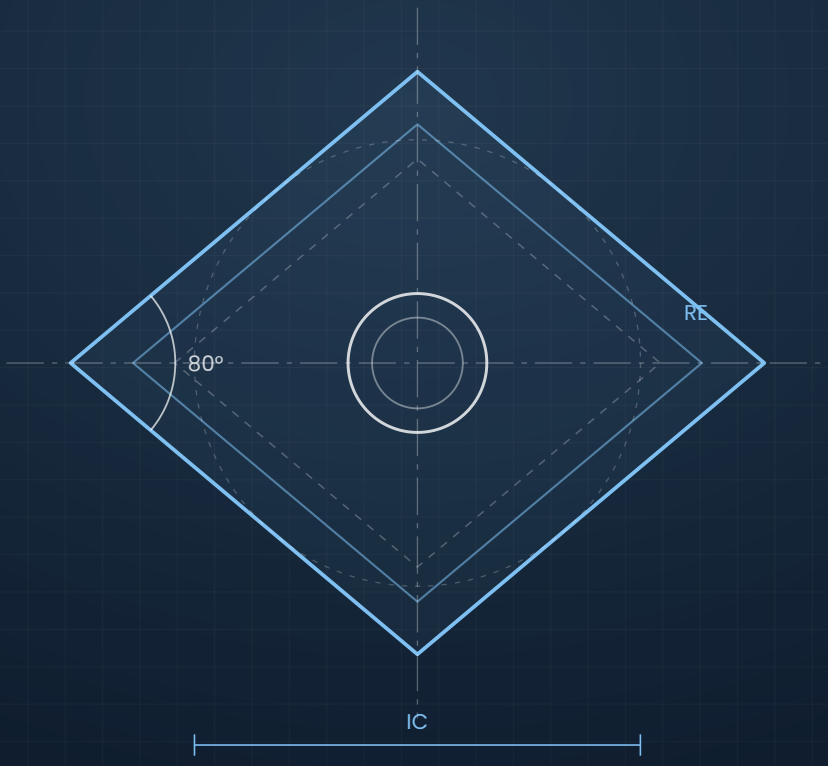
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2026







ÜRÜN KATALOĞU

AV · KU · 2026

Kesici Uç Kataloğu

Tornalama · Frezeleme · Delme · Kanal açma ve kesme · Derin delik · Özel uygulamalar

CNC talaşlı imalat için tek noktadan tedarik

avedontools.com

Hakkımızda

Avedon, CNC talaşlı imalat yapan atölye ve fabrikalara kesici takım tedarik eden bir Türk markasıdır. Tornalama, frezeleme ve delme uçlarından karbür parmak frezelere, matkaplardan derin delik sistemlerine kadar üretimde ihtiyaç duyulan takımları tek noktadan sunuyoruz.

Ürünlerimizi, her ürün grubunda numune ve saha testiyle seçtiğimiz üreticilerle birlikte Avedon markasıyla sunuyoruz. Hedefimiz, Avrupa markalarına yakın performansı daha erişilebilir fiyatla ve hızlı tedarikle tezgâha ulaştırmak.

Tek noktadan tedarik

Uç, freze, matkap ve delik işleme takımları tek tedarikçiden, tek siparişte.

Test edilmiş kalite

Her ürün grubu, seçilen üreticinin numunesiyle aynı tezgâh ve aynı şartlarda denenir.

Teknik destek

Malzemeye göre doğru takımı, kaliteyi ve kesme parametresini birlikte seçeriz.

MALZEME GRUPLARI (ISO 513)

- **P — Çelik**
  Alaşımsız ve alaşımlı çelikler, çelik döküm
- **M — Paslanmaz çelik**
  Östenitik, ferritik ve dubleks paslanmazlar
- **K — Dökme demir**
  Gri, sfero ve temper döküm
- **N — Demir dışı metaller**
  Alüminyum, bakır, pirinç, plastik
- **S — Süper alaşımlar ve titanyum**
  Inconel, nikel ve kobalt bazlı alaşımlar, titanyum
- **H — Sertleştirilmiş malzeme**
  Sertleştirilmiş çelik (45–65 HRC), sert döküm

Bu katalog nasıl okunur? Her sayfanın alt köşesinde sayfa numarası vardır; İçindekiler bölümlerin sayfa aralıklarını gösterir. Ürün sayfalarındaki bölüm kodları (ör. G-12) tablolar arası yönlendirmelerde kullanılır. Tablolardaki ölçü sembolleri ve kısaltmalar sonraki sayfada açıklanmıştır. Sipariş verirken uç tanımını (ör. CNMG120408-PM), kaliteyi ve adedi belirtmeniz yeterlidir.

içindekiler

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BÖLÜMLER

		Sayfa
A	**Derin delik delme sistemleri** BTA matkap başları, havşa başları ve tabanca matkaplar; derin delik uçları ve destek pabuçları.	5 – 43 A-01 – A-37
B	**Yüzey sıyırma uçları** Çelikhanelerde kütük ve slab yüzeyindeki kusurları temizleyen sıyırma uçları.	44 – 55 B-01 – B-11
C	**Kabuk soyma uçları** Çubuk ve boru soyma tezgâhları için kabuk soyma uçları.	56 – 67 C-01 – C-11
D	**Freze kafaları** Tarama, köşe ve kopya frezeleme için takma uçlu freze kafaları.	68 – 76 D-01 – D-08
E	**Küçük parça tornalama uçları** Kayar otomat ve hassas küçük parça tornalama için uçlar ve kater sistemleri.	77 – 94 E-02 – E-18
F	**Özel uygulama uçları** Alüminyum ingot frezeleme ve özel sektör uygulamaları için uçlar.	95 – 101 F-01 – F-06
G	**Tornalama uçları** Negatif ve pozitif tornalama uçları, talaş kırıcılar, CVD ve PVD kaliteler.	102 – 185 G-01 – G-87
G	**Kanal açma ve kesme uçları** Kanal açma, kesme ve diş tornalama uçları ile kater sistemleri.	186 – 201 G-89 – G-103
H	**Frezeleme uçları** Tarama, köşe frezeleme ve yüksek ilerleme uçları; frezeleme kalite önerileri.	202 – 249 H-01 – H-47
I	**Delme uçları** U-drill (takma uçlu matkap) uçları ve modüler matkaplar.	250 – 262 I-01 – I-12

Semboller ve kısaltmalar

Ürün tablolarında ve çizimlerde kullanılan ölçü sembolleri, kesme değerleri ve kısaltmalar.

IC, I.C	Yazılı daire çapı (mm)
S	Uç kalınlığı (mm)
L, LE	Kesme kenarı uzunluğu
d, d1	Bağlama deliği çapı
RE, r	Köşe radyüsü
AN	Boşluk açısı
BS	Silici kenar uzunluğu
W, W1	Kesme / kanal genişliği
DC	Kesme çapı
DCON	Bağlantı (sap) çapı
OAL	Toplam boy
LF	Fonksiyonel boy

PL	Uç çıkıntısı
APMX	En büyük kesme derinliği
ap (mm)	Kesme derinliği
f (mm/dev)	Devir başına ilerleme
fz (mm/diş)	Diş başına ilerleme
Vc (m/dk)	Kesme hızı
CVD	Kimyasal buhar biriktirme kaplama
PVD	Fiziksel buhar biriktirme kaplama
AV…	Avedon uç kaliteleri (CVD/PVD kaplama tablo başlığında)
•	Stokta tutulan önerilen kalite
R / L / N	Sağ / sol / nötr kesme yönü
P · M · K · N · S · H	ISO 513 malzeme grupları (bkz. Hakkımızda)

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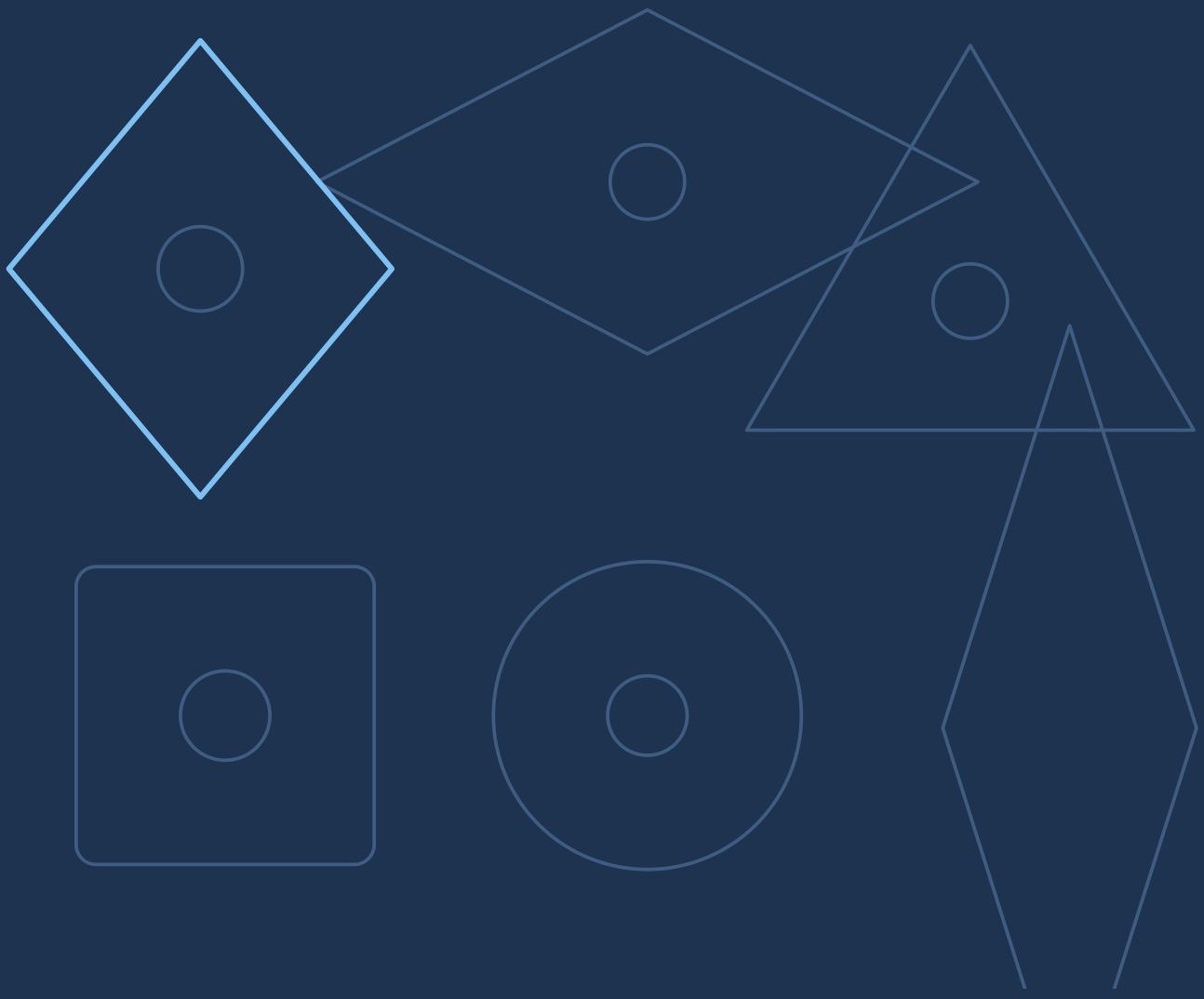
A

BÖLÜM A

Derin delik delme sistemleri

BTA matkap başları, havşa başları ve tabanca matkaplar; derin delik uçları ve destek pabuçları.

Sayfa A-01 – A-37



Derin Delik Delme



BTA DERİN DELİK SİSTEMİ

Uygulamalar	Matkap başları				
					
Matkap çapı (mm)	25 - 65	62 - 135	14 - 40	25 - 65	38 - 150
Sayfa	A-01	A-02	A-14	A-15	A-16

Uygulamalar	Havşa başları			
				
Matkap çapı (mm)	43 - 120	43 - 120	151 - 214	215 - 293
Sayfa	A-03	A-04	A-17	A-18

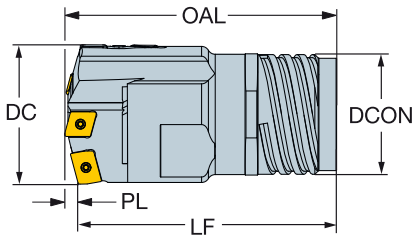


TABANCA MATKAPLAR

Tabanca matkaplar				
				
Matkap çapı (mm)	10mm-13mm	14mm-20mm	21mm-32mm	13mm-40mm
Sayfa	A-31	A-32	A-33	A-34

Tüm malzemelerde derin delik işleme

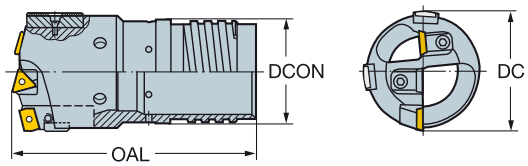




Çap aralığı (mm)	Ara uç	Merkez uç	Çevre ucu	Destek pabuçları
25 - 28.5	800-050308M-C-G	800-050308M-I-G	800-060308H-P-G	800-06A
28.6 - 31.99	800-06T308M-C-G	800-050308M-I-G	800-060308H-P-G	800-06A
32 - 33.99	800-06T308M-C-G	800-06T308M-I-G	800-08T308H-P-G	800-07A
34 - 35	800-08T308M-C-G	800-06T308M-I-G	800-08T308H-P-G	800-07A
35.1 - 38.99	800-08T308M-C-G	800-08T308M-I-G	800-08T308H-P-G	800-07A
39 - 43	800-08T308M-C-G	800-08T308M-I-G	800-09T308H-P-G	800-08A
44 - 47	800-10T308M-C-G	800-08T308M-I-G	800-09T308H-P-G	800-08A
48 - 52	800-10T308M-C-G	800-08T308M-I-G	800-11T308H-P-G	800-10A
53 - 56	800-10T308M-C-G	800-12T308M-I-G	800-11T308H-P-G	800-10A
57 - 59	800-10T308M-C-G	800-12T308M-I-G	800-11T308H-P-G	800-12A
60 - 65	800-12T308M-C-G	800-12T308M-I-G	800-11T308H-P-G	800-12A

Takma uçlu tasarımla verimli derin delik işleme

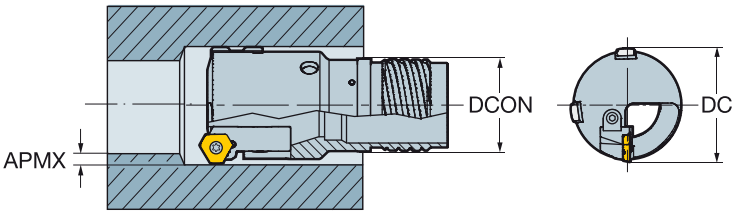




Çap aralığı (mm)	Ara uç	Merkez uç	Çevre ucu	Destek pabuçları
62.00-65.00	TPMT16T312RG	TPMT16T312RG	R424.9-13T308PG	50*14*7
65.01-66.99	TPMT16T312RG	TPMT16T312RG	R424.9-13T308PG	50*16*8
67.00-72.99	TPMT16T312RG	TPMT16T312RG	R424.9-13T308PG	50*16*8
73.00-73.99	TPMT16T312RG	TPMT16T312RG	R424.9-137308PG	50*16*8
74.00-79.99	TPMT16T312RG	TPMT16T312RG	R424.9-180608PG	50*16*8
80.00-83.99	TPMT16T312RG	TPMT16T312RG	R424.9-180608PG	50*16*8
84.00-86.99	TPMT16T312RG	TPMT220612RG	R424.9-180608PG	50*16*8
87.00-93.99	TPMT16T312RG	TPMT220612RG	R424.9-180608PG	50*16*8
94.00-99.99	TPMT220612RG	TPMT220612RG	R424.9-180608PG	50*16*8
100.00-105.99	TPMT220612RG	TPMT220612RG	R424.9-180608PG	50*20*9
106.00-111.99	TPMT16T312RG	TPMT16T312RG	R424.9-13T308PG	50*20*9
112.00-119.99	TPMT16T312RG	TPMT16T312RG	R424.9-137308PG	50*20*9
120.00-123.99	TPMT16T312RG	TPMT16T312RG	R424.9-180608PG	50*20*9
124.00-129.99	TPMT16T312RG	TPMT16T312RG	R424.9-180608PG	50*20*9
130.00-135.99	TPMT16T312RG	TPMT220612RG	R424.9-180608PG	50*20*9

Tek takma uçlu tasarım – dar ve normal toleranslar

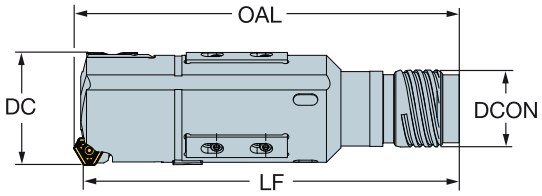




Çap aralığı (mm)	Uçlar	APMX(mm)
43.01-58.00	TXN160408	6.0
65.00-85.00	TXN250408	10.0
90.00-120.00	TXN400708	13.0

818 – Takma uçlu tasarımla güvenli delik büyütme

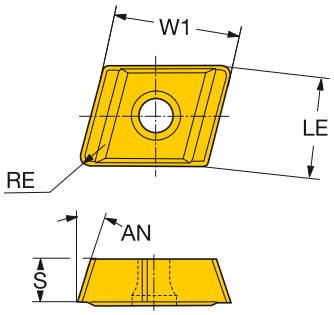




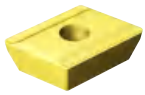
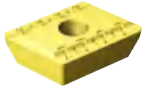
Çap aralığı (mm)	Uçlar	APMX(mm)
43.01-58.00	TXN160408	6.0
65.00-85.00	TXN250408	10.0
90.00-120.00	TXN400708	13.0

CoroDrill® 800 için delme uçları



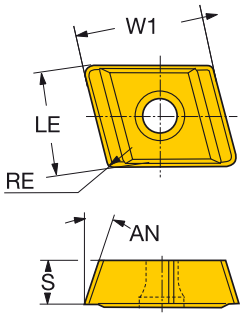


Merkez uç

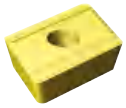
Şekil		Tip	PVD			AN
			AV3025	AV3225	AV3330	
	05	800-05 03 08M-C-G	•	•	•	17°
	06	800-06 T3 08M-C-G	•	•	•	17°
	08	800-08 T3 08M-C-G	•	•	•	17°
	10	800-10 T3 08M-C-G	•	•	•	17°
	12	800-12 T3 08M-C-G	•	•	•	17°
	05	800-05 03 08M-C-L	•	•	•	17°
	06	800-06 T3 08M-C-L	•	•	•	17°
	08	800-08 T3 08M-C-L	•	•	•	17°
	10	800-10 T3 08M-C-L	•	•	•	17°
	12	800-12 T3 08M-C-L	•	•	•	17°

CoroDrill® 800 için delme uçları



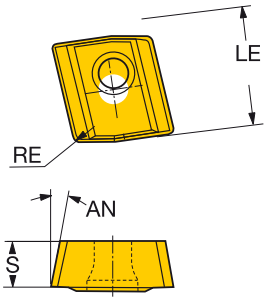


Ara uç

Şekil		Tip	PVD			AN
			AV3025	AV3225	AV3330	
	05	800-05 03 08M-I-G	•	•	•	17°
	06	800-06 T3 08M-I-G	•	•	•	17°
	08	800-08 T3 08M-I-G	•	•	•	17°
	12	800-12 T3 08M-I-G	•	•	•	17°
	05	800-05 03 08M-I-L	•	•	•	17°
	06	800-06 T3 08M-I-L	•	•	•	17°
	08	800-08 T3 08M-I-L	•	•	•	17°
	12	800-12 T3 08M-I-L	•	•	•	17°

CoroDrill® 800 için delme uçları



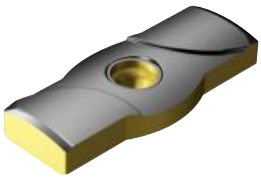


Çevre ucu

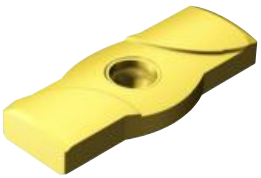
Şekil		Tip	PVD			AN
			AV3025	AV3225	AV3330	
	06	800-0603 08H-P-G	●	●	●	11°
	08	800-08 T3 08H-P-G	●	●	●	11°
	09	800-09 T3 08H-P-G	●	●	●	11°
	11	800-11 T3 08H-P-G	●	●	●	11°
	06	800-06 03 08H-P-L	●	●	●	11°
	08	800-08 T3 08H-P-L	●	●	●	11°
	09	800-09 T3 08H-P-L	●	●	●	11°
	11	800-11 T3 08H-P-L	●	●	●	11°

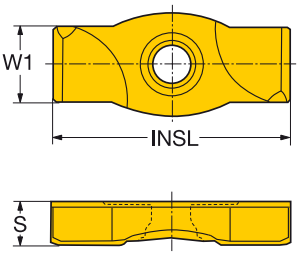
CoroDrill® 800 matkap başları için destek pabuçları

Destek pabucu PM1



Destek pabucu P1 ve M1

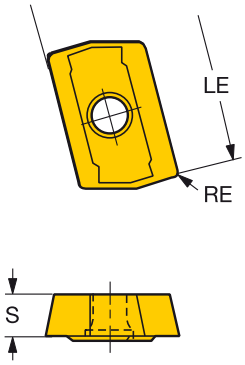




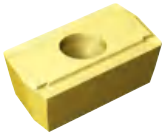
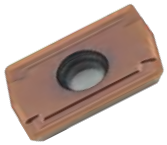
Sipariş kodu	Ölçüler, mm, inç					
	W1	W1"	INSL	INSL'	S	S"
800-06A	6	.236	18	.709	3.0	.118
800-07A	7	.276	20	.787	3.5	.138
800-08A	8	.315	25	.984	4.5	.177
800-10A	10	.394	30	1.181	4.5	.177
800-12A	12	.472	35	1.378	5.5	.216

T-MAX® 424.10 ve 801 için uçlar

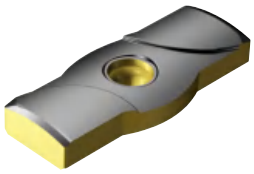


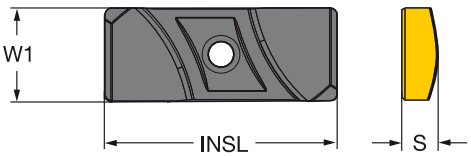


Çevre ucu

Şekil		Tip	CVD		
			AV2025	AV2225	AV2330
	13	R424.9-13 T3 08-22	●	●	●
		R424.9-13 T3 08-23	●	●	●
	18	R424.9-18 06 08-22	●	●	●
		R424.9-18 06 08-23	●	●	●
	13	R424.9-13 T3 08-24	●	●	●
	18	R424.9-18 06 08-24	●	●	●

CoroDrill® 801, CoroDrill® 818 ve T-MAX 424.10 için destek pabuçları

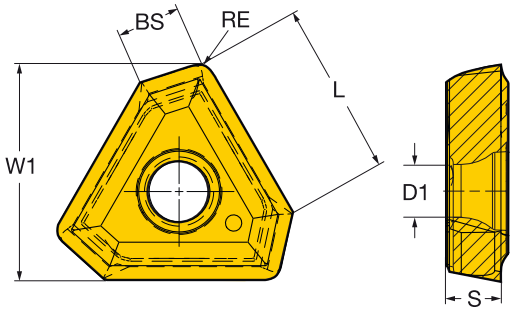


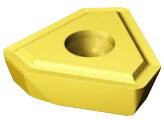


Matkap başı çapı	Destek pabuçları	Ölçüler, mm, inç					
		W1	W1"	INSL	INSL"	S	S"
63.5-74.99(2.480-2.952)	800-14 D065	14	0.551	35	1.379	7.0	0.276
75.0-84.99(2.953-3.346)	800-16 D075	14	0.551	35	1.379	7.0	0.276
85.0-99.99(3.346-3.936)	800-18 D085	14	0.551	35	1.379	7.0	0.335
100-109.99(3.937-4.330)	800-20 D100	20	0.787	50	1.969	8.5	0.276
110-119.99(4.331-4.724)	800-22 D110	20	0.787	50	1.969	8.5	0.335
120-129.99(4.724-5.118)	800-24 D120	20	0.787	50	1.969	8.5	0.335
130-139.99(5.118-5.511)	800-26 D130	20	0.787	50	1.969	8.5	0.335

Delme için TPGX uçları

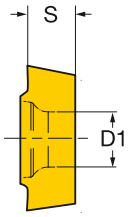


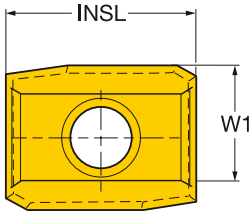


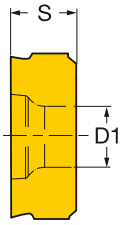
Şekil		Tip	PVD		
			AV3025	AV3225	AV3330
	14	TPGX 14 03 08R/L-G	•	•	•
		TPGX 14 03 08R/L-L	•	•	•
	17	TPGX 17 04 08R/L-G	•	•	•
		TPGX 17 04 08R/L-L	•	•	•
	24	TPGX 24 05 12R/L-G	•	•	•
		TPGX 24 05 12R/L-L	•	•	•
	28	TPGX 28 07 16R/L-G	•	•	•
		TPGX 28 07 16R/L-L	•	•	•

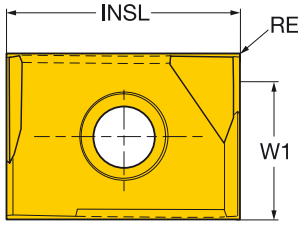
Sıyırma (skiving) uçları

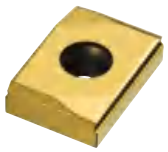




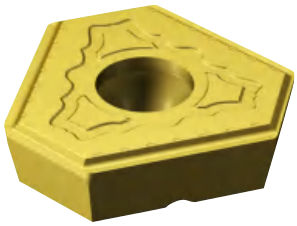


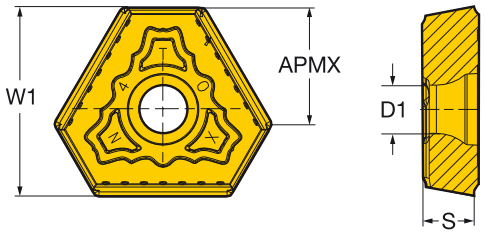


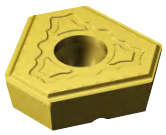


Şekil		Tip	PVD			CVD		
			AV3025	AV3225	AV3330	AV1015	AV1025	AV1115
	06	R420.37-06 02 00-01	•	•	•	•	•	•
	07	R420.37-07 08 00-01	•	•	•	•	•	•
	11	R420.37-11 12 00-01	•	•	•	•	•	•

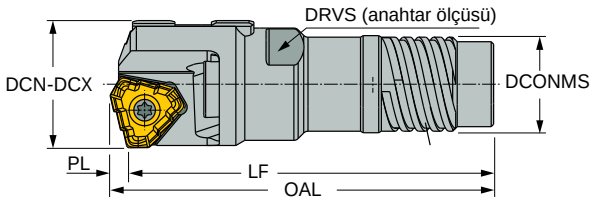
CoroDrill® 818 için uçlar





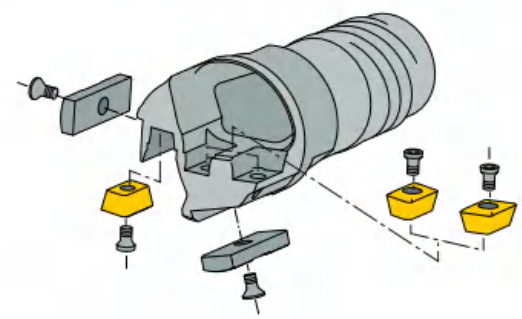
Şekil		Tip	PVD		
			AV3025	AV3225	AV3330
	16	TXN 160408-A	●	●	●
		TXN 160408-G	●	●	●
		TXN 160408-L	●	●	●
	25	TXN 250408-A	●	●	●
		TXN 250408-G	●	●	●
		TXN 250408-L	●	●	●
	40	TXN 400708-A	●	●	●
		TXN 400708-G	●	●	●
		TXN 400708-L	●	●	●

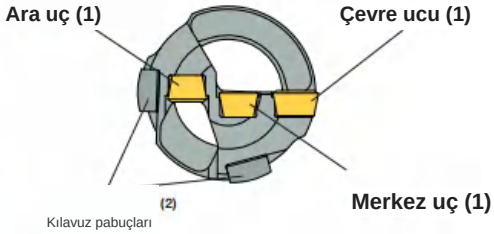
14mm - 40mm



Çap aralığı (mm)	Uç	Kılavuz pabuçlar
14.00-15.99	TOGT 070304-DT	GPS-05-18-060
16.00-18.00	TOGT 080305-DT	GPS-05-18-075
18.01-20.00	TOGT 090305-DT	GPS-06-20-085
20.01-21.00	TOGT 100305-DT	GPS-06-20-085
21.01-21.99	TOGT 100305-DT	GPS-06-20-100
22.00-25.00	TOGT 110405-DT	GPS-06-20-100
25.01-28.00	TOGT 120405-DT	GPS-06-20-120
28.01-29.99	TOGT 130408-DT	GPS-06-20-120
30.00-32.00	TOGT 130408-DT	GPS-07-20-120
32.01-39.00	TOGT 140510-DT	GPS-07-20-120
39.01-40.00	TOGT 140510-DT	GPS-08-25-155

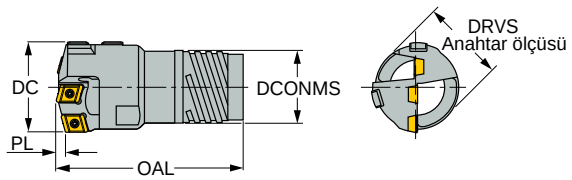
25mm - 65mm





Matkap çapı (mm)	Çevre ucu	Ara uç	Merkez uç
25.00-28.00	NPHT 060308R-G-P	NPMT 050304R-G-I	NPMT 050308L-G-C
28.01-29.99	NPHT 060308R-G-P	NPMT 050304R-G-I	NPMT 060408L-G-C
30.00-35.00	NPHT 070408R-G-P	NPMT 060404R-G-I	NPMT 060408L-G-C
35.01-38.00	NPHT 070408R-G-P	NPMT 060404R-G-I	NPMT 080408L-G-C
38.01-39.00	NPHT 090408R-G-P	NPMT 060404R-G-I	NPMT 080408L-G-C
39.01-41.00	NPHT 090408R-G-P	NPMT 060404R-G-I	NPMT 080408L-G-C
41.01-44.00	NPHT 090408R-G-P	NPMT 080404R-G-I	NPMT 080408L-G-C
44.01-45.00	NPHT 090408R-G-P	NPMT 080404R-G-I	NPMT 090408L-G-C
45.01-47.00	NPHT 090408R-G-P	NPMT 080404R-G-I	NPMT 090408L-G-C
47.01-51.00	NPHT 110408R-G-P	NPMT 080404R-G-I	NPMT 090408L-G-C
51.01-54.00	NPHT 110408R-G-P	NPMT 090404R-G-I	NPMT 090408L-G-C
54.01-57.00	NPHT 110408R-G-P	NPMT 090404R-G-I	NPMT 120408L-G-C
57.01-60.00	NPHT 110408R-G-P	NPMT 090404R-G-I	NPMT 120408L-G-C
60.01-64.00	NPHT 130408R-G-P	NPMT 090404R-G-I	NPMT 120408L-G-C
64.01-65.00	NPHT 130408R-G-P	NPMT 120404R-G-I	NPMT 120408L-G-C

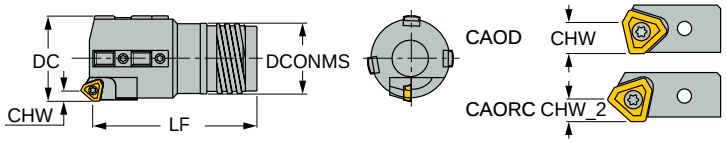
38mm - 150mm



Çap aralığı (mm)	Ara uç	Merkez uç	Çevre ucu	Kılavuz pabuç
38.00-39.99	NPMX 06**R..	NPMX 08*R..	NPMX 08*R..	GPS-08-25-155
40.00-44.99	NPMX 08**R..	NPMX 08**R..	TPMX 14**R..	GPS-08-25-155
45.00-47.99	NPMX 08**R..	TPMX 14**R..	TPMX 14**R..	GPS-10-35-200
48.00-51.99	TPMX 14**R..	TPMX 14**R.	TPMX 14**R..	GPS-10-35-200
52.00-54.99	TPMX 14**R..	TPMX 14**R..	TPMX 17**R..	GPS-10-35-200
55.00-57.99	TPMX 14**R..	TPMX 17**R..	TPMX 17**R..	GPS-10-35-200
58.00-59.99	TPMX 17**R..	TPMX 17**R..	TPMX 17**R..	GPS-10-35-200
60.00-63.99	TPMX 17**R..	TPMX 17**R..	TPMX 17**R..	GPS-14-40-250
64.00-67.99	TPMX 17**R..	TPMX 17**R..	TPMX 24**R..	GPS-14-40-250
68.00-77.99	TPMX 24**R..	TPMX 24**R..	TPMX 17**R..	GPS-14-40-250
78.00-84.99	TPMX 24**R..	TPMX 24**R..	TPMX 24**R..	GPS-14-40-250
85.00-91.99	TPMX 24**R..	TPMX 24**R..	TPMX 28**R..	GPS-14-40-250
92.00-98.99	TPMX 28**R..	TPMX 28**R..	TPMX 24**R..	GPS-14-40-250
99.00-106.99	TPMX 28**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
107.00-117.99	TPMX 17**R..	TPMX 24**R..	TPMX 24**R..	GPS-18-40-300
118.00-135.99	TPMX 24**R..	TPMX 24**R..	TPMX 24**R..	GPS-18-40-300
136.00-144.99	TPMX 24**R..	TPMX 28**R..	TPMX 24**R..	GPS-18-40-300
145.00-150.99	TPMX 24**R..	TPMX 28**R..	TPMX 24**R..	GPS-18-40-300

151mm-214mm

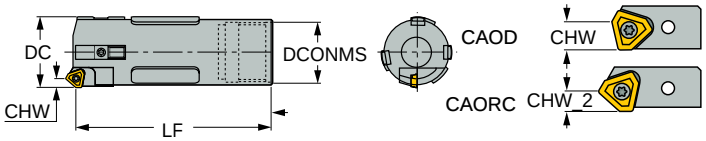




Çap aralığı (mm)	Ara uç	Merkez uç	Çevre ucu	Kılavuz pabuç
151.00-156.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
157.00-162.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
163.00-168.99	TPMX 28**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
169.00-188.99	TPMX 24**R..	TPMX 24**R..	TPMX 24**R..	GPS-18-40-300
189.00-196.99	TPMX 24**R..	TPMX 28**R..	TPMX 24**R..	GPS-18-40-300
197.00-202.99	TPMX 24**R..	TPMX 28**R..	TPMX 24**R..	GPS-18-40-300
203.00-208.99	TPMX 24**R..	TPMX 28**R..	TPMX 24**R..	GPS-18-40-300
209.00-214.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300

215mm-293mm

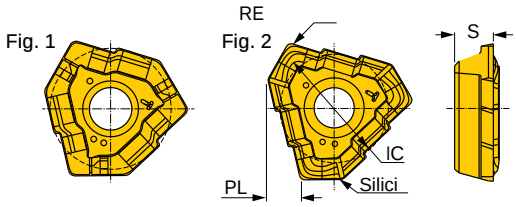




Çap aralığı (mm)	Ara uç	Merkez uç	Çevre ucu	Kılavuz pabuç
215.00-220.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
221.00-226.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
227.00-232.99	TPMX 28**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
233.00-247.99	TPMX 24**R..	TPMX 28**R..	TPMX 24**R..	GPS-18-40-300
248.00-253.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
254.00-258.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
259.00-264.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
265.00-271.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
272.00-275.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
276.00-284.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
285.00-289.99	TPMX 24**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300
290.00-293.99	TPMX 28**R..	TPMX 28**R..	TPMX 28**R..	GPS-18-40-300

TOGT

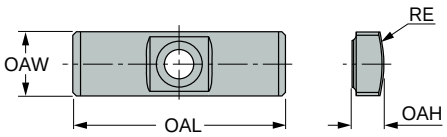




Tanım	Ölçüler				
	IC	RE	PL	S	Fig.
TOGT 070304-DT	7.69	0.40	1.95	2.30	1
TOGT 080305-DT	8.55	0.50	2.20	2.80	1
TOGT 090305-DT	8.32	0.50	3.00	3.00	2
TOGT 100305-DT	9.23	0.50	3.20	3.30	2
TOGT 110405-DT	10.40	0.50	3.40	3.80	2
TOGT 120405-DT	11.59	0.50	3.60	4.30	2
TOGT 130408-DT	12.85	0.80	4.57	4.76	2
TOGT 140510-DT	16.85	1.00	5.43	5.26	2

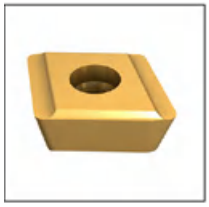
GPS

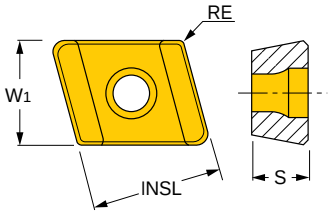




Tanım	Ölçüler			
	OAW	OAL	OAH	RE
GPS-04-16-045	4.00	16.00	1.80	4.50
GPS-04-16-050	4.00	16.00	1.80	5.00
GPS-04-16-055	4.00	16.00	2.00	5.50
GPS-05-18-060	5.00	18.00	2.50	6.00
GPS-05-18-075	5.00	18.00	2.50	7.50
GPS-06-20-075	6.00	20.00	3.00	7.50
GPS-06-20-085	6.00	20.00	3.00	8.50
GPS-06-20-100	6.00	20.00	3.00	10.00
GPS-06-20-120	6.00	20.00	3.00	12.00
GPS-07-20-120	7.00	20.00	3.50	12.00
GPS-08-25-155	8.00	25.00	4.50	15.50
GPS-10-30-200	10.00	30.00	4.50	20.00
GPS-10-35-200	10.00	35.00	6.00	20.00
GPS-12-35-250	12.00	35.00	5.50	25.00
GPS-14-40-250	14.00	40.00	7.50	25.00
GPS-18-40-300	18.00	40.00	9.00	30.00

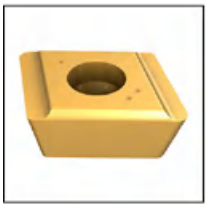
NPHT

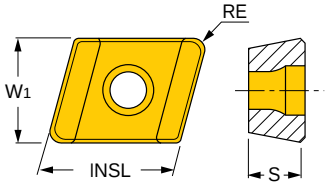




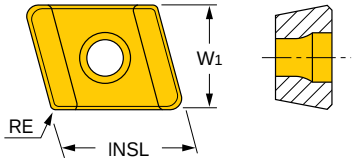
Tanım	Ölçüler			
	W1	INSL	S	RE
NPHT 060304R-G-P	6.00	8.00	3.00	0.40
NPHT 070404R-G-P	7.50	10.00	4.00	0.40
NPHT 090404R-G-P	9.00	10.00	4.00	0.40
NPHT 110404R-G-P	11.00	10.00	4.00	0.40
NPHT 130404R-G-P	13.00	10.00	4.00	0.40
NPHT 060308R-G-P	6.00	8.00	3.00	0.80
NPHT 070408R-G-P	7.50	10.00	4.00	0.80
NPHT 090408R-G-P	9.00	10.00	4.00	0.80
NPHT 110408R-G-P	11.00	10.00	4.00	0.80
NPHT 130408R-G-P	13.00	10.00	4.00	0.80

NPMT





NPMT...L

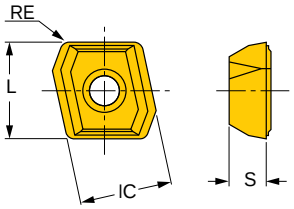


NPMT...R

Tanım	Ölçüler			
	W1	INSL	S	RE
NPMT 050304R-G-I	5.50	8.00	3.00	0.40
NPMT 060404R-G-I	6.50	10.00	4.00	0.40
NPMT 080404R-G-I	8.00	10.00	4.00	0.40
NPMT 090404R-G-I	9.50	10.00	4.00	0.40
NPMT 120404R-G-I	12.50	10.00	4.00	0.40
NPMT 050308L-G-C	5.50	8.00	3.00	0.80
NPMT 060408L-G-C	6.50	10.00	4.00	0.80
NPMT 080408L-G-C	8.00	10.00	4.00	0.80
NPMT 090408L-G-C	9.50	10.00	4.00	0.80
NPMT 120408L-G-C	12.50	10.00	4.00	0.80

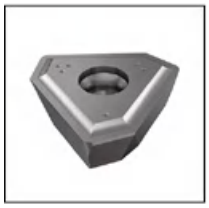
NPMX

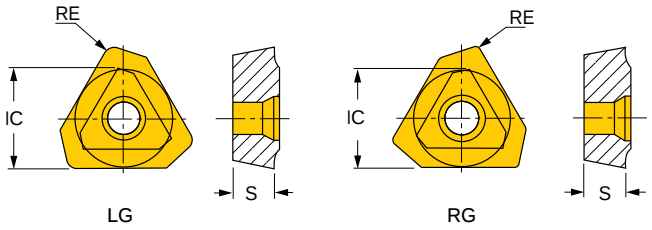




Tanım	Ölçüler (mm)			
	IC	S	RE	L
NPMX 080304R-B	8.00	3.18	0.40	8.36
NPMX 080308R-G	8.00	3.18	0.80	8.36

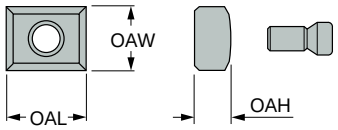
TPMX





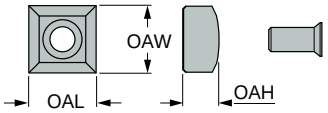
Tanım	Ölçüler (mm)		
	IC	S	RE
TPMX 140304R-B	8.45	3.50	0.40
TPMX 140308L-G	8.45	3.50	0.80
TPMX 140308R-B	8.45	3.50	0.80
TPMX 140308R-G	8.45	3.50	0.80
TPMX 170404R-B	10.30	4.00	0.40
TPMX 170408L-G	10.30	4.00	0.80
TPMX 170408R-B	10.30	4.00	0.80
TPMX 170408R-G	10.30	4.00	0.80
TPMX 240504R-B	14.20	5.50	0.40
TPMX 240512L-G	14.20	5.50	1.20
TPMX 2405 12R-B	14.20	5.50	1.20
TPMX 240512R-G	14.20	5.50	1.20
TPMX 280708R-B	17.00	7.50	0.80
TPMX 280716L-G	17.00	7.50	1.60
TPMX 280716R-B	17.00	7.50	1.60
TPMX 280716R-G	17.00	7.50	1.60

SGP



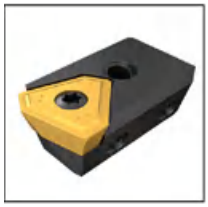
Tanım	Ölçüler (mm)		
	OAL	OAW	OAH
SGP-01	10.00	6.00	3.00
SGP-02	10.00	8.00	4.50
SGP-03	10.00	10.00	5.00
SGP-04	20.00	14.00	7.00

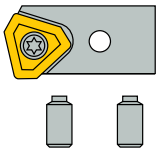
GPP



Tanım	Ölçüler (mm)		
	OAL	OAW	OAH
GPP-06	8.00	8.00	4.50
GPP-07	10.00	10.00	6.00
GPP-08	14.00	14.00	7.50
GPP-09	18.00	18.00	9.00

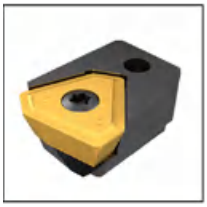
CAOD

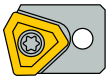




Tanım	Kilit vidası	Key	Uç	Uç bağlama vidası
CAOD-080	SR 1120176-11	HW 2.0	NPMX 0803..R-G	SR 11201753-2
CAOD-0845	SR 11201756-10	HW 2.5	TPMX 1403..R-G	SR 11201753-3
CAOD-085	SR 11201756-11	HW 2.0	NPMX 0803..R-G	SR 11201753-2
CAOD-103	SR 11201756-12	HW 3.0	TPMX 1704..R-G	SR 11201753-7
CAOD-142	SR 11201756-15	HW 4.0	TPMX 2405..R-G	SR 11201753-9
CAOD-170	SR 11201756-15	HW 4.0	TPMX 2807..R-G	SR 11201753-10

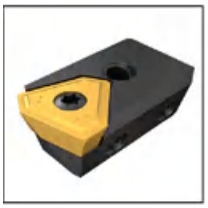
CAID

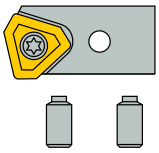




Tanım	Kilit vidası	Key	Uç	Uç bağlama vidası
CAID-080	SR 11201753-5	T-9/51	NPMX 0803..R-G	SR 11201753-2
CAID-0845	SR 11201753-6	T-15/51	TPMX 1403..R-G	SR 11201753-3
CAID-085	SR 11201753-5	T-9/51	NPMX 0803..R-G	SR 11201753-2
CAID-103	SR 11201752-1	T-15/51	TPMX 1704..R-G	SR 11201753-7
CAID-142	SR 11201756-7	HW 3.0	TPMX 2405..R-G	SR 11201753-9
CAID-170	SR 11201756-7	HW 3.0	TPMX 2807..R-G	SR 11201753-10

CAOD

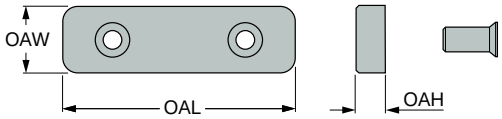




Tanım	Ayar vidası	Key	Kilit vidası	Key	Uç
CAOD-080+1	SR 11201755-4	HW 1.5	SR 11201756-11	HW 2.0	NPMX 0803.R-G
CAOD-080+2	SR 11201755-4	HW 1.5	SR 11201756-11	HW 2.0	NPMX 0803.R-G
CAOD-085+1	SR 11201755-7	HW 1.5	SR 11201756-11	HW 2.0	NPMX 0803.R-G
CAOD-085+2	SR 11201755-7	HW 1.5	SR 11201756-11	HW 2.0	NPMX 0803.R-G
CAOD-085+3	SR 11201755-7	HW 1.5	SR 11201756-11	HW 2.0	NPMX 0803.R-G
CAOD-103+1	SR 11201755-8	HW 2.5	SR 11201756-12	HW 3.0	TPMX 1704.R-G
CAOD-103+2	SR 11201755-8	HW 2.5	SR 11201756-12	HW 3.0	TPMX 1704.R-G
CAOD-103+3	SR 11201755-8	HW 2.5	SR 11201756-12	HW 3.0	TPMX 1704.R-G
CAOD-103+4	SR 11201755-8	HW 2.5	SR 11201756-12	HW 3.0	TPMX 1704.R-G
CAOD-142+1	SR 11201755-9	HW 2.5	SR 11201756-15	HW 4.0	TPMX 2405.R-G
CAOD-142+2	SR 11201755-9	HW 2.5	SR 11201756-15	HW 4.0	TPMX 2405.R-G
CAOD-142+3	SR 11201755-9	HW 2.5	SR 11201756-15	HW 4.0	TPMX 2405.R-G
CAOD-142+4	SR 11201755-9	HW 2.5	SR 11201756-15	HW 4.0	TPMX 2405.R-G
CAOD-142+5	SR 11201755-9	HW 2.5	SR 11201756-15	HW 4.0	TPMX 2405.R-G
CAOD-170+1	SR 11201755-11	HW 3.0	SR 11201756-15	HW 4.0	TPMX 2807.R-G
CAOD-170+2	SR 11201755-11	HW 3.0	SR 11201756-15	HW 4.0	TPMX 2807.R-G
CAOD-170+3	SR 11201755-11	HW 3.0	SR 11201756-15	HW 4.0	TPMX 2807.R-G
CAOD-170+4	SR 11201755-11	HW 3.0	SR 11201756-15	HW 4.0	TPMX 2807.R-G
CAOD-170+5	SR 1120755-11	HW 3.0	SR 11201756-15	HW 4.0	TPMX 2807.R-G

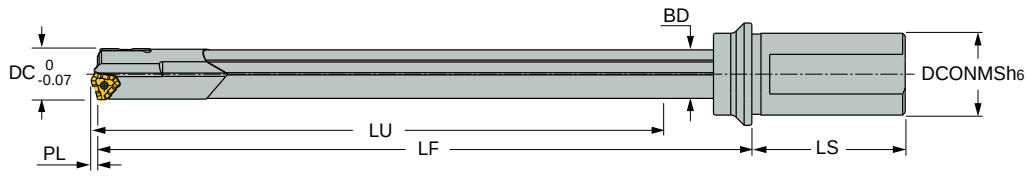
RGP





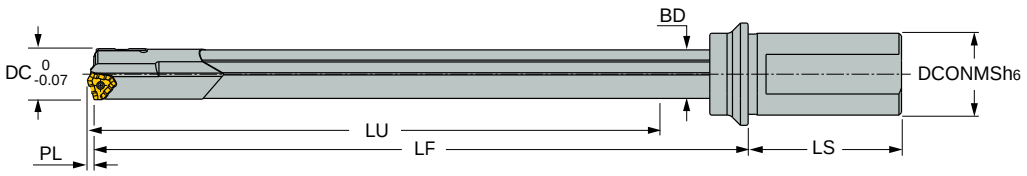
Tanım	Ölçüler (mm)		
	OAL	OAW	OAH
RGP01	40.00	10.00	4.00
RGP02	45.00	1200	5.00
RGP03	50.00	15.00	5.80
RGP04	70.00	20.00	7.50
RGP05	80.00	30.00	12.50
RGP06	100.00	35.00	15.50
RGP07	120.00	40.00	18.50
RGP08	140.00	50.00	22.50
RGP09	150.00	60.00	23.50
RGP10	150.00	70.00	26.50

GD-DH (10.00-13.50)



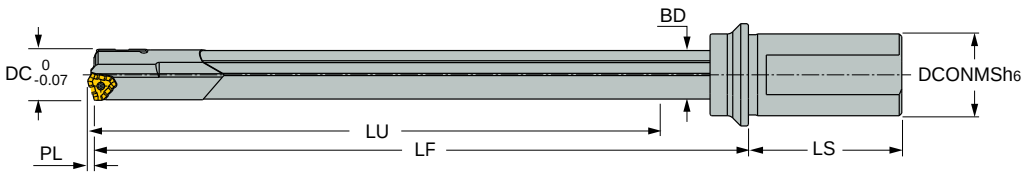
DC	LF	PL	DCONMS	BD	LS	Uç
10.00	184.50	1.800	20.00	9.60	50.0	ZSGT 06..
10.50	193.00	1.800	20.00	10.00	50.0	ZSGT 06..
11.00	209.00	1.800	20.00	10.60	50.0	ZSGT 06..
11.50	209.00	1.800	20.00	11.10	50.0	ZSGT 06..
12.00	225.00	1.800	20.00	11.50	50.0	LOGT 06..
12.50	226.00	1.800	20.00	12.00	50.0	LOGT 06..
13.00	238.00	1.800	25.00	12.50	56.0	LOGT 06..
13.50	245.00	1.800	25.00	13.00	56.0	LOGT 06..

GD-DH (14-20)



DC	LF	PL	DCONMS	BD	LS	Uç
14.00	261.00	1.95	25.00	13.50	56.0	TOGT 07..
15.00	278.00	1.95	25.00	14.50	56.0	TOGT 07..
16.00	209.00	2.20	25.00	15.50	56.0	TOGT 08..
16.50	294.00	2.20	25.00	15.50	56.0	TOGT 08..
17.00	220.00	2.20	25.00	16.20	56.0	TOGT 08..
17.50	310.00	2.20	25.00	16.20	56.0	TOGT 08..
18.00	232.00	2.20	25.00	16.20	56.0	TOGT 08..
18.50	327.00	3.00	25.00	17.20	56.0	TOGT 09..
19.00	243.00	3.00	25.00	18.20	56.0	TOGT 09..
19.50	343.00	3.00	25.00	18.20	56.0	TOGT 09..
20.00	255.00	3.00	32.00	19.00	60.0	TOGT 09..

GD-DH (21-32)



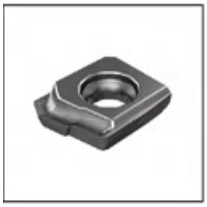
DC	LF	PL	DCONMS	BD	LS	Uç
21.00	266.00	3.20	32.00	20.00	60.0	TOGT 10..
22.00	278.00	3.40	32.00	21.00	60.0	TOGT 11..
23.00	289.00	3.40	32.00	22.00	60.0	TOGT 11..
24.00	301.00	3.40	32.00	23.00	60.0	TOGT 11..
25.00	312.00	3.40	32.00	24.00	60.0	TOGT 11..
26.00	324.00	3.60	40.00	25.00	70.0	TOGT 12..
27.00	335.00	3.60	40.00	26.00	70.0	TOGT 12..
28.00	337.00	3.60	40.00	27.00	70.0	TOGT 12..
29.00	360.00	4.57	40.00	27.00	69.0	TOGT 13..
30.00	383.00	4.57	40.00	29.00	69.0	TOGT 13..
31.00	383.00	4.57	40.00	29.00	69.0	TOGT 13..
32.00	395.00	4.57	40.00	30.00	69.0	TOGT 13..

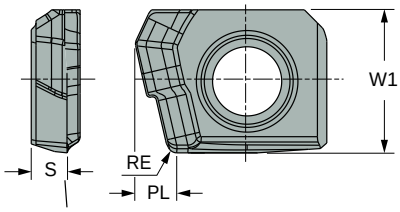
Yedek Parçalar



Çap aralığı (mm)	Uç	Tam karbür kılavuz pabuç
14.00-15.99	TOGT 07..	GPS-05-18-060
16.00-18.00	TOGT 08..	GPS-05-18-075
18.01-20.00	TOGT 09..	GPS-06-20-085
20.01-21.00	TOGT 10..	GPS-06-20-085
21.01-21.99	TOGT 10..	GPS-06-20-100
22.00-25.00	TOGT 11..	GPS-06-20-100
25.01-28.00	TOGT 12..	GPS-06-20-120
28.01-29.99	TOGT 13..	GPS-06-20-120
30.00-32.00	TOGT 13..	GPS-07-20-120
32.01-39.00	TOGT 14..	GPS-07-20-120
39.01-40.00	TOGT 14..	GPS-08-25-155

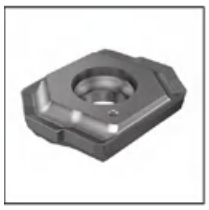
ZSGT

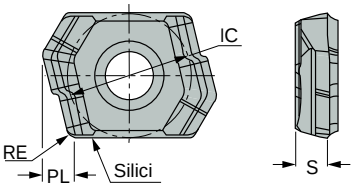




Tanım	Ölçüler (mm)			
	W1	RE	PL	S
ZSGT 060204R-DT	6.00	0.40	1.800	1.50

LOGT

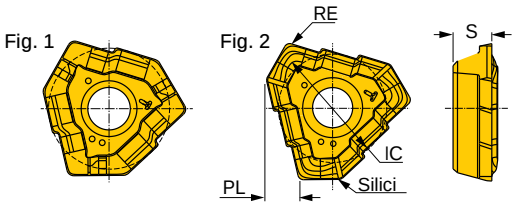




Tanım	Ölçüler (mm)			
	IC	RE	PL	S
LOGT 060204R-DT	7.00	0.40	1.800	2.00

LOGT-GT





Tanım	Ölçüler (mm)				
	IC	RE	PL	S	Fig.
TOGT 070304-DT	7.69	0.40	1.95	230	1
TOGT 080305-DT	8.55	0.50	2.20	2.80	1
TOGT 090305-DT	8.32	0.50	3.00	3.00	2
TOGT 100305-DT	9.23	0.50	3.20	3.30	2
TOGT 110405-DT	10.40	0.50	3.40	3.80	2
TOGT 120405-DT	11.59	0.50	3.60	430	2
TOGT 130408-DT	12.85	0.80	4.57	4.76	2
TOGT 140510-DT	16.85	1.00	5.43	526	2

avedon®

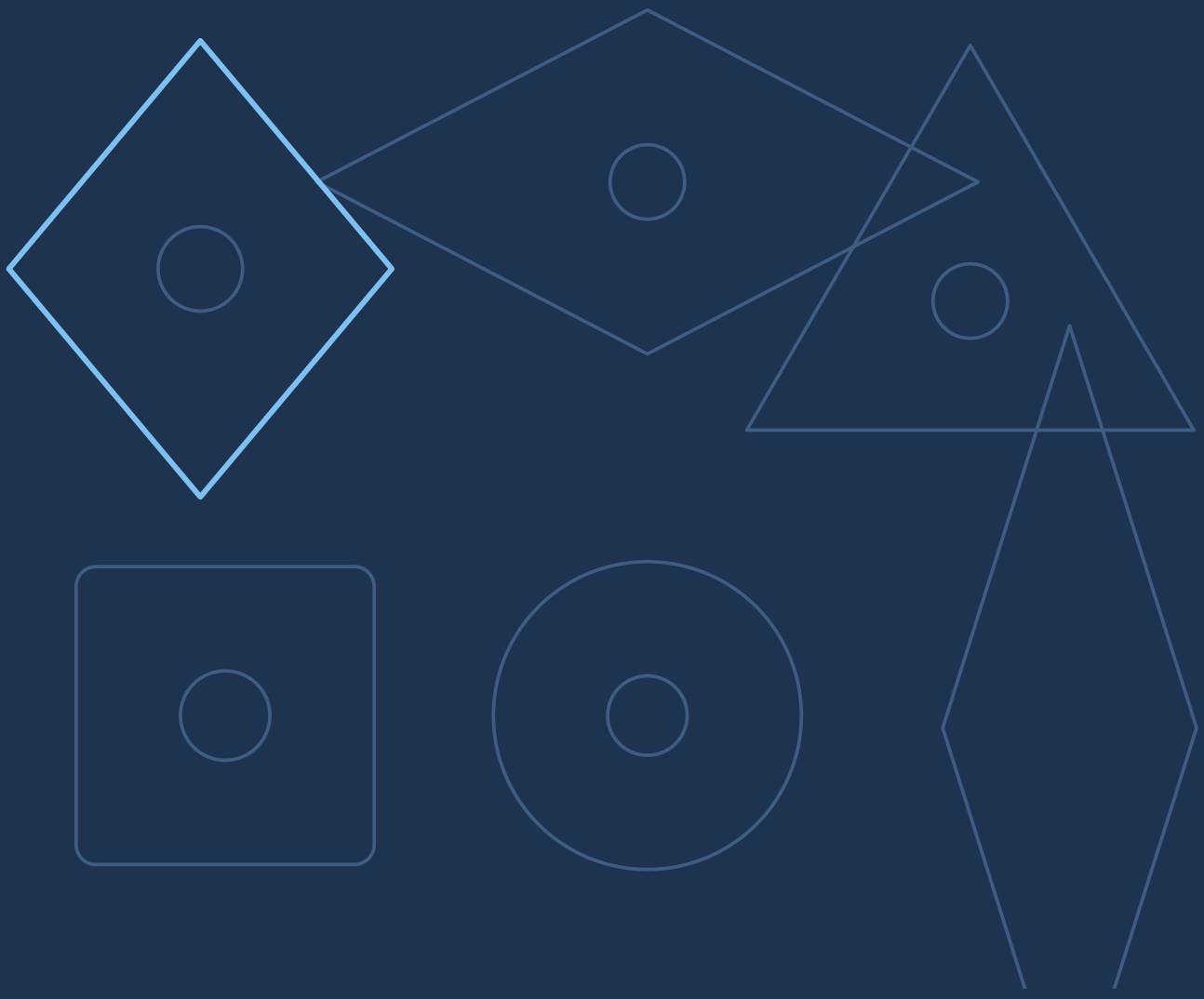
B

BÖLÜM B

Yüzey sıyırma uçları

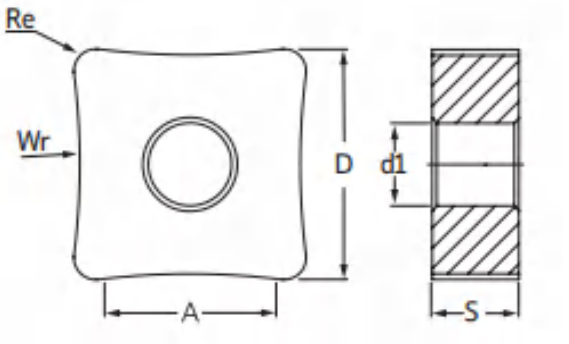
Çelikhanelerde kütük ve slab yüzeyindeki kusurları temizleyen sıyırma uçları.

Sayfa B-01 – B-11



SNMA 15

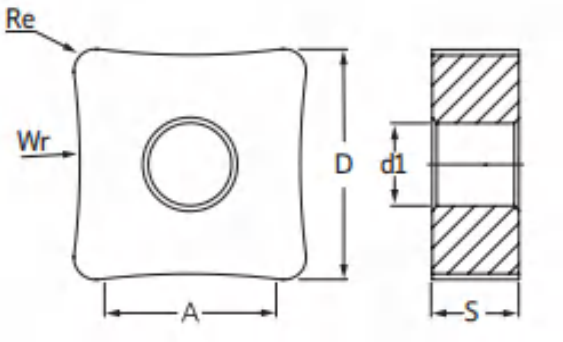




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMA 150612-R020	15.88	6.35	10	12	6.35	20	23-29
SNMA 150612-R022	15.88	6.35	10	12	6.35	22	25-32
SNMA 150612-R025	15.88	6.35	10	12	6.35	25	29-36
SNMA 150612-R027	15.88	6.35	10	12	6.35	27	31-39
SNMA150612-R030	15.88	6.35	10	12	6.35	30	35-44
SNMA 150612-R035	15.88	6.35	10	12	6.35	35	40-51
SNMA 150612-R040	15.88	6.35	10	12	6.35	40	46-58
SNMA 150612-R050	15.88	6.35	10	12	6.35	50	58-73
SNMA 150612-R060	15.88	6.35	10	12	6.35	60	69-87
SNMA 150612-R070	15.88	6.35	10	12	6.35	70	80-95

SNMA 19

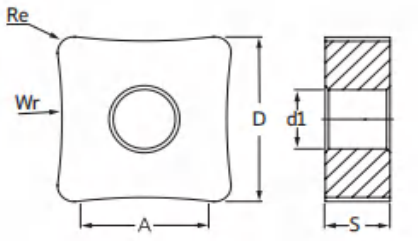




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMA 190612-R030	19.05	6.35	12	1.2	7.94	30	35-44
SNMA 190612-R040	19.05	6.35	12	1.2	7.94	40	46-58
SNMA 190612-R050	19.05	6.35	12	1.2	7.94	50	58-73
SNMA 190612-R060	19.05	6.35	12	1.2	7.94	60	69-87
SNMA 190612-R070	19.05	6.35	12	1.2	7.94	70	80-95
SNMA 190612-R080	19.05	6.35	12	12	7.94	80	92-116
SNMA 190612-R090	19.05	6.35	12	1.2	7.94	90	104-131

SNMA 25

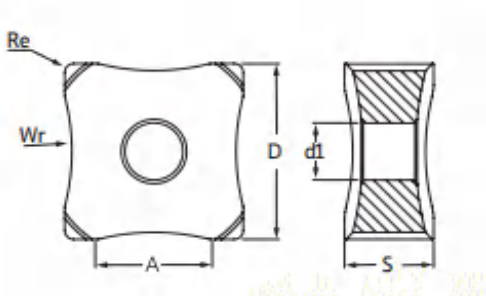




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMA 250924-R000	25.40	9.52	17	2.4	9.12	0	-
SNMA 250924-R060	25.40	9.52	17	2.4	9.12	60	69-87
SNMA 250924-R070	25.40	9.52	17	2.4	9.12	70	80-95
SNMA 250924-R080	25.40	9.52	17	2.4	9.12	80	92-116
SNMA 250924-R100	25.40	9.52	17	2.4	9.12	100	115-145
SNMA 250924-R150	25.40	9.52	17	2.4	9.12	150	165-215
SNMA 250924-R200	25.40	9.52	17	2.4	9.12	200	230-290

SNMX 15

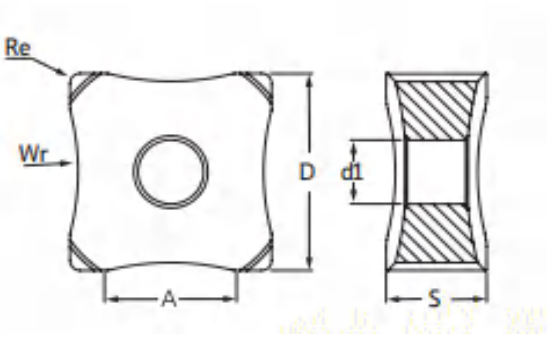




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMX 150708-R000	15.88	7.94	10	0.8	5.16	0	-
SNMX 150708-R007	15.88	7.94	10	0.8	5.16	7	08-10
SNMX 150708-R009	15.88	7.94	10	0.8	5.16	9	10-13
SNMX 150708-R011	15.88	7.94	10	0.8	5.16	11	13-16
SNMX 150708-R013	15.88	7.94	10	0.8	5.16	13	15-19
SNMX 150708-R015	15.88	7.94	10	0.8	5.16	15	17-22
SNMX 150708-R018	15.88	7.94	10	0.8	5.16	18	21-26
SNMX 150708-R020	15.88	7.94	10	0.8	5.16	20	23-29
SNMX 150708-R022	15.88	7.94	10	0.8	5.16	22	25-32
SNMX 150708-R025	15.88	7.94	10	0.8	5.16	25	29-36
SNMX 150708-R027	15.88	7.94	10	0.8	5.16	27	31-39
SNMX 150708-R030	15.88	7.94	10	0.8	5.16	30	35-44
SNMX 150708-R035	15.88	7.94	10	0.8	5.16	35	40-51
SNMX 150708-R040	15.88	7.94	10	0.8	5.16	40	46-58
SNMX 150708-R045	15.88	7.94	10	0.8	5.16	45	52-65
SNMX 150708-R050	15.88	7.94	10	0.8	5.16	50	58-73
SNMX 150708-R060	15.88	7.94	10	0.8	5.16	60	69-87
SNMX 150708-R070	15.88	7.94	10	0.8	5.16	70	80-95
SNMX 150708-R075	15.88	7.94	10	0.8	5.16	75	86-102

SNMX 19

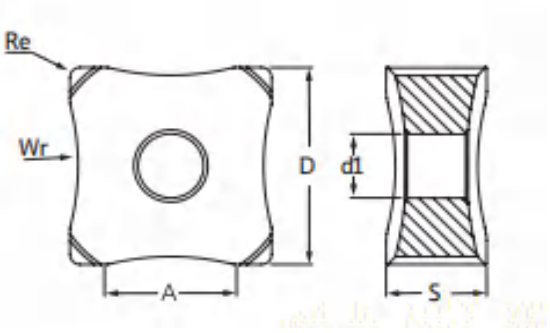




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMX 190912-R000	19.05	9.12	12	1.2	6.35	0	-
SNMX 190912-R020	19.05	9.12	12	12	6.35	20	23-29
SNMX 190912-R030	19.05	9.12	12	12	6.35	30	35-44
SNMX 190912-R040	19.05	9.12	12	1.2	6.35	40	46-58
SNMX 190912-R050	19.05	9.12	12	1.2	6.35	50	58-73
SNMX 190912-R060	19.05	9.12	12	1.2	6.35	60	69-87
SNMX 190912-R070	19.05	9.12	12	1.2	6.35	70	80-95
SNMX 190912-R080	19.05	9.12	12	1.2	6.35	80	92-116
SNMX 190912-R090	19.05	9.12	12	12	6.35	90	104-131
SNMX 190912-R100	19.05	9.12	12	12	6.35	100	115-145

SNMX 25

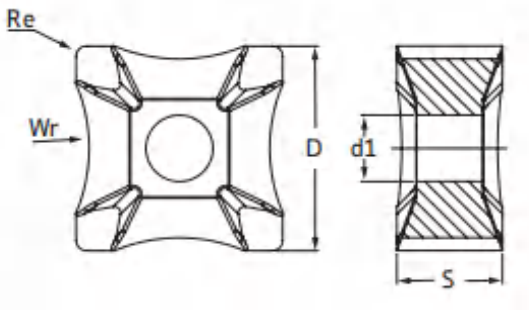




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMX 251216-R000	25.40	12.70	17	1.6	9.12	0	-
SNMX 251216-R050	25.40	12.70	17	1.6	9.12	50	58-73
SNMX 251216-R080	25.40	12.70	17	1.6	9.12	80	92-116
SNMX 251216-R090	25.40	12.70	17	1.6	9.12	90	104-131
SNMX 251216-R100	25.40	12.70	17	1.6	9.12	100	115-145
SNMX 251216-R120	25.40	12.70	17	1.6	9.12	120	138-174
SNMX 251216-R150	25.40	12.70	17	1.6	9.12	150	165-215
SNMX 251216-R200	25.40	12.70	17	1.6	9.12	200	230-290
SNMX 251216-R250	25.40	12.70	17	1.6	9.12	250	275-315

SNMG 15

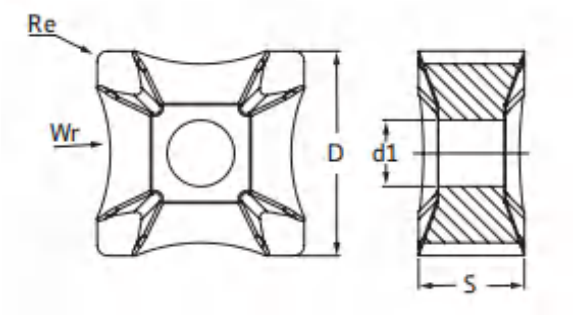




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMG 15M808-R000	15.88	8.15	10	0.8	5.16	0	-
SNMG 15M808-R007	15.88	8.15	10	0.8	5.16	7	08-10
SNMG 15M808-R009	15.88	8.15	10	0.8	5.16	9	10-13
SNMG 15M808-R011	15.88	8.15	10	0.8	5.16	11	13-16
SNMG 15M808-R013	15.88	8.15	10	0.8	5.16	13	15-19
SNMG 15M808-R015	15.88	8.15	10	0.8	5.16	15	17-22
SNMG 15M808-R018	15.88	8.15	10	0.8	5.16	18	21-26
SNMG 15M808-R020	15.88	8.15	10	0.8	5.16	20	23-29
SNMG 15M808-R022	15.88	8.15	10	0.8	5.16	22	25-32
SNMG 15M808-R025	15.88	8.15	10	0.8	5.16	25	29-36
SNMG 15M808-R027	15.88	8.15	10	0.8	5.16	27	31-39
SNMG 15M808-R030	15.88	8.15	10	0.8	5.16	30	35-44
SNMG 15M808-R035	15.88	8.15	10	0.8	5.16	35	40-51
SNMG 15M808-R040	15.88	8.15	10	0.8	5.16	40	46-58
SNMG 15M808-R045	15.88	8.15	10	0.8	5.16	45	52-65
SNMG 15M808-R050	15.88	8.15	10	0.8	5.16	50	58-73
SNMG 15M808-R060	15.88	8.15	10	0.8	5.16	60	69-87

SNMG 19

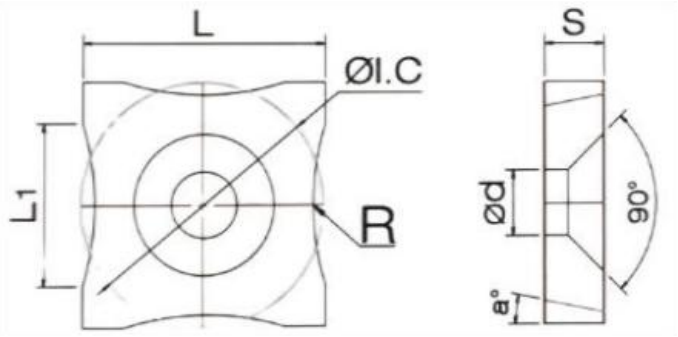




Tanım	Ölçüler (mm)						Boru çapı (mm)
	D	S	A	Re	d1	Wr	
SNMG 19M808-R000	19.05	8.15	12	0.8	8.00	20	-
SNMG 19M808-R010	19.05	8.15	12	0.8	8.00	10	12-15
SNMG 19M808-R020	19.05	8.15	12	0.8	8.00	20	23-29
SNMG 19M808-R030	19.05	8.15	12	0.8	8.00	30	35-44
SNMG 19M808-R040	19.05	8.15	12	0.8	8.00	40	46-58
SNMG 19M808-R050	19.05	8.15	12	0.8	8.00	50	58-73
SNMG 19M808-R060	19.05	8.15	12	0.8	8.00	60	69-87
SNMG 19M808-R070	19.05	8.15	12	0.8	8.00	70	80-95
SNMG 19M808-R080	19.05	8.15	12	0.8	8.00	80	92-116
SNMG 19M808-R090	19.05	8.15	12	0.8	8.00	90	104-131
SNMG 19M808-R100	19.05	8.15	12	0.8	8.00	100	115-145

S-SPUB 63

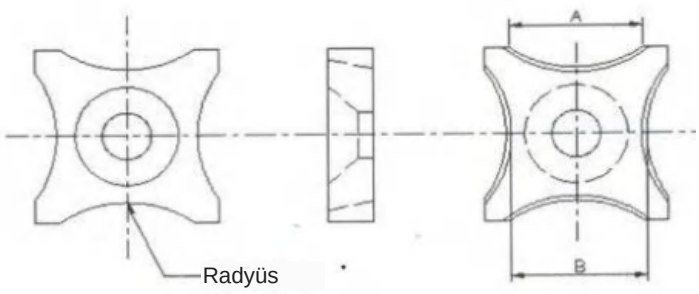




Tanım	Ölçüler (mm)			
	Çalışma aralığı	ΦI.C	S	Φd
S-SPUB-63A	Φ10~Φ15	19.05	4.76	5.16
S-SPUB-63B	Φ15~Φ22	19.05	4.76	5.16
S-SPUB-63C	Φ22~Φ30	19.05	4.76	5.16
S-SPUB-63D	Φ27~Φ40	19.05	4.76	5.16
S-SPUB-63E	Φ38~Φ52	19.05	4.76	5.16
S-SPUB-63F	Φ42~Φ60	19.05	4.76	5.16
S-SPUB-63G	Φ50~Φ76	19.05	4.76	5.16

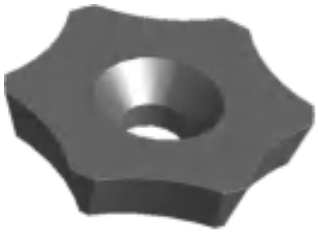
S-SPUB 86

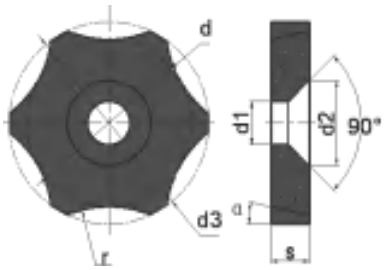




Tanım	Ölçüler (mm)			
	Kalınlık	A	B	Radyüs
S-SPUB-86B	9.5	21.11	16.71	12.07
S-SPUB-86C	9.5	22.07	17.68	15.00
S-SPUB-86D	9.5	22.96	18.57	19.94
S-SPUB-86E	9.5	23.47	19.08	25.02
S-SPUB-86F	9.5	23.8	19.41	29.97
S-SPUB-86G	9.5	24.21	19.81	40.00
S-SPUB-86H	9.5	24.46	20.07	50.04
S-SPUB-86I	9.5	24.64	20.24	62.74

WJD





Tanım	Ölçüler (mm)						
	d	s	d1	d2	d3	a	r
WJD3-1	20.7	4.76	5.3	10.5	25	15°	13.54
WJD3-2	20.7	4.76	5.3	10.5	25	15°	16.71
WJD3-3	20.7	4.76	5.3	10.5	25	15°	21.79
WJD3-4	20.7	4.76	5.3	10.5	25	15°	27.51
WJD3-5	20.7	4.76	5.3	10.5	25	15°	38.89
WJD3-6	20.7	4.76	5.3	10.5	25	15°	47.63

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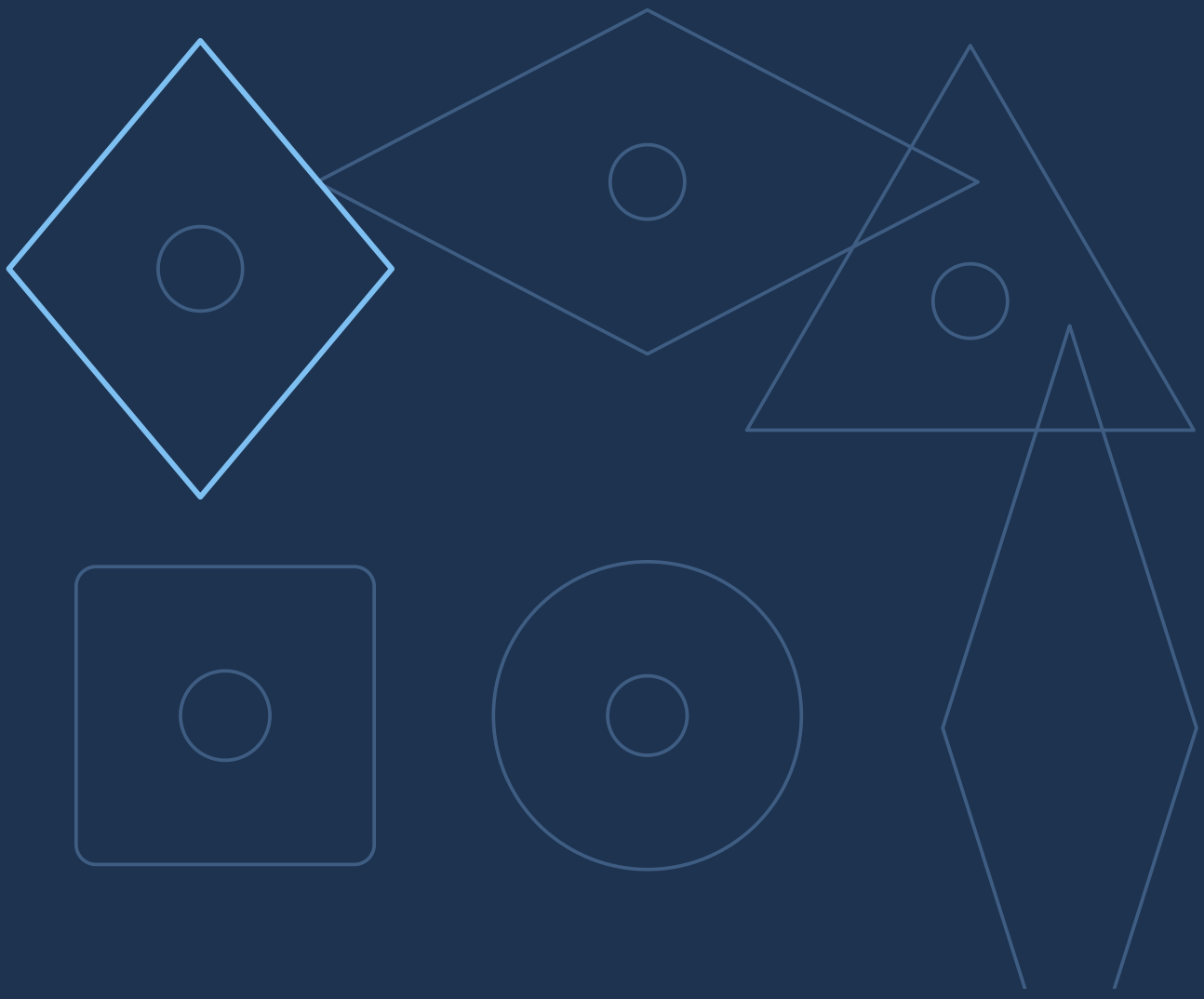
C

BÖLÜM C

Kabuk soyma uçları

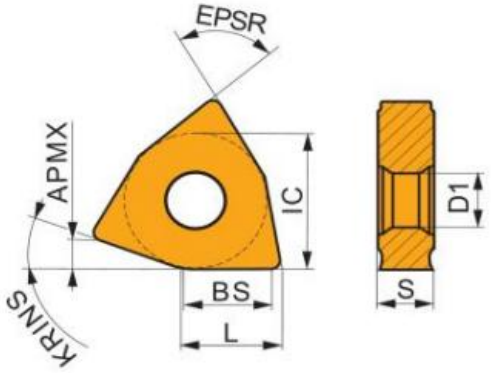
Çubuk ve boru soyma tezgâhları için kabuk soyma uçları.

Sayfa C-01 – C-11



WNXJ

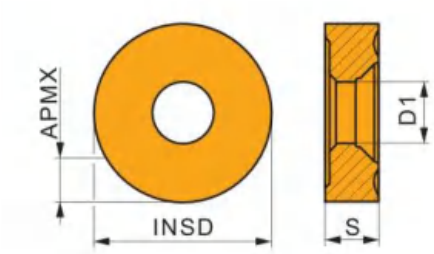




Tanım	Ölçüler (mm)						
	APMX	EPSR	BS	L	IC	D1	S
WNXJ 201380	8	85	15	20	31.75	9	13
WNXJ 150935	3.5	75	13	15	22.22	7.94	9.52

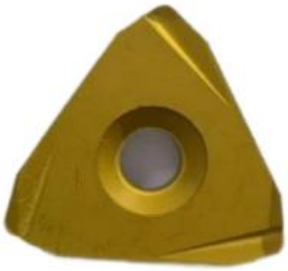
RNGH

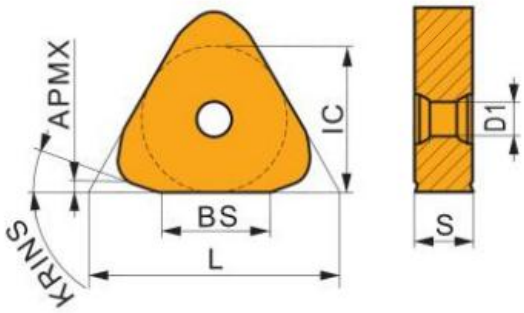




Tanım	Ölçüler (mm)			
	APMX	INSD	D1	S
RNGH 381200	12	38.1	12.7	12.7
RNGH 5018MO	16	50	12.7	18

TNGJ

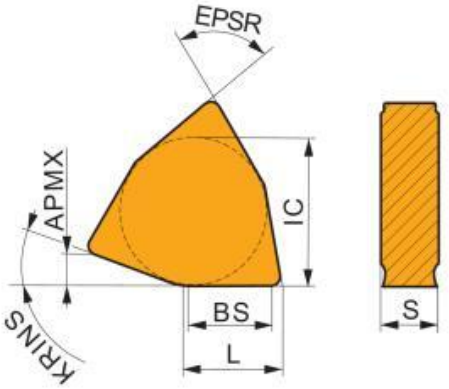




Tanım	Ölçüler (mm)					
	APMX	BS	L	IC	D1	S
TNGJ 220720-PM	2	12	38	21.96	7	7.94
TNGJ 281025-PF	2.5	18	49.5	28.6	7	10

WNMF

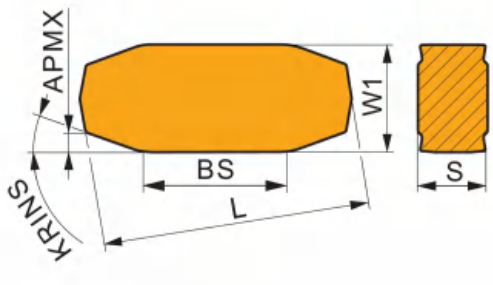




Tanım	Ölçüler (mm)					
	APMX	EPSR	BS	L	IC	S
WNMF 201380	8	85	15	20	31.75	13

LNGF

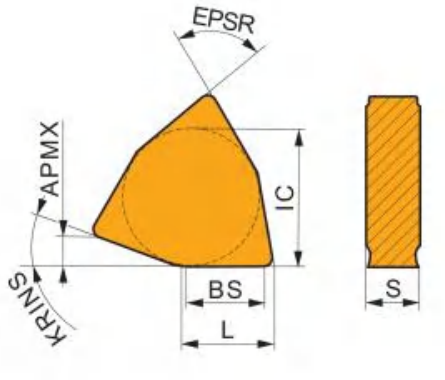




Tanım	Ölçüler (mm)				
	APMX	BS	L	W1	S
LNGF 300715	1.5	13	30.12	12	7.54
LNGF 361220	2	16	36.5	18	12
LNGF 401035	3.5	20	40	20	10.15

WNGF

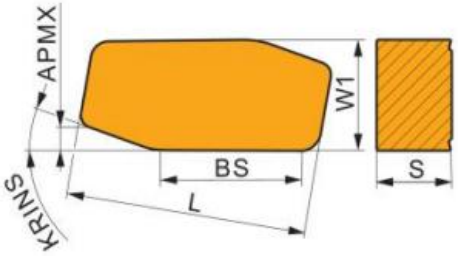




Tanım	Ölçüler (mm)					
	APMX	EPSR	BS	L	IC	S
WNGF 201380	8	85	15	20	31.75	13

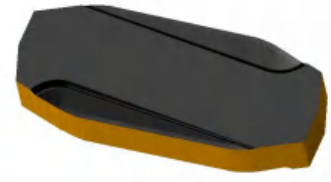
LNXR

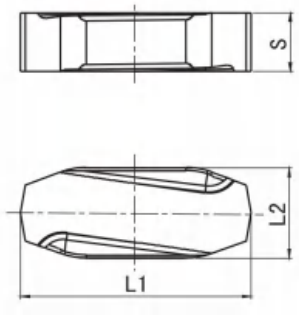




Tanım	Ölçüler (mm)				
	APMX	BS	L	W1	S
LNXR 381240	4	21	38.25	17.5	12

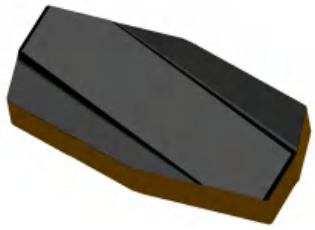
LNMF

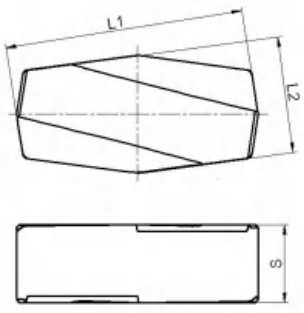




Tanım	Ölçüler (mm)			Kalite		
	L1	L2	s	AV1025	AV1125	AV3125
LNMF3007	30.6	12	7.8	●	●	○
LNMF3612	36.5	23.6	12.3	●	●	○

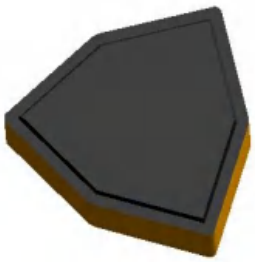
LNUX

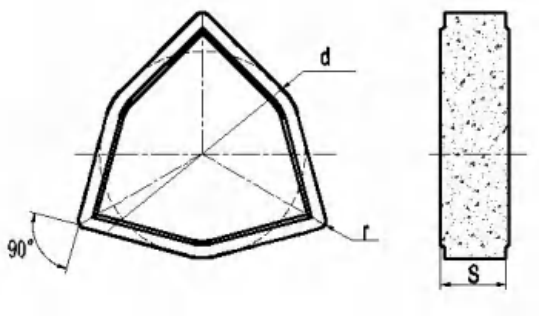




Tanım	Ölçüler (mm)			Kalite		
	L1	L2	s	AV1025	AV1125	AV3125
LNUX361215	36.7	18	12	●	●	○

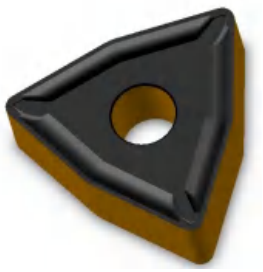
TNMF

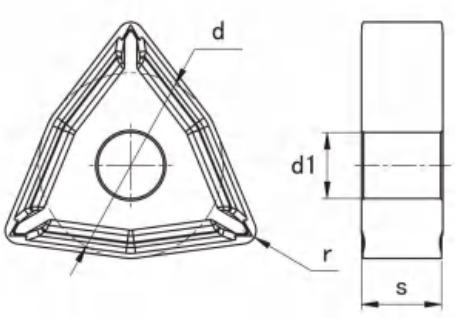




Tanım	Ölçüler (mm)			Kalite		
	d	s	r	AV1025	AV1125	AV3125
TNMF96	28.5	9	1.2	●	●	○

TNMX





Tanım	Ölçüler (mm)				Kalite		
	d	s	d1	r	AV1025	AV1125	AV3125
TNMX110616	15.875	6.5	6.75	1.6	●	●	○
TNMX150916	22.22	9.7	7.94	1.6	●	●	○

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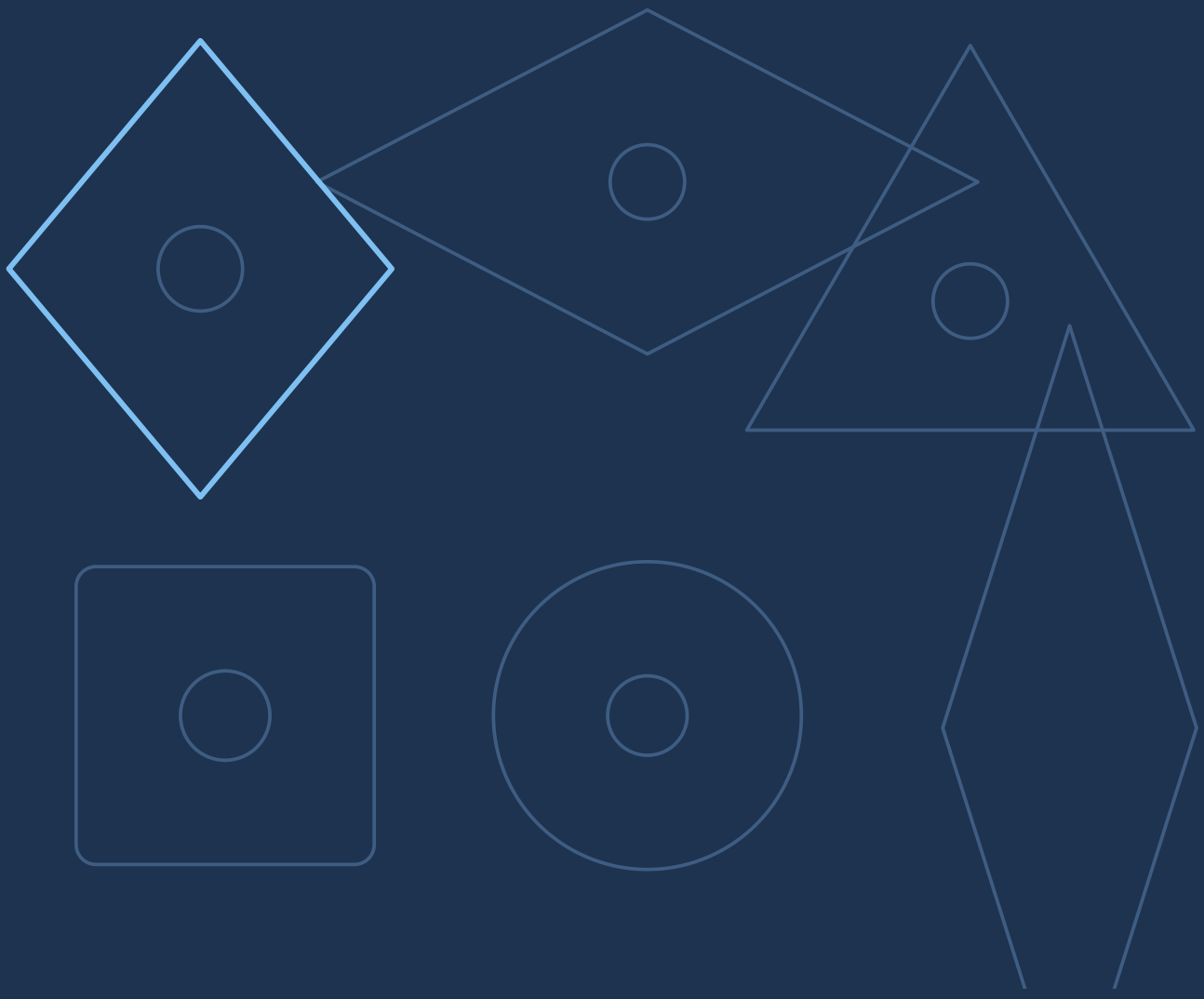
D

BÖLÜM D

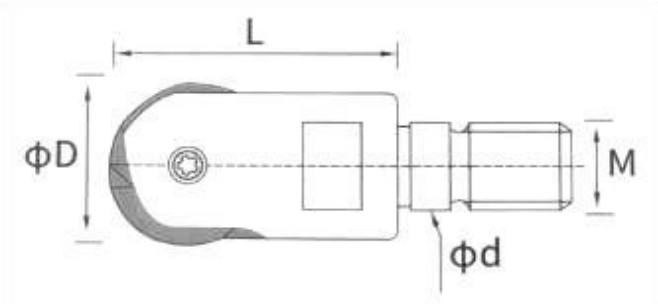
Freze kafaları

Tarama, köşe ve kopya frezeleme için takma uçlu freze kafaları.

Sayfa D-01 – D-08

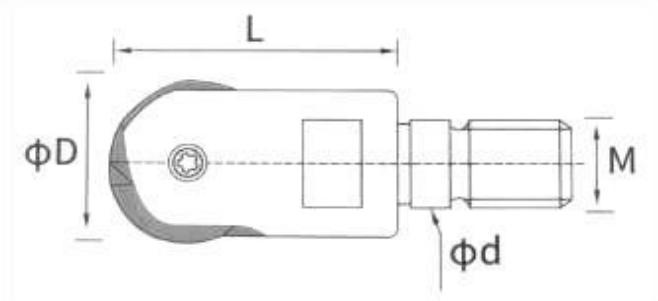


PPH



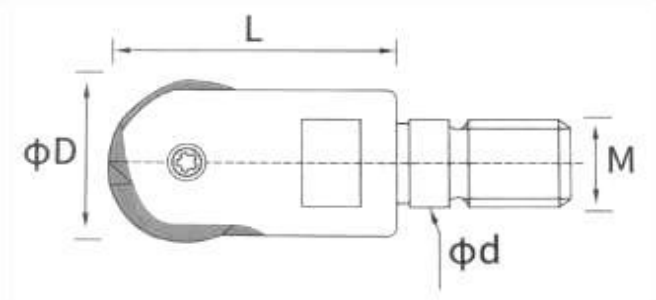
Tip	Ölçü				Uç
	ΦD	M	Φd	L	
PPH08-M4	8	4	4.5	16	BNM-080
PPH10-M5	10	5	5.5	20	BNM-100
PPH12-M6	12	6	6.5	22	BNM-120
PPH16-M8	16	8	8.5	28	BNM-160
PPH20-M10	20	10	10.5	30	BNM-200
PPH25-M12	25	12	12.5	35	BNM-250
PPH32(30)-M16	32(30)	16	17	40	BNM-300

WGR



Tip	Ölçü				Uç
	ΦD	M	Φd	L	
WGR08-M4	8	4	4.5	16	P3201-D08
WGR10-M5	10	5	5.5	20	P3201-D10
WGR12-M6	12	6	6.5	22	P3201-D12
WGR16-M8	16	8	8.5	28	P3201-D16
WGR20-M10	20	10	10.5	30	P3201-D20
WGR25-M12	25	12	12.5	35	P3201-D25
WGR32(30)-M16	32(30)	16	17	40	P3201-D30/2

ABPF



Tip	Ölçü				Uç
	ΦD	M	Φd	L	
ABPF08-M4	8	4	4.5	16	ZPFG080
ABPF10-M5	10	5	5.5	20	ZPFG100
ABPF12-M6	12	6	6.5	22	ZPFG120
ABPF16-M8	16	8	8.5	28	ZPFG160
ABPF20-M10	20	10	10.5	30	ZPFG200
ABPF25-M12	25	12	12.5	35	ZPFG250
ABPF32(30)-M16	32(30)	16	17	40	ZPFG300

MFT

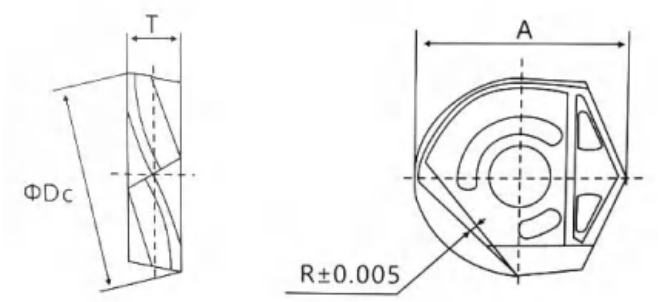


Tip
MFT08-100-M4
MFT10-100-M5
MFT10-120-M5
MFT10-150-M5
MFT10-200-M5
MFT12-100-M6
MFT12-150-M6
MFT12-200-M6
MFT15-100-M8
MFT15-150-M8
MFT15-200-M8
MFT15.6-100-M8
MFT15.6-150-M8
MFT15.6-200-M8
MFT15.6-250-M8
MFT16-100-M8
MFT16-150-M8
MFT16-200-M8
MFT16-250-M8
MFT16-300-M8
MFT19-100-M10

Tip
MFT19-150-M10
MFT19-200-M10
MFT19-250-M10
MFT19-300-M10
MFT19-350-M10
MFT20-100-M10
MFT20-150-M10
MFT20-200-M10
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MFT20-350-M10
MFT24-100-M12
MFT24-150-M12
MFT24-200-M12
MFT24-250-M12
MFT24-300-M12
MFT24-350-M12
MFT24-400-M12
MFT25-100-M12
MFT25-150-M12
MFT25-200-M12

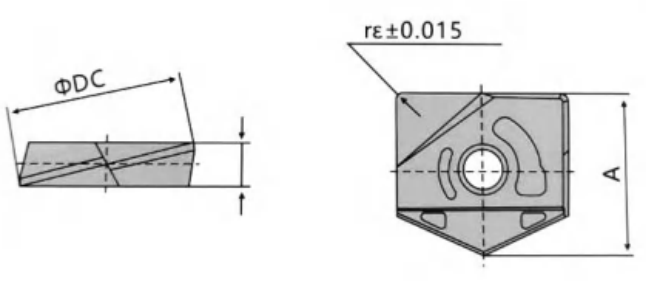
Tip
MFT25-250-M12
MFT25-300-M12
MFT25-350-M12
MFT25-400-M12
MFT32-150-M16
MFT32-200-M16
MFT32-250-M16
MFT32-300-M16
MFT32-350-M16
MFT32-400-M16
MFT32-450-M16

ABPF ucu



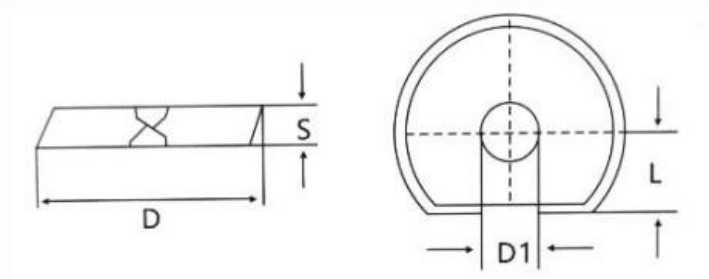
Tip (Finiş)	Ölçü (mm)			
	R	A	ΦDC	T
D080	4	9.7	8	2.1
D100	5	12.1	10	2.7
D120	6	14.6	12	3.2
D160	8	16.6	16	4.2
D200	10	20.3	20	5.2
D250	12.5	24.1	25	6.2
D300	15	29.2	30	7.2
D320	16	30.2	32	7.2

Köşe radyüslü uç



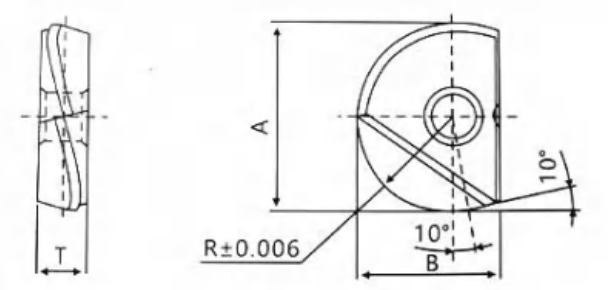
Tip (Finiş)	Ölçü			
	A	ΦDc	T	rε
D080-R0.5-F	9.7	8	2.1	0.5
D080-R1.0-F				1
D100-R0.5-F	12	10	2.7	0.5
D100-R1.0-F				1
D120-R0.5-F	14.6	12	3.2	0.5
D120-R1.0-F				1
D160-R0.5-F	16.6	16	4.2	0.5
D160-R1.0-F				1
D160-R2.0-F				2
D160-R3.0-F				3
D200-R0.5-F	19.9	20	5.2	0.5
D200-R1.0-F				1
D200-R2.0-F				2
D200-R3.0-F				3
D250-R0.5-F	22.6	25	6.2	0.5
D250-R1.0-F				1
D250-R2.0-F				2
D250-R3.0-F				3
D300-R1.0-F	27.2	30	7.2	1
D300-R2.0-F				2
D300-R3.0-F				3
D320-R1.0-F	28.2	32	7.2	1
D320-R2.0-F				2
D320-R3.0-F				3

P3200



Parça no.	D	D1	L	S
P3200-D08	8	3	4	2
P3200-D10	10	4	5	2.5
P3200-D12	12	5	6	2.5
P3200-D16	16	5	6	3
P3200-D20	20	5	6	3
P3200-D25	25	6	9	4
P3200-D30	30	8	10	5
P3200-D32	32	8	10	5

BNM



Tip	Ölçü (mm)			
	R	A	B	T
D080-S-R	4	8	7	2.4
D100-S-R	5	10	8.5	2.6
D120-S-R	6	12	10	3
D160-S-R	8	16	12	4
D200-S-R	10	20	15	5
D250-S-R	12.5	25	18.5	6
D300-S-R	15	30	22.5	7

avedon®

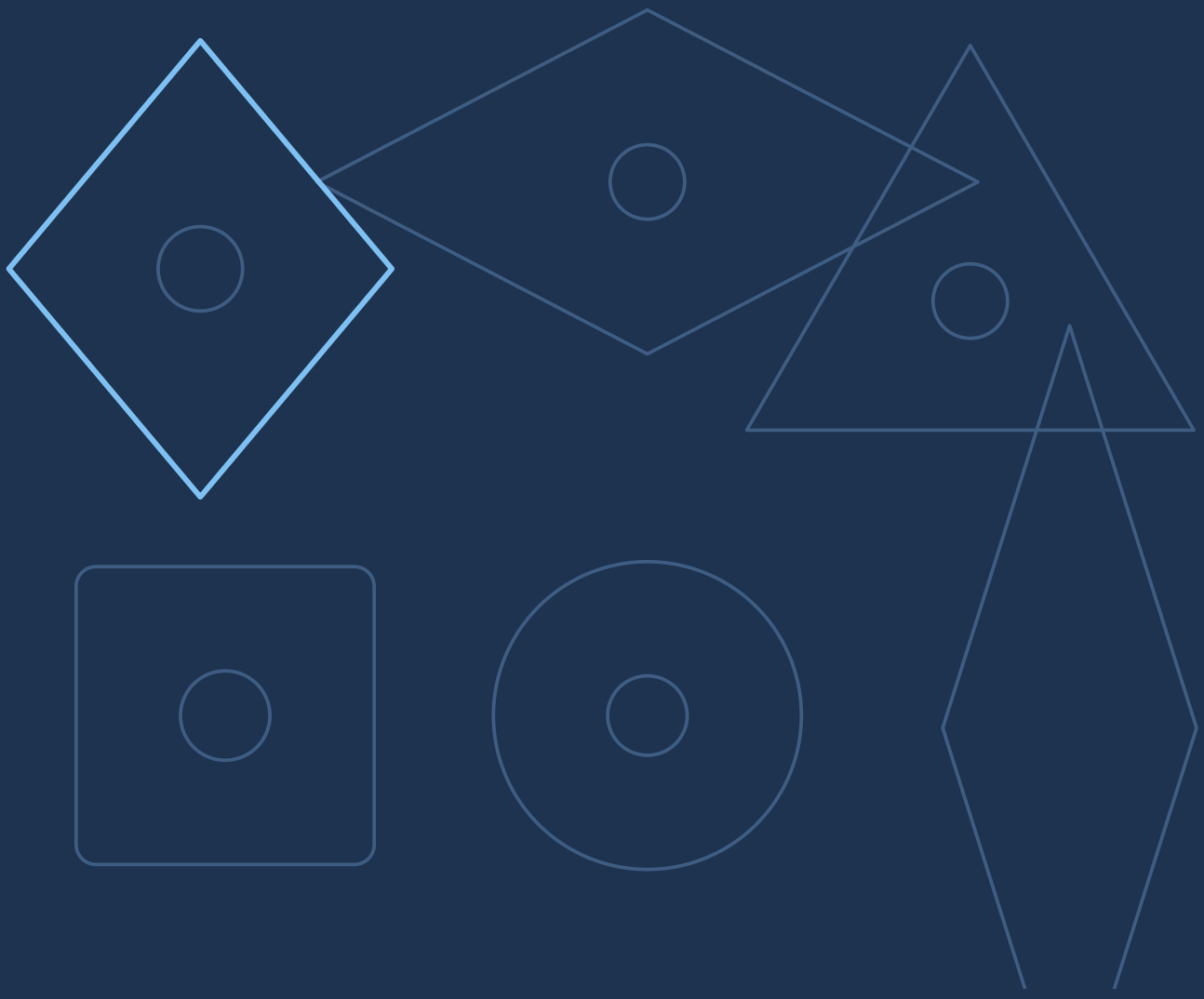
E

BÖLÜM E

Küçük parça tornalama uçları

Kayar otomat ve hassas küçük parça tornalama için uçlar ve kater sistemleri.

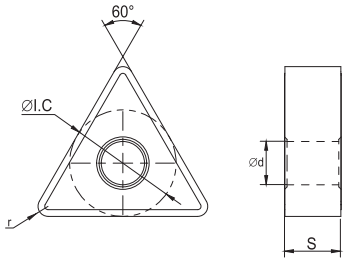
Sayfa E-02 – E-18



E Küçük parçalar

CNC hassas otomatik torna için kesici çözüm. Yüksek hassasiyet ve yüksek kalite güvencesi

Negatif uçlar



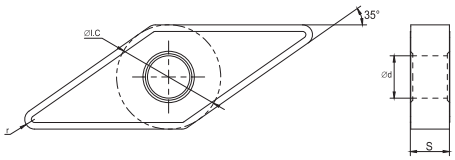
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.1–0.4

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	TNGG160401–FS	0.4–1.5	0.02–0.06							○	●	●	○			
	TNGG160402–FS	0.6–2.0	0.04–0.08							○	●	●	○			
	TNGG160404–FS	0.8–2.5	0.06–0.10							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



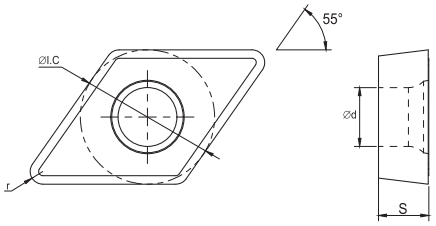
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	6.35	4.76	3.81	0.2–0.8

35° VN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	VNGG160402–FS	0.4–2.0	0.02–0.06							○	●	●	○			
	VNGG160404–FS	0.8–2.5	0.04–0.08							○	●	●	○			
	VNGG160408–FS	1.0–3.0	0.06–0.12							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



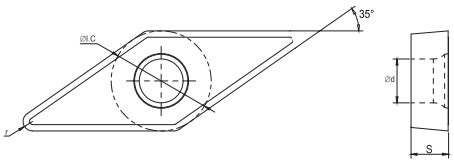
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	9.525	3.97	4.4	0.1–0.8

55° DC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
	DCGT11T301–FS	0.10–1.50	0.02–0.06							○	●	●	○			
	DCGT11T302–FS	0.20–2.00	0.05–0.12							○	●	●	○			
	DCGT11T304–FS	0.20–2.50	0.08–0.25							○	●	●	○			
	DCGT11T308–FS	0.30–3.00	0.10–0.30							○	●	●	○			
Küçük parça işleme																

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



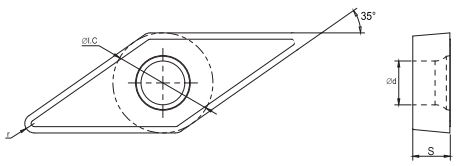
Uzunluk	Ölçü (mm)			
	IC	S	d	r
11	6.35	3.18	2.81	0.1–0.4

35° VB□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	VBGT110301–FS	0.1–1.5	0.02–0.06							○	●	●	○			
	VBGT110302–FS	0.2–2.0	0.05–0.12							○	●	●	○			
	VBGT110304–FS	0.2–2.5	0.08–0.25							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



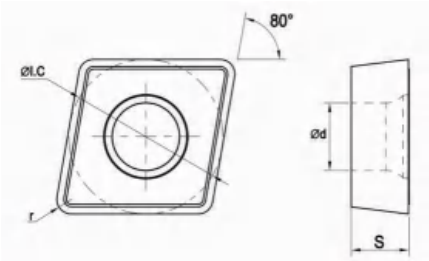
Uzunluk	Ölçü (mm)			
	IC	S	d	r
11	6.35	3.18	2.81	0.1–0.4

35° VC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	VCGT110301–FS	0.1–1.5	0.02–0.06							○	●	●	○			
	VCGT110302–FS	0.2–2.0	0.05–0.12							○	●	●	○			
	VCGT110304–FS	0.2–2.5	0.08–0.25							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



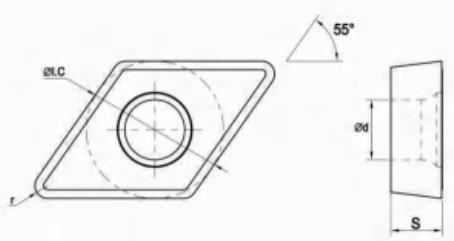
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	9.525	3.97	4.4	0.1
9	9.525	3.97	4.4	0.2
9	9.525	3.97	4.4	0.4

80° CC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	CCGT09T301R/L-UF	0.1–1.5	0.05–0.15							○	●	●	○			
	CCGT09T302R/L-UF	0.2–2	0.05–0.2							○	●	●	○			
	CCGT09T304R/L-UF	0.4–2.5	0.05–0.25							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



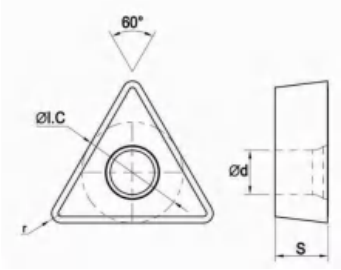
Uzunluk	Ölçü (mm)			
	IC	S	d	r
7	6.35	2.38	2.8	0.05–0.2
11	9.525	3.97	4.4	0.1–0.2

55° DC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	DCGT0702005R/L–UF	0.1–1	0–0.1							○	●	●	○			
	DCGT070201R/L–UF	0.1–1.5	0.05–0.15							○	●	●	○			
	DCGT070202R/L–UF	0.2–2	0.05–0.2							○	●	●	○			
	DCGT11T301R/F–UF	0.1–1.5	0.05–0.15							○	●	●	○			
	DCGT11T302R/F–UF	0.2–2	0.05–0.2							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



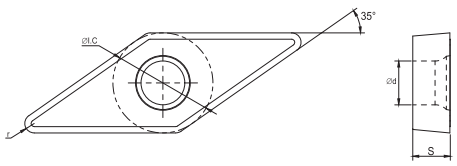
Uzunluk	Ölçü (mm)			
	IC	S	d	r
11	6.35	3.18	2.8	0.1–0.2

60° TC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	TCGT110301R/L–UF	0.1–1.5	0.05–0.15							○	●	●	○			
	TCGT110302R/L–UF	0.2–2	0.05–0.2							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



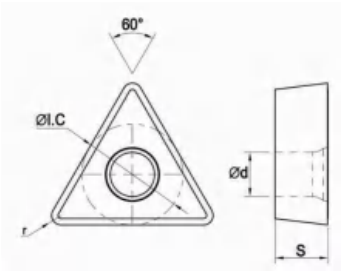
Uzunluk	Ölçü (mm)			
	IC	S	d	r
8	4.76	2.38	2.3	0.1–0.2
11	6.35	3.18	2.8	0.1–0.2

35° VC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	VCGT080201R/L–UF	0.1–1.5	0.05–0.15							○	●	●	○			
	VCGT080202R/L–UF	0.2–2	0.05–0.2							○	●	●	○			
	VCGT110301R/L–UF	0.1–1.5	0.05–0.15							○	●	●	○			
	VCGT110302R/L–UF	0.2–2	0.05–0.2							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



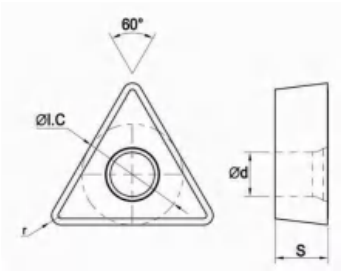
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.2–0.8

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	TNGG160402R/L–F	0.1–1.5	0.05–0.15							○	●	●	○			
	TNGG160404R/L–F	0.2–2	0.05–0.2							○	●	●	○			
	TNGG160408R/L–F	0.4–2.5	0.05–0.2							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



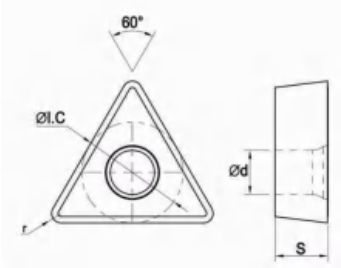
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.2–0.8

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	TNGG160402R/L–M	0.2–2	0.05–0.12							○	●	●	○			
	TNGG160404R/L–M	0.2–2.5	0.08–0.25							○	●	●	○			
	TNGG160408R/L–M	0.3–3	0.1–0.3							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



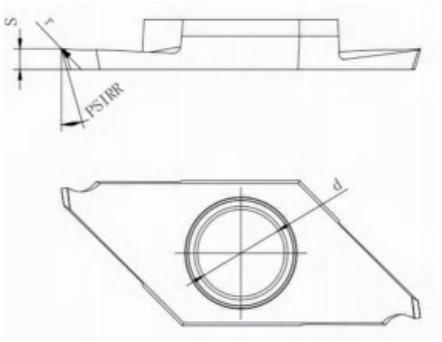
Uzunluk	Ölçü (mm)			
	IC	S	d	r
08	4.76	2.38	2.3	0.2–0.4
09	5.56	2.38	2.8	0.2–0.4
11	6.35	3.18	3.18	0.2–0.4

60° TP□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
 Küçük parça işleme	TPGH080202R/L	0.2–1	0.02–0.1							○	●	●	○			
	TPGH080204R/L	0.4–1.5	0.05–0.1							○	●	●	○			
	TPGH090202R/L	0.2–1	0.02–0.1							○	●	●	○			
	TPGH090204R/L	0.4–1.5	0.05–0.1							○	●	●	○			
	TPGH110302R/L	0.2–1.5	0.02–0.15							○	●	●	○			
	TPGH110304R/L	0.4–1.5	0.05–0.15							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Özel kesme uçları

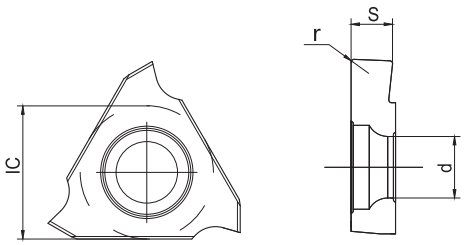


Genişlik	Ölçü (mm)			
	PSIRR	S	d	r
150	16°	1.50	5.2	0.05
200		2.00	5.2	0.05
150		1.50	5.2	0.05
200		2.00	5.2	0.05
150		1.50	5.2	0.08
200		2.00	5.2	0.08
150	0°	1.50	5.2	0.08
200		2.00	5.2	0.08

Şekil	Tip	ap (maks./mm)	Kalite												
			CVD						PVD						
			AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
	TKF16R/L150-S-16DR	16.00							○	●	●	○			
	TKF16R/L200-S-16DR								○	●	●	○			
	TKF16R/L150-S								○	●	●	○			
	TKF16R/L150-S								○	●	●	○			
	TKF16R/L150-T-16DR								○	●	●	○			
	TKF16R/L200-T-16DR								○	●	●	○			
	TKF16R/L150-T								○	●	●	○			
	TKF16R/L200-T								○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Sığ kanal açma uçları

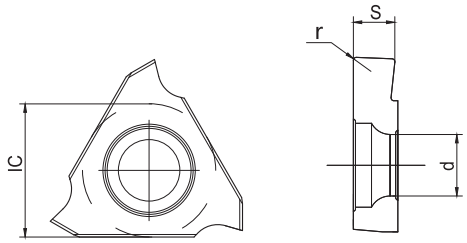


Genişlik	Ölçü (mm)			
	IC	S	d	r
110	9.525	1.10	4.4	0.1
125	9.525	1.25	4.4	0.1
145	9.525	1.45	4.4	0.1
150	9.525	1.50	4.4	0.1
175	9.525	1.75	4.4	0.1
185	9.525	1.85	4.4	0.1
200	9.525	2.00	4.4	0.1
250	9.525	2.50	4.4	0.1
300	9.525	3.00	4.4	0.1

Şekil	Tip	ap (maks./mm)	Kalite												
			CVD						PVD						
			AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
	TGF32R/L033–005	0.80							○	●	●	○			
	TGF32R/L050–005	1.20							○	●	●	○			
	TGF32R/L075–010	2.00							○	●	●	○			
	TGF32R/L095–010	2.00							○	●	●	○			
	TGF32R/L100–010	2.00							○	●	●	○			
	TGF32R/L110–010	2.00							○	●	●	○			
	TGF32R/L125–010	2.00							○	●	●	○			
	TGF32R/L145–010	2.50							○	●	●	○			
	TGF32R/L150–010	2.50							○	●	●	○			
	TGF32R/L175–010	2.50							○	●	●	○			
	TGF32R/L185–010	2.50							○	●	●	○			
	TGF32R/L200–010	2.50							○	●	●	○			
	TGF32R/L250–010	2.50							○	●	●	○			
	TGF32R/L300–010	2.50							○	●	●	○			

Not: • Stokta tutulan önerilen kalite

Sığ kanal açma uçları



Genişlik	Ölçü (mm)			
	IC	S	d	r
125	12.7	1.25	4.4	0.1
125	12.7	1.25	4.4	0.2
150	12.7	1.50	4.4	0.1
150	12.7	1.50	4.4	0.2
200	12.7	2.00	4.4	0.1
200	12.7	2.50	4.4	0.2
250	12.7	2.50	4.4	0.1
250	12.7	2.50	4.4	0.2
300	12.7	3.00	4.4	0.1
300	12.7	3.00	4.4	0.2

Şekil	Tip	ap (maks./mm)	Kalite												
			CVD						PVD						
			AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
	GBA43R/L125-010	2.00							○	●	●	○			
	GBA43R/L125-020								○	●	●	○			
	GBA43R/L150-010	3.50							○	●	●	○			
	GBA43R/L150-020								○	●	●	○			
	GBA43R/L200-010								○	●	●	○			
	GBA43R/L200-020								○	●	●	○			
	GBA43R/L250-010	4.00							○	●	●	○			
	GBA43R/L250-020								○	●	●	○			
	GBA43R/L300-010								○	●	●	○			
	GBA43R/L300-020								○	●	●	○			

Not: • Stokta tutulan önerilen kalite

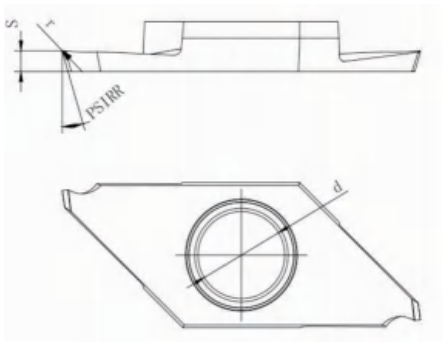
TKF	12	R	050	-	S	-	16D	R
Seri	Boyut	Kesme yönü	Genişlik		Talaş kırıcı		(PSIRR)	PSIRR yönü

Kesme yönü
- R: Sağ
- L: Sol

Talaş kırıcı
- S: S talaş kırıcı
- T: T talaş kırıcı (burun güçlendirilmiş)
- NB: talaş kırıcısız

PSIRR yönü
- R: Sağ

Özel kesme uçları



Genişlik	Ölçü (mm)			
	PSIRR	S	d	r
50	16°	0.50	5.2	0.03
70		0.70	5.2	0.03
100		1.00	5.2	0.03
125		1.25	5.2	0.03
150		1.50	5.2	0.03
200		2.00	5.2	0.03
50	0°	0.50	5.2	0.03
70		0.70	5.2	0.03
100		1.00	5.2	0.03
125		1.25	5.2	0.03
150		1.50	5.2	0.03
200		2.00	5.2	0.03
100	16°	1.00	5.2	0.08
150		1.50	5.2	0.08
200		2.00	5.2	0.08
100	0°	1.00	5.2	0.08
150		1.50	5.2	0.08
200		2.00	5.2	0.08

Şekil	Tip	ap (maks./mm)	Kalite												
			CVD						PVD						
			AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3605	AV3805	AV3625	AV3010	AV3825	AV4010	AV4525
	TKF12R/L050-S-16DR	5.00							○	●	●	○			
	TKF12R/L070-S-16DR	8.00							○	●	●	○			
	TKF12R/L100-S-16DR	12.00							○	●	●	○			
	TKF12R/L125-S-16DR	12.00							○	●	●	○			
	TKF12R/L150-S-16DR								○	●	●	○			
	TKF12R/L200-S-16DR								○	●	●	○			
	TKF12R/L050-S	5.00							○	●	●	○			
	TKF12R/L070-S	8.00							○	●	●	○			
	TKF12R/L100-S	12.00							○	●	●	○			
	TKF12R/L125-S								○	●	●	○			
	TKF12R/L150-S								○	●	●	○			
	TKF12R/L200-S								○	●	●	○			
	TKF12R/L100-T-16DR								○	●	●	○			
	TKF12R/L150-T-16DR								○	●	●	○			
	TKF12R/L200-T-16DR								○	●	●	○			
	TKF12R/L100-T								○	●	●	○			
	TKF12R/L150-T								○	●	●	○			
	TKF12R/L200-T								○	●	●	○			

Not: • Stokta tutulan önerilen kalite

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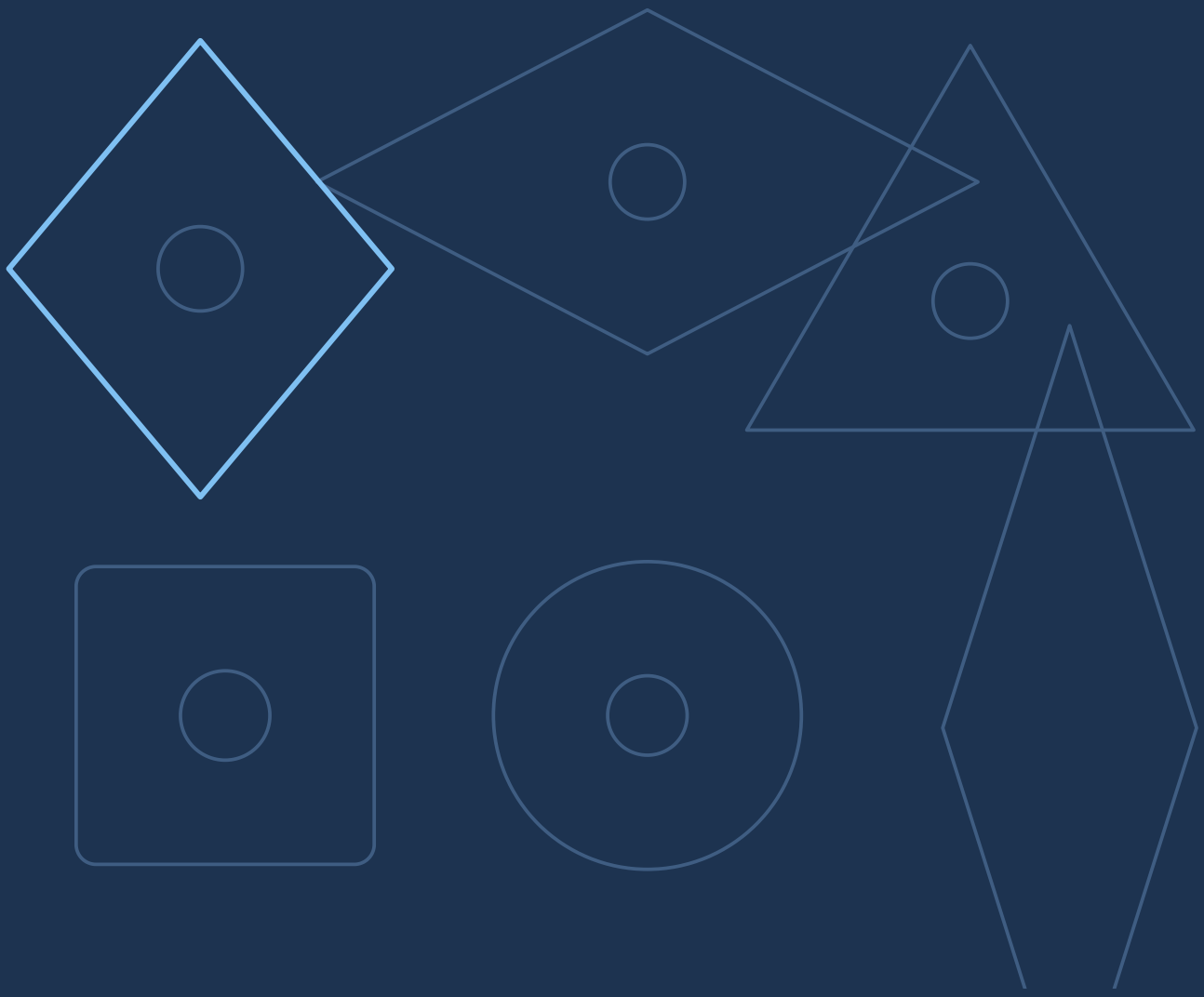
F

BÖLÜM F

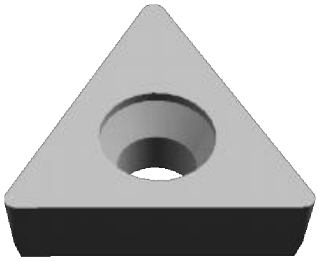
Özel uygulama uçları

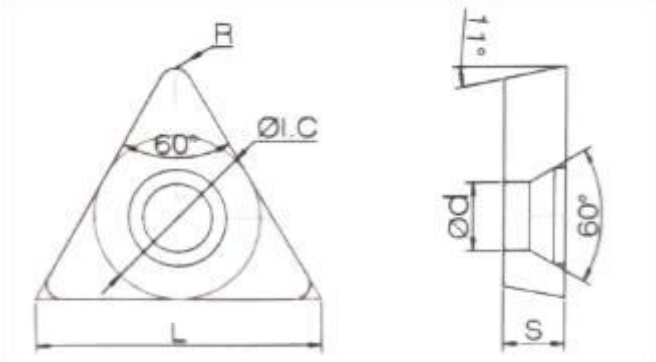
Alüminyum ingot frezeleme ve özel sektör uygulamaları için uçlar.

Sayfa F-01 – F-06



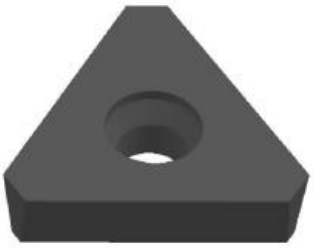
TPEW

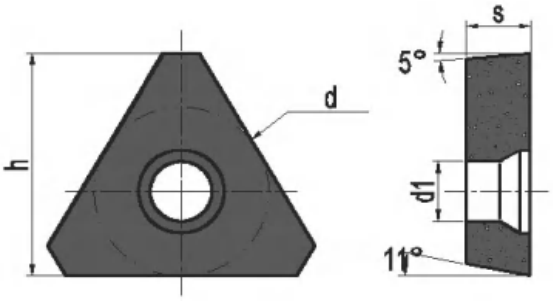




Tanım	Ölçüler (mm)			
	L	ΦI.C	S	Φd
TPEW270612	27.50	15.88	6.35	6.5
TPEW330716	33.00	19.05	7.00	6.6

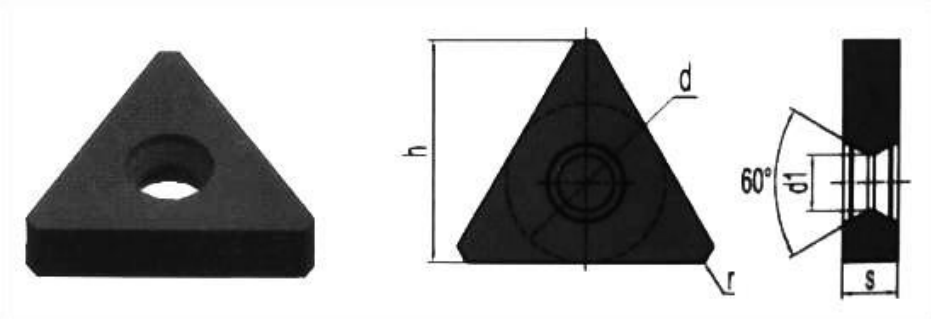
TPHW





Tanım	Ölçüler (mm)			
	L	ΦI.C	S	Φd
TPHW220412	22.0	12.70	4.76	5.16
TPHW2306-Z	23.5	17.78	6.35	6.35
TPHW2507-Z	25.4	19.05	7.00	6.60
TPHW3007-Z	30.5	21.00	7.94	6.60
TPHW330716	33.0	19.05	7.00	6.60

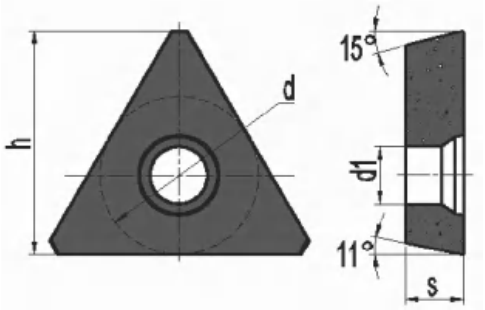
TNHW



Tanım	Ölçüler (mm)				
	d	h	s	d1	r
TNHW330704	19.05	25	7.00	6.7	0.4

TPCW

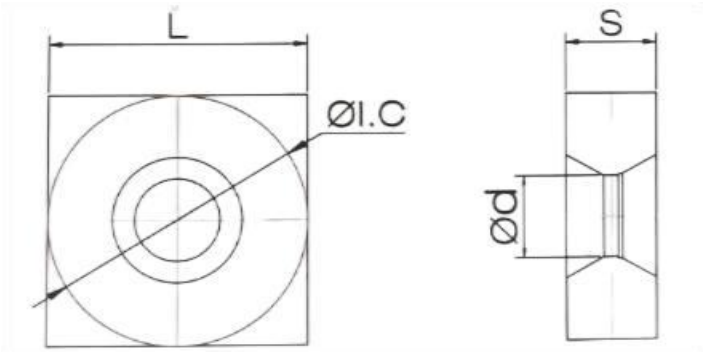




Tanım	Ölçüler (mm)			
	d	h	s	d1
TPCW3207DDN	19.05	27	7.00	6.6

SNEQ

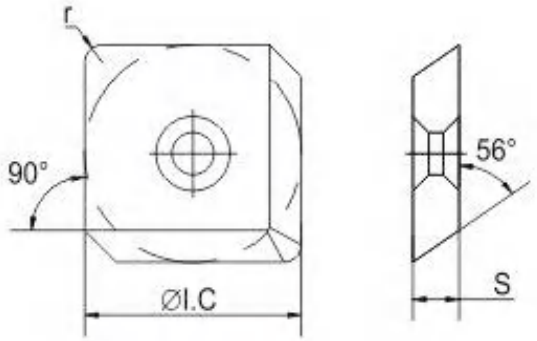




Tanım	Ölçüler (mm)			
	L	ΦI.C	S	Φd
SNEQ2007-Z	20.0	20.0	7.00	6.6
SNEQ2008-Z	20.0	20.0	8.00	6.6
SNEQ2207-Z	22.0	22.0	7.94	6.6

Alüminyum ingot frezeleme uçları

SX uçları



Ölçü (mm)		
I.C	S	r
30.5	8	3
37.5	8	3

Şekil	Tip	Kesme derinliği (mm)	İlerleme (mm/dev)	YK101
	SXET37.508R3-LH	3-16	0.1-0.45	•
	SXET30.508R3-LH	2-12	0.1-0.45	•

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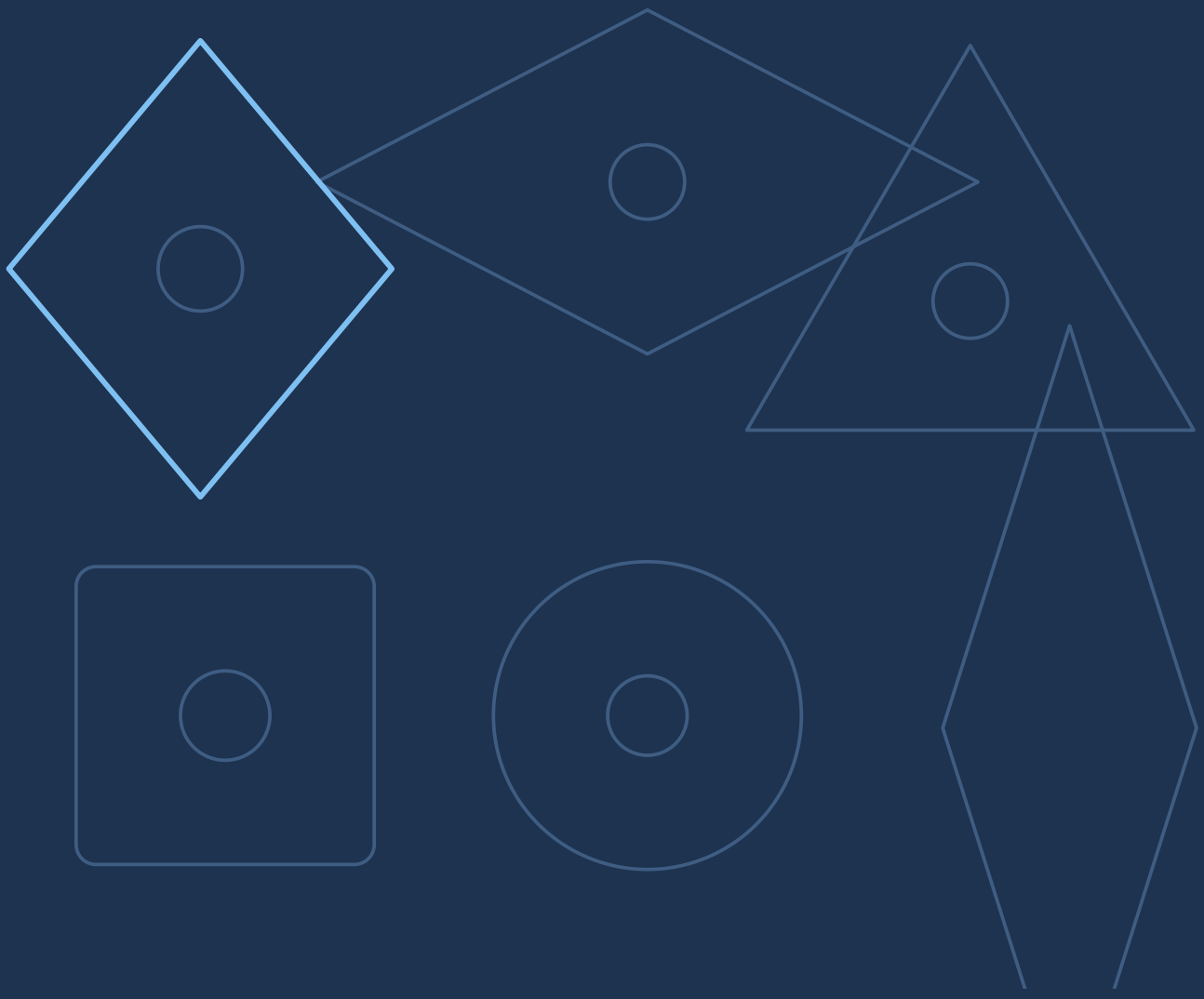
G

BÖLÜM G

Tornalama uçları

Negatif ve pozitif tornalama uçları, talaş kırıcılar, CVD ve PVD kaliteler.

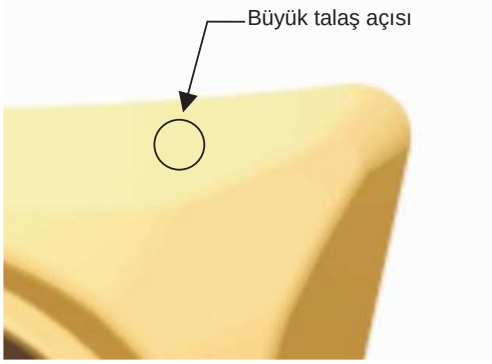
Sayfa G-01 – G-87



Talaş kırıcı özellikleri -FL

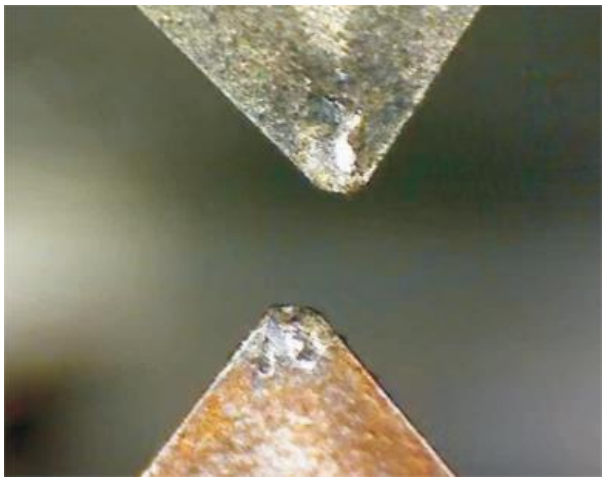
- Çevresi hassas taşlanmış, yüksek konumlama hassasiyeti
- Büyük talaş açısı çok keskin bir kenar yapısı sağlar
- Keskin kesme kenarı düşük kesme kuvveti sağlar; geniş kenar bandı kenarın keskinliğini korur ve iyi talaş kırma sağlar
- Yüzey parlatma işlemi ve akıcı talaş tahliyesi mükemmel yüzey kalitesi sağlar





Örnek 1

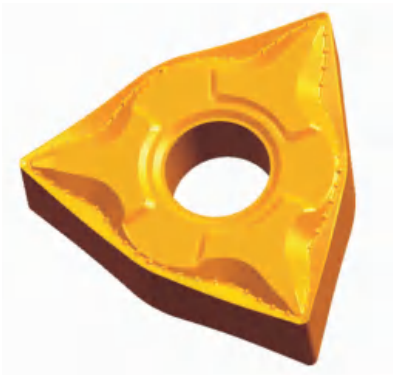
İş parçası: Uçak parçaları
İş parçası malzemesi: GH4169
Tezgâh: yatay torna
Avedon ucu: CCGT09T302-FL
Karşılaştırılan uç: CCGT09T302, yabancı marka
İşlem: Tornalama
Kesme parametreleri: Vc 40 m/dk, f 0,15 mm/dev, ap 0,1 mm
Sonuç: Aynı parametrelerle 1 saatlik işlemden sonra ucumuz ile karşılaştırılan ucun aşınması çok yakın, ömürleri benzer. Ucumuzun fiyat/performans oranı yüksektir.

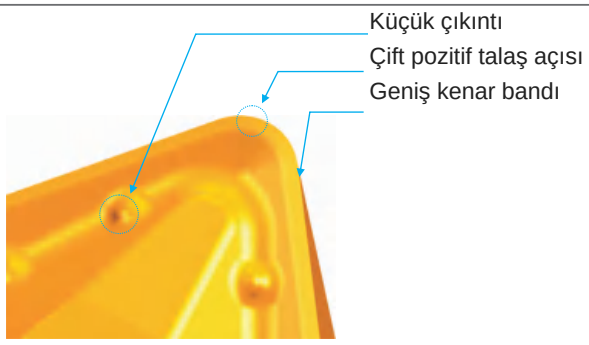


Paslanmaz Çelik İçin Kesici Çözümler

1 Paslanmaz çelik finiş talaş kırıcısı -BF

- Çift büyük pozitif talaş açısı, kenarın keskinliğini tam olarak sağlar
- Küçük çıkıntılar talaş kırmayı kolaylaştırır
- Büyük kesme kenarı eğimi talaş akışını çok iyi yönlendirir
- Düşük kesme direnci, işlenen parçada yüksek yüzey kalitesi

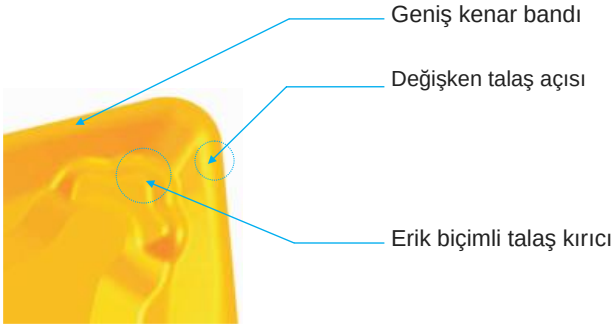




2 Paslanmaz çelik yarı finiş talaş kırıcısı -BM

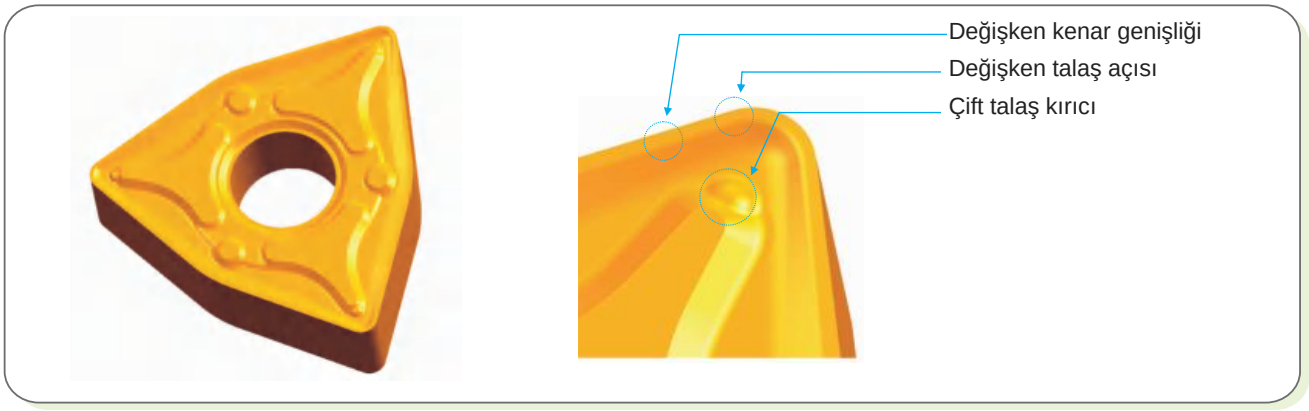
- Değişken kenar genişliği ve değişken talaş açısının birleşimi, kesme kenarının hem keskinliğini hem dayanımını gözetir
- Erik biçimli talaş kırıcı yapısı, ucun talaş kırma aralığını genişletir
- Paslanmaz çeliğin yarı finiş işlemesine uygundur

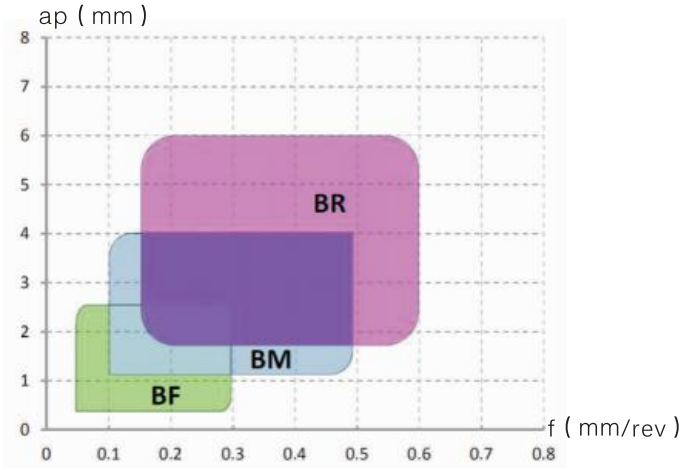




3 Paslanmaz çelik kaba işleme talaş kırıcısı -BR

- Değişken kenar genişliği ve değişken talaş açısı tasarımı, kenarın keskinliğini ve dayanımını birlikte gözetir
- Büyük talaş kırıcı ve talaş cebi tasarımı mükemmel talaş kırma sağlar
- Çift talaş kırıcı tasarımı talaş kırma aralığını genişletir
- Paslanmaz çeliğin yarı finişten kaba işlemesine uygundur





Örnek 1

İş parçası malzemesi: paslanmaz çelik SUS304
İş parçası: Flanş
Soğutma: Sıvı soğutma
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: WNMG080408-BR
Kesme parametresi: Vc 153 m/dk, f 0,2 mm/dev, ap 1–2 mm
Sonuç: Delik büyütmede, düzensiz talaş payıyla ucumuz 48 parça, yabancı marka 41 parça işledi; takım ömrü %17 arttı ve fiyat/performans avantajı sağlandı.

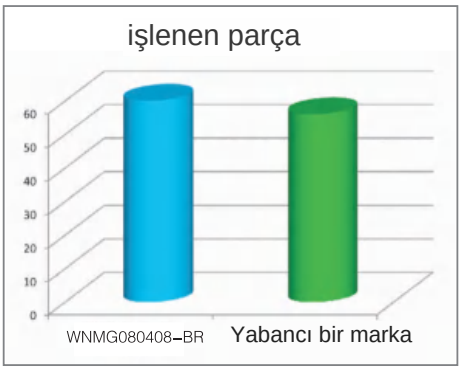






Örnek 2

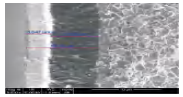
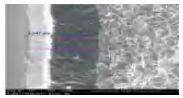
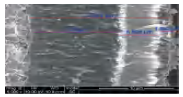
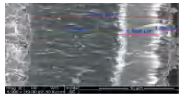
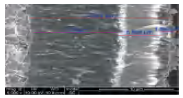
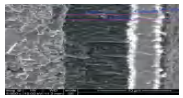
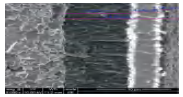
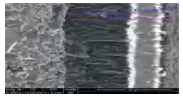
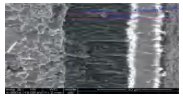
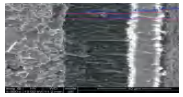
İş parçası malzemesi: paslanmaz çelik SUS304
İş parçası: Flanş
Soğutma: Sıvı soğutma
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: WNMG080408-BR
Kesme parametresi: Vc 170 m/dk, f 0,2 mm/dev, ap 1–1,5 mm
Sonuç: Paslanmaz çelik flanş alın yüzeyi işlemede ucumuz 69 parça, yabancı marka 56 parça işledi; takım ömrü %23 arttı, avantaj belirgin ve müşteri çok memnun.



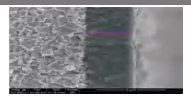
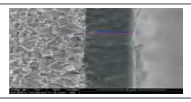
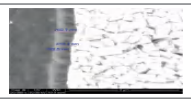
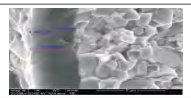
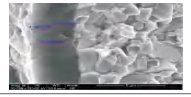
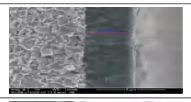
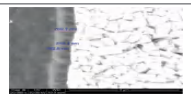
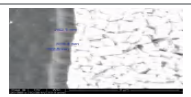
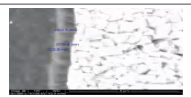
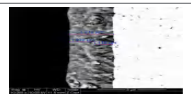
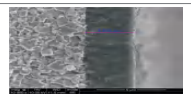




CVD Kaplama Özellikleri

ISO	Kalite	Renk	Kaplama yapısı		Elektron mikroskobu görüntüleri	Özellikler / uygulama
K Dökme demir	AV2330	Siyah	$TiCN+Al_2O_3$			Yüksek sertlikte alt malzeme, ince CVD kaplama, mükemmel aşınma direnci. Kararlı çalışma koşullarında gri dökme demir ve sfero dökümün frezelenmesi.
	AV2340	Siyah	$TiCN+Al_2O_3$			Yüksek tokluklu alt malzeme, ince CVD kaplama, kenar kırılmasına karşı mükemmel direnç. Özellikle zorlu koşullarda dökme demirin kaba frezelenmesi.
	AV2115	Siyah	$TiCN+Al_2O_3$			Aşınmaya son derece dayanıklı, optimize edilmiş malzeme; nano kalın film CVD kaplama. Gri dökme demir ve sfero dökümün sürekli veya hafif kesintili tornalanması.
	AV2205	Siyah	$TiCN+Al_2O_3$			MT-CVD kaplı; mükemmel sertlikte süper ince taneli alt malzeme ile ekstra kalın Al2O3 kaplama, pürüzsüz yüzey. Gri dökme demirin yüksek hızda tornalanması ve frezelenmesi için uygundur.
	AV2215	Siyah	$TiCN+Al_2O_3$			Aşınmaya yüksek dirençli alt malzeme; MT-TiCN, süper Al2O3 ve TiCN kaplamayı birleştiren yeni nesil kaplama prosesi. Sfero ve dövme dökme demir için ilk tercih; yüksek kesme hızına izin verir.
P Çelik	AV1315	Sarı siyah	$TiCN+Al_2O_3+$ (TiN)			Plastik deformasyona dayanıklı, aşınmaya dirençli alt malzeme; yüksek bağlanma kuvvetli güçlü ve tok kaplama. Çeliğin finişten kabaya yüksek hızlı, verimli tornalanması.
	AV1325	Sarı siyah	$TiCN+Al_2O_3+$ (TiN)			Aşınma ve kenar kırılması direncini birleştiren alt malzeme, mükemmel yapışmalı tok kaplama. Çeliğin kesintili ve genel tornalanmasında ilk tercih.
	AV1335	Sarı siyah	$TiCN+Al_2O_3+$ (TiN)			Yüksek tokluklu alt malzeme, yüksek bağlanma kuvvetli güçlü ve tok kaplama, çok yüksek işlem güvenliği. Çeliğin ağır kaba işlenmesi ve kesintili tornalanması.
	AV1315A	Sarı siyah	$TiCN+Al_2O_3+TiN$			Yüksek tokluklu alt malzeme, yüksek bağlanma dayanımlı güçlü ve tok kaplama, çok yüksek işlem güvenliği. Çelik parçaların ağır yükte işlenmesi ve kesintili tornalanması.
	AV1325A	Sarı siyah	$TiCN+Al_2O_3+TiN$			Geliştirilmiş performans: aşınma ve kenar kırılması direncini birleştiren alt malzeme, güçlü ve tok kaplama; plastik deformasyon ve krater aşınması direnci artırıldı. Çelik parçaların kesintili ve genel tornalanmasında daha uzun ömür; ağır kaba işlemeye de uygundur.

PVD Kaplama Özellikleri

ISO	Kalite	Renk	Kaplama yapısı		Elektron mikroskobu görüntüleri	Özellikler / uygulama
P Çelik	AV3015	Siyah	AlTiN			Abrazif aşınmaya dayanıklı mikron altı alt malzeme, yüksek alüminyum içerikli kaplama. Dökme demir ve çelik parçaların kararlı frezelenmesi.
	AV3025	Siyah	AlTiN			Sertlik ve tokluğu dengeleyen alt malzeme, yüksek alüminyum içerikli kaplama. Dökme demir, çelik ve paslanmaz çeliğin genel frezelenmesi; yüksek işlem güvenliği.
	AV3825	Bronz	AlTiMeN			Ultra ince taneli alt malzeme, yüksek ısı direnci ve tokluklu yeni nano kompozit kaplama. Dökme demir, çelik ve paslanmaz çeliğin genel frezelenmesi; üstün aşınma direnci. Paslanmaz çelik tornalamada ek kalite.
M Paslanmaz çelik	AV3805	Bronz	AlTiMeN			Orta kobaltlı, ultra ince taneli sert metal alt malzeme; yüksek sertlikte nano kompozit PVD kaplama. Tok alt malzeme ile aşınmaya dayanıklı yüzey kaplamasının ideal birleşimi; üstün genel performans.
	AV3824	Bronz	AlTiMeN			Tokluğu ve sıcak sertliği artırılmış ultra ince taneli alt malzeme, son nesil aşınma dirençli kaplama. Çelik, paslanmaz çelik ve ısıya dayanıklı alaşımların verimli frezelenmesi; paslanmaz çelik tornalamaya da uygundur.
	AV3525	Mor siyah	AlTiMeN			Ultra ince taneli alt malzeme, nano çok katmanlı kaplama; iyi aşınma ve oksidasyon direnci. Çelik ve paslanmaz çeliğin kararlı, uzun ömürlü frezelenmesi.
	AV3825	Bronz	AlTiMeN			Ultra ince taneli alt malzeme, yüksek ısı direnci ve tokluklu yeni nano kompozit kaplama. Dökme demir, çelik ve paslanmaz çeliğin genel frezelenmesi; üstün aşınma direnci. Paslanmaz çelik tornalamada ek kalite.
S Isıya dayanıklı alaşım	AV3605	Bronz	AlTiSiN			Düşük kobaltlı, ince taneli, aşınma ve ısıya dayanıklı alt malzeme; yüksek enerjili darbeli magnetron sıçratma ile kaplanmış, yüksek yapışmalı kaplama. Isıya dayanıklı ve titanyum alaşımlarının sürekli, kararlı koşullarda tornalanması.
	AV4010	Bronz	AlTiSiN			Bağlayıcı fazla güçlendirilmiş süper ince taneli alt malzeme, mükemmel ısı ve aşınma direnci; HIPIMS kaplama, yüksek yapışma. Isıya dayanıklı alaşımlar ve sert malzemelerin finiş / yarı finiş tornalanması, genel frezeleme.
	AV4525	Mor siyah	AlTiMeN			Isıya dayanıklı alaşımlar için ısı direnci ve tokluğu optimize edilmiş süper ince taneli alt malzeme; aşınma ve oksidasyon direnci yüksek nano çok katmanlı kaplama. Isıya dayanıklı alaşımların genel işlenmesinde tercih edilen kalite.
	AV4025	Siyah	AlTiN			Güçlendirilmiş süper tok alt malzeme, yüksek alüminyumlu kaplama, yüksek fiyat/performans. Buhar türbini kanatlarının verimli kaba frezelenmesi, uzun ömürlü kuru kesme; ısıya dayanıklı alaşımlara da uygundur.

Önerilen Tornalama Ucu Kaliteleri

ISO		CVD			PVD		
K Dökme demir	01						
	10		AV2115				
	20						
	30						
	40						
P Çelik	01	AV1315A		AV1315			
	10						
	20	AV1325A		AV1325			
	30		AV1335				
	40						
M Paslanmaz çelik	01				AV3805		
	10						
	20					AV3824	AV1525 AV3825
	30						
	40						
S Isıya dayanıklı alaşım	01				AV3605	AV4010	
	10						
	20						AV3824 AV4525
	30						
	40						

Genel Tornalama Uçları

No	Uygulama	Talaş kırıcı	Uç özelliği / şekli
1	Çelik Finiş	AF	P tipi malzeme · Finiş
			M sınıfı çift taraflı talaş kırıcı; iki kademeli çıkıntı, geniş ilerleme aralığında kararlı talaş kontrolü sağlar.
2	Çelik Yarı finiş	AS	P tipi malzeme · Yarı finiş
			M sınıfı çift taraflı talaş kırıcı, negatif pah tasarımı, yüksek kenar dayanımı; kararsız çalışma koşullarında yarı finiş için uygundur.
3	Çelik Orta işleme	AM	P tipi malzeme · Orta işleme
			Çift açılı kesme kenarı sayesinde düşük kesme direnci; değişken genişlik tasarımı keskinlik ve dayanım sağlar.
4	Çelik Kaba işleme	AG	P tipi malzeme · Kaba işleme
			Hafif yüklü kaba işlemede tercih edilen talaş kırıcı; geniş kenar bandı, iyi kenar dayanımı, yüksek talaş kaldırma, iyi aşınma direnci ve takım ömrü.
5	Çelik Ağır kaba işleme	AG (tek taraflı)	P tipi malzeme · Ağır kaba işleme
			M sınıfı tek taraflı talaş kırıcı, negatif pah tasarımı; büyük kesme derinliği ve yüksek ilerlemede yüksek kenar dayanımı ve talaş kaldırma sağlar.

Genel Tornalama Uçları

No	Uygulama	Talaş kırıcı	Uç özelliği / şekli
6	Paslanmaz çelik Finiş	BF	M tipi malzeme · Finiş
			M sınıfı çift taraflı talaş kırıcı; dar kenar bandı ve çift pozitif talaş açısı, keskin kesme kenarı, düşük kesme direnci. Özel kenar eğimi tasarımıyla yüksek yüzey kalitesi.
7	Paslanmaz çelik Yarı finiş	BM	M tipi malzeme · Yarı finiş
			M sınıfı çift taraflı talaş kırıcı, çift pozitif talaş açısı, yüksek kenar dayanımı; paslanmaz çeliğin genel işlenmesinde geniş kullanım.
8	Paslanmaz çelik Kaba işleme	BR	M tipi malzeme · Kaba işleme
			M sınıfı çift taraflı talaş kırıcı; değişken kenar genişliği ve değişken talaş açısı. Paslanmaz çeliğin yarı finiş ve kaba işlenmesine uygundur.
9	Yüksek sıcaklık alaşımı Yarı finiş	DM	S tipi malzeme · Yarı finiş
			M sınıfı çift taraflı talaş kırıcı. Çift pozitif talaş açısı keskinlik ile dayanımı birleştirir, kesme direnci düşüktür. Geniş talaş kırıcı talaşa yeterli alan bırakır, kanal aşınmasını azaltır.

Genel İç Çap Tornalama Uçları

No	Uygulama	Talaş kırıcı	Uç özelliği / şekli
10	Genel Yarı finiş	GM	Genel talaş kırıcı
			M sınıfı tek taraflı talaş kırıcı; P, M ve K tipi malzemelerde iç delik ve dış çapın yarı finiş işlenmesine uygundur.
11	Paslanmaz çelik Finiş	GF	M tipi malzeme · Finiş
			M sınıfı tek taraflı talaş kırıcı; paslanmaz çelikte iç delik ve dış çap finiş işlemine uygundur.

Özel Tornalama Uçları

No	Uygulama	Talaş kırıcı	Uç özelliği / şekli
12	Tren tekerleği poyra işleme	175.32 serisi	P tipi malzemede finiş için talaş kırıcı
			M sınıfı çift taraflı talaş kırıcı, dikey yerleşimli uç; özellikle tren tekerleği tornalama için uygundur.
13		RCMX serisi	P tipi malzemede ağır yüklü işleme için talaş kırıcı
			M sınıfı tek taraflı talaş kırıcı, negatif pah tasarımı, yüksek kenar dayanımı; profil işlemede ilk tercih.

Uç ve Talaş Kırıcı Önerileri

Finiş						
	CNMG–AF	DNMG–AF	SNMG–AF	TNMG–AF	VNMG–AF	WNMG–AF
Uzunluk	09/12	11/15	12	16/22	16	06/08
Sayfa	G-20	G-30	G-39	G-49	G-58	G-62
Finiş						
	CNMG–BF	DNMG–BF	SNMG–BF	TNMG–BF	VNMG–BF	WNMG–BF
Uzunluk	09/12	15	12	16	16	06/08
Sayfa	G-25	G-34	G-44	G-53	G-61	G-66
Yarı finiş						
	CNMG–AS	CNMG–AM	CNMG–BM	CNMG–CM	CNMG–DM	DNMG–AS
Uzunluk	12/16/19	12/16/19	12/16	12/16	12	15
Sayfa	G-21	G-22	G-26	G-27	G-29	G-31
Yarı finiş						
	DNMG–AM	DNMG–BM	DNMG–CM	DNMG–DM	SNMG–AS	SNMG–AM
Uzunluk	15	15	15	15	12/15	12/15
Sayfa	G-32	G-35	G-37	G-38	G-40	G-41
Yarı finiş						
	SNMG–BM	SNMG–CM	SNMG–DM	TNMG–AS	TNMG–AM	TNMG–BM
Uzunluk	12/15	12/16	12/15	16/22	16/22	16/22
Sayfa	G-45	G-47	G-48	G-50	G-51	G-54

Uç ve Talaş Kırıcı Önerileri

Yarı finiş						
	TNMG–CM	VNMG–AS	VNMG–AM	VNMG–CM	WNMG–AS	WNMG–AM
Uzunluk	16	11/16	11/16	16	08	08
Sayfa	G-55	G-59	G-60	G-57	G-63	G-64
Yarı finiş						
	WNMG–BM	WNMG–CM	WNMG–DM			
Uzunluk	06/08	06/08	08			
Sayfa	G-67	G-69	G-70			
Kaba işleme						
	CNMG–AG	CNMG–BR	DNMG–AG	DNMG–BR	SNMG–AG	SNMG–BR
Uzunluk	12/16/19	12/16	15	15	12/15/19	12/15
Sayfa	G-23	G-28	G-33	G-36	G-42	G-46
Kaba işleme					Ağır kaba işleme	
	TNMG–AG	TNMG–BR	WNMG–AG	WNMG–BR		CNMM–AG
Uzunluk	16/22	16/22	06/08	06/08	Uzunluk	19/25
Sayfa	G-52	G-56	G-65	G-67		G-24
Ağır kaba işleme		Yarı finiş				
	SNMM–AG		CCMT–GM	DCMT–GM	SCMT–GM	TCMT–GM
Uzunluk	19/25	Uzunluk	06/09/12	07/11	09/12	09/11/16
Sayfa	G-43		G-71	G-73	G-75	G-77

Uç ve talaş kırıcı önerileri

M Finiş						
	CCMT–GF	DCMT–GF	SCMT–GF	TCMT–GF		
Uzunluk	06/09	07/11	09	09/11/16		
Sayfa	G-72	G-74	G-76	G-78		

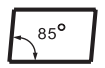
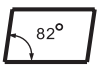
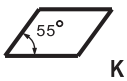
Yarı finiş						
	CCMT–DM	DCMT–DM	SCMT–DM	TCMT–DM		
Uzunluk	12	07/11	09	11		
Sayfa	G-80	G-81	G-82	G-83		

Tren tekerleği poyra işleme						
	RCMX	175.32–22	175.32–24	175.32–28		
Uzunluk	08/32	19	19	19		
Sayfa	G-84	G-85	G-86	G-87		

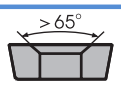
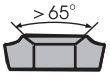
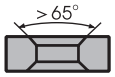
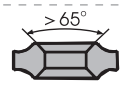
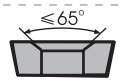
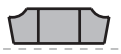
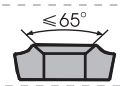
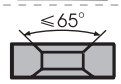
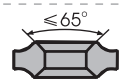
Kesme ve kanal açma					
	EDMN–C	EDMN–J	ECMN–T	MRMN–T	MGGN–GL
Uzunluk	2.0–5.0	2.0–5.0	3.0–6.0	3.0–6.0	2.0–5.0
Sayfa	G-90	G-91	G-92	G-93	G-94
Kesme Kanal açma					
	MRMN–M				
Uzunluk	2.0–8.0				
Sayfa	G-95				

Tornalama ucu kod anahtarı

1. Şekil

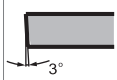
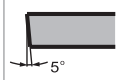
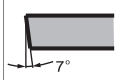
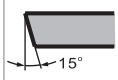
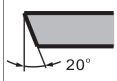
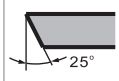
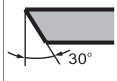
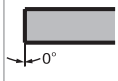
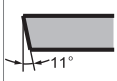
 A	 B	 C
 D	 E	 H
 K	 L	 M
 O	 P	 R
 S	 T	 T
 V	 W	Diğer Z

4. Talaş kırıcı ve delik

Kod	Merkez delik	Talaş kırıcı	Uç profili	Kod	Merkez delik	Talaş kırıcı	Uç profili
B	Y	N		N	N	N	
H	Y	Tek		R	N	Tek	
C	Y	N		F	N	Çift	
J	Y	Çift		A	Y	N	
W	Y	N		M	Y	Tek	
T	Y	Tek		G	Y	Çift	
Q	Y	N		X	---	---	Özel tip
U	Y	Çift					

C N M G

2. Boşluk açısı

Kod	Boşluk açısı	Kod	Boşluk açısı
A		B	
C		D	
E		F	
G		N	
P		O	Diğer

3. Tolerans

Kod	m(mm)	d=I.C	S (mm)
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.005	±0.05-±0.13	±0.025
K	±0.013	±0.05-±0.13	±0.025
L	±0.025	±0.05-±0.13	±0.025
M	±0.08-±0.18	±0.05-±0.13	±0.13
N	±0.08-±0.18	±0.05-±0.13	±0.025
U	±0.13-±0.38	±0.08-±0.25	±0.13

Yazılı daire	Normal üçgen	Kare	80° rombik	55° rombik	35° rombik	
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	---
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	---
12.7	±0.13	±0.13	±0.13	±0.15	---	---
15.875	±0.15	±0.15	±0.15	±0.18	---	---
19.05	±0.15	±0.15	±0.15	±0.18	---	---
25.4	---	±0.18	---	---	---	---

• Yazılı daire toleransı (mm)

Yazılı daire	Normal üçgen	Kare	80° rombik	55° rombik	35° rombik	
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	---
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
12.7	±0.08	±0.08	±0.08	±0.08	---	±0.08
15.875	±0.10	±0.10	±0.10	±0.10	---	±0.10
19.05	±0.10	±0.10	±0.10	±0.10	---	±0.10
25.4	---	±0.13	---	---	---	±0.13

Yazılı daire çapı (mm)	C	D	R	S	T	V	W	K
32.00			32					
31.75			31	32				
25.40			25	25				
25.00	25	25	25					
20.00			20					
19.05	19		19	19	33			
16.00		19	16					
15.875	16		15	15	27			
12.70	12	15	12	12	22	22	08	
12.00			12					
10.00			10					
9.525	09	11	09	09	16	16	06	16
8.00			08					
6.35	06	07			11	11		
6.00			06					
5.56					09			
5.50			05					
3.97					06			

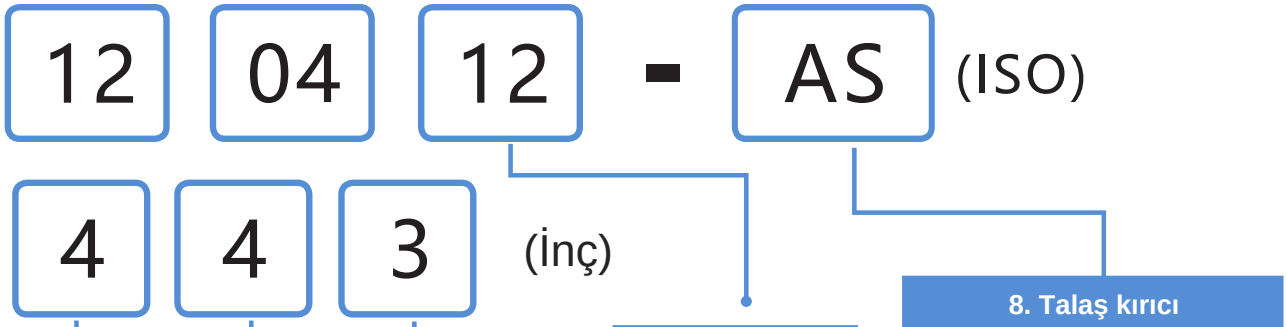
Uç şekli

5. Kesme kenarı uzunluğu

Kod	Kalınlık (mm)
12	12.70
10	11.11
T9	9.72
09	9.52
07	7.94
T6	6.75
06	6.35
05	5.56
T4	4.96
04	4.76
T3	3.97
03	3.18
T2	2.78
02	2.38
T1	1.98
01	1.59
T0	0.99
00	0.79



6. Kalınlık



5. Yazılı daire

Kod	Yazılı daire çapı (mm)
2	6.35
3	9.525
4	12.7
5	15.875
6	19.05
8	25.4

6. Kalınlık

Kod	Kalınlık (mm)
2	3.18
3	4.76
4	6.35
5	7.94
6	9.52

7. Köşe radyüsü

Kod	Köşe radyüsü (mm)
0	0.2
1	0.4
2	0.8
3	1.2
4	1.6
5	2.0
6	2.4

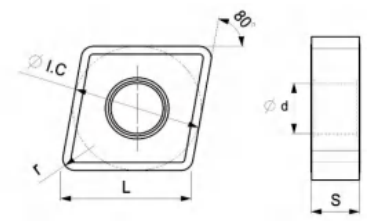
7. Köşe radyüsü

Kod	Köşe radyüsü (mm)
00	
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
32	3.2
X	
Uç çapı (metrik)	Yuvarlak uç

8. Talaş kırıcı

AF	AS	AG
BF	BM	BR
CM	DM	Tek taraflı

Negatif uçlar



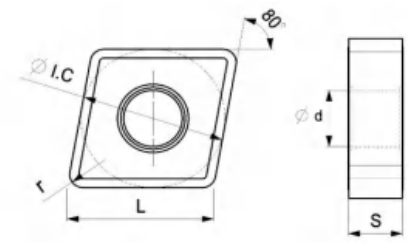
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	9.525	3.18	3.81	0.4–0.8
12	12.7	4.76	5.16	0.4–1.2

80° CN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Finiş	CNMG090304–AF	0.26–3.2	0.05–0.15				●	○								
	CNMG090308–AF	0.52–3.2	0.1–0.30				●	○								
	CNMG120404–AF	0.26–3.2	0.05–0.15				●	○								
	CNMG120408–AF	0.52–3.2	0.1–0.30				●	○								
	CNMG120412–AF	0.78–3.2	0.15–0.45				●	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



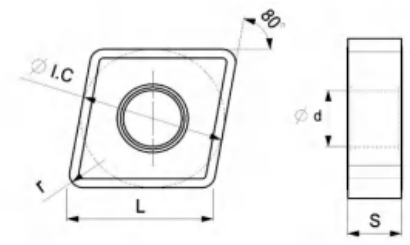
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.6
16	15.875	6.35	6.35	0.8–1.6
19	19.05	6.35	7.94	0.8–1.6

80° CN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Yarı finiş	CNMG120404–AS	0.60–6.40	0.10–0.30				○	●	○							
	CNMG120408–AS	1.20–6.40	0.20–0.60				○	●	○							
	CNMG120412–AS	1.80–6.40	0.30–0.90				○	●	○							
	CNMG120416–AS	2.40–6.40	0.12–0.40				○	●	○							
	CNMG160608–AS	1.20–8.10	0.10–0.30				○	●	○							
	CNMG160612–AS	1.80–8.10	0.20–0.60				○	●	○							
	CNMG160616–AS	2.40–8.10	0.30–0.90				○	●	○							
	CNMG190608–AS	1.20–9.70	0.20–0.60				○	●	○							
	CNMG190612–AS	1.80–9.70	0.30–0.90				○	●	○							
	CNMG190616–AS	2.40–9.70	0.40–1.20				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



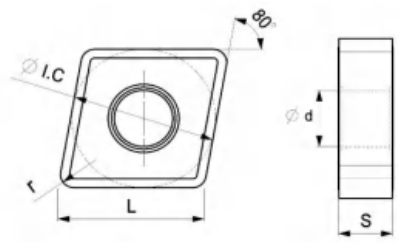
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.6
16	15.875	6.35	6.35	0.8–1.6
19	19.05	6.35	7.94	0.8–1.6

80° CN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Orta işleme	CNMG120404–AM	0.4–5.5	0.10–0.30				○	●	○							
	CNMG120408–AM	0.5–5.5	0.15–0.50				○	●	○							
	CNMG120412–AM	0.8–5.5	0.18–0.60				○	●	○							
	CNMG120416–AM	1.0–5.5	0.23–0.65				○	●	○							
	CNMG160608–AM	0.5–7.2	0.15–0.50				○	●	○							
	CNMG160612–AM	0.8–7.2	0.18–0.60				○	●	○							
	CNMG160616–AM	1.0–7.2	0.23–0.65				○	●	○							
	CNMG190608–AM	0.5–8.6	0.15–0.50				○	●	○							
	CNMG190612–AM	0.8–8.6	0.16–0.60				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



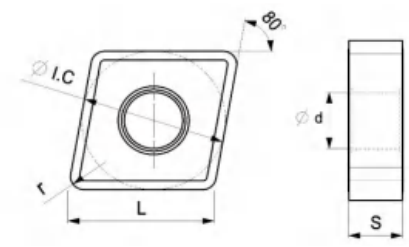
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.8–1.6
16	15.875	6.35	6.35	0.8–1.6
19	19.05	6.35	7.94	0.8–2.4

80°CN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Kaba işleme	CNMG120408–AG	1.45–5.20	0.15–0.32				○	●	●							
	CNMG120412–AG	2.15–5.20	0.25–0.50				○	●	●							
	CNMG120416–AG	2.90–5.20	0.30–0.65				○	●	●							
	CNMG160608–AG	1.45–6.40	0.15–6.35				○	●	●							
	CNMG160612–AG	2.15–6.40	0.24–0.50				○	●	●							
	CNMG160616–AG	2.90–6.40	0.30–0.65				○	●	●							
	CNMG190608–AG	1.45–7.70	0.15–0.35				○	●	●							
	CNMG190612–AG	2.15–7.70	0.25–0.50				○	●	●							
	CNMG190616–AG	2.90–7.70	0.30–0.65				○	●	●							
	CNMG190624–AG	4.30–7.70	0.45–0.95				○	●	●							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



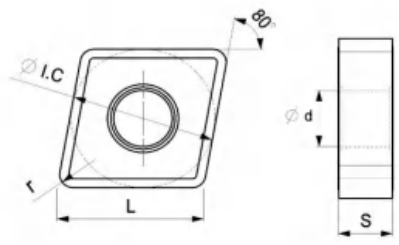
Uzunluk	Ölçü (mm)			
	IC	S	d	r
19	19.05	6.35	7.94	1.2–2.4
25	25.4	7.94–9.52	9.12	2.4–3.2

80° CN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Ağır kaba işleme	CNMM190612–AG	2.40–9.70	0.25–0.60				○	●	●							
	CNMM190616–AG	3.20–9.70	0.35–0.80				○	●	●							
	CNMM190624–AG	4.80–9.70	0.50–1.20				○	●	●							
	CNMM250724–AG	4.80–12.90	0.50–1.20				○	●	●							
	CNMM250924–AG	4.80–12.90	0.50–1.20				○	●	●							
	CNMM250932–AG	4.80–12.90	0.50–1.20				○	●	●							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



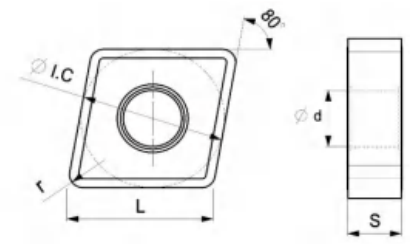
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	9.525	3.18	3.81	0.4–0.8
12	12.7	4.76	5.16	0.4–1.2
16	15.875	6.35	6.35	0.8–1.6

80°CN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	CNMG090304–BF	0.25–2.40	0.05–0.15								○	●	○	●		
	CNMG090308–BF	0.50–2.40	0.10–0.30								○	●	○	●		
	CNMG120404–BF	0.25–3.20	0.05–0.15								○	●	○	●		
	CNMG120408–BF	0.50–3.20	0.10–0.30								○	●	○	●		
	CNMG120412–BF	0.75–3.20	0.15–0.45								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



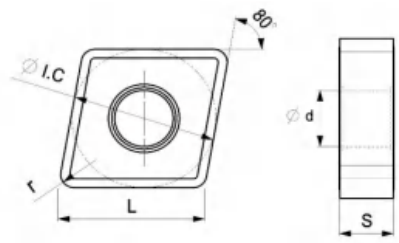
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.2
16	15.875	6.35	6.35	0.8–1.6

80° CN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Yarı finiş	CNMG120404–BM	0.30–4.30	0.08–0.25								○	○	○	●		
	CNMG120408–BM	0.65–4.30	0.15–0.45								○	○	○	●		
	CNMG120412–BM	0.95–4.30	0.20–0.65								○	○	○	●		
	CNMG160608–BM	0.65–5.30	0.15–0.45								○	○	○	●		
	CNMG160612–BM	0.95–5.30	0.25–0.65								○	○	○	●		
	CNMG160616–BM	1.30–5.30	0.30–0.90								○	○	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



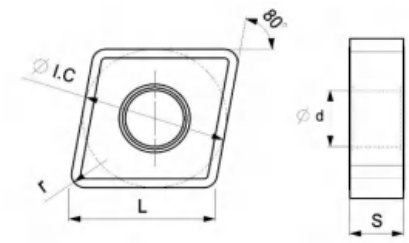
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.6
16	15.875	6.35	6.35	0.8–1.6
19	19.05	6.35	7.94	0.8–1.6

80° CN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 K Yarı finiş	CNMG120404–CM	0.40–4.30	0.08–0.25			●	○	○								
	CNMG120408–CM	0.80–4.30	0.15–0.45			●	○	○								
	CNMG120412–CM	1.20–4.30	0.20–0.65			●	○	○								
	CNMG160612–CM	1.20–5.30	0.25–0.65			●	○	○								
	CNMG160616–CM	1.60–5.30	0.30–0.90			●	○	○								
	CNMG190612–CM	1.20–6.40	0.25–0.65			●	○	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



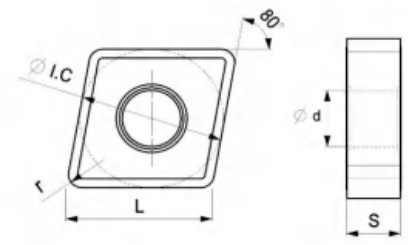
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.2
16	15.875	6.35	6.35	0.8–1.6

80° CN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Kaba işleme	CNMG120404–BR	0.30–4.30	0.08–0.25							○	○		○	●		
	CNMG120408–BR	0.65–4.30	0.15–0.45							○	○		○	●		
	CNMG120412–BR	0.95–4.30	0.25–0.65							○	○		○	●		
	CNMG160608–BR	0.65–5.30	0.15–0.45							○	○		○	●		
	CNMG160612–BR	0.95–5.30	0.25–0.65							○	○		○	●		
	CNMG160616–BR	1.25–5.30	0.30–0.90							○	○		○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



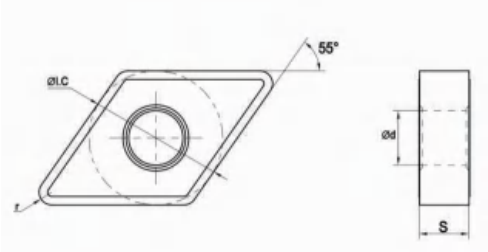
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–0.8
16	15.875	6.35	6.35	0.8–1.6
19	19.05	6.35	7.94	0.8–1.6

80° CN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 S Finiş	CNMG120404–DM	0.40–4.30	0.08–0.25						○			○		●	○	●
	CNMG120408–DM	0.80–4.30	0.15–0.45						○			○		●	○	●
	CNMG120412–DM	1.20–4.30	0.25–0.65						○			○		●	○	●
	CNMG120416–DM	1.60–4.30	0.30–0.90						○			○		●	○	●
	CNMG160608–DM	0.65–5.30	0.15–0.45						○			○		●	○	●
	CNMG160612–DM	0.95–5.30	0.25–0.65						○			○		●	○	●
	CNMG160616–DM	1.25–5.30	0.30–0.90						○			○		●	○	●
	CNMG190608–DM	0.65–5.30	0.15–0.45						○			○		●	○	●
	CNMG190612–DM	0.95–5.30	0.25–0.65						○			○		●	○	●
	CNMG190616–DM	1.25–5.30	0.30–0.90						○			○		●	○	●

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



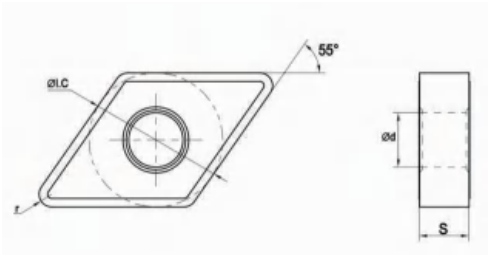
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76	5.16	0.8–1.2
15	12.7	6.35	5.16	0.4–1.2

55° DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Finiş	DNMG150404–AF	0.26–3.1	0.05–0.15				●	○								
	DNMG150408–AF	0.52–3.1	0.10–0.30				●	○								
	DNMG150412–AF	0.78–3.1	0.15–0.45				●	○								
	DNMG150604–AF	0.26–3.1	0.05–0.15				●	○								
	DNMG150608–AF	0.52–3.1	0.10–0.30				●	○								
	DNMG150612–AF	0.78–3.1	0.15–0.45				●	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



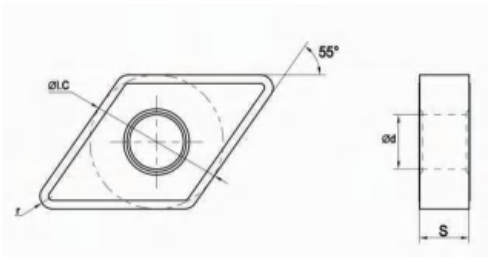
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76–6.35	5.16	0.4–1.2

55° DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Yarı finiş	DNMG150404–AS	0.60–5.40	0.10–0.30				○	●	○							
	DNMG150408–AS	1.20–5.40	0.20–0.60				○	●	○							
	DNMG150412–AS	1.80–5.40	0.30–0.90				○	●	○							
	DNMG150604–AS	0.60–5.40	0.10–0.30				○	●	○							
	DNMG150608–AS	1.20–5.40	0.20–0.60				○	●	○							
	DNMG150612–AS	1.80–5.40	0.30–0.90				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



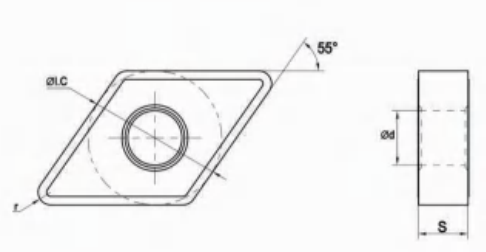
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76–6.35	5.16	0.4–1.2

55° DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Orta işleme	DNMG150404–AM	0.4–6.0	0.10–0.3				○	●	○							
	DNMG150408–AM	0.5–6.0	0.15–0.5				○	●	○							
	DNMG150412–AM	0.8–6.0	0.18–0.6				○	●	○							
	DNMG150604–AM	0.4–6.0	0.10–0.3				○	●	○							
	DNMG150608–AM	0.5–6.0	0.15–0.5				○	●	○							
	DNMG150612–AM	0.8–6.0	0.18–0.6				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



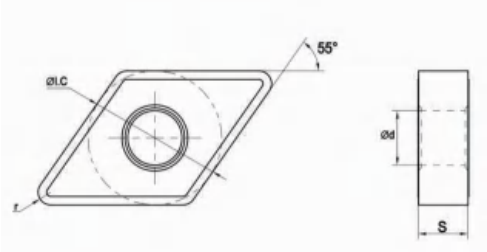
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76–6.35	5.16	0.8–1.2

55°DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Kaba işleme	DNMG150408–AG	0.80–4.0	0.15–0.50				○	●	●							
	DNMG150412–AG	1.20–4.0	0.15–0.65				○	●	●							
	DNMG150608–AG	0.80–4.0	0.15–0.50				○	●	●							
	DNMG150612–AG	1.20–4.0	0.15–0.65				○	●	●							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



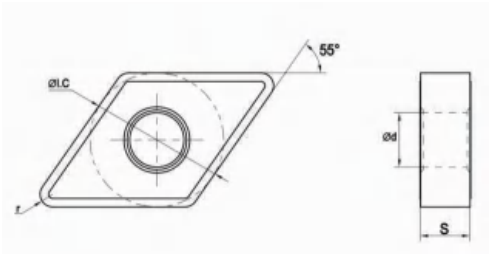
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76–6.35	5.16	0.4–1.2

55° DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	DNMG150404–BF	0.25–2.90	0.05–0.15								○	●	○	●		
	DNMG150408–BF	0.50–2.90	0.10–0.30								○	●	○	●		
	DNMG150412–BF	0.75–2.90	0.15–0.45								○	●	○	●		
	DNMG150604–BF	0.25–2.90	0.05–0.15								○	●	○	●		
	DNMG150608–BF	0.50–2.90	0.10–0.30								○	●	○	●		
	DNMG150612–BF	0.75–2.90	0.15–0.45								○	●	○	●		
M Finiş																

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



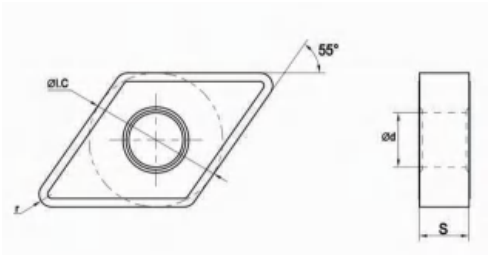
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76–6.35	5.16	0.4–1.2

55°DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite											
				CVD						PVD					
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	DNMG150404–BM	0.30–3.90	0.08–0.25								○	○	○	●		
	DNMG150408–BM	0.65–3.90	0.15–0.45								○	○	○	●		
	DNMG150412–BM	0.95–3.90	0.25–0.65								○	○	○	●		
	DNMG150604–BM	0.30–3.90	0.08–0.20								○	○	○	●		
	DNMG150608–BM	0.65–3.90	0.15–0.45								○	○	○	●		
	DNMG150612–BM	0.95–3.90	0.25–0.65								○	○	○	●		
M Yarı finiş																

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



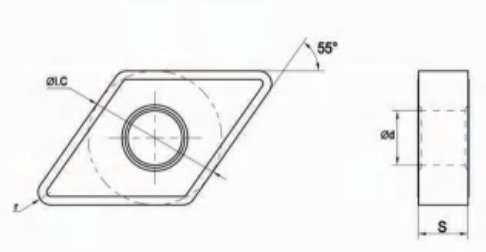
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76–6.35	5.16	0.4–1.2

55° DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Kaba işleme	DNMG150404–BR	0.30–3.90	0.08–0.25							○	○		○	●		
	DNMG150408–BR	0.65–3.90	0.15–0.45							○	○		○	●		
	DNMG150412–BR	0.95–3.90	0.25–0.65							○	○		○	●		
	DNMG150604–BR	0.30–3.90	0.08–0.20							○	○		○	●		
	DNMG150608–BR	0.65–3.90	0.15–0.45							○	○		○	●		
	DNMG150612–BR	0.95–3.90	0.25–0.65							○	○		○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



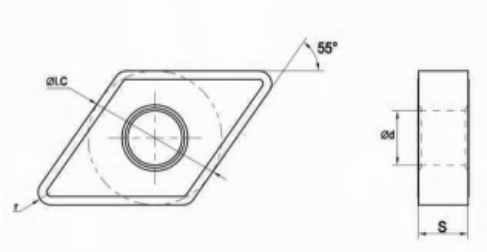
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	6.35	5.16	0.8–1.2

55°DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 K Yarı finiş	DNMG150404–CM	0.40–3.90	0.08–0.25			●	○	○								
	DNMG150408–CM	0.80–3.90	0.15–0.45			●	○	○								
	DNMG150412–CM	1.20–3.90	0.25–0.65			●	○	○								
	DNMG150604–CM	0.40–3.90	0.08–0.20			●	○	○								
	DNMG150608–CM	0.80–3.90	0.15–0.45			●	○	○								
	DNMG150612–CM	1.20–3.90	0.25–0.65			●	○	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



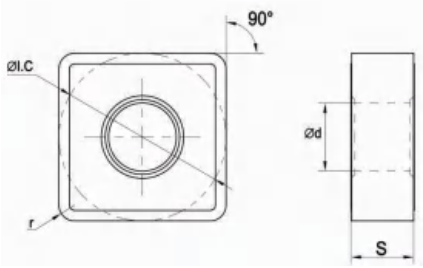
Uzunluk	Ölçü (mm)			
	IC	S	d	r
15	12.7	4.76–6.35	5.16	0.4–1.2

55° DN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 S Yarı finiş	DNMG150404–DM	0.40–3.90	0.08–0.25						○			○		●	○	●
	DNMG150408–DM	0.80–3.90	0.15–0.45						○			○		●	○	●
	DNMG150412–DM	1.20–3.90	0.25–0.65						○			○		●	○	●
	DNMG150604–DM	0.40–3.90	0.08–0.20						○			○		●	○	●
	DNMG150608–DM	0.80–3.90	0.15–0.45						○			○		●	○	●
	DNMG150612–DM	1.20–3.90	0.25–0.65						○			○		●	○	●

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



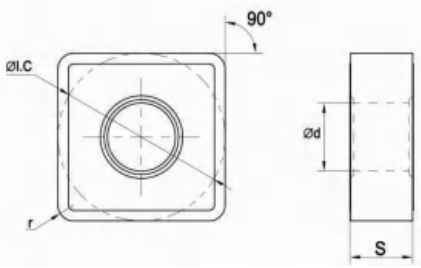
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.8–1.2

90° SN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Finiş	SNMG120404–AF	0.26–3.2	0.05–0.15				●	○								
	SNMG120408–AF	0.52–3.2	0.10–0.30				●	○								
	SNMG120412–AF	0.78–3.2	0.15–0.45				●	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



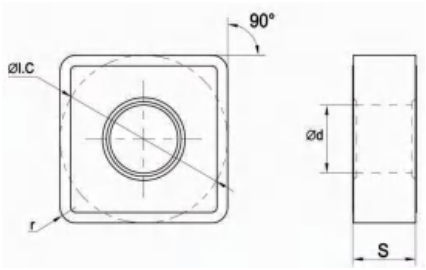
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.8–1.6
15	15.875	6.35	6.35	0.8–1.2

90° SN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Yarı finiş	SNMG120404–AS	1.00–5.00	0.12–0.40				○	●	○							
	SNMG120408–AS	1.20–5.00	0.15–0.55				○	●	○							
	SNMG120412–AS	1.50–5.00	0.20–0.55				○	●	○							
	SNMG150612–AS	2.00–7.00	0.30–0.65				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



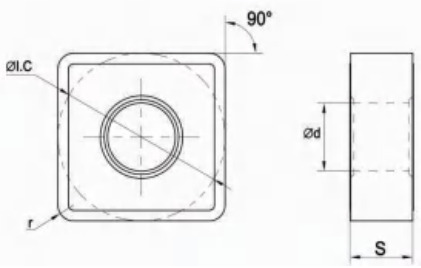
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.8–1.6
15	15.875	6.35	6.35	0.8–1.2

90° SN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Orta işleme	SNMG120404–AM	0.4–6.0	0.10–0.3				○	●	○							
	SNMG120408–AM	0.5–6.0	0.15–0.5				○	●	○							
	SNMG120412–AM	0.8–6.0	0.18–0.6				○	●	○							
	SNMG150612–AM	0.8–7.5	0.18–0.6				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



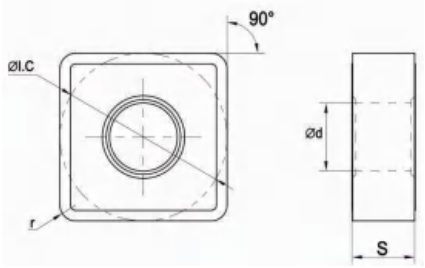
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.8–1.6
15	15.875	6.35	6.35	0.8–1.2
19	19.05	6.35	7.94	1.2–1.6

90° SN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Kaba işleme	SNMG120408–AG	2.50–6.00	0.25–0.70				○	●	●							
	SNMG120412–AG	2.50–6.00	0.30–0.70				○	●	●							
	SNMG120416–AG	2.50–6.00	0.40–0.70				○	●	●							
	SNMG150612–AG	2.15–6.40	0.25–0.50				○	●	●							
	SNMG190612–AG	2.15–6.40	0.25–0.50				○	●	●							
	SNMG190616–AG	2.85–7.60	0.30–0.65				○	●	●							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



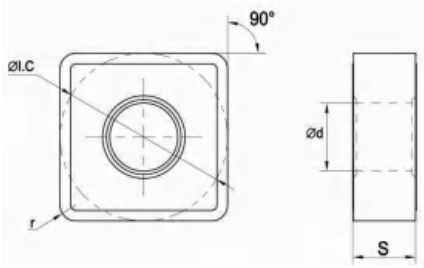
Uzunluk	Ölçü (mm)			
	IC	S	d	r
19	19.05	6.35	7.94	1.2–2.4
25	25.4	7.94–9.52	9.12	2.4–3.2

90° SN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Ağır kaba işleme	SNMM190612–AG	2.40–9.50	0.25–0.60				○	●	●							
	SNMM190616–AG	3.20–9.50	0.35–0.80				○	●	●							
	SNMM190624–AG	4.80–9.50	0.53–1.20				○	●	●							
	SNMM250724–AG	4.80–12.70	0.53–1.20				○	●	●							
	SNMM250732–AG	4.80–12.70	0.53–1.20				○	●	●							
	SNMM250924–AG	4.35–12.70	0.53–1.20				○	●	●							
	SNMM250932–AG	4.35–12.70	0.53–1.20				○	●	●							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



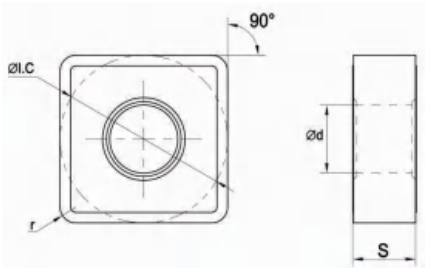
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.2

90° SN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	SNMG120404–BF	0.25–3.20	0.05–0.15								○	●	○	●		
	SNMG120408–BF	0.50–3.20	0.10–0.30								○	●	○	●		
	SNMG120412–BF	0.75–3.20	0.15–0.45								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



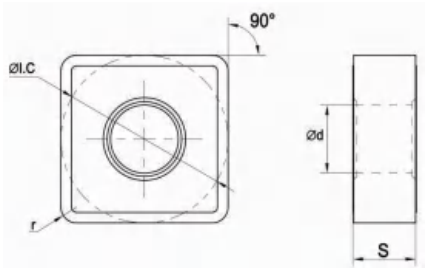
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.2
15	15.875	6.35	6.35	0.8–1.2

90° SN☐☐ Delikli

Shape	Type	ap (mm)	f (mm/rev)	Grade												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Yarı finiş	SNMG120404–BM	0.30–4.20	0.08–0.25								○	○	○	●		
	SNMG120408–BM	0.65–4.20	0.15–0.45								○	○	○	●		
	SNMG120412–BM	0.95–4.20	0.25–0.65								○	○	○	●		
	SNMG150608–BM	0.65–5.20	0.15–0.45								○	○	○	●		
	SNMG150612–BM	0.95–5.20	0.25–0.65								○	○	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



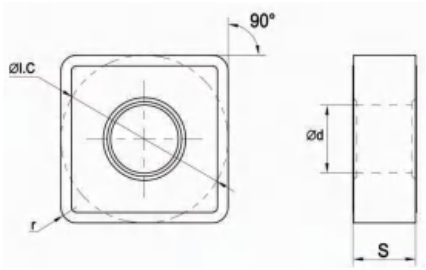
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.2
15	15.875	6.35	6.35	0.8–1.2

90° SN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Kaba işleme	SNMG120404–BR	0.30–4.20	0.08–0.25							○	○		○	●		
	SNMG120408–BR	0.65–4.20	0.15–0.45							○	○		○	●		
	SNMG120412–BR	0.95–4.20	0.23–0.66							○	○		○	●		
	SNMG150608–BR	0.65–5.20	0.15–0.44							○	○		○	●		
	SNMG150612–BR	0.95–5.20	0.23–0.66							○	○		○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



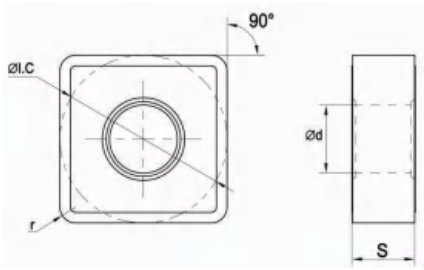
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.6
15	15.875	6.35	6.35	0.8–1.6
19	19.05	6.35	7.94	1.2–1.6

90° SN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 K Yarı finiş	SNMG120404–CM	0.40–4.20	0.08–0.25			●	○	○								
	SNMG120408–CM	0.80–4.20	0.15–0.45			●	○	○								
	SNMG120412–CM	1.20–4.20	0.25–0.65			●	○	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



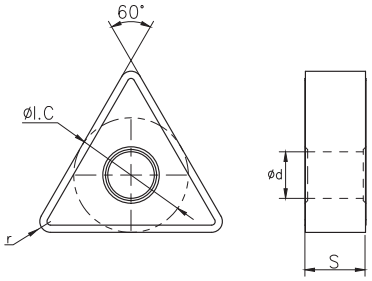
Uzunluk	Ölçü (mm)			
	IC	S	d	r
12	12.7	4.76	5.16	0.4–1.6
15	15.875	6.35	6.35	0.8–1.6

90° SN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 S Yarı finiş	SNMG120404–DM	0.40–3.90	0.08–0.25						○			○		●	○	●
	SNMG120408–DM	0.80–3.90	0.15–0.45						○			○		●	○	●
	SNMG120412–DM	1.20–3.90	0.25–0.65						○			○		●	○	●
	SNMG120416–DM	1.80–3.90	0.30–0.90						○			○		●	○	●
	SNMG150608–DM	0.80–3.90	0.15–0.45						○			○		●	○	●
	SNMG150612–DM	1.20–3.90	0.25–0.65						○			○		●	○	●
	SNMG150616–DM	1.80–3.90	0.30–0.90						○			○		●	○	●

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



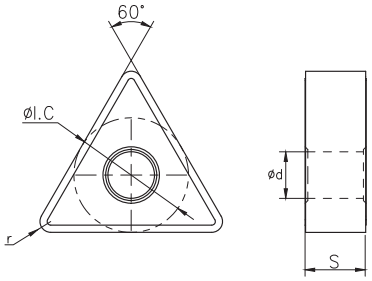
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Finiş	TNMG160404–AF	0.26–3.1	0.05–0.15				●	○								
	TNMG160408–AF	0.52–3.1	0.10–0.30				●	○								
	TNGG160412–AF	0.78–3.1	0.15–0.45				●	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



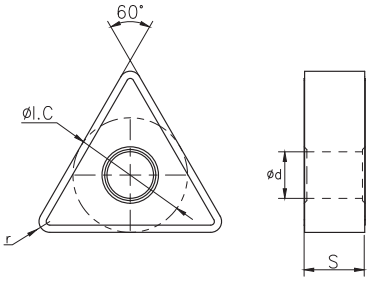
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2
22	12.7	4.76	5.16	0.8–1.6

60° TN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Yarı finiş	TNMG160404–AS	0.60–5.80	0.10–0.30				○	●	○							
	TNMG160408–AS	1.20–5.80	0.20–0.60				○	●	○							
	TNMG160412–AS	1.80–5.80	0.30–0.90				○	●	○							
	TNMG220408–AS	1.20–7.70	0.20–0.60				○	●	○							
	TNMG220412–AS	1.80–7.70	0.30–0.90				○	●	○							
	TNMG220416–AS	2.40–7.70	0.40–1.20				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



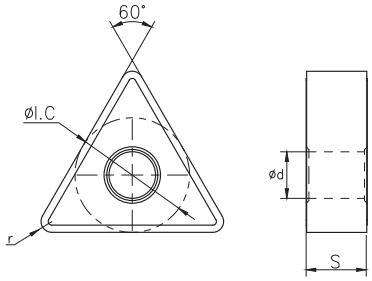
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2
22	12.7	4.76	5.16	0.8–1.6

60° TN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Orta işleme	TNMG160404–AM	0.4–5.0	0.10–0.30				○	●	○							
	TNMG160408–AM	0.5–5.0	0.15–0.50				○	●	○							
	TNMG160412–AM	0.8–5.0	0.18–0.60				○	●	○							
	TNMG220408–AM	0.8–6.6	0.15–0.50				○	●	○							
	TNMG220412–AM	0.5–6.0	0.18–0.60				○	●	○							
	TNMG220416–AM	1.0–6.0	0.23–0.65				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



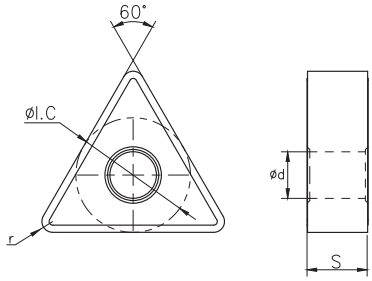
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.8–1.2
22	12.7	4.76	5.16	0.8–1.6

60° TN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Kaba işleme	TNMG160408–AG	2.00–5.00	0.25–0.65				○	●	●							
	TNMG220408–AG	2.50–7.00	0.25–0.65				○	●	●							
	TNMG220412–AG	2.50–7.00	0.25–0.65				○	●	●							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



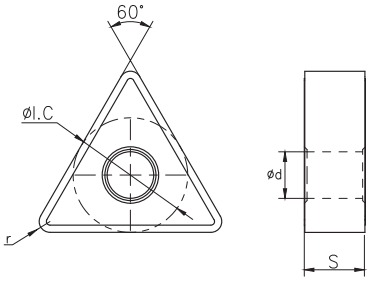
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite											
				CVD						PVD					
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	TNMG160404–BF	0.25–3.10	0.05–0.15								○	●	○	●		
	TNMG160408–BF	0.50–3.10	0.10–0.30								○	●	○	●		
	TNMG160412–BF	0.75–3.10	0.10–0.30								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



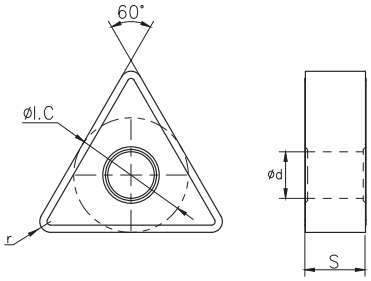
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2
22	12.7	4.76	5.16	0.8–1.6

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Yarı finiş	TNMG160404–BM	0.30–4.10	0.08–0.25								○	○	○	●		
	TNMG160408–BM	0.65–4.10	0.15–0.45								○	○	○	●		
	TNMG160412–BM	0.95–4.10	0.25–0.65								○	○	○	●		
	TNMG220408–BM	0.65–4.90	0.15–0.45								○	○	○	●		
	TNMG220412–BM	0.95–4.90	0.25–0.65								○	○	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



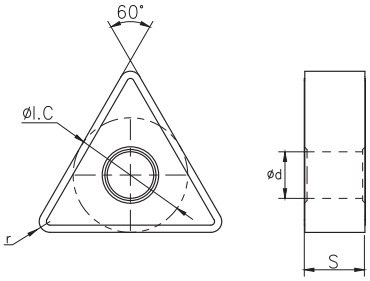
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2
22	12.7	4.76	5.16	0.8–1.6

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	TNMG160404–CM	0.40–4.10	0.08–0.25			●	○	○								
	TNMG160408–CM	0.80–4.10	0.15–0.45			●	○	○								
	TNMG160412–CM	1.20–4.10	0.25–0.65			●	○	○								
	TNMG220412–CM	1.20–4.90	0.25–0.65			●	○	○								
K Yarı finiş																

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



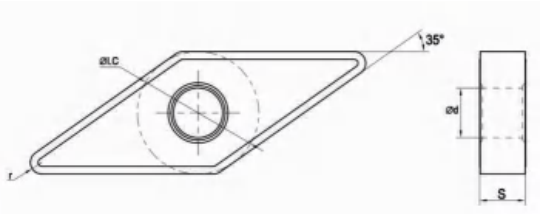
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2
22	12.7	4.76	5.16	0.8–1.2

60° TN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Kaba işleme	TNMG160404–BR	0.30–4.10	0.08–0.25							○	○		○	●		
	TNMG160408–BR	0.65–4.10	0.15–0.45							○	○		○	●		
	TNMG160412–BR	0.95–4.10	0.25–0.65							○	○		○	●		
	TNMG220408–BR	0.65–4.90	0.15–0.45							○	○		○	●		
	TNMG220412–BR	0.95–4.90	0.25–0.65							○	○		○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



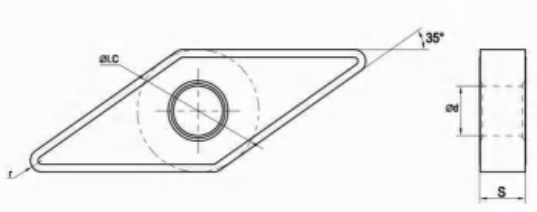
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2

35° VN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 K Yarı finiş	VNMG160404–CM	0.40–3.30	0.08–0.25			●	○	○								
	VNMG160408–CM	0.80–3.30	0.15–0.45			●	○	○								
	VNMG160412–CM	1.20–3.30	0.25–0.65			●	○	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



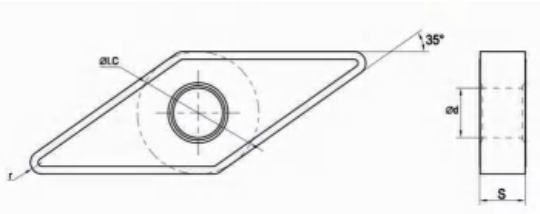
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2

35° VN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Finiş	VNMG160404–AF	0.26–2.1	0.05–0.15				●	○								
	VNMG160408–AF	0.52–2.1	0.10–0.30				●	○								
	VNMG160412–AF	0.78–2.1	0.15–0.45				●	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



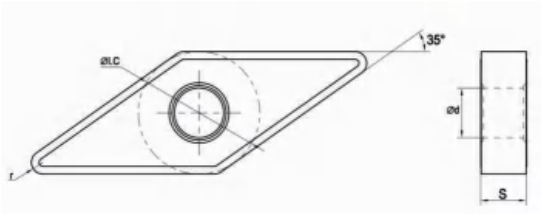
Uzunluk	Ölçü (mm)			
	IC	S	d	r
11	6.35	4.76	2.26	0.4–0.8
16	9.525	4.76	3.81	0.4–0.8

35° VN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	VNMG110404–AS	0.80–2.50	0.15–0.36				○	●	○							
	VNMG110408–AS	1.00–2.50	0.17–0.36				○	●	○							
	VNMG160404–AS	0.80–3.00	0.15–0.36				○	●	○							
	VNMG160408–AS	1.00–2.50	0.17–0.36				○	●	○							
P Yarı finiş																

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



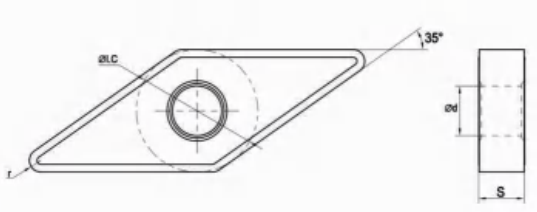
Uzunluk	Ölçü (mm)			
	IC	S	d	r
11	6.35	4.76	2.26	0.4–0.8
16	9.525	4.76	3.81	0.4–0.8

35° VN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Orta işleme	VNMG160408–AM	0.5 – 4.0	0.15 –0.5				○	●	○							
	VNMG160412–AM	0.8 – 4.0	0.18 – 0.6				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



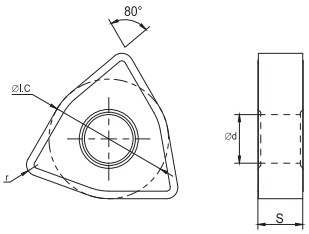
Uzunluk	Ölçü (mm)			
	IC	S	d	r
16	9.525	4.76	3.81	0.4–1.2

35° VN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite											
				CVD						PVD					
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	VNMG160404–BF	0.25–3.30	0.05–0.15								○	●	○	●		
	VNMG160408–BF	0.55–3.30	0.10–0.30								○	●	○	●		
	VNMG160412–BF	0.75–3.30	0.15–0.45								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



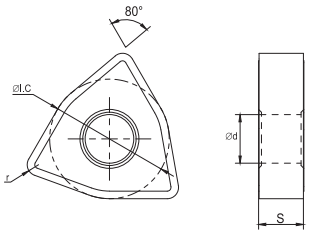
Uzunluk	Ölçü (mm)			
	IC	S	d	r
8	12.7	4.76	5.16	0.4–1.2

80° WN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	WNMG080404–AF	0.26–2.2	0.05–0.15				●	○								
	WNMG080408–AF	0.52–2.2	0.10–0.30				●	○								
	WNMG080412–AF	0.78–2.2	0.15–0.45				●	○								
P Finiş																

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



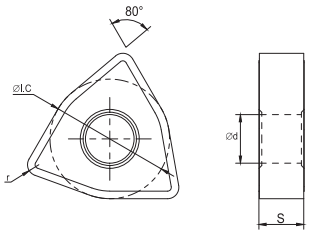
Uzunluk	Ölçü (mm)			
	IC	S	d	r
8	12.7	4.76	5.16	0.4–1.6

80°WN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Yarı finiş	WNMG080404–AS	0.60–4.30	0.10–0.30				○	●	○							
	WNMG080408–AS	1.20–4.30	0.20–0.60				○	●	○							
	WNMG080412–AS	1.80–4.30	0.30–0.90				○	●	○							
	WNMG080416–AS	2.40–4.30	0.40–1.20				○	●	○							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



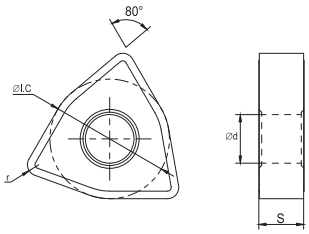
Uzunluk	Ölçü (mm)			
	IC	S	d	r
8	12.7	4.76	5.16	0.4–1.6

80° WN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	WNMG080404–AM	0.25–3.0	0.10–0.40				○	●	○							
	WNMG080408–AM	0.50–4.0	0.15–0.50				○	●	○							
	WNMG080412–AM	0.80–4.0	0.18–0.60				○	●	○							
	WNMG080416–AM	0.80–6.6	0.23–0.65				○	●	○							
P Orta işleme																

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



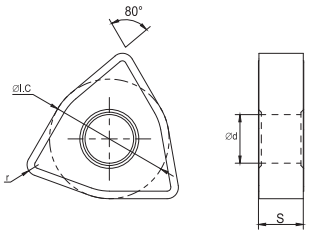
Uzunluk	Ölçü (mm)			
	IC	S	d	r
6	9.525	4.76	3.81	0.8–1.2
8	12.7	4.76	5.16	0.8–1.2

80° WN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 P Kaba işleme	WNMG060408–AG	0.80–4.00	0.15–0.50				○	●	●							
	WNMG060412–AG	0.80–4.00	0.15–0.50				○	●	●							
	WNMG080408–AG	0.80–4.50	0.15–0.55				○	●	●							
	WNMG080412–AG	0.80–4.50	0.20–0.55				○	●	●							

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



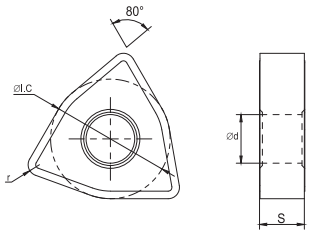
Uzunluk	Ölçü (mm)			
	IC	S	d	r
6	9.525	4.76	3.81	0.4–0.8
8	12.7	4.76	5.16	0.4–1.6

80° WN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	WNMG060404–BF	0.25–2.40	0.05–0.15								○	●	○	●		
	WNMG060408–BF	0.50–2.40	0.10–0.30								○	●	○	●		
	WNMG080404–BF	0.25–3.20	0.05–0.15								○	●	○	●		
	WNMG080408–BF	0.50–3.20	0.10–0.30								○	●	○	●		
	WNMG080412–BF	0.75–3.20	0.15–0.45								○	●	○	●		
	WNMG080416–BF	1.05–3.20	0.20–0.60								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



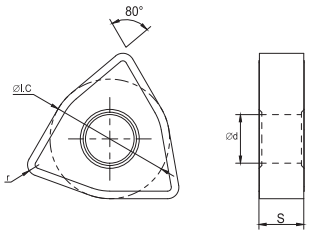
Uzunluk	Ölçü (mm)			
	IC	S	d	r
6	9.525	4.76	3.81	0.4–0.8
8	12.7	4.76	5.16	0.4–1.6

80° WN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite											
				CVD						PVD					
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Yarı finiş	WNMG060404–BM	0.30–2.10	0.10–0.30								○	○	○	●		
	WNMG060408–BM	0.65–2.10	0.15–0.45								○	○	○	●		
	WNMG080404–BM	0.30–2.90	0.10–0.30								○	○	○	●		
	WNMG080408–BM	0.65–2.90	0.15–0.45								○	○	○	●		
	WNMG080412–BM	0.95–2.90	0.20–0.60								○	○	○	●		
	WNMG080416–BM	1.25–2.90	0.25–0.75								○	○	○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



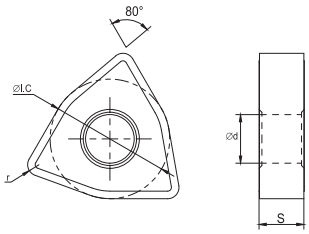
Uzunluk	Ölçü (mm)			
	IC	S	d	r
6	9.525	4.76	3.81	0.4–0.8
8	12.7	4.76	5.16	0.4–1.6

80° WN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Kaba işleme	WNMG060404–BR	0.30–2.10	0.10–0.30							○	○		○	●		
	WNMG060408–BR	0.65–2.10	0.15–0.45							○	○		○	●		
	WNMG080404–BR	0.30–2.90	0.10–0.30							○	○		○	●		
	WNMG080408–BR	0.65–2.90	0.15–0.45							○	○		○	●		
	WNMG080412–BR	0.95–2.90	0.20–0.60							○	○		○	●		
	WNMG080416–BR	1.25–2.90	0.25–0.75							○	○		○	●		

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



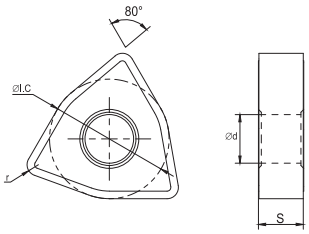
Uzunluk	Ölçü (mm)			
	IC	S	d	r
8	12.7	4.76	5.16	0.4–1.6

80° WN□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 K Yarı finiş	WNMG080404–CM	0.08–0.25	0.40–2.90			●	○	○								
	WNMG080408–CM	0.15–0.45	0.80–2.90			●	○	○								
	WNMG080412–CM	0.25–0.66	1.20–2.90			●	○	○								

Not: • Stokta tutulan önerilen kalite

Negatif uçlar



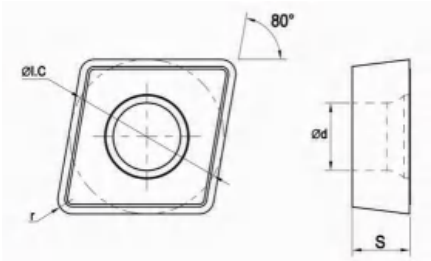
Uzunluk	Ölçü (mm)			
	IC	S	d	r
8	12.7	4.76	5.16	0.4–1.6

80° WN☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 S Yarı finiş	WNMG080404–DM	0.40–4.30	0.08–0.25						○			○		●	○	●
	WNMG080408–DM	0.80–4.30	0.15–0.45						○			○		●	○	●
	WNMG080412–DM	1.20–4.30	0.25–0.66						○			○		●	○	●
	WNMG080416–DM	1.60–4.30	0.30–0.90						○			○		●	○	●

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



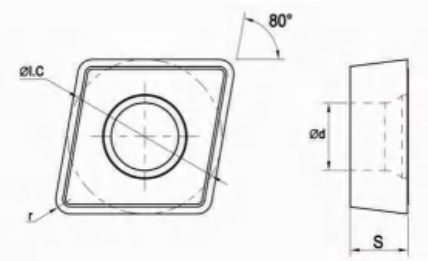
Uzunluk	Ölçü (mm)			
	IC	S	d	r
6	3.65	2.38	2.8	0.4–0.8
9	9.525	3.97	4.4	0.4–0.8
12	12.7	4.76	5.56	0.4–1.2

80° CC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Genel yarı finiş	CCMT060204-GM	0.40–2.10	0.05–0.18		●	●		○		●		○				○
	CCMT060208-GM	0.80–2.10	0.10–0.35		●	●		○		●		○				○
	CCMT09T304-GM	0.40–3.80	0.05–0.18		●	●		○		●		○				○
	CCMT09T308-GM	0.80–3.20	0.10–0.35		●	●		○		●		○				○
	CCMT120404-GM	0.40–4.30	0.05–0.18		●	●		○		●		○				○
	CCMT120408-GM	0.80–4.30	0.10–0.35		●	●		○		●		○				○
	CCMT120412-GM	1.20–4.30	0.15–0.55		●	●		○		●		○				○

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



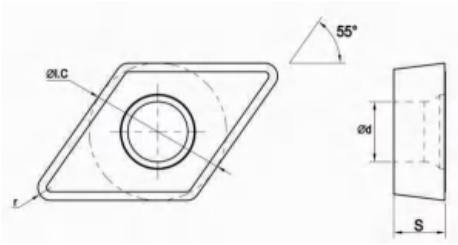
Uzunluk	Ölçü (mm)			
	IC	S	d	r
6	3.65	2.38	2.8	0.4–0.8
9	9.525	3.97	4.4	0.4–0.8

80° CC☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite											
				CVD						PVD					
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	CCMT060204–GF	0.30–1.60	0.05–0.15								○	●	○	●		
	CCMT060208–GF	0.60–1.60	0.10–0.30								○	●	○	●		
	CCMT09T304–GF	0.30–2.20	0.05–0.15								○	●	○	●		
	CCMT09T308–GF	0.60–2.40	0.10–0.30								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



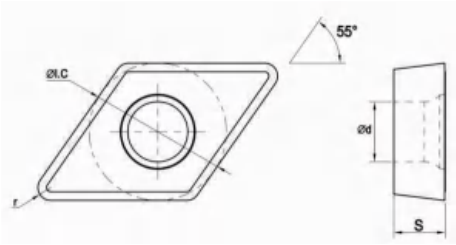
Uzunluk	Ölçü (mm)			
	IC	S	d	r
7	6.35	2.38	2.8	0.4–0.8
11	9.525	3.97	4.4	0.4–1.2

55° DC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Genel yarı finiş	DCMT070204–GM	0.40–2.30	0.05–0.20		●	●		○		●		○				○
	DCMT070208–GM	0.80–2.30	0.10–0.35		●	●		○		●		○				○
	DCMT11T304–GM	0.40–3.50	0.05–0.20		●	●		○		●		○				○
	DCMT11T308–GM	0.80–3.50	0.20–0.35		●	●		○		●		○				○
	DCMT11T312–GM	1.20–3.50	0.25–0.55		●	●		○		●		○				○

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



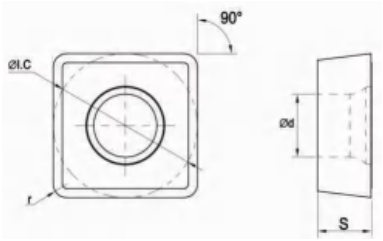
Uzunluk	Ölçü (mm)			
	IC	S	d	r
7	6.35	2.38	2.8	0.4–0.8
11	9.525	3.97	4.4	0.4–1.2

55° DC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	DCMT070204–GF	0.30–1.50	0.05–0.15								○	●	○	●		
	DCMT070208–GF	0.60–1.50	0.05–0.20								○	●	○	●		
	DCMT11T304–GF	0.30–2.30	0.02–0.10								○	●	○	●		
	DCMT11T308–GF	0.60–2.30	0.05–0.26								○	●	○	●		
	DCMT11T312–GF	0.90–2.30	0.20–0.30								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



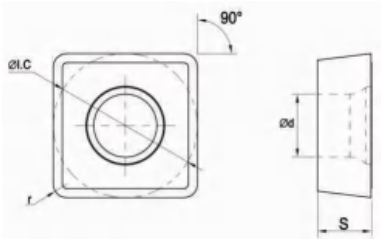
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	9.525	3.97	4.4	0.4–0.8
12	12.7	4.76	5.56	0.4–1.2

90° SC☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Genel yarı finiş	SCMT09T304–GM	0.40–3.10	0.05–0.20		●	●		○		●		○				○
	SCMT09T308–GM	0.80–3.10	0.10–0.35		●	●		○		●		○				○
	SCMT120404–GM	0.40–4.20	0.05–0.20		●	●		○		●		○				○
	SCMT120408–GM	0.80–4.20	0.10–0.30		●	●		○		●		○				○
	SCMT120412–GM	1.20–4.20	0.15–0.55		●	●		○		●		○				○

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



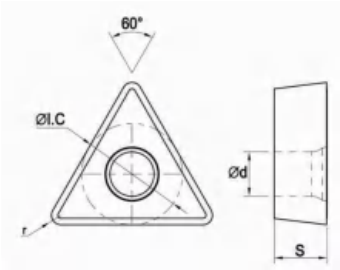
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	9.525	3.97	4.4	0.4–0.8

90° SC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	SCMT09T304–GF	0.30–2.40	0.05–0.15								○	●	○	●		
	SCMT09T308–GF	0.60–2.40	0.10–0.30								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



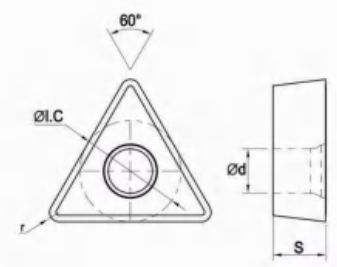
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	5.56	2.38	2.2	0.4–0.8
11	6.35	2.38	2.8	0.4–1.2
16	9.525	3.97	4.4	0.4–1.2

60° TC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Genel yarı finiş	TCMT090204–GM	0.40–2.90	0.05–0.20		●	●		○		●		○				○
	TCMT090208–GM	0.80–2.90	0.10–0.35		●	●		○		●		○				○
	TCMT110204–GM	0.40–3.30	0.05–0.20		●	●		○		●		○				○
	TCMT110208–GM	0.80–3.30	0.10–0.35		●	●		○		●		○				○
	TCMT110212–GM	1.20–3.30	0.15–0.55		●	●		○		●		○				○
	TCMT16T304–GM	0.40–4.90	0.05–0.20		●	●		○		●		○				○
	TCMT16T308–GM	0.80–4.90	0.10–0.35		●	●		○		●		○				○
	TCMT16T312–GM	1.20–4.90	0.15–0.55		●	●		○		●		○				○

Not: • Stokta tutulan önerilen kalite

Pozitif uçlar



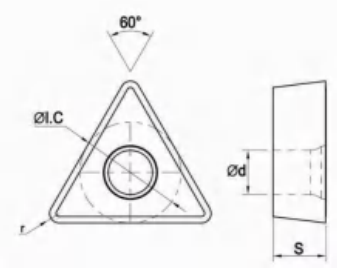
Uzunluk	Ölçü (mm)			
	IC	S	d	r
9	5.56	2.38	2.2	0.4–0.8
11	6.35	2.38	2.8	0.4–1.2
16	9.525	3.97	4.4	0.4–1.2

60° TC☐☐ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV2330	AV2340	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 M Finiş	TCMT090204–GF	0.30–1.80	0.05–0.15								○	●	○	●		
	TCMT090208–GF	0.60–2.20	0.10–0.30								○	●	○	●		
	TCMT110204–GF	0.30–2.20	0.05–0.15								○	●	○	●		
	TCMT110208–GF	0.60–3.30	0.10–0.30								○	●	○	●		
	TCMT110212–GF	1.20–3.30	0.20–0.40								○	●	○	●		
	TCMT16T304–GF	0.30–3.30	0.05–0.15								○	●	○	●		
	TCMT16T308–GF	0.60–3.30	0.10–0.30								○	●	○	●		
	TCMT16T312–GF	1.20–3.30	0.10–0.40								○	●	○	●		

Not: • Stokta tutulan önerilen kalite

Isıya dayanıklı alaşım için yarı finiş



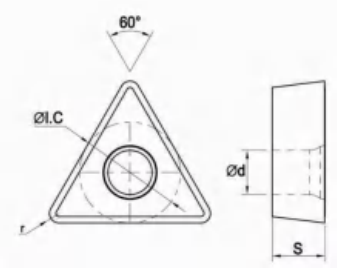
Uzunluk	Ölçü (mm)			
	IC	S	d	RE
09	9.525	3.97	4.15	0.4
12	12.7	4.76	5.16	0.8

80° CC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Yarı finiş	CCMT09T304–DM	0.3–2.2	0.05–0.15						○			○	○	●		●
	CCMT120408–DM	0.7–3.2	0.1–0.30						○			○	○	●		●

Not: • Stokta tutulan önerilen kalite

Isıya dayanıklı alaşım için yarı finiş



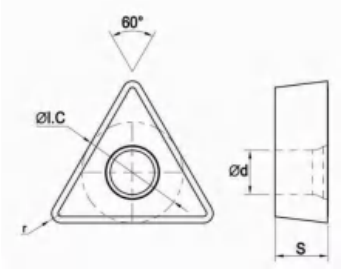
Uzunluk	Ölçü (mm)			
	IC	S	d	RE
07	6.35	2.38	2.56	0.4–0.8
11	9.525	3.97	4.15	0.4–0.8

55°DC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Yarı finiş	DCMT070204–DM	0.3–1.5	0.05–0.15						○			○	○	●		●
	DCMT070208–DM	0.6–1.5	0.05–0.2						○			○	○	●		●
	DCMT11T304–DM	0.2–2.3	0.02–0.1						○			○	○	●		●
	DCMT11T308–DM	0.6–2.3	0.05–0.26						○			○	○	●		●

Not: • Stokta tutulan önerilen kalite

Isıya dayanıklı alaşım için yarı finiş



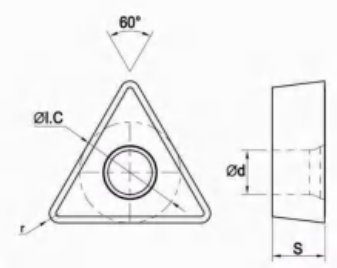
Uzunluk	Ölçü (mm)			
	IC	S	d	RE
09	9.525	3.97	4.15	0.4–0.8

90° SC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Yarı finiş	SCMT09T304–DM	0.3–2.4	0.05–0.15						○			○	○	●		●
	SCMT09T308–DM	0.6–2.4	0.1–0.30						○			○	○	●		●

Not: • Stokta tutulan önerilen kalite

Isıya dayanıklı alaşım için yarı finiş



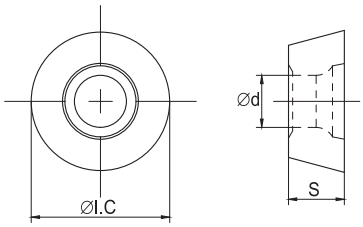
Uzunluk	Ölçü (mm)			
	IC	S	d	RE
11	9.525	2.38	2.56	0.4–0.8

60° TC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3824	AV3825	AV3325	AV3605	AV4510	AV4010	AV4525
 Yarı finiş	TCMT110204–DM	0.2–2.2	0.05–0.15						○			○	○	●		●
	TCMT110208–DM	0.6–3.3	0.1–0.3						○			○	○	●		●

Not: • Stokta tutulan önerilen kalite

Tren tekerleği tornalama uçları



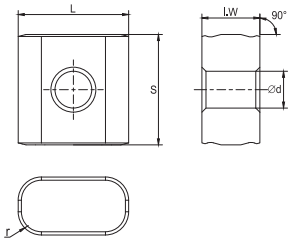
Uzunluk	Ölçü (mm)		
	IC	S	d
8	8	3.18	3.36
10	10	3.18	4.4
12	12.7	4.76	4.4
16	16	6.35	5.5
20	20	6.35	6.5
25	25	7.94	7.2
32	32	9.52	9.5

RC□□ Delikli

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 Tren tekerleği profil işleme	RCMX0803MO	0.50–3.00	0.15–0.40				●	○								
	RCMX1003MO	1.50–4.00	0.25–0.50				●	○								
	RCMX1204MO	2.50–5.00	0.30–0.60				●	○								
	RCMX1606MO	3.00–7.00	0.40–0.75				●	○								
	RCMX2006MO	3.50–9.00	0.48–0.90				●	○								
	RCMX2507MO	4.00–12.00	0.55–1.20				●	○								
	RCMX3209MO	5.00–15.00	0.65–1.50				●	○								

Not: • Stokta tutulan önerilen kalite

Tren tekerleği tornalama uçları

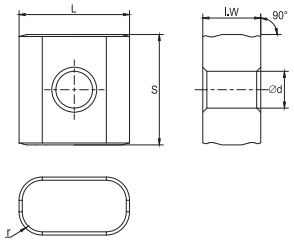


Uzunluk	Ölçü (mm)				
	L	I.W	S	d	r
19	19.05	10	19.05	6.35	4

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 Tren tekerleği kenar işleme	175.32-191940-22	2.00-5.00	0.20-0.60				●	○								

Not: • Stokta tutulan önerilen kalite

Tren tekerleği tornalama uçları

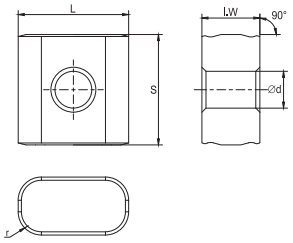


Uzunluk	Ölçü (mm)				
	L	I.W	S	d	r
19	19.05	10	19.05	6.35	4

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 Tren tekerleği kenar işleme	175.32-191940-24	2.00-5.00	0.20-0.60				●	○								

Not: • Stokta tutulan önerilen kalite

Tren tekerleği tornalama uçları



Uzunluk	Ölçü (mm)				
	L	l.W	S	d	r
19	19.05	10	19.05	6.35	4

Şekil	Tip	ap (mm)	f (mm/rev)	Kalite												
				CVD						PVD						
				AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
 Tren tekerleği kenar işleme	175.32-191940-28	2.00-5.00	0.20-0.60				●	○								

Not: • Stokta tutulan önerilen kalite

avedon®

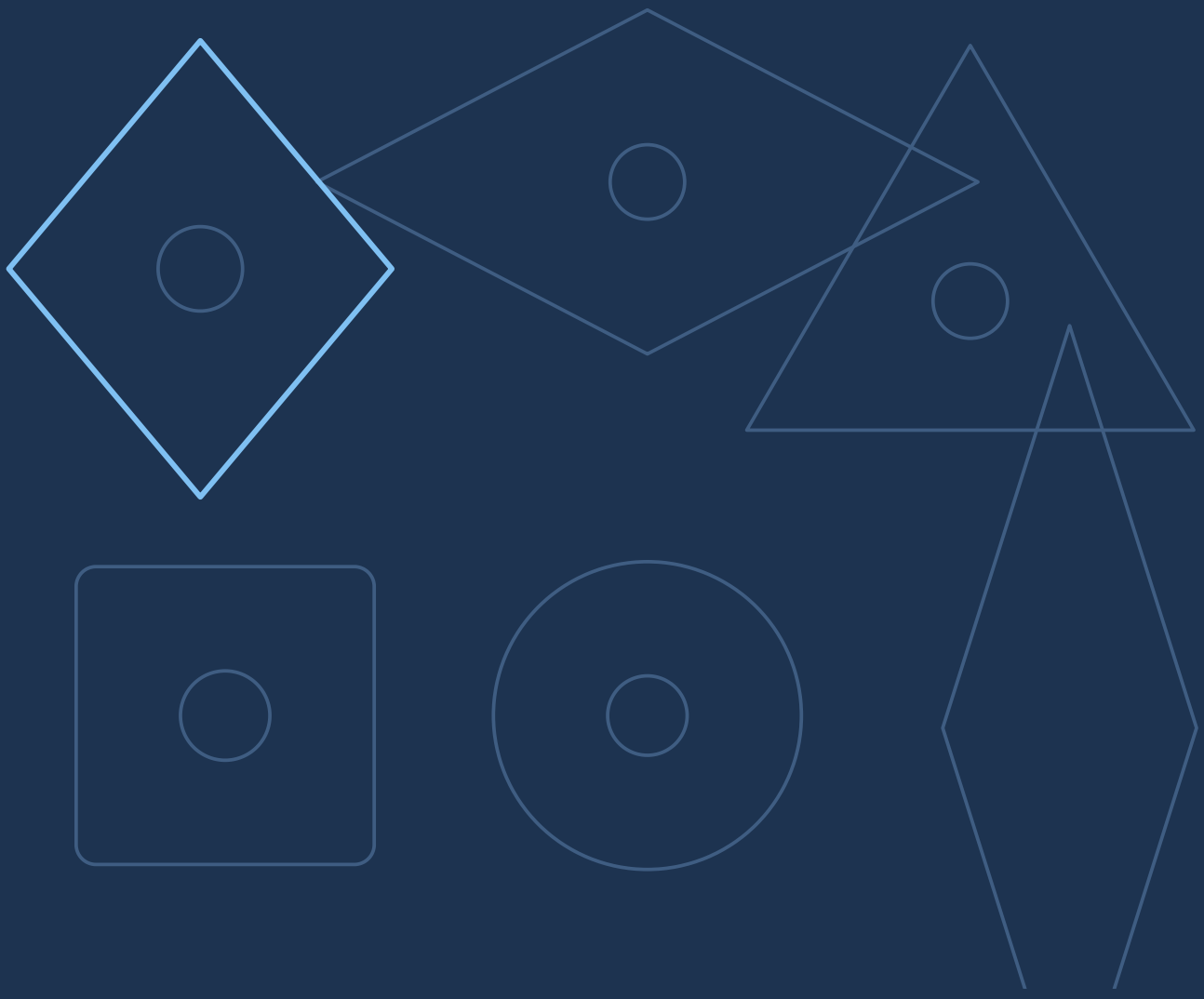
G

BÖLÜM G · ALT GRUP

Kanal açma ve kesme uçları

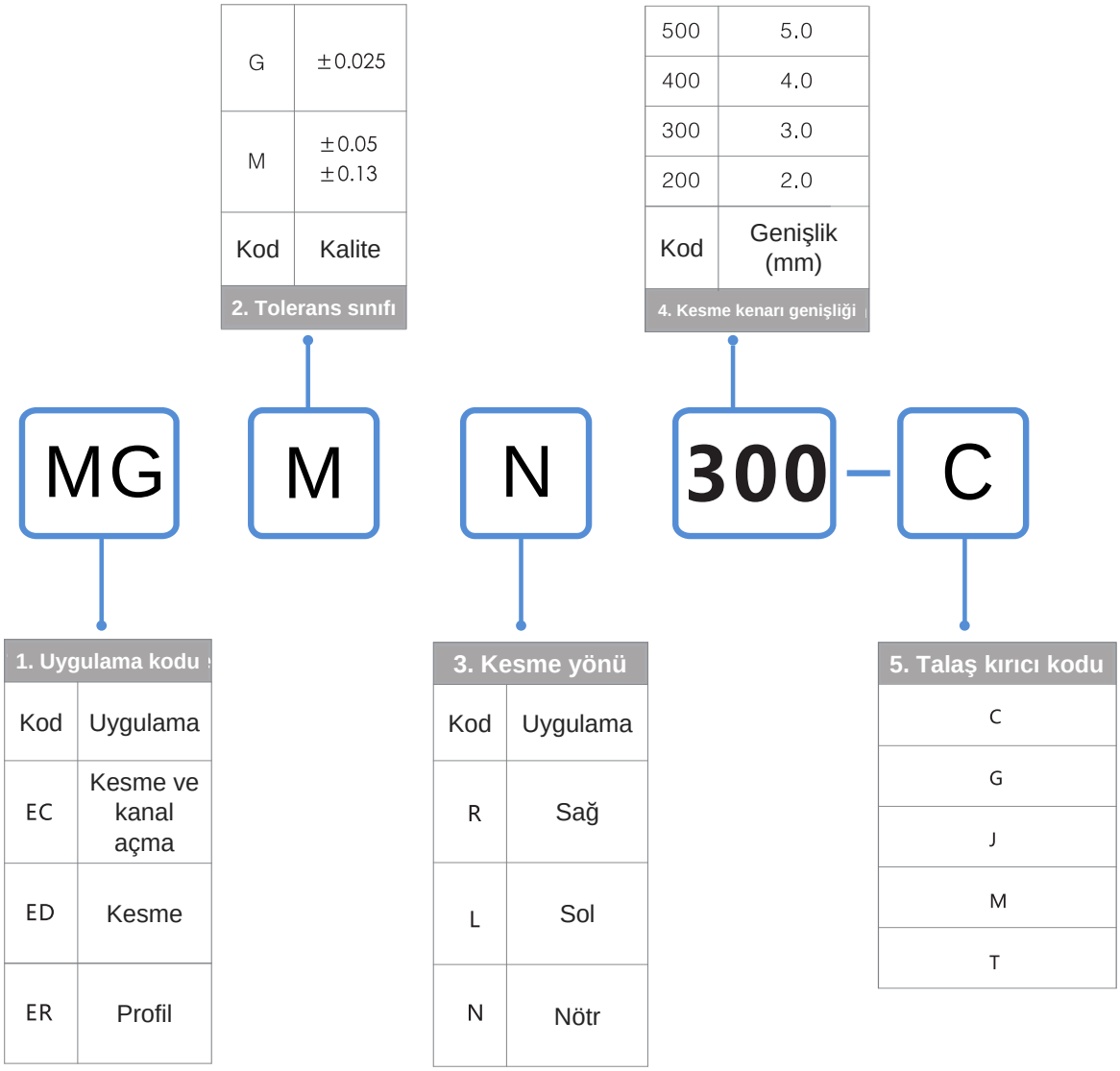
Kanal açma, kesme ve diş tornalama uçları ile kater sistemleri.

Sayfa G-89 – G-103



Kesme ve kanal açma uçları

Adlandırma kuralları



Kod	Uygulama
EC	Kesme ve kanal açma
ED	Kesme
ER	Profil

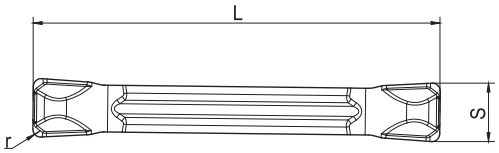
Kod	Kalite
G	±0.025
M	±0.05 ±0.13

Kod	Uygulama
R	Sağ
L	Sol
N	Nötr

Kod	Genişlik (mm)
500	5.0
400	4.0
300	3.0
200	2.0

C
G
J
M
T

Kesme ve kanal açma uçları

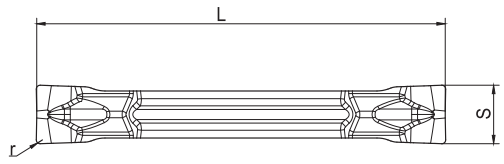


Genişlik	Ölçü (mm)		
	S	r±0.1	L
200	2.0	0.2	20
300	3.0	0.4	20
400	4.0	0.4	20
500	5.0	0.4	25

Şekil	Tip	f (mm/rev)	Kalite												
			CVD						PVD						
			AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	EDMN200-C	0.05-0.18					●		○	●	●				
	EDMN300-C	0.07-0.25					●		○	●	●				
	EDMN400-C	0.08-0.30					●		○	●	●				
	EDMN500-C	0.09-0.35					●		○	●	●				

Not: • Stokta tutulan önerilen kalite

Kesme ve kanal açma uçları

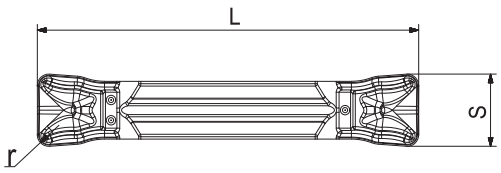


Genişlik	Ölçü (mm)		
	S	r±0.1	L
200	2.0	0.2	20
300	3.0	0.4	20
400	4.0	0.4	20
500	5.0	0.4	25

Şekil	Tip	f (mm/rev)	Kalite												
			CVD						PVD						
			AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	EDMN200–J	0.04–0.12					●		○	●	●				
	EDMN300–J	0.04–0.16					●		○	●	●				
	EDMN400–J	0.05–0.18					●		○	●	●				
	EDMN500–J	0.05–0.20					●		○	●	●				

Not: • Stokta tutulan önerilen kalite

Kesme ve kanal açma uçları

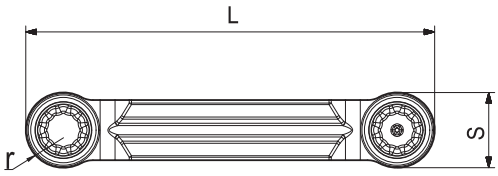


Genişlik	Ölçü (mm)		
	S	r±0.1	L
300	3.0	0.4	21.1
400	4.0	0.8	26.4
500	5.0	0.8	27.2
600	6.0	0.8	27.5

Şekil	Tip	f (mm/rev)	Kalite												
			CVD						PVD						
			AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	ECMN300–T	0.05–0.18					●		○	●	●				
	ECMN400–T	0.07–0.25					●		○	●	●				
	ECMN500–T	0.08–0.3					●		○	●	●				
	ECMN600–T	0.09–0.35					●		○	●	●				

Not: • Stokta tutulan önerilen kalite

Kesme ve kanal açma uçları

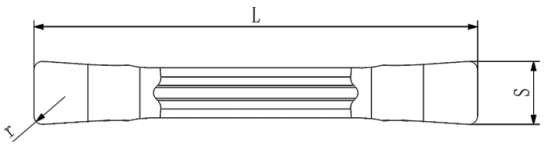


Genişlik	Ölçü (mm)		
	S	r±0.1	L
300	3.0	1.5	21.1
400	4.0	2	26.4
500	5.0	2.5	27.2
600	6.0	3	27.5

Şekil	Tip	f (mm/rev)	Kalite												
			CVD						PVD						
			AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	MRMN300–T	0.05–0.18					●		○	●	●				
	MRMN400–T	0.07–0.25					●		○	●	●				
	MRMN500–T	0.08–0.3					●		○	●	●				
	MRMN600–T	0.09–0.35					●		○	●	●				

Not: • Stokta tutulan önerilen kalite

Kesme ve kanal açma uçları

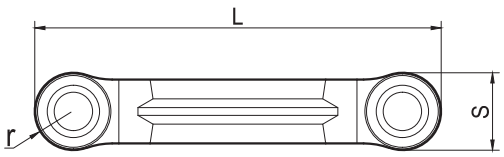


Genişlik	Ölçü (mm)		
	S	r±0.1	L
200	2.0	0.2	21
300	3.0	0.4	21
400	4.0	0.4	21
500	5.0	0.4	26

Şekil	Tip	f (mm/rev)	Kalite												
			CVD						PVD						
			AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	MGGN200-GL	0.05-0.18					●		○	●	●				
	MGGN300-GL	0.07-0.25					●		○	●	●				
	MGGN400-GL	0.08-0.3					●		○	●	●				
	MGGN500-GL	0.09-0.35					●		○	●	●				

Not: • Stokta tutulan önerilen kalite

Kesme ve kanal açma uçları

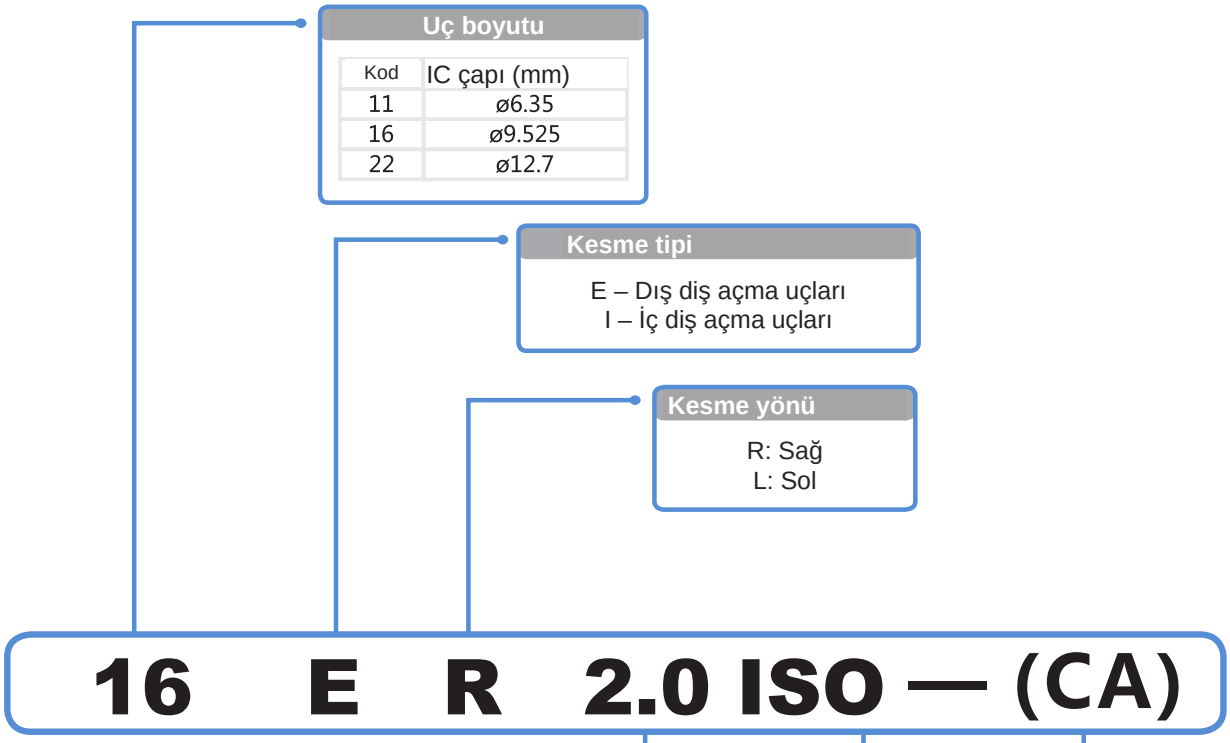


Genişlik	Ölçü (mm)		
	S	r±0.1	L
200	2.0	1.0	16.0
300	3.0	1.5	21.0
400	4.0	2.0	21.0
500	5.0	2.5	26.0
600	6.0	3.0	26.0
800	8.0	4.0	31.0

Şekil	Tip	f (mm/rev)	Kalite												
			CVD						PVD						
			AV1025	AV1035	AV2115	AV1315	AV1325	AV1335	AV3025	AV3525	AV3825	AV3824	AV3325	AV4010	AV4525
	MRMN200-M	0.05-0.15					●		○	●	●				
	MRMN300-M	0.08-0.18					●		○	●	●				
	MRMN400-M	0.10-0.20					●		○	●	●				
	MRMN500-M	0.12-0.23					●		○	●	●				
	MRMN600-M	0.15-0.27													
	MRMN800-M	0.18-0.35													

Not: • Stokta tutulan önerilen kalite

Adlandırma kuralları



Uç boyutu

Kod	IC çapı (mm)
11	ø6.35
16	ø9.525
22	ø12.7

Kesme tipi

E – Dış diş açma uçları
I – İç diş açma uçları

Kesme yönü

R: Sağ
L: Sol

Diş hatvesi

Tam profil (hatve aralığı rakamla gösterilir).

mm	TPI
0.5-6.0	48-5

V profil (hatve aralığı harfle gösterilir).

Kod	mm	TPI
A	0.5-1.5	48-16
AG	0.5-3.0	48-8
G	1.75-3.0	14-8
N	3.5-5.0	7-5

Diş standardı	Hatve aralığı
ISO metrik diş	0.5-6.0
Genel hatveli diş	0.5-5.0
Whitworth diş W	8-19
İngiliz std. boru dişi	11-28
Unified diş	8-24
Amerikan std. boru dişi	8-27

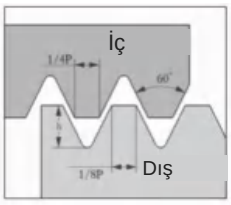
Profil

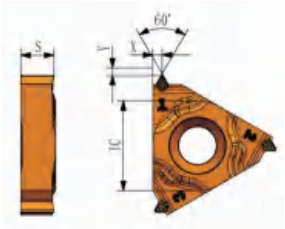
ISO – ISO metrik 60° diş
60 – 60° genel hatveli diş
55 – 55° genel hatveli diş
W – Whitworth diş
UN – Unified diş (Amerikan standardı)
BSPT – İngiliz std. konik boru dişi
NPT – Amerikan std. konik boru dişi

Talaş kırıcı

G – Tamamen taşlanmış kenarlı uç
CA – 3 boyutlu talaş kırıcılı uç

ISO metrik diş





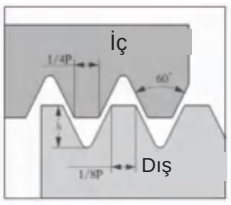
Standart: R262 (DIN 13) Tolerans sınıfı: 6g/6H

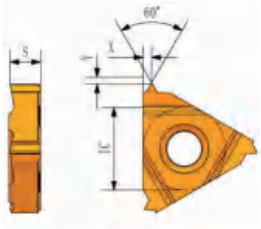
* Tam profil

Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	diş/inç	IC	S	X	Y	AV3825	AV3525
	16ER1.00ISO-CA	1		9.525	3.52	0.7	0.6	●	○
	16ER1.25ISO-CA	1.25		9.525	3.52	0.9	0.7	●	○
	16ER1.50ISO-CA	1.5		9.525	3.52	1	0.8	●	○
	16ER1.75ISO-CA	1.75		9.525	3.52	1.1	0.9	●	○
	16ER2.00ISO-CA	2		9.525	3.52	1.2	0.9	●	○
	16ER2.50ISO-CA	2.5		9.525	3.52	1.5	1.1	●	○
	16ER3.00ISO-CA	3		9.525	4.65	1.7	1.2	●	○
	16IR1.00ISO-CA	1		9.525	3.52	0.7	0.6	●	○
	16IR1.25ISO-CA	1.25		9.525	3.52	0.8	0.6	●	○
	16IR1.50ISO-CA	1.5		9.525	3.52	0.9	0.7	●	○
	16IR1.75ISO-CA	1.75		9.525	3.52	1	0.8	●	○
	16IR2.00ISO-CA	2		9.525	3.52	1.1	0.8	●	○
	16IR2.50ISO-CA	2.5		9.525	3.52	1.4	1	●	○
	16IR3.00ISO-CA	3		9.525	4.65	1.5	1.1	●	○

Not: • Stokta tutulan önerilen kalite

ISO metrik diş





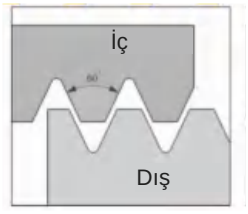
Standart: R262 (DIN 13) Tolerans sınıfı: 6g/6H

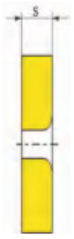
* Tam profil

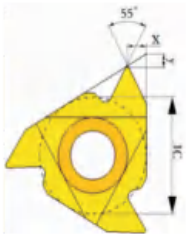
Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	diş/inç	IC	S	X	Y	AV3825	AV3525
	16ER1.00ISO-G	1		9.525	3.52	0.7	0.6	●	○
	16ER1.25ISO-G	1.25		9.525	3.52	0.9	0.7	●	○
	16ER1.50ISO-G	1.5		9.525	3.52	1	0.8	●	○
	16ER1.75ISO-G	1.75		9.525	3.52	1.1	0.9	●	○
	16ER2.00ISO-G	2		9.525	3.52	1.2	0.9	●	○
	16ER2.50ISO-G	2.5		9.525	3.52	1.5	1.1	●	○
	16ER3.00ISO-G	3		9.525	4.65	1.7	1.2	●	○
	22ER3.50ISO-G	3.5		12.7	4.65	2.3	1.6	●	○
	22ER4.00ISO-G	4		12.7	4.65	2.3	1.6	●	○
	22ER4.50ISO-G	4.5		12.7	4.65	2.4	1.7	●	○
	22ER5.00ISO-G	5		12.7	4.65	2.5	1.7	●	○
	11IR1.00ISO-G	1		6.35	3.05	0.7	0.6	●	○
	11IR1.25ISO-G	1.25		6.35	3.05	0.9	0.8	●	○
	11IR1.50ISO-G	1.5		6.35	3.05	1	0.8	●	○
	11IR1.75ISO-G	1.75		6.35	3.05	1.1	0.9	●	○
	11IR2.00ISO-G	2		6.35	3.05	1.1	0.9	●	○
	16IR1.00ISO-G	1		9.525	3.52	0.7	0.6	●	○
	16IR1.25ISO-G	1.25		9.525	3.52	0.8	0.6	●	○
	16IR1.50ISO-G	1.5		9.525	3.52	0.9	0.7	●	○
	16IR1.75ISO-G	1.75		9.525	3.52	1	0.8	●	○
	16IR2.00ISO-G	2		9.525	3.52	1.1	0.8	●	○
	16IR2.50ISO-G	2.5		9.525	3.52	1.4	1	●	○
	16IR3.00ISO-G	3		9.525	4.65	1.5	1.1	●	○
	22IR3.50ISO-G	3.5		12.7	4.65	2.3	1.6	●	○
	22IR4.00ISO-G	4		12.7	4.65	2.3	1.6	●	○
	22IR4.50ISO-G	4.5		12.7	4.65	2.4	1.7	●	○
	22IR5.00ISO-G	5		12.7	4.65	2.5	1.7	●	○

Not: • Stokta tutulan önerilen kalite

55°/60° genel hatveli diş







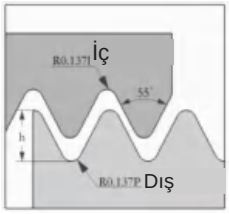
* Kısmi profil

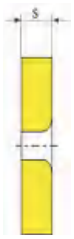
Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	diş/inç	IC	S	X	Y	AV3825	AV3525
	16ERA55	0.5–1.5	48–16	9.525	3.52	0.9	0.8	●	○
	16ERAG55	0.5–3.0	48–8	9.525	3.52	1.7	1.2	●	○
	16ERG55	1.75–3.0	14–8	9.525	3.52	1.7	1.2	●	○
	22ERN55	3.5–5.0	7–5	12.7	4.65	2.5	1.7	●	○
	11IRA55	0.5–1.5	48–16	6.35	3.52	0.9	0.8	●	○
	16IRA55	0.5–1.5	48–16	9.525	3.52	0.9	0.8	●	○
	16IRAG55	0.5–3.0	48–8	9.525	3.52	1.7	1.2	●	○
	16IRG55	1.75–3.0	14–8	9.525	3.52	1.7	1.2	●	○
	22IRN55	3.5–5.0	7–5	12.7	4.65	2.5	1.7	●	○

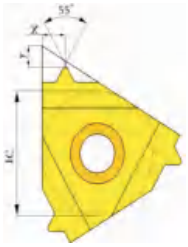
Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	diş/inç	IC	S	X	Y	AV3825	AV3520
	16ERA60	0.5–1.5	48–16	9.525	3.52	0.9	0.8	●	○
	16ERAG60	0.5–3.0	48–8	9.525	3.52	1.7	1.2	●	○
	16ERG60	1.75–3.0	14–8	9.525	3.52	1.7	1.2	●	○
	22ERN60	3.5–5.0	7–5	12.7	4.65	2.5	1.7	●	○
	11IRA60	0.5–1.5	48–16	6.35	3.52	0.9	0.8	●	○
	16IRA60	0.5–1.5	48–16	9.525	3.52	0.9	0.8	●	○
	16IRAG60	0.5–3.0	48–8	9.525	3.52	1.7	1.2	●	○
	16IRG60	1.75–3.0	14–8	9.525	3.52	1.7	1.2	●	○
	22IRN60	3.5–5.0	7–5	12.7	4.65	2.5	1.7	●	○

Not: • Stokta tutulan önerilen kalite

Whitworth diş







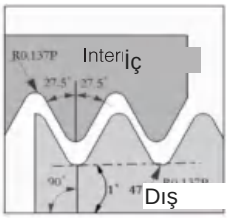
Standart: B.S.84:1956, DIN259, ISO288/1:1982
Tolerans sınıfı: Orta sınıf A

* Tam profil

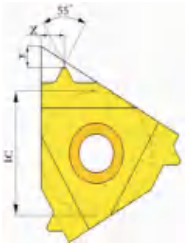
Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	diş/inç	IC	S	X	Y	AV3825	AV3525
	16ER8W		8	9.525	3.52	1.5	1.2	●	○
	16ER9W		9	9.525	3.52	1.7	1.2	●	○
	16ER10W		10	9.525	3.52	1.5	1.1	●	○
	16ER11W		11	9.525	3.52	1.5	1.1	●	○
	16ER12W		12	9.525	3.52	1.4	1.1	●	○
	16ER14W		14	9.525	3.52	1.2	1	●	○
	16ER16W		16	9.525	3.52	1.1	0.9	●	○
	16ER18W		18	9.525	3.52	1	0.8	●	○
	16ER19W		19	9.525	3.52	1	0.8	●	○
	16IR8W		8	9.525	3.52	1.5	1.2	●	○
	16IR9W		9	9.525	3.52	1.7	1.2	●	○
	16IR10W		10	9.525	3.52	1.5	1.1	●	○
	16IR11W		11	9.525	3.52	1.5	1.1	●	○
	16IR12W		12	9.525	3.52	1.4	1.1	●	○
	16IR14W		14	9.525	3.52	1.2	1	●	○
	16IR16W		16	9.525	3.52	1.1	0.9	●	○
	16IR18W		18	9.525	3.52	1	0.8	●	○
	16IR19W		19	9.525	3.52	1	0.8	●	○

Not: • Stokta tutulan önerilen kalite

İngiliz standardı konik boru dişi (BSPT)







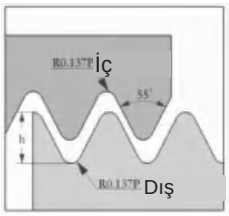
Standart: B.S.21:1985
Tolerans sınıfı: BSPT

* Tam profil

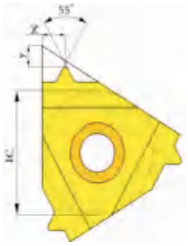
Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	pitch/inch diş/inç	IC	S	X	Y	AV3825	AV3525
	16ER11BSPT		11	9.525	3.52	1.5	1.1	●	○
	16ER14BSPT		14	9.525	3.52	1.2	1	●	○
	16ER19BSPT		19	9.525	3.52	0.9	0.8	●	○
	16ER28BSPT		28	9.525	3.52	0.6	0.6	●	○
	16IR11BSPT		11	9.525	3.52	1.5	1.1	●	○
	16IR14BSPT		14	9.525	3.52	1.2	1	●	○
	16IR19BSPT		19	9.525	3.52	0.9	0.8	●	○
	16IR28BSPT		28	9.525	3.52	0.6	0.6	●	○

Not: • Stokta tutulan önerilen kalite

Unified diş (UN)







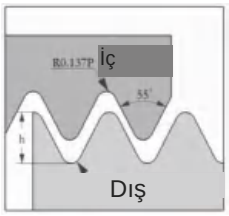
Standart: ANSI B1.1:74
Tolerans sınıfı: 2A/2B

* Tam profil

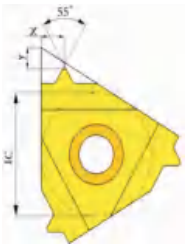
Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	diş/inç	IC	S	X	Y	AV3825	AV3525
	16ER8UN		8	9.525	3.52	1.6	1.2	●	○
	16ER10UN		10	9.525	3.52	1.5	1.1	●	○
	16ER12UN		12	9.525	3.52	1.4	1.1	●	○
	16ER14UN		14	9.525	3.52	1.2	1	●	○
	16ER16UN		16	9.525	3.52	1.1	0.9	●	○
	16ER18UN		18	9.525	3.52	1	0.8	●	○
	16ER20UN		20	9.525	3.52	0.9	0.8	●	○
	16ER24UN		24	9.525	3.52	0.8	0.7	●	○
	16IR8UN		8	9.525	3.52	1.5	1.1	●	○
	16IR10UN		10	9.525	3.52	1.5	1.1	●	○
	16IR12UN		12	9.525	3.52	1.4	1.1	●	○
	16IR14UN		14	9.525	3.52	1.2	0.9	●	○
	16IR16UN		16	9.525	3.52	1.1	0.9	●	○
	16IR18UN		18	9.525	3.52	1	0.8	●	○
	16IR20UN		20	9.525	3.52	0.9	0.8	●	○
	16IR24UN		24	9.525	3.52	0.8	0.7	●	○

Not: • Stokta tutulan önerilen kalite

Amerikan standardı konik boru dişi (NPT)







Standart: USAS B.21:1968
Tolerans sınıfı: NPT

* Tam profil

Şekil	Tip	Hatve aralığı		Uç ölçüleri (mm)				Kaplama	
		mm	diş/inç	IC	S	X	Y	AV3825	AV3525
	16ER8NPT		8	9.525	3.52	1.8	1.3	●	○
	16ER11.5NPT		11.5	9.525	3.52	1.5	1.1	●	○
	16ER14NPT		14	9.525	3.52	1.2	0.9	●	○
	16ER18NPT		18	9.525	3.52	1	0.8	●	○
	16ER27NPT		27	9.525	3.52	0.8	0.7	●	○
	16IR8NPT		8	9.525	3.52	1.8	1.3	●	○
	16IR11.5NPT		11.5	9.525	3.52	1.5	1.1	●	○
	16IR14NPT		14	9.525	3.52	1.2	0.9	●	○
	16IR18NPT		18	9.525	3.52	1	0.8	●	○
	16IR27NPT		27	9.525	3.52	0.8	0.7	●	○

Not: • Stokta tutulan önerilen kalite

avedon®

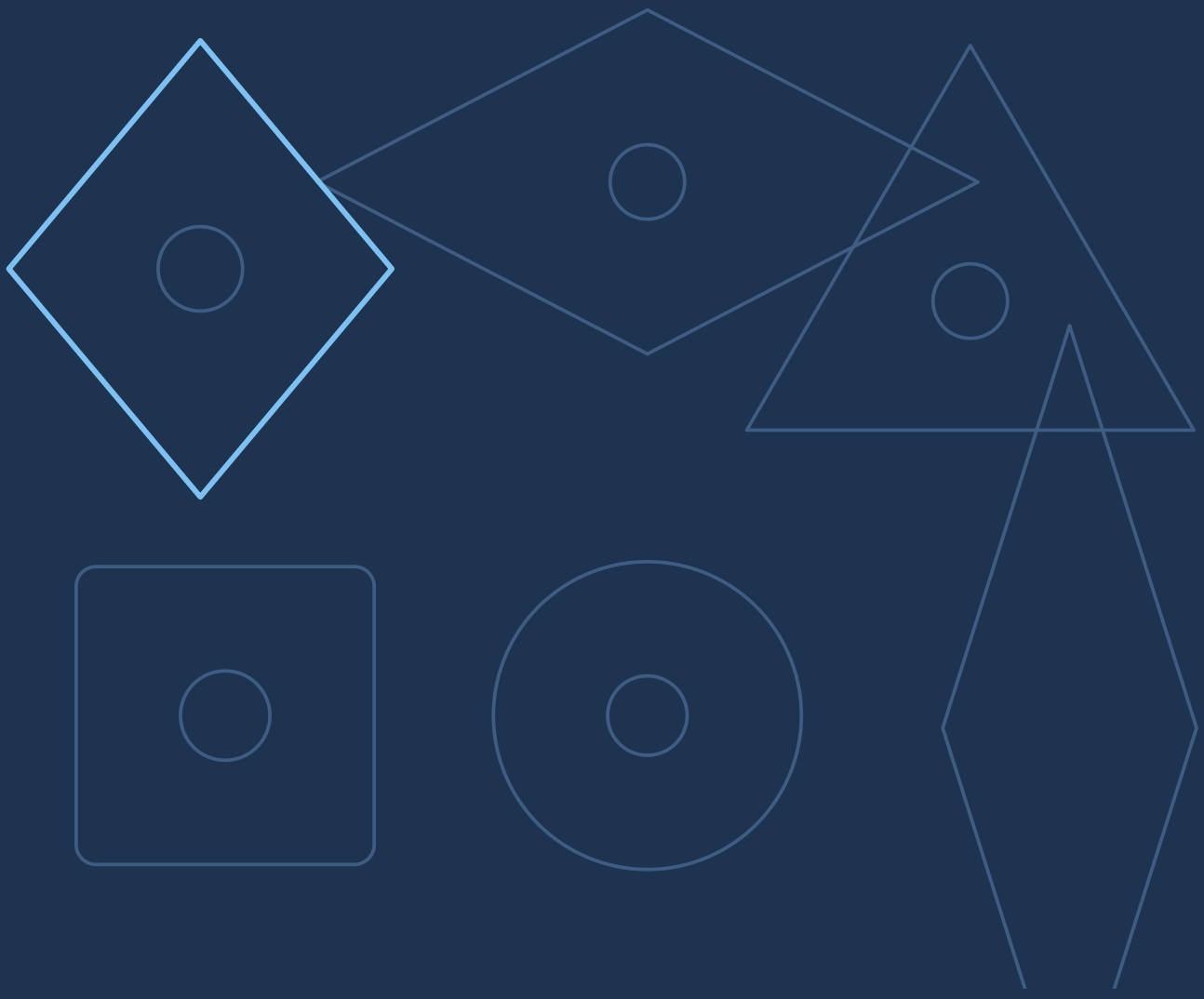
H

BÖLÜM H

Frezeleme uçları

Tarama, köşe frezeleme ve yüksek ilerleme uçları; frezeleme kalite önerileri.

Sayfa H-01 – H-47



Turboşarj

Yakıt tasarrufu, güç ve çevre koruma gibi nedenlerle turboşarjlar giderek yaygınlaşıyor ve içten yanmalı motorun vazgeçilmez bir parçası haline geliyor. Turboşarj gövdesi turboşarjın en önemli parçasıdır; malzemesi çoğunlukla yüksek sıcaklığa dayanıklı alaşımdır (ör. 1.4826, 1.4837, 1.4848, 1.4849).
Teknik ekibimiz yeni kesici takım malzemeleri, talaş kırıcılar ve kaplamalar geliştirmeye odaklanır. Turboşarj gövdelerinin kabadan finişe kadar işlenmesinde farklı koşullar için eksiksiz çözümler sunabiliyoruz.







Uygulama 1

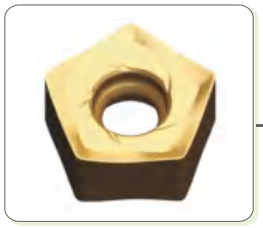


Yedigen tarama frezesi,
14 etkin kesme kenarı,
flanş yüzeylerinin kaba frezelenmesi,
mükemmel fiyat/performans





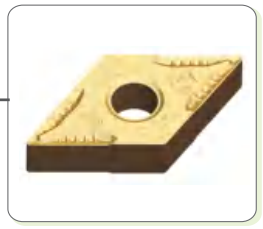
CN12: türbin gövdesi dış ve iç çapının kaba işlenmesi ve delik büyütme



PN09: türbin gövdesi flanş yüzeyinin finiş frezelenmesi, iyi yüzey temizliği

Uygulama 2





DN15: türbin gövdesi iç çap finiş delik büyütme



SN09: flanşların arka yüz frezelemesi.

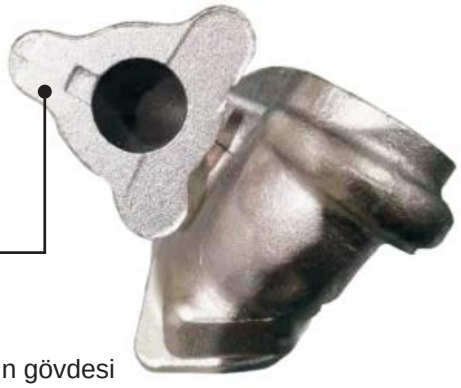


SD09: iç düzlem işleme.

Örnek 1

İş parçası malzemesi: ısıya dayanıklı çelik
İş parçası: Türbin gövdesi
Soğutma: Basınçlı hava
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: ONHU050408-AF
Kesme parametresi: Vc 168 m/dk, fz 0,07 mm/diş, ap 2,3 mm
Sonuç: Ucumuz hafif ve hızlı keser, kesme kuvveti düşüktür, arka yüzeyde aşınma düzgündür. Kenar başına 15 parça işleyen yabancı markaya göre ürünümüz daha ekonomiktir.





ONHU050408-AR: türbin gövdesi yüzeyinin kaba frezelenmesi



Örnek 2

İş parçası malzemesi: ısıya dayanıklı çelik 1.4837
İş parçası: Türbin gövdesi
Soğutma: Soğutma sıvısı
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: XNGU0705ANN-GR
Kesme parametresi: Vc 261,2 m/dk, fz 0,08 mm/diş, ap 1,5–2 mm
Sonuç: Ucumuz 32 parça, yabancı marka 30 parça işledi; takım ömrü %7 arttı, fiyat/performans iyi.



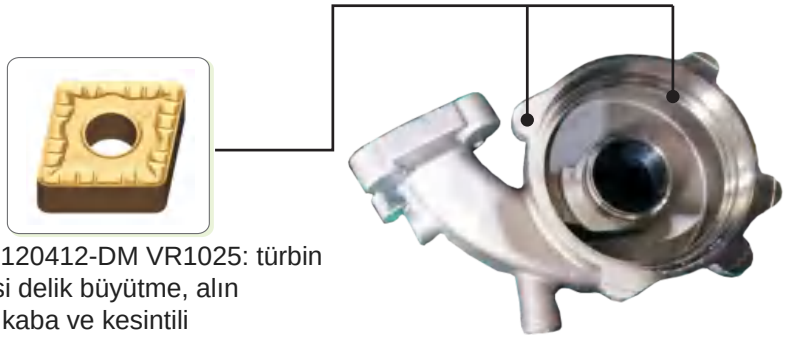


XNGU0705ANN-GR
Yedigen tarama frezesi,
14 etkin kesme kenarı,
flanş yüzeyi kaba frezeleme,
mükemmel fiyat/performans

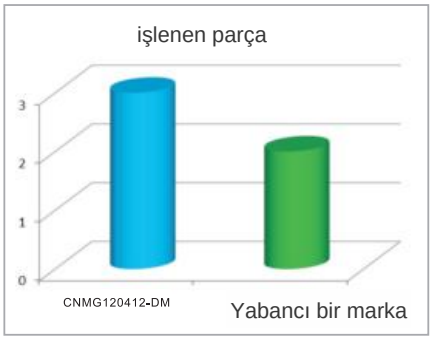


Örnek 3

İş parçası malzemesi: ısıya dayanıklı çelik 1.4837
İş parçası: Türbin gövdesi
Soğutma: Basınçlı hava
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: CNMG120412-DM
Kesme parametresi (delik): Vc 111 m/dk, f 0,18 mm/dev, ap 1,75 mm
Alın yüzeyi: Vc 120 m/dk, f 0,15 mm/dev, ap 1,3 mm
Takım ömrü: kenar başına 3 parça
Sonuç: Türbin gövdesi delik büyütme ve alın yüzeyi kaba işlemede (kesintili alın işleme dahil) ucumuz 3 parça, yabancı marka 2 parça işledi; rakip ürünün yerini başarıyla aldı.

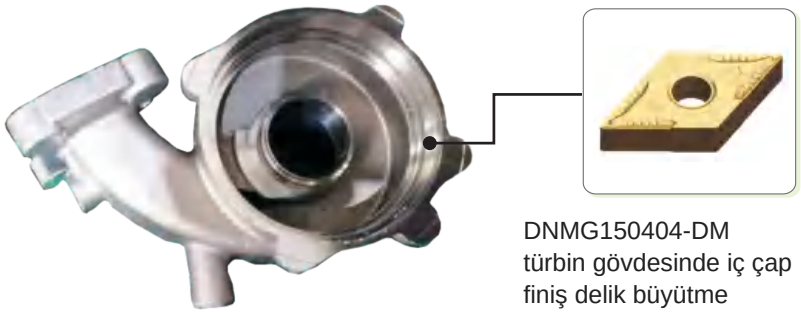


CNMG120412-DM VR1025: türbin gövdesi delik büyütme, alın yüzeyi kaba ve kesintili alın işleme

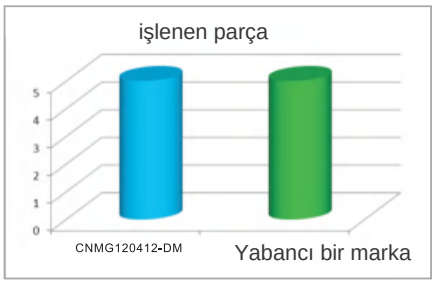


Örnek 4

İş parçası malzemesi: ısıya dayanıklı çelik 1.4837
İş parçası: Türbin gövdesi
Soğutma: Soğutma sıvısı
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: DNMG150404-DM
Kesme parametresi: Vc 130 m/dk, f 0,1 mm/dev, ap 0,2 mm
Takım ömrü: kenar başına 5 parça
Sonuç: Türbin gövdesi delik büyütme ve alın finiş işlemede ucumuz 5 parça, yabancı marka 5 parça işledi; parça başı maliyet düşük ve ucumuzun arka yüzey aşınması rakipten azdır.



DNMG150404-DM türbin gövdesinde iç çap finiş delik büyütme



SHARK TOOTH –
Türbin Kanadı Frezeleme Ucu

1 Buhar türbini kanadı malzemesi ve özellikleri

Kanatlarda genellikle yüksek dayanımlı, tok ve sıcak sertliği iyi, ısıya dayanıklı paslanmaz çelik kullanılır; talaşlı işlenmesi şu nedenlerle zordur:

- Talaş payı büyüktür; verimi artırmak için mümkün olan en yüksek kesme parametreleriyle kesilir
- Yüksek dayanım, yüksek kesme kuvveti, yüksek işleme sıcaklığı, hızlı takım aşınması, kolay kırılma
- Belirgin işlem sertleşmesi, yüksek kanal aşınması

2 Kalite özellikleri

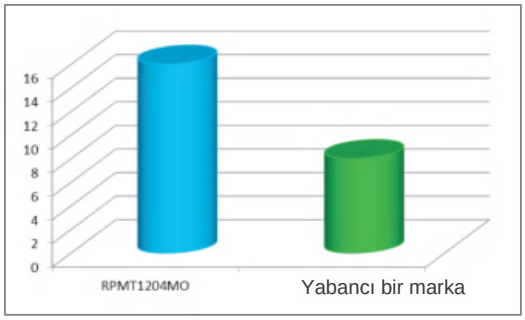
- Daha güçlü bağlayıcı faz; plastik deformasyona ve aşınmaya karşı daha yüksek direnç, mükemmel tokluk
- Yüksek alüminyum içerikli kademeli nano kaplama; oksidasyon direnci ve kesme sıcaklığı dayanımı artar
- Pürüzsüz yüzey, yığıntı talaş oluşumunu önler



Örnek 1

İş parçası malzemesi: 2Cr12NiMo1W1V
İş parçası: Yüksek basınç silindiri 12. kademe dinamik ve kilit lobu
Soğutma: Basınçlı hava
İşlem: Hava yolu profillerinin kaba frezelenmesi
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: RPMT1204M0
Kesme parametresi: Vc 231 m/dk, fz 0,38 mm/diş, ap 1,5 mm
Sonuç: Ucumuzun ömrü kenar başına 4 parça, yani bir uçla 16 iş parçası. Yabancı markanın ömrü kenar başına 2 parça. İşlenen miktar yabancı markanın %200'ü, maliyet belirgin şekilde düştü.

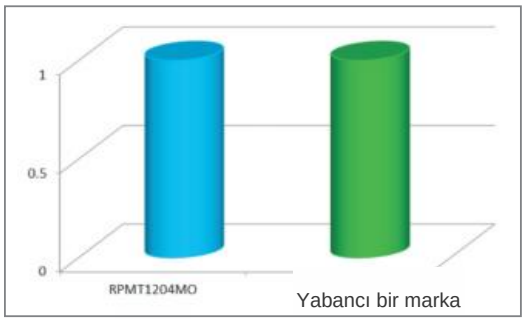




Örnek 2

İş parçası malzemesi: 10Cr11Co3W3NiMoVNbNB
İş parçası: Yüksek basınç 5. kademe
Soğutma: Basınçlı hava
İşlem: Hava yolu profillerinin kaba frezelenmesi
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: RPMT1204M0
Kesme parametresi: Vc 221 m/dk, fz 0,51 mm/diş, ap 1,5 mm
Sonuç: Ucumuzun ömrü kenar başına 1 parça, yani bir uçla 4 iş parçası. Yabancı markada da kenar başına 1 parça; ikisinde de 1 parçadan sonra uç değiştirilmek zorunda. Ucumuzun aşınması daha az ve maliyet düştü.





YÜKSEK İLERLEME – Cyclone Frezeleme

1. LNMU Serisi

Talaş kırıcı özelliği

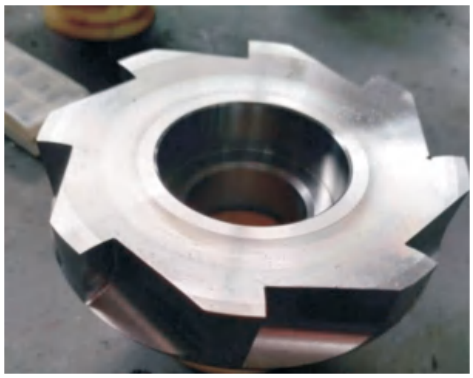
- Çift taraflı yüksek ilerleme, 4 kenarla ekonomik
- Çelik, paslanmaz çelik, dökme demir ve yüksek sıcaklık alaşımları için optimize edilmiş kenar hazırlığı
- Uçlarda ap 1 mm'ye kadar; köşe, kanal, rampalı ve küçük derinlikli frezelemede kullanılabilir



Örnek:
İş parçası malzemesi: Alaşımlı çelik
İş parçası: Kanal frezeleme
Soğutma: Basınçlı hava
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: LNMU0303ZER-GM
Kesme parametresi: Vc 126 m/dk, fz 0,3 mm/diş, ap 0,8 mm
Sonuç: Ucumuz kenar başına 46 parça, yabancı marka 33 parça işledi; takım ömrü %40 arttı, müşterinin ekonomik çözüm ihtiyacı karşılandı.







2. LOGU Serisi

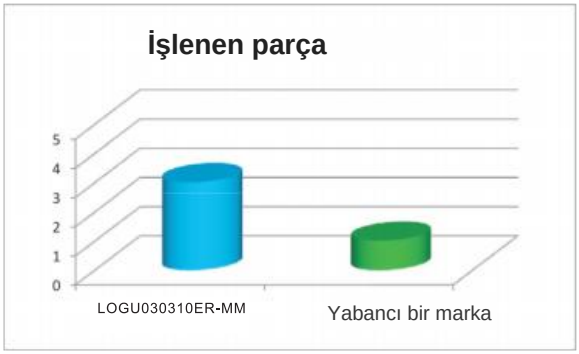
Talaş kırıcı özelliği

- Çift taraflı, 4 kesme kenarı
- Yüksek konumlama hassasiyeti için hassas taşlanmış uçlar
- Küçük çap ve çok kenarla verimli işleme; freze çapı aralığı 16–32 mm



Örnek:
İş parçası malzemesi: 45# çelik
İş parçası: Otomotiv kalıp parçaları
Soğutma: Basınçlı hava
Karşılaştırılan uç: Yabancı bir marka
Avedon ucu: LOGU030310ER-MM
Kesme parametresi: Vc 180 m/dk, fz 0,77 mm/diş, ap 0,7 mm
Sonuç: Ucumuz kenar başına 3 parça, yabancı marka 1 parça işledi; verim 4–5 kat arttı, birim maliyet 5 kat düştü.









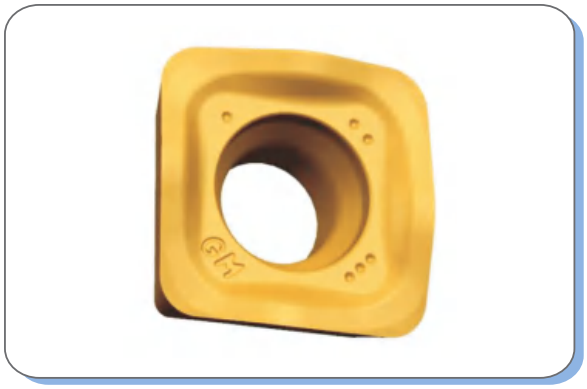
YÜKSEK İLERLEME – Yeni Uygulama

Geleneksel yuvarlak uçların yerini alır

3. SOMT Serisi

Talaş kırıcı özelliği

- Genel frezeleme için hızlı ilerleme
- Dışbükey kesme kenarı ilerleme sırasında darbeyi azaltır, ucun darbe direncini artırır
- Düz yüzey, cep ve helisel frezeleme için



Örnek:
İş parçası malzemesi: SUS 431
İş parçası: Maske makinesi düze plakası
Soğutma: Basınçlı hava
Karşılaştırılan uç: Yabancı marka – RPEW1003
Kesme parametresi: Vc 271 m/dk, fz 0,91 mm/diş, ap 0,3 mm
Avedon ucu: SOMT140520-GM
Kesme parametresi: Vc 178 m/dk, fz 1,23 mm/diş, ap 1 mm
Sonuç: Hızlı ilerleme uçları geleneksel yuvarlak uçların yerini aldı; birim zamanda talaş kaldırma 3,6 kat, kesme performansı %300 arttı, takım maliyeti %80 düştü.





Frezeleme Kalitesi Önerileri

ISO		CVD			PVD		
K Dökme demir	01				AV3015		
	10	AV2330				AV3825	
	20		AV2340				AV3525
	30						
	40						
P Çelik	01						
	10				AV3015		
	20					AV3825	
	30						AV3025
	40						
M Paslanmaz çelik	01						
	10				AV3805		
	20					AV3824	AV3825
	30						
	40						
S Isıya dayanıklı alaşım	01						
	10				AV4010		
	20					AV4525	
	30						AV4025
	40						

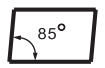
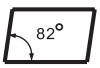
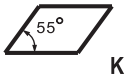
Uç ve Talaş Kırıcı Önerileri

Köşe frezeleme uçları						
	APMT–XR	APMT–GM	APMT–M2	APMT–H2	ADMT–JT	TPKT
Uzunluk	11/16	11/16	11/16	11/16	11/16	04/09
Sayfa	H-15	H-15	H-16	H-16	H-17	H-18
Çift taraflı köşe frezeleme uçları						
	ANMX	ANKT–M	LNGU–GM	WNMU–GM	XNEX–GL/GM	
Uzunluk	11/15	04/06/09/11	11	05/08	08	
Sayfa	H-19	H-20	H-21	H-21	H-22	
Profil frezeleme uçları						
	RPMW	RPMT–JM	RPMT–GM	RDKT	RPMT–XR	RPMT
Uzunluk	08/10/12	08/10/12/16	08/10/12	08/20	08/10/12	12
Sayfa	H-23	H-23	H-24	H-25	H-26	H-27
Tek taraflı yüksek ilerleme uçları						
	EPNW–GH	LPGT–GM	SDMT–GM	SDMT–GH	SOMT–GM	SOMT–GH
Uzunluk	06	01	12/15	06/15	10	14
Sayfa	H-28	H-28	H-29	H-29	H-30	H-30
Çift taraflı yüksek ilerleme uçları				45° tarama uçları		
	LNMU–GM	LOGU–GM	BLMP–GM		SEMT–GM	SEER–GM
Uzunluk	03	03	04–11	Uzunluk	12	12/15
Sayfa	H-31	H-31	H-32		H-37	H-37

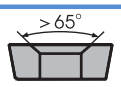
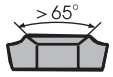
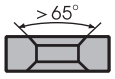
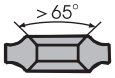
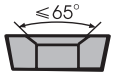
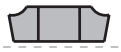
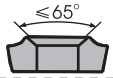
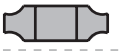
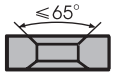
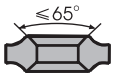
Süper alaşım, titanyum alaşımı					
	RPHX–DF	RPHX–DM	APMT–DF	SDMT–DM	LNMU–MS
Uzunluk	10/12	10/12	11/16	06/09	03
Sayfa	H-34	H-34	H-35	H-35	H-36
Çift taraflı ekonomik tarama uçları					
	SNMU–GM	SNMX–GM	SNGX–GF	PNCU–GM	HNMG–R
Uzunluk	13	12/16	09	09	09
Sayfa	H-38	H-39	H-39	H-40	H-41
Çift taraflı ekonomik tarama uçları					
	HNMG–M	XNMU–MM	XNMU–GR	ONHU–AR	ONHU–AF
Uzunluk	09	07	07/09	05	05
Sayfa	H-41	H-42	H-42	H-43	H-43
Çift taraflı ekonomik tarama uçları		Helis frezeleme uçları			
	ONMU–GM		APKT–PM	SP–KM	SP–PM
Uzunluk	09	Uzunluk	15	12	12
Sayfa	H-44		H-45	H-45	H-45
Helisel frezeleme uçları					
	CNHX	LNKT	LNKX		
Uzunluk	16	16	12		
Sayfa	H-46	H-46	H-47		

Freze ucu kod anahtarı

1. Şekil

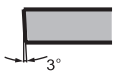
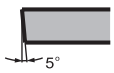
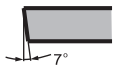
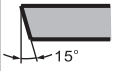
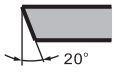
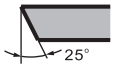
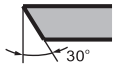
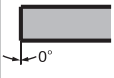
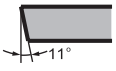
 A	 B	 C
 D	 E	 H
 K	 L	 M
 O	 P	 R
 S	 T	 T
 V	 W	Diğer Z

4. Talaş kırıcı ve delik

Kod	Merkez delik	Talaş kırıcı	Uç profili	Kod	Merkez delik	Talaş kırıcı	Uç profili
B	Y	N		N	N	N	
H	Y	Tek		R	N	Tek	
C	Y	N		F	N	Çift	
J	Y	Çift		A	Y	N	
W	Y	N		M	Y	Tek	
T	Y	Tek		G	Y	Çift	
Q	Y	N		X	---	---	Özel tip
U	Y	Çift					

A P M T

2. Boşluk açısı

Kod	Boşluk açısı	Kod	Boşluk açısı
A		B	
C		D	
E		F	
G		N	
P		O	Diğer

3. Tolerans

Kod	m(mm)	d=I.C	S (mm)
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.005	±0.05-±0.13	±0.025
K	±0.013	±0.05-±0.13	±0.025
L	±0.025	±0.05-±0.13	±0.025
M	±0.08-±0.18	±0.05-±0.13	±0.13
N	±0.08-±0.18	±0.05-±0.13	±0.025
U	±0.13-±0.38	±0.08-±0.25	±0.13

Yazılı daire	Normal üçgen	Kare	80° rombik	55° rombik	35° rombik	
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	---
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	---
12.7	±0.13	±0.13	±0.13	±0.15	---	---
15.875	±0.15	±0.15	±0.15	±0.18	---	---
19.05	±0.15	±0.15	±0.15	±0.18	---	---
25.4	---	±0.18	---	---	---	---

• Yazılı daire toleransı (mm)

Yazılı daire	Normal üçgen	Kare	80° rombik	55° rombik	35° rombik	
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	---
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
12.7	±0.08	±0.08	±0.08	±0.08	---	±0.08
15.875	±0.10	±0.10	±0.10	±0.10	---	±0.10
19.05	±0.10	±0.10	±0.10	±0.10	---	±0.10
25.4	---	±0.13	---	---	---	±0.13

Yazılı daire çapı (mm)	C	D	R	S	T	V	W
32.00			32				
31.75			31				
25.40			25	25			
25.00	25	25	25				
20.00			20				
19.05	19		19	19	33		
16.00		19	16				
15.875	16		15	16	27		
12.70	12	15	12	12	22	22	08
12.00			12				
10.00			10				
9.525	09	11	09	09	16	16	06
8.00			08				
6.35	06	07			11	11	
6.00			06				
5.56					09		
5.50			05				
3.97					06		

Uç şekli

5. Kesme kenarı uzunluğu

Kod	Kalınlık (mm)
12	12.70
10	11.11
T9	9.72
09	9.52
07	7.94
T6	6.75
06	6.35
05	5.56
T4	4.96
04	4.76
T3	3.97
03	3.18
T2	2.78
02	2.38
T1	1.98
01	1.59
T0	0.99
00	0.79

6. Kalınlık

16 04 PD E R - GM

7. Yaklaşma açısı / boşluk açısı

Kr		α°	
A	45°	A	3°
D	60°	B	5°
E	75°	C	7°
F	85°	D	15°
P	90°	E	20°
Z	diğer	F	25°
		G	30°
		N	0°
		P	11°
		Z	diğer

8. Kesme kenarı kodu

	a °	b	
F	0-5°	0-0.10	k (veya kodsuz)
E	1-10°	1-0.15	P
	2-15°	2-0.20	
T	3-20°	3-0.25	W
	4-25°	4-0.30	
S	5-30°	5-0.35	Q
	1-10°	6-0.40	
	1-10°	7-0.45	

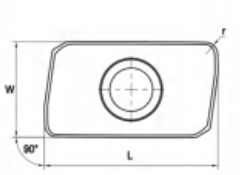
10. Talaş kırıcı

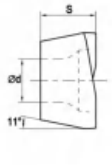
9. Kesme yönü kodu

R	Sağ
L	Sol
N	Nötr

Köşe Frezeleme Uçları

APㅁㅁ uçları

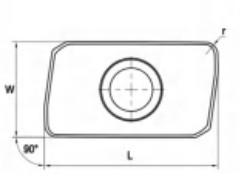


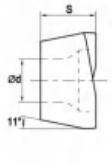


Uzunluk	Ölçü (mm)			
	L	W	S	r
11	11.35	6.2	3.5	0.8
16	17.35	9.3	5.26	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	APMT1135PDER-XR	2.50–7.50	0.05–0.25			○	●	○	●	●	○				
	APMT1605PDER-XR	3.50–10.00	0.07–0.50			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite



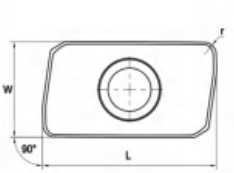


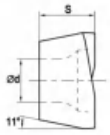
Uzunluk	Ölçü (mm)			
	L	W	S	r
11	11.35	6.2	3.5	0.8
16	17.35	9.3	5.26	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	APMT1135PDER-GM	2.50–7.50	0.05–0.25			○	●	○	●	●	○				
	APMT160408PDER-GM	3.50–10.00	0.07–0.50			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

APㅁㅁ uçları

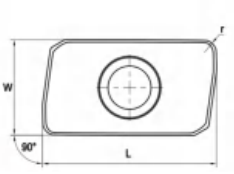


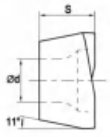


Uzunluk	Ölçü (mm)			
	L	W	S	r
11	11.35	6.2	3.5	0.8
16	17.35	9.2	4.76	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	APMT1135PDER–M2	2.50–7.50	0.05–0.25			○	●	○	●	●	○				
	APMT160408PDER–M2	3.50–10.00	0.07–0.30			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite





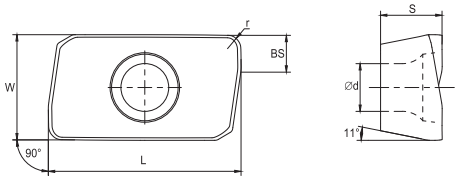
Uzunluk	Ölçü (mm)			
	L	W	S	r
11	11.35	6.2	3.5	0.8
16	17.35	9.2	4.76	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	APMT1135PDER–H2	2.50–7.50	0.05–0.25			○	●	○	●	●	○				
	APMT160408PDER–H2	3.50–10.00	0.07–0.30			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Köşe frezeleme uçları

AD□□ uçları

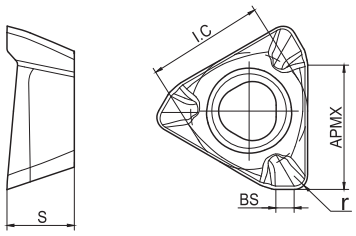


11	11	6.7	3.8	1.4–2.1	0.2–1.2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	ADMT11T302ER–JT	2.0–6.0	0.06–0.15			○	●	○	●	●	○				
	ADMT11T304ER–JT	2.2–8.0	0.08–0.15			○	●	○	●	●	○				
	ADMT11T308ER–JT	2.5–10.0	0.10–0.18			○	●	○	●	●	○				
	ADMT11T312ER–JT	2.8–10.0	0.08–0.20			○	●	○	●	●	○				
	ADMT170408ER–JT	3.5–10.0	0.08–0.25			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

TP□□ uçları



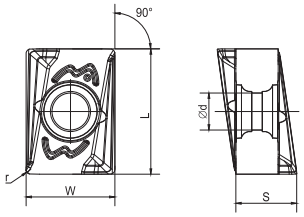
Uzunluk	Ölçü (mm)				
	IC	S	APMX	BS	r
4	3.9	2.1	3.5	0.5–0.7	0.2–0.4
6	5.3	2.8	4.7	0.6–1.2	0.2–0.8
10	6.9	4	7	0.5–1.3	0.4–1.6
15	10.7	5	11	0.5–2.0	0.4–2.4
19	13.5	6	15	0.5–2.0	0.4–3.2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	TPKT040202R–M	0.50–3.00	0.04–0.08			○	●	○	●	●	○				
	TPKT040204R–M	0.50–3.00	0.04–0.08			○	●	○	●	●	○				
	TPKT060302R–M	1.00–4.00	0.04–0.10			○	●	○	●	●	○				
	TPKT060304R–M	1.00–4.00	0.04–0.10			○	●	○	●	●	○				
	TPKT060308R–M	1.00–4.00	0.04–0.10			○	●	○	●	●	○				
	TPKT100404R–M	2.00–6.00	0.05–0.12			○	●	○	●	●	○				
	TPKT100408R–M	2.00–6.00	0.05–0.12			○	●	○	●	●	○				
	TPKT100416R–M	2.00–6.00	0.05–0.12			○	●	○	●	●	○				
	TPKT150508R–M	3.00–9.00	0.07–0.17			○	●	○	●	●	○				
	TPKT150516R–M	3.00–9.00	0.07–0.17			○	●	○	●	●	○				
	TPKT150524R–M	3.00–12.00	0.07–0.17			○	●	○	●	●	○				
	TPKT190608R–M	4.50–12.00	0.09–0.22			○	●	○	●	●	○				
	TPKT190616R–M	4.50–12.00	0.09–0.22			○	●	○	●	●	○				
	TPKT190624R–M	4.50–12.00	0.09–0.22			○	●	○	●	●	○				
	TPKT190632R–M	4.50–12.00	0.09–0.22			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Köşe frezeleme uçları

AN□□ uçları

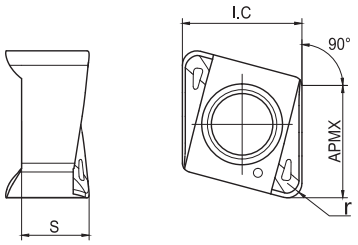


Uzunluk	Ölçü (mm)					
	L	W	S	APMX	BS	r
11	11.85	8.4	5.7			0.4–0.8
15	15.430	11	7.3			0.8–1.6

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	ANMX110504PNR	2.00–9.00	0.10–0.20			○	●	○	●	●	○				
	ANMX110508PNR	3.00–9.00	0.10–0.20			○	●	○	●	●	○				
	ANMX150608PNR	4.50–12.00	0.10–0.20			○	●	○	●	●	○				
	ANMX150616PNR	5.00–12.00	0.10–0.20			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

AN□□ uçları



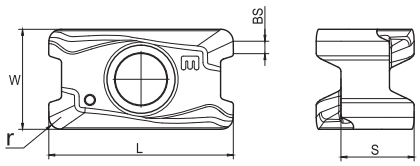
Uzunluk	Ölçü (mm)				
	IC	S	APMX	BS	r
4	4	3.1	3.5	–	0.2–0.8
6	6.6	4.2–5.0	5.8–6.2	0.6–1.0	0.4–2.0
9	8.6	5.7–6.3	8	0.8–1.2	0.4–1.6
11	10.7	8.1	10.5	1	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	ANKT040202R–M	0.50–3.00	0.04–0.08			○	●	○	●	●	○				
	ANKT040204R–M	1.00–3.00	0.06–0.12			○	●	○	●	●	○				
	ANKT040208R–M	1.00–3.00	0.06–0.12			○	●	○	●	●	○				
	ANKT060304R–M	0.50–5.00	0.07–0.15			○	●	○	●	●	○				
	ANKT060308R–M	1.00–5.00	0.07–0.15			○	●	○	●	●	○				
	ANKT060312R–M	1.00–5.00	0.07–0.15			○	●	○	●	●	○				
	ANKT060316R–M	2.00–4.50	0.07–0.15			○	●	○	●	●	○				
	ANKT060320R–M	2.00–4.50	0.07–0.15			○	●	○	●	●	○				
	ANKT090408R–M	2.50–7.00	0.07–0.15			○	●	○	●	●	○				
	ANKT090416R–M	2.50–7.00	0.07–0.15			○	●	○	●	●	○				
	ANKT110608R–M	3.50–10.0	0.09–0.15			○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

Köşe frezeleme uçları

LN□□ uçları

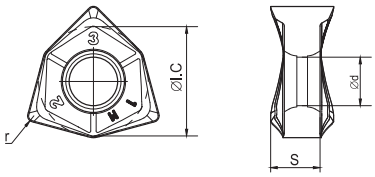


Uzunluk	Ölçü (mm)				
	L	S	W	BS	r
11	12.16	4.83	6.6	1.4	0.4–1.2

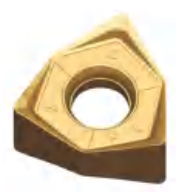
Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	LNGU110404ERGE-GM	max=10	0.50–1.50			○	●	○	●	●	○				
	LNGU110408ERGE-GM	max=10	0.50–1.50			○	●	○	●	●	○				
	LNGU110412ERGE-GM	max=10	0.50–1.50			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

WN□□ uçları

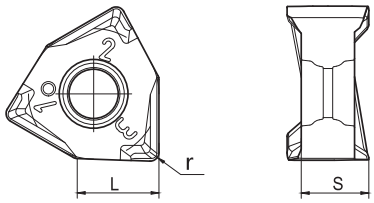


Uzunluk	Ölçü (mm)		
	S	d	r
5	4.2	3.4	0.8
8	6.65	6.2	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	WNMU050408EN-GM	0.50–5.00	0.10–0.30			○	●	○	●	●	○				
	WNMU080608EN-GM	0.80–8.00	0.10–0.30			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

XN□□ uçları



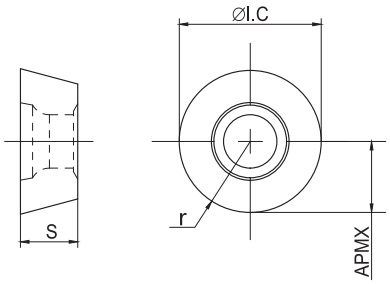
Uzunluk	Ölçü (mm)	
	L	S
08	7.5	6.45

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	XNEX080608TR-GL	0.80–8.00	0.10–0.30			○	●	○	●	●	○				
	XNEX080612TR-GL	0.80–8.00	0.10–0.30			○	●	○	●	●	○				
	XNEX080608TR-GM	0.80–8.00	0.10–0.30			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Köşe frezeleme uçları

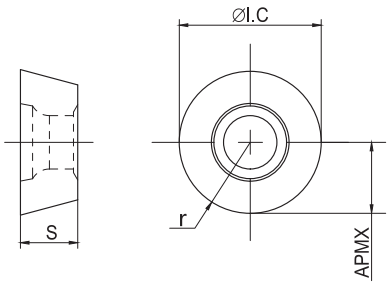
RP□□ uçları



Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
8	4	8	2.78	4
10	5	10	3.18	5
12	6	12	4.76	6

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	RPMW08T2MO	1.00–3.00	0.05–0.25			○	●	○	●	●	○				
	RPMW1003MO	1.50–4.00	0.05–0.30			○	●	○	●	●	○				
	RPMW1204MO	1.50–5.00	0.05–0.35			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

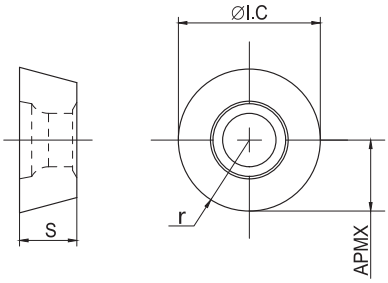


Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
8	4	8	2.78	4
10	5	10	3.97	5
12	6	12	4.76	6
16	8	16	6.35	8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	RPMT08T2MOE-JM	1.00–1.30	0.05–0.25			○	●	○	●	●	○				
	RPMT10T3MOE-JM	1.50–4.00	0.05–0.30			○	●	○	●	●	○				
	RPMT1204MOE-JM	1.50–5.00	0.05–0.35			○	●	○	●	●	○				
	RPMT1606MOE-JM	2.00–6.50	0.10–0.40			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

RP□□ uçları



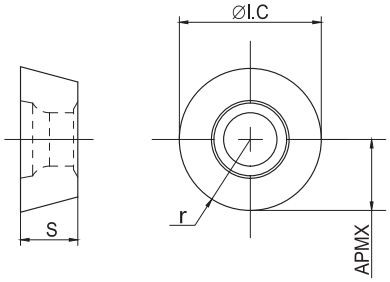
Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
8	4	8	2.78	4
10	5	10	3.18	5
12	6	12	4.76	6

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	RPMT08T2MO-GM	1.50–4.00	0.10–0.30			○	●	○	●	●	○				
	RPMT10T3MO-GM	1.80–5.00	0.10–0.50			○	●	○	●	●	○				
	RPMT1204MO-GM	2.00–6.50	0.10–0.50			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Profil frezeleme uçları

RD□□ uçları

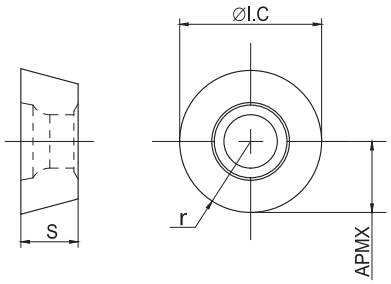


Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
8	4	8	3.18	4
10	5	10	3.97	5
12	6	12	4.76	6
16	8	16	5.56	8
20	10	20	6.35	10

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	RDKT0803MO	1.00–3.00	0.05–0.25			○	●	○	●	●	○				
	RDKT10T3MO	1.50–4.00	0.05–0.30			○	●	○	●	●	○				
	RDKT1204MO	1.50–5.00	0.05–0.35			○	●	○	●	●	○				
	RDKT1604MO	2.00–6.50	0.10–0.40			○	●	○	●	●	○				
	RDKT1605MO	2.00–6.50	0.10–0.40			○	●	○	●	●	○				
	RDKT1606MO	2.00–6.50	0.10–0.40			○	●	○	●	●	○				
	RDKT2006MO	3.00–8.00	0.10–0.40			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

RP□□ uçları



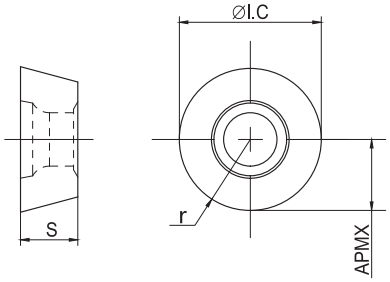
Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
8	4	8	2.78	4
10	5	10	3.97	5
12	6	12	4.76	6

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	RPMT0803–XR	1.00–1.30	0.05–0.25			○	●	○	●	●	○				
	RPMT10T3–XR	1.50–4.00	0.05–0.30			○	●	○	●	●	○				
	RPMT1204–XR	1.50–5.00	0.05–0.35			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Profil frezeleme uçları

RP□□ uçları



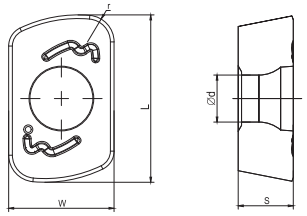
Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
8	4	8	2.78	4
10	5	10	3.97	5
12	6	12	4.76	6

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	RPMT08T2MO	1.5–4.0	0.1–0.3			○	●	○	●	●	○				
	RPMT10T3MO	1.8–5.0	0.1–0.5			○	●	○	●	●	○				
	RPMT1204MO	2–6.5	0.1–0.5			○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

Yüksek ilerlemeli frezeleme uçları

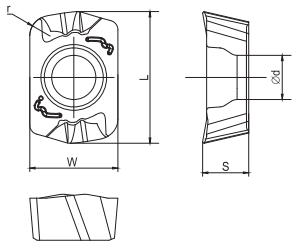
EP□□ uçları



Ölçü (mm)				
W	S	d	L	r
6.28	3.18	2.8	9.79	1.6

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	EPNW0603TN-GH	max=1.5	0.15-0.50			○	●	○	●	●	○				

LP□□ uçları



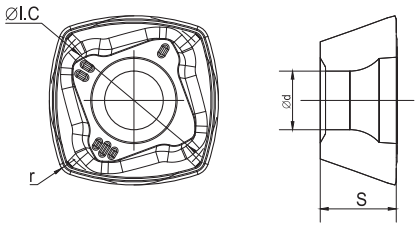
Ölçü (mm)				
W	S	d	L	r
4.19	2.19	2.1	6.26	1

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	LPGT010210ER-GM	max=1	0.50-1.50			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Yüksek ilerlemeli frezeleme uçları

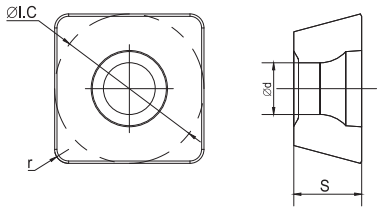
SD□□ uçları



Uzunluk	Ölçü (mm)		
	I.C	S	r
12	12.7	5.56	1.2
15	15.875	5.56	1.2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SDMT120512-GM	0.50-2.00	0.60-1.20			○	●	○	●	●	○				
	SDMT150512-GM	0.80-3.00	0.60-1.20			○	●	○	●	●	○				
						○	●	○	●	●	○				
						○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

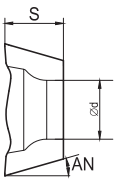


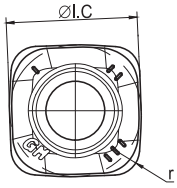
Uzunluk	Ölçü (mm)		
	I.C	S	r
6	6.35	2.58	0.8
9	9.525	3.97	1.2
12	12.7	4.76	1.2
15	15.875	5.56	2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SDMT06T208-GH	0.50-1.20	0.50-1.00			○	●	○	●	●	○				
	SDMT09T312-GH	0.50-1.80	0.50-1.00			○	●	○	●	●	○				
	SDMT120412-GH	0.50-2.00	0.60-1.20			○	●	○	●	●	○				
	SDMT150520-GH	0.80-3.00	0.60-1.20			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

SO□□ uçları

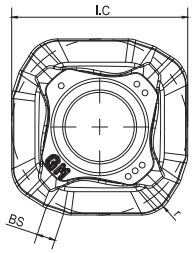


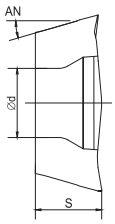


Uzunluk	Ölçü (mm)				
	I.C	S	d	r	AN(°)
10	10.3	4.58	4.6	2	16

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SOMT100420ER-GM	0.10–1.20	0.20–2.00			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite





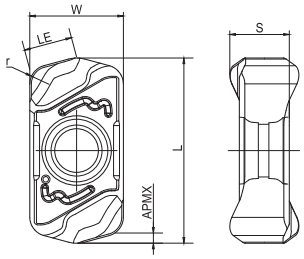
Uzunluk	Ölçü (mm)					
	I.C	S	d	BS	r	AN(°)
14	14.76	5.56	5.8	1.6	2	16

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SOMT140520ER-GH	0.50–2.00	0.42–2.00			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Yüksek ilerlemeli frezeleme uçları

LN□□ uçları

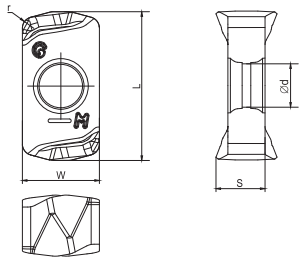


Uzunluk	Ölçü (mm)				
	r	APMX	L	I.C	S
3	1.2	1	3.2	6	4.3

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	LNMU0303ZER-GM	0.20-2.00	0.50-1.30			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

LO□□ uçları

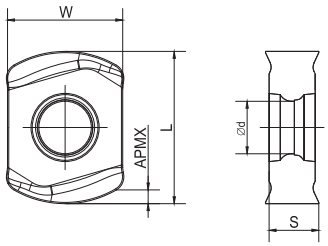


Uzunluk	Ölçü (mm)				
	W	S	d	L	r
3	6.2	3.96	3.45	11.9	1

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	LOGU030310ER-GM	max=1	0.50-1.50			○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

BL□□ uçları



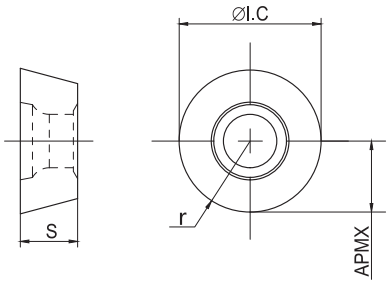
Uzunluk	Ölçü (mm)			
	L	W	S	APMX
4	6	4.2	2.5	0.5
6	9	6.39	3.73	1
9	11.9	9.18	4.8	1.5
11	14.6	11.2	6.5	2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	BLMP0402R-GM	0.10–0.50	0.20–1.50			○	●	○	●	●	○				
	BLMP0603R-GM	0.10–1.00	0.30–2.50			○	●	○	●	●	○				
	BLMP0904R-GM	0.10–1.50	0.30–3.50			○	●	○	●	●	○				
	BLMP1105R-GM	0.30–2.00	0.30–4.00			○	●	○	●	●	○				

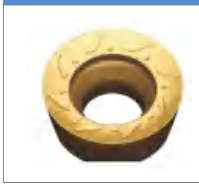
Not: • Stokta tutulan önerilen kalite

Isıya dayanıklı alaşımlar / Titanyum alaşımları

RP□□ uçları

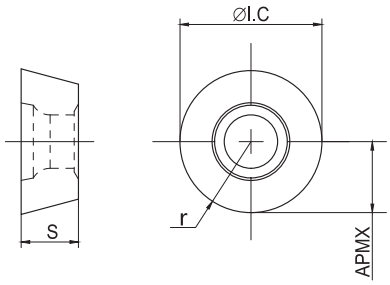


Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
10	5	10	3.97	5
12	6	12	4.76	6

Şekil	Tip	ap (mm)	fz (mm/z)	CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3015	AV3525	AV3824	AV3825	AV3625	AV3025	AV4525	AV4010	AV4025
	RPHX10T3-DF	1.50-4.00	0.05-0.30											●	●	○
	RPHX1204-DF	1.50-5.00	0.05-0.35											●	●	○

Not: • Stokta tutulan önerilen kalite

RP□□ uçları



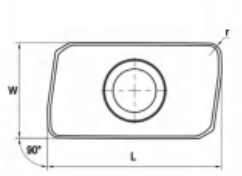
Uzunluk	Ölçü (mm)			
	r	I.C	S	APMX
10	5	10	3.18	5
12	6	12	4.76	6

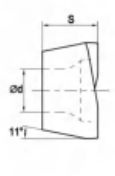
Şekil	Tip	ap (mm)	fz (mm/z)	CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3015	AV3525	AV3824	AV3825	AV3625	AV3025	AV4525	AV4010	AV4025
	RPHX10T3–DM	1.80–5.00	0.10–0.50											●	●	○
	RPHX1204–DM	2.00–6.50	0.10–0.50											●	●	○

Not: • Stokta tutulan önerilen kalite

Isıya dayanıklı alaşımlar / Titanyum alaşımları

APㅁㅁ uçları



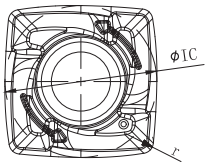


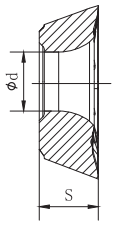
Uzunluk	Ölçü (mm)			
	L	W	S	r
11	11.4	6.2	3.5	0.8
16	17.25	9.2	4.76	0.8、3

Şekil	Tip	ap (mm)	fz (mm/z)	CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3015	AV3525	AV3824	AV3825	AV3625	AV3025	AV4525	AV4010	AV4025
	APMT1135PDER-DF	2.5-7.5	0.05-0.25											●	●	○
	APMT160408PDER-DF	3.5-10	0.07-0.5											●	●	○
	APMT160430PDER-DF	5.0-10	0.2-0.5											●	●	○
	APMT1135PDER-DM	2.5-7.5	0.05-0.35											●	●	○
	APMT160408PDER-DM	3.5-10	0.2-0.7											●	●	○

Not: • Stokta tutulan önerilen kalite

SDㅁㅁ uçları



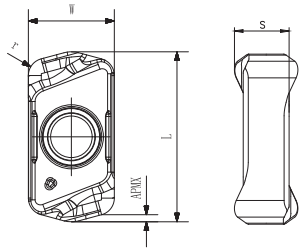


Uzunluk	Ölçü (mm)		
	I.C	S	r
6	6.35	2.78	0.5
9	9	3.5	0.7

Şekil	Tip	ap (mm)	fz (mm/z)	CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3015	AV3525	AV3824	AV3825	AV3625	AV3025	AV4525	AV4010	AV4025
	SDMT06T205-DM		0.1-1.0											●	●	○
	SDMT09T307-DM		0.2-1.2											●	●	○

Not: • Stokta tutulan önerilen kalite

LN□□ uçları



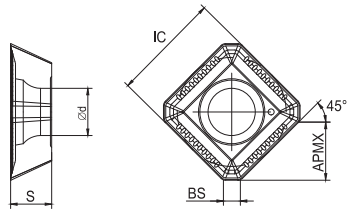
Uzunluk	Ölçü (mm)				
	W	S	APMX	L	r
3	6	3.75	1	11.8	1.2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD				PVD								
				AV2115	AV1315	AV1325	AV1335	AV3015	AV3525	AV3824	AV3825	AV3625	AV3025	AV4525	AV4010	AV4025
	LNMU0303ZER-MS	0.2–2.0	0.5–1.3											●	●	○

Not: • Stokta tutulan önerilen kalite

45° Tarama Uçları

SE□□ uçları

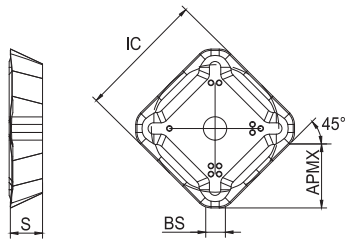


Uzunluk	Ölçü (mm)			
	BS	APMX	I.C	S
12	1.5	6.5	12.7	4.76

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD									
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SEMT1204AFTN-GM	3.00–8.50	0.09–0.16			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

SE□□ uçları



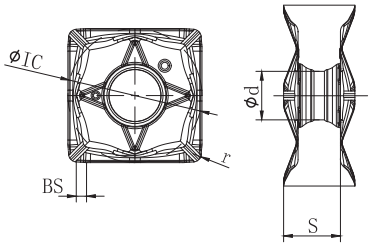
Uzunluk	Ölçü (mm)			
	BS	APMX	I.C	S
12	1.5	6.5	12.7	3.19
15	2	8.5	15.875	4.76

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD									
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SEER1203-GM	1.50–6.00	0.10–0.25			○	●	○	●	●	○				
	SEER1504-GM	1.50–8.00	0.10–0.25			○	●	○	●	●	○				

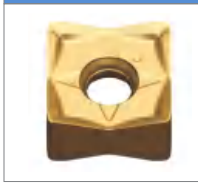
Not: ● Stokta tutulan önerilen kalite

88° Yaklaşma Açısı
Ekonomik Tarama Uçları

SN□□ uçları



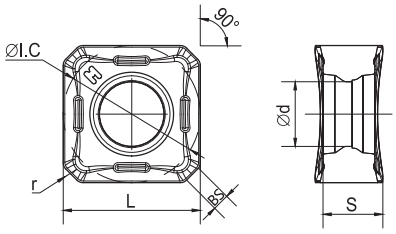
Uzunluk	Ölçü (mm)			
	I.C	S	BS	r
13	13	5.5	1	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SNMU130508EN-GM	1.0–5.0	0.1–0.25			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Ekonomik tarama uçları

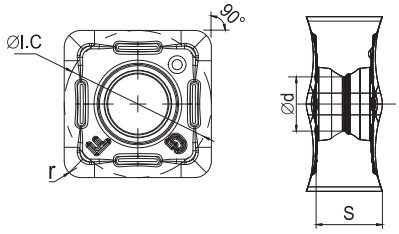
SN□□ uçları



Uzunluk	Ölçü (mm)		
	I.C	S	BS
12	12.7	6.4	1.5
16	16	7.7	1.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD									
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SNMX1205ANN-GM	1.00–6.00	0.15–0.50			○	●	○	●	●	○				
	SNMX1606ANN-GM	1.00–6.00	0.15–0.50			○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

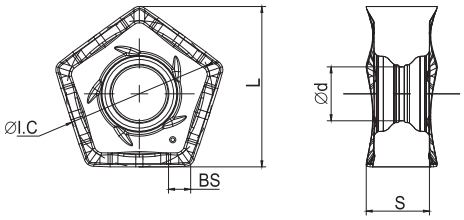


Uzunluk	Ölçü (mm)		
	I.C	S	r
9	9.525	5.5	0.8–1.1

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD									
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SNGX090408-GF	2.50–7.50	0.08–0.15			○	●	○	●	●	○				
	SNGX090411-GF	2.50–7.50	0.08–0.15			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

PN□□ uçları



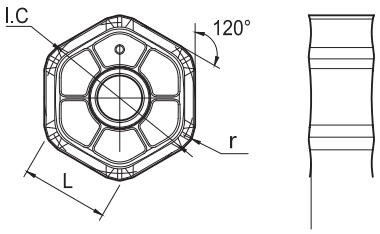
Uzunluk	Ölçü (mm)				
	L	S	d	BCH	BS
09	12.2	13.4	5.35	4.5	2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD									
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	PNCU0905GNEN-GM	0.50–3.00	0.20–0.60			○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

Ekonomik tarama uçları

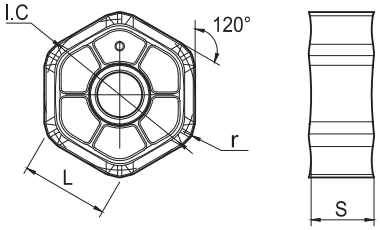
HN□□ uçları



Uzunluk	Ölçü (mm)		
	I.C	S	r
9	16.5	6.35	1.0

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	HNMG0907ANSN-R	1.50–4.00	0.20–0.70			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite



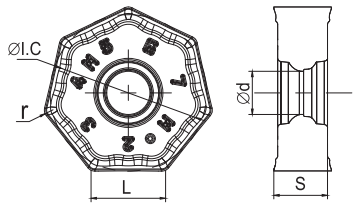
Uzunluk	Ölçü (mm)		
	I.C	S	r
9	16.5	6.35	1.0

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	HNMG0907ANSN-M	1.00–3.00	0.05–0.15			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Ekonomik tarama uçları

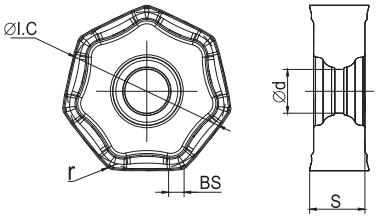
XN□□ uçları



Uzunluk	Ölçü (mm)			
	I.C	S	d	r
7	12	5.8	4	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	XNMU070508-MM	0.2–3.0	0.05–0.2			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite



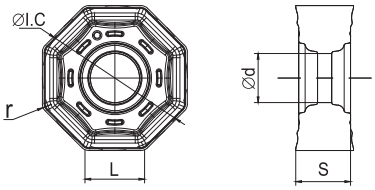
Uzunluk	Ölçü (mm)				
	I.C	S	d	BS	r
9	19.05	5.9	5.5	1.5	1.2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	XNMU090612-GR	0.3–3.0	0.05–0.3			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Ekonomik tarama uçları

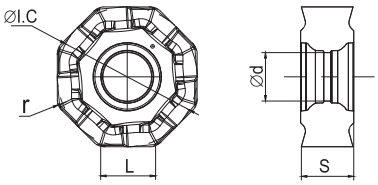
ON□□ uçları



Uzunluk	Ölçü (mm)		
	I.C	S	r
05	12.7	4.76	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	ONHU050408–AR	0.8–3.5	0.2–0.35			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite



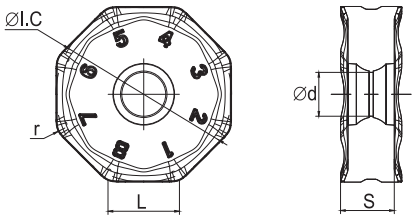
Uzunluk	Ölçü (mm)		
	I.C	S	r
05	12.7	4.76	0.8

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	ONHU050408–AF	0.5–2.5	0.1–0.25			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Ekonomik tarama uçları

ON□□ uçları



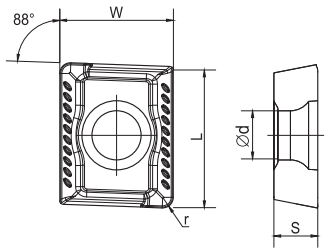
Uzunluk	Ölçü (mm)		
	I.C	S	BS
09	22	5.8	0.45
09	22	5.8	2.11

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	ONMU090520ANTN-GM	0.80–2.50	0.10–0.20			○	●	○	●	●	○				
	ONMU090520ANTN-GR	1.00–3.50	0.10–0.20			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

Helis Frezeleme Uçları

APㅁㅁ uçları

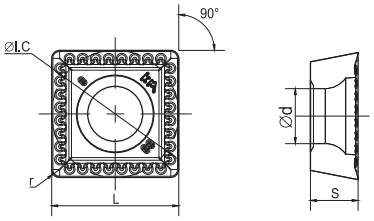


Uzunluk	Ölçü (mm)				
	L	W	S	d	r
15	16.33	12.7	4.76	5.4	1.2

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD									
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	APKT150412-PM	1.2-8	0.08-0.2			○	●	○	●	●	○				
	APKT150415-KM	1.2-8	0.08-0.2			○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

SPㅁㅁ uçları



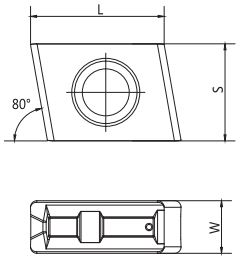
Uzunluk	Ölçü (mm)				
	r	L	I.C	S	d
12	0.8	12.7	12.7	4.76	5.5

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD									
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	SPMT120408-PM	1.00-6.00	0.06-0.15			○	●	○	●	●	○				
	SPMT120408-KM	1.00-6.00	0.06-0.15			○	●	○	●	●	○				

Not: ● Stokta tutulan önerilen kalite

Helisel Frezeleme Uçları

CN□□ uçları

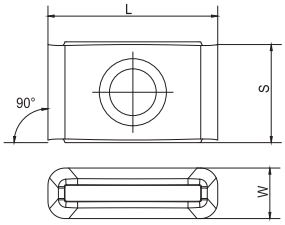


Tip	Ölçü (mm)		
	L	S	W
160608T	16	12	6.4

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	CNHX160608T	1.20–5.50	0.20–0.60			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

LN□□ uçları

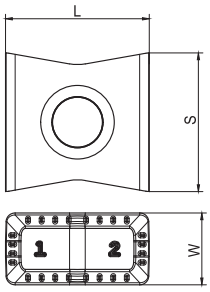


Tip	Ölçü (mm)		
	L	S	W
16090416	16	9.5	4.76

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	LNKT16090416	1.60–12.00	0.15–0.50			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

LN□□ uçları



Tip	Ölçü (mm)		
	L	S	W
120608	12.7	12.25	6.35

Şekil	Tip	ap (mm)	fz (mm/z)	CVD		PVD								
				AV2330	AV2340	AV3015	AV3025	AV3824	AV3825	AV3525	AV3325	AV3625	AV4010	AV4025	AV4525
	LNKX120608	2.00–7.00	0.10–0.20			○	●	○	●	●	○				

Not: • Stokta tutulan önerilen kalite

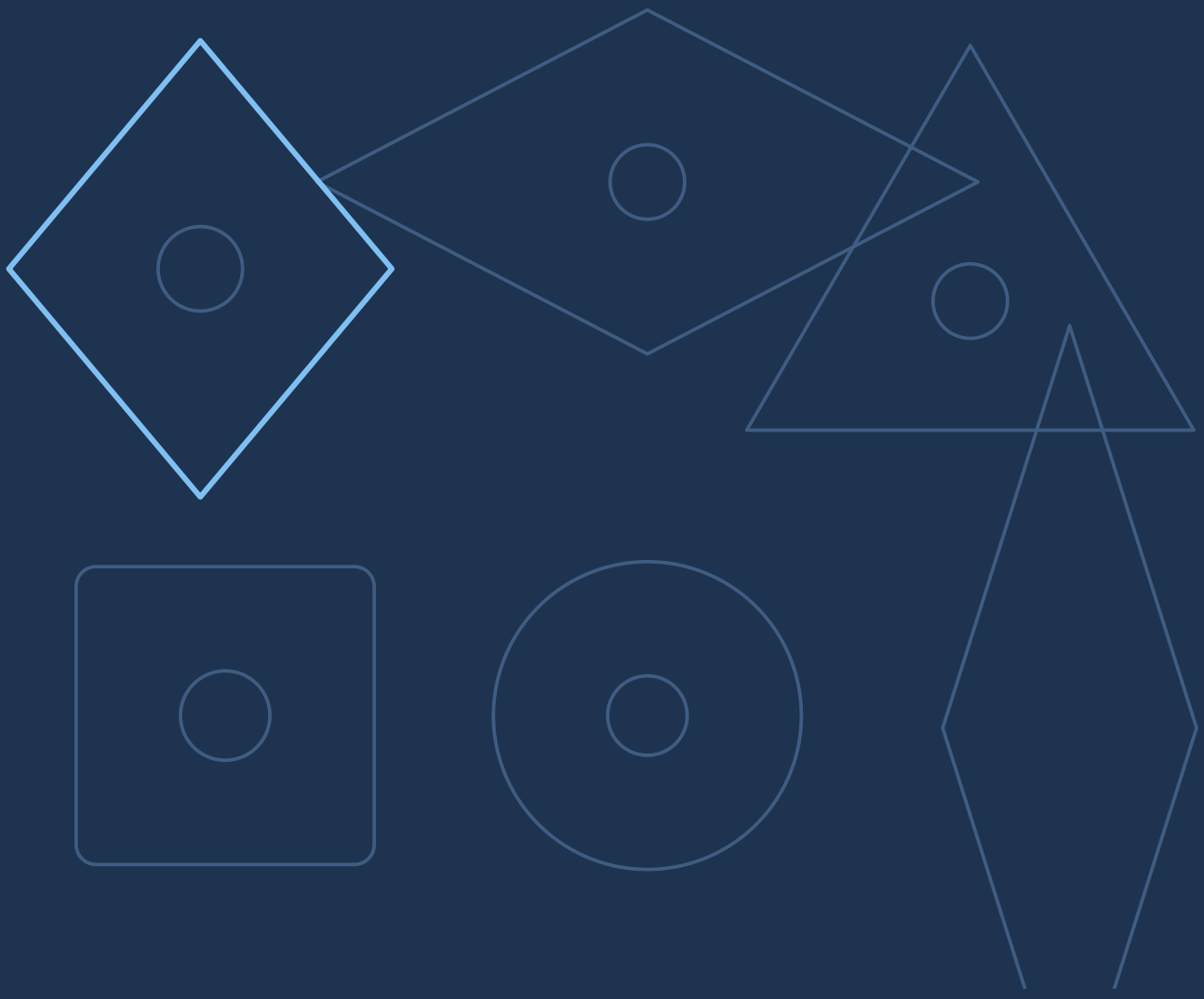
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BÖLÜM I

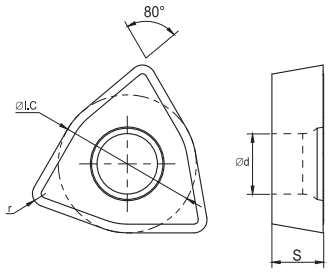
Delme uçları

U-drill (takma uçlu matkap) uçları ve modüler matkaplar.

Sayfa I-01 – I-12



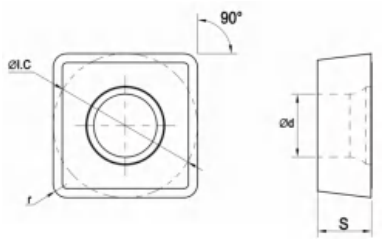
WC□□ uçları



Şekil	Tip	Delik büyütme aralığı (mm)	Ölçü					Uygulama	Kalite	
			L	øI.C	S	Φd	r		PVD	
									AV3025	AV3825
	WCMT030208–GM	16–20	3.8	5.56	2.38	2.8	0.8	Yarı finiş	●	●
	WCMT040208–GM	21–25	4.3	6.35	2.38	3.1	0.8		●	●
	WCMT050308–GM	26–30	5.4	7.94	3.18	3.2	0.8		●	●
	WCMT06T308–GM	31–41	6.5	9.525	3.97	3.7	0.8		●	●
	WCMT080412–GM	42–58	8.7	12.7	4.76	4.3	1.2		●	●
	WCMT030208–GF	16–20	3.8	5.56	2.38	2.8	0.8	Finiş	●	●
	WCMT040208–GF	21–25	4.3	6.35	2.38	3.1	0.8		●	●
	WCMT050308–GF	26–30	5.4	7.94	3.18	3.2	0.8		●	●
	WCMT06T308–GF	31–41	6.5	9.525	3.97	3.7	0.8		●	●
	WCMT080412–GF	42–58	8.7	12.7	4.76	4.3	1.2		●	●

Not: • Stokta tutulan önerilen kalite

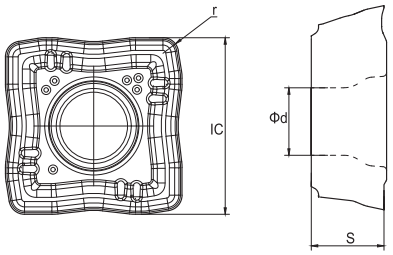
SP□□ uçları



Şekil	Tip	Delik büyütme aralığı (mm)	Ölçü					Application	Kalite	
			L	ø I.C	S	Φd	r		PVD	
									AV3025	AV3825
	SPMT050204–GM	12.5–15	5	5	2.38	2.2	0.4	Semi-finishing	●	●
	SPMT060204–GM	15.5–21.5	6	6	2.38	2.6	0.4		●	●
	SPMT07T308–GM	22–27.5	7.94	7.94	3.97	2.8	0.8		●	●
	SPMT090408–GM	28–33	9.8	9.8	4.3	4.2	0.8		●	●
	SPMT110408–GM	34–41	11.5	11.5	4.76	4.4	0.8		●	●
	SPMT140512–GM	42–50	14.3	14.3	5.2	5.75	1.2		●	●

Not: ● Stokta tutulan önerilen kalite

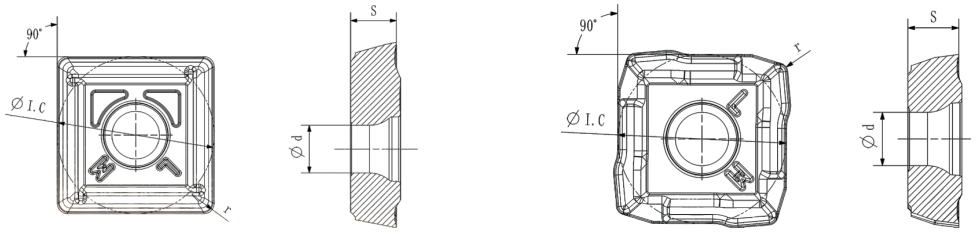
SO□□ uçları



Şekil	Tip	Delik büyütme aralığı (mm)	Ölçü					Uygulama	Kalite	
			L	øI.C	S	Φd	r		PVD	
									AV3025	AV3825
	SOMT040204–VP	13–16	1	4.4	2.38	2.2	0.4	Yarı finiş	●	●
	SOMT050204–VP	13–16	1.2	4.9	2.38	2.2	0.4		●	●
	SOMT060204–VP	16.5–17	1.8	5.7	2.38	2.6	0.4		●	●
	SOMT070306–VP	17.5–19	1.8	6.8	2.8	2.6	0.6		●	●
	SOMT08T306–VP	22.5–26.5	2	7.8	3.97	2.8	0.6		●	●
	SOMT09T308–VP	27.5–31.5	2.4	9.2	3.97	3.8	0.8		●	●
	SOMT11T308–VP	32–36.5	3	11	3.97	3.8	0.8		●	●
	SOMT130408–VP	37–43	3.2	12.8	4.4	4.5	0.8		●	●

Not: • Stokta tutulan önerilen kalite

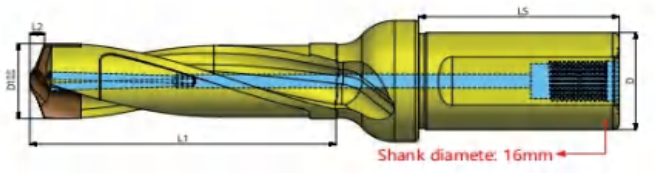
SO□□ uçları



Şekil	Tip	Delik büyütme aralığı (mm)	Ölçü				Application	Kalite	
			øI.C	S	Φd	r		PVD	
								AV3025	AV3825
	SOMT050305C–LM	24–29	8.40	3.00	3.20	0.50	Medium Machining	●	●
	SOMT060406C–LM	30–41	10.20	3.50	4.00	0.60		●	●
	SOMT070406C–LM	30–41	12.36	4.00	4.00	0.60		●	●
	SOMT080508C–LM	44–63	14.90	4.50	4.70	0.80		●	●
	SOMT090608C–LM	44–63	17.90	5.50	4.70	0.80		●	●
	SPMT050308P–LM	24–29	8.90	3.00	3.20	0.80		●	●
	SPMT060408P–LM	30–41	10.70	3.50	4.00	0.80		●	●
	SPMT070410P–LM	30–41	12.70	3.95	4.00	1.00		●	●
	SPMT080510P–LM	44–63	15.50	4.50	4.70	1.00		●	●
	SPMT090610P–LM	44–63	18.60	5.50	4.70	1.00		●	●

Not: • Stokta tutulan önerilen kalite

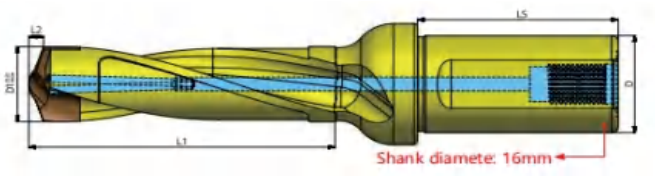
Modüler matkap 3D





Sipariş kodu 3D	D1 min	D1 Max
KS-12.5-3D-C16 KSEM125R3WN16M	12.500	12.990
KS-13-3D-C16 KSEM130R3WN16M	13.000	13.500
KS-13.5-3D-C16 KSEM135R3WN16M	13.510	13.990
KS-14-3D-C16 KSEM140R3WN16M	14.000	14.500
KS-14.5-3D-C20 KSEM145R3WN20M	14.510	14.990
KS-15-3D-C20 KSEM150R3WN20M	15.000	15.990
KS-16-3D-C20 KSEM160R3WN20M	16.000	16.990
KS-17-3D-C20 KSEM170R3WN20M	17.000	18.000
KS-18-3D-C25 KSEM180R3WN25M	18.010	18.990
KS-19-3D-C25 KSEM190R3WN25M	19.000	19.990
KS-20-3D-C25 KSEM200R3WN25M	20.000	20.990
KS-21-3D-C25 KSEM210R3WN25M	21.000	22.000
KS-22-3D-C25 KSEM220R3WN25M	22.010	22.990
KS-23-3D-C25 KSEM230R3WN25M	23.000	24.000

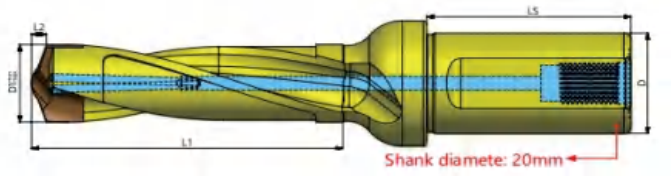
Modüler matkap 3D





Sipariş kodu 3D	D1 min	D1 Max
KS-24-3D-C32 KSEM240R3WN32M	24.010	24.990
KS-25-3D-C32 KSEM250R3WN32M	25.000	26.000
KS-26-3D-C32 KSEM260R3WN32M	26.010	26.990
KS-27-3D-C32 KSEM270R3WN32M	27.000	28.000
KS-28-3D-C32 KSEM280R3WN32M	28.010	28.990
KS-29-3D-C32 KSEM290R3WN32M	29.000	30.000
KS-30-3D-C32 KSEM300R3WN32M	30.010	30.990
KS-31-3D-C32 KSEM310R3WN32M	31.000	32.000
KS-32-3D-C40 KSEM320R3WN40M	32.010	32.990
KS-33-3D-C40 KSEM330R3WD40M	33.000	33.990
KS-34-3D-C40 KSEM340R3WD40M	34.000	34.990
KS-35-3D-C40 KSEM350R3WD40M	35.000	36.000
KS-36-3D-C40 KSEM360R3WD40M	36.010	36.990
KS-37-3D-C40 KSEM370R3WD40M	37.000	37.990
KS-38-3D-C40 KSEM380R3WD40M	38.000	38.990
KS-39-3D-C40 KSEM390R3WD40M	39.000	39.990
KS-40-3D-C40 KSEM400R3WD40M	40.000	40.990

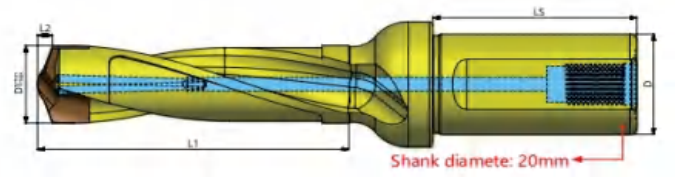
Modüler matkap 5D





Sipariş kodu 5D	D1 min	D1 Max
KS-12.5-5D-C16 KSEM125R5WN16M	12.500	12.990
KS-13-5D-C16 KSEM130R5WN16M	13.000	13.500
KS-13.5-5D-C16 KSEM135R5WN16M	13.510	13.990
KS-14-5D-C16 KSEM140R5WN16M	14.000	14.500
KS-14.5-5D-C20 KSEM145R5WN20M	14.510	14.990
KS-15-5D-C20 KSEM150R5WN20M	15.000	15.990
KS-16-5D-C20 KSEM160R5WN20M	16.000	16.990
KS-17-5D-C20 KSEM170R5WN20M	17.000	18.000
KS-18-5D-C25 KSEM180R5WN25M	18.010	18.990
KS-19-5D-C25 KSEM190R5WN25M	19.000	19.990
KS-20-5D-C25 KSEM200R5WN25M	20.000	20.990
KS-21-5D-C25 KSEM210R5WN25M	21.000	22.000
KS-22-5D-C25 KSEM220R5WN25M	22.010	22.990
KS-23-5D-C25 KSEM230R5WN25M	23.000	24.000

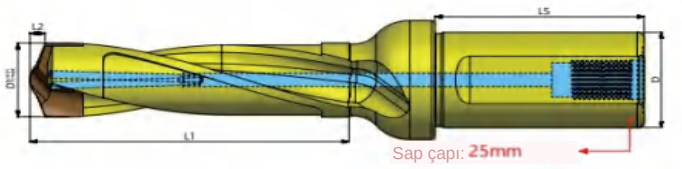
Modüler matkap 5D





Sipariş kodu 5D	D1 min	D1 Max
KS-24-5D-C32 KSEM240R5WN32M	24.010	24.990
KS-25-5D-C32 KSEM250R5WN32M	25.000	26.000
KS-26-5D-C32 KSEM260R5WN32M	26.010	26.990
KS-27-5D-C32 KSEM270R5WN32M	27.000	28.000
KS-28-5D-C32 KSEM280R5WN32M	28.010	28.990
KS-29-5D-C32 KSEM290R5WN32M	29.000	30.000
KS-30-5D-C32 KSEM300R5WN32M	30.010	30.990
KS-31-5D-C32 KSEM310R5WN32M	31.000	32.000
KS-32-5D-C40 KSEM320R5WN40M	32.010	32.990
KS-33-5D-C40 KSEM330R5WD40M	33.000	33.990
KS-34-5D-C40 KSEM340R5WD40M	34.000	34.990
KS-35-5D-C40 KSEM350R5WD40M	35.000	36.000
KS-36-5D-C40 KSEM360R5WD40M	36.010	36.990
KS-37-5D-C40 KSEM370R5WD40M	37.000	37.990
KS-38-5D-C40 KSEM380R5WD40M	38.000	38.990
KS-39-5D-C40 KSEM390R5WD40M	39.000	39.990
KS-40-5D-C40 KSEM400R5WD40M	40.000	40.990

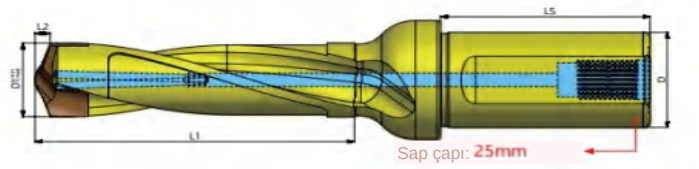
Modüler matkap 7D





Sipariş kodu 7D	D1 min	D1 Max
KS-12.5-7D-C16 KSEM125R7WN16M	12.500	12.990
KS-13-7D-C16 KSEM130R7WN16M	13.000	13.500
KS-13.5-7D-C16 KSEM135R7WN16M	13.510	13.990
KS-14-7D-C16 KSEM140R7WN16M	14.000	14.500
KS-14.5-7D-C20 KSEM145R7WN20M	14.510	14.990
KS-15-7D-C20 KSEM150R7WN20M	15.000	15.990
KS-16-7D-C20 KSEM160R7WN20M	16.000	16.990
KS-17-7D-C20 KSEM170R7WN20M	17.000	18.000
KS-18-7D-C25 KSEM180R7WN25M	18.010	18.990
KS-19-7D-C25 KSEM190R7WN25M	19.000	19.990
KS-20-7D-C25 KSEM200R7WN25M	20.000	20.990
KS-21-7D-C25 KSEM210R7WN25M	21.000	22.000
KS-22-7D-C25 KSEM220R7WN25M	22.010	22.990
KS-23-7D-C25 KSEM230R7WN25M	23.000	24.000

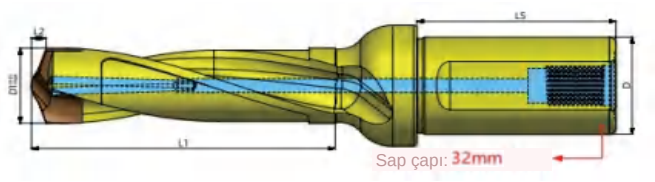
Modüler matkap 7D





Sipariş kodu 7D	D1 min	D1 Max
KS-24-7D-C32 KSEM240R7WN32M	24.010	24.990
KS-25-7D-C32 KSEM250R7WN32M	25.000	26.000
KS-26-7D-C32 KSEM260R7WN32M	26.010	26.990
KS-27-7D-C32 KSEM270R7WN32M	27.000	28.000
KS-28-7D-C32 KSEM280R7WN32M	28.010	28.990
KS-29-7D-C32 KSEM290R7WN32M	29.000	30.000
KS-30-7D-C32 KSEM300R7WN32M	30.010	30.990
KS-31-7D-C32 KSEM310R7WN32M	31.000	32.000
KS-32-7D-C40 KSEM320R7WN40M	32.010	32.990
KS-33-7D-C40 KSEM330R7WD40M	33.000	33.990
KS-34-7D-C40 KSEM340R7WD40M	34.000	34.990
KS-35-7D-C40 KSEM350R7WD40M	35.000	36.000
KS-36-7D-C40 KSEM360R7WD40M	36.010	36.990
KS-37-7D-C40 KSEM370R7WD40M	37.000	37.990
KS-38-7D-C40 KSEM380R7WD40M	38.000	38.990
KS-39-7D-C40 KSEM390R7WD40M	39.000	39.990
KS-40-7D-C40 KSEM400R7WD40M	40.000	40.990

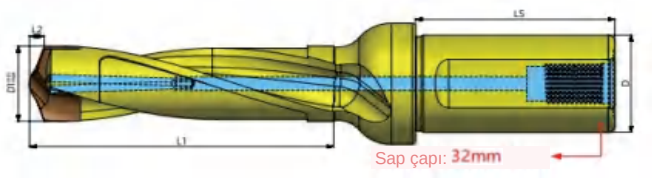
Modüler matkap 10D





Sipariş kodu 10D	D1 min	D1 Max
KS-12.5-10D-C16 KSEM125R10WN16M	12.500	12.990
KS-13-10D-C16 KSEM130R10WN16M	13.000	13.500
KS-13.5-10D-C16 KSEM135R10WN16M	13.510	13.990
KS-14-10D-C16 KSEM140R10WN16M	14.000	14.500
KS-14.5-10D-C20 KSEM145R10WN20M	14.510	14.990
KS-15-10D-C20 KSEM150R10WN20M	15.000	15.990
KS-16-10D-C20 KSEM160R10WN20M	16.000	16.990
KS-17-10D-C20 KSEM170R10WN20M	17.000	18.000
KS-18-10D-C25 KSEM180R10WN25M	18.010	18.990
KS-19-10D-C25 KSEM190R10WN25M	19.000	19.990
KS-20-10D-C25 KSEM200R10WN25M	20.000	20.990
KS-21-10D-C25 KSEM210R10WN25M	21.000	22.000
KS-22-10D-C25 KSEM220R10WN25M	22.010	22.990
KS-23-10D-C25 KSEM230R10WN25M	23.000	24.000

Modüler matkap 10D





Sipariş kodu 10D	D1 min	D1 Max
KS-24-10D-C32 KSEM240R10WN32M	24.010	24.990
KS-25-10D-C32 KSEM250R10WN32M	25.000	26.000
KS-26-10D-C32 KSEM260R10WN32M	26.010	26.990
KS-27-10D-C32 KSEM270R10WN32M	27.000	28.000
KS-28-10D-C32 KSEM280R10WN32M	28.010	28.990
KS-29-10D-C32 KSEM290R10WN32M	29.000	30.000
KS-30-10D-C32 KSEM300R10WN32M	30.010	30.990
KS-31-10D-C32 KSEM310R10WN32M	31.000	32.000
KS-32-10D-C40 KSEM320R10WN40M	32.010	32.990
KS-33-10D-C40 KSEM330R10WD40M	33.000	33.990
KS-34-10D-C40 KSEM340R10WD40M	34.000	34.990
KS-35-10D-C40 KSEM350R10WD40M	35.000	36.000
KS-36-10D-C40 KSEM360R10WD40M	36.010	36.990
KS-37-10D-C40 KSEM370R10WD40M	37.000	37.990
KS-38-10D-C40 KSEM380R10WD40M	38.000	38.990
KS-39-10D-C40 KSEM390R10WD40M	39.000	39.990
KS-40-10D-C40 KSEM400R10WD40M	40.000	40.990

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2026

CNC talaşlı imalat için tek noktadan tedarik.

NEDEN AVEDON

01

Test edilmiş kalite

Her ürün grubu, numune ve saha testlerinden geçirilerek seçilir.

02

Tezgâhınızda deneyin

Numune takımla kendi parçanızda deneyin; parça başı maliyeti birlikte ölçelim.

03

Hızlı tedarik

Standart ürünlerde stoktan hızlı sevkiyat, tek siparişte geniş ürün yelpazesi.

04

Teknik destek

Takım seçimi ve kesme değerleri için WhatsApp üzerinden doğrudan destek.

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WHATSAPP	+90 535 798 77 89
E-POSTA	info@avedontools.com
ADRES	Topçular Mah., Topçubaşı Esatağa Cd. Üretmen İş Merkezi C Blok No: 1 34055 Eyüpsultan / İstanbul

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