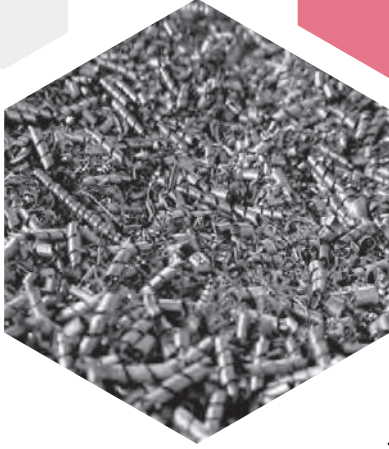


TORNA VE FREZE UÇLARI
TURNING & MILLING INSERTS

2021



GENEL ÜRÜN KATALOĞU

GENERAL PRODUCT CATALOGUE

WWW.KLP.COM.TR





Karakoc Tooling & Metal Form Industry Co.

Hakkımızda / About Us

Tarihçe / History

Freze Uçları / Milling Inserts

Iso Kodları / Iso Codes

ADKT

APCT

APKT

APXT

HNMX

KFB

LNMX

ONMU

RHKT

RHKW

SDMT

SEKT

SNMX

SPMG

TPKN

WCMX

Kaliteler / Grades

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Torna Bölümü / Turning Inserts

Iso Kodları / Iso Codes

CNMA-CNMG

CCMT

DCMT

DGN

DNMA-DNMG

KNUX

TCMT

TNMA-TNMG

TNUX

SNMA-SNMG

VBMT-VCMT

VNMG

WNMA-WNMG

Kaliteler / Grades

Formüller / Formulas

Çaplar ve Kesme Hızına Göre Çap/Devir Tablosu /

Diameter-Rotation Speed Table by Cutting Speed

Kalite Tablosu / Grade Chart

Kalite Karşılaştırma

Tablosu / Grade Comparison Chart

Notlar / Notes

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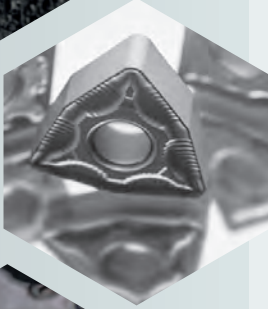
56

57

58-59

60-61

%Yüz Yerli



www.klp.com.tr

Dünyanın ucunu ürettiyoruz

Türkiye'nin ilk ve tek tamamen entegre karbür kesici takımlar üreticisi KLP Kesici Takımlar, KARAKOÇ KALIP AŞ tarafından 2010 yılında kurulmuştur. Yeni doğan firmamızın kalite anlayışı kısa süre içerisinde tüm yerli ve yabancı müşterilerimiz tarafından beğeniyle karşılanmıştır.

Daha bu erken aşamalarında parlamaya başlayan Türk Markası KLP Kesici Takımlar, Türkiye'nin ilk ve tek karbür ucunu ihraç etmeye başlamıştır.

Yatırım, araştırma ve geliştirme sürekli surette devam etmektedir. 2021 öngörümüz 200 farklı geometride ve 400 farklı tipte insert üretim yapmak.

We produce inserts for the world

Turkey's the first and only fully-integrated carbide cutting tools factory KLP Cutting Tools was established by KARAKOÇ Inc. in 2010. Quality approach of the new-born company has been widely appreciated by all local and foreign customers in a short time.

Turkish brand **KLP CUTTING TOOLS**, as a new shining enterprise, has begun to export Turkey's carbide inserts.

Investment and RD activities are constantly developing in the company. The company anticipates producing Made in Turkey inserts in 400 different types and 200 different geometries its own facility by the year 2020.

1976

Orta Anadolu, Konya 48 metre karelik bir atölyede kalıp üretimine başladık. Sürekli gelişime, başarıya ve kaliteye odaklandık. Özveri ile çalıştık.

Central Turkey, Konya 48 sqm workshop... We started to produce toolsets. We believed in continuous development, innovation, focused in quality. We didn't stop, worked with devotion.

1987

Soğuk sac biçimlendirmeye ve otomotiv endüstrisine yedek parça üretmeye başladık. Sac parça bastık, pres makinaları ürettik.

We have started to serve automotive industry with cold formed spare parts. We have formed metal sheets, we have started to produce cold metal forming press machines, continuously worked, didn't stop...

1998

Orta Anadolu'dan otomotivin başkenti Bursa'ya taşındık. Kalite, yenilik ve gelişim ana düsturumuz oldu.

We have moved from Central Turkey, Konya to the heart of automotive industry Western Turkey Bursa... Quality, innovation, development were our main norm...

2004

Lazer kesim makinaları üretmeye başladık. Artık Karakoç, karmaşık problemlere getirdiği çabuk ve pratik çözümlerle marka olmuştu.

We have started to produce laser cutting machines. Karakoç was a very known brand of Turkish Industry especially on quick and practical solutions for complex problems...

2010

Ürün ve hizmet gamımız genişledi.; Soğuk sac biçimlendirme, kaynaklı parça imalatı, kalıp üretimi, eksenrik pres makinaları üretimi, hidrolik pres sistemleri üretimi, servo pres sistemleri, lazer kesim makinaları, transfer robotları...

Our product range has increased, cold pressed metal forming, welded parts production, toolset production, eccentric press machine systems, hydraulic press machine systems, servo press systems, laser cutting units, transfer robots...

2011

Türkiye'nin tamamen yerli sermayeli, tam entegre ilk ve tek tungsten karbür kesici takımları fabrikasını kurduk. Artık toplam üretim alanımız 13.500 metrekare.

We have established the first and only fully integrated tungsten carbide cutting tools factory. Our total production area is now 13.500 sqm.

2012

Kesici takımlar üretimi test fazı tamamlandı. KLP Kesici Takımlar artık memleket ve dünya piyasalarında...

Test phase of insert production is completed. KLP Cutting Tools is in the market.

2013

CVD Kaplama tesisimizi kurduk. Bir çok ülkeye ihracatımız başladı.

We founded insert production is completed. KLP Cutting Tools is in the market.

2014

Yeni ürün çeşitlerimiz ile büyümeye devam ettik.

We keep growing with our new product range.

2015

Kendi satış mağazalarımızı kurduk. Bursa, Konya, Ankara, İstanbul, İzmir...

We have established our own sales offices Bursa, Konya, Ankara, İstanbul, İzmir...



www.klp.com.tr

2021 DURMUYORUZ...
WE DO NOT STOP...

WE PRODUCE THE QUALITY...



TURNING & MILLING INSERTS

TORNA ve FREZE UÇLARI



CUT & GROOVING INSERTS

KESME ve KANAL UÇLARI



ROUND INSERTS

YUVARLAK UÇLAR



CARBIDE END MILLS

KARBÜR PARMAK FREZE



RAW CARBIDE STICKS

İŞLENMEMİŞ KARBÜR ÇUBUK



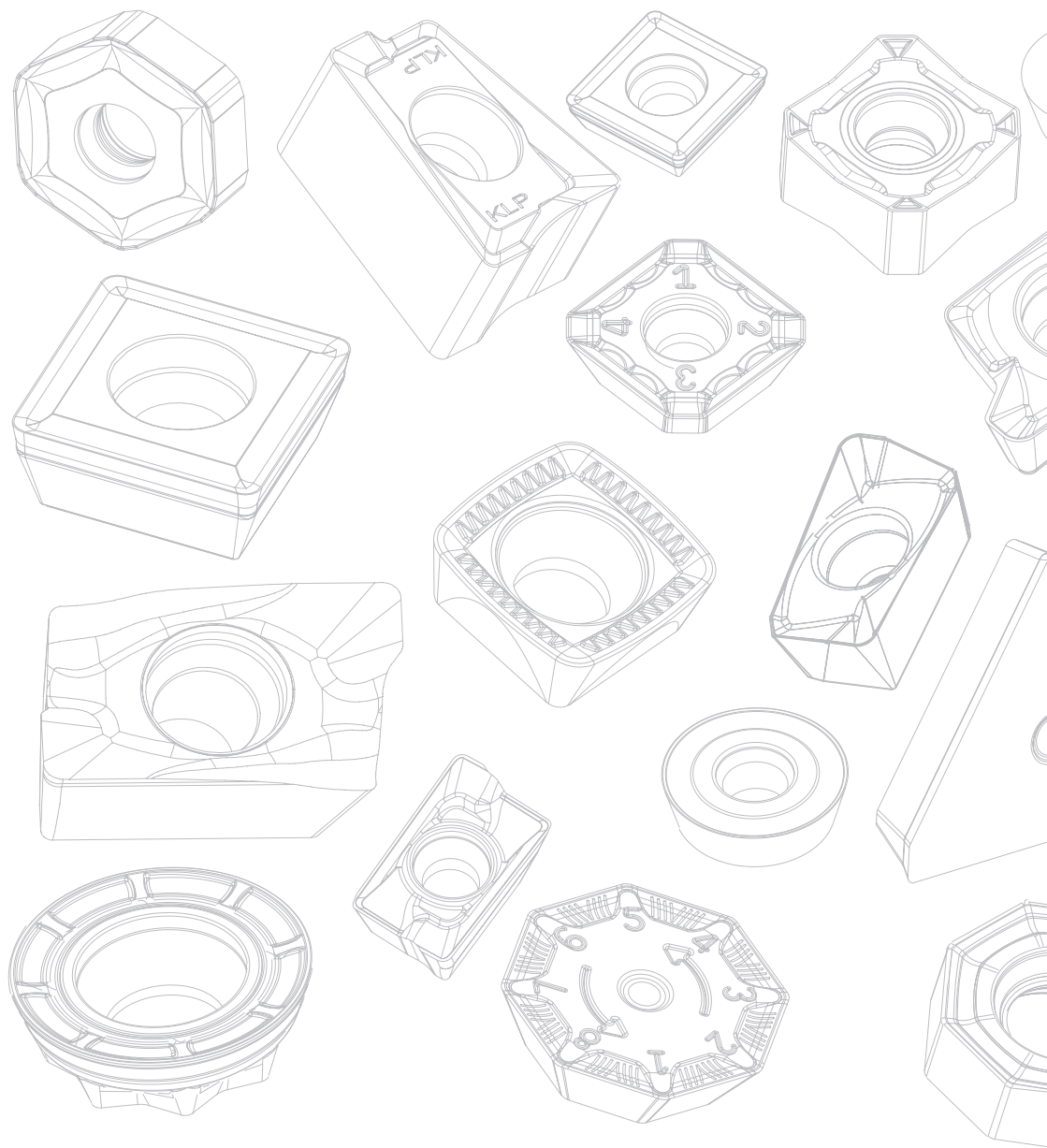
SPECIAL PRODUCTS

ÖZEL ÜRÜNLER



PVD & CVD COATING

PVD ve CVD KAPLAMALAR



FREZE/MILLING

ISO KODLARI / ISO CODES

1 S BİÇİM FORM

	A 85°
	B 82°
	C 80°
	D 55°
	E 75°
	H 120°
	K 55°
	L 90°
	M 86°
	O 135°
	P 108°
	R 360°
	S 90°
	T 60°
	V 35°
	W 80°

2 D AÇI ANGLE

	A 3°
	B 5°
	C 7°
	D 15°
	E 20°
	F 25°
	G 30°
	H 13°
	N 0°
	P 11°

3 M TOLERANS TOLERANCE

			
	d	m	s
A	mm ±0,025	±0,005	±0,025
C	mm ±0,025	±0,013	±0,025
E	mm ±0,025	±0,025	±0,025
F	mm ±0,025	±0,005	±0,025
G	mm ±0,013	±0,025	±0,013
H	mm ±0,025	±0,013	±0,025
J	mm ±0,013	±0,005	±0,025
K	mm *	±0,013	±0,025
L	mm *	±0,025	±0,025
M	mm *	*	±0,127
U	mm *	*	±0,127
N	mm *	*	±0,025

4 T TALAŞ KIRICI INSERT HOLE OR BREAKER

**A****B**

70°-90°

**C**

70°-90°

**F****G****H**

70°-90°

**J**

70°-90°

**M****N****Q**

40°-60°

**R****T**

40°-60°

**U**

40°-60°

**W**

40°-60°

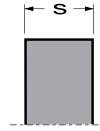
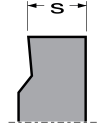
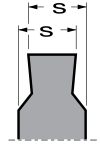
Özel Ürün
Special Product

X

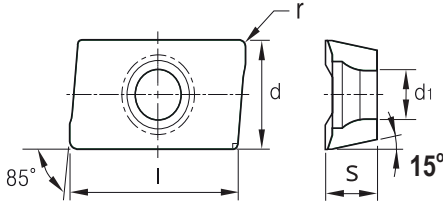
5 12 KESME BOYU CUTTING LENGHT

**C, D, E, M, V****H****A, B, K****L****O****P****R****S****T****W**

6 04 KALINLIK THICKNESS

**A, B, C, N, O, W****H, M, R, T****F, G, J, U**

01	=	1,588
T1	=	1,984
02	=	2,381
03	=	3,175
T3	=	3,969
04	=	4,763
05	=	5,556
06	=	6,350
07	=	7,938
09	=	9,525
11	=	11,113
12	=	12,700
14	=	14,288
15	=	15,875



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250	5,50 €
KLP 1255	5,50 €
KLP 855	5,50 €

ADKT

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
ADKT 150508 PDR	9,65	14,20	5,65	0,80	4,45
ADKT 150508 ALU	9,65	14,20	5,65	0,80	4,45

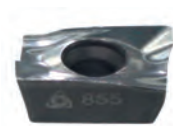
ADKT 1505 PDR
KLP 1250



ADKT 1505 PDR
KLP 1255

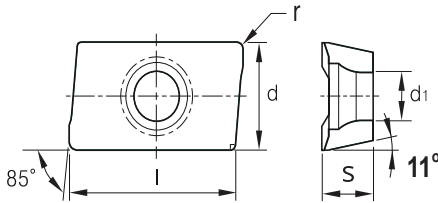


ADKT 150508 ALU
KLP 855



Kaliteler / Grades

	KLP 1250	KLP 1255	KLP 855
Çelik / Steel	✓	✓	
Paslanmaz Çelik / Stainless Steel	✓	✓	
Döküm / Cast Iron	✓	✓	✓
Alüminyum / Aluminum			✓
Özel Alaşımlar / Special Alloy			
Sertleştirilmiş Çelik / Hardened Steel		✓	



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250	4,10 €
KLP 1255	4,10 €

APCT

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
APCT 113508 PDR KLP 1250	6,20	11,30	3,50	0,80	3,00

APCT 113508 PDR
KLP 1250

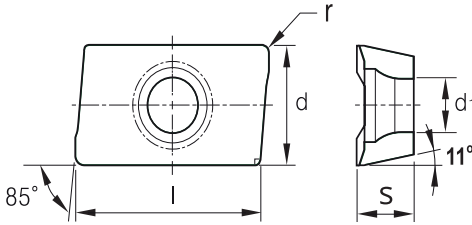


APCT 113508 PDR
KLP 1255



Kaliteler / Grades

	KLP 1250	KLP 1255
Çelik / Steel	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓
Döküm / Cast Iron	✓	✓
Aluminyum / Aluminum		
Özel Alaşımlar / Special Alloy		
Sertleştirilmiş Çelik / Hardened Steel		✓



KALİTELER / GRADES	FİYAT / PRICE
--------------------	---------------

KLP 1250 **4,00 €**

APKT 100305 CM / CF - 100308 CM - 100312 CR

KLP 1255 **4,00 €**

APKT 100305 CM / CF - 100308 CM - 100312 CR

APKT

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
APKT 100305 PDRCF	6,65	10,50	3,47	0,50	3,20
APKT 100305 PDRCM	6,65	10,50	3,47	0,50	3,20
APKT 100308 PDR CM	6,65	10,50	3,47	0,80	3,20
APKT 100312 PDR CR	6,65	10,50	3,47	1,20	3,20

APKT 100305 CF
KLP 1255



APKT 100305 CM
KLP 1255



APKT 100308 CM
KLP 1255



APKT 100312 CR
KLP 1255



KLP 1250

KLP 1255

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum



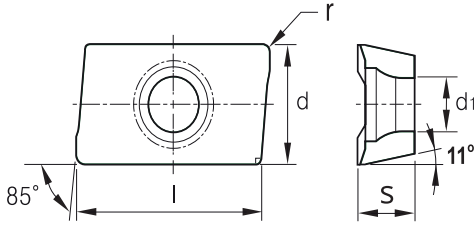
Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel



Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250	5,60 €
APKT 16 CM - 08 - 16	
KLP 1255	5,90 €
APKT 17	

APKT

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
APKT 160408 PDR CM	9,45	16,80	5,70	0,80	4,70
APKT 160416 PDR CR	9,45	16,80	5,70	1,60	4,70
APKT 170408 PDR	10,70	18,50	5,70	0,80	4,70

APKT 160408PDR CM
KLP 1255



APKT 160416 PDR CR
KLP 1255



APKT 170408 PDR
KLP 1250



KLP 1250	KLP 1255
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Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum



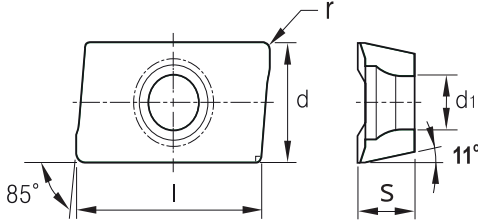
Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel



Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250	4,00 €
KLP 1255	4,00 €

APXT

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
APXT 100308 PDR	6,30	11,30	3,50	0,80	3,00

APXT 1003 PDR
KLP 1250

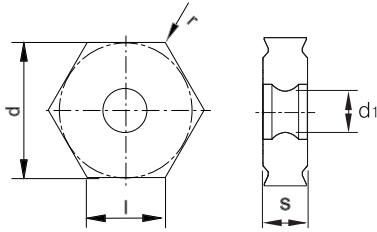


APXT 1003 PDR
KLP 1255



Kaliteler / Grades

	KLP 1250	KLP 1255
Çelik / Steel	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓
Döküm / Cast Iron	✓	✓
Alüminyum / Aluminum		
Özel Alaşımlar / Special Alloy		
Sertleştirilmiş Çelik / Hardened Steel		✓



KALİTELER / GRADES **FİYAT / PRICE**

KLP 1255HNMX09 8,10 €

HNMX

KOD / CODE **d (mm)** **l (mm)** **s(mm)** **r(mm)** **d1 (mm)**

HNMX 090610 ENACM 15,80 9,00 6,35 1,00 5,20

HNMX 090610 ENACM
KLP 1255



KLP 1250

KLP 1255

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum



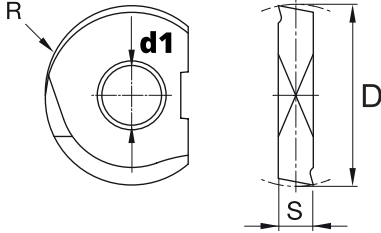
Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel



Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1255 KFB 100 CF	15,22 €
KLP 1255 KFB 120 CF	17,60 €
KLP 1255 KFB 160 CF	20,62 €
KLP 1255 KFB 200 CF	25,50 €
KLP 1255 KFB 250 CF	30,80 €

KFB

KOD / CODE	D(mm)	S(mm)	R(mm)	d1 (mm)
KFB 100 CF	10.00	2.50	5.00	4.00
KFB 120 CF	12.00	2.50	6.00	5.00
KFB 160 CF	16.00	3.00	8.00	5.00
KFB 200 CF	20.00	3.00	10.00	5.00
KFB 250 CF	25.00	4.00	12.50	6.00

KFB 100 CF
KLP 1255



KFB 120 CF
KLP 1255



KFB 160 CF
KLP 1255



KFB 200 CF
KLP 1255



KFB 250 CF
KLP 1255


KLP 1255

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum

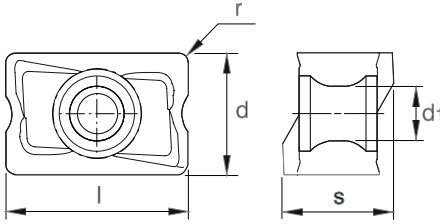


Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel


Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250 - 1255	5,90 €
<i>LNMX 10</i>	
KLP 1250 - 1255	7,50 €
<i>LNMX 15</i>	

LNMX

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
LNMX 100605 PNR - CM	6,50	10,00	6,35	0,50	3,60
LNMX 151008 PNR - CM	10,00	15,00	10,00	0,80	4,50

LNMX 100605 PNR CM
KLP 1250

LNMX 151008 PNR CM
KLP 1250

LNMX 100605 PNR CM
KLP 1255

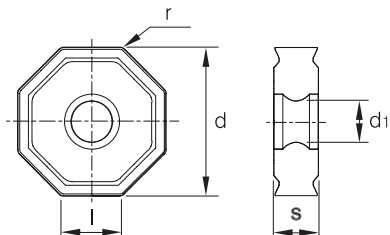
LNMX 151008 PNR CM
KLP 1255



Kaliteler / Grades

	KLP 1250	KLP 1255
Çelik / Steel	☒	☒
Paslanmaz Çelik / Stainless Steel	☒	☒
Döküm / Cast Iron	☒	☒
Alüminyum / Aluminum	☐	☐
Özel Alaşımlar / Special Alloy	☐	☐
Sertleştirilmiş Çelik / Hardened Steel	☐	☒





KALİTELER / GRADES	FİYAT / PRICE
KLP 1250	8,75 €
KLP 1255	8,75 €

ONMU

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
------------	--------	--------	-------	-------	---------

ONMU 050505 CM	13,00	5,00	5,55	0,50	5,70
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ONMU 0505 CM
KLP 1250

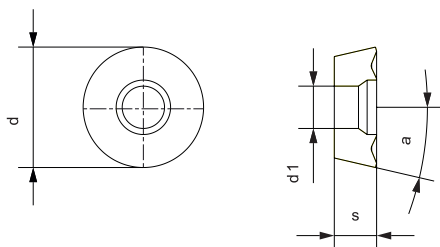


ONMU 0505 CM
KLP 1255



Kaliteler / Grades

	KLP 1250	KLP 1255
Çelik / Steel	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓
Döküm / Cast Iron	✓	✓
Aluminyum / Aluminum		
Özel Alaşımlar / Special Alloy		
Sertleştirilmiş Çelik / Hardened Steel		✓



RHKT-RHKX-RHKW

Kaliteler / Grades

KOD / CODE	d (mm)	a(mm)	s(mm)	r(mm)	d1 (mm)
RHKT 1605 CM	16,00	13,00	5,20	8,00	5,60
RHKX 1204 CR	12,00	13,00	4,76	6,00	3,70
RHKX 1204 CM	12,00	13,00	4,76	6,00	4,40
RHKX 1204 CH	12,00	13,00	4,76	6,00	4,40
RHKX 1204 CF	12,00	13,00	4,76	6,00	4,40
RHKX 10T3 CR	10,00	13,00	3,96	5,00	4,40
RHKX 10T3 CM	10,00	13,00	3,96	5,00	4,40
RHKX 10T3 CH	10,00	13,00	3,96	5,00	4,40
RHKX 10T3 CF	10,00	13,00	3,96	5,00	4,40
RHKX 0803 CR	8,00	13,00	3,17	4,00	4,40
RHKX 0803 CM	8,00	13,00	3,17	4,00	4,40
RHKX 0803 CH	8,00	13,00	3,17	4,00	4,40
RHKX 0803 CF	8,00	13,00	3,17	4,00	2,20
RHKW 0501 CR	5,00	13,00	1,50	2,50	4,40

RHKT-RHKX-RHKW

Kaliteler / Grades

KALİTELER / GRADES

KLP 1250 - 1255 6,00 €

RHKT 1605 CM

KLP 1250 - 1255 4,45 €

RHKX 12

KLP 1250 - 1255 4,00 €

RHKX 10

KLP 1250 - 1255 3,60 €

RHKX 08

KLP 1250 3,00 €

RHKW 05

RHKX 1204 CR
KLP 1255



RHKX 1204 CM
KLP 1255



RHKX 1204 CH
KLP 1255



RHKX 1204 CF
KLP 1255



RHKT 1605 CM
KLP 1255



RHKW 0501 CR
KLP 1255



KLP 1250

KLP 1255

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum



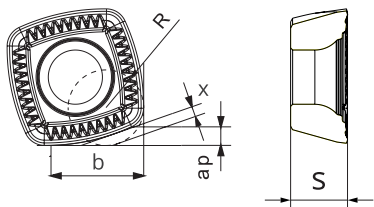
Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel







KALİTELER / GRADES	FİYAT / PRICE
KLP 1250 - 1255	5,00 €
<i>SDMT 07 - CM - CR</i>	
KLP 1250 - 1255	5,95 €
<i>SDMT 09 - CM - CR - CF</i>	
KLP 1250 - 1255	7,25 €
<i>SDMT 12 CM - CR</i>	

KOD / CODE	d (mm)	R (mm)	b(mm)	ap(mm)	x (mm)	s (mm)
SDMT 070308 CM	7,94	1,60	6,20	0,80	0,14	3,17
SDMT 070308 CR	7,94	1,60	6,20	0,80	0,14	3,17
SDMT 09T312 CF	9,52	2,20	7,40	1,40	0,90	3,97
SDMT 09T312 CM	9,52	2,20	7,40	1,40	0,90	3,97
SDMT 09T312 CR	9,52	2,20	7,40	1,40	0,90	3,97
SDMT 09T312 CH	9,52	2,20	7,40	1,40	0,90	3,97
SDMT 120520 CM	12,70	3,70	9,00	1,80	1,10	5,55
SDMT 120520 CR	12,70	3,70	9,00	1,80	1,10	5,55

SDMT
070308CR
KLP 1255



SDMT
070308CM
KLP 1250



SDMT
09T312CR
KLP 1255



SDMT
09T312CH
KLP 1255



NEW

SDMT
09T312CM
LP 1255



SDMT
09T312CF
KLP 1255



NEW

SDMT
120520CM
KLP 1255



SDMT
120520CR
KLP 1255



NEW

KLP 1250

KLP 1255

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum



Özel Alaşımlar /
Special Alloy

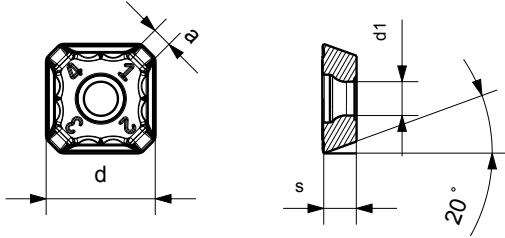


Sertleştirilmiş Çelik /
Hardened Steel



SDMT

Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250	5,65 €
KLP 1255	5,65 €

SEKT

KOD / CODE	d (mm)	a(mm)	s(mm)	r(mm)	d1 (mm)
SEKT 12T3 AFTN-CM	13,40	2,20	3,96	0,60	4,20
SEKT 12T3 AFTN-CF	13,40	2,20	3,96	0,60	4,20

SEKT 12T3 AFTN CM
KLP 1250



SEKT 12T3 AFTN CM
KLP 1255



SEKT 12T3 AFTN CF
KLP 1250

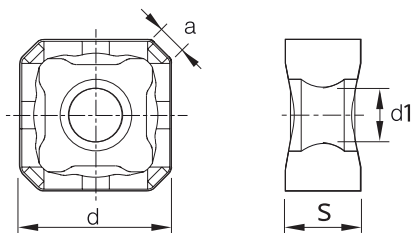


SEKT 12T3 AFTN CF
KLP 1255



Kaliteler / Grades

	KLP 1250	KLP 1255
Çelik / Steel	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓
Döküm / Cast Iron	✓	✓
Alüminyum / Aluminum		
Özel Alaşımlar / Special Alloy		
Sertleştirilmiş Çelik / Hardened Steel		✓



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250 SNMX12	6,50 €
KLP 1255 SNMX12	6,50 €

SNMX

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
SNMX 120608 ANN	12,70	12,70	6,35	0,80	4,40
SNMX 120608 ENN	12,70	12,70	6,35	0,80	5,20

SNMX 120608 ANN
KLP 1250



SNMX 120608 ENN
KLP 1250



SNMX 120608 ANN
KLP 1255

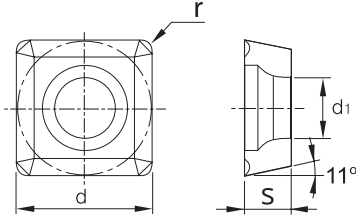


SNMX 120608 ENN
KLP 1255



Kaliteler / Grades

	KLP 1250	KLP 1255
Çelik / Steel	☒	☒
Paslanmaz Çelik / Stainless Steel	☒	☒
Döküm / Cast Iron	☒	☒
Alüminyum / Aluminum	☐	☐
Özel Alaşımlar / Special Alloy	☐	☐
Sertleştirilmiş Çelik / Hardened Steel	☐	☒



KALİTELER / GRADES	FİYAT / PRICE
KLP 1250	3,35 €
<i>SPMG 05</i>	
KLP 1250	3,90 €
<i>SPMG 06</i>	
KLP 1250	4,25 €
<i>SPMG 07</i>	
KLP 1250	4,75 €
<i>SPMG 09</i>	
KLP 1250	5,10 €
<i>SPMG 11</i>	

SPMG

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
SPMG 050204	5,00	5,00	2,38	0,40	2,20
SPMG 060204	6,00	6,00	2,38	0,40	2,70
SPMG 07T308	8,00	7,00	3,97	0,80	2,80
SPMG 090408	9,80	9,80	4,30	0,80	3,70
SPMG 110408	11,50	11,50	4,98	0,80	4,20

SPMG 050204
KLP 1250

SPMG 060204
KLP 1250

SPMG 07T308
KLP 1250

SPMG 090408
KLP 1250

SPMG 110408
KLP 1250



KLP 1250

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum



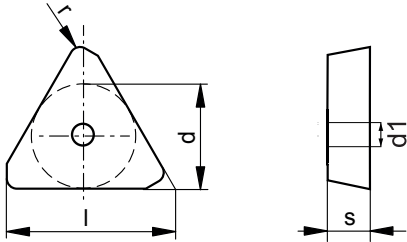
Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel



Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1255	4,00 €
TPKN 16	
KLP 1255	5,20 €
TPKN 22	
KLP 1275	4,00 €
TPKN 16	
KLP 1275	5,20 €
TPKN 22	

TPKN

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
TPKN 1603 PPTN	9,52	16,50	3,18	0,20	2,50
TPKN 2204 PPTN	12,70	22,00	4,76	0,60	2,50

TPKN 1603 PPTN
KLP 1255



TPKN 2204 PPTN
KLP 1255



TPKN 1603 PPTN
KLP 1275

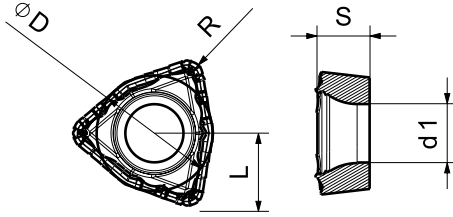


TPKN 2204 PPTN
KLP 1275



Kaliteler / Grades

	KLP 1250	KLP 1255	KLP 1275
Çelik / Steel	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓	✓
Döküm / Cast Iron	✓	✓	✓
Alüminyum / Aluminum			
Özel Alaşımlar / Special Alloy			
Sertleştirilmiş Çelik / Hardened Steel		✓	✓



KALİTELER / GRADES	FİYAT / PRICE
KLP 1255	3,90 €
WCMX 03	
KLP 1255	4,10 €
WCMX 04	
KLP 1255	4,65 €
WCMX 05	
KLP 1255	5,20 €
WCMX 06	

WCMX

KOD / CODE	L(mm)	R (mm)	D(mm)	S(mm)	d1 (mm)
WCMX 030208	3,70	0,80	5,52	2,50	2,80
WCMX 040208	4,30	0,80	6,32	2,50	3,10
WCMX 050308	5,40	0,80	7,90	3,40	3,40
WCMX 06T308	6,50	0,80	9,52	3,97	3,70

WCMX 030208
KLP 1255



WCMX 040208
KLP 1255



WCMX 050308
KLP 1255



WCMX 06T3008



KLP 1255

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Aluminyum /
Aluminum



Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel



Kaliteler / Grades

NANO PVD KAPLAMALI KALİTELER NANO PVD COATED GRADES

YENİ KALİTE / NEW GRADE

KLP 1255

Yüksek performans ve ömür için üretilmiş AlTiN pvd kaplamalı özel bir kalitedir. Yüksek hız ve ısı dayanımı artırılmış olup nitelikli çelikler için uygundur.

AlTiN coated special quality produced for high performance and long-lasting tool life. Compatible with high quality steels, increased heat resistance and higher cutting speeds.

P05 - P25

P05 - P15

KLP 1250

Çok yüksek aşınma direncine sahip NANO - PVD kaplamalı bir kalitedir. Özellikle final operasyonlarında, rijit bağlanmış çelik parçaların yüksek kesme hızlarında işlenmesine olanak sağlayan bir kalitedir.

NANO - PVD coated grade offering a very high resistance against erosion. Especially in final operations, this grade enables rigid fitted steel parts processed through high speed cutting.

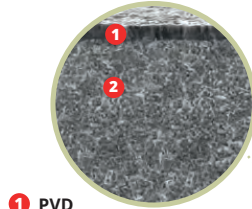
MT-CVD KALİTE
MT-CVD GRADES

KLP 2460

Döküm malzemelerin işlenmesi için tasarlanmış MT CVD kaplamalı darbe ve aşınma direnci yüksek bir kalitedir.

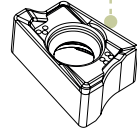
NANO CVD coated grade with high resistance against impact and erosion. It is designed for cast material processing.

K10 - K25



1 PVD

2 ALT YAPI / INFRASTRUCTURE

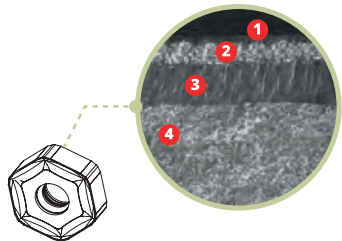


P25 - P35

KLP 1280

Genişletilmiş genel amaçlı ortadan düşük kesme hızlarına kadar iyi performans verebilen NANO PVD kaplamalı bir kalitedir. Yüksek aşınma direnci ve mükemmel köşe dayanımı için tasarlanmıştır. Uzun boy bağlamalarda ve darbeli kesim çelik işlemleri için ideal kalitedir.

NANO - PVD coated grade extended for general purposes, offering a good performance from medium to lower cutting speeds. Designed for excellent corner endurance and high resistance against erosion. An ideal grade for longer length fitting and impact cut steel processes.



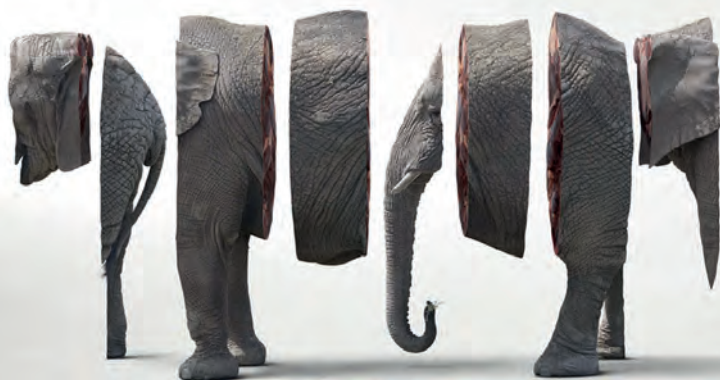
1 TM

2 AlO3

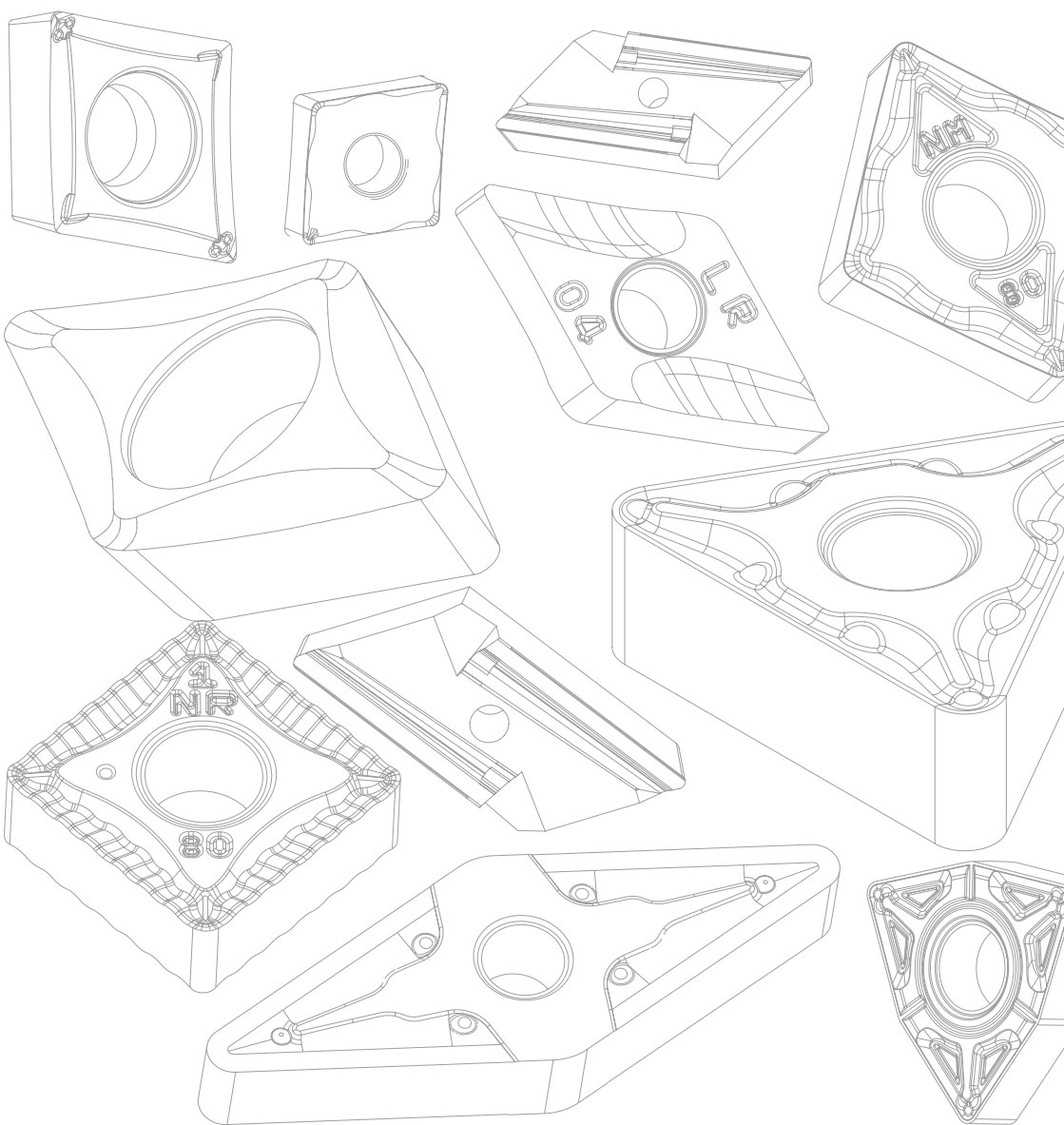
3 MTTCN

4 ALT YAPI / INFRASTRUCTURE





CUTTING TOOLS



TORNA/TURNING

ISO KODLARI / ISO CODES

1 W BİÇİM FORM	2 N AÇI ANGLE	3 M TOLERANS TOLERANCE	4 G TALAS KIRICI INSERT HOLE OR BREAKER
 A 85°	 A 3°		 A
 B 82°	 B 5°		 B 70°-90°
 C 80°	 C 7°		 C 70°-90°
 D 55°	 E 20°		 F
 E 75°	 F 25°		 G
 H 120°	 P 11°		 H 70°-90°
 K 55°			 J 70°-90°
 L 90°			 M
 M 86°			 N
 O 135°			 Q 40°-60°
 P 108°			 R
 R 360°			 T 40°-60°
 S 90°			 U 40°-60°
 T 60°			 W 40°-60°
 V 35°			Özel Ürün Special Product
 W 80°			X

5 08 KESME BOYU
CUTTING LENGTH

**C, D, E,
M, V**

H

A, B, K

L

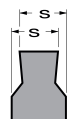
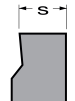
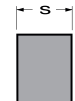
O

P

R

S

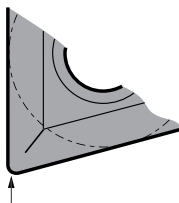
T

W
6 04 KALINLIK
THICKNESS


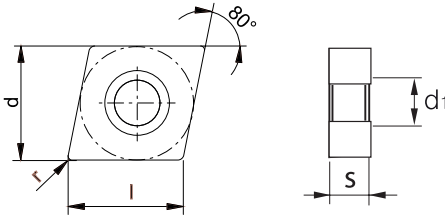
01	=	1,588
T1	=	1,984
02	=	2,381
03	=	3,175
T3	=	3,969
04	=	4,763
05	=	5,556
06	=	6,350
07	=	7,938
09	=	9,525
11	=	11,113
12	=	12,700
14	=	14,288
15	=	15,875

7 08 UÇ RADYUSU
EDGE RADIUS

01	=	0,1
02	=	0,2
04	=	0,4
08	=	0,8
12	=	1,2
16	=	1,6
20	=	2,0


8 NM GEOMETRİ
GEOMETRIES

PM
PF
NF
NF1
NM
NM1
NR
NR1
A



KALİTELER / GRADES	FİYAT / PRICE
KLP 2355 - 2365 CNMA - CNMG16	7,35 €
KLP 2175 - 2185 CNMG16	7,35 €
KLP 2355 - 2365 CNMA - CNMG19	9,85 €
KLP 2175 - 2185 CNMG19	9,85 €

CNMA - CNMG

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
CNMA 190612 A	19,05	16,12	6,35	1,20	6,30
CNMG 190612 NR	19,05	16,12	6,35	1,20	6,30
CNMA 160616 A	15,9	16,12	6,35	1,60	6,30
CNMG 160616 NR	15,9	16,12	6,35	1,60	6,30
CNMA 160612 A	15,9	19,60	6,35	1,20	8,10
CNMG 160612 NR	15,9	19,60	6,35	1,20	8,10

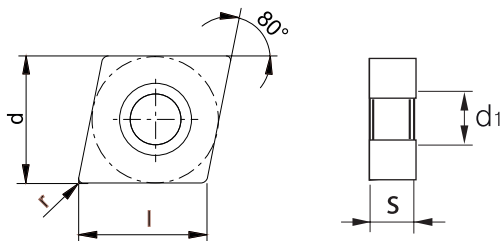
A
KLP 2355



NR
KLP 2175



	KLP 1550	KLP 2175	KLP 2185	KLP 2355	KLP 2365
Çelik / Steel	✓	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓				
Döküm / Cast Iron				✓	✓
Alüminyum / Aluminum					
Özel Alaşımlar / Special Alloy					
Sertleştirilmiş Çelik / Hardened Steel		✓		✓	



KALİTELER / GRADES	FİYAT / PRICE
KLP 2175 - 2185 <i>A - NF - NM1 - NR</i>	4,45 €
KLP 2355 - 2365	4,45 €

CNMA-CNMG

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
CNMA 120408	12,7	12,90	4,76	0,80	5,20
CNMG 120408 NM	12,7	12,90	4,76	0,80	5,20
CNMG 120408 NM1	12,7	12,90	4,76	0,80	5,20
CNMG 120408 NR	12,7	12,90	4,76	0,80	5,20
CNMG 120408 A	12,7	12,90	4,76	0,80	5,20
CNMG 120412 A	12,7	12,90	4,76	1,20	5,20
CNMG 120412 NR	12,7	12,90	4,76	1,20	5,20

A
KLP 2365



NF
KLP 2185



NM1
KLP 2185



NR
KLP 2185

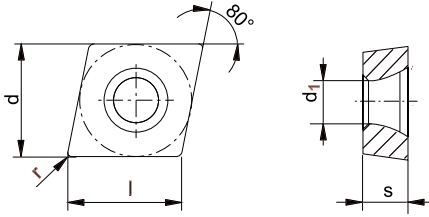


NR1
KLP 2185



	KLP 1550	KLP 2175	KLP 2185	KLP 2355	KLP 2365
Çelik / Steel	✓	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓				
Döküm / Cast Iron				✓	✓
Alüminyum / Aluminum					
Özel Alaşımlar / Special Alloy					
Sertleştirilmiş Çelik / Hardened Steel		✓		✓	

Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1150 CCMT 06	2,70 €
KLP 1150 CCMT 09	3,75 €
KLP 1150 CCMT 12	4,25 €
KLP 2175 - 85 CCMT 06	2,70 €
KLP 2175 - 85 CCMT 09	3,75 €
KLP 2175 - 85 CCMT 12	4,25 €

CCMT

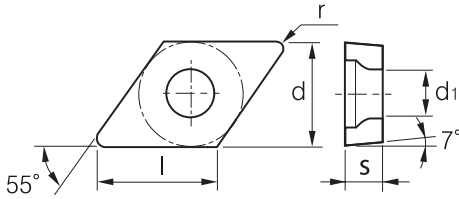
KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
CCMT 0602004 PF	6,35	6,45	2,38	0,40	2,81
CCMT 060204 PM	6,35	6,45	2,38	0,40	2,81
CCMT 09T304 PF	9,52	9,67	3,97	0,40	4,40
CCMT 09T304 PM	9,52	9,67	3,97	0,40	4,40
CCMT 09T308 PF	9,52	9,67	3,97	0,80	4,40
CCMT 09T308 PM	9,52	9,67	3,97	0,80	4,40
CCMT 120408 PF	12,07	12,09	4,76	0,80	5,50
CCMT 120408 PM	12,07	12,09	4,76	0,80	5,50

CCMT 060204 PF KLP 1150
 CCMT 060204 PM KLP 1150
 CCMT 09T304 PF KLP 1150
 CCMT 09T304 PM KLP 1150
 CCMT 09T308 PF KLP 1150
 CCMT 09T308 PM KLP 1150
 CCMT 120408 PF KLP 1150
 CCMT 120408 PM KLP 1150



KLP 1150	KLP 2175	KLP 2185	KLP 2355	KLP 2365
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Çelik / Steel	✓	✓	✓		
Paslanmaz Çelik / Stainless Steel	✓				
Döküm / Cast Iron	✓			✓	✓
Alüminyum / Aluminum					
Özel Alaşımlar / Special Alloy					
Sertleştirilmiş Çelik / Hardened Steel		✓		✓	



KALİTELER / GRADES	FİYAT / PRICE
KLP 1150	2,90 €
DCMT 07	
KLP 1150	3,90 €
DCMT 11	
KLP 2175 - 2185	2,90 €
DCMT 07	
KLP 2175 - 2185	3,90 €
DCMT 11	

DCMT

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
DCMT 070202 PF	6,35	7,75	2,38	0,20	2,81
DCMT 070202 PM	6,35	7,75	2,38	0,20	2,81
DCMT 070204 PF	6,35	7,75	2,38	0,40	2,81
DCMT 070204 PM	6,35	7,75	2,38	0,40	2,81
DCMT 11T304 PF	9,52	11,63	3,97	0,40	4,40
DCMT 11T304 PM	9,52	11,63	3,97	0,40	4,40
DCMT 11T308 PF	9,52	11,63	3,97	0,80	4,40
DCMT 11T308 PM	9,52	11,63	3,97	0,80	4,40

DCMT 070202 PM
KLP 1150



DCMT 11T308 PM
KLP 1150



DCMT 11T304 PM
KLP 1150



DCMT 070202 PF
KLP 1150



DCMT 11T308 PF
KLP 1150



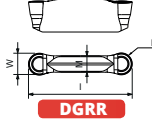
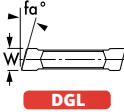
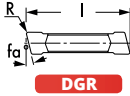
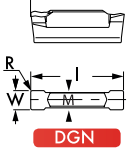
DCMT 11T304 PF
KLP 1150



KLP 1150	KLP 2175	KLP 2185	KLP 2355	KLP 2365
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Çelik / Steel	✓			✓	✓
Paslanmaz Çelik / Stainless Steel	✓				
Döküm / Cast Iron	✓				
Alüminyum / Aluminum					
Özel Alaşımlar / Special Alloy					
Sertleştirilmiş Çelik / Hardened Steel		✓		✓	

Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1550	7,55 €
<i>DGN 2002</i>	
KLP 1550	9,10 €
<i>DGN 3102</i>	
KLP 1550	9,10 €
<i>DGR 3102 - DGL 3102</i>	
KLP 1550	9,95 €
<i>DGN 4003 - DGN 4020</i>	

DGN

KOD / CODE	W	L (mm)	R	M	fa°
DGN 2002	2.00	19.90	0.20	1.70	--
DGN 3102	3.10	20.00	0.20	2.40	--
DGR 3102	3.10	21.00	0.20	2.40	6.0
DGL 3102	3.10	21.00	0.20	2.40	6.0
DGN 4003	4.00	18.80	0.30	3.00	--
DGRR 4020	4.00	18.80	2.00	3.00	--

DGN 2002
 KLP 1550

DGN 3102
 KLP 1550

DGL 3102
 KLP 1550

DGR 3102
 KLP 1550

DGN 4003
 KLP 1550

DGRR 4020
 KLP 1550

KLP 1550
Çelik /
 Steel

Paslanmaz Çelik /
 Stainless Steel

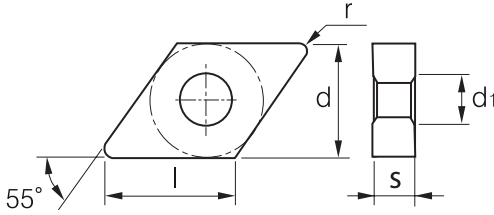
Döküm /
 Cast Iron

Alüminyum /
 Aluminum

Özel Alaşımlar /
 Special Alloy

Sertleştirilmiş Çelik /
 Hardened Steel



DNMA-DNMG

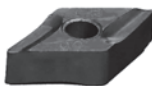
KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
DNMA 150608	12,70	15,50	6,50	0,80	5,20
DNMA 150612	12,70	15,50	6,50	1,20	5,20
DNMG 150604 NR	12,70	15,50	6,50	0,40	5,20
DNMG 150604 NM	12,70	15,50	6,50	0,40	5,20
DNMG 150604 NM1	12,70	15,50	6,50	0,40	5,20
DNMG 150604 NF	12,70	15,50	6,50	0,40	5,20
DNMG 150604 LR	12,70	15,50	6,50	0,40	5,20
DNMG 150604 RL	12,70	15,50	6,50	0,40	5,20

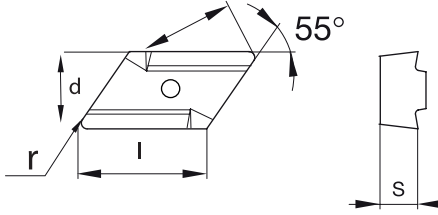
Kaliteler / Grades

	KLP 1550	KLP 2175	KLP 2185	KLP 2355	KLP 2365
Çelik / Steel	✓	✓	✓		
Paslanmaz Çelik / Stainless Steel	✓				
Döküm / Cast Iron				✓	✓
Alüminyum / Aluminum					
Özel Alaşımlar / Special Alloy					
Sertleştirilmiş Çelik / Hardened Steel		✓		✓	

KALİTELER / GRADES	FİYAT / PRICE
KLP 1550	6,50 €
<i>NM</i>	
KLP 2175 - 2185	5,85 €
<i>NF, NM, NM1, NR, NR1, LR, RL</i>	
KLP 2355 - 2365	5,85 €
<i>DNMA 150608, DNMA 150612</i>	

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
DNMG 150608 NR	12,70	15,50	6,50	0,80	5,20
DNMG 150608 NR1	12,70	15,50	6,50	0,80	5,20
DNMG 150608 NM	12,70	15,50	6,50	0,80	5,20
DNMG 150608 NM1	12,70	15,50	6,50	0,80	5,20
DNMG 150608 RL	12,70	15,50	6,50	0,80	5,20
DNMG 150608 RR	12,70	15,50	6,50	0,80	5,20
DNMG 150612 NR	12,70	15,50	6,50	1,20	5,20
DNMG 150612 NR1	12,70	15,50	6,50	1,20	5,20
DNMG 150612 NM	12,70	15,50	6,50	1,20	5,20
DNMG 150612 NM1	12,70	15,50	6,50	1,20	5,20

A*KLP 2355***NR***KLP 2185***NR1***KLP 2185***NM***KLP 2185***NM1***KLP 2185***NF***KLP 2185***RL***KLP 2355***RR***KLP 2185***NM***KLP 1550***DNMA-DNMG****Kaliteler / Grades**



KALİTELER / GRADES	FİYAT / PRICE
KLP 2175 - 2185	5,00 €

KNUX

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
KNUX 160405 R	9,52	19,72	4,76	0,50	--
KNUX 160405 L	9,52	19,72	4,76	0,50	--

KNUX 160405 R
KLP 2185

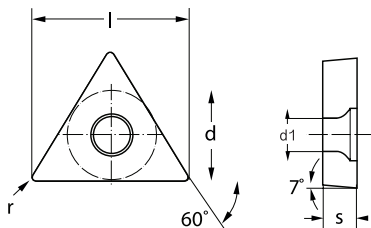


KNUX 160405 L
KLP 2185



KLP 2175	KLP 2185
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Çelik / Steel	☒	☒
Paslanmaz Çelik / Stainless Steel	☒	☒
Döküm / Cast Iron	☒	☒
Alüminyum / Aluminum	☐	☐
Özel Alaşımlar / Special Alloy	☐	☒
Sertleştirilmiş Çelik / Hardened Steel	☒	☐



**KALİTELER /
GRADES**

**FİYAT /
PRICE**

KLP

4,20 €

TCMT

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
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TCMT 160404 PM	9,52	16,50	3,97	0,40	4,30
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TCMT 160408 PM	9,52	16,50	3,97	0,80	4,30
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TCMT 160404 PM
KLP 1150



TCMT 160408 PM
KLP 1150



Kaliteler / Grades

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Aluminyum /
Aluminum



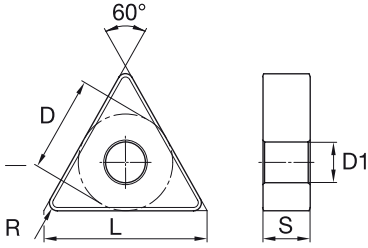
Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel



KLP 1150



TNMA-TNMG

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
TNMA 160408	9,52	16,5	4,76	0,80	3,80
TNMA 160412	9,52	16,5	4,76	1,20	3,80
TNMG 160404 NR1	9,52	16,5	4,76	0,40	3,80
TNMG 160404 NM	9,52	16,5	4,76	0,40	3,80
TNMG 160404 NM1	9,52	16,5	4,76	0,40	3,80
TNMG 160404 NF	9,52	16,5	4,76	0,40	3,80

Kaliteler / Grades

	KLP 1550	KLP 2175	KLP 2185	KLP 2355	KLP 2365
Çelik / Steel	✓	✓	✓		
Paslanmaz Çelik / Stainless Steel	✓				
Döküm / Cast Iron				✓	✓
Alüminyum / Aluminum					
Özel Alaşım / Special Alloy	✓		✓		
Sertleştirilmiş Çelik / Hardened Steel	✓	✓		✓	

KALİTELER / GRADES	FİYAT / PRICE
KLP 1550	5,40 €
<i>NM</i>	
KLP 2175 - 2185	4,45 €
<i>NR, NR1, NM, NM1, NF, NF1</i>	
KLP 2365 - 2355	4,45 €
<i>A- NR</i>	

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
TNMG 160408 NR	9,52	16,5	4,76	0,80	3,80
TNMG 160408 NR1	9,52	16,5	4,76	0,80	3,80
TNMG 160408 NM	9,52	16,5	4,76	0,80	3,80
TNMG 160408 NM1	9,52	16,5	4,76	0,80	3,80
TNMG 160408 NF	9,52	16,5	4,76	0,80	3,80
TNMG 160408 NF1	9,52	16,5	4,76	0,80	3,80
TNMG 160408 RR	9,52	16,5	4,76	0,80	3,80
TNMG 160408 LR	9,52	16,5	4,76	0,80	3,80
TNMG 160412 NR	9,52	16,5	4,76	1,20	3,80
TNMG 160412 NR1	9,52	16,5	4,76	1,20	3,80
TNMG 160412 NM	9,52	16,5	4,76	1,20	3,80
TNMG 160412 NM1	9,52	16,5	4,76	1,20	3,80
TNMG 160412 RR	9,52	16,5	4,76	1,20	3,80
TNMG 160412 LR	9,52	16,5	4,76	1,20	3,80

A
KLP 2365



NR
KLP 2185



NR1
KLP 2185



NM
KLP 2185



NM1
KLP 2185



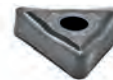
NF
KLP 2185

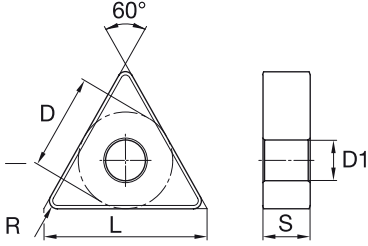


NF1
KLP 2185



NM
KLP 1550





KALİTELER / GRADES	FİYAT / PRICE
KLP 1550	5,40 €
<i>R, L</i>	

TNUX

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
TNUX 160404 R	9,52	16,5	4,76	0,40	3,60
TNUX 160404 L	9,52	16,5	4,76	0,40	3,60
TNUX 160408 R	9,52	16,5	4,76	0,40	3,60
TNUX 160408 L	9,52	16,5	4,76	0,40	3,60

TNUX 160404 R
KLP 1550



TNUX 160404 L
KLP 1550



TNUX 160408 R
KLP 1550



TNUX 160408 L
KLP 1550



KLP 1550

Çelik /
Steel



Paslanmaz Çelik /
Stainless Steel



Döküm /
Cast Iron



Alüminyum /
Aluminum



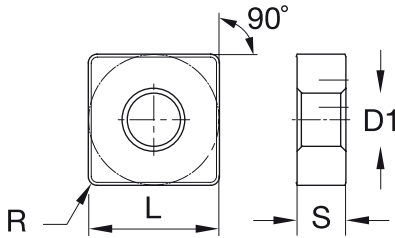
Özel Alaşımlar /
Special Alloy



Sertleştirilmiş Çelik /
Hardened Steel



Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 2175 - 2185 NR1, NF1	4,45 €
KLP 2365 - 2355 SNMA	4,45 €

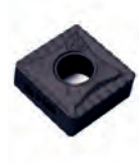
SNMA-SNMG

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
SNMG 120408 SNMA	12,7	12,90	4,76	0,80	5,20
SNMG 120408 NR1	12,7	12,90	4,76	0,80	5,20
SNMG 120408 NMI	12,7	12,90	4,76	0,80	5,20
SNMG 120408 NF1	12,7	12,90	4,76	0,80	5,20

SNMA 120408
KLP 2365



SNMG 120408 NR1
KLP 2185



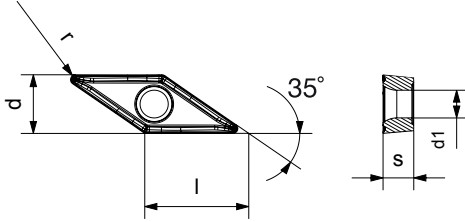
SNMG 120408 NF1
KLP 2185



KLP 2175	KLP 2185	KLP 2355	KLP 2365
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Çelik / Steel	☒	☒	☒	☒
Paslanmaz Çelik / Stainless Steel	☐	☐	☐	☐
Döküm / Cast Iron	☐	☐	☒	☒
Alüminyum / Aluminum	☐	☐	☐	☐
Özel Alaşımlar / Special Alloy	☐	☐	☐	☐
Sertleştirilmiş Çelik / Hardened Steel	☒	☐	☒	☐

Kaliteler / Grades



KALİTELER / GRADES	FİYAT / PRICE
KLP 1150	5,40 €
KLP 855	5,40 €

VBMT-VCMT

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
VBMT 160404 PM	9,52	16	4,75	0,40	4,35
VBMT 160408 PM	9,52	16	4,75	0,80	4,35
VCMT 160412 ALU	9,52	16	4,75	0,80	4,35

VBMT 160404 PM
KLP 1150



VBMT 160408 PM
KLP 1150

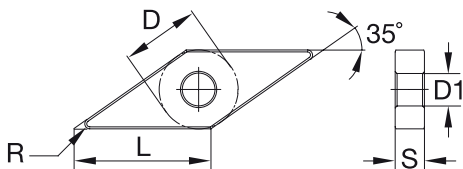


VCMT 160412 RL
KLP 855



KLP 855	KLP 1150
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Çelik / Steel		
Paslanmaz Çelik / Stainless Steel		
Döküm / Cast Iron		
Alüminyum / Aluminum		
Özel Alaşımlar / Special Alloy		
Sertleştirilmiş Çelik / Hardened Steel		



KALİTELER / GRADES	FİYAT / PRICE
KLP 2175	4,45 €
KLP 2185	4,45 €

VNMG

KOD / CODE	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)
VNMG 160404 NR	9,52	12,79	4,76	0,40	3,81
VNMG 160404 NF	9,52	12,79	4,76	0,40	3,81
VNMG 160408 NR	9,52	12,79	4,76	0,80	3,81
VNMG 160408 NF	9,52	12,79	4,76	0,80	3,81

VNMG 160404 NR
KLP 2175



VNMG 160404 NF
KLP 2185



VNMG 160408 NR
KLP 2185

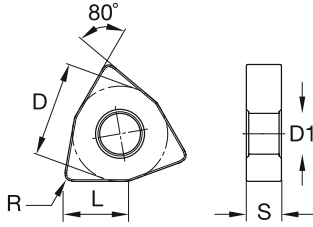


VNMG 160408 NF
KLP 2185



Kaliteler / Grades

	KLP 2175	KLP 2185	KLP 2355	KLP 2365
Çelik / Steel	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel				
Döküm / Cast Iron			✓	✓
Alüminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel	✓		✓	



WNMA - WNMG

Kaliteler / Grades

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
WNMG 060408 NR	9,52	6,45	4,76	0,80	3,80
WNMG 060408 NM	9,52	6,45	4,76	0,80	3,80
WNMG 060408 NF	9,52	6,45	4,76	0,80	3,80
WNMA 080408	12,7	8,60	4,76	0,80	5,20
WNMA 080412	12,7	8,60	4,76	1,20	5,20
WNMA 080416	12,7	8,60	4,76	1,60	5,20
WNMG 080404 NR	12,7	8,60	4,76	0,40	5,20
WNMG 080404 NR1	12,7	8,60	4,76	0,40	5,20
WNMG 080404 NM	12,7	8,60	4,76	0,40	5,20
WNMG 080404 NM1	12,7	8,60	4,76	0,40	5,20
WNMG 080404 NF	12,7	8,60	4,76	0,40	5,20

	KLP 1550	KLP 2175	KLP 2185	KLP 2355	KLP 2365
Çelik / Steel	✓	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓				
Döküm / Cast Iron				✓	✓
Aluminyum / Aluminum					
Özel Alaşımlar / Special Alloy					
Sertleştirilmiş Çelik / Hardened Steel		✓		✓	

KALİTELER / GRADES	FİYAT / PRICE
KLP 1550 <i>NM</i>	4,00 €
KLP 1550 <i>NM</i>	5,40 €
KLP 2175 - 2185- 2355 - 2365 <i>NR, NR1, NM, NM1, NF, NF1</i>	4,45 €
KLP 2175 - 2185 <i>WNMG 06, NF, NR</i>	2,90 €

KOD / CODE	d (mm)	l (mm)	s(mm)	r(mm)	d1 (mm)
WNMG 080408 NR	12,7	8,60	4,76	0,80	5,20
WNMG 080408 NR1	12,7	8,60	4,76	0,80	5,20
WNMG 080408 NM	12,7	8,60	4,76	0,80	5,20
WNMG 080408 NM1	12,7	8,60	4,76	0,80	5,20
WNMG 080408 NF	12,7	8,60	4,76	0,80	5,20
WNMG 080412 NR	12,7	8,60	4,76	1,20	5,20
WNMG 080412 NR1	12,7	8,60	4,76	1,20	5,20
WNMG 080412 NM	12,7	8,60	4,76	1,20	5,20
WNMG 080412 NM1	12,7	8,60	4,76	1,20	5,20
WNMG 080412 NF	12,7	8,60	4,76	1,20	5,20

060408 NR
KLP 2175060408 NM
KLP 1550A
KLP 2365NR
KLP 2185NR1
KLP 2175NF1
KLP 2185NM
KLP 2185NM1
KLP 2185NF
KLP 2185NM
KLP1550

KALİTELER / GRADES

P15 - P25

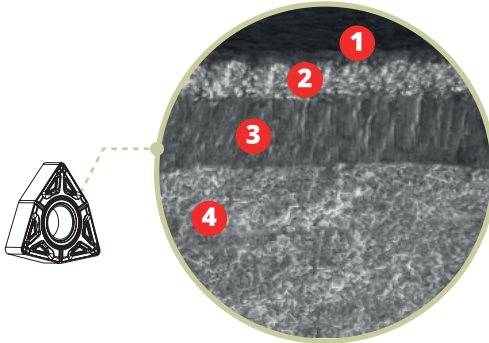
KLP 2175

Çok yüksek aşınma direncine sahip MT-CVD kaplamalı bir kalitedir. Özellikle rijit koşullarda tornalama operasyonları için önerilir. İyi işleme koşullarında yüksek kesme hızlarında çalışmak için tasarlanmıştır. *MT - CVD coated grade offering extremely high resistance against erosion. Especially suggested for turning operations under rigid conditions. Designed to operate in high speed cutting within fine process conditions.*

P25 - P35

KLP 2185

MT-CVD kaplamalı bir kalitedir. Hafif ve orta kaba tornalama, darbeli tornalama operasyonları için önerilir. Yüksek tokluğa ve dayanıma sahip genel torna kalitesidir. Yüksek ve orta kesme hızlarında çalışmak için ideal kalitedir. *MT-CVD coated grade. Suggested for lower and medium rough turning as well as impact turning operations. It is a common turning grade having a high toughness and endurance. It is ideal to operate within higher and medium cutting speed.*



- 1 TIN
- 2 AlO3
- 3 MTTCN
- 4 ALT YAPI / INFRASTRUCTURE

MT-CVD KALİTE MT-CVD GRADES

K05 - K15

KLP 2355

Yüksek aşınma direnci ve mükemmel kenar güvenliği bir araya getirilmiş MT-CVD ile kaplanmış bir kalitedir. Ortadan yüksek kesme hızlarına kadar geniş bir aralıkta döküm malzemelerin sürekli kesim işlenmesi için tasarlanmıştır.

MT-CVD coated grade offering both high resistance against erosion and excellent edge security. Designed for continuous process of cast materials, within a wide range from medium to higher speed cutting.

MT-CVD KALİTE MT-CVD GRADES

K10 - K20

KLP 2365

Yüksek darbe dayanımı ve yüksek aşınma direncinin bir arada olduğu MT-CVD kaplamalı bir döküm kalitesidir. Döküm malzemelerin orta ve yüksek hızlarda tornalanması için geliştirilmiştir.

MT-CVD coated cast grade offering both high endurance against impact and high resistance against erosion. Developed for turning process of cast materials within medium and higher speed.

KALİTELER / GRADES

P05 - P15

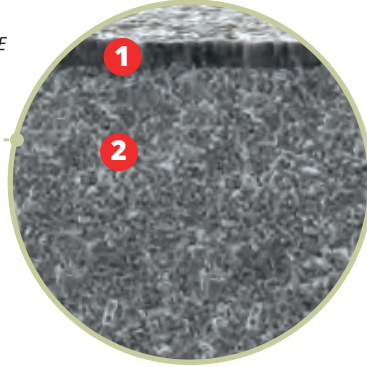
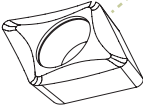
KLP 1150

Çok yüksek aşınma direncine sahip NANO PVD kaplamalı bir kalitedir. Özellikle rijit koşullarda final tornalama operasyonları için önerilir. İyi işleme koşullarında yüksek kesme hızlarında çalışmak için tasarlanmıştır.

NANO PVD coated grade offering a very high resistance against erosion. Especially suggested for rigid cutting conditions and final turning operations. Designed to operate in high speed cutting under fine processing conditions.

1 PVD

2 ALT YAPI / INFRASTRUCTURE



M10 - M15

KLP 1550

Yüksek işleme sıcaklıklarına dayanabilen ve NANO PVD kaplamalı bir kalitedir. Paslanmaz çelik ve sert çelik malzemelerin işlenmesi için tasarlanmıştır. Yüksek aşınma direncine sahip, darbe ve vibrasyon dayanımı kısıtlı, sert bir kalitedir.

NANO - PVD coated grade with resistance against high processing heat. Designed to process stainless steel and hard steel materials. It is a rough grade offering a higher resistance against erosion but a lower resistance against impact and vibration.

FORMÜLLER / FORMULAS

TORNALAMA İÇİN FORMÜLLER / FORMULAS FOR TURNING OPERATIONS

$$\text{DEVİR SAYISI} = n = \frac{Vc \times 1000}{\pi \times D} \quad \text{devir / dakika}$$

REVOLUTIONS = n = $\frac{Vc \times 1000}{\pi \times D}$ Revs / min.

n: Devir Sayısı (dev. / dk)
Revolutions (Revs / min.)

Vc: Kesme Hızı (m / dk)
Cutting Speed (Meter / min.)

$$\text{KESME HIZI} = Vc = \frac{\pi \times D \times n}{1000} \quad \text{devir / dakika}$$

CUTTING SPEED = Vc = $\frac{\pi \times D \times n}{1000}$ Revs / min.

D: İş Parçasının Çapı (mm)
Workpiece Diameter (mm)

π: Sabit Sayı (3,14)
Constant (3,14)

TORNALAMA DA İŞLEME ZAMANININ HESAPLANMASI / FORMULAS FOR TURNING TIME

$$\text{ÇAP TORNALAMADA} = th = \frac{L \times Ps}{n \times f} \quad \text{metre / dakika}$$

TURNING DIAMETER = th = $\frac{L \times Ps}{n \times f}$ meter / minute

Ps: Paso Sayısı (kaç defa'da)
No Of Passes

th: İşleme Zamanı (dakika)
Processing Time (min)

f: İlerleme (mm)
feedrate (mm)

$$\text{ALIN TORNALAMADA} = th = \frac{dx \pi \times L \times Ps}{Vc \times 1000 \times f} \quad \text{dakika}$$

LENGHT TURNING = th = $\frac{dx \pi \times L \times Ps}{Vc \times 1000 \times f}$ minute

L: Parça Boyu (mm)
Part Lenght (mm)

Alın Tornalama için Boy
Face Turning Lenght

$$L = \frac{d1 - d2}{2} \quad \text{mm}$$

Dolu Malzemede Alın Tornalama
Face Turning Lenght

$$L = \frac{d}{2} \quad \text{mm}$$

FORMÜLLER / FORMULAS

YÜZEY FREZELERDE KULLANILAN FORMÜLLER / FORMULAS FOR MILLING OPERATIONS

DEVİR SAYISI
REVOLUTIONS

$$= n = \frac{V_c \times 1000}{\pi \times D} \quad \text{devir / dakika} \quad \text{Revs / min.}$$

z: Frezenin Ağız Sayısı (adet)
Number of teeth

k: Disk Frezenin Efektif Ağız Sayısı (adet)
Effective Edge Of The Cutter

KESME HIZI
CUTTING SPEED

$$= V_c = \frac{\pi \times D \times n}{1000} \quad \text{metre / dakika} \quad \text{meter / min.}$$

fz: Ağız Başına İlerleme (mm/ağız)
Feedrate Per Cutting (mm / Z)

th: İşleme Zamanı (dak.)
Process Time

TABLA İLERLEMESİ
FEEDRATE

$$= V_f = n \times z \times f_z \quad \text{mm / dakika} \quad \text{mm / min.}$$

Ps: Paso Sayısı
Number Of Passes

D: Takım Çapı
Tool Diameter

Vc: Sabit Değer
Fixed Value

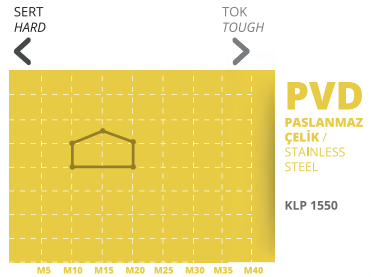
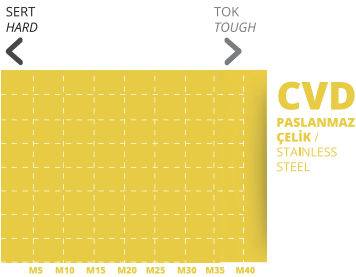
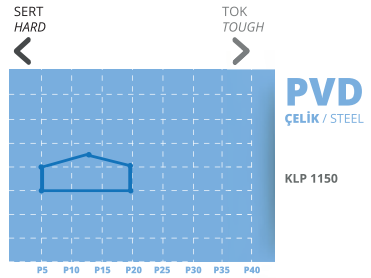
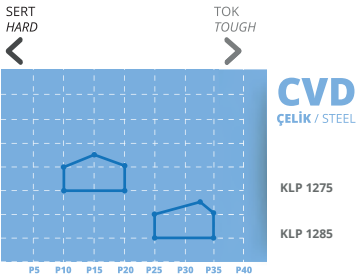
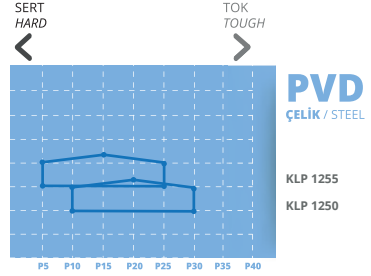
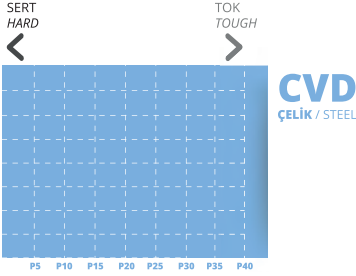
ÇAPLAR VE KESME HIZINA GÖRE ÇAP/DEVİR TABLOSU

DIAMETER ROTATION SPEED TABLE BY CUTTING SPEED

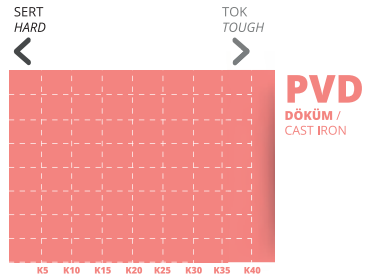
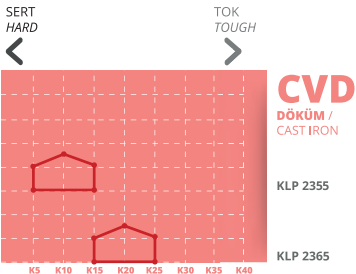
VC HIZI m/dk.	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
50	1137	995	885	796	724	663	612	569	531	498	468	442	419	398	379	362	346	332	318
60	1365	1194	1062	955	869	769	735	682	637	597	562	531	503	478	455	434	415	398	382
70	1592	1393	1238	1115	1013	929	857	796	743	697	656	619	587	557	531	507	485	464	446
80	1820	1592	1415	1274	1158	1062	980	910	849	796	749	708	670	637	607	579	554	531	510
90	2047	1791	1592	1303	1194	1102	1024	955	896	853	803	766	734	703	673	645	623	597	573
100	2275	1990	1769	1552	1448	1327	1225	1137	1062	995	937	885	838	796	758	724	692	663	637
110	2502	2189	1946	1710	1592	1460	1347	1251	1168	1095	1030	973	922	876	834	796	762	730	700
120	2730	2389	2123	1870	1737	1592	1470	1365	1274	1194	1124	1062	1006	955	910	869	831	796	764
130	2957	2588	2300	2029	1882	1725	1592	1479	1380	1294	1218	1150	1090	1035	986	941	900	863	828
140	3185	2787	2477	2189	2027	1858	1715	1592	1486	1393	1311	1238	1173	1115	1062	1013	969	929	892
150	3412	2986	2654	2348	2171	1990	1837	1706	1592	1493	1405	1327	1257	1194	1137	1086	1038	995	955
160	3640	3185	2831	2497	2316	2143	1960	1820	1699	1592	1499	1415	1341	1274	1213	1158	1108	1062	1019
170	3867	3384	3008	2666	2461	2256	2082	1934	1805	1692	1592	1504	1425	1354	1289	1230	1177	1128	1083
180	4095	3583	3185	2825	2606	2389	2205	2047	1911	1791	1686	1592	1509	1433	1365	1303	1246	1194	1146
190	4322	3782	3362	2985	2750	2521	2327	2161	2017	1891	1780	1681	1592	1513	1441	1375	1315	1261	1210
200	4550	3981	3539	3144	2895	2654	2450	2275	2123	1990	1873	1769	1676	1592	1517	1448	1385	1327	1274
210	4777	4180	3715	3303	3040	2787	2572	2389	2229	2090	1967	1858	1760	1672	1592	1520	1454	1393	1338
220	5005	4379	3892	3462	3185	2919	2695	2502	2335	2189	2061	1946	1844	1752	1668	1592	1523	1460	1401
230	5232	4578	4069	3622	3329	3052	2817	2616	2442	2289	2154	2035	1928	1831	1744	1665	1592	1526	1465
240	5460	4777	4246	3781	3474	3185	2940	2730	2548	2389	2248	2123	2011	1911	1820	1737	1662	1592	1529
250	5687	4976	4423		3619	3317	3062	2843	2654	2488	2342	2212	2095	1990	1896	1809	1731	1659	1592

KALİTE TABLOSU / GRADE CHART

FREZE / MILLING



TORNA / TURNING



KALİTE KARŞILAŞTIRMA TABLOSU

GRADE COMPARISON CHART

UYGULAMA APPLICATION	SINIF - CLASS	KALİTE - GRADE	KLP	SUMITOMO ELECTRIC	mitsubishi	TUNGALOY	KYOCERA	HITACHI	SANDVIK	KENNAMETAL	DIJET	VALENTINE	SECO TOOLS JAPAN	WALTER	ISCAR
P çelik steel	P05	KLP 1150 KLP 1150 KLP 2170 KLP 2180 KLP 2190	AC810P	UE610S	T910S	CA550S	HG8010	GC420S	KCP05 KC910S	JC110V	VP5515 VP1510	TP0500	WPP05	IC8005 IC428	
	P10		AC810P AC820P	UE6110	T911S	CA551S	HG8010	GC421S	KCP10 KC9110	JC110V JC215V	SV310 SV315 SV515	TP1500	WPP10S WPP10	IC8150 IC9015	
	P20		AC820P	MC602S UE6020	T912S	CA552S	IP2000 HG802S GM25	GC422S	KCP25 KC912S	JC215V	SV315 SV325 VP552S	TP2500	WPP20S WPP20	IC8250 IC9015	
	P30		AC830P AC630M	UE603S VP15TF	T913S	CA553S	IP3000 HG803S	GC423S	KCP30 KC9140	JC215V JC325V	VP553S SV325 SV230	TP3500	WPP30S WPP30	IC8350 IC8025	
	P40		AC830P AC630M	UE603S UH6400	T913S	PR660	IP3000 HG803S	GC423S	KC9140	JC325V JC450V	SV235 V1N VP553S	TP3500	WTN53	IC8350 IC8025	
M paslanmaz çelik stainless steel	M10	KLP 1550 KLP 1580	AC610M AC510M	U590S VP05RT VP10RT U57020	T911S AH110 AH90S	PR130S CA651S PR90S	IP050S IP100S	GC201S GC110S GC111S	KCM15 KC5510 KCU10	JC605X JC5003 JC110V	SV310 SV315 VC929	TP1500 TS2000	WSM10	IC807 IC8025 IC907	
	M30		AC630M AC830P AC530U	U573S VP15TF VP20MF	AH72S T6030 AH630	PR132S CA652S PR660 PR112S	GM803S GX30	GC203S	KCM35 KC9240	JC5015 JC8015 JC525X	VC901 V1N	TP3500 TM4000	WSM30	IC8080 IC830	
K döküm cast iron	K10	KLP 2350 KLP 2360	AC415K	UC510S UC511S	T511S T512S	CA450S CA451S CA411S	HX330S HG330S HG331S HX331S	GC3210	KCK15	JC105V	SV410 SV515	TK1000 TK1001	WAK10 WAK20	IC5010 IC5100	
	K20		AC420K	UC511S VP15TF UE6110	T512S T912S	CA451S CA4120 CA411S	HX331S CA4120 CA411S	GC321S	KCK20	JC215V	SV415 SV515	TK2000 TK2001	WAK20 WAK30	IC8150	
TORNAR - TURNING															

TORNA - TURNING

UYGULAMA APPLICATION	SINIF - CLASS	KALİTE - GRADE	KLP	SUMITOMO ELECTRIC	MITSUBISHI	TUNGALOY	KYOCERA	HITACHI	SANDVIK	KENAMETAL	DİJET	VALENTINE	SECO TOOLS JAPAN	WALTER	ISCAR
	KLP 1250	KLP 1280	ACP100	FH7020 F7030	T3130 T3030	PR1230 PR1225 PR830 PR760 PR660 PR630	HX3315 HG3315 HG8010	GC4220 GC4230 GC4240	KC930M KC935M	JC730U	V1N	T250M T350M MP1500 MP2500 MP3000	WKP25 WKP35 WAP35 WKP35S	IC4100 IC4050 IC520M	
			ACP200 ACP300	VP15TF VP20RT VP30RT	AH120 AH725 AH130 AH140	JP4005 GX2140 JP4020 CY150 CY250 JX1045 JX1060	GC1010 GC1025 GC1030	KC530M KC610M KC715M KC725M KC735M KC792M	JC8015 JC5003 JC5030 JC5015 JC5040	VC935	F25M F30M F40M T60M	IC808 IC908 IC910 IC928 IC950 IC328	WXM15 WSP45 WSM35 WXP45		
	KLP 1650	KLP 1650	ACP300	VP15TF VP20RT VP30RT	AH120 AH725 AH130 AH140	PR1225 PR830 PR760 PR660 PR630	JP4060 JP4020 CY150 CY250 JX1045 JX1060	GC2040 GC1040 S30T S40T GC1025 GC1030 GC2030 GC2035	KC522M KC635M KC715M KC725M KC520M KC525M	JC8015 JC5003 JC5030 JC5015 JC5040	VC935	F25M F30M F40M	IC808 IC830 IC908 IC928 IC328	WSM35 WXM35	
			ACK200	F5010 F5020 MC5020	T1115	PR905	GC3220 GC3020 GC3040 K15W K20D K20W	KC915M KC930M KC935M	JC600 JC610	VN5	T150M T200M MK1500 MK3000	IC5100 IC4100 IC520M IC4050 DT7150	WAK15 WRK25 WKP35S		
	KLP 1450	KLP 1450	ACP300	VP15TF VP20RT	AH110 GH110 AH725 AH120	PR1210 PR905	GX2140 JP4020 CY150 CY250 JX1045	GC1020 GC1025 GC1030	KC620M KC510M KC515M KC520M KC525M	JC5080 JC5003 JC5015	VC928	MK2000 MH1000	IC810 IC908 IC910 IC928 IC950		
			ACP300	VP15TF VP20RT	AH110 GH110 AH725 AH120	PR1210 PR905	GX2140 JP4020 CY150 CY250 JX1045	GC1020 GC1025 GC1030	KC620M KC510M KC515M KC520M KC525M	JC5080 JC5003 JC5015	VC928	MK2000 MH1000	IC810 IC908 IC910 IC928 IC950		

FREZE - MILLING

NOTLAR / NOTES

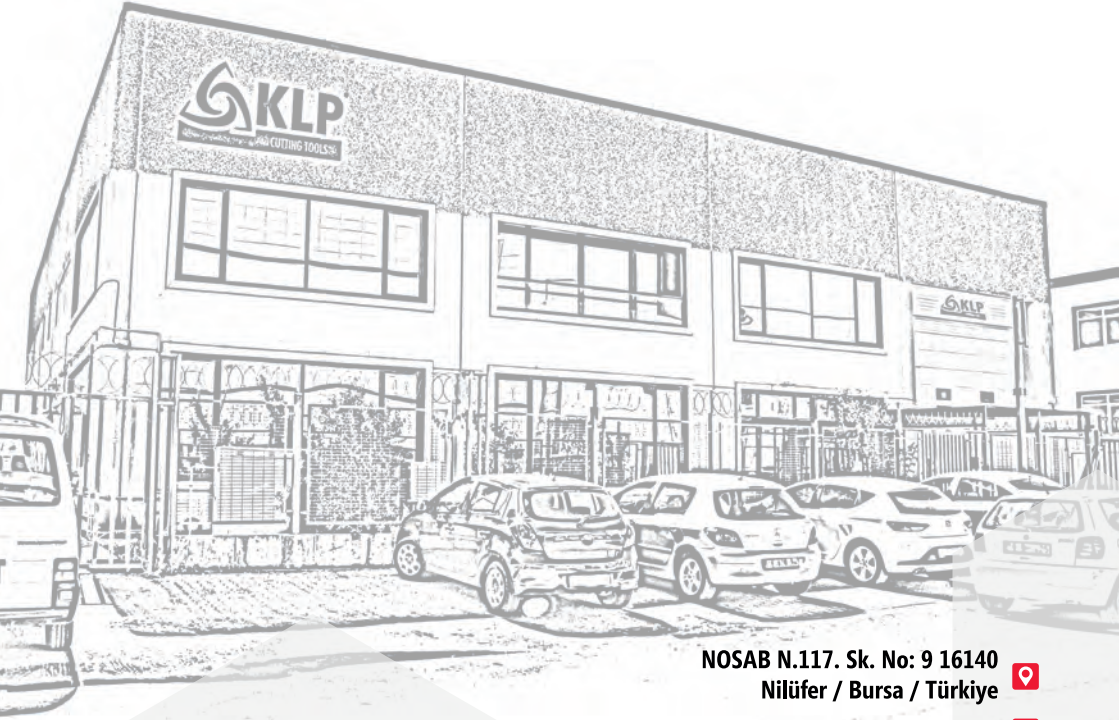
NOTLAR / NOTES

Handwriting practice lines consisting of multiple horizontal dashed lines for text entry.

NOTLAR / NOTES

NOTLAR / NOTES

Handwriting practice area with horizontal dashed lines.



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