KYOCERA

NEW

고경도재 가공용 신코팅 CBN

KBN010/KBN020

「내마모성 × 내결손성」을 실현. 고경도재 가공의 비용 절감

신코팅＋고인성 CBN에 의한 내마모성과 내결손성을 양립

연속~단속・강단속까지의 폭넓은 가공 영역에 대응

신개발 코팅「MEGACOAT® TOUGH」를 채용

NEW 신코팅 탄생

MEGACOAT TOUGH | CBN

고경도재 가공용 신코팅 CBN

KBN010/KBN020

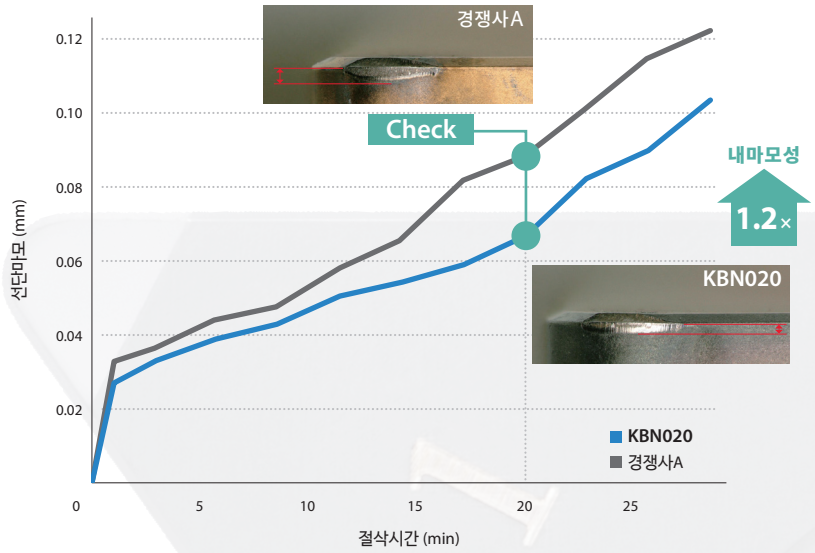
「내마모성 × 내결손성」에 의한 긴수명・안정가공
폭넓은 가공영역에 대해 고경도재 가공의 비용 절감을 실현

1 신코팅＋고인성 CBN에 의해 내마모성과 내결손성을 양립

내마모성

신코팅 MEGACOAT TOUGH를 채용하여 막 박리를 억제
뛰어난 내마모성을 실현

내마모성 비교 (당사비교)

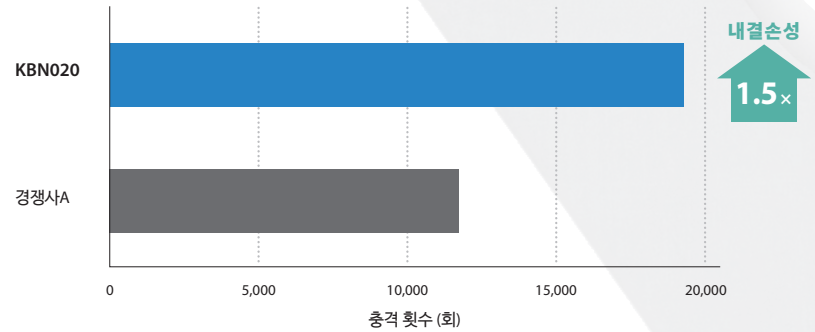


절삭조건 : Vc = 150 m/min, ap = 0.2 mm, f = 0.1 mm/rev, Wet
피삭재 : SCM415Ⓗ 60HRC

내결손성

KBN010 : 초미립자＋조립입자의 혼합조직
KBN020 : 고함유 CBN×고순도 TiN 바인더에 의해 뛰어난 내결손성을 실현

연속~단속 비교 (당사비교)



절삭조건 : Vc = 150 m/min, ap = 0.2 mm, f = 0.2 mm/rev, Dry
피삭재 : SCM415Ⓗ 60HRC

2 연속~단속·강단속까지의 폭넓은 가공에 대응

고속 정삭가공에 적합한 KBN010
광범위한 가공영역을 커버하는 제1추천 재종 KBN020

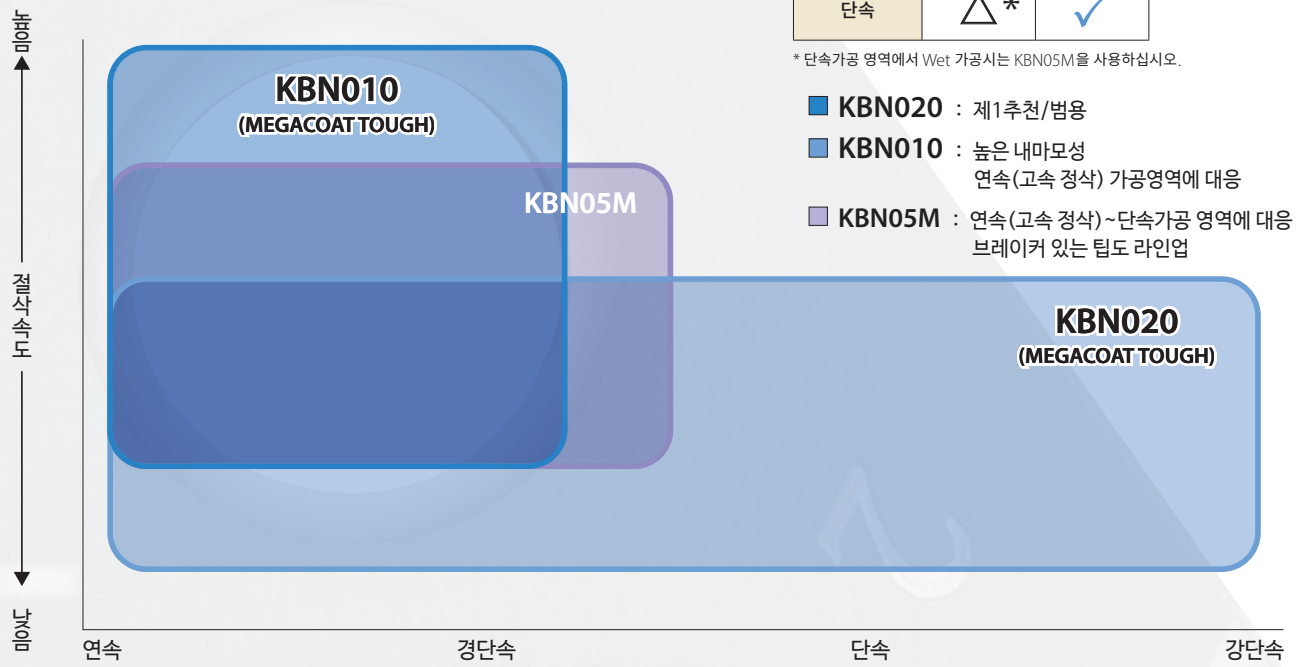
쿨런트 ✓ 추천 ⃠ 비추천

가공형태	Wet	Dry
연속	✓	⃠
단속	△*	✓

* 단속가공 영역에서 Wet 가공시는 KBN05M을 사용하십시오.

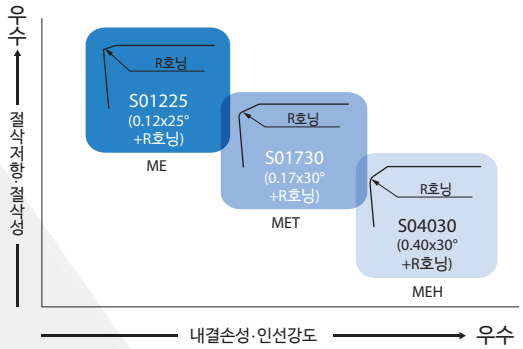
■ **KBN020** : 제1추천/범용
■ **KBN010** : 높은 내마모성
연속(고속 정삭) 가공영역에 대응
■ **KBN05M** : 연속(고속 정삭)~단속가공 영역에 대응
브레이커 있는 팁도 라인업

팁 재종 적용 영역

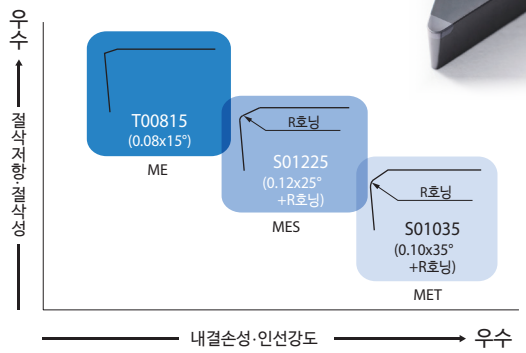


3 풍부한 인선사양을 레퍼토리

네가티브 팁



포지티브 팁



네가티브 팁 표준 인선 사양(고경도재 가공)

임의기호	인선사양		용도·특징
ME	S01225	0.12mm x 25°+R호닝	범용
MET	S01730	0.17mm x 30°+R호닝	내결손성 우수
MEH	S04030	0.40mm x 30°+R호닝	단속·고이송 가공 플레이킹 억제

포지티브 팁 표준 인선사양(고경도재 가공)

임의기호	인선사양		용도·특징
ME	T00815	0.08mm x 15°	챔퍼 사양 절삭성 중시, 버 대책
MES	S01225	0.12mm x 25°+R호닝	범용
MET	S01035	0.10mm x 35°+R호닝	단속가공 안정가공 중시

4 신개발의 코팅「MEGACOAT® TOUGH」

MEGACOAT TOUGH | CBN

특징

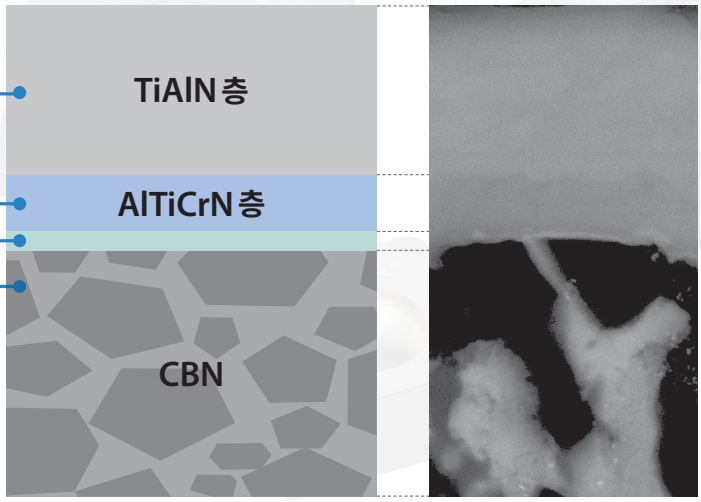
고내마모층과 CBN의 사이에 밀착층을 적층
막 박리를 억제하여 긴수명·안정가공을 실현

고내마모층＜TiAlN＋내산화성 향상 성분＞
⇒산화/확산 마모를 억제

Check 신개발 밀착층 코팅
응력 완화를 위한 중간층
고밀착층
⇒CBN 전용의 층을 2층 추가
CBN과 고내마모층의 밀착성을 향상
막 박리를 억제

Check 고인성CBN
KBN010 : 초미립자＋조립입자의 혼합조직
⇒고속영역에서의 내마모성을 향상

KBN020 : 고함유CBN×고순도TiN 바인더
⇒내열성과 인성의 향상을 실현



적층 이미지

가공사례

클러치 SCr420H

Vc = 100 m/min
ap = 0.15 mm
f = 0.1 mm/rev
Wet
WNGA080408S01225

가공수

KBN020	650 1개/코너	1.6× 수명
경쟁사B	400 1개/코너	

KBN020은 정상 마모로 안정
수명 연장을 실현

(고객평가)

기어 SCM415

Vc = 100 m/min
ap = 0.05 mm
f = 0.15 mm/rev
Wet
CNGA120408S01325MEW

가공수

KBN020	300 1개/코너	1.5× 수명
경쟁사C	200 1개/코너	

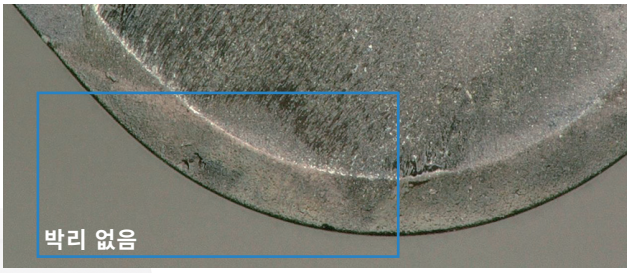
KBN020은 치수의 편차를 개선
수명 연장을 실현

(고객평가)

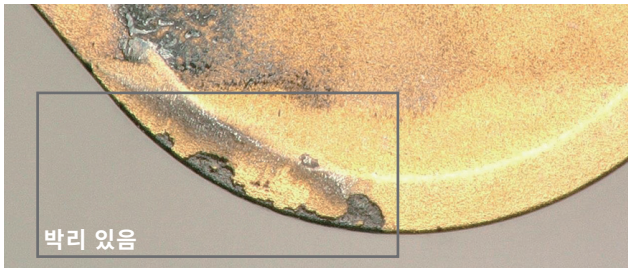
Check 신개발 밀착층 코팅

밀착성의 향상으로 CBN과 코팅의 밀착성이 향상. 막 박리를 억제

KBN020



경쟁사A

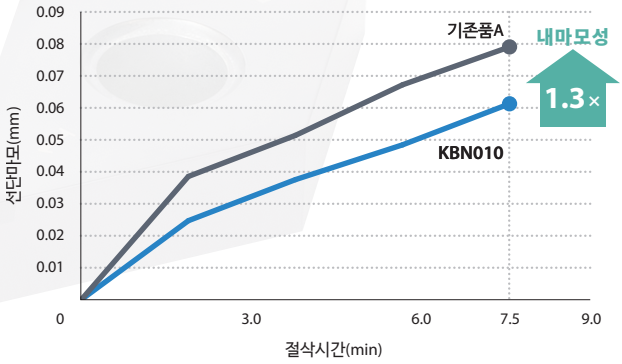


절삭조건 : Vc = 150 m/min, ap = 0.2 mm, f = 0.2 mm/rev, Dry 피삭재 : SCM415Ⓗ (당사비교)

Check 고인성CBN

KBN010

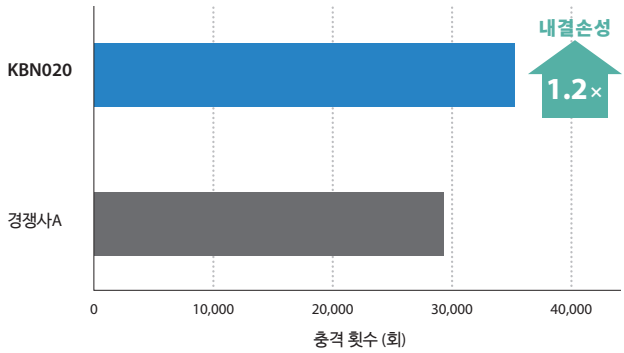
고속 절삭영역에서 내마모성 30%향상(기존품 대비)



절삭조건 : Vc = 210 m/min, ap = 0.2 mm, f = 0.1mm/rev, Wet
피삭재 : SCM415Ⓗ 60HRC (당사비교)

KBN020

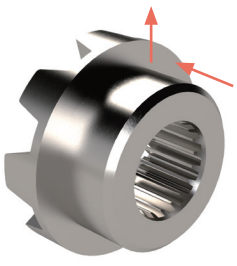
강단속 가공영역에서 내결손성20% 향상(경쟁사 대비)



절삭조건 : Vc = 100 m/min, ap=0.2 mm, f=0.3 mm/rev, Dry
피삭재: SCM415Ⓗ 4홈 61HRC (당사비교)

기어 SNCM220Ⓗ 58HRC

Vc = 125 m/min
ap = 0.25 mm
f = 0.1 mm/rev
Dry
CNGA120408S04030MEH



가공수

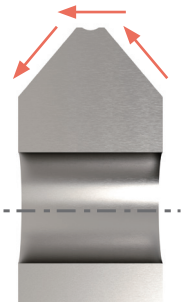
KBN010	600 1개/코너	3.0× 수명
경쟁사D	200 1개/코너	

KBN010은 경쟁사D에 비해
대폭적인 수명 연장을 달성

(고객평가)

롤 SKD11 62HRC

Vc = 145 m/min
ap = 0.25-0.50 mm
f = 0.1 mm/rev
Dry
DNGA150608S01225



가공수

KBN010	18 1개/코너	1.3× 수명
경쟁사E	13 1개/코너	

고경도재의 연속가공에서 뛰어난 내마모성을 발휘해
수명 연장을 실현

(고객평가)

Solution for Automotive Parts

자동차 부품의 가공 과제를 해결

Videos

샤프트 외경 연속~단속가공

기어 단면 강단속 가공

Solution 1

연속~단속・강단속까지의 가공 가능
샤프트나 기어를 비롯해 다양한 부품 증정에 대응

Point 고경도재가 많이 사용되는 자동차 조향장치 부품의 가공에서 성능을 발휘

Solution 2

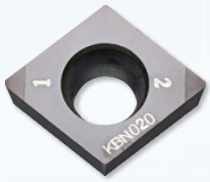
긴수명・안정가공
높은 인성을 갖추어 연속~단속가공시의 돌발 결손을 억제

Point 안정가공으로 생산성 향상을 실현

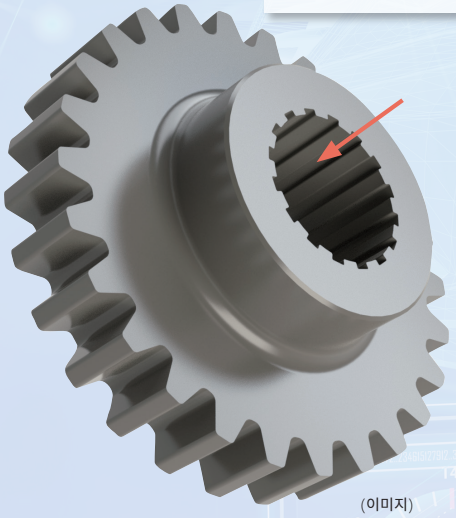
선기어

피삭재
S45C(침탄 열처리)

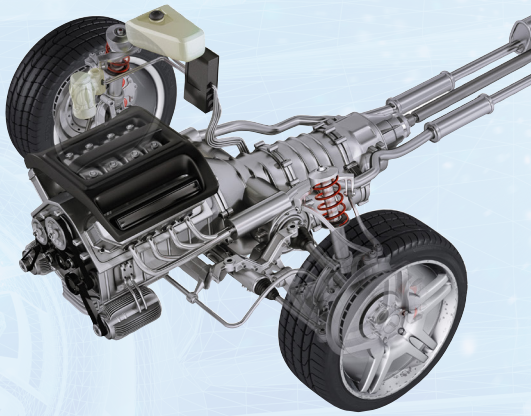
팁 제1추천 : KBN020
CCMW09T308S01035MET



가공용도
내경 스플라인부 정삭가공(단속)



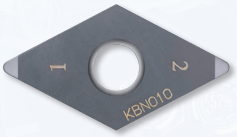
(이미지)



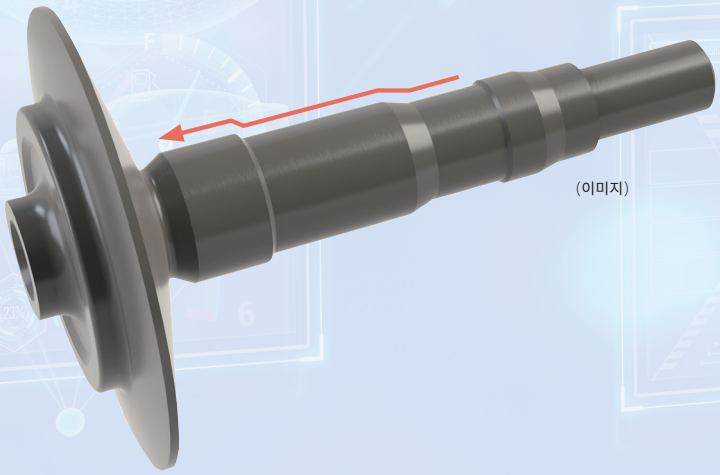
CVT 샤프트

피삭재
SCr420H

팁 제1추천 : KBN010
제2추천 : KBN020
DNGA150404S01225ME



가공용도
외경 정삭가공

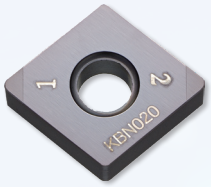


(이미지)

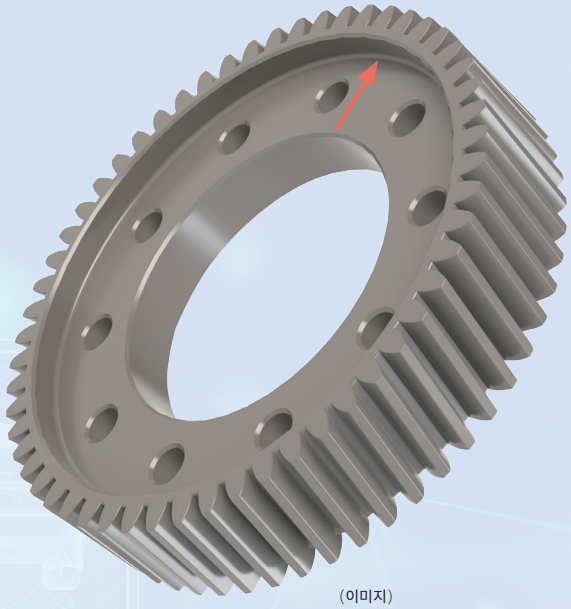
디프

피삭재
SCr420H

칩 제1추천 : KBN020
CNGA120408S01730MET



가공용도
단면가공 (단속)



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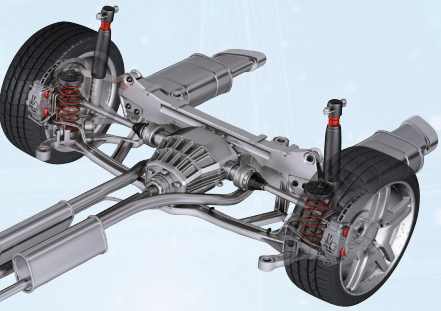
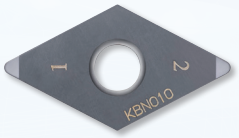


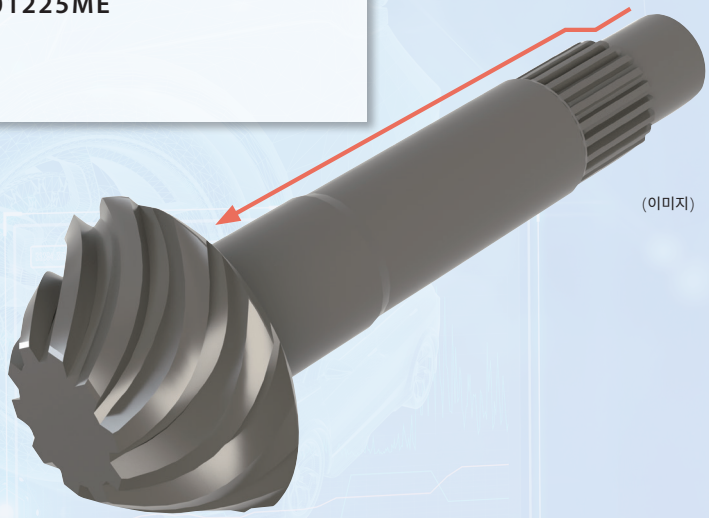
피니언 기어

피삭재
SCM420H

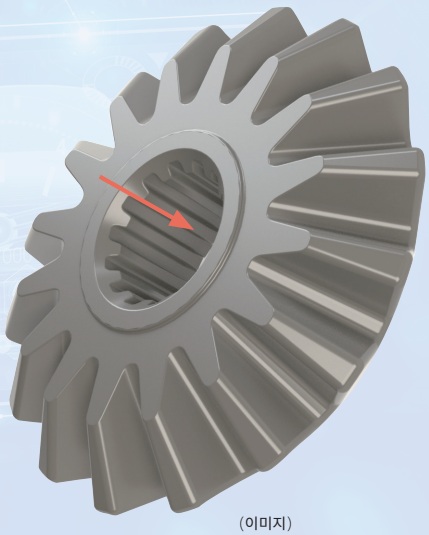
팁 제1추천 : KBN010
제2추천 : KBN020
DNGA150404S01225ME



가공용도
외경 정삭가공



(이미지)

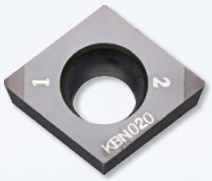


(이미지)

사이드 기어

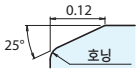
피삭재
S45C(침탄 열처리)

팁 제1추천 : KBN020
CCMW09T308S01035MET

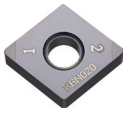
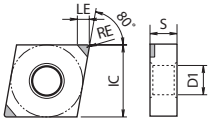
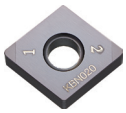
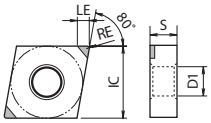
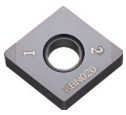
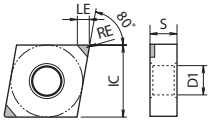
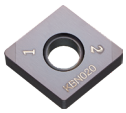
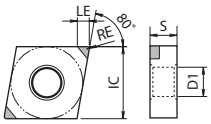
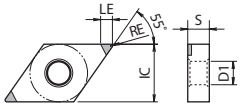
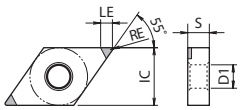
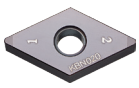
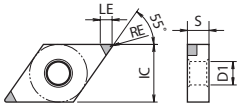


가공용도
내경 스플라인부 정삭가공 (단속)

표준재고 규격 (네가티브)

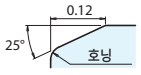
인선사양				
기호	절삭날 상태	기입 예		형상 예
S	챔퍼+호닝	S01225	0.12mm x 25° 챔퍼+호닝	

규격	IC	S	D1
CNGA 1204_	12.70	4.76	5.16
DNGA 1504_	12.70	4.76	5.16
DNGA 1506_		6.35	

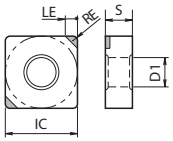
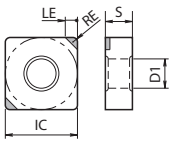
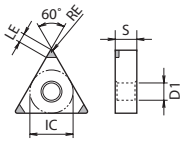
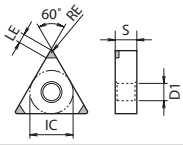
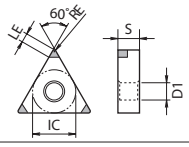
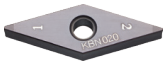
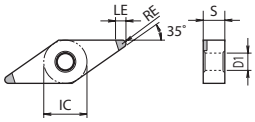
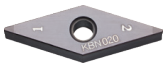
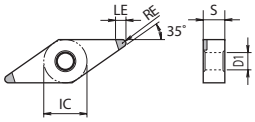
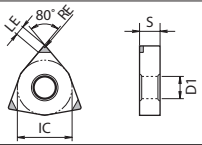
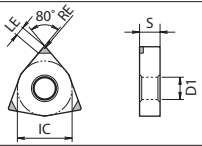
형상		규격		인선사양	치수 (mm)		사용 코너수	MEGACOAT TOUGH	
					RE	LE		KBN010	KBN020
 멀티에지·와이퍼 절삭날		CNGA	120404S01215MEW	S01215	0.4	2.6	2	●	●
			120408S01215MEW		0.8	2.5		●	●
			120412S01215MEW		1.2	2.5		●	●
 멀티에지		CNGA	120402S01225ME	S01225	0.2	2.6	2	●	●
			120404S01225ME		0.4	2.6		●	●
			120408S01225ME		0.8	2.6		●	●
			120412S01225ME		1.2	2.5		●	●
			120416S01225ME		1.6	3.4		●	●
			120420S01225ME		2.0	3.4		●	●
 멀티에지·터프사양		CNGA	120404S01730MET	S01730	0.4	2.6	2	●	●
			120408S01730MET		0.8	2.6		●	●
			120412S01730MET		1.2	2.5		●	●
			120416S01730MET		1.6	3.4		●	●
 멀티에지·단속		CNGA	120408S04030MEH	S04030	0.8	2.6	2	●	●
			120412S04030MEH		1.2	2.5		●	●
멀티에지		DNGA	150401S01225ME	S01225	0.1	2.8	2	●	●
			150402S01225ME		0.2	2.7		●	●
			150404S01225ME		0.4	2.6		●	●
			150408S01225ME		0.8	2.2		●	●
			150412S01225ME		1.2	1.9		●	●
			150416S01225ME		1.6	3.8		●	●
		DNGA	150604S01225ME	S01225	0.4	2.6	2	●	●
			150608S01225ME		0.8	2.2		●	●
멀티에지·터프사양		DNGA	150404S01730MET	S01730	0.4	2.6	2	●	●
			150408S01730MET		0.8	2.2		●	●
			150412S01730MET		1.2	1.9		●	●
			150416S01730MET		1.6	3.8		●	●
		DNGA	150604S01730MET	S01730	0.4	2.6	2	●	●
			150608S01730MET		0.8	2.2		●	●
 멀티에지·단속		DNGA	150404S04030MEH	S04030	0.4	2.6	2	●	●
			150408S04030MEH		0.8	2.2		●	●
			150412S04030MEH		1.2	1.9		●	●

● : 표준재고

표준재고규격 (네가티브)

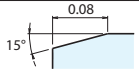
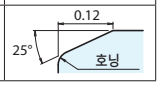
인선사양				
기호	절삭날 상태	기입 예		형상 예
S	챔퍼+호닝	S01225	0.12mm x 25° 챔퍼+호닝	

규격	IC	S	D1
SNGA 1204_	12.70	4.76	5.16
TNGA 1604_	9.525	4.76	3.81
VNGA 1604_	9.525	4.76	3.81
WNGA 0804_	12.70	4.76	5.16

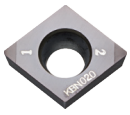
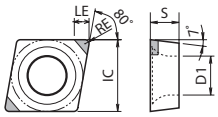
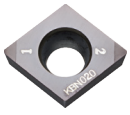
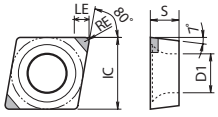
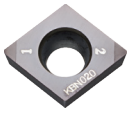
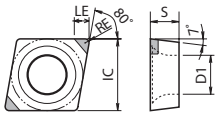
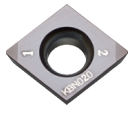
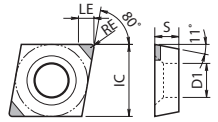
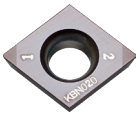
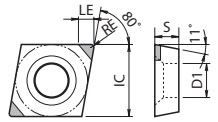
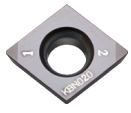
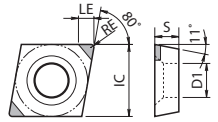
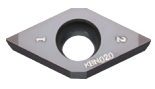
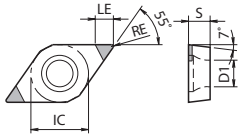
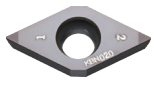
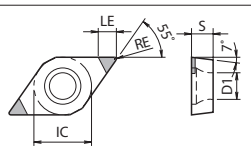
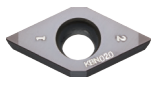
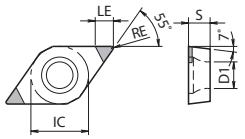
형상		규격		인선사양	치수 (mm)		사용 코너수	MEGACOAT TOUGH	
					RE	LE		KBN010	KBN020
멀티에지		SNGA	120404S01225ME	S01225	0.4	2.6	2	●	●
			120408S01225ME		0.8	2.6		●	●
멀티에지·터프사양		SNGA	120404S01730MET	S01730	0.4	2.6	2	●	●
			120408S01730MET		0.8	2.6		●	●
			120412S01730MET		1.2	2.6		●	●
멀티에지		TNGA	160401S01225ME	S01225	0.1	2.9	3	●	●
			160402S01225ME		0.2	2.8		●	●
			160404S01225ME		0.4	2.7		●	●
			160408S01225ME		0.8	2.4		●	●
			160412S01225ME		1.2	2.1		●	●
멀티에지·터프사양		TNGA	160404S01730MET	S01730	0.4	2.7	3	●	●
			160408S01730MET		0.8	2.4		●	●
			160412S01730MET		1.2	2.1		●	●
멀티에지·단속		TNGA	160404S04030MEH	S04030	0.4	2.7	3	●	●
			160408S04030MEH		0.8	2.4		●	●
 멀티에지		VNGA	160401S01225ME	S01225	0.1	2.6	2	●	●
			160402S01225ME		0.2	2.3		●	●
			160404S01225ME		0.4	2.0		●	●
			160408S01225ME		0.8	2.7		●	●
 멀티에지·터프사양		VNGA	160404S01730MET	S01730	0.4	2.0	2	●	●
			160408S01730MET		0.8	2.7		●	●
멀티에지		WNGA	080404S01225ME	S01225	0.4	2.6	3	●	●
			080408S01225ME		0.8	2.6		●	●
멀티에지·터프사양		WNGA	080404S01730MET	S01730	0.4	2.0	3	●	●
			080408S01730MET		0.8	2.6		●	●

●: 표준재고

표준재고규격 (포지티브)

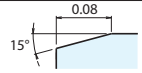
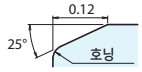
인선사양				
기호	절삭날 상태	기입 예		형상 예
T	챔퍼	T00815	0.08mm x 15° 챔퍼	
S	챔퍼+호닝	S01225	0.12mm x 25° 챔퍼+호닝	

규격	IC	S	D1
CCMW 0602_	6.35	2.38	2.8
CCMW 09T3_	9.525	3.97	4.4
CPGB 0802_	7.94	2.38	3.5
CPGB 0903_	9.525	3.18	4.5
DCMW 0702_	6.35	2.38	2.8
DCMW 11T3_	9.525	3.97	4.4

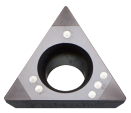
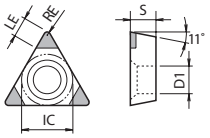
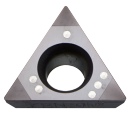
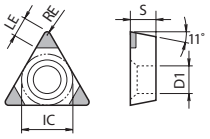
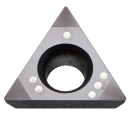
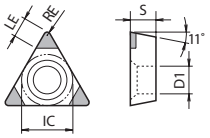
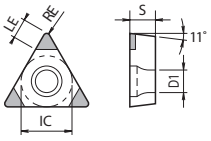
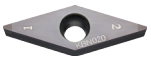
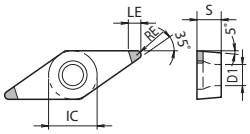
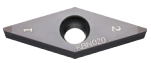
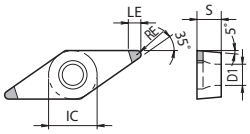
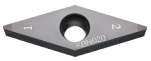
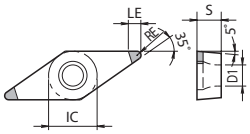
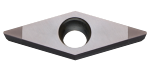
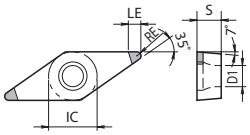
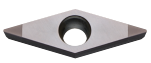
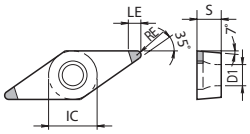
형상		규격		인선사양	치수 (mm)		사용 코너수	MEGACOAT TOUGH	
					RE	LE		KBN010	KBN020
 멀티에지		CCMW	060202T00815ME	T00815	0.2	2.0	2	●	●
			060204T00815ME		0.4	1.9		●	●
			060208T00815ME		0.8	1.8		●	●
		CCMW	09T302T00815ME	T00815	0.2	2.0	2	●	●
			09T304T00815ME		0.4	1.9		●	●
			09T308T00815ME		0.8	1.8		●	●
 멀티에지·범용		CCMW	060204S01225MES	S01225	0.4	1.9	2	●	●
			060208S01225MES		0.8	1.8		●	●
		CCMW	09T304S01225MES	S01225	0.4	1.9	2	●	●
			09T308S01225MES		0.8	1.8		●	●
 멀티에지·터프사양		CCMW	09T304S01035MET	S01035	0.4	1.9	2	●	●
			09T308S01035MET		0.8	1.8		●	●
 멀티에지		CPGB	080204T00815ME	T00815	0.4	1.9	2	●	●
		CPGB	090302T00815ME	T00815	0.2	2.6	2	●	●
			090304T00815ME		0.4	2.6		●	●
 멀티에지·범용		CPGB	090304S01225MES	S01225	0.4	2.5	2	●	●
			090308S01225MES		0.8	2.5		●	●
 멀티에지·터프사양		CPGB	080204S01035MET	S01035	0.4	1.9	2	●	●
			080208S01035MET		0.8	2.2		●	●
		CPGB	090304S01035MET	S01035	0.4	2.5	2	●	●
			090308S01035MET		0.8	2.5		●	●
 멀티에지		DCMW	070202T00815ME	T00815	0.2	2.4	2	●	●
			070204T00815ME		0.4	2.2		●	●
			070208T00815ME		0.8	1.9		●	●
		DCMW	11T302T00815ME	T00815	0.2	2.4	2	●	●
			11T304T00815ME		0.4	2.2		●	●
			11T308T00815ME		0.8	1.9		●	●
			11T312T00815ME		1.2	1.9		●	●
 멀티에지·범용		DCMW	11T302S01225MES	S01225	0.2	2.4	2	●	●
			11T304S01225MES		0.4	2.2		●	●
			11T308S01225MES		0.8	1.9		●	●
 멀티에지·터프사양		DCMW	070202S01035MET	S01035	0.2	1.9	2	●	●
			070204S01035MET		0.4	1.7		●	●
			070208S01035MET		0.8	1.9		●	●
		DCMW	11T302S01035MET	S01035	0.2	2.4	2	●	●
			11T304S01035MET		0.4	2.2		●	●
			11T308S01035MET		0.8	1.9		●	●
			11T312S01035MET		1.2	1.9		●	●

● : 표준재고

표준재고규격 (포지티브)

인선사양				
기호	절삭날 상태	기입 예		형상 예
T	챔퍼	T00815	0.08mm x 15˚ 챔퍼	
S	챔퍼+호닝	S01225	0.12mm x 25˚ 챔퍼+호닝	

규격	IC	S	D1
TPGB 1103_	6.35	3.18	3.5
TPGB 1603_	9.525		4.5
TPGW 1604_	9.525	4.76	4.4
VBGW 1103_	6.35	3.18	2.8
VBGW 1604_	9.525	4.76	4.4
VCGW 0802_	4.76	2.38	2.3

형상		규격		인선사양	치수 (mm)		사용 코너수	MEGACOAT TOUGH	
					RE	LE		KBN010	KBN020
 멀티에지		TPGB	110302T00815ME	T00815	0.2	2.3	3	●	●
			110304T00815ME		0.4	2.1		●	●
			110308T00815ME		0.8	1.8		●	●
 멀티에지•범용		TPGB	110304S01225MES	S01225	0.4	2.1	3	●	●
			110308S01225MES		0.8	1.8		●	●
 멀티에지•터프사양		TPGB	110302S01035MET	S01035	0.2	2.3	3	●	●
			110304S01035MET		0.4	2.1		●	●
			110308S01035MET		0.8	1.8		●	●
		TPGB	160304S01035MET	S01035	0.4	1.8	3	●	●
			160308S01035MET		0.8	1.5		●	●
멀티에지•터프사양		TPGW	160404S01035MET	S01035	0.4	1.8	3	●	●
			160408S01035MET		0.8	1.5		●	●
 멀티에지		VBGW	110302T00815ME	T00815	0.2	2.4	2	●	●
			110304T00815ME		0.4	2.0		●	●
			110308T00815ME		0.8	1.7		●	●
		VBGW	160402T00815ME	T00815	0.2	2.4	2	●	●
			160404T00815ME		0.4	2.0		●	●
			160408T00815ME		0.8	1.7		●	●
 멀티에지•범용		VBGW	110304S01225MES	S01225	0.4	2.0	2	●	●
			160404S01225MES		0.4	2.0	2	●	●
 멀티에지•터프사양		VBGW	110302S01035MET	S01035	0.2	2.4	2	●	●
			110304S01035MET		0.4	2.0		●	●
			110308S01035MET		0.8	1.7		●	●
		VBGW	160402S01035MET	S01035	0.2	2.4	2	●	●
			160404S01035MET		0.4	2.0		●	●
			160408S01035MET		0.8	1.7		●	●
 멀티에지		VCGW	080202T00815ME	T00815	0.2	2.4	2	●	●
			080204T00815ME		0.4	2.0		●	●
 멀티에지•터프사양		VCGW	080202S01035MET	S01035	0.2	2.4	2	●	●
			080204S01035MET		0.4	2.0		●	●
			080208S01035MET		0.8	1.7		●	●

●: 표준재고

추천 절삭조건표

피삭재	피삭재 경도	가공형태		추천 재종	절삭조건		
					절삭속도 Vc (m/min)	절입량 ap (mm)	이송 f (mm/rev)
고경도재	55HRC 이상	고속 정삭	연속	KBN010	80 - **180** - 230	0.05 - **0.2** - 0.35	0.05 - **0.15** - 0.3
		범용 정삭	연속~단속	KBN020	80 - **150** - 200	0.05 - **0.2** - 0.5	0.05 - **0.2** - 0.45
		고능률 안정 가공	경단속~단속	KBN020	80 - **150** - 200	0.05 - **0.2** - 0.5	0.05 - **0.2** - 0.45
		단속	단속~강단속	KBN020	80 - **130** - 180	0.05 - **0.2** - 0.5	0.05 - **0.2** - 0.4

절삭공구에 관한 제품 상담은

교세라
고객지원센터 **032-821-8365**

FAX: 032-821-8369 MAIL: qna@kptk.co.kr

●상담시간 8:30~12:00/13:30~16:30 ●토요일·일요일·공휴일·회사 휴일은 상담이 제한됩니다.
※개인 정보의 이용…문의에 대한 답변이나 서비스 향상, 정보제공에 사용합니다.
※문의하실 때 번호를 틀리지 않도록 부탁 드립니다.

이 카탈로그에 기재된 정보는 2023년 7월 시점의 것입니다.
이 카탈로그를 무단으로 복제 및 전재하는 것을 금합니다.

KP181 CAT/18T2307

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