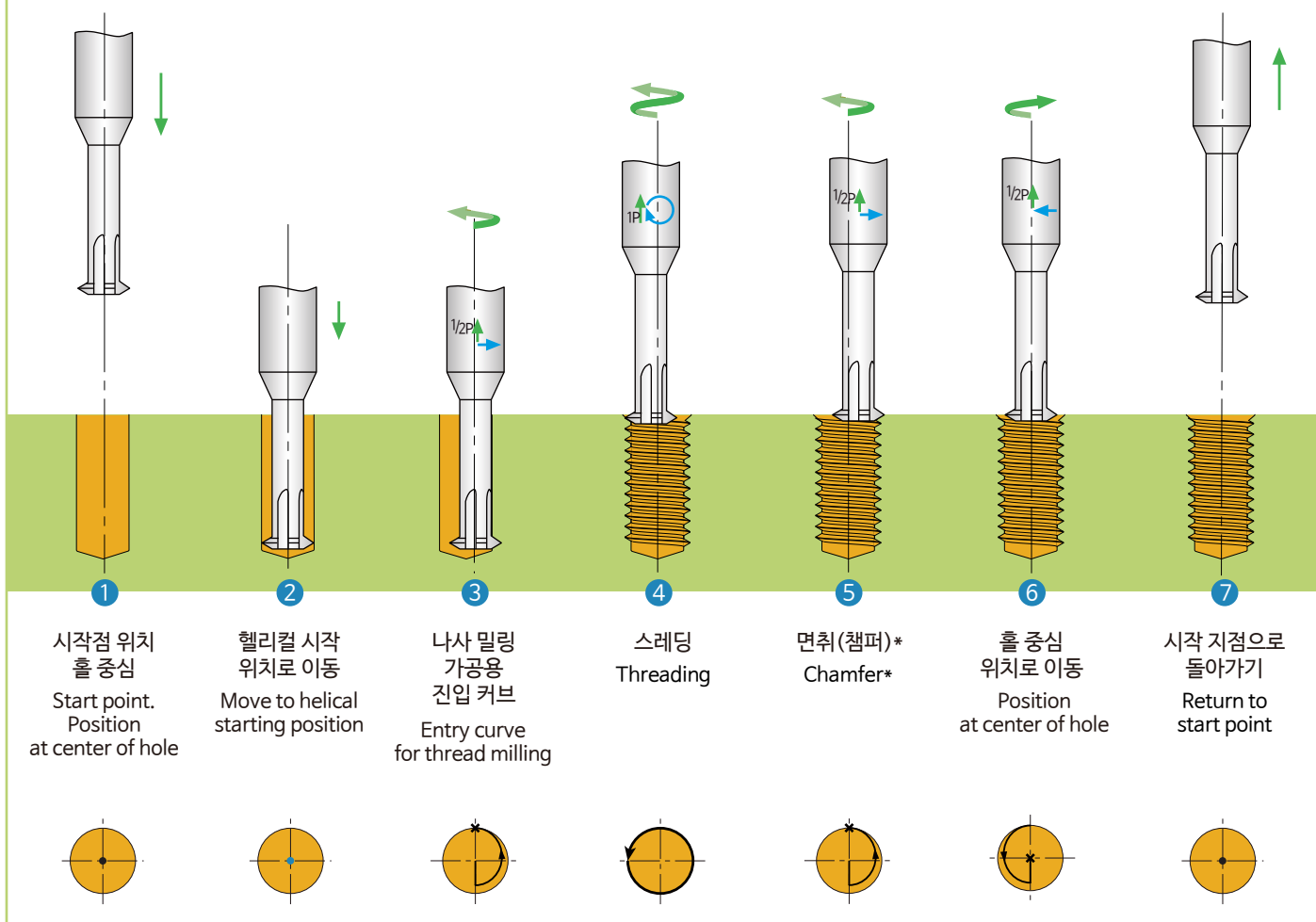
동작주기 - 외부 급유형 Operating Cycle (Without coolant)



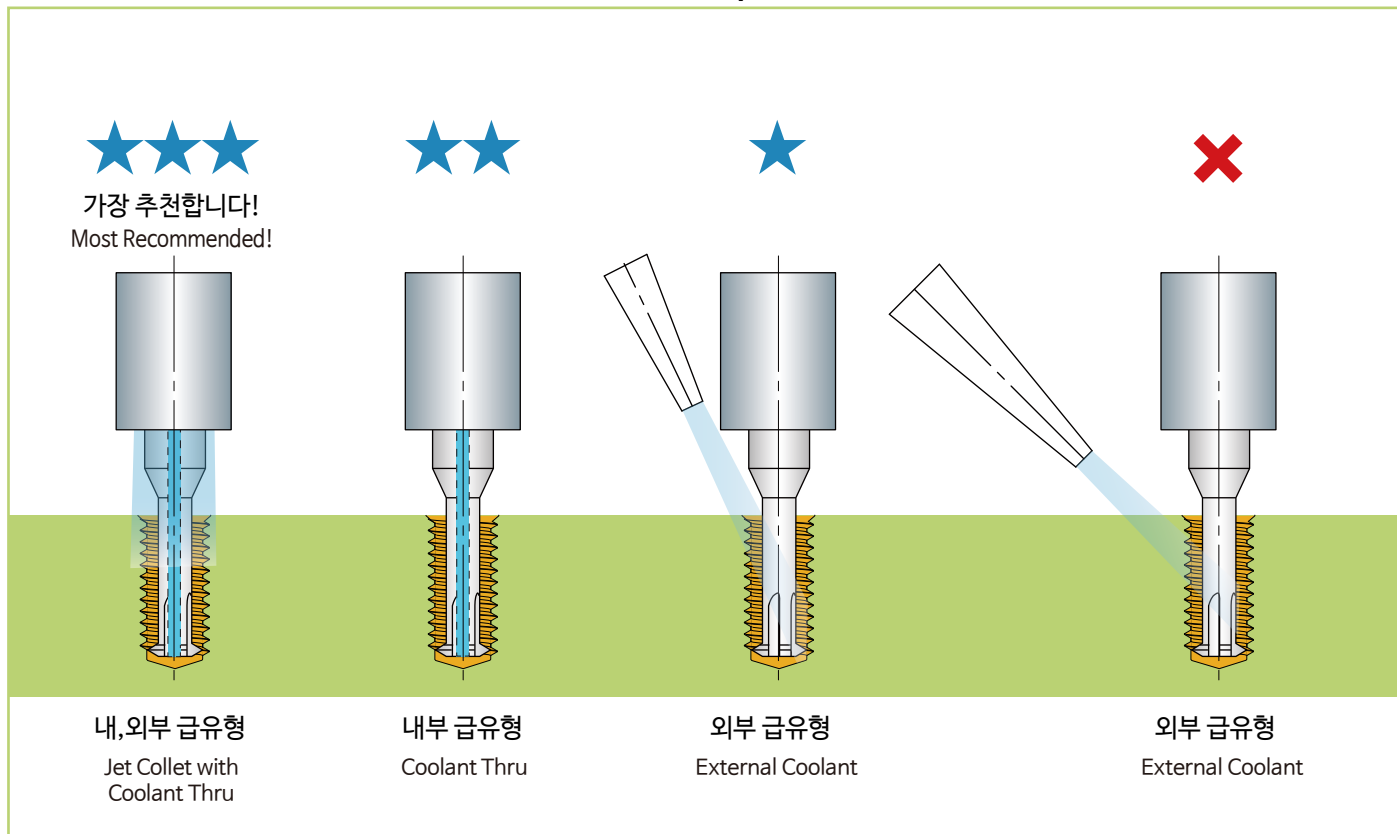
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Best Chip Evacuation



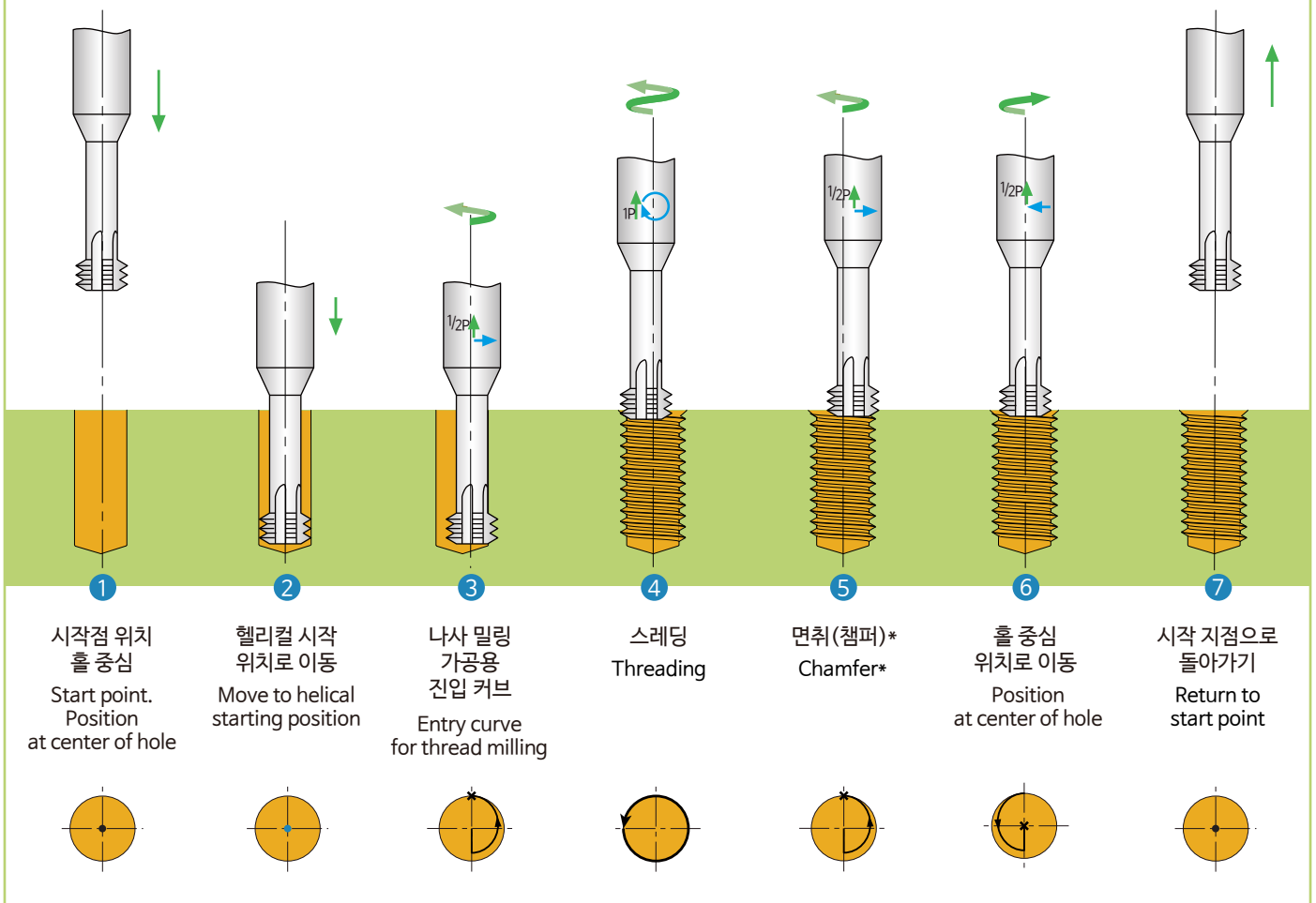
동작주기 Operating Cycle



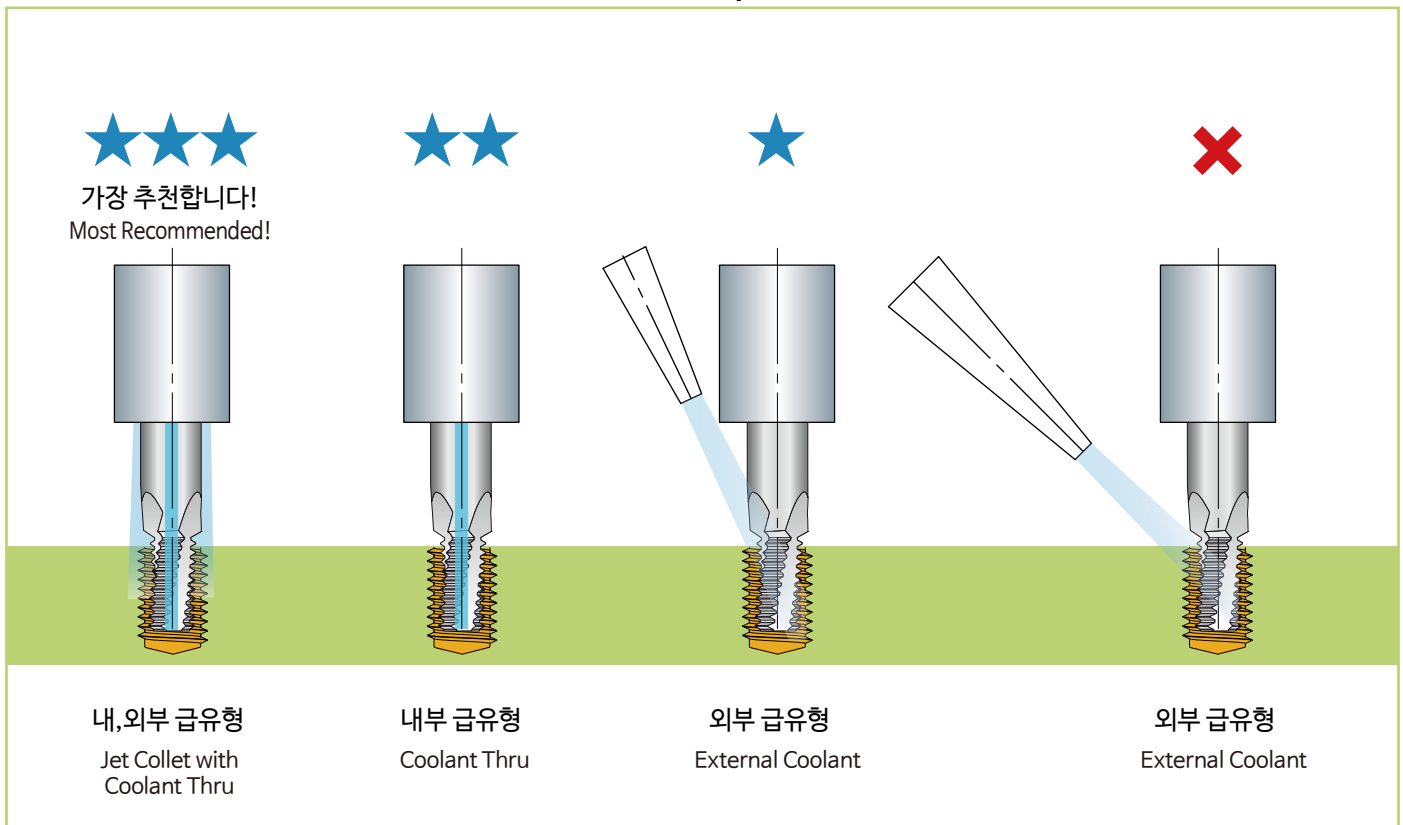
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



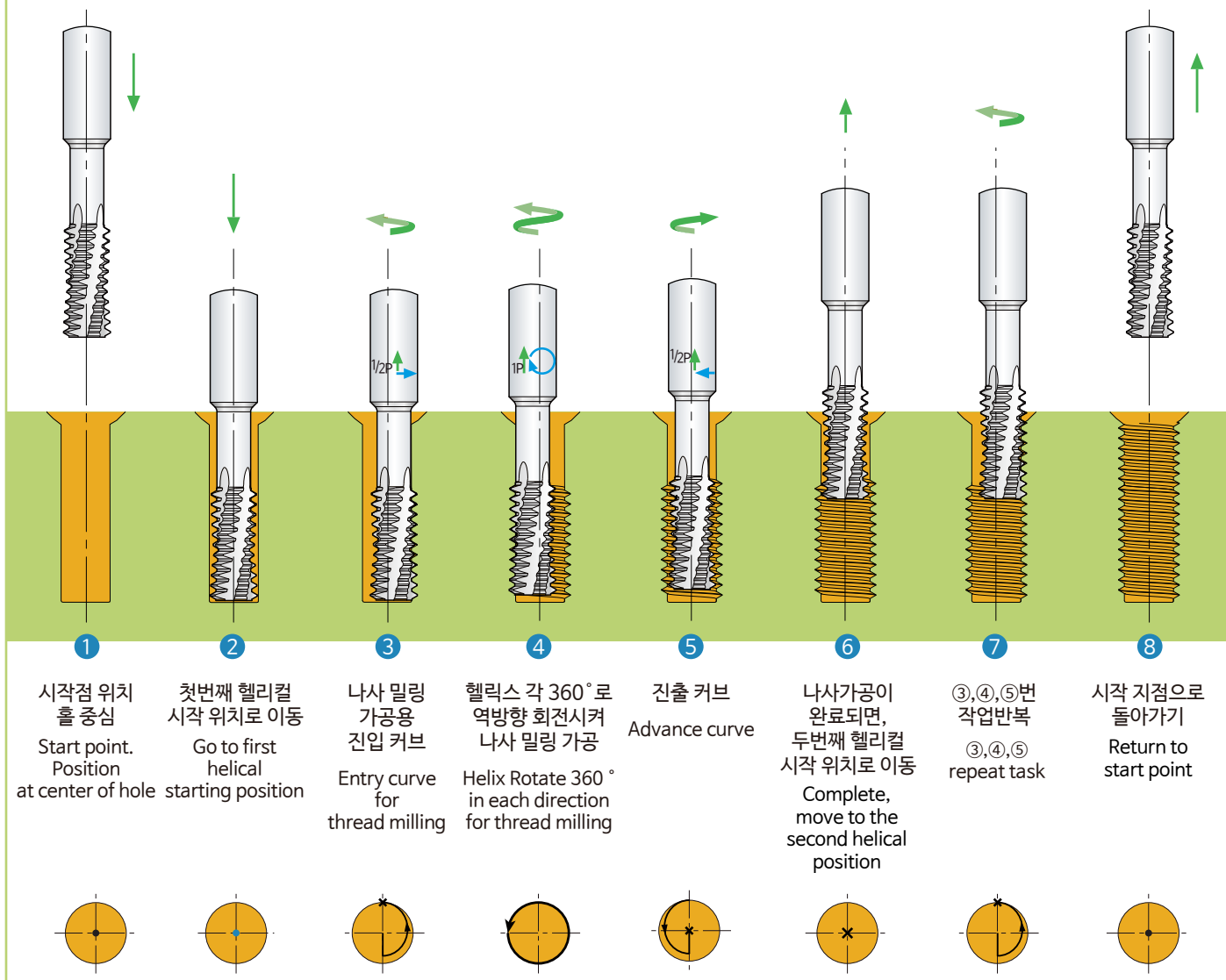
동작주기 Operating Cycle



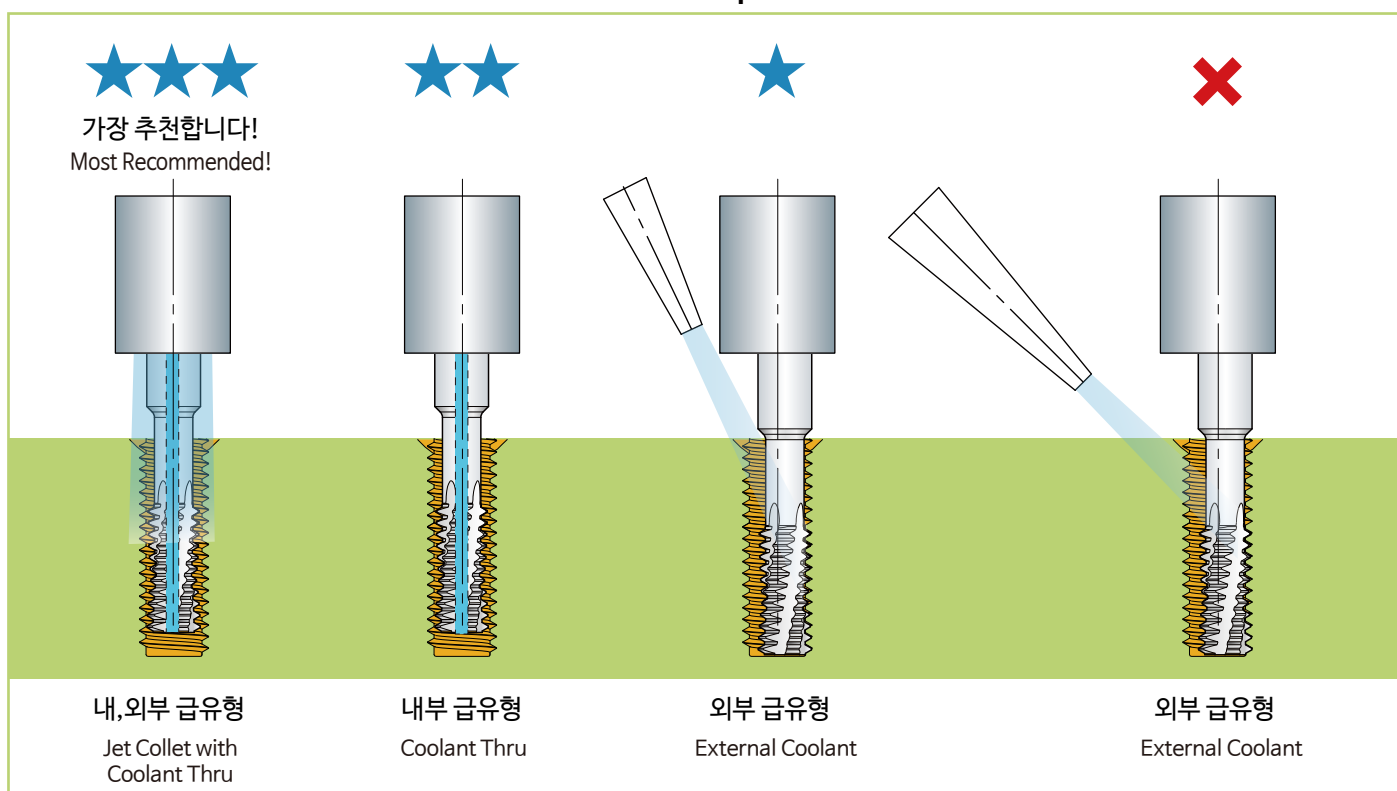
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



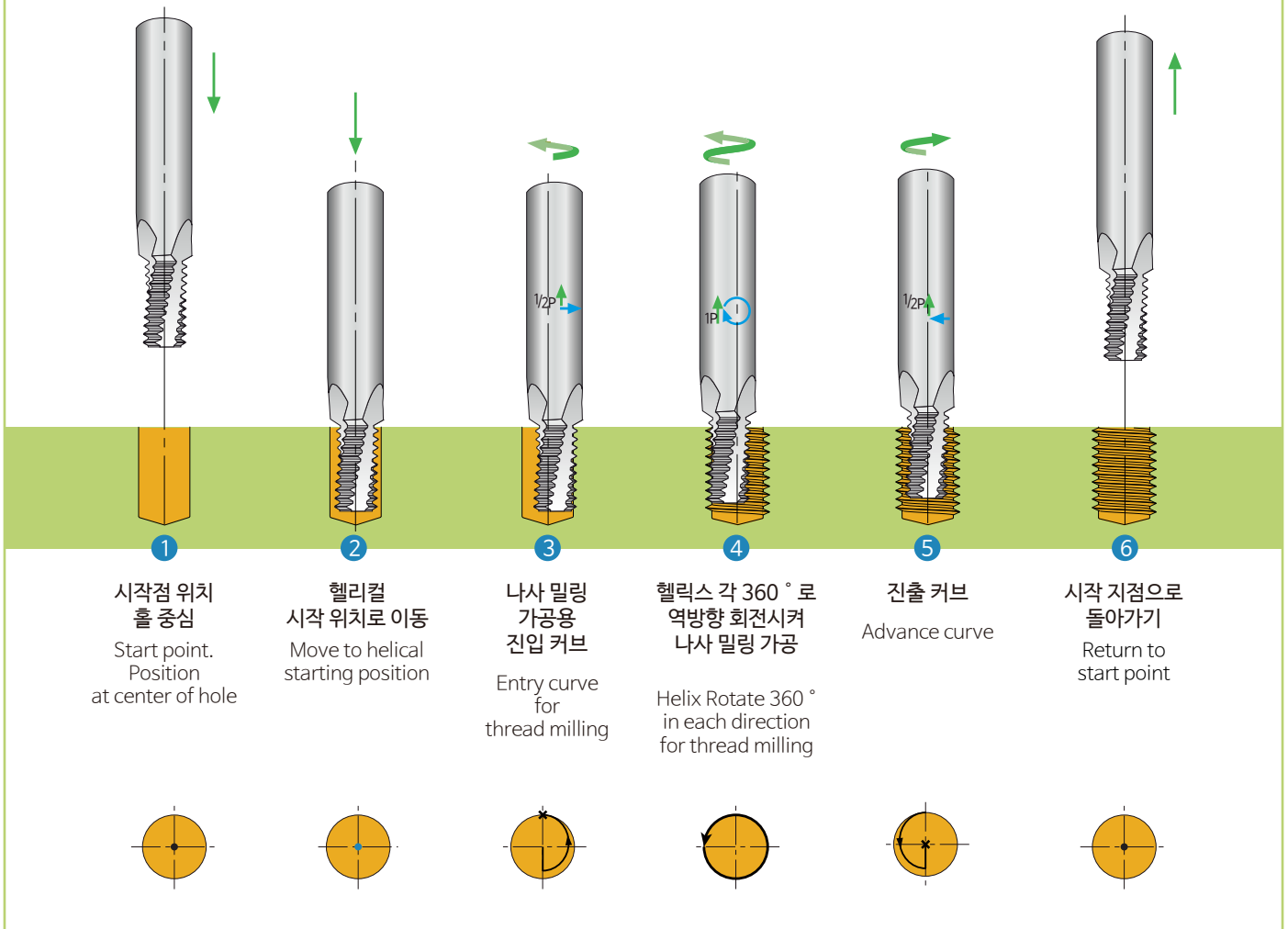
동작주기 Operating Cycle



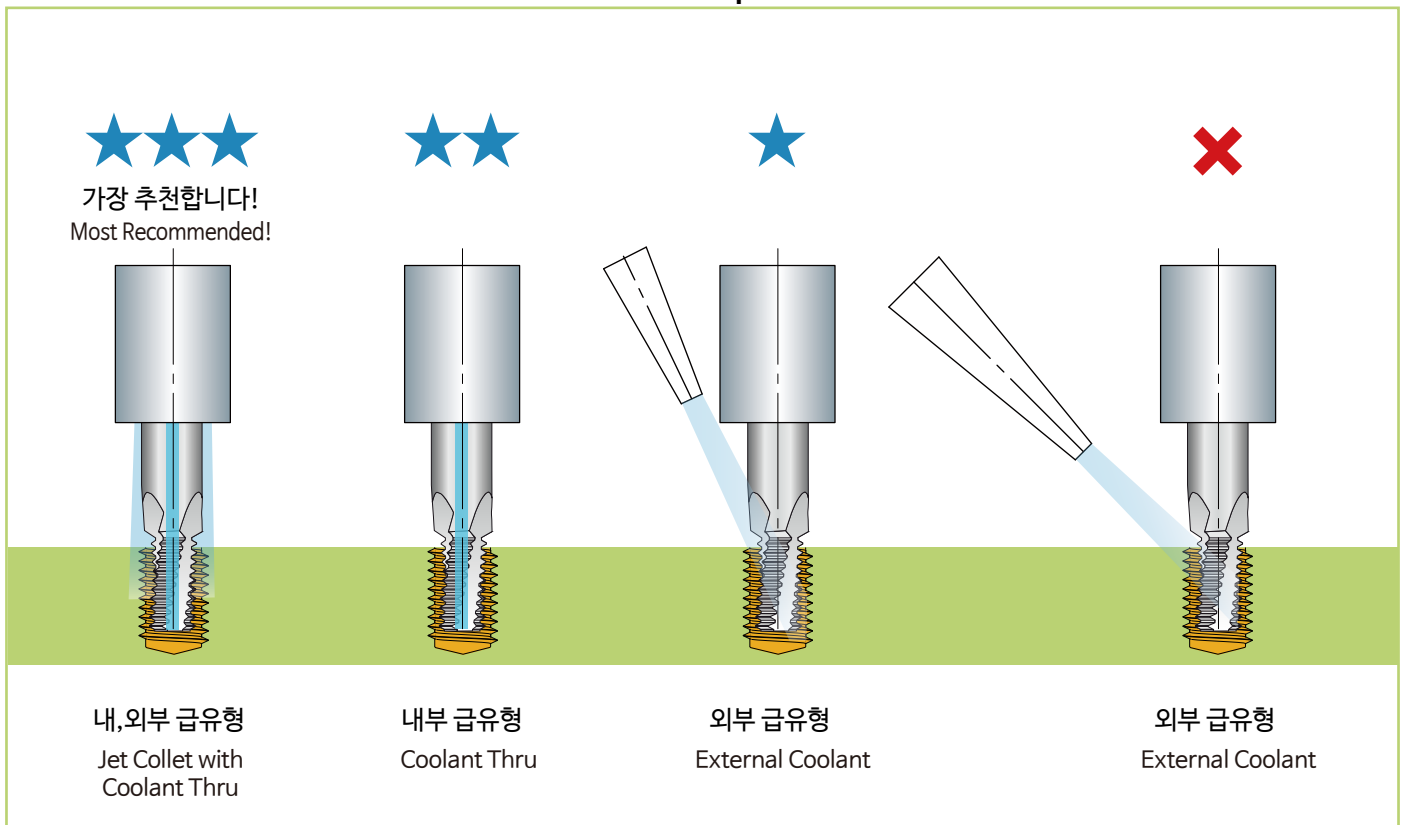
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



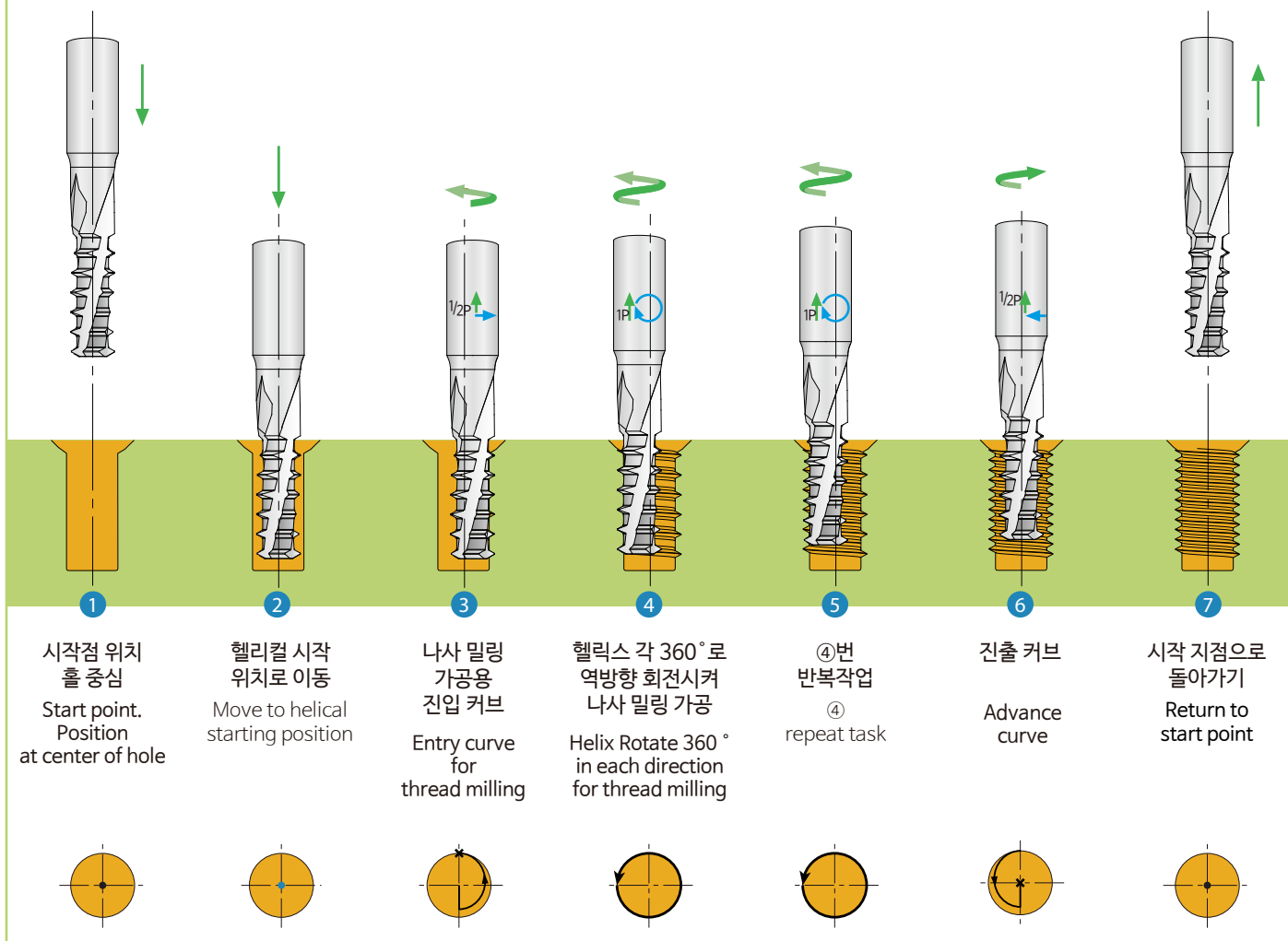
동작주기 Operating Cycle



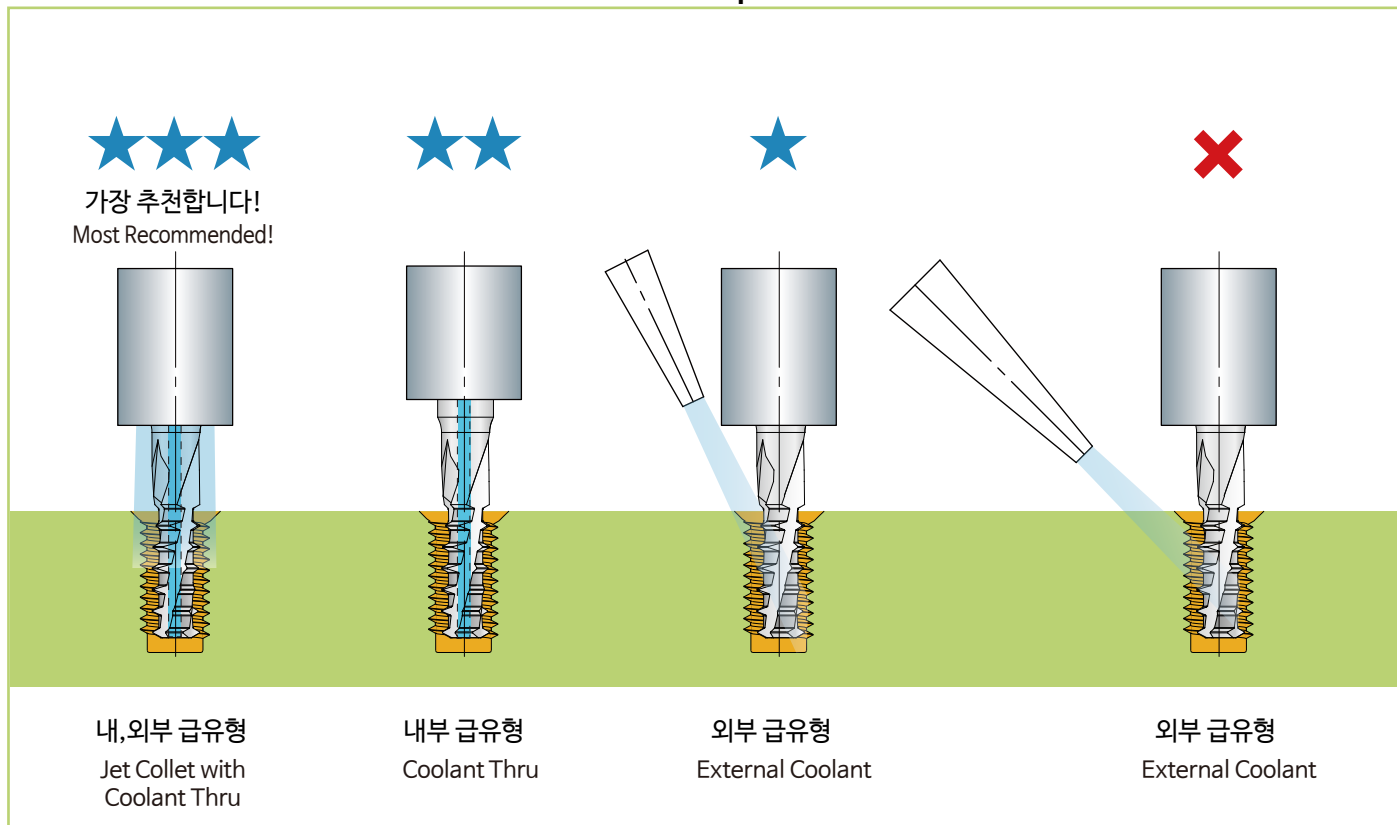
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



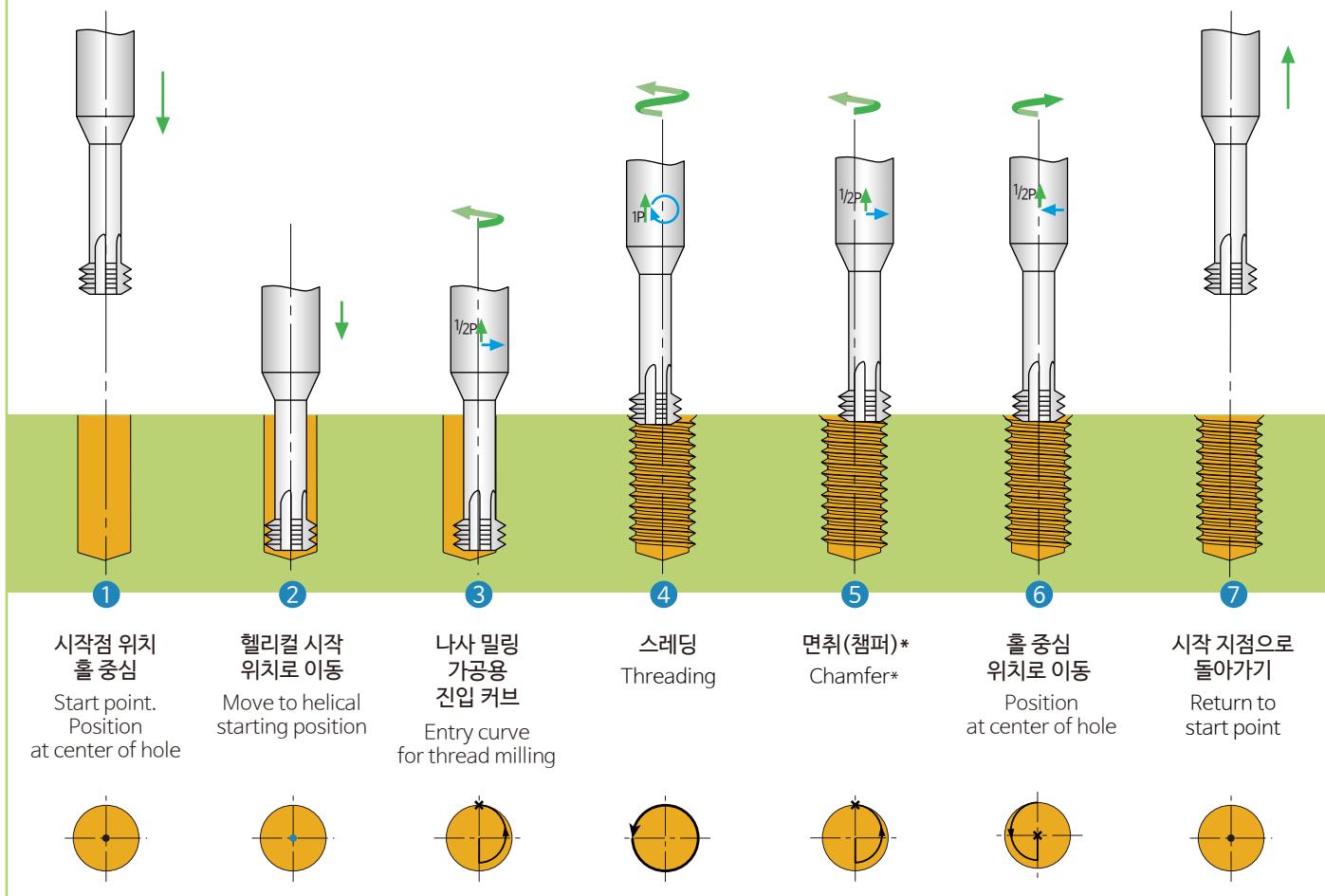
동작주기 Operating Cycle



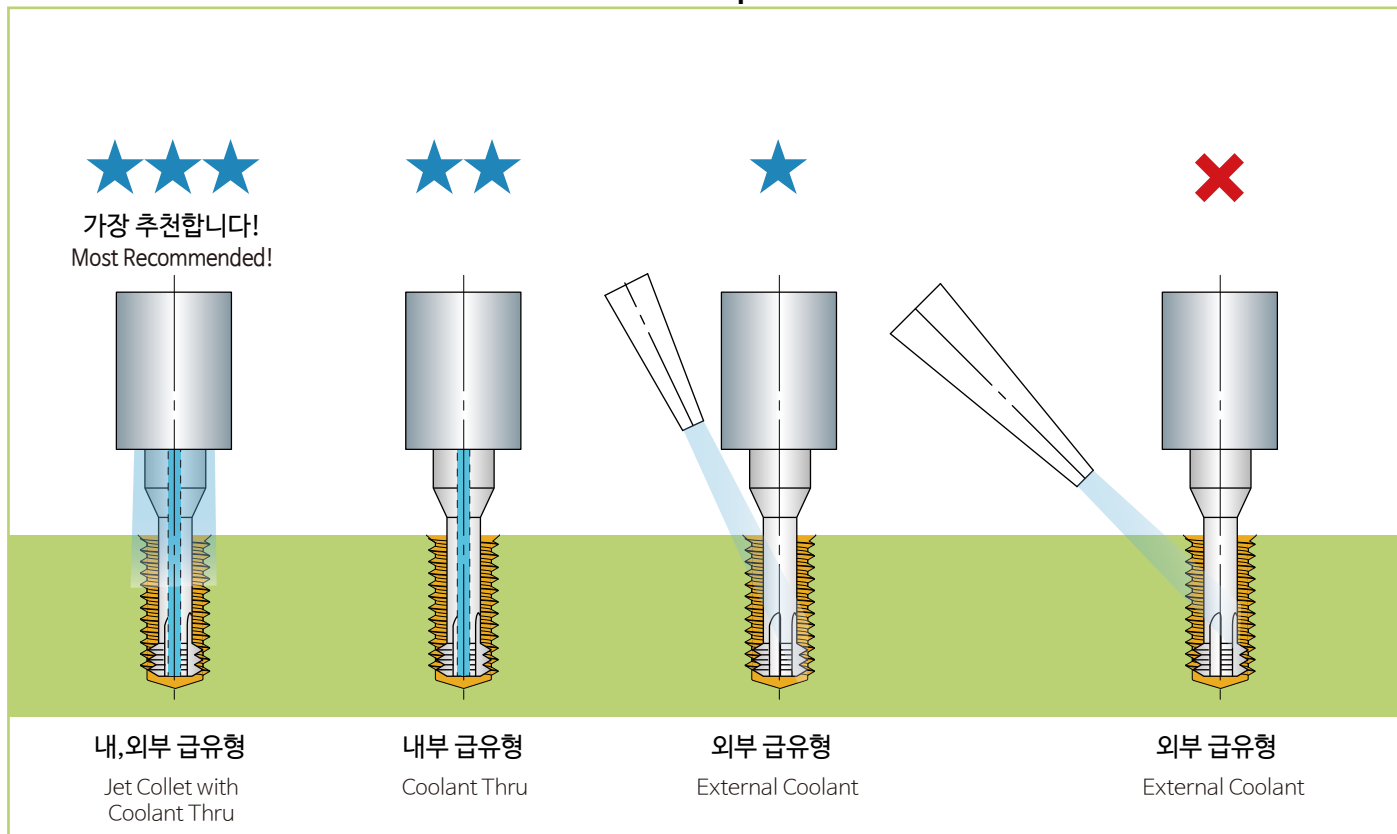
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



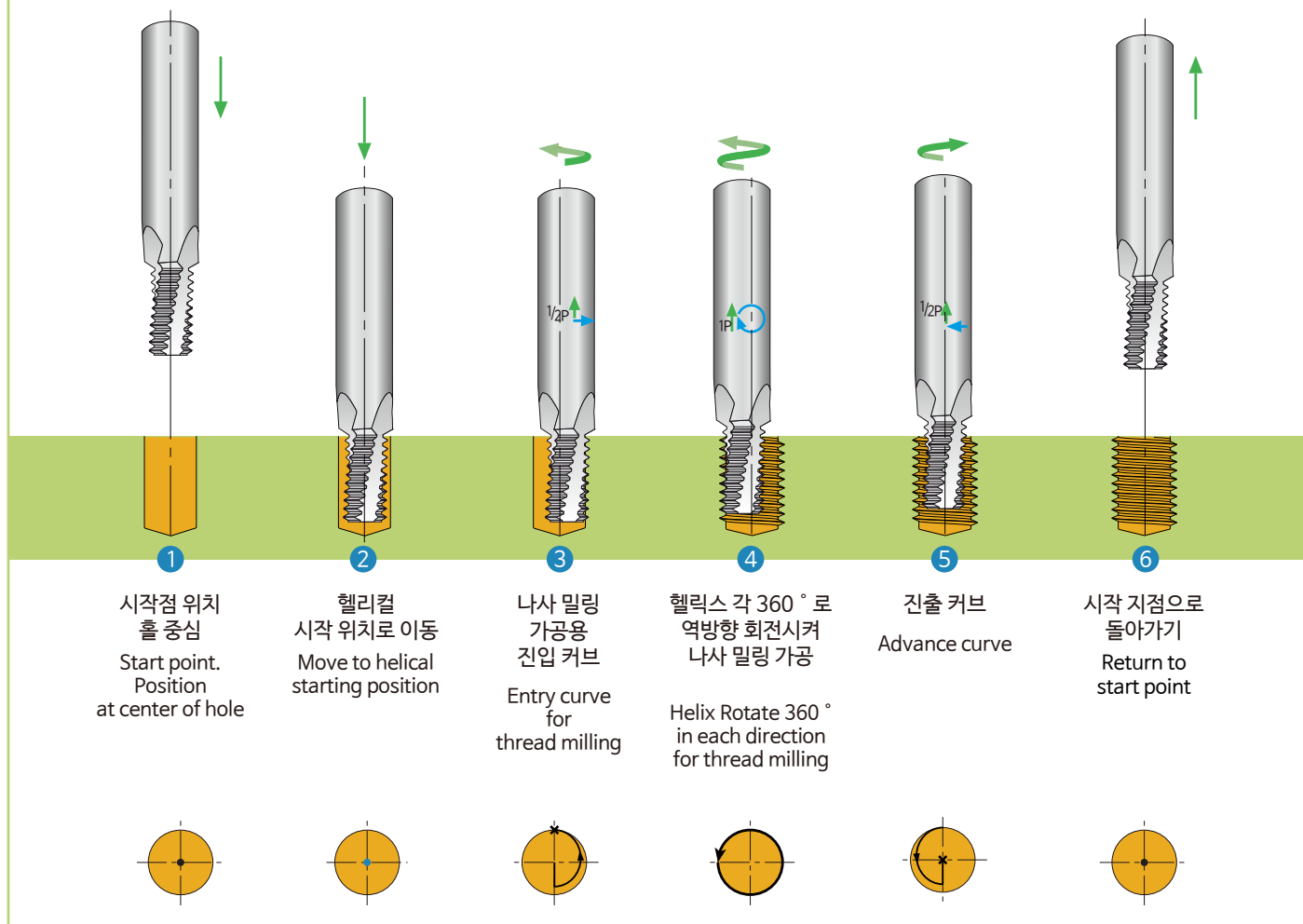
동작주기 Operating Cycle



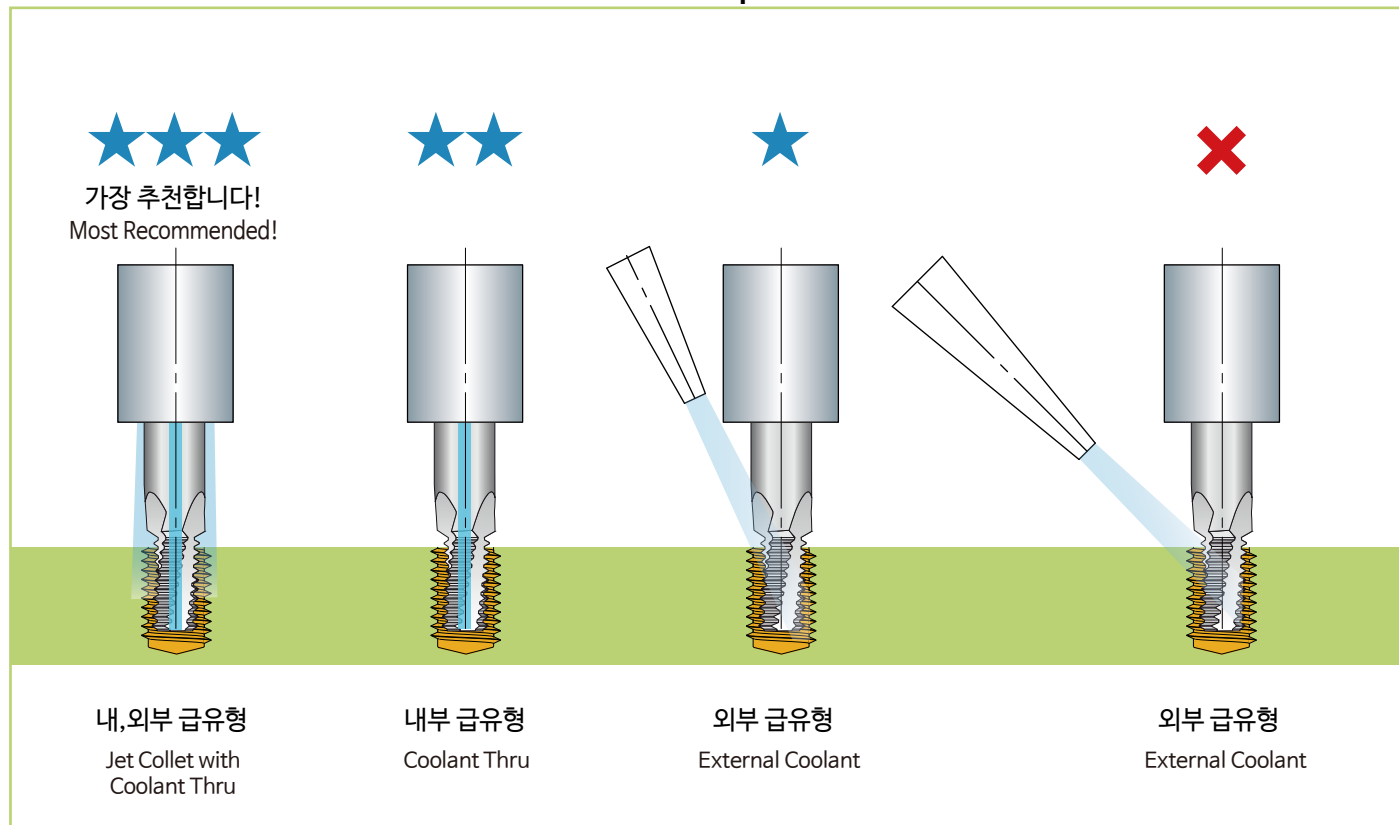
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



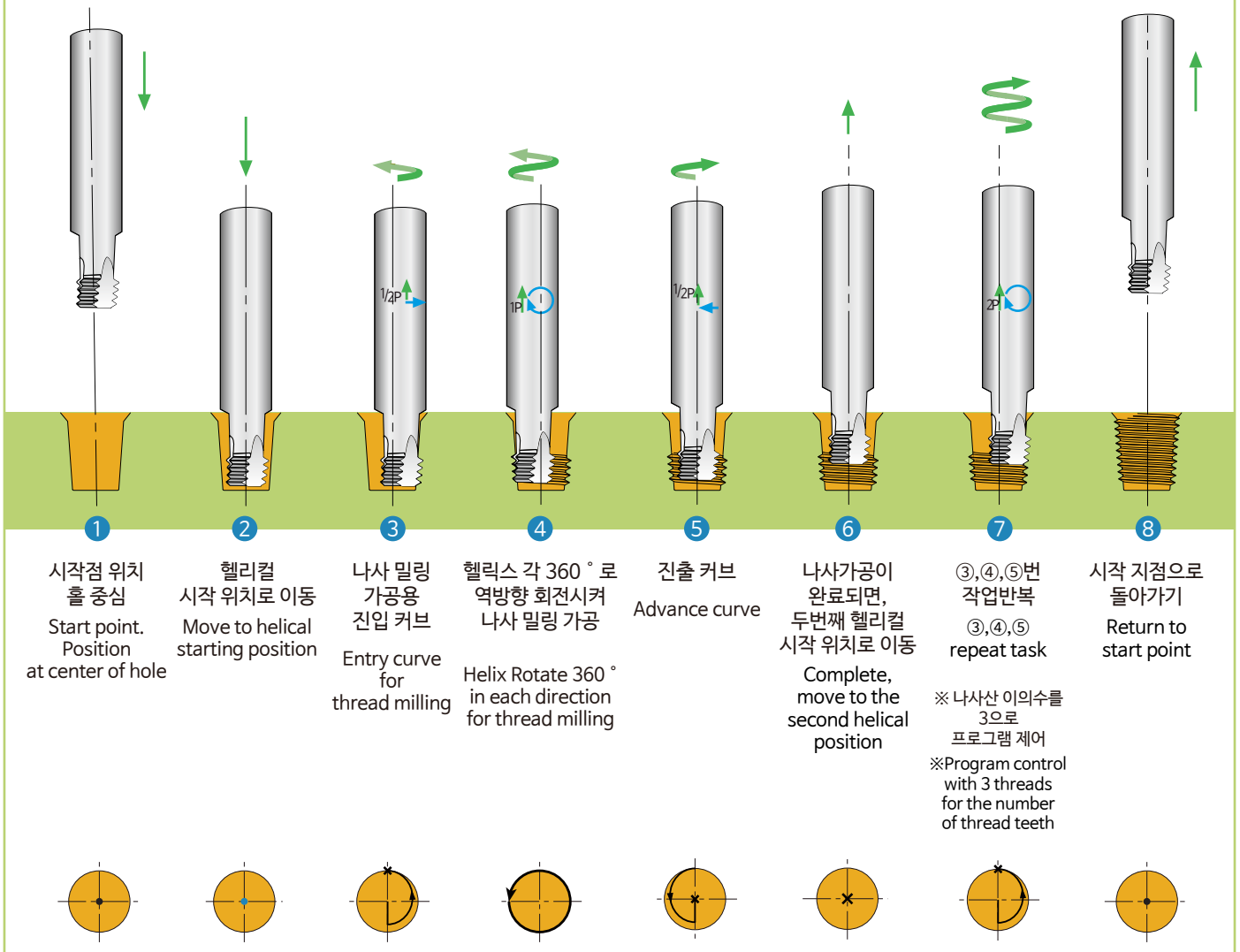
동작주기 Operating Cycle



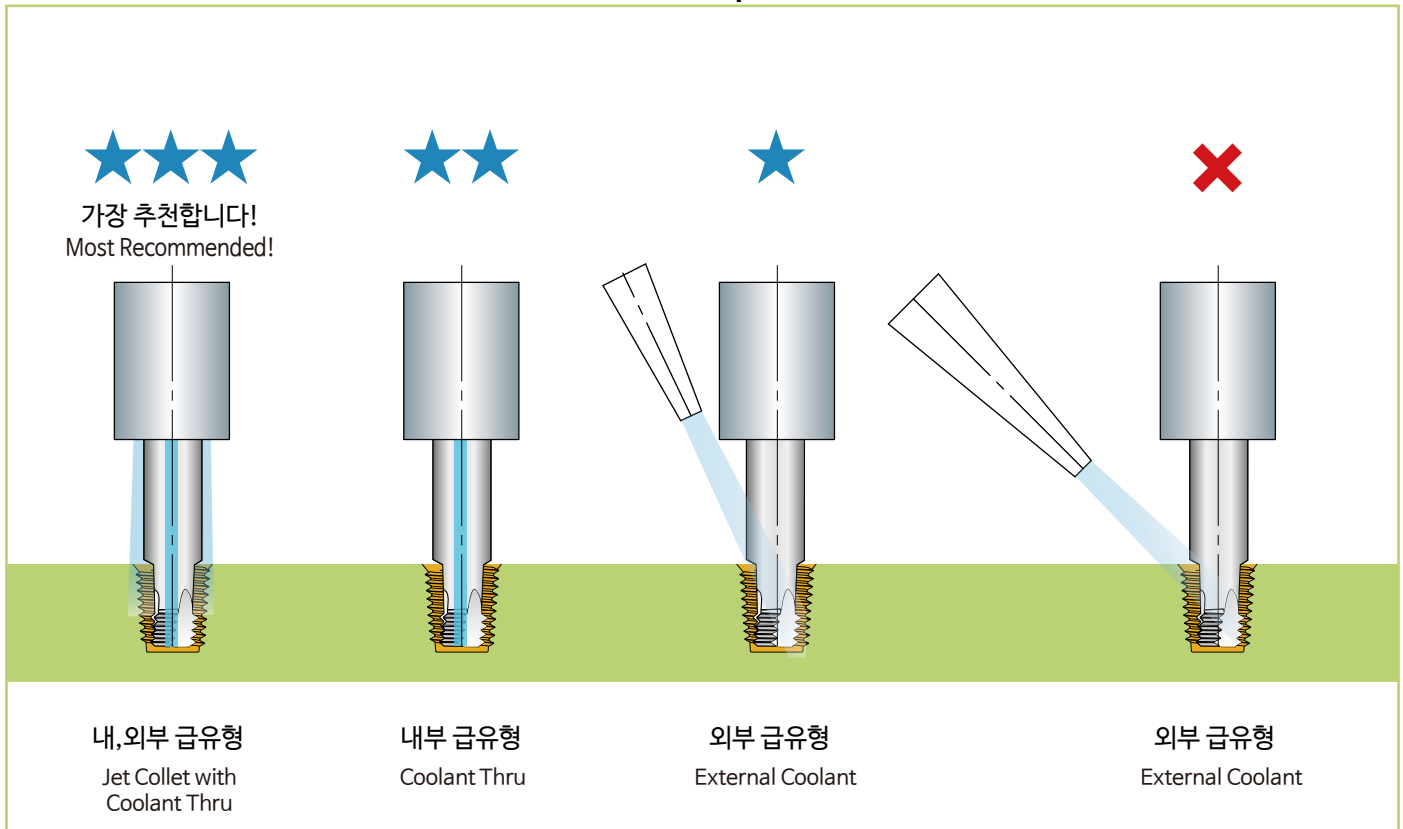
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



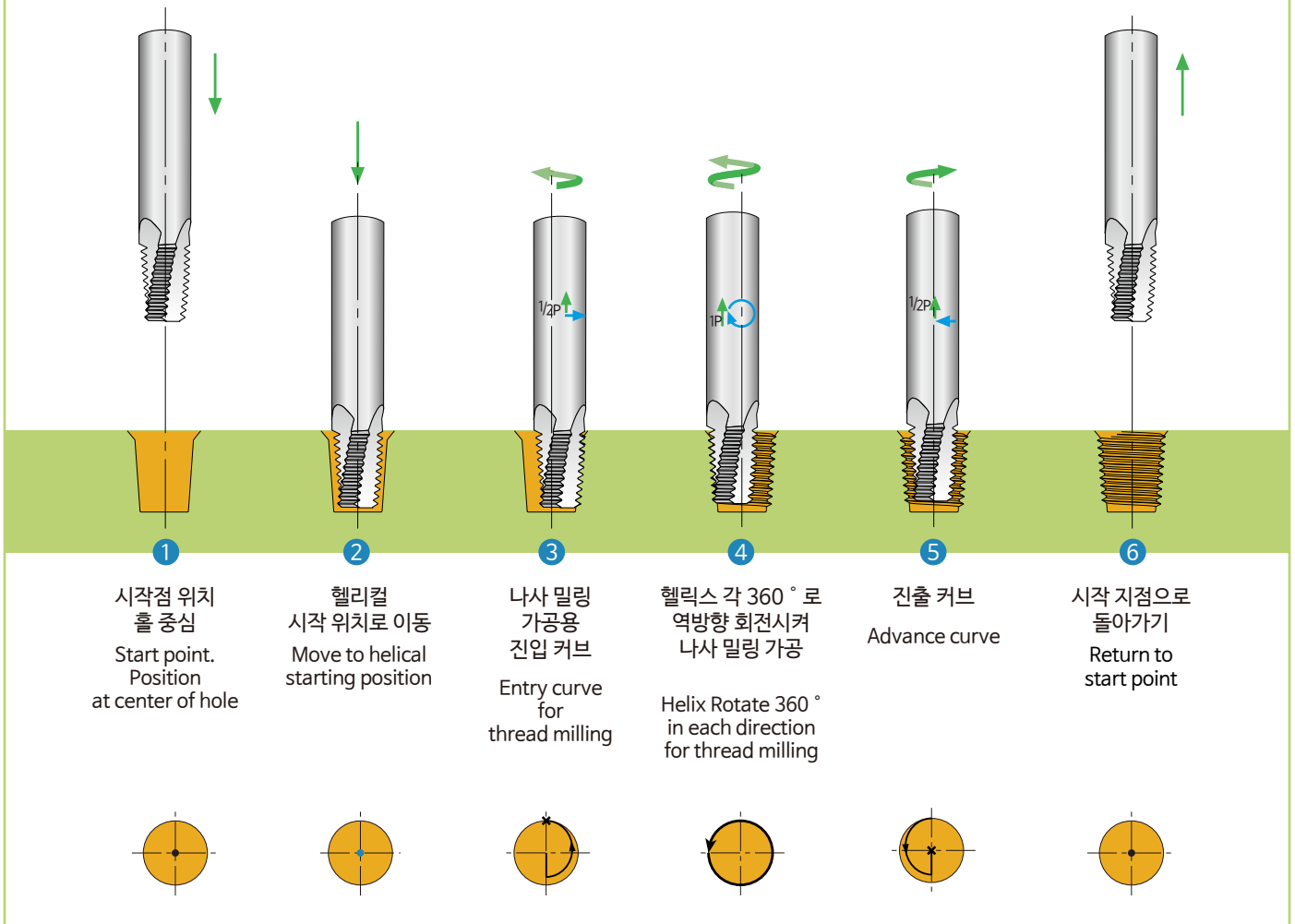
동작주기 Operating Cycle



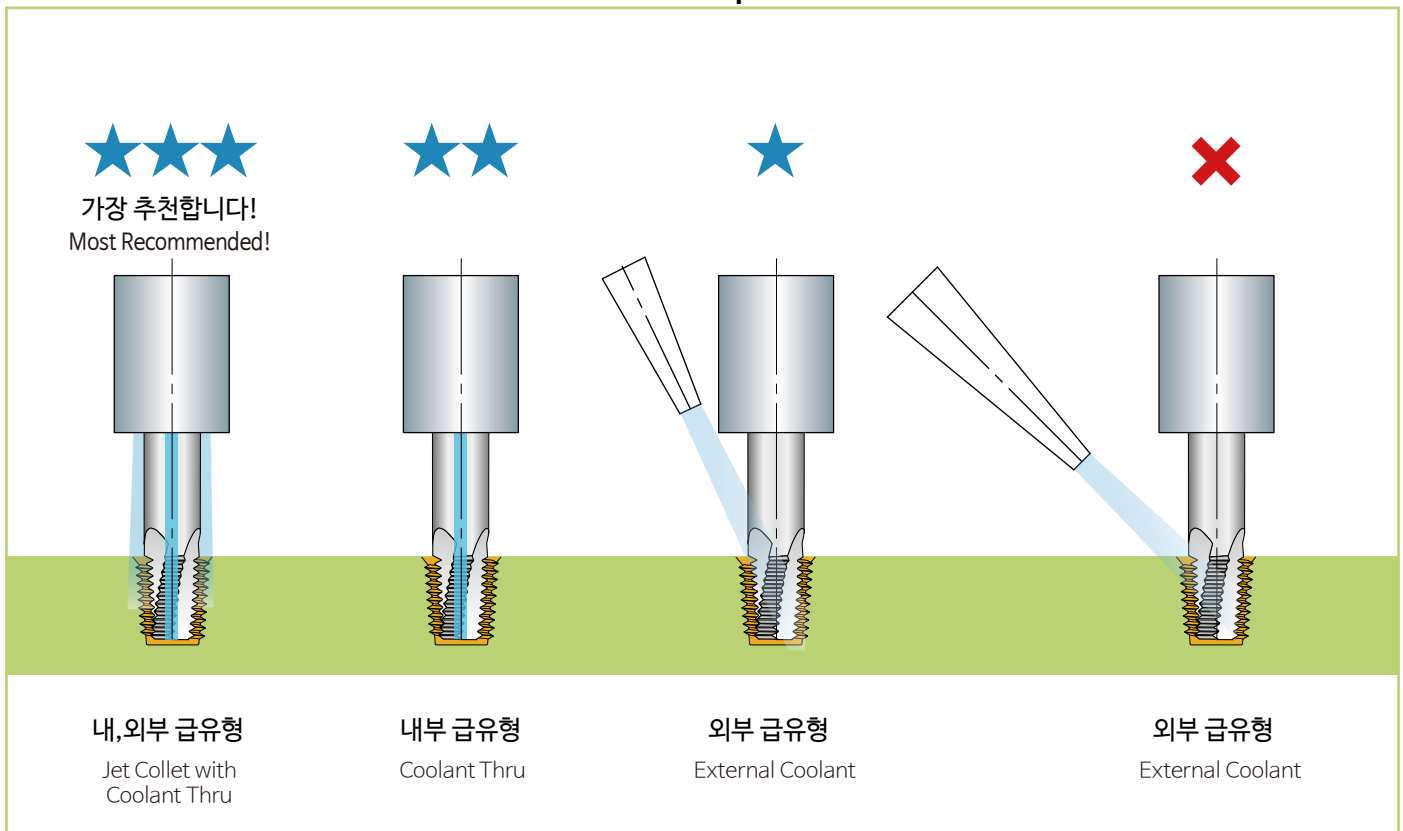
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



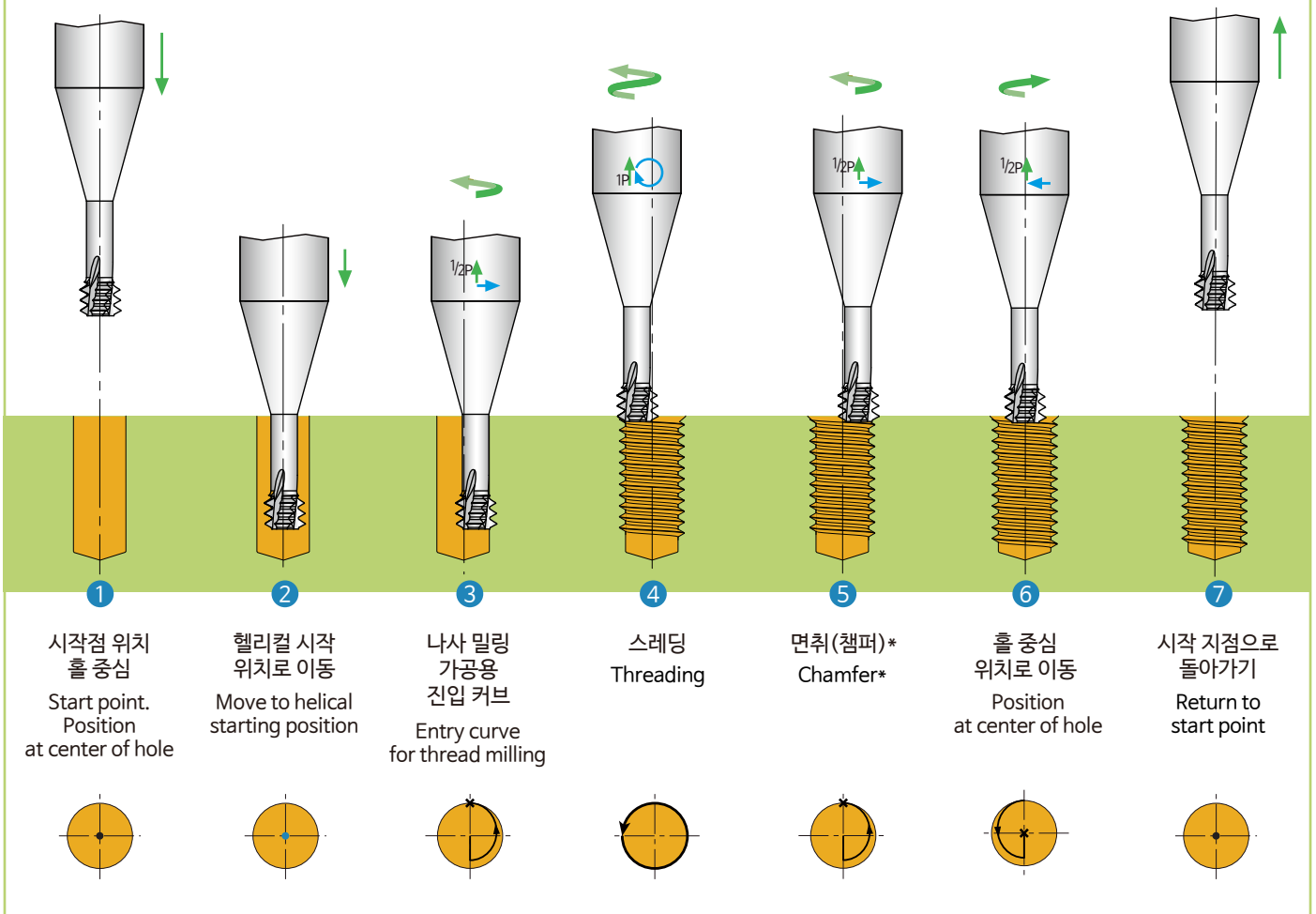
동작주기 Operating Cycle



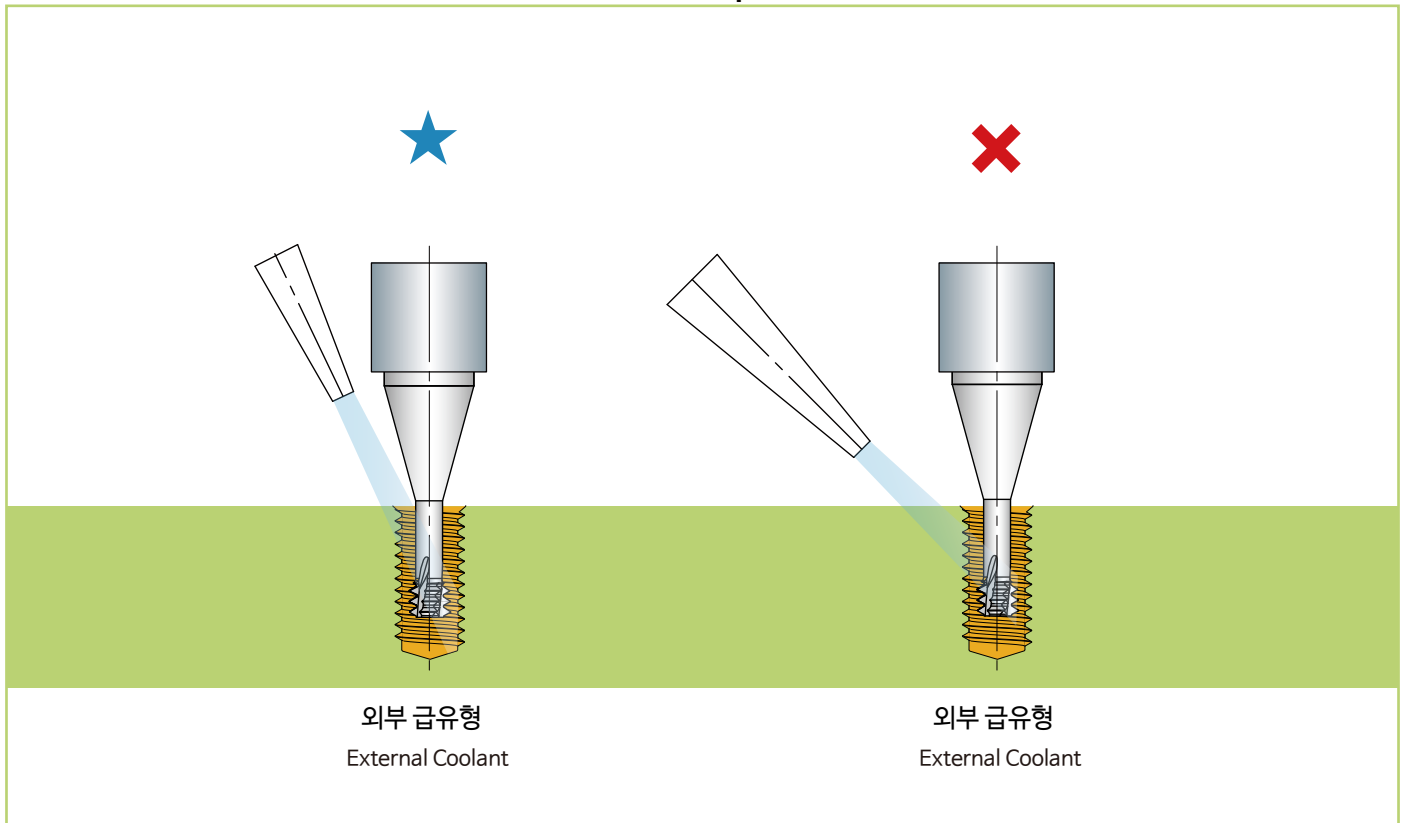
최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation



동작주기 Operating Cycle



최적의 칩 배출을 위한 냉각수 사용 Coolant Use for Chip Evacuation

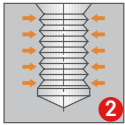


2DM 2DTMS 스레드밀 - 가능한 원인들



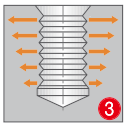
스레드 프로파일에 채워지거나 접착 된 칩 (Chips packed or glued at the thread profile)

- 열악한 냉각수 (Poor coolant)
- 냉각제 개선 (즉, 플러드 냉각제, 관통 구멍 용 측면 플루트 냉각제 공급 장치 추가)
Improve Coolant (i.e add flood coolant, lateral flute coolant supply for thru holes)
- 냉각수 플루트를 샹크에 추가하십시오.
Add coolant flutes on shank.



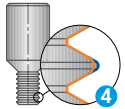
쓰레드 게이지는 피팅되지 않습니다. (Thread go-gage doesn't fit)

- 스레드가 너무 작음 (thread too small) → 오프셋 레지스터에서 공구 반경 감소 (Reduce tool radius in offset register)
- 스레드에 칩이 있음 (Chip in thread) → 냉각제 개선 (Improve coolant)



쓰레드가 점점 가늘어지고 있습니다. (Thread is getting tapered)

- 열악한 공구 클램핑 (Poor tool clamping)
- 공구 홀딩 (즉, 수축 끼워 맞춤 홀더) 개선 Improve tool holding (i.e shrink fit holders)
- 나사산 밀링 피드가 너무 높음 (thread milling feed too high) → 나사산 밀링 피드 감소 (reduce thread milling feed)
- 스레드 가공 횟수를 향상, 정삭으로 나눠서 가공
(Machining by dividing the number of thread machining into roughing and finishing)



불규칙한 공구 마모 (Erratic tool wear)

- 공구가 너무 많이 소모 됨 → 공구 홀더 (예 : 단축 장막 홀더)를 사용하십시오.
- 스레드에 칩이 있음 (Chip in thread) → 냉각제 개선 (Improve coolant)



카운터 보어 칩이 공구 주변에 감겨 있습니다.

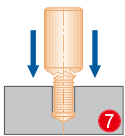
- (Counterbore chips are winding around the tool)
- 모따기 피드가 너무 낮음 (Chamfer feed too low)
- 모따기 피드가 증가합니다. (Increase chamfer feed)



시끄러운 드릴링 노이즈 (특히 최종 드릴링 깊이 방향)

Loud drilling noise (especially towards the final drilling depth)

- 칩 문제 (Chip problem)
- 드릴 이송 속도 감소 (reduce drill feed rate)
- 절삭유가 들어간 공구를 사용하십시오. (Use tool with coolant through)
- 펍주기 추가 (Add peck cycle)



드릴링 중 공구 파손 (특히 긴 칩핑 소재에서)

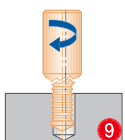
Tool breakage while drilling (especially in long chipping material)

- 칩 문제 (Chip problem)
- 드릴 이송 속도 감소 (reduce drill feed rate)
- 절삭유가 들어간 공구를 사용하십시오. (Use tool with coolant through)
- 펍주기 추가 (Add peck cycle)



틈새에 붙어있는 칩 (Chips glued up in the flutes)

- 열악한 냉각수 (Poor coolant)
- 냉각제 상황 개선 (Improve coolant situation)
- 절삭유가 들어간 공구를 사용하십시오. (Use tool with coolant through)
- 코팅 공구 사용 (Use coated tool)



쓰레드 밀링 중 공구 파손, 공구 파손 (Chippage, tool breakage while thread milling)

- 이송 속도 나사 밀링이 너무 높음 (feed rate thread milling too high)
- 보링 작업 후 칩 그루브에 칩이 없음을 확인하십시오
Check that the chip grooves are free of chips after the boring operation)
- 진동 (Vibrations)
- 이송 속도 감소 (NC피드가 중심점 또는 외부 트랙과 관련되는지 확인)
Reduce feed rate (Check whether Nc feeds relate to centre point or external track)



나사 표면이 좋지 않음 (고조파) Poor thread surface (harmonics)

- 진동 (Vibrations)
- 공구 홀더 확인 (모듈러 시스템을 사용하지 마십시오!)
(Check tool holder (do not use modular systems!))
- 공작물 클램핑 및 픽스처 확인. 클램핑 셋업이 불안정한 곳에서는 절삭력의 분포가 도입됩니다.
(Check workpiece clamping and fixture. Where the clamping set-up is unstable introduce a distribution of the cutting force.)
- 절단 속도 감소 (reduce cutting speed)
- 치아 이송 속도 증가 (Increase tooth feed rate)
- 절삭력의 분포를 소개 (Introduce distribution of cutting force)

유니파이 계열 나사직경(와이어 프레임)_ UNC

SIZE	T.P.I	B inch MAJ DIA	mm 환산시
NO. 2	56	0.1092	2.7737
NO. 3	48	0.1261	3.2029
NO. 4	40	0.1445	3.6703
NO. 5	40	0.1575	4.0005
NO. 6	32	0.1786	4.5364
NO. 8	32	0.2046	5.1968
NO. 10	24	0.2441	6.2001
NO. 12	24	0.2701	6.8605
1/4	20	0.315	8.001
5/16	18	0.3847	9.7714
3/8	16	0.4562	11.5875
7/16	14	0.5303	13.4696
1/2	13	0.5999	15.2375
9/16	12	0.6708	17.0383
5/8	11	0.7431	18.8747
3/4	10	0.8799	22.3495
7/8	9	1.0193	25.8902
1	8	1.1624	29.525
1 1/8	7	1.3106	33.2892
1 1/4	7	1.4356	36.4642
1 3/8	6	1.5914	40.4216
1 1/2	6	1.7164	43.5966

유니파이 계열 나사직경(와이어 프레임)_ UNF

SIZE	T.P.I	B inch MAJ DIA	mm 환산시
NO. 3	56	0.1092	2.7737
NO. 4	48	0.1261	3.2029
NO. 5	44	0.1445	3.6703
NO. 6	40	0.1575	4.0005
NO. 8	36	0.1786	4.5364
NO. 10	32	0.2046	5.1968
1/4	28	0.2441	6.2001
5/16	24	0.2701	6.8605
3/8	24	0.315	8.001
7/16	20	0.3847	9.7714
1/2	20	0.4562	11.5875
9/16	18	0.5303	13.4696
5/8	18	0.5999	15.2375
3/4	16	0.6708	17.0383
7/8	14	0.7431	18.8747
1	12	0.8799	22.3495
1 1/8	12	1.0193	25.8902
1 1/4	12	1.1624	29.525
1 3/8	12	1.3106	33.2892
1 1/2	12	1.4356	36.4642

밀리미터(mm) 계열 나사직경(와이어 프레임)

SIZE	C MM
M2 x 0.4	2.520
M2.2 x 0.45	2.785
M2.5 x 0.45	3.085
M3 x 0.5	3.650
M3.5 x 0.6	4.279
M4 x 0.7	4.909
M5 x 0.8	6.039
M6 x 1.0	7.299
M7 x 1.0	8.299
M8 x 1.0	9.299
M8 x 1.25	9.624
M9 x 1.25	10.624
M10 x 1.25	11.624
M10 x 1.5	11.949
M11 x 1.5	12.949
M12 x 1.25	13.624
M12 x 1.5	14.131
M12 x 1.75	14.273
M14 x 1.5	15.949
M14 x 2.0	16.598
M16 x 1.5	17.949
M16 x 2.0	18.598
M18 x 1.5	19.949
M18 x 2.0	20.598
M18 x 2.5	21.248
M20 x 1.5	21.949
M20 x 2.0	22.598
M20 x 2.5	23.248
M22 x 1.5	23.949
M22 x 2.0	24.598
M22 x 2.5	25.248
M24 x 2.0	26.598
M24 x 3.0	27.897
M27 x 3.0	30.897
M30 x 3.5	34.547
M33 x 3.5	37.547
M36 x 4.0	41.196

4ETM(R)

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		스테인레스강 Stainless steels SUS304 / SUS316		구조용강/탄소강/회주철 Structural steels / Carbon Steels / Gray cast irons SS/SC/FC		합금강/프리하드강 Alloy Steels / Pre-hardened Steels NAK80/KP4M	
경도 Hardness					~30HRc		40 ~ 45HRc	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
M3	120~250	0.02 ~ 0.03	70 ~ 80	0.01 ~ 0.015	60 ~ 70	0.01 ~ 0.015	45 ~ 55	0.005 ~ 0.01
M4		0.02 ~ 0.03		0.01 ~ 0.015		0.01 ~ 0.015		0.005 ~ 0.01
M5		0.02 ~ 0.03		0.01 ~ 0.015		0.01 ~ 0.015		0.005 ~ 0.01
M6		0.03 ~ 0.04		0.015 ~ 0.02		0.015 ~ 0.02		0.01 ~ 0.015
M8		0.03 ~ 0.04		0.015 ~ 0.02		0.015 ~ 0.02		0.01 ~ 0.015
M10		0.04 ~ 0.05		0.015 ~ 0.02		0.015 ~ 0.02		0.015 ~ 0.02
M12		0.04 ~ 0.05		0.015 ~ 0.02		0.015 ~ 0.02		0.015 ~ 0.02
M16~M23		0.05 ~ 0.07		0.025 ~ 0.03		0.025 ~ 0.03		0.015 ~ 0.02

2DTM

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		비철금속 Non-ferrous metal	
TAP	V/C	FZ	V/C	FZ
M3	200~250	0.03 ~ 0.04	250~300	0.03 ~ 0.04
M4		0.03 ~ 0.04		0.03 ~ 0.04
M5		0.03 ~ 0.04		0.03 ~ 0.04
M6		0.04 ~ 0.05		0.04 ~ 0.05
M8		0.04 ~ 0.05		0.04 ~ 0.05
M10		0.05 ~ 0.06		0.05 ~ 0.06
M12		0.06 ~ 0.07		0.06 ~ 0.07
M16		0.06 ~ 0.07		0.06 ~ 0.07

4IMTM

피삭재 Work Material	티타늄 합금 Titanium Alloys	
TAP	V/C	FZ
M0.8 ~ M1	20 ~ 60	0.005 ~ 0.01
M1 ~ M2		0.005 ~ 0.01
M 2.5		0.005 ~ 0.01
M 2.6		0.005 ~ 0.01

4TRTM(S)

피삭재 Work Material	스테인레스강 Stainless steels SUS304 / SUS316		일반구조강 / 패삭강 Mild Steels / Free cutting steels HP / SM		구조용강/탄소강/회주철 Structural steels / Carbon Steels / Gray cast irons SS/SC/FC		공구강 / 금형강 Tool steels / Mold steels SCM / HPM	
경도 Hardness			~ 200HB		~ 30HRc		30 ~ 40HRc	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
Tr8, Tr9	70 ~ 80	0.02 ~ 0.03	60 ~ 70	0.02 ~ 0.03	50 ~ 60	0.01 ~ 0.02	40 ~ 50	0.01 ~ 0.02
Tr10, Tr11		0.02 ~ 0.03		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
Tr12, Tr14		0.03 ~ 0.04		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
Tr12		0.03 ~ 0.04		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
Tr14, Tr22		0.03 ~ 0.04		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
Tr16, Tr18, Tr20		0.03 ~ 0.04		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
Tr22, Tr24, Tr26		0.03 ~ 0.04		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03

- 파지력이 좋은 열박음 척 사용을 추천합니다.
- 떨림방지를 위한 부등분할 설계로, 공구 진입 시 f_1 (mm/tooth) 기준으로 나사가공 이송대비 50% 수준으로 낮춰 주십시오.
- 상기 절삭조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건변경 요망 합니다.
- 절삭시 내,외부 급유형 쿨런트 사용을 추천합니다.
- Using shrink-fit chuck with great holding power is recommended.
- When the tool approaches the work material, reduce the feed by 50%.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Internal and external coolants are recommended for milling.

추천 절삭조건표 Recommended Cutting Conditions

4MTM

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	120 ~ 250	0.03 ~ 0.04	70 ~ 85	0.01 ~ 0.02	50 ~ 60	0.01 ~ 0.02	40 ~ 50	0.008 ~ 0.01
M2		0.03 ~ 0.04		0.01 ~ 0.02		0.01 ~ 0.02		0.008 ~ 0.01
M3		0.03 ~ 0.04		0.01 ~ 0.02		0.01 ~ 0.02		0.01 ~ 0.02
M4		0.04 ~ 0.05		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
M6		0.04 ~ 0.05		0.02 ~ 0.03		0.02 ~ 0.03		0.02 ~ 0.03
M8		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
M10		0.06 ~ 0.07		0.05 ~ 0.06		0.02 ~ 0.03		0.02 ~ 0.03
M12		0.06 ~ 0.07		0.05 ~ 0.06		0.03 ~ 0.04		0.03 ~ 0.04

4BSP(T)

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 ~ 58HRC	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
1/16/28C	120 ~ 250	0.04 ~ 0.05	70 ~ 85	0.02 ~ 0.03	50 ~ 60	0.02 ~ 0.03	40 ~ 50	0.02 ~ 0.03
1/4/19C		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
1/2/14C		0.06 ~ 0.07		0.05 ~ 0.06		0.02 ~ 0.03		0.02 ~ 0.03
1"/11C		0.06 ~ 0.07		0.05 ~ 0.06		0.03 ~ 0.04		0.03 ~ 0.04

4HBSP

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		스테인레스강 Stainless steels SUS304 / SUS316		구조용강/탄소강/회주철 Structural steels / Carbon Steels / Gray cast irons SS/SC/FC		합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M	
경도 Hardness					~ 30 HRC		40 ~ 45HRC	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
1/16/28C	120 ~ 150	0.03 ~ 0.04	70 ~ 85	0.02 ~ 0.03	50 ~ 65	0.01 ~ 0.02	40 ~ 50	0.01 ~ 0.02
1/4/19C		0.03 ~ 0.04		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
1/2/14C		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
1"/11C		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03

- 파지력이 좋은 열박음 척 사용을 추천 합니다.
- 떨림방지를 위한 부등분할 설계로, 공구 진입 시 f1 (mm/tooth) 기준으로 나사가공 이송대비 50% 수준으로 낮춰 주십시오.
- 상기 절삭조건은 참고 수치이므로, 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건변경 요망 합니다.
- 절삭시 내,외부 급유형 쿨런트 사용을 추천합니다.
- Using shrink-fit chuck with great holding power is recommended.
- When the tool approaches the work material, reduce the feed by 50%.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Internal and external coolants are recommended for milling.

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

추천 절삭조건표

Recommended Cutting Conditions

4BSTM

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		스테인레스강 Stainless steels SUS304 / SUS316		구조용강/탄소강/회주철 Structural steels / Carbon Steels / Gray cast irons SS/SC/FC		합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M	
경도 Hardness					~30HRc		40~45HRc	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
1/16.28C BSPT	120 ~ 150	0.03 ~ 0.04	70 ~ 85	0.02 ~ 0.03	50 ~ 65	0.01 ~ 0.02	40 ~ 50	0.01 ~ 0.02
1/8.28C BSPT		0.03 ~ 0.04		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
1/4.19C BSPT		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
3/8.19C BSPT		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
1/2(3/4).14C BSPT		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
1".11C BSPT		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03

4NPTS

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
1/16.27C	120 ~ 250	0.04 ~ 0.05	70 ~ 85	0.02 ~ 0.03	50 ~ 60	0.02 ~ 0.03	40 ~ 50	0.02 ~ 0.03
1/4.18C		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
1/2.14C		0.06 ~ 0.07		0.05 ~ 0.06		0.02 ~ 0.03		0.02 ~ 0.03
1".11.5C		0.06 ~ 0.07		0.05 ~ 0.06		0.03 ~ 0.04		0.03 ~ 0.04

4NPTM

피삭재 Work Material	알루미늄 합금 Aluminum alloys AL7075		스테인레스강 Stainless steels SUS304 / SUS316		구조용강/탄소강/회주철 Structural steels / Carbon Steels / Gray cast irons SS/SC/FC		합금강 / 프리하든강 Alloy Steels / Pre-hardened Steels NAK80 / KP4M	
경도 Hardness					~30HRc		40 ~ 45HRc	
TAP	V/C	FZ	V/C	FZ	V/C	FZ	V/C	FZ
1/16.27C NPT	120 ~ 150	0.03 ~ 0.04	70 ~ 85	0.02 ~ 0.03	50 ~ 85	0.01 ~ 0.02	40 ~ 50	0.01 ~ 0.02
1/8.27C NPT		0.03 ~ 0.04		0.02 ~ 0.03		0.01 ~ 0.02		0.01 ~ 0.02
1/4.18C NPT		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
3/8.18C NPT		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03
1/2(3/4).14C NPT		0.05 ~ 0.06		0.03 ~ 0.04		0.02 ~ 0.03		0.02 ~ 0.03

절삭조건 계산공식

회전수 (N) : $N = 1000 \times V / \pi \times D$

V : 절삭속도
 π : 3.14(원주율)
D : 공구직경

분당이송 : $F = f \times Z \times N$

f : 회전당 이송
z : 날 수
N : 회전 수

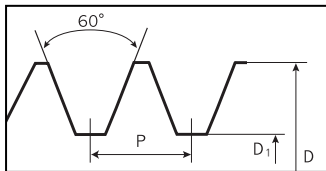
- 절삭하는 피삭재에 따라 절입 횟수를 변경하십시오.(열처리 강 나사 가공 시 3회 이상의 절입을 권장합니다.)
- 나사플러그 게이지 측정 후 경 보정값을 수정하십시오.
- 긴 유효장 타입의 제품을 사용 시 나사가공 이송속도를 줄여주십시오.
- 가급적 열박음 척을 추천 합니다.
- 공구 진입 시 이송 f(mm/tooth)을 나사가공 이송 대비 30% 수준으로 낮춰주십시오.
- 상기 절삭조건은 참고 수치입니다. 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건변경 요망합니다.

- Change the number of feeds according to the workpiece material.
(Three or more feeds are recommended for thread milling of hardened steel.)
- Modify the diameter correction value after measuring the gauge of screw plug.
- When using the tool with long effective length, please reduce the speed of threading feed.
Shrink fit chuck is recommended.
- During the approach of the tool to the workpiece, please reduce the feed F value (mm/tooth) to 30% of the feed for threading.
- The above cutting condition is just for reference.
- You may modify depending on the processing shape, purpose of processing, and the machine you use.

나사산 예비 가공 홀 직경 - 탭가공 / 스레드 밀링

나사의 종류 및 기호

나사의 종류		기호	나사산 각도	규격	
미터 나사	보통 나사	M	60°	JIS B 0205	
	가는 나사			JIS B 0207	
항공 우주용 미터 나사	보통 나사	MJ	60°	ISO 5855	JIS B 0206
유니파이 나사	보통 나사	UNC	60°	ANSI B1.1	JIS B 0208
	가는 나사	UNF			
	아주 가는 나사	UNEF			
	특수 나사	UNS			
항공 우주용 인치 나사	보통 나사	UNJC	60°	MIL-S-8879	
	가는 나사	UNJF			
	아주 가는 나사	UNJEF			
	특수 나사	UNJ			
관용 테이퍼 나사	미국식 관용 테이퍼 나사	NPT	60°	ANSI/ASEM B1.20.1	
	미국식 드라이쉴 관용 테이퍼 나사	NPTF		ANSI B1.20.3	
	영국식 관용 테이퍼 나사	PT(Rc)	55°	JIS B 0203	
관용 평행 나사	기계 결합용 관용 평행 나사	PF(G)	55°	JIS B 0202	
	내밀 용 관용 평행 나사	PS(Rp)		JIS B 0203	
영국 워트워스 나사	보통나사	BSW	55°	BS 84	



M, UNC, UNF, UNEF 도면

M 미터법 ISO 미세 나사산
DIN 13 및 DIN ISO 965-1

D		D ₁		
직경 Diameter	피치 Pitch	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
1	0.25	0.729	0.785	0.75
1.1	0.25	0.829	0.885	0.85
1.2	0.25	0.929	0.985	0.95
1.4	0.3	1.075	1.142	1.1
1.6	0.35	1.221	1.321	1.25
1.7	0.35	1.321	1.421	1.35
1.8	0.35	1.421	1.521	1.45
2	0.25	1.729	1.785	1.75
2	0.4	1.567	1.679	1.6
2.2	0.25	1.929	1.985	1.95
2.2	0.45	1.713	1.838	1.75
2.3	0.25	2.029	2.085	2.05
2.3	0.4	1.813	1.938	1.85
2.5	0.35	2.121	2.221	2.15
2.5	0.45	2.013	2.138	2.05
2.6	0.45	2.113	2.238	2.15
3	0.25	2.729	2.785	2.75
3	0.35	2.621	2.721	2.65
3	0.5	2.459	2.599	2.5
3.5	0.35	3.121	3.221	3.15
3.5	0.6	2.85	3.01	2.9
4	0.35	3.621	3.721	3.65
4	0.5	3.459	3.599	3.5
4	0.7	3.242	3.422	3.3
4.5	0.5	3.959	4.099	4
4.5	0.75	3.688	3.878	3.7
5	0.35	4.621	4.721	4.65
5	0.5	4.459	4.599	4.5
5	0.75	4.188	4.378	4.2
5	0.8	4.134	4.334	4.2

D		D ₁		
직경 Diameter	피치 Pitch	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
6	0.5	5.459	5.599	5.5
6	0.75	5.188	5.378	5.25
6	1	4.917	5.153	5
7	0.5	6.459	6.599	6.5
7	0.75	6.188	6.378	6.25
7	1	5.917	6.153	6
8	0.5	7.459	7.599	7.5
8	0.75	7.188	7.378	7.25
8	1	6.917	7.153	7
8	1.25	6.647	6.912	6.8
9	0.75	8.188	8.378	8.25
9	1	7.917	8.153	8
9	1.25	7.647	7.912	7.8
10	0.5	9.459	9.599	9.5
10	0.75	9.188	9.378	9.25
10	1	8.917	9.153	9
10	1.25	8.647	8.912	8.75
10	1.5	8.376	8.676	8.5
11	1	9.917	10.153	10
11	1.5	9.376	9.676	9.5
12	0.5	11.459	11.599	11.5
12	1	10.917	11.153	11
12	1.25	10.647	10.912	10.75
12	1.5	10.376	10.676	10.5
12	1.75	10.106	10.441	10.2
13	1	11.917	12.153	12
14	0.75	13.188	13.378	13.2
14	1	12.917	13.153	13
14	1.25	12.647	12.912	12.75
14	1.5	12.376	12.676	12.5

D		D _i		
직 경 Diameter	피 치 Pitch	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
14	2	11.835	12.21	12
15	1	13.917	14.153	14
15	1.5	13.376	13.676	13.5
16	0.75	15.188	15.378	15.2
16	1	14.917	15.153	15
16	1.25	14.647	14.912	14.8
16	1.5	14.376	14.676	14.5
16	2	13.835	14.21	14
17	1	15.917	16.153	16
18	1	16.917	17.153	17
18	1.5	16.376	16.676	16.5
18	2	15.835	16.21	16
18	2.5	15.294	15.744	15.5
20	1	18.917	19.153	19
20	1.5	18.376	18.676	18.5
20	2	17.835	18.21	18
20	2.5	17.294	17.744	17.5
22	1	20.917	21.153	21
22	1.5	20.376	20.676	20.5
22	2	19.835	20.21	20
22	2.5	19.294	19.744	19.5
24	1.5	22.376	22.676	22.5
24	2	21.835	22.21	22
24	3	20.752	21.252	21
25	1	22.917	23.153	23
25	1.5	23.376	23.676	23.5
26	1.5	24.376	24.676	24.5
27	1	25.917	26.153	26
27	1.5	25.376	25.676	25.5
27	2	24.835	25.21	25
27	3	23.752	24.252	24
28	1.5	26.376	26.676	26.5
28	2	25.835	26.21	26
30	1	28.917	29.153	29
30	1.5	28.376	28.676	28.5
30	2	27.835	28.21	28
30	3.5	26.211	26.771	26.5
32	1.5	30.376	30.676	30.5
32	2	29.835	30.21	30
33	1.5	31.376	31.676	31.5
33	2	30.835	31.21	31
33	3.5	29.211	29.771	29.5
34	1.5	32.376	32.676	32.5
35	1.5	33.376	33.676	33.5
36	1.5	34.376	34.676	34.5
36	2	33.835	34.21	34
36	3	32.752	33.252	33
36	4	31.67	32.27	32
38	1.5	36.376	36.676	36.5
39	1.5	37.376	37.676	37.5
39	2	36.835	37.21	37
39	3	35.752	36.252	36
39	4	34.67	35.27	35
40	1.5	38.376	38.676	38.5
40	2	37.835	38.21	38
40	3	36.752	37.252	37
42	1.5	40.376	40.676	40.5
42	2	39.835	40.21	40
42	3	38.752	37.252	39
42	4.5	37.129	37.799	37.5
45	1.5	43.376	40.676	43.5
45	2	42.835	40.21	43
45	3	41.752	42.252	42
45	4.5	40.129	40.799	40.5

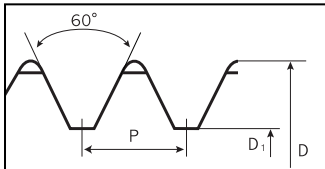
D		D ₁		
직경 Diameter	피치 Pitch	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
48	1.5	46.376	46.676	46.5
48	2	45.835	46.21	46
48	3	44.752	45.252	45
48	5	42.587	43.297	43
50	1.5	48.376	48.676	48.5
50	2	47.835	48.21	48
50	3	46.752	47.252	47
52	1.5	50.376	50.676	50.5
52	2	49.835	50.21	50
52	3	46.587	47.087	49
52	5	46.587	47.297	47
56	1.5	54.376	54.676	54.5
56	2	53.835	54.21	54
56	3	52.752	53.252	53
56	5.5	50.046	50.796	50.5
58	1.5	56.376	56.676	56.5
60	1.5	58.376	58.676	58.5
60	2	57.835	58.21	58
60	3	56.752	57.252	57
60	5.5	54.046	54.796	54.5
64	6	57.505	58.305	58
68	6	62.505	62.305	62

[illegible]

나사산 예비 가공 홀 직경 - 탭가공 / 스레드 밀링

UNF ASME B1.1에 따른
미세 나사산

D	D _i		
직 경 Diameter	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
0-80 UNF	1.181	1.306	1.25
1-72 UNF	1.473	1.613	1.55
2-64 UNF	1.755	1.913	1.85
3-56 UNF	2.024	2.197	2.15
4-48 UNF	2.271	2.459	2.40
5-44 UNF	2.550	2.741	2.70
6-40 UNF	2.819	3.023	2.95
8-36 UNF	3.404	3.607	3.50
10-32 UNF	3.962	4.166	4.10
12-28 UNF	4.496	4.724	4.60
1/4-28 UNF	5.367	5.580	5.50
5/16-24 UNF	6.792	7.038	6.90
3/8-24 UNF	8.379	8.626	8.50
7/16-20 UNF	9.738	10.030	9.90
1/2-20 UNF	11.326	11.618	11.50
9/16-18 UNF	12.761	13.084	12.90
5/8-18 UNF	14.348	14.671	14.50
3/4-16 UNF	17.330	17.689	17.50
7/8-14 UNF	20.262	20.663	20.40
1-12 UNF	23.109	23.569	23.25
1 1/8-12 UNF	26.284	26.744	26.50
1 1/4-12 UNF	29.459	29.919	29.50
1 3/8-12 UNF	32.634	33.094	33.00
1 1/2-12 UNF	35.809	36.269	36.10



MJ, UNJC, UNJF 도면

UNJC ASME B1.15 및 ISO 3161에 따른
보통 나사산

D	D _i		
직 경 Diameter	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
1-64 UNJC	1.467	1.570	1.50
2-56 UNJC	1.742	1.860	1.80
3-48 UNJC	1.999	2.137	2.05
4-40 UNJC	2.226	2.391	2.30
5-40 UNJC	2.556	2.721	2.65
6-32 UNJC	2.732	2.938	2.80
8-32 UNJC	3.393	3.599	3.50
10-24 UNJC	3.795	4.064	3.90
12-24 UNJC	4.455	4.704	4.60
1/4-20 UNJC	5.113	5.387	5.20
5/16-18 UNJC	6.563	6.833	6.70
3/8-16 UNJC	7.978	8.255	8.10
7/16-14 UNJC	9.344	9.637	9.50
1/2-13 UNJC	10.796	11.093	10.90
9/16-12 UNJC	12.226	12.480	12.30
5/8-11 UNJC	13.625	13.902	13.70
3/4-10 UNJC	16.575	16.880	16.75

UNEF

D	D _i		
직 경 Diameter	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
No.12-32 UNEF	4.826	4.623	4.70
1/4-32 UNEF	5.689	5.487	5.60
5/16-32	7.264	7.087	7.10
3/8-32	8.864	8.662	8.70
7/16-28	10.337	10.135	10.20
1/2-28	11.938	11.710	11.80
9/16-24	13.385	13.132	13.20
5/8-24	14.986	14.732	14.80
3/4-20	17.957	17.679	17.80
7/8-20	21.132	20.854	21.00
1-20	24.307	24.029	24.10
1 1/8-18	27.381	27.051	27.20
1 1/4-18	30.556	30.226	30.30
1 3/8-18	33.731	33.401	33.50
1 1/2-18	36.906	36.576	36.70
1 5/8-18	40.081	39.751	39.80

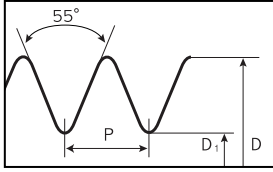
MJ DIN ISO 5855에 따른
표준 나사산

D	D _i			
직 경 Diameter	피 치 Pitch	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
MJ3	0.5	2.513	2.653	2.6
MJ4	0.7	3.318	3.498	3.4
MJ5	0.8	4.221	4.421	4.3
MJ6	1	5.026	5.215	5.1
MJ8	1.25	6.782	6.994	6.9
MJ10	1.5	8.539	8.779	8.7
MJ12	1.75	10.295	10.563	10.5
MJ16	2	14.051	14.351	14.3

UNJF ASME B1.15 및 ISO 3161에 따른
미세 나사산

D	D _i		
직 경 Diameter	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
0-80 UNJF	1.215	1.297	1.25
1-72 UNJF	1.510	1.602	1.55
2-64 UNJF	1.797	1.900	1.85
3-56 UNJF	2.073	2.191	2.10
4-48 UNJF	2.329	2.467	2.40
5-44 UNJF	2.613	2.763	2.70
6-40 UNJF	2.886	3.051	2.95
8-36 UNJF	3.479	3.662	3.60
10-32 UNJF	4.053	4.253	4.15
12-28 UNJF	4.602	4.815	4.70
1/4-28 UNJF	5.466	5.662	5.60
5/16-24 UNJF	6.907	7.110	7.00
3/8-24 UNJF	8.494	8.680	8.60
7/16-20 UNJF	9.875	10.083	10.00
1/2-20 UNJF	11.463	11.660	11.50
9/16-18 UNJF	12.913	13.123	13.00
5/8-18 UNJF	14.500	14.702	14.50

나사산 예비 가공 홀 직경 - 탭가공 / 스레드 밀링



PF(G), PS(Rp), BSW

PF(G) DIN EN ISO 228에 따른
관용 나사산

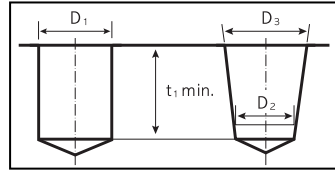
D	D ₁		
직경 Diameter	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
PF(G) 1/16-28	6.561	6.843	6.80
PF(G) 1/8-28	8.566	8.848	8.80
PF(G) 1/4-19	11.445	11.890	11.80
PF(G) 3/8-19	14.950	15.395	15.25
PF(G) 1/2-14	18.632	19.173	19.00
PF(G) 5/8-14	20.588	21.129	21.00
PF(G) 3/4-14	24.118	24.659	24.50
PF(G) 7/8-14	27.878	28.419	28.25
PF(G) 1-11	30.292	30.932	30.75
PF(G) 1 1/8-11	34.940	35.580	35.50
PF(G) 1 1/4-11	38.953	39.593	39.50
PF(G) 1 3/8-11	41.366	42.006	41.90
PF(G) 1 1/2-11	44.846	45.486	45.25
PF(G) 1 3/4-11	50.789	51.429	51.00
PF(G) 2-11	56.657	57.297	57.00
PF(G) 2 1/4-11	62.753	63.393	63.00
PF(G) 2 1/2-11	72.227	72.867	72.60
PF(G) 3-11	84.927	85.567	85.00

BSW BS 84에 따른
Whitworth 나사산

D	D ₁		
직경 Diameter	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
1/16-60	1.045	1.231	1.2
3/32-48	1.703	1.911	1.9
1/8-40	2.362	2.59	2.5
5/32-32	2.952	3.213	3.1
3/16-24	3.407	3.745	3.6
7/32-24	4.201	4.539	4.5
1/4-20	4.724	5.155	5
5/16-18	6.131	6.591	6.5
3/8-16	7.493	7.988	7.9
7/16-14	8.79	9.33	9.2
1/2-12	9.989	10.59	10.5
9/16-12	11.577	12.178	12
5/8-11	12.919	13.558	13.4
3/4-10	15.798	16.484	16.4
7/8-9	18.612	19.354	19.25
1-8	21.335	22.148	22
1 1/8-7	23.929	24.833	24.75
1 1/4-7	27.104	28.008	27.5
1 3/8-6	29.505	30.529	30
1 1/2-6	32.68	33.704	33.5
1 5/8-5	34.771	35.965	35.5
1 3/4-5	37.946	39.14	39
1 7/8-4.5	40.398	41.705	41.5
2-4 1/2	43.573	44.88	44.5
2 1/4-4	49.02	50.468	50
2 1/2-4	55.37	56.818	56

PS(Rp) DIN EN10226-1에 따른
Whitworth 관용 나사산

D	D ₁		
직경 Diameter	min (mm)	max (mm)	드릴 직경 Drill Dia. (mm)
PS(Rp) 1/16-28	6.490	6.632	6.55
PS(Rp) 1/8-28	8.495	8.637	8.60
PS(Rp) 1/4-19	11.341	11.549	11.50
PS(Rp) 3/8-19	14.846	15.054	15.00
PS(Rp) 1/2-14	18.490	18.774	18.50
PS(Rp) 5/8-14	20.446	20.73	20.50
PS(Rp) 3/4-14	23.976	24.26	24.00
PS(Rp) 1-11	30.112	30.472	30.25
PS(Rp) 1 1/4-11	38.773	39.133	39.00
PS(Rp) 1 1/2-11	44.629	45.063	45.00
PS(Rp) 2-11	56.440	56.874	56.50
PS(Rp) 2 1/2-11	72.010	72.444	72.20
PS(Rp) 3-11	84.710	85.144	85.00



NPT, NPTF 도면

NPT ASME B1.20.1에 따른 관용 표준 나사산,
테이퍼 1:16

D				
직경 Diameter	D ₁	D ₂	D ₃	T ₁
1/16-27 NPT	6.150	5.950	6.39	10.7
1/8-27 NPT	8.400	8.310	8.74	10.8
1/4-18 NPT	11.100	10.730	11.36	15.6
3/8-18 NPT	14.300	14.150	14.80	16.0
1/2-14 NPT	17.900	17.470	18.32	20.8
3/4-14 NPT	23.300	22.790	23.67	21.3
1-11 1/2 NPT	29.000	28.640	29.69	25.6
1 1/4-11 1/2 NPT	37.700	3.370	38.45	26.1
1 1/2-11 1/2 NPT	43.700	43.440	44.52	26.1
2-11 1/2 NPT	55.600	55.450	56.56	26.5
2 1/2-8 NPT	66.300	66.140	67.62	36.3
3-8 NPT	82.300	81.900	83.52	38.5

NPTF ASME B1.20.3에 따른 미국 관용 표준 나사산,
테이퍼 1:16

D				
직경 Diameter	D ₁	D ₂	D ₃	T ₁
1/16-27 NPTF	6.1	5.97	6.41	10.3
1/8-27 NPTF	8.4	8.33	8.77	10.3
1/4-18 NPTF	11.0	10.77	11.40	15.0
3/8-18 NPTF	14.5	14.19	14.84	15.3
1/2-14 NPTF	17.5	17.48	18.33	19.9
3/4-14 NPTF	23.0	22.84	23.72	20.4
1-11 1/2 NPTF	29.0	28.62	29.76	24.5
1 1/4-11 1/2 NPTF	37.5	37.44	38.52	25.0
1 1/2-11 1/2 NPTF	43.5	43.50	44.59	25.0
2-11 1/2 NPTF	56.0	55.51	56.62	25.4
2 1/2-8 NPTF	66.0	66.03	67.71	38.0
3-8 NPTF	82.0	81.80	83.62	40.0



Where Variety Meets Precision.

다양성과 정밀함이 만나는 기술

WWW.JJTOOLS.CO.KR

공구 사용시 주의사항

- 공구가 사용중 파손되어 상해의 위험이 있으므로 보호안경 등 안전장비를 착용하고 사용해 주십시오
- 공구의 목적 외에 다른 용도로 사용하거나 전용장비가 아닌 장비에 장착하지 마시고 임의로 연삭, 변경하지 마십시오
- 제품 날부분의 손상을 방지하기 위해 가능한 비접촉 측정을 권고합니다.
- 공구의 체결이 정확히 되었는지 확인한 후 사용해 주십시오.
- 사용시 고열로 인한 스파크가 발생할 수 있습니다.
- 화재나 폭발 등 위험 인자를 제거하고 사용하십시오
- 제품 사용 전과 후에도 공구와 가공물의 치수를 반드시 확인해 주십시오
- 공구가 마모되거나 손상된 경우 사용을 중지해 주십시오
- 비정상적인 진동, 소음이 발생할 경우 시스템을 중지하고 진동, 소음의 원인을 확인하여 제거 하십시오.

Precautions When Using Tools

- Wear safety equipment such as protective eyewear to prevent the risk of injury in case the tool breaks during use.
- Do not use the tool for purposes other than its intended use, or install it on equipment that is not designed for it. Do not grind or modify it arbitrarily.
- To prevent damage to the cutting edge, it is recommended to use non-contact measurements whenever possible.
- Ensure proper attachment of the tool before use.
- Sparks may be generated due to high heat during use.
- Eliminate potential fire or explosion hazards before using.
- Before and after use, always check the dimensions of the tool and the workpiece.
- Discontinue use if the tool is worn or damaged.
- If abnormal vibration or noise occurs, stop the system and identify and eliminate the cause of the vibration or noise.