

2014

HAZİRAN / JUNE

GENEL ÜRÜN KATALOĞU
GENERAL PRODUCT CATALOGUE





Karakoc Tooling & Metal Form Industry Co.

KLP Cutting Tools is a registered trade mark of KARAKOÇ alıp Metal Form San. Tic. Inc.

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Türkiye'nin ilk ve tek %100 yerli tamamen entegre karbür kesici takımlar üreticisi KLP Kesici Takımlar, KARAKOÇ KALIP A.Ş. tarafından 2010 yılında kurulmuştur. Yeni doğan firmamızın kalite anlayışı kısa süre içerisinde tüm yerli ve yabancı müşterilerimiz tarafından beğeni ile 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. 2015 öngörümüz 200 farklı geometride insert ve 400 farklı tipte üretim yapmak ve bunun tamamını Türk Malı olarak kendi tesislerimizde gerçekleştirmektir.



Turkey's very first and only fully integrated carbide cutting tools factory KLP Cutting Tools has established by KARAKOÇ, Inc in 2010. Quality understanding of this new born company is appreciated by all local and foreign customers in a very short period of time.

The rising Turkish brand has started to export Turkey's very first and only carbide cutting tools in this very early stages.

Investment, research and development is continuously running. Today KLP Cutting Tools is producing 10.000 inserts per day in 30 different forms and types. 2015 projection is reaching 200 different geometries of inserts with 400 different types of cutting tools which are totally Made in Turkey, in the house.



KLP Kesici Takımlar

Kısaca Hikayemiz

KLP Cutting Tools

A Brief History

Orta Anadolu, Konya, 48 metrekairelik bir atölyede kalıp üretimine başladık. Sürekli gelişime, başarıya ve kaliteye odaklandık. Özveriyle çalıştık, durmadık...

1976

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

1987

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

1998

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

2004

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

2010

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

2011

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

2012

CVD Kaplama tesisimizi kurduk. Bir çok ülkeye ihracatımız başladı.

2013

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

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....

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

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...

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... We didn't stop.

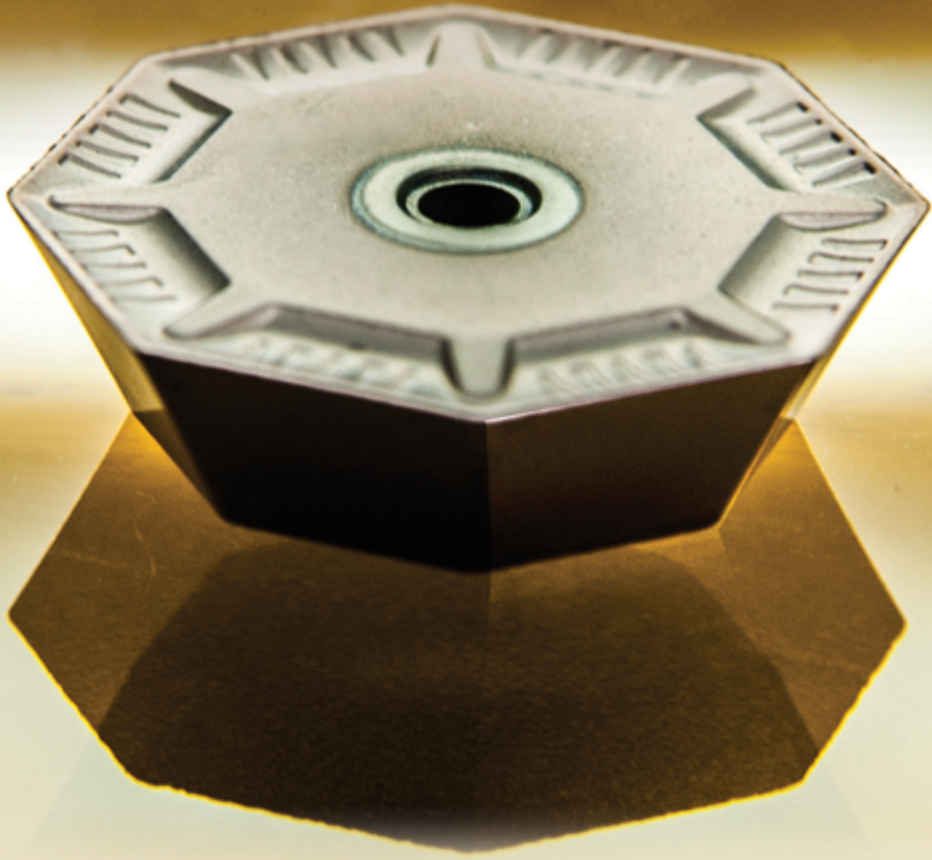
We have established the very first and only fully integrated tungsten carbide cutting tools factory. Our total production area is now 13.500 sqm.

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

We established our CVD coating facility

Durmuyoruz... **2014** We are not stopping...

www.klp.com.tr



www.klp.com.tr

KLP bir KARAKOÇ Kalıp Metal Form A.Ş. markasıdır. KLP is a registered trade mark of KARAKOÇ Kalıp Metal Form A.Ş.

FREZE UÇLARI
MILLING INSERTS



S

1

D

2

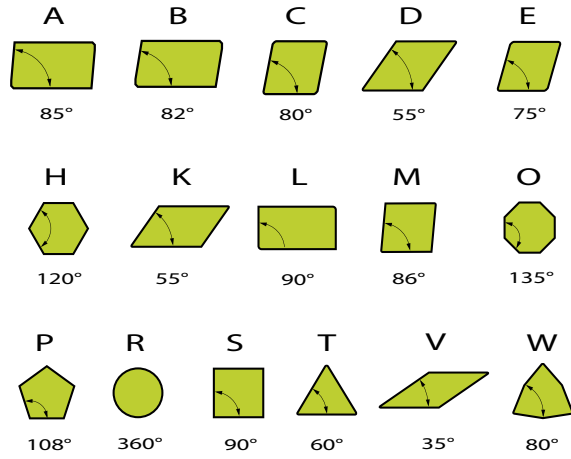
H

3

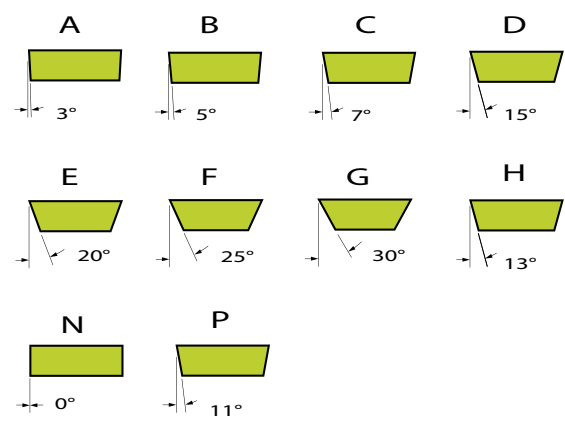
T

4

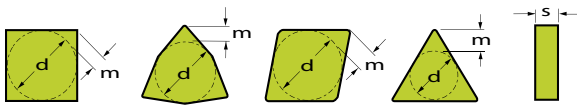
1 Biçim - Form



2 Açı - Angle

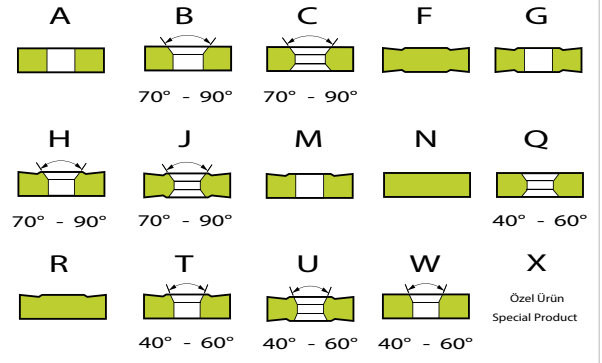


3 Tolerans - Tolerance



	d	m	s
A	mm ±0,02 5	±0,00 5	±0,025
C	mm ±0,02 5	±0,01 3	±0,025
E	mm ±0,02 5	±0,02 5	±0,025
F	mm ±0,01 3	±0,00 5	±0,025
G	mm ±0,02 5	±0,02 5	±0,13
H	mm ±0,01 3	±0,01 3	±0,025
J	mm *	±0,00 5	±0,025
K	mm *	±0,01 3	±0,025
L	mm *	±0,02 5	±0,025
M	mm *	*	±0,127
U	mm *	*	±0,127
N	mm *	*	±0,025

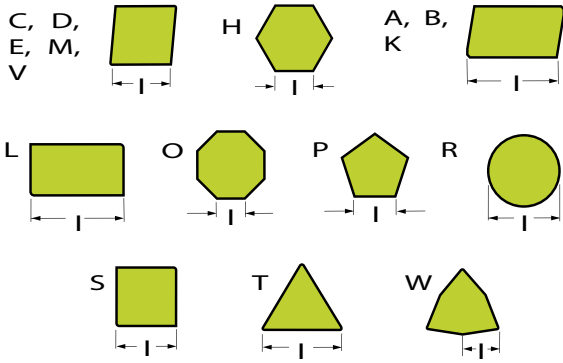
4 Bağlantı - Hardware and chip breakers



12
5

04
6

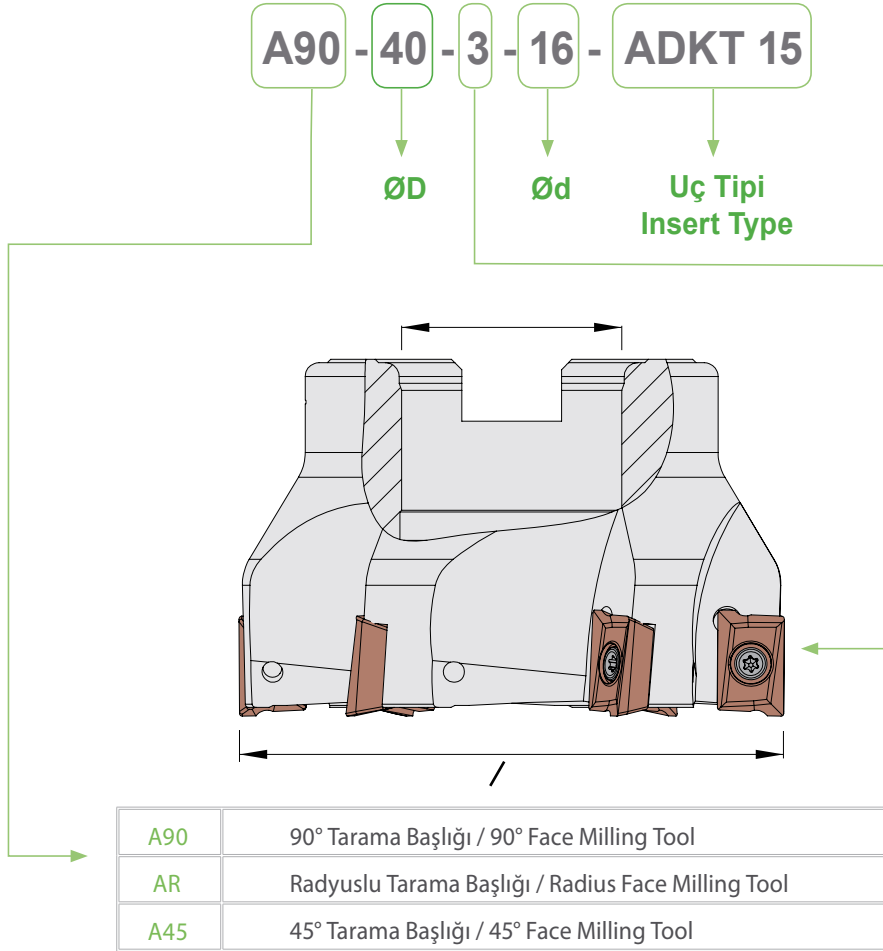
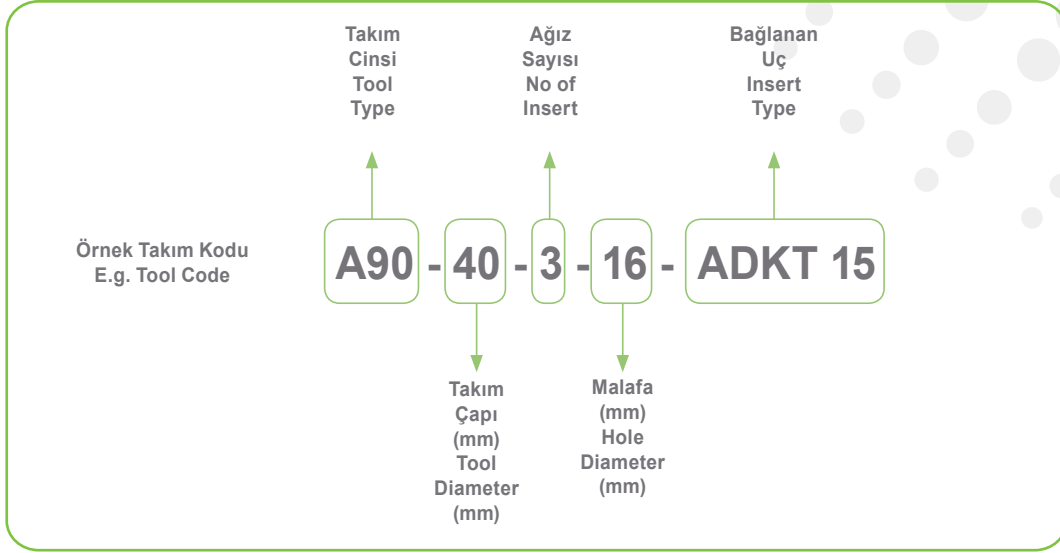
5 Kesme Boyu - Cutting Length

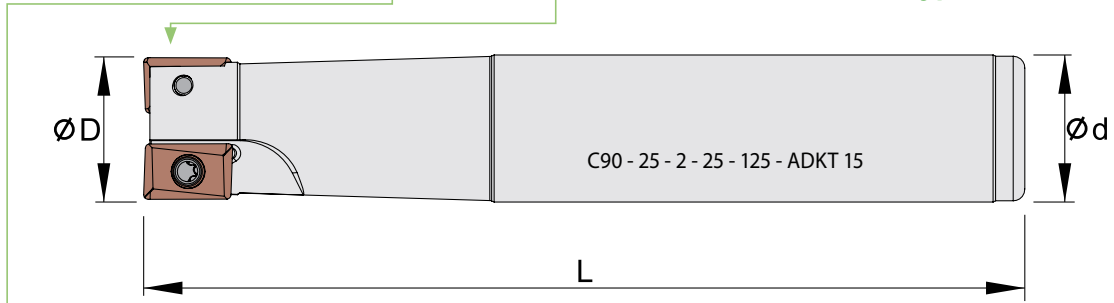
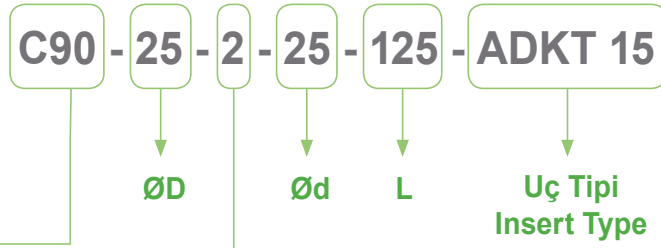
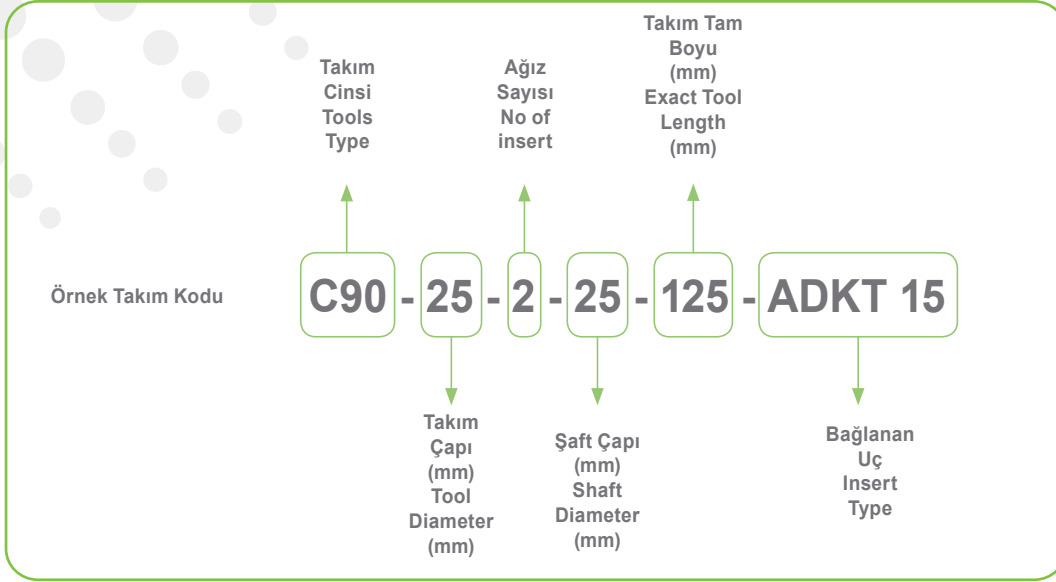


6 Kalınlık - Thickness

A, B,		01 = 1,588
C, N,		T1 = 1,984
O, W.		02 = 2,381
		03 = 3,175
		T3 = 3,969
H, M,		04 = 4,763
R, T.		05 = 5,556
		06 = 6,350
		07 = 7,938
		09 = 9,525
		11 = 11,113
F, G,		12 = 12,700
J, U.		14 = 14,288
		15 = 15,875

ISO KODLARI ISO CODES





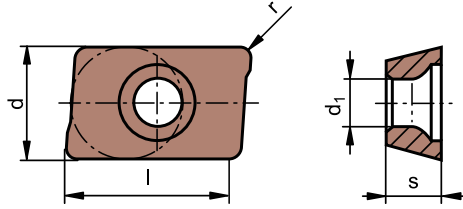
C90	90° Saplı Tarama / 90° End Milling Tool
CR	Radyuslu Saplı Tarama / Radius End Milling Tool
C45	45° Saplı Tarama / 45° End Milling Tool

ADKT



ADKT

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1(mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
ADKT 1505	9,65	16,18	5,85	0,80	4,45	✓	✓		



Çelik / Steel	✓	✓		✓
Paslanmaz Çelik / Stainless Steel	✓			✓
Döküm / Cast Iron			✓	
Aluminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				

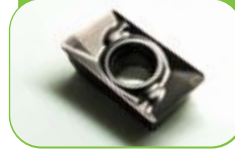
APKT 1003



APKT 1604

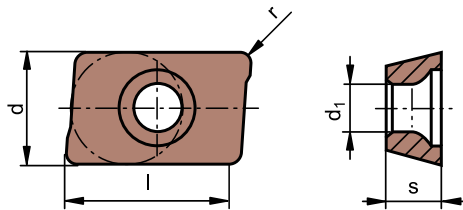


APKT 1604 CM



APKT

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1(mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
APKT 1003	6,70	11,00	3,47	0,40	2,85	✓	✓		
APKT 1604	9,45	17,30	5,70	0,80	4,41	✓	✓		
APKT 1604-CM	9,45	17,30	5,70	0,80	4,41	✓	✓		



Çelik / Steel	✓	✓		✓
Paslanmaz Çelik / Stainless Steel	✓			✓
Döküm / Cast Iron			✓	
Aluminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				



ADKT takım bilgileri için Sayfa 24'e bakınız.
APKT takım bilgileri için Sayfa 25'e bakınız.
For ADKT tools information please see Pages 24.
For APKT tools information please see Pages 25.



Geometri bilgileri, ap/ fz bilgileri için Sayfa 46 bakınız.
For Geometry, ap/fz information see Page 46



Vc değerleri için Sayfa 48 - 49 bakınız.
For Vc Values see Page 48 - 49

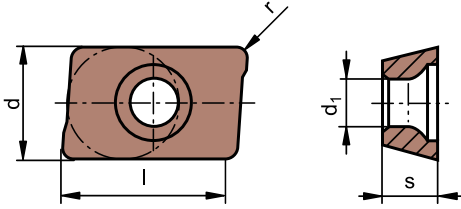


APCT



APCT

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1(mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
APCT 113508	6,20	11,30	3,50	0,80	3,00	✓	✓		



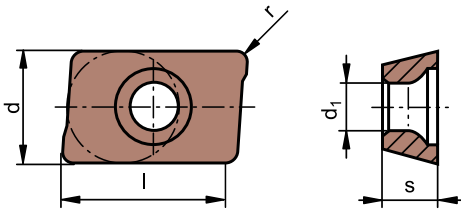
Çelik / Steel	✓	✓		✓
Paslanmaz Çelik / Stainless Steel	✓			✓
Döküm / Cast Iron			✓	
Alüminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				

APXT



APXT

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1(mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
APXT 1003	6,32	11,73	3,50	0,80	3,00	✓	✓		



Çelik / Steel	✓	✓		✓
Paslanmaz Çelik / Stainless Steel	✓			✓
Döküm / Cast Iron			✓	
Alüminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				



APCT takım bilgileri için Sayfa 27'e bakınız.
APXT takım bilgileri için Sayfa 28'e bakınız.
For APCT tools information please see Pages 27.
For APXT tools information please see Pages 28.



Geometri bilgileri, ap/ fz bilgileri için Sayfa 46 bakınız.
For Geometry, ap/fz information see Page 46

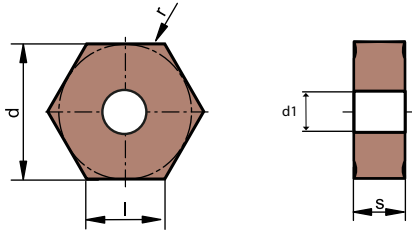


Vc değerleri için Sayfa 48 - 49 bakınız.
For Vc Values see Page 48 - 49

HNMX

HNMX

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
HNMX 1006ANTN	19,06	10,00	6,34	1,00	6,29	✓		✓	

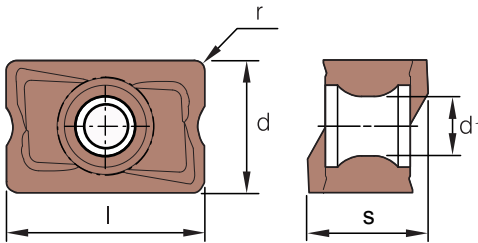


Çelik / Steel	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓	✓	✓
Döküm / Cast Iron	✓	✓	✓	✓
Aluminyum / Aluminum	✓	✓	✓	✓
Özel Alaşım / Special Alloy	✓	✓	✓	✓
Sertleştirilmiş Çelik / Hardened Steel	✓	✓	✓	✓

LNMX

LNMX

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
LNMX	10	15	10	0,80	4,5	✓	✓		



Çelik / Steel	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓	✓	✓
Döküm / Cast Iron	✓	✓	✓	✓
Aluminyum / Aluminum	✓	✓	✓	✓
Özel Alaşım / Special Alloy	✓	✓	✓	✓
Sertleştirilmiş Çelik / Hardened Steel	✓	✓	✓	✓



HNMX takım bilgileri için Sayfa 29'a bakınız.
 LNMX takım bilgileri için Sayfa 30'e bakınız.
 For HNMX tool information please see Pages 29.
 For LNMX tool information please see Pages 30.



Geometri bilgileri, ap/ fz bilgileri için Sayfa 46 bakınız.
 For Geometry, ap/fz information see Page 46



Vc değerleri için Sayfa 48 - 49 bakınız.
 For Vc Values see Page 48 - 49

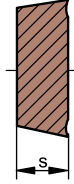
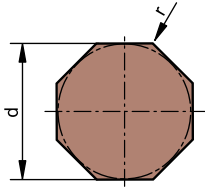


OFCR



OFCR

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
OFCR 0704	17,90	--	5,1	0,80	--	✓	✓		



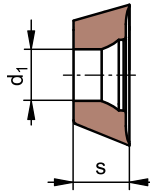
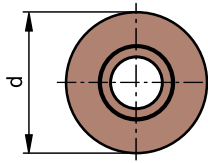
Çelik / Steel	✓	✓		✓
Paslanmaz Çelik / Stainless Steel	✓			✓
Döküm / Cast Iron			✓	
Alüminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				

RHKT



RHKT

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
RHKT 1605	16	--	5,2	8,00	5,60	✓	✓		



Çelik / Steel	✓	✓		✓
Paslanmaz Çelik / Stainless Steel	✓			✓
Döküm / Cast Iron			✓	
Alüminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				



OFCR takım bilgileri için Sayfa 31'e bakınız.
RHKT takım bilgileri için Sayfa 32'e bakınız.
For OFCR tools information please see Pages 31.
For RHKT tools information please see Pages 32.



Geometri bilgileri, ap/ fz bilgileri için Sayfa 46 bakınız.
For Geometry, ap/fz information see Page 46



Vc değerleri için Sayfa 48 - 49 bakınız.
For Vc Values see Page 48 - 49.

RHKW 0802



RHKW 1003

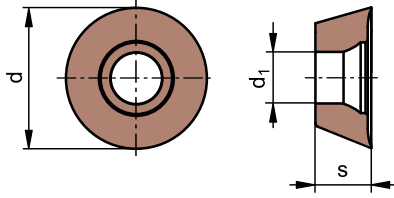


RHKW 1204



RHKW

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
RHKW 0802	8	--	2,6	4,00	3,70	✓	✓		
RHKW 1003	10	--	3,8	5,00	4,40	✓	✓		
RHKW 1204	12	--	4,76	6,00	4,40	✓	✓		



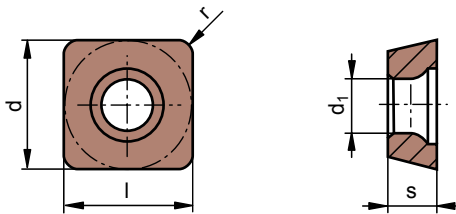
Çelik / Steel	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓	✓	✓
Döküm / Cast Iron			✓	
Aluminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				

SDHT



SDHT

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
SDHT 1204	12,7	12,7	4,76	0,20	5,50	✓	✓		



Çelik / Steel	✓	✓	✓	✓
Paslanmaz Çelik / Stainless Steel	✓	✓	✓	✓
Döküm / Cast Iron			✓	
Aluminyum / Aluminum				
Özel Alaşım / Special Alloy				
Sertleştirilmiş Çelik / Hardened Steel				



RHKW takım bilgileri için Sayfa 35'e bakınız.
SDHT takım bilgileri için Sayfa 36'e bakınız.
For RHKW tools information please see Pages 35.
For SDHT tools information please see Pages 36.



Geometri bilgileri, ap/ fz bilgileri için Sayfa 46 bakınız.
For Geometry, ap/fz information see Page 46



Vc değerleri için Sayfa 48 - 49 bakınız.
For Vc Values see Page 48 - 49.



SNMX



SNMX

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
SNMX 1206	12,70	12,70	6,35	0,80	4,50	✓	✓		
						✓	✓		✓
						✓			✓
								✓	

Çelik / Steel

Paslanmaz Çelik / Stainless Steel

Döküm / Cast Iron

Aluminyum / Aluminum

Özel Alaşım / Special Alloy

Sertleştirilmiş Çelik / Hardened Steel

050204



060204



07T308



090408



110408



SPMG

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
SPMG 050204	5	5	2,38	0,40	2,25	✓	✓		
SPMG 060204	6	6	2,38	0,40	2,61	✓	✓		
SPMG 07T308	7,94	7,94	3,97	0,80	2,85	✓	✓		
SPMG 090408	9,80	9,80	4,30	0,80	4,05	✓	✓		
SPMG 110408	11,50	11,50	4,98	0,80	4,40	✓	✓		
						✓	✓		✓
						✓			✓
								✓	

Çelik / Steel

Paslanmaz Çelik / Stainless Steel

Döküm / Cast Iron

Aluminyum / Aluminum

Özel Alaşım / Special Alloy

Sertleştirilmiş Çelik / Hardened Steel



SNMX takım bilgileri için Sayfa 37'e bakınız.
SPMG takım bilgileri için Sayfa 36'e bakınız.
For SNMX tools information please see Pages 37.
For SPMG tools information please see Pages 36.



Geometri bilgileri, ap/ fz bilgileri için Sayfa 46 bakınız.
For Geometry, ap/fz information see Page 46



Vc değerleri için Sayfa 48 - 49 bakınız.
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1603

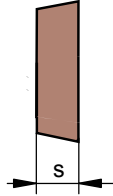
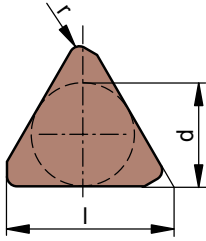


2204



TPKN

Kod / Code	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1250	KLP 1280	KLP 2460	KLP 1650
TPKN 1603	9,52	16,50	3,18	0,2	--	✓		✓	
TPKN 2204	12,7	22,00	4,76	0,4	--	✓		✓	



Çelik / Steel

Paslanmaz Çelik / Stainless Steel

Döküm / Cast Iron

Aluminyum / Aluminum

Özel Alaşım / Special Alloy

Sertleştirilmiş Çelik / Hardened Steel

✓	✓	✓	✓
✓			✓
		✓	



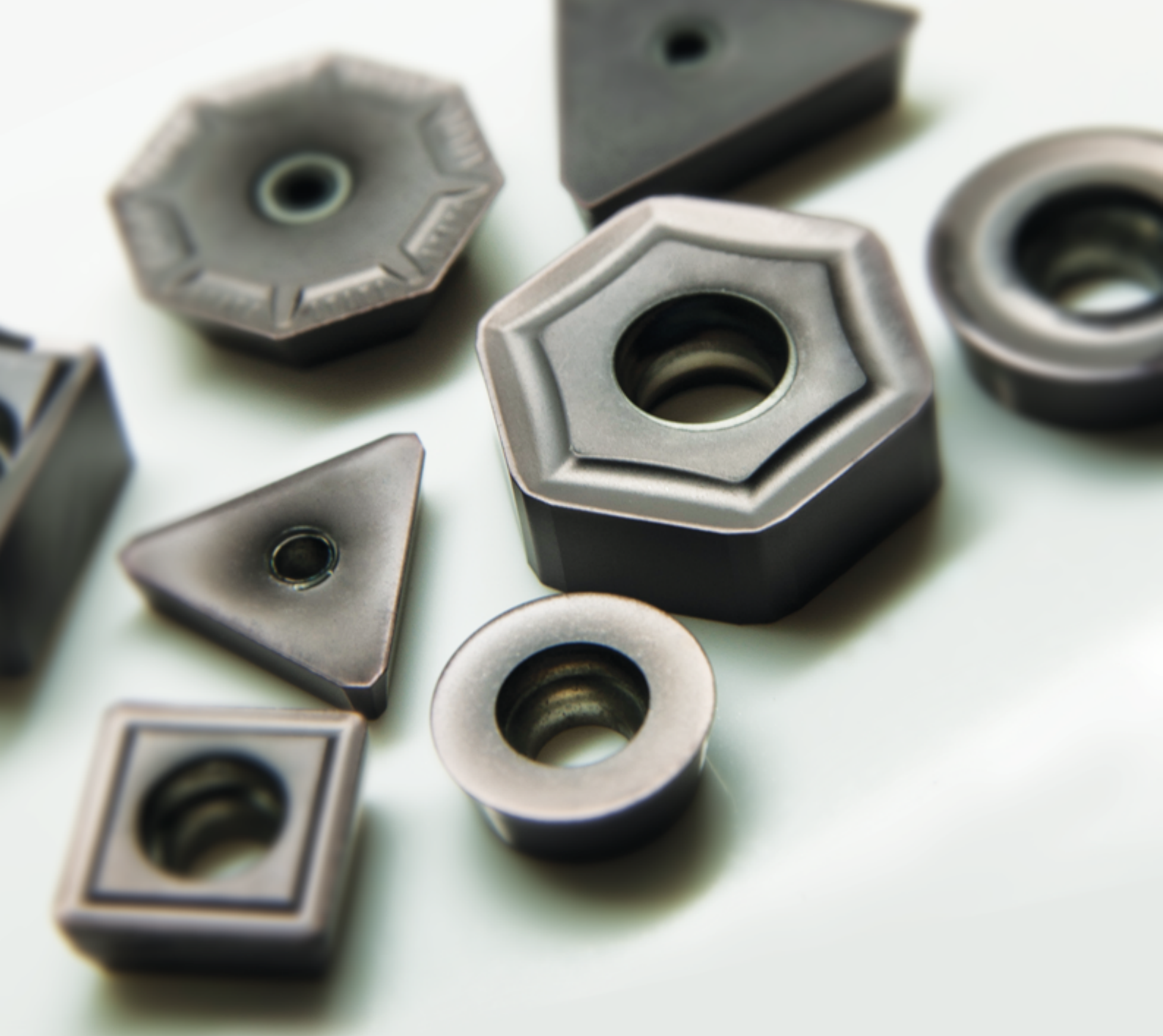


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KLP bir KARAKOÇ Kalıp Metal Form A.Ş. markasıdır. KLP is a registered trade mark of KARAKOÇ Kalıp Metal Form A.Ş.

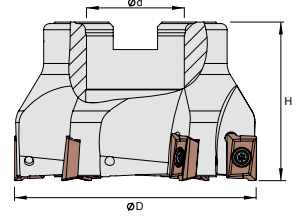


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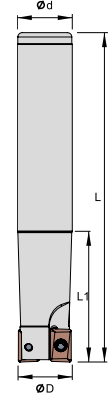
KLP bir KARAKOÇ Kalıp Metal Form A.Ş. markasıdır. KLP is a registered trade mark of KARAKOÇ Kalıp Metal Form A.Ş.

ADKT 1506

Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
A90 40-3-16	40	3	16	45	ADKT 1505	M4	T15
A90 50-4-22	50	4	22	45			
A90 63-5-22	63	5	22	45			
A90 80-6-32	80	6	32	52			
A90 100-8-32	100	8	32	52			
A90 125-9-40	125	9	40	62			

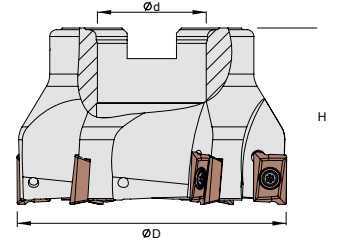


Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1			
C90 25-2-25-120	25	2	25	120	45	ADKT 1505	M4	T15
C90 30-2-25-120	30	2	25	120	45			
C90 32-3-32-120	32	3	32	120	45			
C90 35-3-25-120	35	3	25	120	45			
C90 40-4-25-120	40	4	25	120	45			
C90 25-2-25-150	25	2	25	150	55			
C90 30-2-25-150	30	2	25	150	55			
C90 32-3-32-150	32	3	32	150	55			
C90 35-3-25-150	35	3	25	150	55			
C90 40-4-32-150	40	4	32	150	55			
C90 25-2-25-200	25	2	25	200	55			
C90 30-2-25-200	30	2	25	200	55			
C90 32-3-32-200	32	3	32	200	55			
C90 35-3-32-200	35	3	32	200	55			
C90 40-4-32-200	40	4	32	200	55			

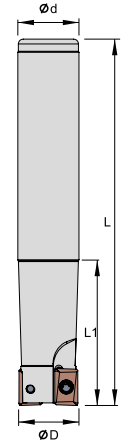


APKT 1003

Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
A90 40-5-16	40	5	16	40	APKT 1003	M2.5	T8
A90 50-6-22	50	6	22	40			
A90 63-7-22	63	7	22	40			
A90 80-8-32	80	8	32	50			

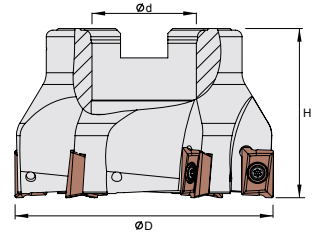


Tool Code	Dimensions (mm)						Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1				
C90 12-1-12-100	12	1	12	100		APKT 1003	M2.5	T8	
C90 14-1-14-100	14	1	14	100					
C90 16-2-16-100	16	2	16	100					
C90 18-2-16-100	18	2	16	100					
C90 20-3-20-100	20	3	20	100					
C90 22-3-20-100	22	3	20	100					
C90 25-3-25-100	25	3	25	100					
C90 30-4-25-100	30	4	25	100					
C90 32-4-25-100	32	4	25	100					
C90 35-4-25-100	35	4	25	100					
C90 40-5-25-100	40	5	25	100					
C90 12-1-12-120	12	1	12	120					
C90 14-1-14-120	14	1	14	120					
C90 16-2-16-120	16	2	16	120					
C90 18-2-16-120	18	2	16	120					
C90 20-3-20-120	20	3	20	120					
C90 22-3-20-120	22	3	20	120					
C90 25-3-25-120	25	3	25	120					
C90 30-4-25-120	30	4	25	120					
C90 35-4-25-120	35	4	25	120					
C90 40-5-25-120	40	5	25	120					
C90 16-2-16-150	16	2	16	150					
C90 18-2-16-150	18	2	16	150					
C90 20-3-20-150	20	3	20	150					
C90 22-3-20-150	22	3	20	150					
C90 25-3-25-150	25	3	25	150					
C90 30-4-25-150	30	4	25	150					
C90 32-4-25-150	32	4	25	150					

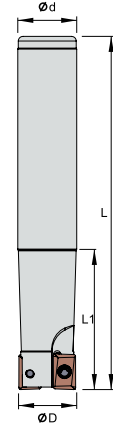


APKT 1604

Takım Kodu / Tool Code	Ölçüler (mm) Dimensions (mm)				Kullanılan Uç Insert	Civata Clamp Screw	Anahtar Torx Key
	ØD	Z	Ød	H			
A90 40-3-16	40	3	16	40	APKT 1604	M4	T15
A90 50-4-22	50	4	22	40			
A90 63-5-22	63	5	22	40			
A90 80-6-32	80	6	32	50			
A90 100-7-32	100	7	32	50			

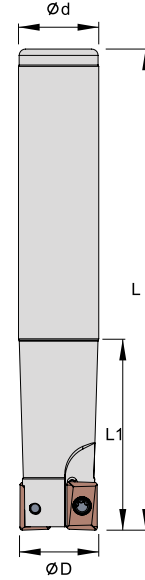


Takım Kodu / Tool Code	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Civata Clamp Screw	Anahtar Torx Key
	ØD	Z	Ød	L	L1			
C90 25-2-25-120	25	2	25	120	45	APKT 1604	M4	T15
C90 30-2-25-120	30	2	25	120	45			
C90 32-3-25-120	32	3	25	120	45			
C90 35-3-25-120	35	3	25	120	45			
C90 40-4-25-120	40	4	25	120	45			
C90 25-2-25-150	25	2	25	150	55			
C90 30-2-25-150	30	2	25	150	55			
C90 32-3-25-150	32	3	25	150	55			
C90 35-3-25-150	35	3	25	150	55			
C90 40-4-25-150	40	4	25	150	55			
C90 25-2-25-200	25	2	25	200	55			
C90 30-2-25-200	30	2	25	200	55			
C90 32-3-25-200	32	3	25	200	55			
C90 35-3-32-200	35	3	32	200	55			
C90 40-4-32-200	40	4	32	200	55			
C90 25-2-25-250	25	2	25	250	60			
C90 30-2-25-250	30	2	25	250	60			
C90 32-3-32-250	32	3	32	250	60			
C90 35-3-32-250	35	3	32	250	60			
C90 40-4-32-250	40	4	32	250	60			
C90 25-2-25-300	25	2	25	300	70			
C90 30-2-25-300	30	2	25	300	70			
C90 32-3-32-300	32	3	32	300	70			
C90 35-3-32-300	35	3	32	300	70			
C90 40-4-32-300	40	4	32	300	70			
C90 32-3-32-350	32	3	32	350	70			
C90 35-3-32-350	35	3	32	350	70			
C90 40-4-32-350	40	4	32	350	70			



APCT 1135

Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1			
C90 16-2-16-120	16	2	16	120		APCT 1135	M2.5	T8
C90 18-2-16-120	18	2	16	120				
C90 20-3-20-120	20	3	20	120				
C90 22-3-20-120	22	3	20	120				
C90 25-3-25-120	25	3	25	120				
C90 30-4-25-120	30	4	25	120				
C90 35-4-25-120	35	4	25	120				
C90 40-5-25-120	40	5	25	120				
C90 16-2-16-150	16	2	16	150				
C90 18-2-16-150	18	2	16	150				
C90 20-3-20-150	20	3	20	150				
C90 22-3-20-150	22	3	20	150				
C90 25-3-25-150	25	3	25	150				
C90 30-4-25-150	30	4	25	150				
C90 32-4-32-150	32	4	32	150				

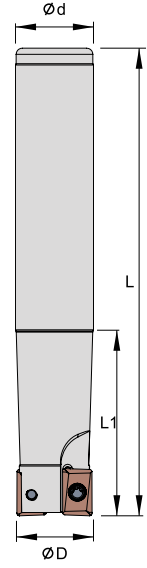


İÇTEN SU VERMELİ / INTERNAL WATER COOLED




Takım Kodu / Tool Code	Ölçüler (mm) / Dimensions (mm)					Kullanılan Uç / Insert	Civata / Clamp Screw	Anahtar / Torx Key
	ØD	Z	Ød	L	L1			
C90 16-2-16-150	16	2	16	150	--	APCT 1135	M 2,5	T8
C90 20-3-20-150	20	3	20	150	--			
C90 25-3-25-150	25	3	25	150	--			
C90 32-4-32-150	32	4	32	150	--			

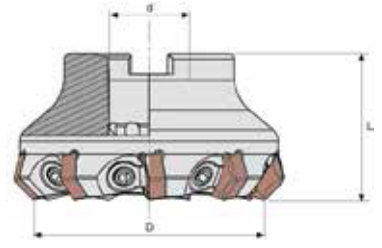
APXT 1003

Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1			
C90 16-2-16-120	16	2	16	120		APXT 1003	M2.5	T8
C90 18-2-16-120	18	2	16	120				
C90 20-3-20-120	20	3	20	120				
C90 22-3-20-120	22	3	20	120				
C90 25-4-25-120	25	3	25	120				
C90 32-5-32-120	32	5	32	120				
C90 16-2-16-150	16	2	16	150				
C90 18-2-16-150	18	2	16	150				
C90 20-3-20-150	20	3	20	150				
C90 22-3-20-150	22	3	20	150				
C90 25-3-25-150	25	3	25	150				
C90 32-5-32-150	32	5	32	150				
C90 16-2-16-200	16	2	16	200				
C90 20-3-20-200	20	3	20	200				
C90 25-4-25-200	25	4	25	200				
C90 32-5-32-200	32	5	32	200				



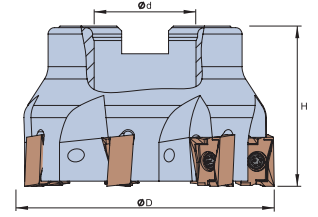
HNMX

Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	$\varnothing D$	Z	$\varnothing d$	H			
A45 63-5-22	63	5	22	50			
A45 80-7-27	80	7	27	50			
A45 100-9-40	100	9	32	50			
A45 125-10-40	125	10	40	62			
A45 160-12-40	160	12	40	62			



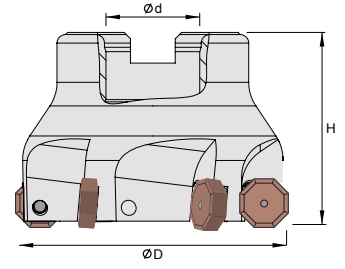
LNMX

Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
A45 50-4-22	50	4	22	45	 LNMX 1510	 M4	 T15
A45 63-6-22	63	6	22	45			
A45 80-7-32	80	7	32	50			
A45 100-8-32	100	8	32	50			
A45 125-10-40	125	10	40	62			






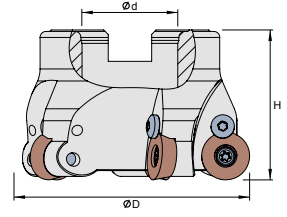
OFCR

Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	$\varnothing D$	Z	$\varnothing d$	H			
A45 50-4-22	50	4	22	45	OFCR 0704	M8	5 ALLEN
A45 63-4-22	63	4	22	45			
A45 80-6-32	80	6	32	52			
A45 100-7-32	100	7	32	52			
A45 125-9-40	125	9	40	52			






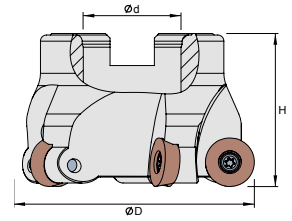
RHKT 1605




Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
AR 50-3-22	50	3	22	45			
AR 63-4-22	63	4	22	45			
AR 80-5-32	80	5	32	50			
AR 100-6-32	100	6	32	50			
AR 125-8-40	125	8	40	50			

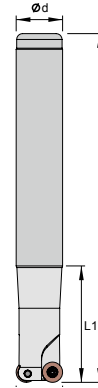


RHKW 0802

Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
AR 40-3-16	40	3	16	40			
AR 40-4-16	40	4	16	40			
AR 50-4-22	50	4	22	40			
AR 50-5-22	50	5	22	40			
AR 63-5-22	63	5	22	40			
AR 63-6-22	63	6	22	40			
AR 80-6-32	80	6	32	50			
AR 80-7-32	80	7	32	50			
AR 100-7-32	100	7	32	50			
AR 100-8-32	100	8	32	50			

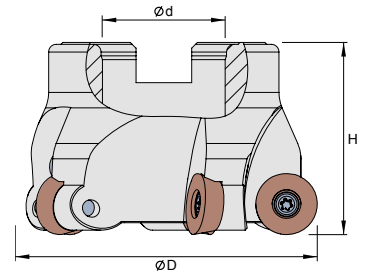


Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1			
CR 16-2-16-120	16	2	16	120	50			
CR 18-2-16-120	18	2	16	120	50			
CR 20-3-20-120	20	3	20	120	50			
CR 16-2-16-150	16	2	16	150	60			
CR 18-2-16-150	18	2	16	150	60			
CR 20-3-20-150	20	3	20	150	60			
CR 25-3-25-150	25	3	25	150	60			
CR 16-2-16-200	16	2	16	200	70			
CR 18-2-16-200	18	2	16	200	70			
CR 20-3-20-200	20	3	20	200	70			



RHKW 1003

Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
AR 40-3-16	40	3	16	40	RHKW 1003	M4	T15
AR 40-4-16	40	4	16	40			
AR 50-4-22	50	4	22	40			
AR 50-5-22	50	5	22	40			
AR 63-5-22	63	5	22	40			
AR 63-6-22	63	6	22	40			
AR 80-6-32	80	6	32	50			
AR 80-7-32	80	7	32	50			
AR 100-7-32	100	7	32	50			
AR 100-8-32	100	8	32	50			

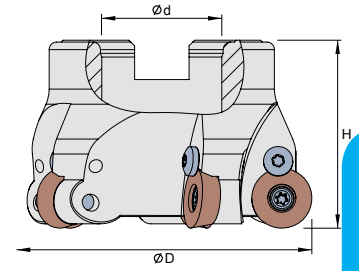


Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1			
CR 20-2-20-120	20	2	20	120	40	RHKW 1003	M4	T15
CR 25-3-25-120	25	3	25	120	40			
CR 30-3-25-120	30	3	25	120	40			
CR 32-3-32-120	32	3	32	120	40			
CR 35-3-25-120	35	3	25	120	40			
CR 40-3-25-120	40	3	25	120	40			
CR 20-2-20-150	20	2	20	150	60			
CR 25-3-25-150	25	3	25	150	60			
CR 30-3-25-150	30	3	25	150	60			
CR 32-3-32-150	32	3	32	150	60			
CR 35-3-25-150	35	3	25	150	60			
CR 40-3-25-150	40	3	25	150	60			
CR 20-2-20-200	20	2	20	200	70			
CR 25-3-25-200	25	3	25	200	70			
CR 30-3-25-200	30	3	25	200	70			
CR 32-3-32-200	32	3	32	200	70			
CR 35-3-32-200	35	3	32	200	70			
CR 40-3-32-200	40	3	32	200	70			

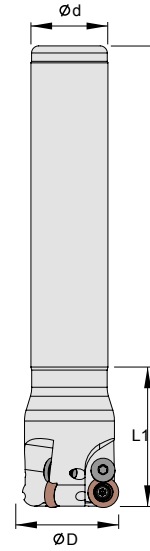


RHKW 1204



Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
AR 40-3-16	40	3	16	40	RHKW 1204	M4	T15
AR 40-4-16	40	4	16	40			
AR 50-4-22	50	4	22	40			
AR 50-5-22	50	5	22	40			
AR 63-5-22	63	5	22	40			
AR 63-6-22	63	6	22	40			
AR 80-6-32	80	6	32	50			
AR 80-7-32	80	7	32	50			
AR 100-7-32	100	7	32	50			
AR 100-8-32	100	8	32	50			

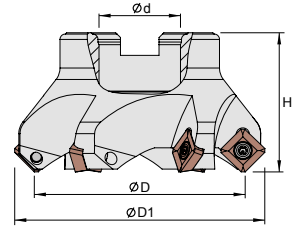


Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1			
CR 25-2-25-150	25	2	25	150	60	RHKW 1204	M4	T15
CR 30-2-25-150	30	2	25	150	60			
CR 32-3-32-150	32	3	32	150	60			
CR 35-3-25-150	35	3	25	150	60			
CR 40-3-25-150	40	3	25	150	60			
CR 25-2-25-200	25	2	25	200	70			
CR 30-2-25-200	30	2	25	200	70			
CR 32-3-32-200	32	3	32	200	70			
CR 35-3-32-200	35	3	32	200	70			
CR 40-3-32-200	40	3	32	200	70			
CR 40-3-32-250	40	3	32	250	70			
CR 25-2-25-300	25	2	25	300	70			
CR 30-2-25-300	30	2	25	300	70			
CR 32-3-32-300	32	3	32	300	70			
CR 35-3-32-300	35	3	32	300	70			
CR 40-3-32-300	40	3	32	300	70			
CR 35-3-32-350	35	3	32	350	70			
CR 40-3-32-350	40	3	32	350	70			



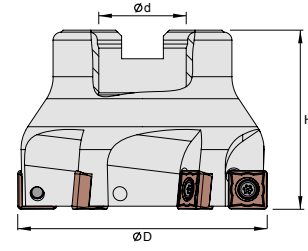
SDHT 1204

Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	$\varnothing D$	Z	$\varnothing d$	H	$\varnothing D1$			
A45 63-5-22	63	5	22	45	76			
A45 80-6-32	80	6	32	52	93			
A45 100-7-32	100	7	32	60	113			
A45 125-8-40	125	8	40	62	138			

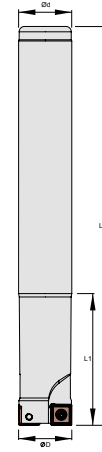


SPMG




Tool Code	Dimensions (mm)				Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H			
A90 50-5-22	50	5	22	45	SPMG 09	M3.5	T15
A90 63-6-22	63	6	22	45			
A90 80-7-32	80	7	32	52			

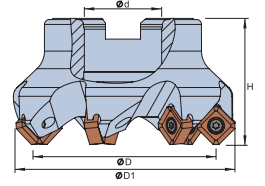


Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	L	L1			
C90 13-2-14-120	13	2	14	120	40	SPMG 05	M2	T6
C90 13,5-2-14-120	13.5	2	14	120	40	SPMG 06	M2.2	T7
C90 14-2-14-120	14	2	14	120	40			
C90 14,5-2-14-120	14.5	2	14	120	40			
C90 15-2-16-120	15	2	16	120	40			
C90 15,5-2-16-120	15.5	2	16	120	40			
C90 16-2-16-120	16	2	16	120	40	SPMG 07	M2.5	T8
C90 20-2-20-150	20	2	20	150	50			
C90 20,5-2-20-120	20.5	2	20	120	50			
C90 25-2-25-150	25	2	25	150	50	SPMG 09	M3.5	T15
C90 32-2-25-150	32	3	25	150	50			



SNMX

Tool Code	Dimensions (mm)					Insert	Clamp Screw	Torx Key
	ØD	Z	Ød	H	ØD1			
A45 50-4-22	50	4	22	44	63	 SNMX 1206	 M4	 T15
A45 63-6-22	63	6	22	44	76			
A45 80-7-32	80	7	32	52	93			
A45 100-8-32	100	8	32	52	113			
A45 125-10-40	125	10	40	63	138			
A45 160-12-40	160	12	40	63	173			






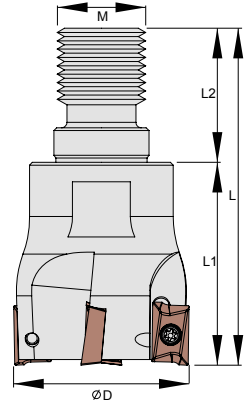





GURUR DUYUYORUZ...
ÇÜNKÜ TÜRKİYE'Yİ
ULUSLARARASI
STANDARTLARA
TAŞIYORUZ.

WE ARE PROUD...
BECAUSE WE ARE
LEADING TURKEY TO
INTERNATIONAL
STANDARDS.




APKT TOOLS

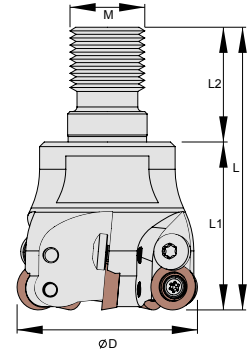
Tool Code	Dimensions (mm)						Insert	Clamp Screw	Torx Key
	ØD	Z	M	L	L1	L2			
KV90 20-3-M10	20	3	M10	55	38	17			
KV90 25-3-M12	25	3	M12	55	33	22			
KV90 32-4-M16	32	4	M16	60	36	24			
KV90 35-4-M16	35	4	M16	60	36	24			
KV90 40-5-M16	40	5	M16	60	36	24			
KV90 42-5-M16	42	5	M16	60	36	24			






Tool Code	Dimensions (mm)						Insert	Clamp Screw	Torx Key
	ØD	Z	M	L	L1	L2			
KV90 25-2-M12	25	2	M12	55	33	22			
KV90 32-3-M16	32	3	M16	60	36	24			
KV90 35-3-M16	35	3	M16	60	36	24			
KV90 40-4-M16	40	4	M16	60	36	24			
KV90 42-4-M16	42	4	M16	60	36	24			

RHKW TOOLS

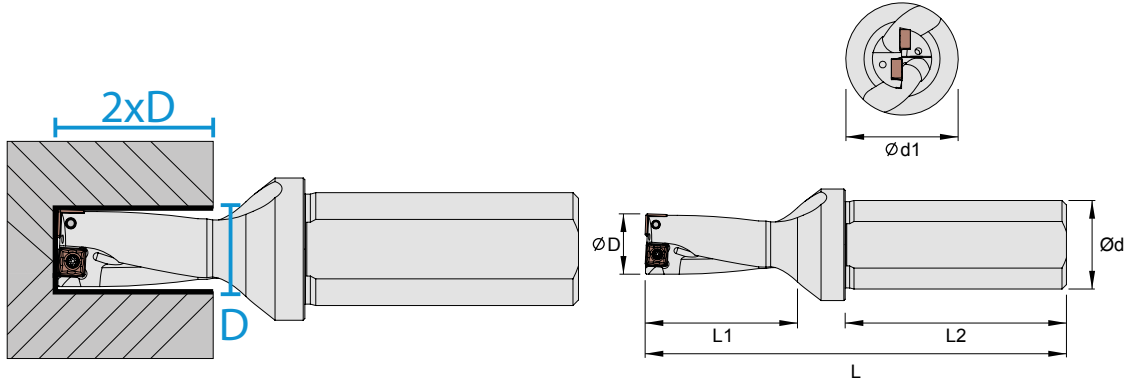
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	ØD	Z	M	L	L1	L2			
KVR 20-2-M10	20	2	M10	55	35	20			
KVR 25-3-M12	25	3	M12	55	33	22			
KVR 32-3-M16	32	3	M16	60	36	24			
KVR 32-4-M16	35	4	M16	60	36	24			
KVR 40-5-M16	40	5	M16	60	36	24			
KVR 42-5-M16	42	5	M16	60	36	24			



Tool Code	Dimensions (mm)						Insert	Clamp Screw	Torx Key
	ØD	Z	M	L	L1	L2			
KVR 25-2-M12	25	2	M12	55	33	22			
KVR 32-3-M16	32	3	M16	60	36	24			
KVR 35-3-M16	35	3	M16	60	36	24			
KVR 40-3-M16	40	3	M16	60	36	24			
KVR 42-4-M16	42	4	M16	60	36	24			
KVR 45-4-M16	45	4	M16	60	36	24			

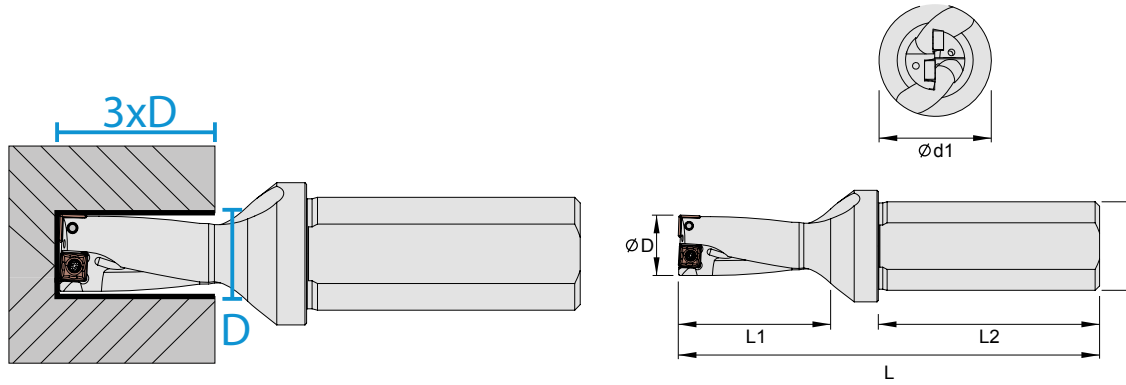
VIDALI FREZE TAKIMLAR
SCREW ON SHOULD MILLING CUTTERS

2D



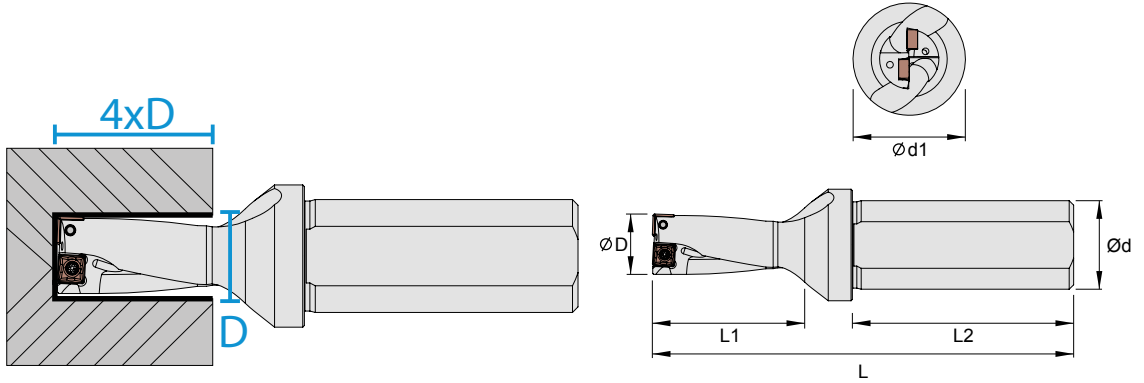
Tool Code	Dimensions (mm)						Insert	Clamp Screw	Torx Key
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2D 14 SPMG05	14	20	25	96	28	50			
2D 15 SPMG05	15	20	25	99	30	50			
2D 16 SPMG06	16	25	34	110	32	55	SPMG 06	M2.2	T6
2D 17 SPMG06	17	25	34	112	34	55			
2D 18 SPMG06	18	25	34	114	36	55			
2D 19 SPMG06	19	25	34	116	38	55			
2D 20 SPMG06	20	25	34	118	40	55			
2D 21 SPMG06	21	25	34	120	42	55			
2D 22 SPMG07	22	25	34	122	44	55	SPMG 07	M2.5	T8
2D 23 SPMG07	23	25	34	124	46	55			
2D 24 SPMG07	24	25	34	126	48	55			
2D 25 SPMG07	25	25	34	128	50	55			
2D 26 SPMG07	26	25	34	132	52	55			
2D 27 SPMG07	27	25	34	134	54	55	SPMG 09	M3.5	T15
2D 28 SPMG09	28	25	34	134	56	55			
2D 29 SPMG09	29	25	34	136	58	55			
2D 30 SPMG09	30	32	44	145	60	58			
2D 31 SPMG09	31	32	44	147	62	58	SPMG 11	M4	T15
2D 32 SPMG09	32	32	44	149	64	58			
2D 33 SPMG09	33	32	44	151	66	58			
2D 34 SPMG011	34	32	44	153	68	58			
2D 35 SPMG011	35	32	44	155	70	58			
2D 36 SPMG011	36	32	44	157	72	58			
2D 37 SPMG011	37	32	44	159	74	58			
2D 38 SPMG011	38	32	44	161	76	58			
2D 39 SPMG011	39	32	44	163	78	58			
2D 40 SPMG011	40	32	44	165	80	58			

3D



Tool Code	Dimensions (mm)						Insert	Clamp Screw	Torx Key
	ØD	Ød	Ød1	L	L1	L2			
3D 13 SPMG05	13	20	25	106	39	50	SPMG 05	M2	T6
3D 14 SPMG05	14	20	25	110	42	50			
3D 15 SPMG05	15	20	25	114	45	50			
3D 16 SPMG06	16	25	34	127	48	55	SPMG 06	M2.2	T6
3D 17 SPMG06	17	25	34	130	51	55			
3D 18 SPMG06	18	25	34	133	54	55			
3D 19 SPMG06	19	25	34	135	57	55			
3D 20 SPMG06	20	25	34	138	60	55			
3D 21 SPMG06	21	25	34	141	63	55			
3D 22 SPMG07	22	25	34	144	66	55	SPMG 07	M2.5	T8
3D 23 SPMG07	23	25	34	147	69	55			
3D 24 SPMG07	24	25	34	150	72	55			
3D 25 SPMG07	25	25	34	153	75	55			
3D 26 SPMG07	26	25	34	156	78	55			
3D 27 SPMG07	27	25	34	159	81	55			
3D 28 SPMG09	28	25	34	162	84	55	SPMG 09	M3.5	T15
3D 29 SPMG09	29	25	34	165	87	55			
3D 30 SPMG09	30	32	44	175	90	58			
3D 31 SPMG09	31	32	44	178	93	58			
3D 32 SPMG09	32	32	44	181	96	58			
3D 33 SPMG09	33	32	44	184	99	58			
3D 34 SPMG011	34	32	44	187	102	58	SPMG 11	M4	T15
3D 35 SPMG011	35	32	44	190	105	58			
3D 36 SPMG011	36	32	44	193	108	58			
3D 37 SPMG011	37	32	44	196	111	58			
3D 38 SPMG011	38	32	44	199	114	58			
3D 39 SPMG011	39	32	44	202	117	58			
3D 40 SPMG011	40	32	44	205	120	58			

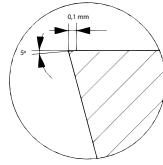
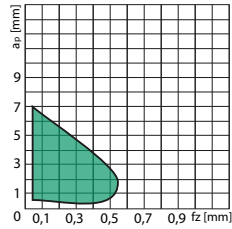
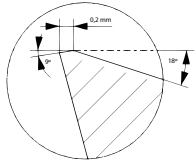
4D



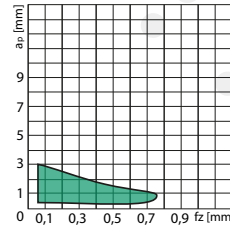
Tool Code	Dimensions (mm)						Insert	Clamp Screw	Torx Key
	ØD	Ød	Ød1	L	L1	L2			
4D 13 SPMG05	13	20	25	119	52	50	SPMG 05	M2	T6
4D 14 SPMG05	14	20	25	124	56	50			
4D 15 SPMG05	15	20	25	129	60	50			
4D 16 SPMG06	16	25	34	143	64	55	SPMG 06	M2.2	T6
4D 17 SPMG06	17	25	34	147	68	55			
4D 18 SPMG06	18	25	34	151	72	55			
4D 19 SPMG06	19	25	34	154	76	55			
4D 20 SPMG06	20	25	34	158	80	55			
4D 21 SPMG06	21	25	34	162	84	55			
4D 22 SPMG07	22	25	34	166	88	55	SPMG 07	M2.5	T8
4D 23 SPMG07	23	25	34	170	92	55			
4D 24 SPMG07	24	25	34	174	96	55			
4D 25 SPMG07	25	25	34	178	100	55			
4D 26 SPMG07	26	25	34	182	104	55			
4D 27 SPMG07	27	25	34	186	108	55	SPMG 09	M3.5	T15
4D 28 SPMG09	28	25	34	190	112	55			
4D 29 SPMG09	29	25	34	194	116	55			
4D 30 SPMG09	30	32	44	205	120	58			
4D 31 SPMG09	31	32	44	209	124	58	SPMG 11	M4	T15
4D 32 SPMG09	32	32	44	213	128	58			
4D 33 SPMG09	33	32	44	217	132	58			
4D 34 SPMG011	34	32	44	221	136	58			
4D 35 SPMG011	35	32	44	225	140	58			
4D 36 SPMG011	36	32	44	229	144	58			
4D 37 SPMG011	37	32	44	233	148	58			
4D 38 SPMG011	38	32	44	237	152	58			
4D 39 SPMG011	39	32	44	241	156	58			
4D 40 SPMG011	40	32	44	245	160	58			



ADKT 15

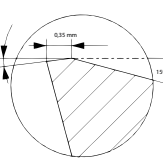
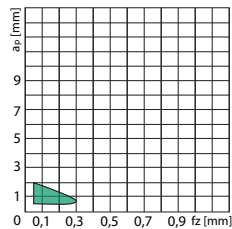
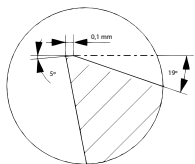


RHKW

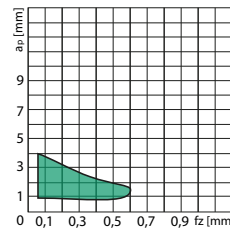


Ap max= D x 0,25

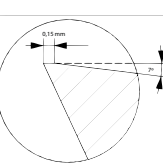
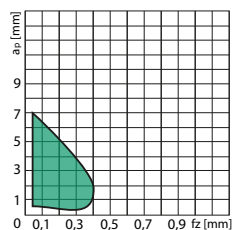
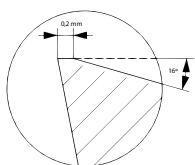
APKT 10



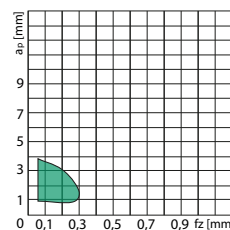
RHKT



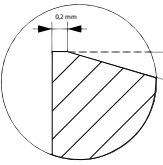
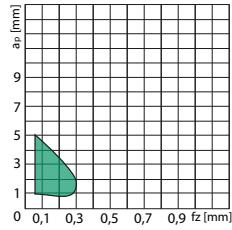
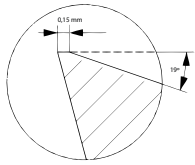
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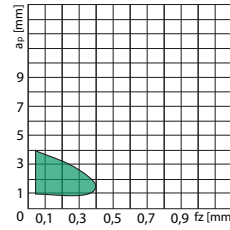
OFCR 07



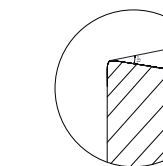
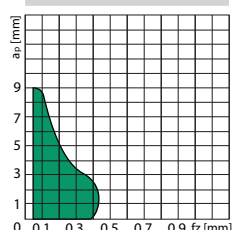
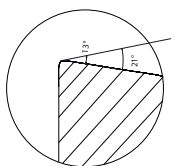
SDHT 12



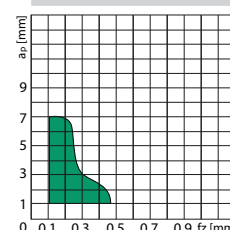
HNMX 10



LNMX

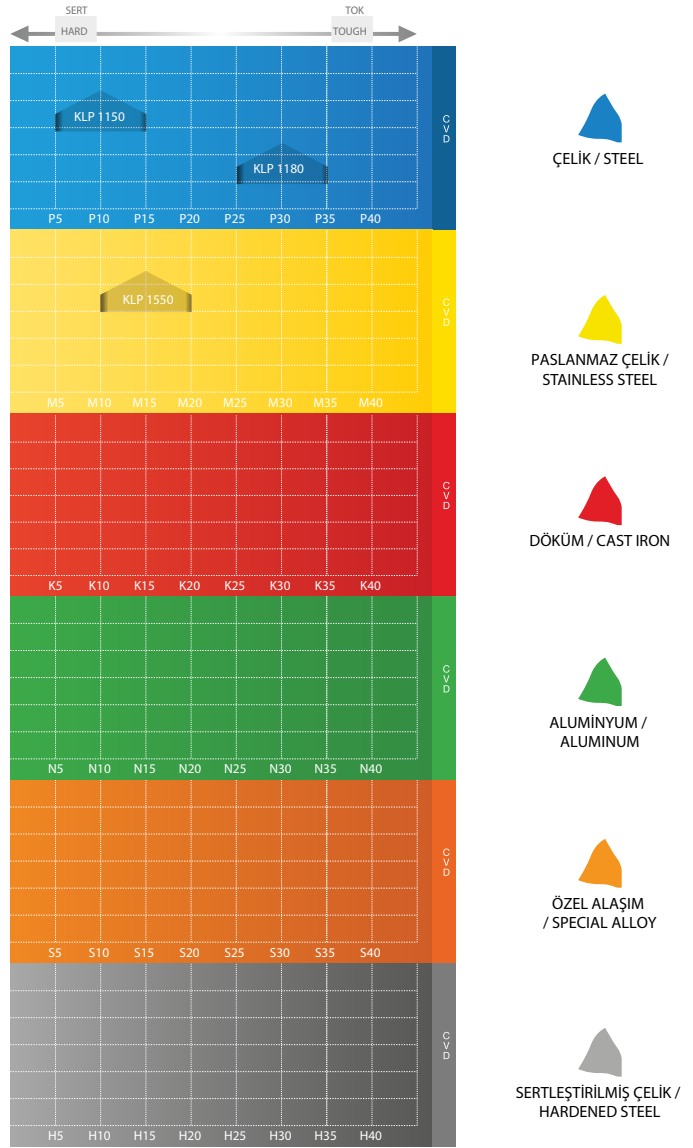
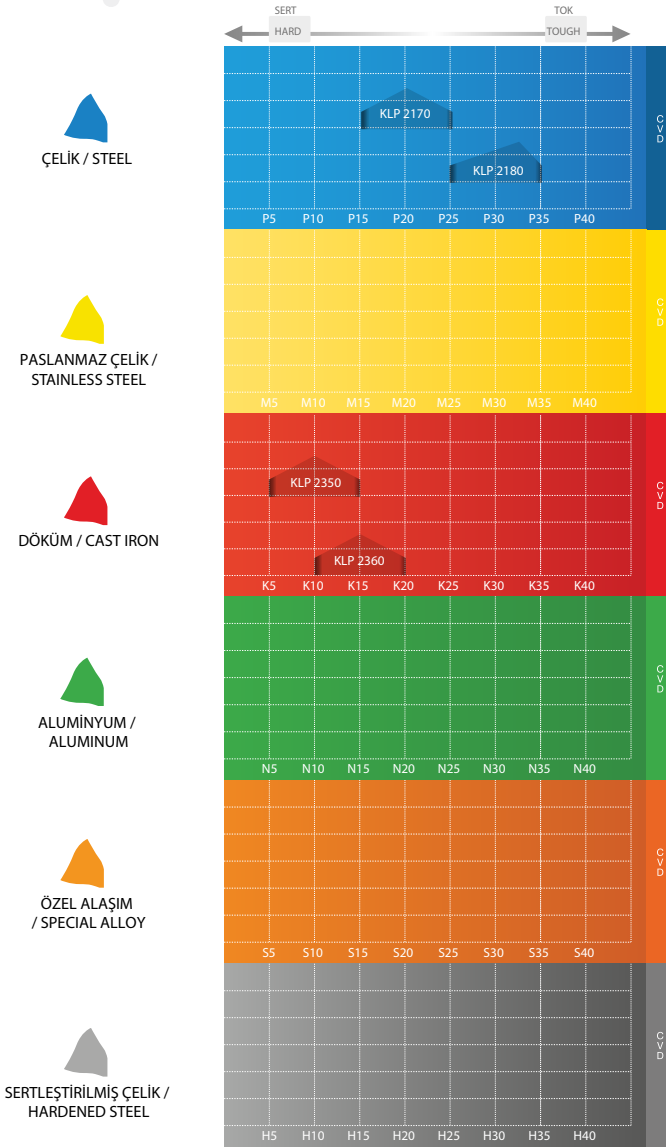


SNMX



CVD KAPLAMA /CVD COATING

PVD KAPLAMA /PVD COATING



		PVD		PVD	
		KLP 1250		KLP 1280	
		min	max	min	max
P	Alaşımsız Çelik <160 HBN Non Alloy Steel <160 HBN	145	350	125	255
	Alaşımlı Çelik <280HBN Alloy Steel <280HBN	150	300	75	245
	Takım Çelikleri >280HBN Tool Steel >280HBN	180	250	70	210
M	Paslanmaz Çelik 300 Serisi Stainless Steel 300 Series				
	Paslanmaz Çelik 400 Serisi Stainless Steel 400 Series				
	Östenitik Çelik Austenitic Steel				
K	Döküm GG Cast Iron				
	Döküm GGG Cast Iron				
	Çelik Döküm Steel Cast Iron				
N	<16 % Si 116HBN				
	>16 % Si 92HBN				
S	Demir Alaşımları Iron Based				
	Kobalt Alaşımları Cobalt Alloys				
	Nikel Alaşımları Nickel Alloys				
	Titanyum Alaşımları Titanium Alloys				
H	Sertleştirilmiş Çelik Hardened Steel 52 Hrc>				



Hesaplama formülleri için Sayfa 84 - 85 bakınız.
For calculate formulas see Page 84 - 85.

		PVD		CVD	
		KLP 1650		KLP 2460	
		min	max	min	max
P	Alaşımsız Çelik <160 HBN Non Alloy Steel <160 HBN				
	Alaşımlı Çelik <280HBN Alloy Steel <280HBN				
	Takım Çelikleri >280HBN Tool Steel >280HBN				
M	Paslanmaz Çelik 300 Serisi Stainless Steel 300 Series	85	200		
	Paslanmaz Çelik 400 Serisi Stainless Steel 400 Series	85	160		
	Östenitik Çelik Austenitic Steel	80	180		
K	Döküm GG Cast Iron			180	380
	Döküm GGG Cast Iron			135	285
	Çelik Döküm Steel Cast Iron			100	210
N	< 16 % Si 116HBN				
	> 16 % Si 92HBN				
S	Demir Alaşımları Iron Based				
	Kobalt Alaşımları Cobalt Alloys				
	Nikel Alaşımları Nickel Alloys				
	Titanyum Alaşımları Titanium Alloys				
H	Sertleştirilmiş Çelik Hardened Steel 52 Hrc>				

NANO PVD KALİTELERİ

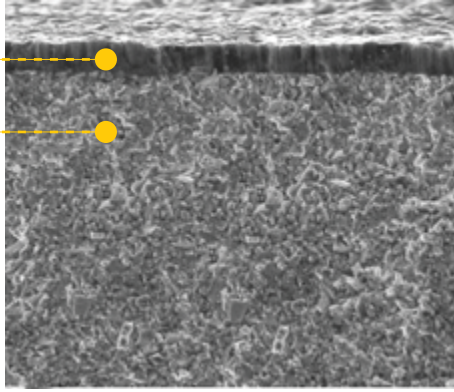
NANO PVD KAPLAMALI YENİ KALİTELER

KLP 1250

KLP 1280

PVD

ALT YAPI



KLP 1550

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.

P05 - P15

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 kalitededir.

P25 - P35

KLP 1650

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 zayıf, sert bir kalitedir.

M10 - M15

MT - CVD KALİTE

MT - CVD KAPLAMALI YENİ KALİTELER

KLP 2460

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

K10 - K25

NANO PVD GRADES

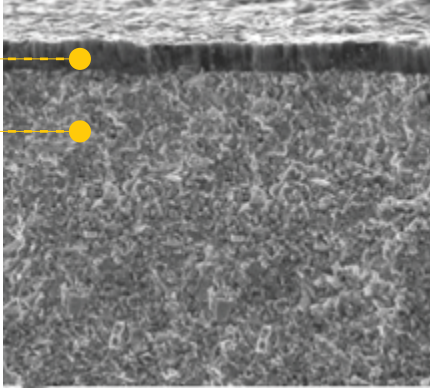
NANO PVD COATED NEW GRADES

KLP 1250

KLP 1280

PVD

INFRASTRUCTURE



KLP 1550

KLP 1250

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.

P05 - P15

KLP 1280

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.

P25 - P35

KLP 1650

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.

M10 - M15

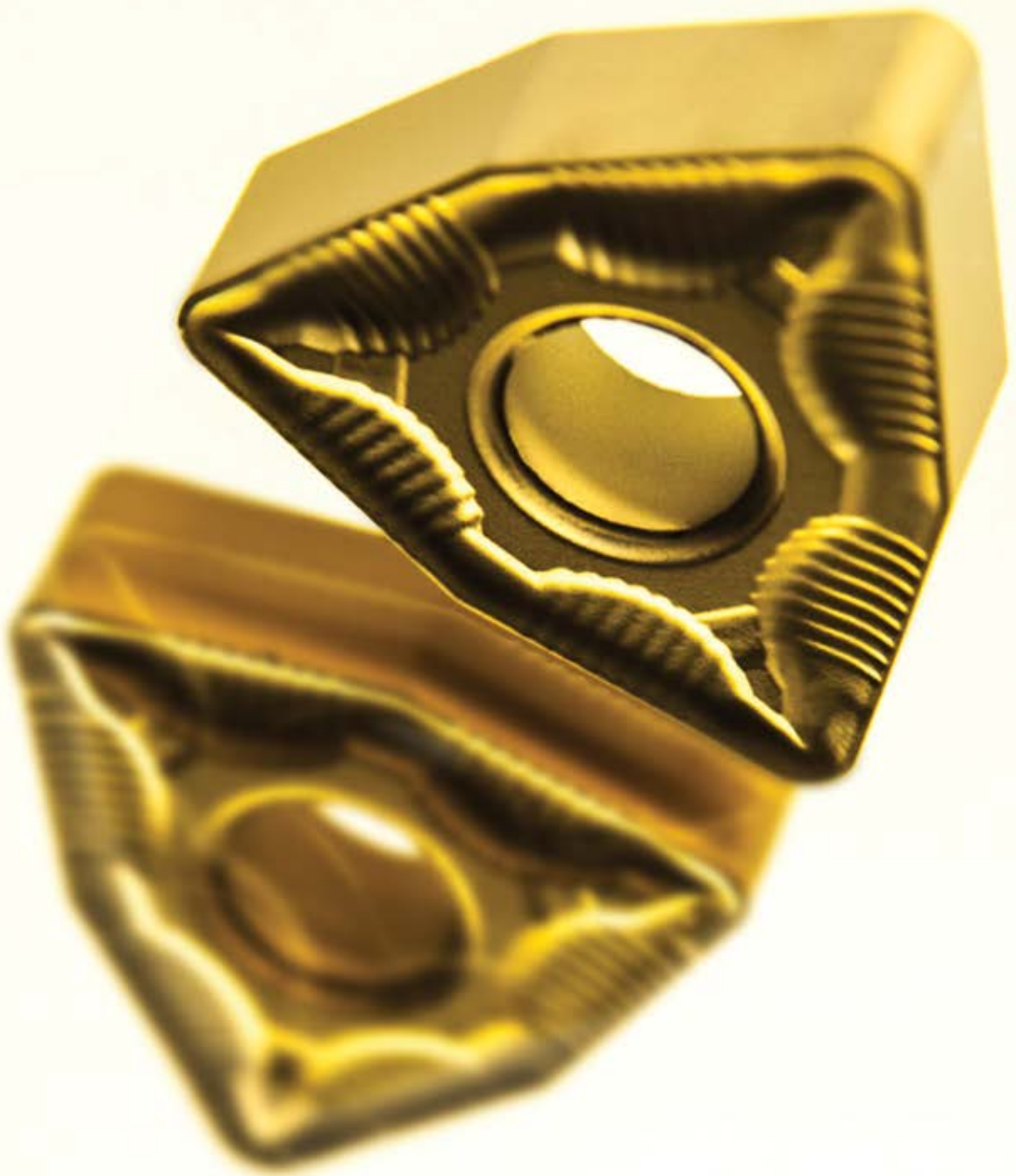
MT - CVD GRADES

MT - CVD COATED NEW GRADES

KLP 2460

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

K10 - K25



TORNA UÇLARI
TURNING INSERTS



W

1

N

2

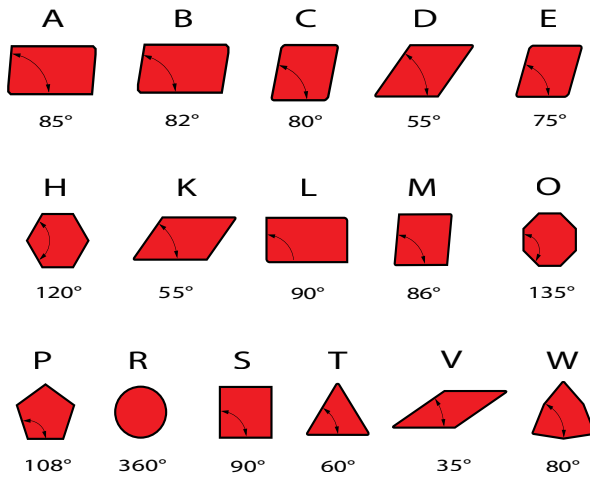
M

3

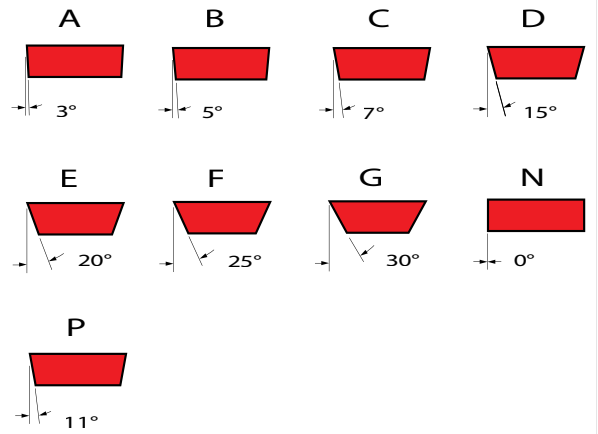
G

4

1 Biçim - Form



2 Açı - Angle

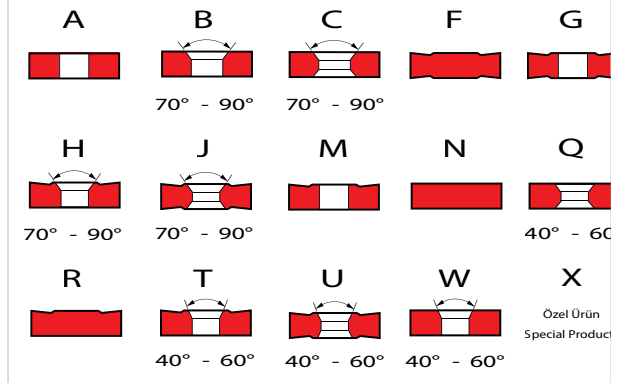


3 Tolerans - Tolerance



	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 ±0,013	±0,005	±0,025
G	mm ±0,025	±0,025	±0,13
H	mm ±0,013	±0,013	±0,025
J	mm *	±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 Bağlantı - Hardware and chip breakers



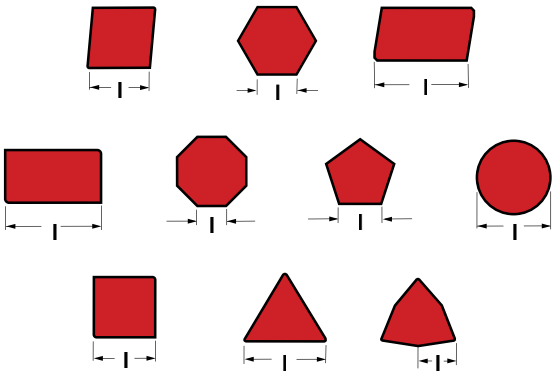
08
5

04
6

08
7

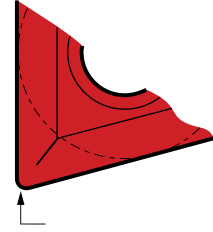
- NM
8

5 Kesme Boyu - Cutting Length

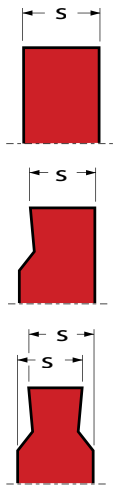


7 Uç Radyusu - Edge Radius

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



6 Kalınlık - Thickness



Ölçü:

Dimension:

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

8 Geometriler - Geometries

PF, PM,

L, R, NF, NM, NR

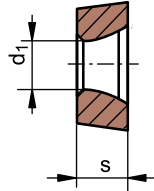
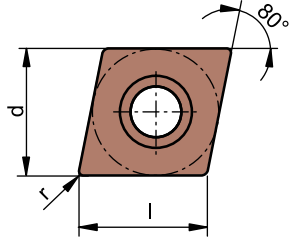
ISO KODLARI ISO CODES

PM



CCMT

Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
CCMT 060204-PM	6,35	6,45	2,38	0,40	2,81	✓	✓					
CCMT 09T304-PM	9,52	9,67	3,97	0,40	4,40	✓	✓		✓			
CCMT 09T308-PM	9,52	9,67	3,97	0,80	4,40	✓	✓		✓			



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

NF



NR

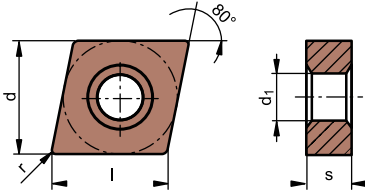


NM



CNMG - CNMA

Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
CNMA 120404	12,7	12,90	4,76	0,40	5,16						✓	✓
CNMA 120408	12,7	12,90	4,76	0,80	5,16						✓	✓
CNMG 120404-NF	12,7	12,90	4,76	0,40	5,16			✓	✓	✓		
CNMG 120408-NF	12,7	12,90	4,76	0,80	5,16			✓	✓	✓		
CNMG 120404-NM	12,7	12,90	4,76	0,40	5,16		✓	✓	✓	✓		
CNMG 120408-NM	12,7	12,90	4,76	0,80	5,16		✓	✓	✓	✓		
CNMG 120404-NR	12,7	12,90	4,76	0,40	5,16			✓	✓	✓		
CNMG 120408-NR	12,7	12,90	4,76	0,80	5,16			✓	✓	✓		



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

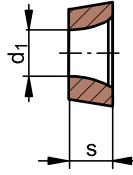
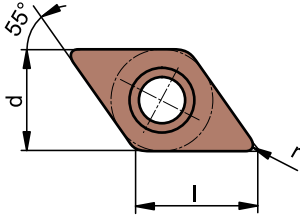
TORNA UÇLARI TURNING INSERTS

PM



DCMT

Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
DCMT 070202 - PM	6,35	7,75	2,38	0,20	2,81	✓	✓					
DCMT 070204 - PM	6,35	7,75	2,38	0,40	2,81	✓	✓					
DCMT 11T304 - PM	9,52	11,63	3,97	0,40	4,40	✓	✓		✓			
DCMT 11T308- PM	9,52	11,63	3,97	0,80	4,40	✓	✓		✓			
						✓	✓	✓	✓	✓		
						✓	✓					
								✓			✓	✓



Çelik / Steel

Paslanmaz Çelik / Stainless Steel

Döküm / Cast Iron

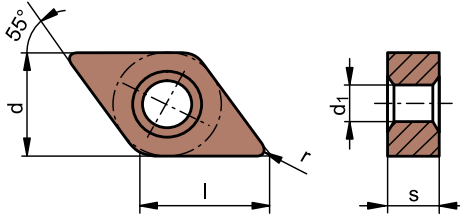
Aluminyum / Aluminum

Özel Alaşım / Special Alloy

Sertleştirilmiş Çelik / Hardened Steel



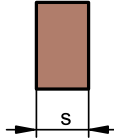
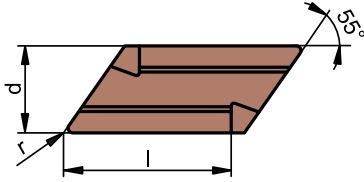
DNMG - DNMA						KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1(mm)							
DNMA 150608	12,7	15,50	6,35	0,80	5,16						✓	✓
DNMA 150612	12,7	15,50	6,35	1,20	5,16						✓	✓
DNMG 150608-NM	12,7	15,50	6,35	0,80	5,16		✓	✓	✓	✓		
DNMG 150608-NM1	12,7	15,50	6,35	0,80	5,16			✓	✓	✓		
DNMG 150612-NM1	12,7	15,50	6,35	1,20	5,16			✓	✓	✓		
DNMG 150604-NF	12,7	15,50	6,35	0,40	5,16			✓	✓	✓		
DNMG 150608-NF	12,7	15,50	6,35	0,80	5,16			✓	✓	✓		
						Çelik / Steel	✓	✓	✓	✓	✓	✓
						Paslanmaz Çelik / Stainless Steel	✓	✓				
						Döküm / Cast Iron			✓		✓	✓
						Aluminyum / Aluminum						
						Özel Alaşım / Special Alloy						
						Sertleştirilmiş Çelik / Hardened Steel						





KNUX

Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
KNUX 160405 R	9,52	19,72	4,76	0,50	--			✓	✓	✓		
KNUX 160405 L	9,52	19,72	4,76	0,50	--			✓	✓	✓		
						✓	✓	✓	✓	✓		
						✓	✓					
								✓			✓	✓

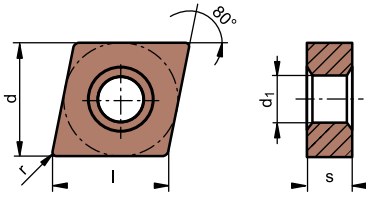


Çelik / Steel
 Paslanmaz Çelik / Stainless Steel
 Döküm / Cast Iron
 Alüminyum / Aluminum
 Özel Alaşım / Special Alloy
 Sertleştirilmiş Çelik / Hardened Steel



TNMG - TNMA

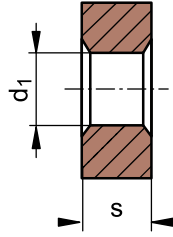
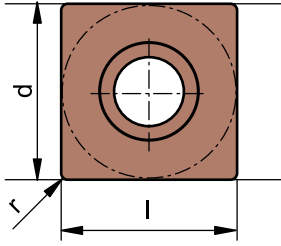
Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
TNMA 160404	9,52	16,50	4,76	0,40	3,81						✓	✓
TNMA 160408	9,52	16,50	4,76	0,80	3,81						✓	✓
TNMG 160404-NM1	9,52	16,50	4,76	0,40	3,81			✓	✓	✓		
TNMG 160408-NM1	9,52	16,50	4,76	0,80	3,81			✓	✓	✓		
TNMG 160404-NR1	9,52	16,50	4,76	0,40	3,81			✓	✓	✓		
TNMG 160408-NR1	9,52	16,50	4,76	0,80	3,81			✓	✓	✓		
TNMG 160404-L	9,52	16,50	4,76	0,40	3,81			✓	✓	✓		
TNMG 160404-R	9,52	16,50	4,76	0,40	3,81			✓	✓	✓		
						Çelik / Steel	✓	✓	✓	✓		
						Paslanmaz Çelik / Stainless Steel	✓	✓				
						Döküm / Cast Iron			✓		✓	✓
						Aluminyum / Aluminum						
						Özel Alaşımlar / Special Alloy						
						Sertleştirilmiş Çelik / Hardened Steel						





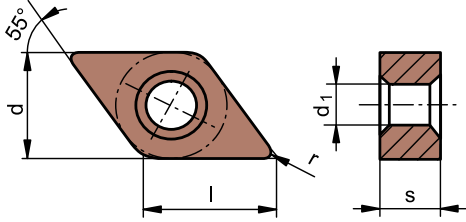
SNMA

Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
SNMA 120404	12,7	12,70	4,76	0,40	5,16			✓	✓	✓		
Çelik / Steel	✓	✓	✓	✓	✓							
Paslanmaz Çelik / Stainless Steel	✓	✓										
Döküm / Cast Iron			✓							✓	✓	
Aluminyum / Aluminum												
Özel Alaşımlar / Special Alloy												
Sertleştirilmiş Çelik / Hardened Steel												



NF**VNMG**

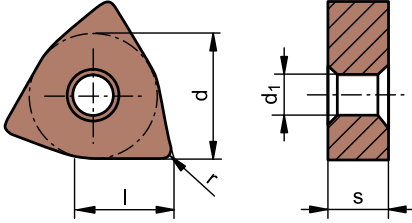
Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
VNMG 160404-NF	9,52	16,50	4,76	0,40	5,16			✓	✓	✓		
VNMG 160408-NF	9,52	16,50	4,76	0,80	5,16			✓	✓	✓		
VNMG 160404-NR	9,52	16,50	4,76	0,40	5,16			✓	✓	✓		
VNMG 160408-NR	9,52	16,50	4,76	0,80	5,16			✓	✓	✓		
						Çelik / Steel	✓	✓	✓	✓		
						Paslanmaz Çelik / Stainless Steel	✓	✓				
						Döküm / Cast Iron			✓		✓	✓
						Aluminyum / Aluminum						
						Özel Alaşımlar / Special Alloy						
						Sertleştirilmiş Çelik / Hardened Steel						

**TORNA UÇLARI** TURNING INSERTS

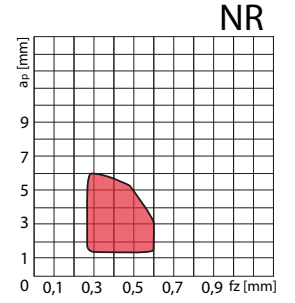
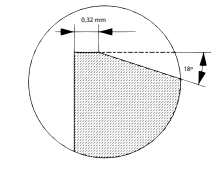
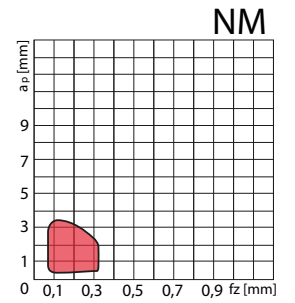
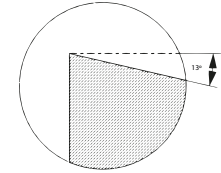
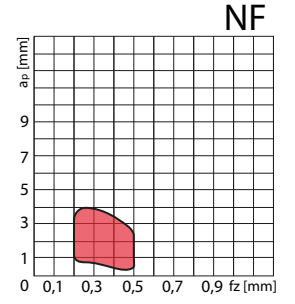
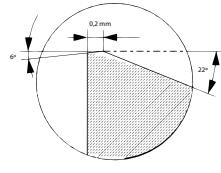
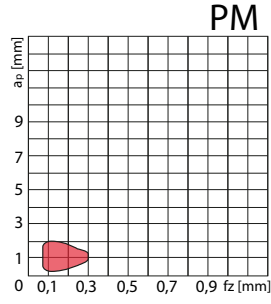
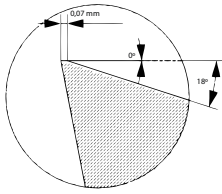
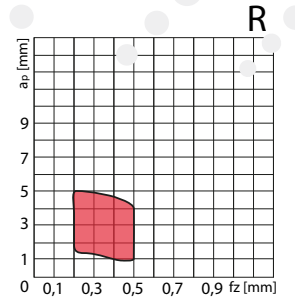
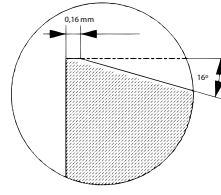
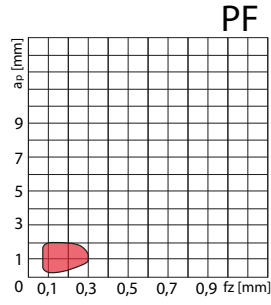
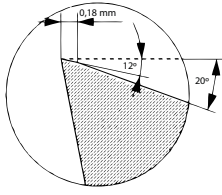


WNMA - WNMG

Ürün Adı / Product Name	d (mm)	l (mm)	s (mm)	r (mm)	d1 (mm)	KLP 1150	KLP 1550	KLP 2160	KLP 2170	KLP 2180	KLP 2350	KLP 2360
WNMA 080408	12,7	8,72	4,76	0,80	5,16						✓	✓
WNMA 080412	12,7	8,72	4,76	1,20	5,16						✓	✓
WNMG 080408 - NF 1	12,7	8,72	4,76	0,80	5,16			✓	✓	✓		
WNMG 080412 - NF 1	12,7	8,72	4,76	1,20	5,16			✓	✓	✓		
WNMG 080408-NM	12,7	8,72	4,76	0,80	5,16		✓	✓	✓	✓		
WNMG 080412-NM	12,7	8,72	4,76	1,20	5,16		✓	✓	✓	✓		
WNMG 080408-NM1	12,7	8,72	4,76	0,80	5,16			✓	✓	✓		
WNMG 080412-NM1	12,7	8,72	4,76	1,20	5,16			✓	✓	✓		
WNMG 080408-NR1	12,7	8,72	4,76	0,80	5,16			✓	✓	✓	✓	
WNMG 080412-NR	12,7	8,72	4,76	1,20	5,16			✓	✓	✓		
WNMG 080412-NR1	12,7	8,72	4,76	1,20	5,16			✓	✓	✓	✓	
Çelik / Steel						✓	✓	✓	✓	✓		
Paslanmaz Çelik / Stainless Steel						✓	✓					
Döküm / Cast Iron								✓			✓	✓
Aluminyum / Aluminum												
Özel Alaşımlar / Special Alloy												
Sertleştirilmiş Çelik / Hardened Steel												







CVD KAPLAMA /CVD COATING

PVD KAPLAMA /PVD COATING

SERT HARD TOK TOUGH

SERT HARD TOK TOUGH

ÇELİK / STEEL

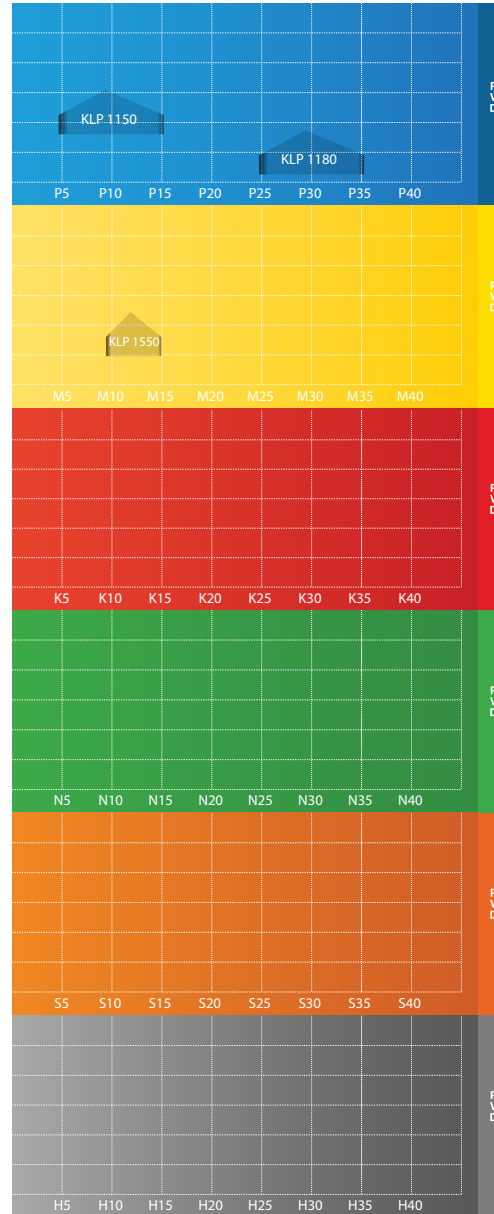
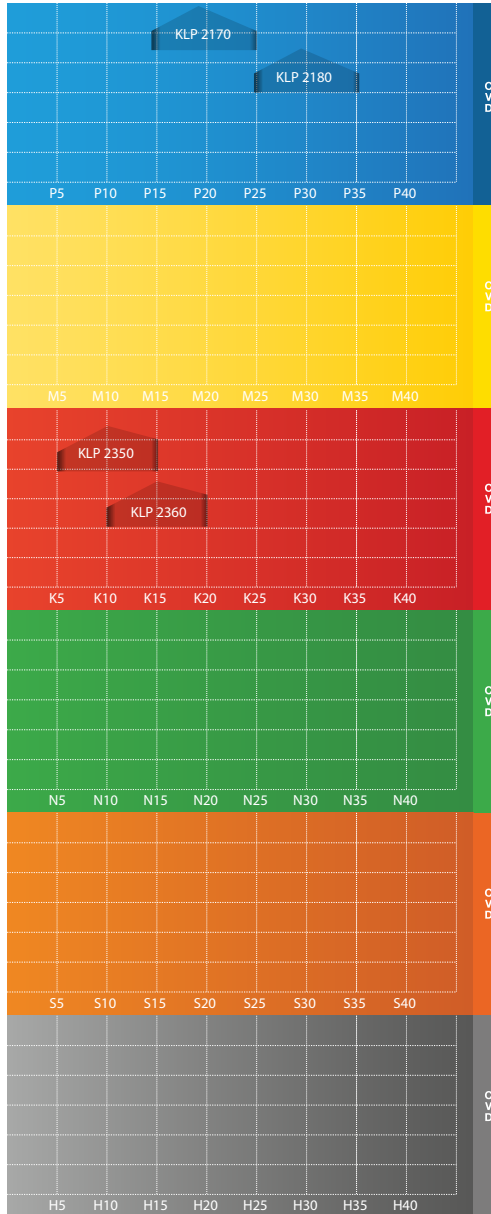
PASLANMAZ ÇELİK /
STAINLESS STEEL

DÖKÜM / CAST IRON

ALUMİNYUM /
ALUMINUM

ÖZEL ALAŞIM /
SPECIAL ALLOY

SERTLEŞTİRİLMİŞ ÇELİK /
HARDENED STEEL



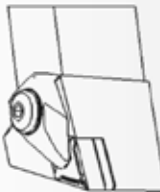



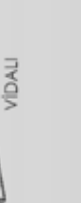


















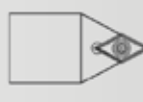















KALİTE TABLOSU QUALITY CHART

		PVD				CVD			
		KLP 1150		KLP 1550		KLP 2160		KLP 2170	
PVD KAPLAMA / PVD COATING		min	max	min	max	min	max	min	max
P	Alaşımsız Çelik <160 HBN Non Alloy Steel <160 HBN	145	235			200	390	185	355
	Alaşımlı Çelik >280HBN Alloy Steel >280HBN	100	205			155	360	140	330
	Takım Çelikleri >280HBN Tool Steel >280HBN	130	55			135	330	125	300
M	Paslanmaz Çelik 300 Serisi Stainless Steel 300 Series			65	150				
	Paslanmaz Çelik 400 Serisi Stainless Steel 400 Series			85	190				
	Östenitik Çelik Austenitic Steel			70	160				
K	Döküm GG Cast Iron								
	Döküm GGG Cast Iron								
	Çelik Döküm Steel Cast Iron								
N	< 16 % Si 116HBN								
	> 16 % Si 92HBN								
S	Demir Alaşımları Iron Based								
	Kobalt Alaşımları Cobalt Alloys								
	Nikel Alaşımları Nickel Alloys								
	Titanyum Alaşımları Titanium Alloys								
H	Sertleştirilmiş Çelik Hardened Steel 52 Hrc>								

CVD

PVD KAPLAMA / PVD COATING		CVD					
		KLP 2180		KLP 2350		KLP 2360	
		min	max	min	max	min	max
P	Alaşsız Çelik <160 HBN Non Alloy Steel <160 HBN	180	340				
	Alaşlı Çelik >280HBN Alloy Steel >280HBN	140	315				
	Takım Çelikleri >280HBN Tool Steel >280HBN	120	290				
M	Paslanmaz Çelik 300 Serisi Stainless Steel 300 Series						
	Paslanmaz Çelik 400 Serisi Stainless Steel 400 Series						
	Östenitik Çelik Austenitic Steel						
K	Döküm GG Cast Iron			115	340	75	175
	Döküm GGG Cast Iron			120	290	90	200
	Çelik Döküm Steel Cast Iron			70	145	75	160
N	< 16 % Si 116HBN						
	> 16 % Si 92HBN						
S	Demir Alaşımları Iron Based						
	Kobalt Alaşımları Cobalt Alloys						
	Nikel Alaşımları Nickel Alloys						
	Titanyum Alaşımları Titanium Alloys						
H	Sertleştirilmiş Çelik Hardened Steel 52 Hrc>						

1 **D** 2 **D** 3 **J** 4 **N** 5 **R** 6 **20** 7 **20** 8 **K** 9 **15**

1	2	3	4	5	6	7	8	9	
Uç Bağlama Sistemi Clamping System Klemmsystem	Kesici Uç Tipi Insert form WSP - Form	Kater Tipi Style Werkzeugtyp	Uç Açısı Clearance angle WSP-Freiwinkel	Kater Yönü Holder execution Bearbeitungs-richtung	Şaft Yüksekliği Height of shank Schaftquerschnitts	Şaft Genişliği Width of shank Schaftbreite	Takım Boyu Length of holder Werkzeuflänge	Uç Kenar Uzunluğu Length of cutting edge WSP-Gesße	
D  M ÇEKİRMELİ  P BASKI PABUÇLU  S LEVYELİ  VİDALI 	A 6° B 8° C 10° D 15° E 20° H 130° K 90° L 30° M 30° O 130° P 100° R 0° S 90° T 60° V 15° W 30°	A  B  C  D  E  F  G  J  K  L  N  P  Q  R  S  V 	A 2° B 3° C 2° D 15° E 20° F 20° G 30° P 20° N ÖZEL SPECIAL Sonderform O	L  R  N 	06=6 08=8 10=10 12=12 14=14 16=16 20=20 22=22 25=25 32=32 40=40 50=50	06=6 08=8 10=10 12=12 14=14 16=16 20=20 22=22 25=25 32=32 40=40 50=50	06=6 08=8 10=10 12=12 14=14 16=16 20=20 22=22 25=25 32=32 40=40 50=50	D=60 E=70 F=80 G=90 H=100 J=110 K=125 L=140 M=150 N=160 P=170 Q=180 R=200 S=250 T=300 U=350 V=400 W=450 Y=500 X=ÖZEL Special Sonderform	A  B  C  D  E  K  L  M  O  P  R  S  T  V  W 

LİDERLİK

Türkiye'nin ilk ve tek tamamen entegre elmas uç üretimine başladık. Toplam 13,500 metrekarelik alanda üretim yapıyoruz. Durmuyoruz.

DURMAYACAĞAK !

LEADERSHIP

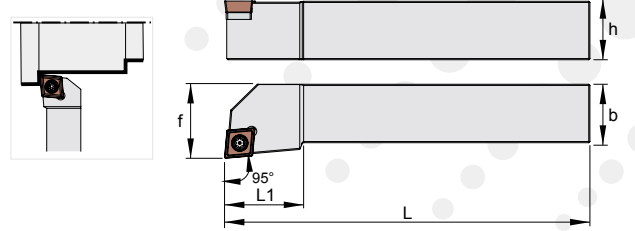
We have established the very first and only fully integrated tungsten carbide cutting tools factory.








IT WILL NOT STOP !



CCMT

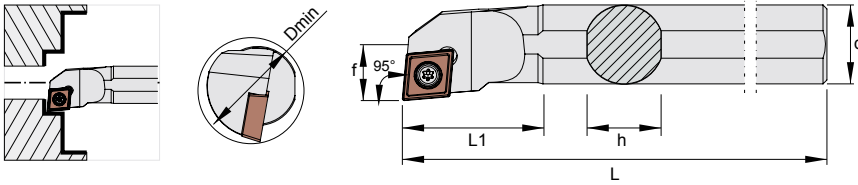
DIŞ ÇAP KATERLERİ
EXTERNAL TURNING TOOLS






CCMT	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Civata Clamp Screw	Altlık Shim	Altlık Civatası Shim Screw	Anahtar Torx Key
Takım Kodu / Tool Code	L	L1	h	f	b					
SCLCR 1010 J06	110	10	10	12	10	CCMT 06	TC 060 M2.5	--	--	T8
SCLCR 1212 J09	110	12	12	16	12					
SCLCR 1616 H09	100	16	16	20	16					
SCLCR 2020 K09	125	25	20	25	20					
SCLCR 2525 M09	150	25	25	32	25					
Takım Kodu / Tool Code	L	L1	h	f	b					
SCLCR 1616 H09	100	16	16	20	16	CCMT 09	TC 070 M3.5	TA 015	TC 048 M5	T15
SCLCR 2020 K09	125	25	20	25	20					
SCLCR 2525 M09	150	25	25	32	25					
SCLCR 2525 M09	150	25	25	32	25					

CCMT

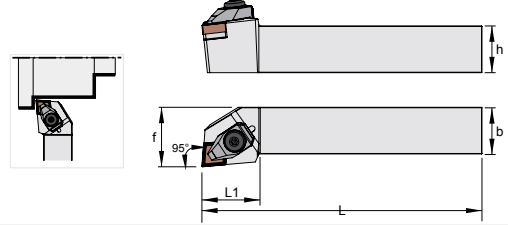
İÇ ÇAP KATERLERİ
INTERNAL TURNING TOOLS



CCMT	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Civata Clamp Screw	Anahtar Torx Key
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h			
S06-08H SCLCR 06	8	8	100	25	4.3	7	CCMT 06	TC 060 M2.5	T8
S08H SCLCR 06	11	8	100	20	5.5	7			
S10J SCLCR 06	13	10	110	20	6	9			
S10K SCLCR 06	13	10	125	20	6	9			
S12K SCLCR 06	16	12	125	24	9	11			
S12Q SCLCR 06	16	12	180	24	9	11	CCMT 09	TC 070 M3.5	T15
S14-16Q SCLCR 09	19	16	180	45	10	15			
S16Q SCLCR 09	20	16	180	30	11	15			
S16R SCLCR 09	20	16	200	30	11	15			
S18-20Q SCLCR 09	24	20	180	37	12	18			
S20Q SCLCR 09	25	20	180	37	13	18			
S20S SCLCR 09	25	20	250	37	13	18			
S25R SCLCR 09	32	25	200	40	17	23			
S25T SCLCR 09	32	25	300	40	17	23			

CNMG

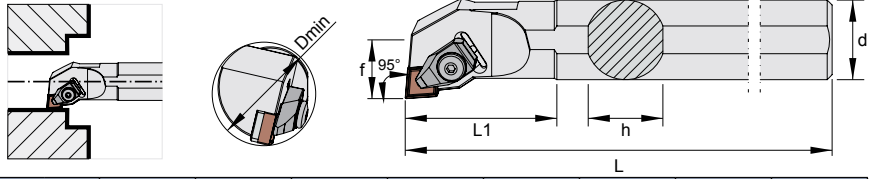
DIŞ ÇAP KATERLERİ EXTERNAL TURNING TOOLS



CNMG	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Baskı Civatası Locking Screw	Altlık Shim	Altlık Civatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
	L	L1	h	f	b								
Takım Kodu / Tool Code	L	L1	h	f	b								
DCLNR 2020 K12	125	30	20	25	20	CNMG 12	TC 044 M6	TA 016	TC 038 M4	BK 020	BY 040	BP 030	4 ALLEN
DCLNR 2525 M12	150	30	25	32	25								
DCLNR 3232 P12	170	30	32	32	32								
DCLNR 2525 M16	150	30	25	25	25	CNMG 16	TC 044 M6	TA 022	TC 095 M5	BK 021	BY 040	BP 030	4 ALLEN
DCLNR 3232 P16	170	30	32	32	32								
DCLNR 2525 M19	150	30	25	25	25	CNMG 19	TC 044 M6	TA 017	TC 039 M6	BK 018	BY 040	BP 030	4 ALLEN
DCLNR 3232 P19	170	30	32	32	32								

CNMG

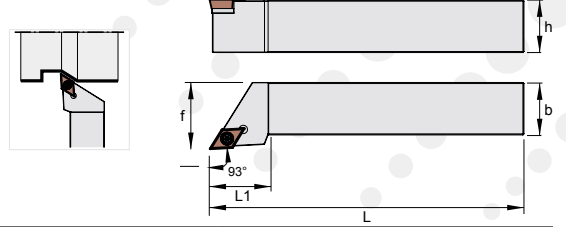
İÇ ÇAP KATERLERİ INTERNAL TURNING TOOLS



CNMG	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Baskı Civatası Locking Screw	Altlık Shim	Altlık Civatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
	Dmin	d	L	L1	f	h								
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h								
S25S DCLNR 12	32	25	250	50	17	23	CNMG 12	TC 044 M6	TA 016	TC 038 M4	BK 020	BY 040	BP 030	4 ALLEN
S32T DCLNR 12	40	32	300	60	22	30								
S40T DCLNR 12	50	40	300	60	27	38								
S50U DCLNR 12	63	50	350	75	35	47								

DCMT

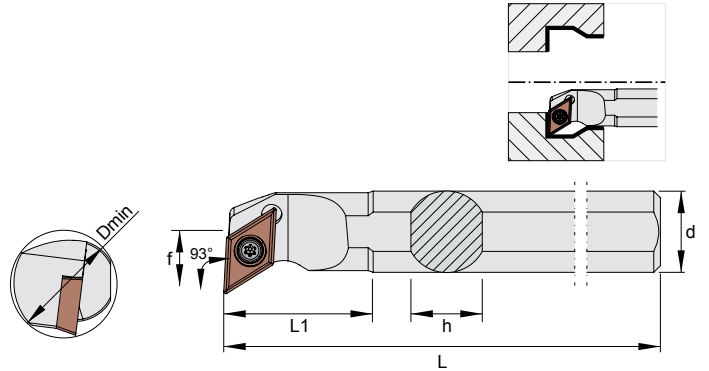
DIŞ ÇAP KATERLERİ
EXTERNAL TURNING TOOLS



DCMT	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Civata Clamp Screw	Altık Shim	Altık Civatası Shim Screw	Anahtar
Takım Kodu / Tool Code	L	L1	h	f	b					
SDJCR 1010 J07	110	12	10	10	10	DCMT 07	TC 060 M 2.5	--	--	T8
SDJCR 1212 J11	110	18	12	12	12	DCMT 11	TC 070 M 3.5	--	--	T15
SDJCR 1616 H11	100	24	16	20	16					
SDJCR 2020 K11	125	24	20	25	20	DCMT 11	TC 072 M 3.5	TA 030	TC 048 M5	T15
SDJCR 2525 M11	150	30	25	32	25					

DCMT

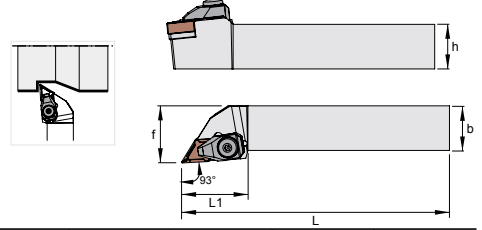
İÇ ÇAP KATERLERİ
INTERNAL TURNING TOOLS



DCMT	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Civata Clamp Screw	Anahtar Torx Key
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h			
S10J SDUCR 07	14	10	110	20	7	9	DCMT 07	TC 060 M2.5	T8
S12K SDUCR 07	17	12	125	24	9	11			
S14-16Q SDUCR 07	20	16	180	40	10.5	15			
S16Q SDUCR 07	21	16	180	27	11	15	DCMT 11	TC 070 M3.5	T15
S14-16Q SDUCR 11	20	16	180	45	10.5	15			
S16Q SDUCR 11	21	16	180	30	11	15			
S20Q SDUCR 11	25	20	180	32	13	18			
S25R SDUCR 11	32	25	200	40	17	23			
S32T SDUCR 11	40	32	300	45	22	30			

DNMG

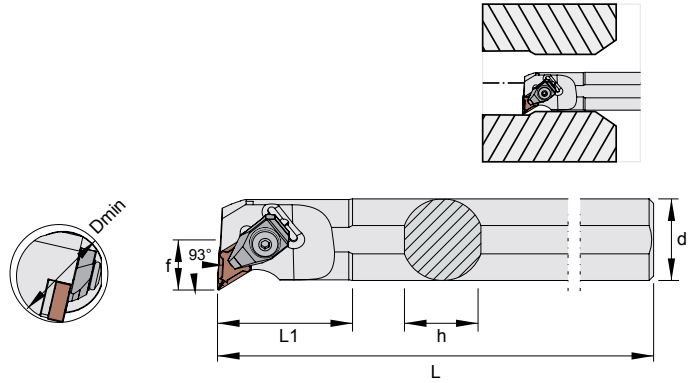
DIŞ ÇAP KATERLERİ EXTERNAL TURNING TOOLS



DNMG	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Baskı Cıvatası Locking Screw	Altlık Shim	Altlık Cıvatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
	L	L1	h	f	b								
Takım Kodu / Tool Code	L	L1	h	f	b								
DDJNR 2020 K15	125	38	20	25	20	DNMG	TC 044 M6	TA 014	TC 038 M4	BK 020	BY 040	BP 030	4 ALLEN
DDJNR 2525 M15	150	38	25	32	25								
DDJNR 3232 P15	170	38	32	40	32								

DNMG

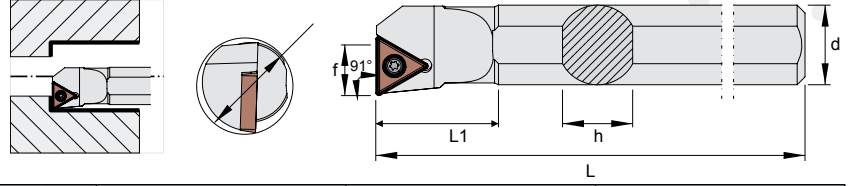
İÇ ÇAP KATERLERİ INTERNAL TURNING TOOLS






DNMG	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Baskı Cıvatası Locking Screw	Altlık Shim	Altlık Cıvatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
	Dmin	d	L	L1	f	h								
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h								
S25S DDUNR 15	32	25	250	50	17	23	DNMG 1506	TC 044 M6	TA 014	TC 038 M4	BK 020	BY 040	BP 030	4 ALLEN
S32T DDUNR 15	40	32	300	55	22	30								
S40T DDUNR 15	50	40	300	55	27	38								
S50U DDUNR 15	63	50	350	65	35	47								

TCMT

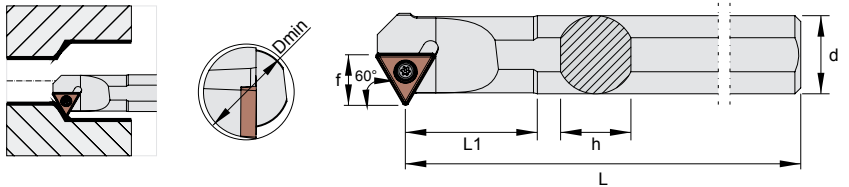
DIŞ ÇAP KATERLERİ
EXTERNAL TURNING TOOLS






TCMT	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Civata Clamp Screw	Anahtar Torx Key
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h			
S16Q STFCR 16	21	16	180	30	11	15	TCMT 16	TC 070 M3,5	T15
S20Q STFCR 16	25	20	180	30	13	18			
S25R STFCR 16	32	25	200	37	16	23			

TCMT

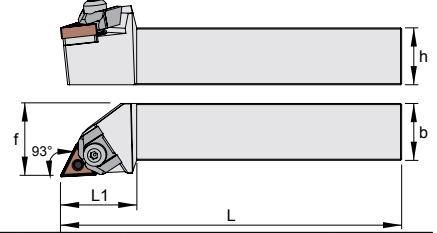
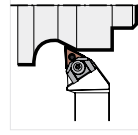
İÇ ÇAP KATERLERİ
INTERNAL TURNING TOOLS



TCMT	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Civata Clamp Screw	Anahtar Torx Key
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h			
S16Q ST-CR 16	21	16	180	40	11	15	TCMT 16	TC 070 M3,5	T15
S20Q ST-CR 16	25	20	180	40	13	18			
S25R ST-CR 16	32	25	200	50	17	23			
S32T ST-CR 16	40	32	300	60	22	30			

TNMG

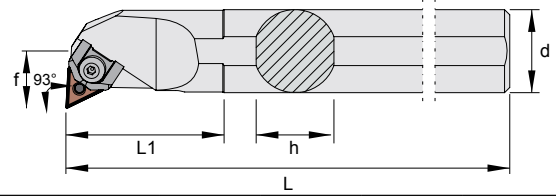
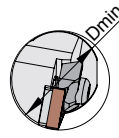
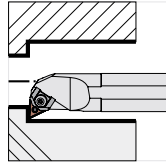
DIŞ ÇAP KATERLERİ
EXTERNAL TURNING TOOLS



TNMG	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Baskı Civatası Locking Screw	Altık Pim Lock Pin	Altık Civatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
	L	L1	h	f	b								
Takım Kodu / Tool Code	L	L1	h	f	b								
MTJNR 2020 K16	125	33	20	25	20	TNMG 16	TC 046 M5	TA 019	BSP 020	BK 020	BY 041	BP 031	T15
MTJNR 2525 M16	150	33	25	32	25								
MTJNR 3232 P16	170	33	32	40	32								
MTJNR 2020 K22	125	37	20	25	20	TNMG 22	TC 044 M6	TA 045	BSP 021	BK 023	BY 040	BP 030	4 ALLEN
MTJNR 2525 M22	150	40	25	32	25								
MTJNR 3232 P22	170	40	32	40	32								

TNMG

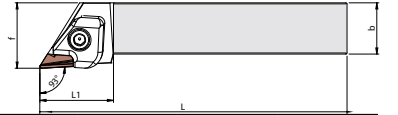
İÇ ÇAP KATERLERİ
INTERNAL TURNING TOOLS











TNMG	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Baskı Civatası Locking Screw	Altık Shim	Altık Civatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
	Dmin	d	L	L1	f	h								
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h								
S20R MTUNR 16	25	20	200	30	13	18	TNMG 16	TC 046 M5	TA 019	BSP 020	BK 022	BY 041	BP 031	T15
S25S MTUNR 16	32	25	250	50	17	23								
S32T MTUNR 16	40	32	300	60	22	30								
S40T MTUNR 16	50	40	300	60	27	38								
S50U MTUNR 16	63	50	350	65	35	47								
S32T MTUNR 22	40	32	300	60	22	30	TNMG 22	TC 044 M5	TA 045	BSP 021	BK 023	BY 040	BP 030	4 ALLEN
S40T MTUNR 22	50	40	300	60	27	38								
S50U MTUNR 22	63	50	350	65	35	47								

KNUX

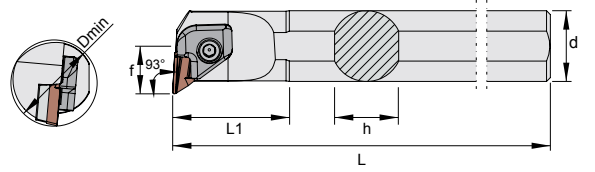
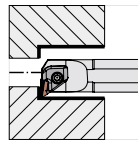
DIŞ ÇAP KATERLERİ
EXTERNAL TURNING TOOLS




KNUX	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Baskı Cıvatası Locking Screw	Altlık Shim	Altlık Cıvatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
Takım Kodu / Tool Code	L	L1	h	f	b								
CKJNR 2020 K16	125	32	20	25	20								
CKJNR 2525 M16	150	35	25	32	25								
CKJNR 2532 P16	170	35	32	32	25								

KNUX

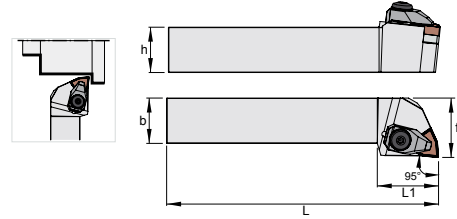
İÇ ÇAP KATERLERİ
INTERNAL TURNING TOOLS



KNUX	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Baskı Cıvatası Locking Screw	Altlık Shim	Altlık Cıvatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h								
S25S CKUNR 16	32	25	250	52	17	23								
S28T CKUNR 16	35	28	300	52	19	25								
S32U CKUNR 16	40	32	350	52	22	29								
S40V CKUNR 16	50	40	400	55	27	37								
S45V CKUNR 16	54	45	400	60	29	43								
S50W CKUNR 16	63	50	450	60	35	47								

WNMG

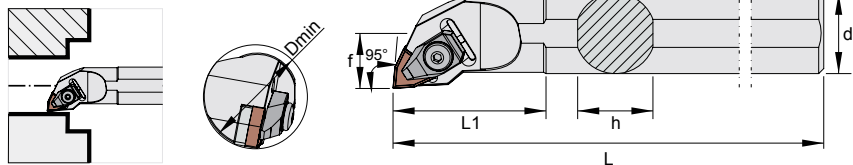
DIŞ ÇAP KATERLERİ
EXTERNAL TURNING TOOLS



WNMG	Ölçüler (mm) Dimensions (mm)					Kullanılan Uç Insert	Baskı Cıvatası Locking Screw	Altlık Shim	Altlık Cıvatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
Takım Kodu / Tool Code	L	L1	h	f	b								
DWLN2020 K08	125	35	20	25	20	WNMG 08	TC 044 M6	TA 020	TC 083 M5	BK 020	BY 040	BP 030	4 ALLEN
DWLN2525 M08	150	35	25	32	25								
DWLN3232 P08	170	35	32	40	32								

WNMG

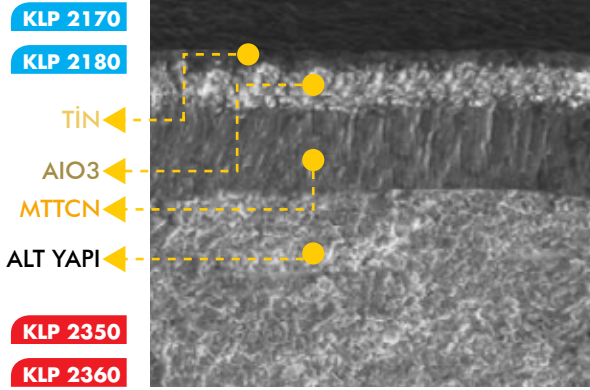
İÇ ÇAP KATERLERİ
INTERNAL TURNING TOOLS



WNMG	Ölçüler (mm) Dimensions (mm)						Kullanılan Uç Insert	Baskı Cıvatası Locking Screw	Altlık Shim	Altlık Cıvatası Shim Screw	Baskı Kepi Clamp	Yay Spring	Pul Stamp	Anahtar Allen Key
Takım Kodu / Tool Code	Dmin	d	L	L1	f	h								
S25S DWLN08	32	25	250	50	17	23	WNMG 08	TC 044 M6	TA 020	TC 083 M5	BK 020	BY 041	BP 030	4 ALLEN
S32T DWLN08	40	32	300	60	22	30								
S40T DWLN08	50	40	300	60	27	38								
S50U DWLN08	63	50	350	75	35	47								

CVD KALİTELERİ

MT - CVD KAPLAMALI KALİTELER



KLP 2170

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.

P15 - P25

KLP 2180

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.

P25 - P35

KLP 2350

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

K05 - K15

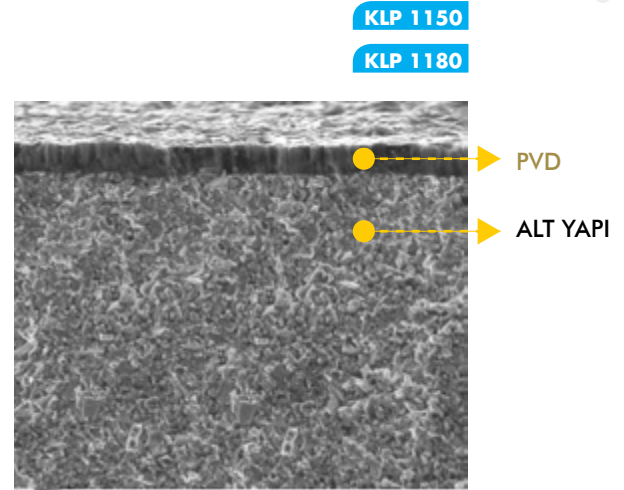
KLP 2360

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.

K10 - K20

PVD KALİTELERİ

NANO PVD YENİ KAPLAMALI KALİTELER



KLP 1150

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

P05 - P15

KLP 1180

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.

P15 - P35

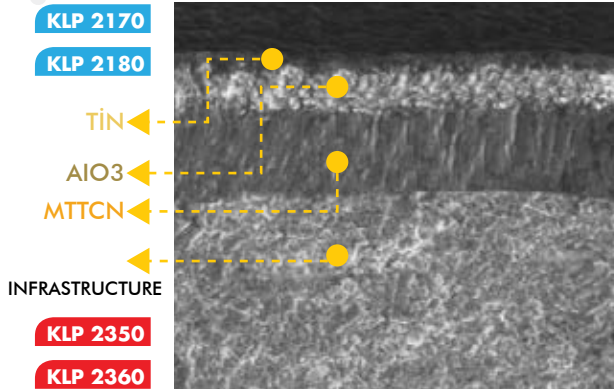
KLP 1550

Yüksek işleme sıcaklıklarına dayanabilen ve NANO PVD kaplamalı bir kalitedir. Paslanmaz çelik ve sert malzemelerin işlenmesi için tasarlanmıştır.

M10 - M15

CVD GRADES

MT - CVD COATED GRADES



KLP 2170

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.

P15 - P25

KLP 2180

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.

P25 - P35

KLP 2350

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.

K05 - K15

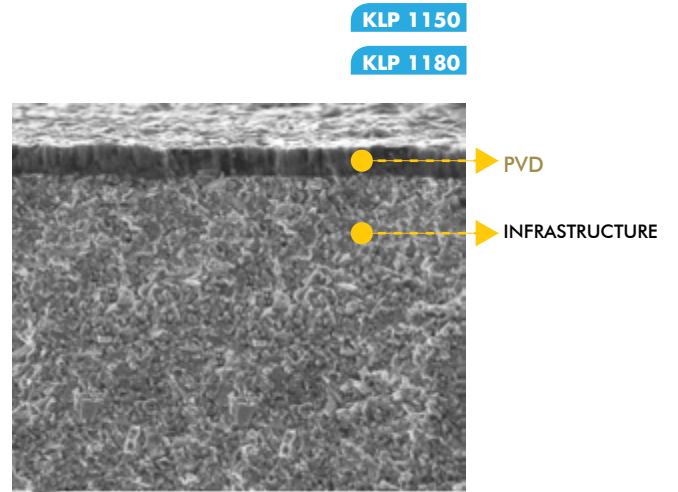
KLP 2360

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.

K10 - K20

PVD GRADES

NANO PVD NEW COATED GRADES



KLP 1550

KLP 1150

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.

P05 - P15

KLP 1180

NANO PVD coated grade with extended common use, offering fine performance in a range from medium to lower cutting speed. Designed with high resistance against erosion and excellent corner endurance.

P15 - P35

KLP 1550

NANO PVD coated grade resistant to high processing temperature. Designed to operate in Stainless Steel processing and hard material processing.

M10 - M15

TORNALAMA İÇİN FORMÜLLER

Recommendations for Turning Operations

$$\text{DEVİR SAYISI} = n = \frac{V_c \times 1000}{\pi \times D} \quad \begin{array}{l} \text{devir / dakika} \\ \text{Revs / min.} \end{array}$$

n : Devir Sayısı (devir / dak.)

Revolutions Revs/min.

Vc : Kesme Hızı (m./dak.)

Cutting Speed (Meter/min.)

D : İş Parçasının Çapı (mm)

Workpiece diameter

π : Sabit Sayı (3,14)

Constant (3,14)

$$\text{KESME HIZI} = V_c = \frac{\pi \times D \times n}{1000} \quad \begin{array}{l} \text{metre / dakika} \\ \text{meter / min.} \end{array}$$

TORNALAMADA İŞLEME ZAMANININ HESAPLANMASI Formulas for turning time

$$\text{Çap Tornalamada İşleme Zamanı} = t_h = \frac{L \times P_s}{n \times f} \quad \begin{array}{l} \text{dakika} \\ \text{minute} \end{array}$$

Ps : Paso Sayısı (kaç defa'da)
no of passes

th : İşleme Zamanı (dakika)

Processing Time (min)

f : İlerleme (mm)

Length delivery (mm)

L : Parça Boyu (mm)

Part Length

$$\text{Alın Tornalama İşleme Zamanı} = t_h = \frac{d \times \pi \times L \times P_s}{V_c \times 1000 \times f} \quad \begin{array}{l} \text{dakika} \\ \text{minute} \end{array}$$

Alın Tornalama

İçin Boy

Length head turning

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

Dolu Malzemede

Alın Tornalama

Solid Stock front turning

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



Vc değerleri için
Vc chart see

Sayfa 68 - 69
Page 68 - 69

YÜZEY FREZELEMEDKULLANILAN FORMÜLLER

Recommendations for Milling Operations

$$\text{DEVİR SAYISI} = n = \frac{V_c \times 1000}{\pi \times D} \quad \begin{array}{l} \text{devir / dakika} \\ \text{Revs / min.} \end{array}$$

z : Frezenin Ağız Sayısı (adet)

Number of teeth

$$\text{KESME HIZI} = V_c = \frac{\pi \times D \times n}{1000} \quad \begin{array}{l} \text{metre / dakika} \\ \text{meter / min.} \end{array}$$

k : Disk Frezenin Efektif Ağız sayısı (adet)

Effective edge of the cutter

$$\text{TABLA İLERLEMESİ} = V_f = n \times z \times f_z \quad \begin{array}{l} \text{mm / dak} \\ \text{mm / min.} \end{array}$$

fz :Ağız Başına İlerleme (mm/ağız)

Delivery per cutting mm / Z

th :İşleme Zamanı (dak.)

Process time

Ps : Paso Sayısı

Number of passes

D :Takım Çapı (mm)

Tool Diameter

Vc : Sabit Değer

Vc : Fixed Value



Vc değerleri için Sayfa 48 - 49


Vc chart see Page 48 - 49





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