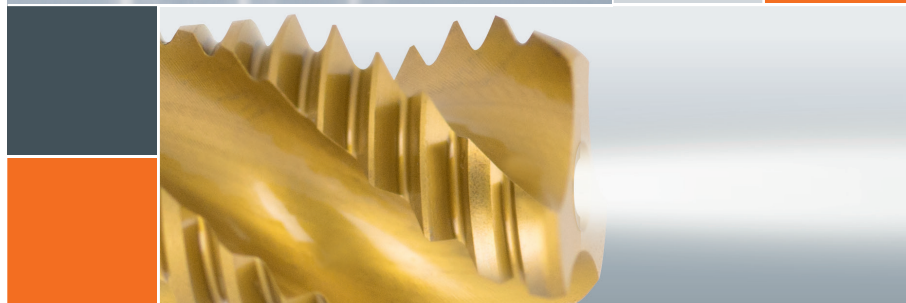




■ Made
■ in
■ Germany



EMUGE

새로운 탭 Enorm-Z-X-PM
New Taps Enorm-Z-X-PM

신규 출시 · now also available in
UNC | UNF
G

CNC 제어 장비를 위한

증가된 경사각 및 여유각을 가진 매우 예리한 Enorm-Z의 절삭부 형상은 롱 칩이 발생하는 여러 종류의 재질에 적합합니다. 그것은 CNC 제어 장비를 위하여 특별히 설계 되었습니다. 특히 우리의 소프트싱크로® 콜렛 홀더 시리즈와 결합하여 이송속도 동기화 제어 가공 시에는 이러한 툴의 잠재된 최대 성능을 발휘할 수 있을 것입니다.

For CNC-controlled machines

This very keen cutting geometry with elevated rake and relief angles is suitable for a multitude of long-chipping materials. It is designed especially for CNC-controlled machine tools.

Synchronous feed control, especially in connection with our collet holders of the Softsynchro® series, will bring out the full performance potential of these tools.

HSSE-PM 모재 Cutting material HSSE-PM

특히 높은 절삭 속도로 가공 시 또는 높은 인장 강도를 가진 소재 가공 시에도 향상된 공구 수명을 얻을 수 있습니다.

Especially for high cutting speeds and in high tensile materials the PM base material achieves higher tool life.

최적화된 코팅 시스템 TIN-60 Optimised coating system TIN-60

특히 강 재질 가공 시, 향상된 경도, 줄어든 마찰저항, 향상된 내마모성을 가진 새롭게 개발된 코팅

New developed coating with increased hardness, less friction and better wear resistance, specially in steel materials.

내부 절삭유 공급 (IKZ) Internal coolant supply (IKZ)

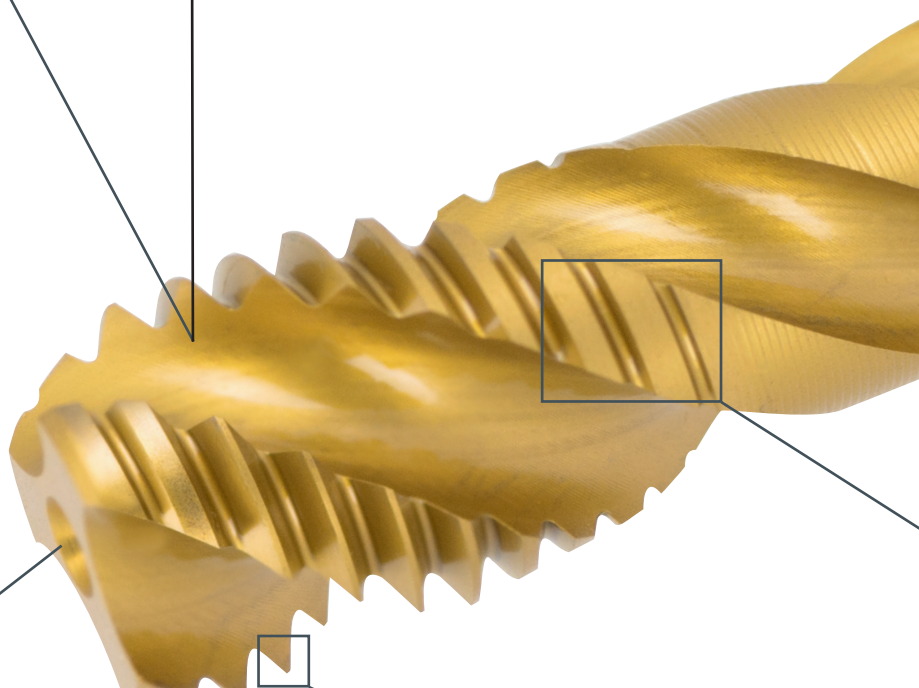
IKZ(축방향 분사) 타입의 내부 절삭유 사용 가능.

Also available with internal coolant supply (IKZ).

X-공차 등급 X-Tolerance

특히 마모성과 인장강도가 높은 재질 가공 시, 증가된 공차 (X등급)로 인해 향상된 공구 수명

Higher tool life due to increased (X) tolerance, especially in abrasive and clamping materials.



새로운 마킹
New marking

EMUGE 로고 아래에 제품군 “Z” 강조.
Highlighting the tool geometry with the EMUGE Logo.

EMUGE
Z

길어진 플루트
Longer flutes

길어진 플루트는 깊은 나사 홀 가공 시, 더 나은 칩 배출을 제공합니다.

Longer flutes allow a better chip evacuation in deep threads.

뒷날부 경사
Back taper

칩 엉킴으로 인해 발생하는 칩핑 현상은 나사산 가이드부의 후미를 경사지게 함으로써 방지될 수 있습니다.

Tooth chipping due to chip jams can be prevented by grinding off the tooth crests in the guide thread area.

참 고:

각 소재 및 공구 별로 열거된 절삭 속도들은 기준값으로 개별적인 작업 환경에 맞게 조정되어야 합니다(재질, 윤활, 장비 등).

적합성은 아래와 같이 표기됩니다.

- 매우 적합함 (굵은 글씨체로 표기됨)
- 적합함 (일반 굵기의 글씨체로 표기됨)

 = 적합한 절삭-윤활유
 E = 에멀전
 O = 나사 절삭 오일
 P = 나사 절삭 도포제

 = DIN 규격 / 챔퍼부 길이 (나사산 수로 표기됨)

Please note:

The cutting speeds (v_c in m/min) listed in the respective columns are standard values which have to be adjusted to individual work conditions (material, lubrication, machine etc.).

The suitability is marked as follows:

- Tap is very suitable
- Tap is suitable

 = suitable coolant-lubricant
 E = Emulsion
 O = Thread cutting oil
 P = Thread cutting paste

 = DIN form / threads (chamfer length)

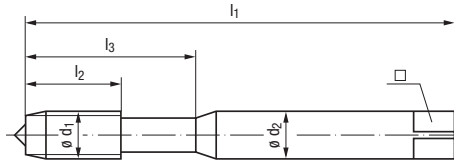
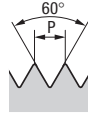
		강	Steel materials			
P	1.1	냉간압출강, 구조강, 폐삭강, 기타.	Cold-extrusion steels, Construction steels, Free-cutting steels, etc.	≤ 600 N/mm ²	Cq15 S235JR (St37-2) 10SPb20	1.1132 1.0037 1.0722
	2.1	구조강, 표면경화강, 주강.	Construction steels, Cementation steels, Steel castings, etc.	≤ 800 N/mm ²	E360 (St70-2) 16MnCr5 GS-25CrMo4	1.0070 1.7131 1.7218
	3.1	표면경화강, 열처리강, 냉간가공강, 기타.	Cementation steels, Heat-treatable steels, Cold work steels, etc.	≤ 1000 N/mm ²	20MoCr3 42CrMo4 102Cr6	1.7320 1.7225 1.2067
	4.1	열처리강, 냉간가공강, 질화강, 기타.	Heat-treatable steels, Cold work steels, Nitriding steels, etc.	≤ 1200 N/mm ²	50CrMo4 X45NiCrMo4 31CrMo12	1.7228 1.2767 1.8515
	5.1	고합금강, 냉간가공강, 열간가공강, 기타.	High-alloyed steels, Cold work steels, Hot work steels, etc.	≤ 1400 N/mm ²	X38CrMoV5-3 X100CrMoV8-1-1 X40CrMoV5-1	1.2367 1.2990 1.2344
M	1.1	페라이트계, 마르텐사이트계	Ferritic, martensitic	≤ 950 N/mm ²	X2CrTi12	1.4512
	2.1	오스테나이트계	Austenitic	≤ 950 N/mm ²	X6CrNiMoTi17-12-2	1.4571
	3.1	오스테나이트-페라이트계 (듀플렉스)	Austenitic-ferritic (Duplex)	≤ 1100 N/mm ²	X2CrNiMoN22-5-3	1.4462
	4.1	내열성 오스테나이트-페라이트계 (슈퍼 듀플렉스)	Austenitic-ferritic heat-resistant (Super Duplex)	≤ 1250 N/mm ²	X2CrNiMoN25-7-4	1.4410
K	1.1	주철	Cast materials			
	1.2	회주철 (GJL)	Cast iron with lamellar graphite (GJL)	100-250 N/mm ²	EN-GJL-200 (GG20)	EN-JL-1030
	2.1			250-450 N/mm ²	EN-GJL-300 (GG30)	EN-JL-1050
	2.2	구상흑연주철 (GJS)	Cast iron with nodular graphite (GJS)	350-500 N/mm ²	EN-GJS-400-15 (GGG40)	EN-JS-1030
	2.2			500-900 N/mm ²	EN-GJS-700-2 (GGG70)	EN-JS-1070
	3.1	CV주철 (GJV)	Cast iron with vermicular graphite (GJV)	300-400 N/mm ²	GJV 300	
	3.2			400-500 N/mm ²	GJV 450	
	4.1	가단주철 (GTMW, GTMB)	Malleable cast iron (GTMW, GTMB)	250-500 N/mm ²	EN-GJMW-350-4 (GTW-35)	EN-JM-1010
	4.2			500-800 N/mm ²	EN-GJMB-450-6 (GTS-45)	EN-JM-1140
N		비철금속	Non ferrous materials			
		알루미늄 합금	Aluminium alloys			
	1.1			≤ 200 N/mm ²	EN AW-AlMn1	EN AW-3103
	1.2	알루미늄 합금 전신재	Aluminium wrought alloys	≤ 350 N/mm ²	EN AW-AlMgSi	EN AW-6060
	1.3			≤ 550 N/mm ²	EN AW-AlZn5Mg3Cu	EN AW-7022
	1.4			Si $\leq 7\%$	EN AC-AlMg5	EN AC-51300
	1.5	알루미늄 합금 주물	Aluminium cast alloys	7% < Si $\leq 12\%$	EN AC-AISi9Cu3	EN AC-46500
	1.6			12% < Si $\leq 17\%$	GD-AISi17Cu4FeMg	
	2.1	동 합금	Copper alloys			
	2.1	순동, 저합금동	Pure copper, low-alloyed copper	≤ 400 N/mm ²	E-Cu 57	EN CW 004 A
	2.2	동-아연 합금 (황동, 롱-칩 발생)	Copper-zinc alloys (brass, long-chipping)	≤ 550 N/mm ²	CuZn37 (Ms63)	EN CW 508 L
	2.3	동-아연 합금 (황동, 숏-칩 발생)	Copper-zinc alloys (brass, short-chipping)	≤ 550 N/mm ²	CuZn36Pb3 (Ms58)	EN CW 603 N
	2.4	동-알루미늄 합금 (알루브론즈, 롱-칩 발생)	Copper-aluminium alloys (alu bronze, long-chipping)	≤ 800 N/mm ²	CuAl10Ni5Fe4	EN CW 307 G
	2.5	동-주석 합금 (청동, 롱-칩 발생)	Copper-tin alloys (tin bronze, long-chipping)	≤ 700 N/mm ²	CuSn8P	EN CW 459 K
	2.6	동-주석 합금 (청동, 숏-칩 발생)	Copper-tin alloys (tin bronze, short-chipping)	≤ 400 N/mm ²	CuSn7 ZnPb (Rg7)	2.1090
	2.7	특수 동 합금	Special copper alloys	≤ 600 N/mm ²	(AMPCO® 8)	
	2.8			≤ 1400 N/mm ²	(AMPCO® 45)	
S		마그네슘 합금	Magnesium alloys			
	3.1	마그네슘 합금	Magnesium wrought alloys	≤ 500 N/mm ²	MgAl6Zn	3.5612
	3.2	마그네슘 합금 주물	Magnesium cast alloys	≤ 500 N/mm ²	EN-MCMgAl9Zn1	EN-MC21120
		합성수지	Synthetics			
	4.1	열경화성수지 (숏-칩 발생)	Duroplastics (short-chipping)		Bakelit, Pertinax	
	4.2	열가소성수지 (롱-칩 발생)	Thermoplastics (long-chipping)		PMMA, POM, PVC	
	4.3	섬유강화수지 (섬유함유율 < 30%)	Fibre-reinforced synthetics (fibre content $\leq 30\%$)		GFK, CFK, AFK	
	4.4	섬유강화수지 (섬유함유율 > 30%)	Fibre-reinforced synthetics (fibre content > 30%)		GFK, CFK, AFK	
		특수 소재	Special materials			
	5.1	그래파이트 (흑연)	Graphite		C 8000	
	5.2	텅스텐-구리 합금	Tungsten-copper alloys		W-Cu 80/20	
	5.3	복합 소재	Composite materials		Hylite, Alucobond	
H		특수 소재	Special materials			
		티타늄 합금	Titanium alloys			
	1.1	순티타늄	Pure titanium	≤ 450 N/mm ²	Ti1	3.7025
	1.2			≤ 900 N/mm ²	TiAl6V4	3.7165
	1.3	티타늄 합금	Titanium alloys	≤ 1250 N/mm ²	TiAl4Mo4Sn2	3.7185
		니켈 합금, 코발트 합금, 철 합금	Nickel alloys, cobalt alloys and iron alloys			
	2.1	순니켈	Pure nickel	≤ 600 N/mm ²	Ni 99,6	2.4060
	2.2			≤ 1000 N/mm ²	Monel 400	2.4360
	2.3	니켈기 합금	Nickel-base alloys	≤ 1600 N/mm ²	Inconel 718	2.4668
	2.4			≤ 1000 N/mm ²	Udimet 605	
	2.5	코발트기 합금	Cobalt-base alloys	≤ 1600 N/mm ²	Haynes 25	2.4964
	2.6	철기 합금	Iron-base alloys	≤ 1500 N/mm ²	Incoloy 800	1.4958
		고경도 소재	Hard materials			
	1.1			44 - 50 HRC	Weldox 1100	
	1.2			50 - 55 HRC	Hardox 550	
	1.3	고강도강, 경화강, 질드 주철	High strength steels, hardened steels, hard castings	55 - 60 HRC	Armox 600T	
	1.4			60 - 63 HRC	Ferro-Titanit	
	1.5			63 - 66 HRC	HSSE	

새로운 탭 Enorm-Z-X-PM
New Taps Enorm-Z-X-PM

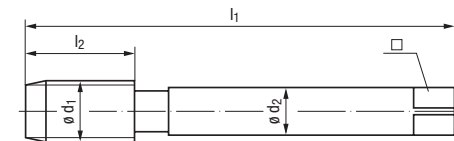
								
Enorm-Z X-PM GLT-1	Enorm-Z/E X-PM GLT-1	Enorm-Z X-PM GLT-1	Enorm-Z/E X-PM GLT-1	Enorm-Z X-PM TIN-60	Enorm-Z/E X-PM TIN-60	Enorm-Z X-PM TIN-60	Enorm-Z/E X-PM TIN-60	
C / 2-3	E / 1,5-2	C / 2-3	E / 1,5-2	C / 2-3	E / 1,5-2	C / 2-3	E / 1,5-2	
E	E	E	E	E / O / P	E / O / P	E / O	E / O	
max. 3 x d₁ 								나사 깊이와 홀 유형 Thread depth and hole type
6	6	7	7	8	8	9	9	M
10	10	10	10	11	11	11	11	MF
12	12	—	—	12	12	—	—	UNC
13	13	—	—	13	13	—	—	UNF
14	14	14	14	15	15	15	15	G
15 - 80	15 - 80	15 - 80	15 - 80	15 - 80	15 - 80	15 - 80	15 - 80	1.1
10 - 60	10 - 60	10 - 60	10 - 60	10 - 60	10 - 60	10 - 60	10 - 60	2.1
5 - 40	5 - 40	5 - 40	5 - 40	5 - 40	5 - 40	5 - 40	5 - 40	3.1
5 - 30	5 - 30	5 - 30	5 - 30	5 - 30	5 - 30	5 - 30	5 - 30	4.1
								5.1
5 - 20	5 - 20	5 - 20	5 - 20					1.1
5 - 20	5 - 20	5 - 20	5 - 20					2.1
5 - 15	5 - 15	5 - 15	5 - 15					3.1
								4.1
								1.1
								1.2
								2.1
								2.2
								3.1
								3.2
								4.1
								4.2
								1.1
								1.2
								1.3
15 - 40	15 - 40	15 - 40	15 - 40					1.4
15 - 40	15 - 40	15 - 40	15 - 40					1.5
10 - 30	10 - 30	10 - 30	10 - 30					1.6
5 - 30	5 - 30	5 - 30	5 - 30					2.1
20 - 60	20 - 60	20 - 60	20 - 60					2.2
								2.3
								2.4
5 - 25	5 - 25	5 - 25	5 - 25					2.5
5 - 25	5 - 25	5 - 25	5 - 25					2.6
								2.7
								2.8
								3.1
								3.2
								4.1
								4.2
								4.3
								4.4
								5.1
								5.2
								5.3
5 - 15	5 - 15	5 - 15	5 - 15					1.1
								1.2
								1.3
								2.1
								2.2
								2.3
								2.4
								2.5
								2.6
								1.1
								1.2
								1.3
								1.4
								1.5

매우 적합한 경우의 절삭 속도 (굵은 글씨체로 표기됨) · Cutting speed v_c in m/min – tap is very suitable
적합한 경우의 절삭 속도 (일반 굵기의 글씨체로 표기됨) · Cutting speed v_c in m/min – tap is suitable

M ISO 미터 보통 나사 DIN 13 ISO Metric coarse thread DIN 13



DIN 371



DIN 376

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



6HX	6GX	6HX	6GX
GLT-1	GLT-1	GLT-1	GLT-1
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	C / 2-3	E / 1,5-2	E / 1,5-2
E	E	E	E

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶▶ 4

P	1.1-4.1
M	1.1-3.1
N	1.4-6, 2.1-2, 2.4-5
S	1.1

DIN 371

툴 식별 코드 · Tool ident

ø d ₁ mm	P mm	l ₁	l ₂	l ₃	ø d ₂	□		치수 코드	B576A601 Enorm 1-Z X-PM GLT-1	B576A621 Enorm 1-Z X-PM GLT-1 „6GX“	B582A601 Enorm 1-Z/E X-PM GLT-1	B582A621 Enorm 1-Z/E X-PM GLT-1 „6GX“
M	2	0,4	45	4	12	2,8	2,1	1,6	.0020	○	○	○
	2,5	0,45	50	5	14	2,8	2,1	2,05	.0025	○	○	○
	3	0,5	56	6	18	3,5	2,7	2,5	.0030	●	●	●
	3,5	0,6	56	7	20	4	3	2,9	.0035	○	○	○
	4	0,7	63	7	21	4,5	3,4	3,3	.0040	●	●	●
	5	0,8	70	8	25	6	4,9	4,2	.0050	●	●	●
	6	1	80	10	30	6	4,9	5	.0060	●	●	●
	8	1,25	90	14	35	8	6,2	6,8	.0080	●	●	●
	10	1,5	100	16	39	10	8	8,5	.0100	●	●	●

DIN 376

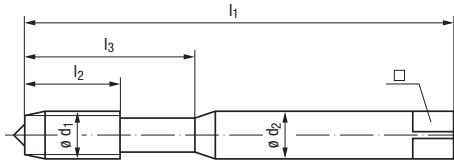
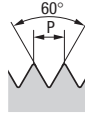
툴 식별 코드 · Tool ident

ø d ₁ mm	P mm	l ₁	l ₂	ø d ₂	□		치수 코드	C576A601 Enorm 2-Z X-PM GLT-1	C576A621 Enorm 2-Z X-PM GLT-1 „6GX“	C582A601 Enorm 2-Z/E X-PM GLT-1	C582A621 Enorm 2-Z/E X-PM GLT-1 „6GX“
M	12	1,75	110	18	9	10,2	.0112	●	●	●	●
	14	2	110	20	11	12	.0114	●	●	●	●
	16	2	110	22	12	14	.0116	●	●	●	●
	20	2,5	140	25	16	12	.0120	●	●	●	●
	24	3	160	30	18	14,5	.0124	●	●	●	●
	30	3,5	180	35	22	18	.0130	●	●	●	●

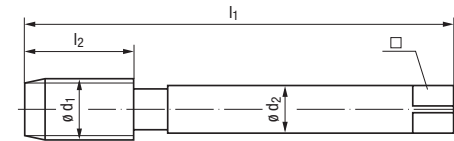
주문 예시 · Ordering example: B576A601.0030

M ISO 미터 보통 나사 DIN 13

ISO Metric coarse thread DIN 13



DIN 371



DIN 376

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



6HX	6GX	6HX	6GX
GLT-1	GLT-1	GLT-1	GLT-1
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	C / 2-3	E / 1,5-2	E / 1,5-2
E	E	E	E

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶▶ 4

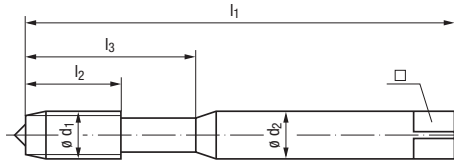
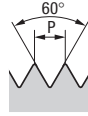
P	1.1-4.1
M	1.1-3.1
N	1.4-6, 2.1-2, 2.4-5
S	1.1

DIN 371									툴 식별 코드 · Tool ident			
Ø d ₁ mm	P mm	l ₁	l ₂	l ₃	Ø d ₂	□		치수 코드	B581A601	B581A621	B583A601	B583A621
M	4	0,7	63	7	21	4,5	3,4	3,3	Enorm 1-Z X-IKZ-PM GLT-1	Enorm 1-Z X-IKZ-PM GLT-1 „6GX“	Enorm 1-Z/E X-IKZ-PM GLT-1	Enorm 1-Z/E X-IKZ-PM GLT-1 „6GX“
	5	0,8	70	8	25	6	4,9	4,2	●	●	●	●
	6	1	80	10	30	6	4,9	5	●	●	●	●
	8	1,25	90	14	35	8	6,2	6,8	●	●	●	●
	10	1,5	100	16	39	10	8	8,5	●	●	●	●

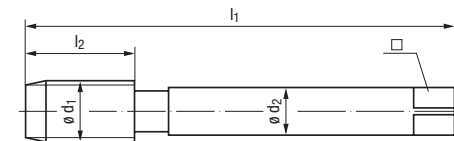
DIN 376		툴 식별 코드 · Tool ident							C581A601	C581A621	C583A601	C583A621
∅ d ₁ mm	P mm	l ₁	l ₂	∅ d ₂			치수 코드	Enorm 2-Z X-IKZ-PM GLT-1	Enorm 2-Z X-IKZ-PM GLT-1 „6GX“	Enorm 2-Z/E X-IKZ-PM GLT-1	Enorm 2-Z/E X-IKZ-PM GLT-1 „6GX“	
M	12	1,75	110	18	9	7	10,2	.0112	●	●	●	
	14	2	110	20	11	9	12	.0114	●	●	●	
	16	2	110	22	12	9	14	.0116	●	●	●	
	20	2,5	140	25	16	12	17,5	.0120	●	●	●	
	24	3	160	30	18	14,5	21	.0124	●	●	●	
	30	3,5	180	35	22	18	26,5	.0130	●	●	●	

주문 예시 · Ordering example: B581A601.0040

M ISO 미터 보통 나사 DIN 13 ISO Metric coarse thread DIN 13



DIN 371



DIN 376

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



6HX	6GX	6HX	6GX
TIN-60	TIN-60	TIN-60	TIN-60
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	C / 2-3	E / 1,5-2	E / 1,5-2
E / 0/P	E / 0/P	E / 0/P	E / 0/P

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶▶ 4

P 1.1-4.1

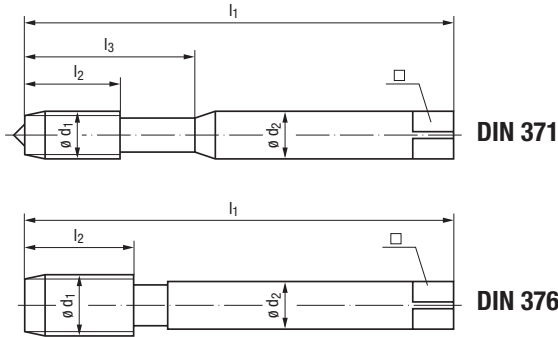
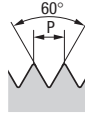
DIN 371										툴 식별 코드 · Tool ident		치수 코드	B5760F01	B5760F21	B5820F01	B5820F21
ø d ₁ mm	P mm	l ₁	l ₂	l ₃	ø d ₂	□							Enorm 1-Z X-PM TIN-60	Enorm 1-Z X-PM TIN-60 „6GX“	Enorm 1-Z/E X-PM TIN-60	Enorm 1-Z/E X-PM TIN-60 „6GX“
M	2	0,4	45	4	12	2,8	2,1	1,6				.0020	○		○	
	2,5	0,45	50	5	14	2,8	2,1	2,05				.0025	○		○	
	3	0,5	56	6	18	3,5	2,7	2,5				.0030	●	●	●	●
	3,5	0,6	56	7	20	4	3	2,9				.0035	○		○	
	4	0,7	63	7	21	4,5	3,4	3,3				.0040	●	●	●	●
	5	0,8	70	8	25	6	4,9	4,2				.0050	●	●	●	●
	6	1	80	10	30	6	4,9	5				.0060	●	●	●	●
	8	1,25	90	14	35	8	6,2	6,8				.0080	●	●	●	●
	10	1,5	100	16	39	10	8	8,5				.0100	●	●	●	●

DIN 376										툴 식별 코드 · Tool ident		치수 코드	C5760F01	C5760F21	C5820F01	C5820F21
ø d ₁ mm	P mm	l ₁	l ₂	ø d ₂	□								Enorm 2-Z X-PM TIN-60	Enorm 2-Z X-PM TIN-60 „6GX“	Enorm 2-Z/E X-PM TIN-60	Enorm 2-Z/E X-PM TIN-60 „6GX“
M	12	1,75	110	18	9	10,2						.0112	●	●	●	●
	14	2	110	20	11	12						.0114	●	●	●	●
	16	2	110	22	12	14						.0116	●	●	●	●
	20	2,5	140	25	16	17,5						.0120	●	●	●	●
	24	3	160	30	18	21						.0124	●	●	●	●
	30	3,5	180	35	22	26,5						.0130	●	●	●	●

주문 예시 · Ordering example: B5760F01.0030

M

Metrisches ISO-Regelgewinde DIN 13
ISO Metric coarse thread DIN 13



6HX	6GX	6HX	6GX
TIN-60	TIN-60	TIN-60	TIN-60
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	C / 2-3	E / 1,5-2	E / 1,5-2
E / 0	E / 0	E / 0	E / 0

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶ 4

P 1.1-4.1

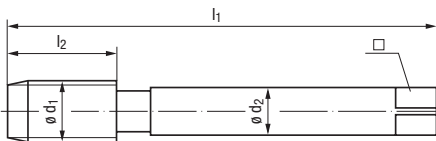
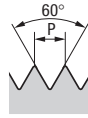
DIN 371		툴 식별 코드 · Tool ident							B5810F01	B5810F21	B5830F01	B5830F21
ø d ₁ mm	P mm	l ₁	l ₂	l ₃	ø d ₂	□		치수 코드	Enorm 1-Z X-IKZ-PM TIN-60	Enorm 1-Z X-IKZ-PM TIN-60 „6GX“	Enorm 1-Z/E X-IKZ-PM TIN-60	Enorm 1-Z/E X-IKZ-PM TIN-60 „6GX“
M	4	0,7	63	7	21	4,5	3,4	3,3	.0040	●	●	●
	5	0,8	70	8	25	6	4,9	4,2	.0050	●	●	●
	6	1	80	10	30	6	4,9	5	.0060	●	●	●
	8	1,25	90	14	35	8	6,2	6,8	.0080	●	●	●
	10	1,5	100	16	39	10	8	8,5	.0100	●	●	●

DIN 376		툴 식별 코드 · Tool ident							C5810F01	C5810F21	C5830F01	C5830F21
ø d ₁ mm	P mm	l ₁	l ₂	ø d ₂	□		치수 코드	Enorm 2-Z X-IKZ-PM TIN-60	Enorm 2-Z X-IKZ-PM TIN-60 „6GX“	Enorm 2-Z/E X-IKZ-PM TIN-60	Enorm 2-Z/E X-IKZ-PM TIN-60 „6GX“	
M 12	1,75	110	18	9	7	10,2	.0112	●	●	●	●	
14	2	110	20	11	9	12	.0114	●	●	●	●	
16	2	110	22	12	9	14	.0116	●	●	●	●	
20	2,5	140	25	16	12	17,5	.0120	●	●	●	●	
24	3	160	30	18	14,5	21	.0124	●	●	●	●	
30	3,5	180	35	22	18	26,5	.0130	●	●	●	●	

주문 예시 · Ordering example: B5810F01.0040

MF ISO 미터 가는 나사 DIN 13

ISO Metric fine thread DIN 13



DIN 374

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



6HX	6HX	6HX	6HX
GLT-1	GLT-1	GLT-1	GLT-1
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	E/ 1,5-2	C / 2-3	E/ 1,5-2
E	E	E	E

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶▶ 4

P	1.1-4.1
M	1.1-3.1
N	1.4-6, 2.1-2, 2.4-5
S	1.1

DIN 374

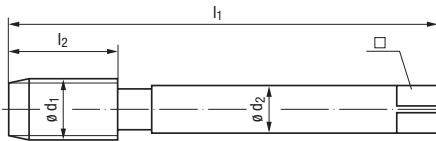
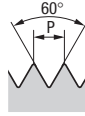
툴 식별 코드 · Tool ident

	ø d ₁ mm	P mm	l ₁	l ₂	ø d ₂	□		치수 코드	C576A601 Enorm 2-Z X-PM GLT-1	C582A601 Enorm 2-Z/E X-PM GLT-1	C581A601 Enorm 2-Z X-IKZ-PM GLT-1	C583A601 Enorm 2-Z/E X-IKZ-PM GLT-1
M	6	x 0,75	80	8	4,5	3,4	5,2	.0229	●	●	●	●
	8	x 1	90	10	6	4,9	7	.0251	●	●	●	●
	10	x 1	90	10	7	5,5	9	.0276	●	●	●	●
	10	x 1,25	100	16	7	5,5	8,8	.0277	●	●	●	●
	12	x 1	100	11	9	7	11	.0301	●	●	●	●
	12	x 1,25	100	15	9	7	10,8	.0302	●	●	●	●
	12	x 1,5	100	15	9	7	10,5	.0303	●	●	●	●
	14	x 1,5	100	15	11	9	12,5	.0331	●	●	●	●
	16	x 1,5	100	15	12	9	14,5	.0359	●	●	●	●
	18	x 1,5	110	17	14	11	16,5	.0390	●	●	●	●
	20	x 1,5	125	17	16	12	18,5	.0422	●	●	●	●
	22	x 1,5	125	17	18	14,5	20,5	.0438	●	●	●	●
	24	x 1,5	140	20	18	14,5	22,5	.0452	●	●	●	●

주문 예시 · Ordering example: C576A601.0229

MF

ISO 미터 가는 나사 DIN 13
ISO Metric fine thread DIN 13



DIN 374

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



6HX	6HX	6HX	6HX
TIN-60	TIN-60	TIN-60	TIN-60
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	E/ 1,5-2	C / 2-3	E/ 1,5-2
E/O/P	E/O/P	E/O	E/O

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶▶ 4

P 1.1-4.1

DIN 374

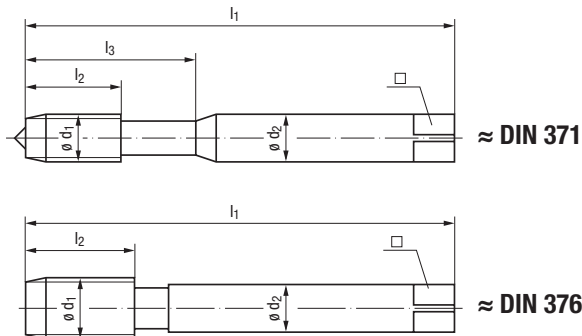
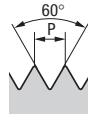
툴 식별 코드 · Tool ident

								C5760F01	C5820F01	C5810F01	C5830F01
								Enorm 2-Z X-PM TIN-60	Enorm 2-Z/E X-PM TIN-60	Enorm 2-Z X-IKZ-PM TIN-60	Enorm 2-Z/E X-IKZ-PM TIN-60
ø d ₁ mm	P mm	l ₁	l ₂	ø d ₂	□		치수 코드				
M	6 x	0,75	80	8	4,5	3,4	5,2	.0229	●	●	●
	8 x	1	90	10	6	4,9	7	.0251	●	●	●
	10 x	1	90	10	7	5,5	9	.0276	●	●	●
	10 x	1,25	100	16	7	5,5	8,8	.0277	●	●	●
	12 x	1	100	11	9	7	11	.0301	●	●	●
	12 x	1,25	100	15	9	7	10,8	.0302	●	●	●
	12 x	1,5	100	15	9	7	10,5	.0303	●	●	●
	14 x	1,5	100	15	11	9	12,5	.0331	●	●	●
	16 x	1,5	100	15	12	9	14,5	.0359	●	●	●
	18 x	1,5	110	17	14	11	16,5	.0390	●	●	●
	20 x	1,5	125	17	16	12	18,5	.0422	●	●	●
	22 x	1,5	125	17	18	14,5	20,5	.0438	●	●	●
	24 x	1,5	140	20	18	14,5	22,5	.0452	●	●	●

주문 예시 · Ordering example: C5760F01.0229

UNC

유니파이 보통 나사 ASME B1.1
Unified coarse thread ASME B1.1



기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



2BX	2BX	2BX	2BX
GLT-1	GLT-1	TIN-60	TIN-60
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	E/ 1,5-2	C / 2-3	E/ 1,5-2
E	E	E/O/P	E/O/P

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶▶ 4

P 1.1-4.1
M 1.1-3.1
N 1.4-6, 2.1-2, 2.4-5
S 1.1

P 1.1-4.1

≈ DIN 371

툴 식별 코드 · Tool ident

Ø d ₁ inch	inch	P Gg/1" (tpi)	l ₁	l ₂	l ₃	Ø d ₂	□	치수 코드	B576A601 Enorm 1-Z X-PM GLT-1	B582A601 Enorm 1-Z/E X-PM GLT-1	B5760F01 Enorm 1-Z X-PM TIN-60	B5820F01 Enorm 1-Z/E X-PM TIN-60
Nr. 4	0.1120	40	56	6	18	3,5	2,7	2,35	●	●	●	●
Nr. 6	0.1380	32	56	7	20	4	3	2,85	●	●	●	●
Nr. 8	0.1640	32	63	8	21	4,5	3,4	3,5	●	●	●	●
Nr. 10	0.1900	24	70	10	25	6	4,9	3,9	●	●	●	●
1/4	0.2500	20	80	13	30	7	5,5	5,1	●	●	●	●
5/16	0.3125	18	90	14	35	8	6,2	6,6	●	●	●	●
3/8	0.3750	16	100	16	39	10	8	8	●	●	●	●

≈ DIN 376

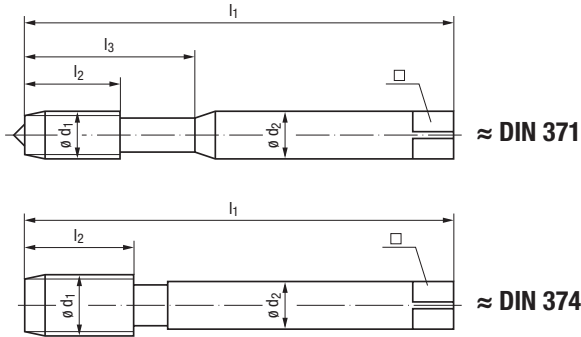
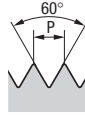
툴 식별 코드 · Tool ident

Ø d ₁ inch	inch	P Gg/1" (tpi)	l ₁	l ₂	Ø d ₂	□	치수 코드	C576A601 Enorm 2-Z X-PM GLT-1	C582A601 Enorm 2-Z/E X-PM GLT-1	C5760F01 Enorm 2-Z X-PM TIN-60	C5820F01 Enorm 2-Z/E X-PM TIN-60
7/16	0.4375	14	100	18	8	6,2	9,4	●	●	●	●
1/2	0.5000	13	110	20	9	7	10,8	●	●	●	●
5/8	0.6250	11	110	22	12	9	13,5	●	●	●	●
3/4	0.7500	10	125	25	14	11	16,5	●	●	●	●
1"	1.0000	8	160	30	18	14,5	22,25	●	●	●	●

주문 예시 · Ordering example: **B576A601.5003**

UNF

유니파이 가는 나사 ASME B1.1
Unified fine thread ASME B1.1



기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



2BX	2BX	2BX	2BX
GLT-1	GLT-1	TIN-60	TIN-60
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	E/ 1,5-2	C / 2-3	E/ 1,5-2
E	E	E/O/P	E/O/P

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

▶▶ 4

P 1.1-4.1
M 1.1-3.1
N 1.4-6, 2.1-2, 2.4-5
S 1.1

P 1.1-4.1

≈ DIN 371

툴 식별 코드 · Tool ident

									치수 코드	Enorm 1-Z	Enorm 1-Z/E	Enorm 1-Z	Enorm 1-Z/E
ø d ₁		P					X-PM			X-PM	X-PM	X-PM	
inch	inch	Gg/1" (tpi)	l ₁	l ₂	l ₃	ø d ₂	□		GLT-1	GLT-1	TIN-60	TIN-60	
Nr. 10	0.1900	32	70	10	25	6	4,9	4,1	.5041	●	●	●	●
1/4	0.2500	28	80	10	30	7	5,5	5,5	.5043	●	●	●	●
5/16	0.3125	24	90	10	35	8	6,2	6,9	.5044	●	●	●	●
3/8	0.3750	24	90	10	35	10	8	8,5	.5045	●	●	●	●

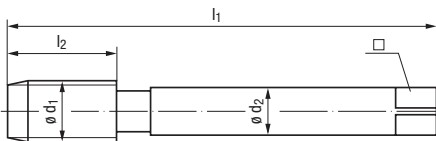
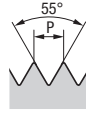
≈ DIN 374

툴 식별 코드 · Tool ident

								치수 코드	Enorm 2-Z X-PM GLT-1	Enorm 2-Z/E X-PM GLT-1	Enorm 2-Z X-PM TIN-60	Enorm 2-Z/E X-PM TIN-60
ø d ₁ inch		P Gg/1" (tpi)	l ₁	l ₂	ø d ₂	□						
7/16	0.4375	20	100	13	8	6,2	9,9	.5046	●	●	●	●
1/2	0.5000	20	100	13	9	7	11,5	.5047	●	●	●	●
5/8	0.6250	18	100	15	12	9	14,5	.5049	●	●	●	●
3/4	0.7500	16	110	17	14	11	17,5	.5050	●	●	●	●
1"	1.0000	12	140	20	18	14,5	23,25	.5052	●	●	●	●

주문 예시 · Ordering example: **B576A601.5041**

G 관용 평행 나사 DIN EN ISO 228 Whitworth pipe thread DIN EN ISO 228



DIN 5156

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



"X"	"X"	"X"	"X"
GLT-1	GLT-1	GLT-1	GLT-1
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	E/ 1,5-2	C / 2-3	E/ 1,5-2
E	E	E	E

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



피삭 소재별 적용 범위
Applications – material

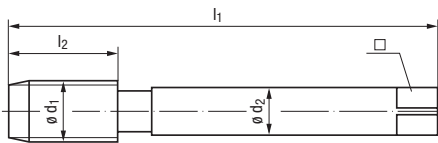
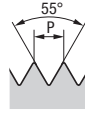
▶▶ 4

P	1.1-4.1
M	1.1-3.1
N	1.4-6, 2.1-2, 2.4-5
S	1.1

DIN 5156		툴 식별 코드 · Tool ident								C576A601	C582A601	C581A601	C583A601
NenngroÙe Nom. size									치수 코드	Enorm 2-Z X-PM GLT-1	Enorm 2-Z/E X-PM GLT-1	Enorm 2-Z X-IKZ-PM GLT-1	Enorm 2-Z/E X-IKZ-PM GLT-1
ø d ₁	ø d ₁ mm	P Gg/1" (tpi)	l ₁	l ₂	ø d ₂	□							
G	1/8	9,73	28	90	10	7	5,5	8,8	.4035	●	●	●	●
	1/4	13,16	19	100	15	11	9	11,8	.4036	●	●	●	●
	3/8	16,66	19	100	15	12	9	15,25	.4037	●	●	●	●
	1/2	20,96	14	125	17	16	12	19	.4038	●	●	●	●
	3/4	26,44	14	140	20	20	16	24,5	.4040	●	●	●	●
	1"	33,25	11	160	24	25	20	30,75	.4042	●	●	●	●

주문 예시 · Ordering example: C576A601.4035

G 관용 평행 나사 DIN EN ISO 228 Whitworth pipe thread DIN EN ISO 228



DIN 5156

기술 정보
Technical information

공차 · Tolerance
코팅 · Coating



"X"	"X"	"X"	"X"
TIN-60	TIN-60	TIN-60	TIN-60
HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
R45	R45	R45	R45
C / 2-3	E / 1,5-2	C / 2-3	E / 1,5-2
E / 0 / P	E / 0 / P	E / 0	E / 0

나사 깊이 및 홀 타입
Thread depth and hole type

max. 3 x d₁



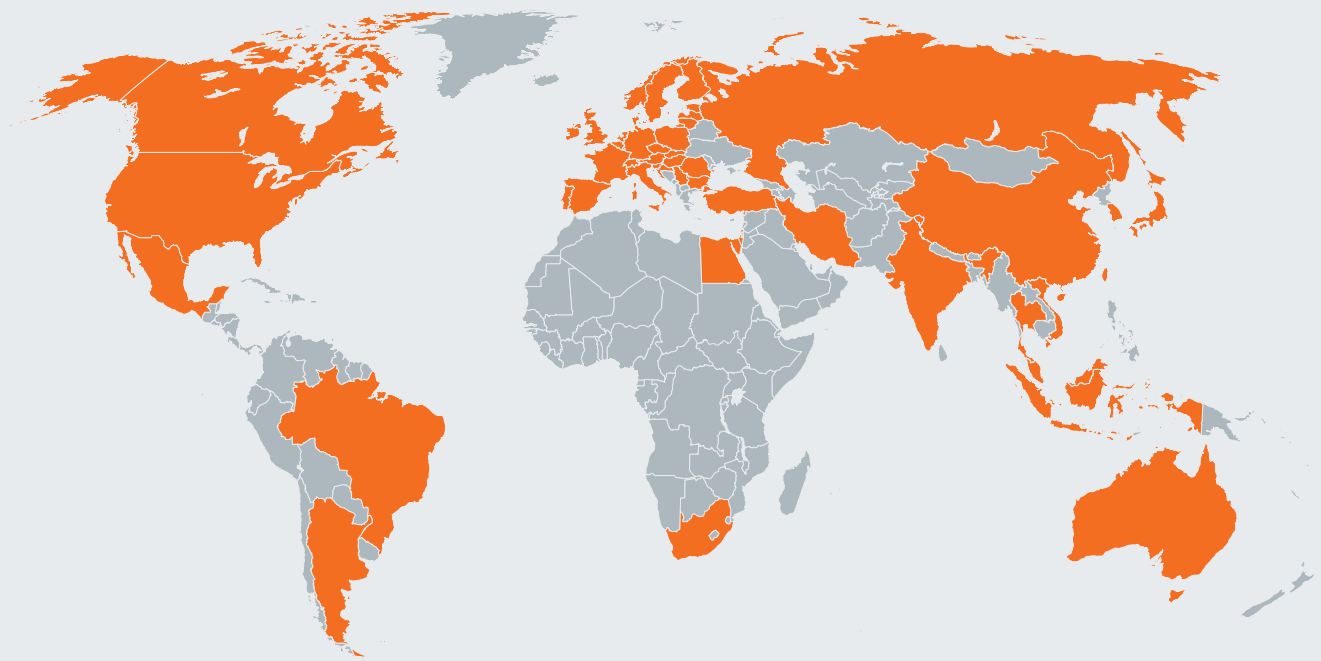
피삭 소재별 적용 범위
Applications – material

▶▶ 4

P 1.1-4.1

DIN 5156		툴 식별 코드 · Tool ident								C5760F01	C5820F01	C5810F01	C5830F01
NenngroÙe Nom. size									치수 코드	Enorm 2-Z X-PM TIN-60	Enorm 2-Z/E X-PM TIN-60	Enorm 2-Z X-IKZ-PM TIN-60	Enorm 2-Z/E X-IKZ-PM TIN-60
ø d ₁	ø d ₁ mm	P Gg/1" (tpi)	l ₁	l ₂	ø d ₂	□							
G	1/8	9,73	28	90	10	7	5,5	8,8	.4035	●	●	●	●
	1/4	13,16	19	100	15	11	9	11,8	.4036	●	●	●	●
	3/8	16,66	19	100	15	12	9	15,25	.4037	●	●	●	●
	1/2	20,96	14	125	17	16	12	19	.4038	●	●	●	●
	3/4	26,44	14	140	20	20	16	24,5	.4040	●	●	●	●
	1"	33,25	11	160	24	25	20	30,75	.4042	●	●	●	●

주문 예시 · Ordering example: C5760F01.4035



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