

_WALTER'DE ÖNE ÇIKAN ÜRÜNLER

Alüminyum İşleme Takımları – Geleceği Şekillendirir




Geleceğe yön verin.

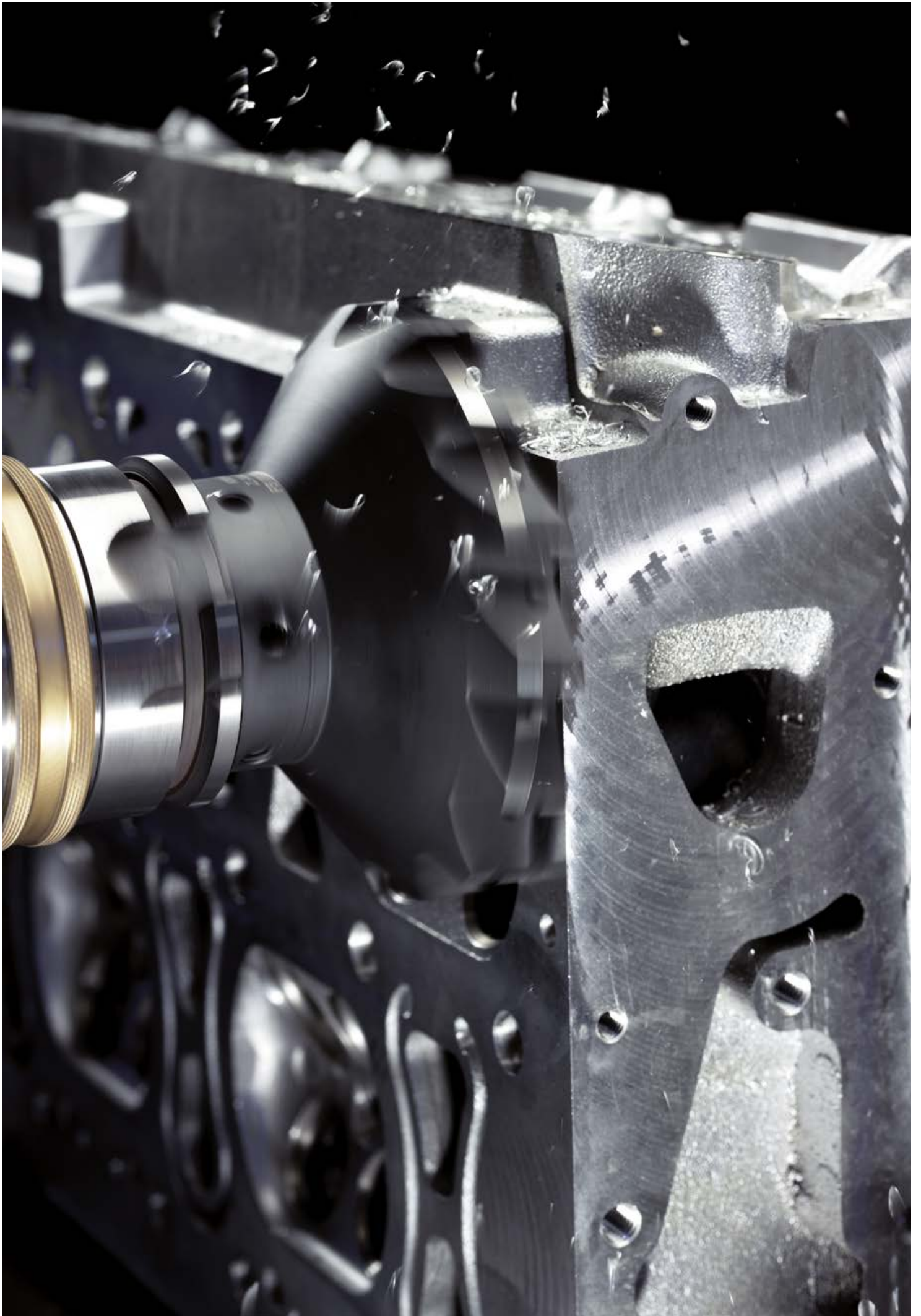


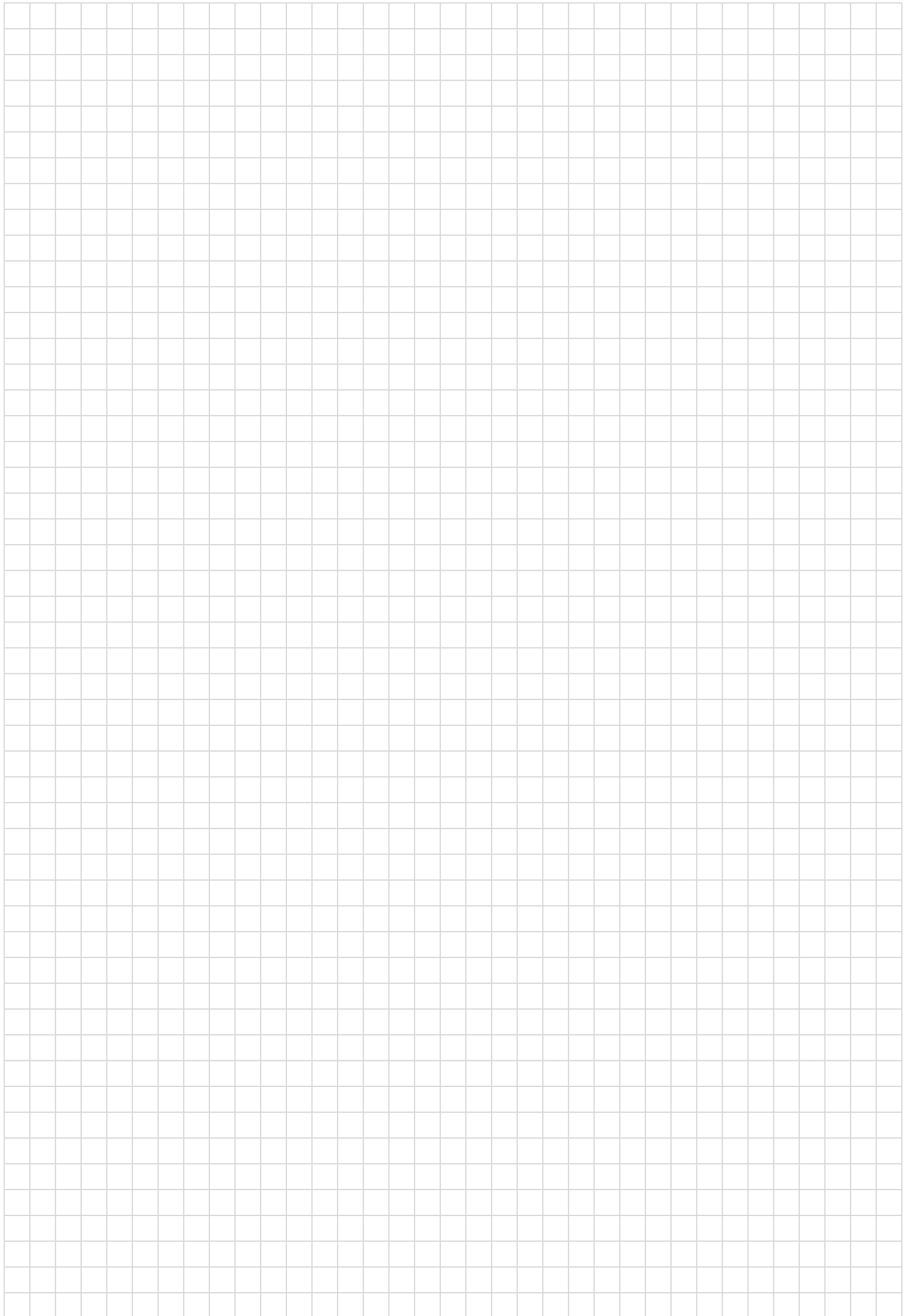
Alüminyum, geniş uygulama alanlarını fethediyor. Otomotiv ve havacılık sektöründe ağırlık ve CO₂ tasarrufu sağlar, makine mühendisliğinde işleme zamanını kısaltır. Walter, alüminyum için ideal takım programını sunuyor: Walter Xpress ile standart olarak veya özel sipariş üzerine. Yüksek yüzey kalitesiyle yüksek talaş kırma hacmiyle kaba işleme veya hassas işleme, „yumuşak“ malzemeler veya yüksek aşındırıcı AlSi alaşımlar. **Walter ile alüminyum iş parçalarında frezeleme, tornalama, delme ve vida dişi açma.**

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 **WALTER**
Engineering Kompetenz

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A – Tornalama

A1: ISO tornalama

Sayfa

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A2: Kanal açma

Sayfa

Ürün programına genel bakış	
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Alüminyum tornalama işleminde Walter ile başarılı.

KALİTE

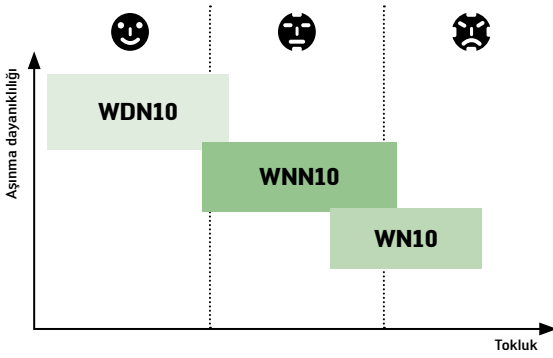
- 6–10 µm tanecik büyüklüğü ile çok kristalli elmas
- ISO N ve ISO O malzemelerinde üniversal kullanım
- Son derece sert evrensel PCD sınıfı WDN10 – orta tanecikli çok kristalli elmas
- Tanecik büyüklüğü: 6 µm
- Bağlayıcı: Co

GEOMETRİ

- Mevcut kesici uç türleri:
 - CCGT.. / CCGW.. / CPGW..
 - DCGT.. / DCGW.. / DPGW..
 - SCGW.. / SPGW..
 - TCGW.. / TPGW..
 - VCGT.. / VCGW..

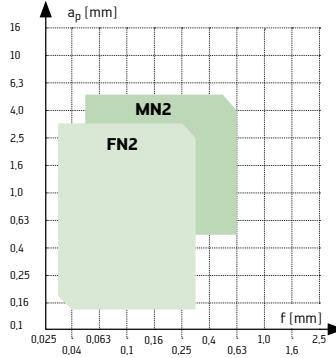
- Mevcut geometriler:
 - talaş açısı: 0°; 7–10°
 - Lazerle işlenmiş talaş kırıcı
 - Tüm kenar kesme kenarı olarak kullanılabilir
- Kesme kenarı hazırlığı:
 - F-Versiyonu (keskin)
 - 6–8 µm kenar yuvarlama

Demir dışı metaller ISO N

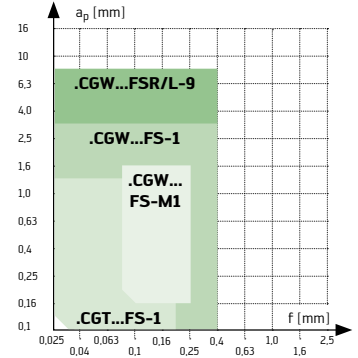


WDN10 – Çok kristalli elmas (PCD)
WNN10 – kaplamalı karbür (PCD – HIPIMS)
WN10 – kaplamasız karbür

Pozitif temel biçim karbür



Pozitif temel biçim PCD



AVANTAJLARINIZ

- İyileştirilmiş yüzey pürüzlülüğü sayesinde yapışma eğiliminde (kesici kenarda talaş yapışması) daha uzun takım ömrü
- Keskin, parlatılmış kesme kenarları sayesinde uzun talaş veren malzemelerde en yüksek proses güvenilirliği
- En ince işlemede en iyi yüzey finiş kaliteleri (R_z 3 µm'ye kadar)
- Düşük kesme basınçları nedeniyle titreşim eğilimi olan iş parçalarında problem çözücü
- Tüm PCD kesici uçlar ISO G toleransına göre taşlanmış

Pozitif – ISO N'de en iyi performans ile.

KALİTE

WN10

- Kaplamasız, parlatılmış sert metal alt tabaka
- Kaplamalı kalitelere ekonomik alternatif

WNN10

- HIPIMS-PVD-TiAlN kaplamalı, parlatılmış karbür kalitesi
- Çok yüksek aşınma dayanıklılığı
- Keskin kesme kenarlarında mükemmel tabaka tutunması

GEOMETRİ

FN2

- Dar talaş kırıcı – düşük kesme derinliklerinde en uygun talaş kırma

MN2

- Açık geometri – yüksek verimlilik ve universal kullanım

UYGULAMA

WN10

- Ana uygulama alanı: ISO N; İkincil uygulama alanı: ISO S, O
- Düşük silisyum içeriğine sahip Al dövme alaşımları veya AlSi döküm alaşımları (~ % 7'nin altında)
- Bakır alaşımları veya pirinç alaşımları için uygundur

WNN10

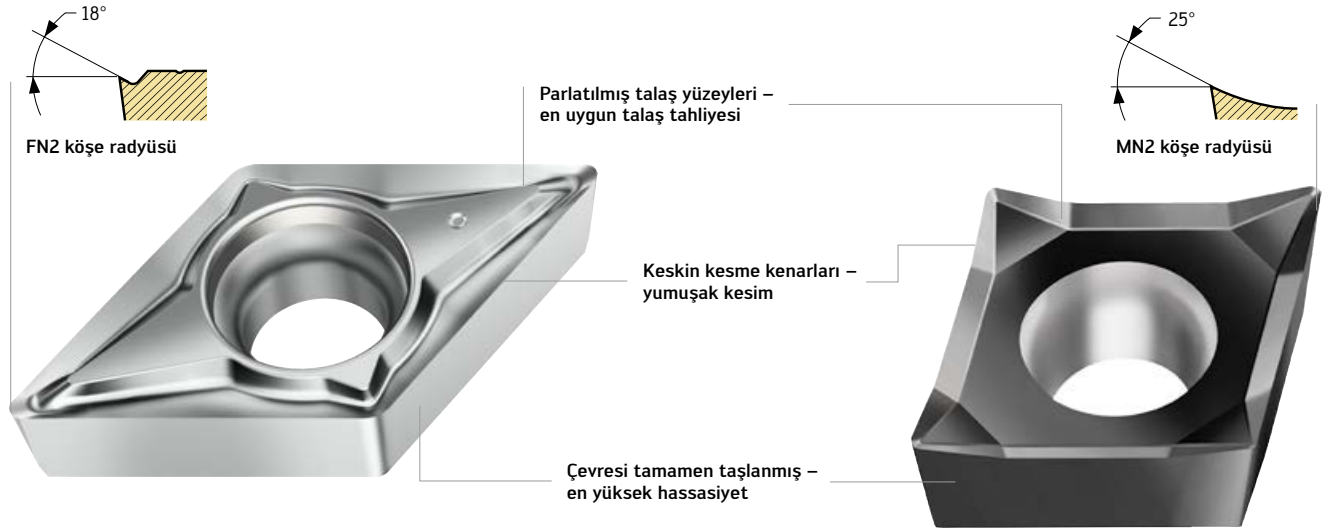
- Ana uygulama alanı: ISO N; İkincil uygulama alanı: ISO P, M, K, S, O
- AlSi döküm alaşımları (% 10'kadar silisyum içeriği), Al dövme alaşımları, bakır ve pirinç alaşımları
- ISO P, M ve S'de hassas işlemler için çok uygundur

FN2 geometrisi

- ISO N hassas işleme
- a_p 0,1–3,0 mm; f 0,02–0,3 mm

MN2 geometrisi

- ISO N'nin orta seviyede işlemesi
- a_p 0,5–6,0 mm; f 0,02–0,8 mm



Pozitif ISO N geometrisi FN2

Şek.: DCGT070202-FN2 WN10

Pozitif ISO N geometrisi MN2

Şek.: CCGT09T304-MN2 WNN10

AVANTAJLARINIZ

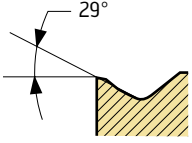
- İyileştirilmiş yüzey pürüzlülüğü sayesinde yapışma eğiliminde (kesici kenarda talaş yapışması) daha uzun takım ömrü
- Keskin, parlatılmış kesme kenarları sayesinde uzun talaş veren malzemelerde en yüksek proses güvenilirliği
- En ince işlemede en iyi yüzey finiş kaliteleri (R_z 3 μ m'ye kadar)
- Katmanlar arası çok iyi bağlantı sayesinde kaplama patlaması olmaz ve aşınma gelişimi dengelidir
- Kararsız bileşenlerin yanı sıra uzun bağlama boyuna sahip iş parçalarının işlenmesi

Yüksek pozitif ve çift taraflı – ISO N işleme için ideal.

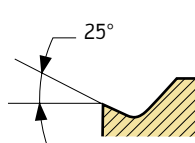
GEOMETRİ

- Çift taraflı, parlatılmış MN3 geometrisi
- Yüksek pozitif kesme kenarları

Köşe radyüsü – MN3



Ana kesme kenarı – MN3



KESİCİ UÇ

- CNGG, DNGG, VNGG, WNGG
- En yüksek hassasiyet için eksi toleranslı köşe radyüsleri:
0,2 / 0,4 / 0,8 mm

KALİTE

- WN10 (kaplamasız ve parlatılmış)
- WNN10 (son derece parlak yüzeyler için HIPIMS-PVD kaplama ile)

UYGULAMA

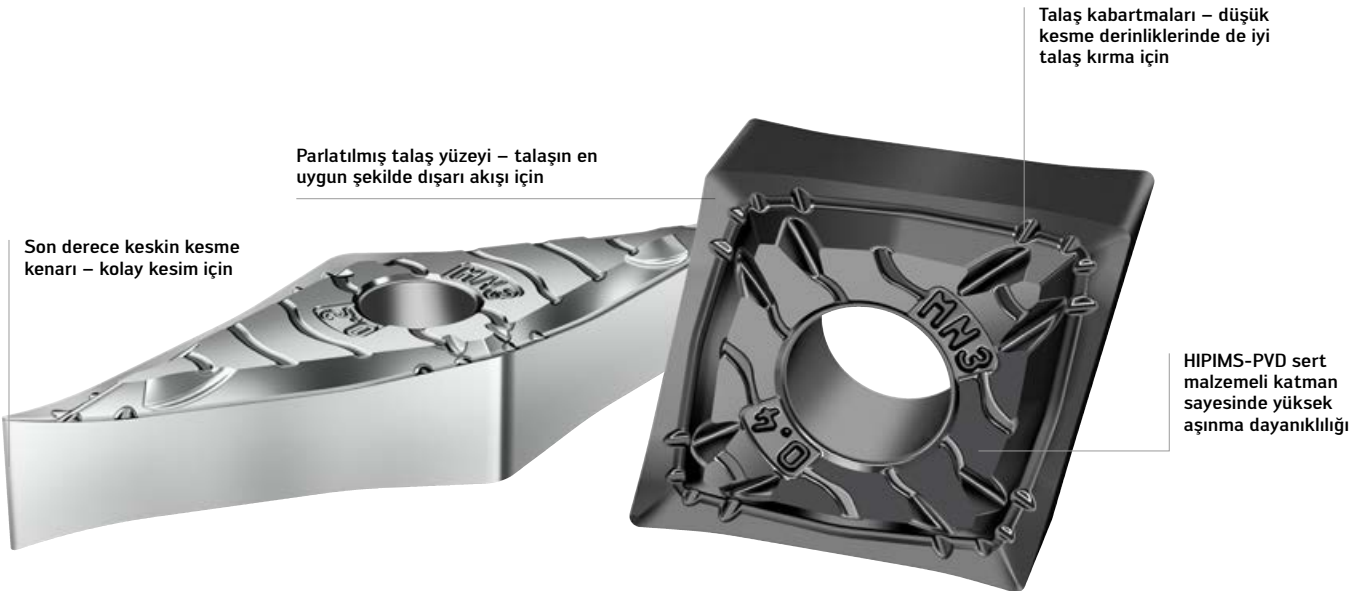
- İşleme parametreleri: $f = 0,05-0,40$ mm, $a_p = 0,5-4,0$ mm

Diğer uygulama alanları:

- Rz 3 μm 'ye kadar en iyi yüzey finiş kaliteleri
- Çelik, paslanmaz malzemeler ve yüksek ısı alaşımı küçük iş parçalarını hassas işleme

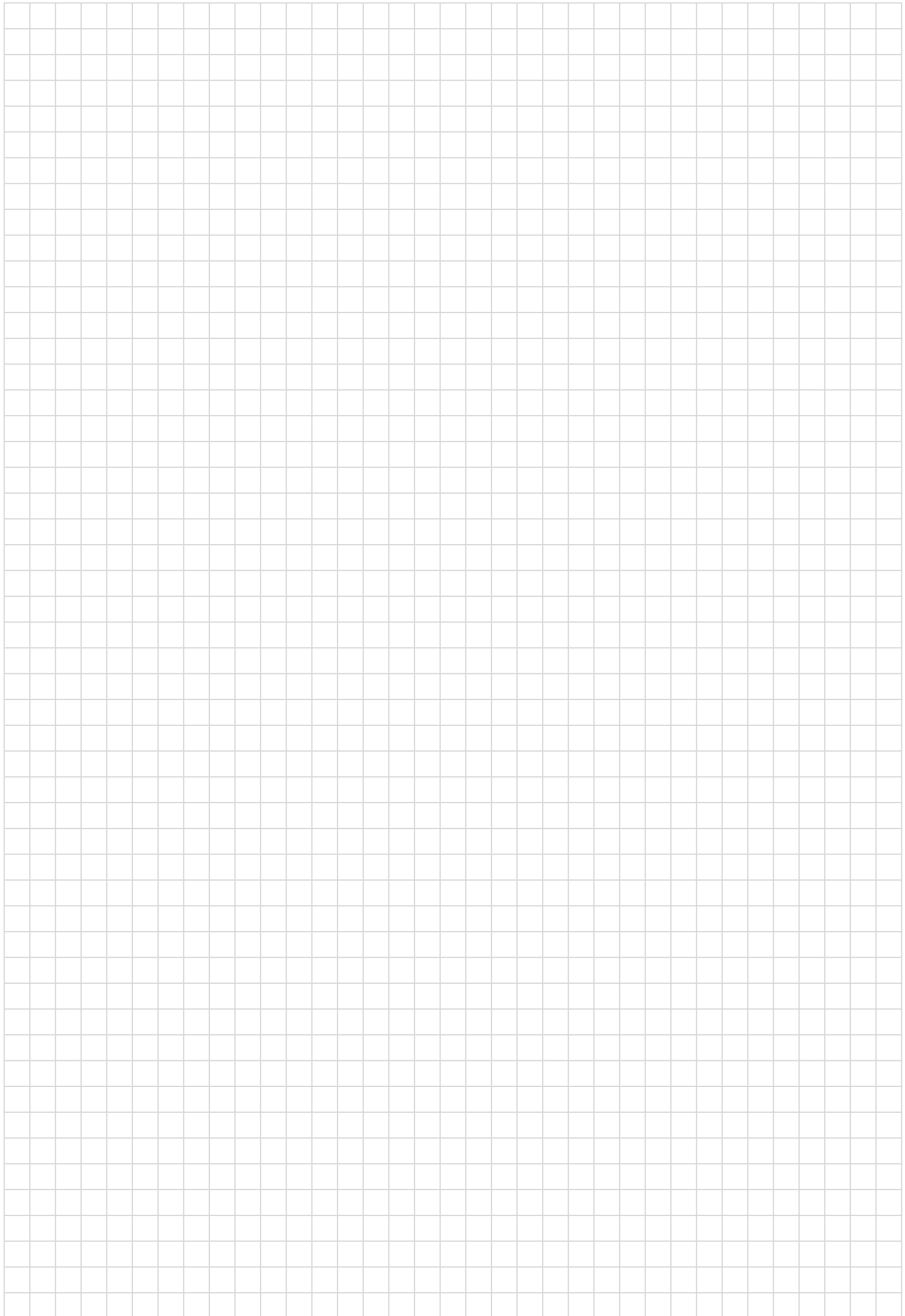
Ana uygulama alanı

- ISO N alaşımlar, örn.:
 - Alüminyum alaşımları
 - Bakır alaşımları
 - Pirinç alaşımlar
 - "Kurşunsuz" malzemeler
- Demir olmayan metallerde orta seviyede işleme

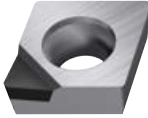
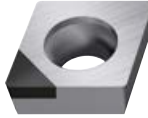
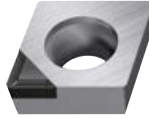







AVANTAJLARINIZ

- Çift kesme kenarı sayısı ile negatif temel biçim sayesinde yüksek ekonomiklik ve verimlilik
- İyileştirilmiş yüzeyi sayesinde yüksek yapışma eğilimi (adezyon) olan malzemelerde daha uzun takım ömrü
- Düşük kesme baskısı nedeniyle sabit olmayan veya uzun bağlanan iş parçalarında problemsiz işleme
- Talaş kabartmaları ve yüksek pozitif kesme kenarları sayesinde iyileştirilmiş talaş kırma (örn. kurşunsuz malzemeler)



ISO kesici uçlar – CBN / PCD / Seramik

İşleme	Hassas işleme		Orta seviyede işleme	Kaba işleme
	Selection	Selection	Selection	Selection
				
Geometri	T-FS	W-FS	FS-M	FS-9
P Çelik				
M Paslanmaz çelik				
K Dökme demir				
N Demir dışı metaller	••	••	••	••
S Zor işlenen malzemeler	•	•	•	•
H Sert malzemeler				
O Diğerleri	••	••	••	••
a _p [mm]	0,05–4,0	0,05–4,0	0,1–2,0	0,05–15,3
f [mm]	0,03–0,38	0,03–0,38	0,08–0,20	0,03–0,38
Katalogdaki sayfa	16	17	16	16
QR kodu				
www.walter-tools.com/woc/	T-FS	W-FS	FS-M	FS-9

ISO kesici uçlar – Negatif temel biçim

İşleme

Orta seviyede
işleme

Selection



Geometri	MN3
P Çelik	●
M Paslanmaz çelik	●
K Dökme demir	
N Demir dışı metaller	●●
S Zor işlenen malzemeler	●
H Sert malzemeler	
O Diğerleri	

 a_p [mm]

0,5–4,0

f [mm]

0,05–0,40

Katalogdaki sayfa

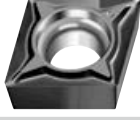
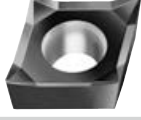


22

QR kodu

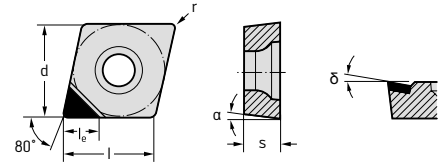
www.walter-tools.com/woc/

MN3






ISO kesici uçlar – Pozitif temel biçim 5° / 7° / 11°

İşleme	Hassas işleme	Orta seviyede işleme
	Selection	Selection
		
Geometri	FN2	MN2
P Çelik	●	●
M Paslanmaz çelik	●	●
K Dökme demir	●	●
N Demir dışı metaller	●●	●●
S Zor işlenen malzemeler	●	●
H Sert malzemeler		
O Diğerleri	●	●
a _p [mm]	0,12–3,5	0,5–6,0
f [mm]	0,02–0,30	0,02–0,80
Katalogdaki sayfa	24	24
QR kodu		
www.walter-tools.com/woc/	FN2	MN2

PCD – Eşkenar dörtgen (rombik) pozitif 80° CCGT / CCGW



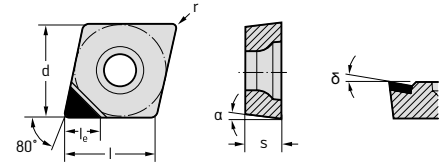
Kesici uçlar

Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									WDN10	DP
 CCGT060202FS-1 CCGT060204FS-1 CCGT060208FS-1 CCGT09T304FS-1 CCGT09T308FS-1	1	3,5	6,45	0,2	7°	7°	0,03–0,12	0,1–3,0	⊕	⊕
	1	3,5	6,45	0,4	7°	7°	0,03–0,25	0,1–3,0	⊕	⊕
	1	3,5	6,45	0,8	7°	7°	0,03–0,38	0,1–3,0	⊕	⊕
	1	4	9,67	0,4	7°	10°	0,03–0,25	0,1–3,5	⊕	⊕
	1	4	9,67	0,8	7°	10°	0,03–0,38	0,1–3,5	⊕	⊕
 CCGT060204FS-M1 CCGT09T304FS-M1	1	3,5	6,45	0,4	7°		0,08–0,20	0,1–2,0	⊕	⊕
	1	4	9,67	0,4	7°		0,08–0,20	0,1–2,0	⊕	⊕
 CCGW060202FS-1 CCGW060204FS-1 CCGW060208FS-1 CCGW09T302FS-1 CCGW09T304FS-1 CCGW09T308FS-1 CCGW120404FS-1 CCGW120408FS-1	1	3,6	6,45	0,2	7°	0°	0,03–0,12	0,1–3,0	⊕	⊕
	1	3,5	6,45	0,4	7°	0°	0,03–0,25	0,1–3,0	⊕	⊕
	1	3,5	6,45	0,8	7°	0°	0,03–0,38	0,1–3,0	⊕	⊕
	1	4,1	9,67	0,2	7°	0°	0,03–0,12	0,1–3,5	⊕	⊕
	1	4,1	9,67	0,4	7°	0°	0,03–0,25	0,1–3,5	⊕	⊕
	1	4	9,67	0,8	7°	0°	0,03–0,38	0,1–3,5	⊕	⊕
	1	4,1	12,9	0,4	7°	0°	0,03–0,25	0,1–3,5	⊕	⊕
	1	4	12,9	0,8	7°	0°	0,03–0,38	0,1–3,5	⊕	⊕
 CCGW060204FSL-9 CCGW09T304FSL-9 CCGW09T308FSL-9	1	6,4	6,45	0,4	7°	0°	0,03–0,25	0,1–6,4	⊕	⊕
	1	9,7	9,67	0,4	7°	0°	0,03–0,25	0,1–9,7	⊕	⊕
	1	9,7	9,67	0,8	7°	0°	0,03–0,38	0,1–9,7	⊕	⊕
 CCGW060204FSR-9 CCGW09T304FSR-9 CCGW09T308FSR-9	1	6,4	6,45	0,4	7°	0°	0,03–0,25	0,1–6,4	⊕	⊕
	1	9,7	9,67	0,4	7°	0°	0,03–0,25	0,1–9,7	⊕	⊕
	1	9,7	9,67	0,8	7°	0°	0,03–0,38	0,1–9,7	⊕	⊕


Boyutlar için bkz. ISO 1832 uyarınca kod anahtar

DP = Çok kristalli elmas

PCD – Eşkenar dörtgen (rombik) pozitif 80° CPGW



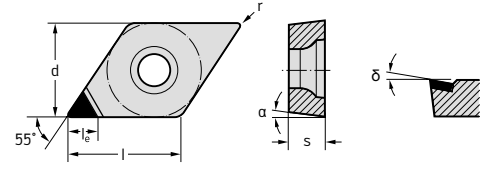
Kesici uçlar

Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 CPGW050204FS-1	1	3	5,64	0,4	11°	0°	0,03–0,25	0,1–2,5	⊕	⊕
CPGW060204FS-1	1	3,5	6,45	0,4	11°	0°	0,03–0,25	0,1–3,0	⊕	⊕
CPGW09T304FS-1	1	4	9,67	0,4	11°	0°	0,03–0,25	0,1–3,5	⊕	⊕
CPGW09T308FS-1	1	4	9,67	0,8	11°	0°	0,03–0,38	0,1–3,5	⊕	⊕
CPGW120408FS-1	1	4	12,9	0,8	11°	0°	0,03–0,38	0,1–3,5	⊕	⊕




Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Eşkenar dörtgen (rombik) pozitif 55° DCGT / DCGW



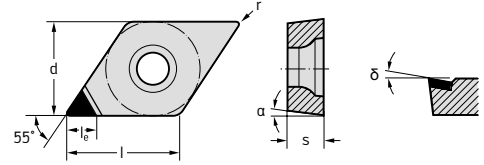
Kesici uçlar

Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 DCGT070202FS-1	1	3,7	7,75	0,2	7°	7°	0,03–0,12	0,1–3,0	⊕	⊕
DCGT070204FS-1	1	3,5	7,75	0,4	7°	7°	0,03–0,25	0,1–3,0	⊕	⊕
DCGT070208FS-1	1	3,5	7,75	0,8	7°	7°	0,03–0,38	0,1–3,0	⊕	⊕
DCGT11T302FS-1	1	4,2	11,63	0,2	7°	10°	0,03–0,12	0,1–3,5	⊕	⊕
DCGT11T304FS-1	1	4	11,63	0,4	7°	10°	0,03–0,25	0,1–3,0	⊕	⊕
DCGT11T308FS-1	1	4	11,63	0,8	7°	10°	0,03–0,38	0,1–3,5	⊕	⊕
 DCGT070204FS-M1	1	3,5	7,75	0,4	7°		0,08–0,20	0,1–2,0	⊕	⊕
DCGT11T304FS-M1	1	4	11,63	0,4	7°		0,08–0,20	0,1–2,0	⊕	⊕
 DCGW070202FS-1	1	3,7	7,75	0,2	7°	0°	0,03–0,12	0,1–3,0	⊕	⊕
DCGW070204FS-1	1	3,5	7,75	0,4	7°	0°	0,03–0,25	0,1–3,0	⊕	⊕
DCGW070208FS-1	1	3,5	7,75	0,8	7°	0°	0,03–0,38	0,1–3,0	⊕	⊕
DCGW11T302FS-1	1	4,2	11,63	0,2	7°	0°	0,03–0,12	0,1–3,5	⊕	⊕
DCGW11T304FS-1	1	4	11,63	0,4	7°	0°	0,03–0,25	0,1–3,5	⊕	⊕
DCGW11T308FS-1	1	4	11,63	0,8	7°	0°	0,03–0,38	0,1–3,5	⊕	⊕


Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Eşkenar dörtgen (rombik) pozitif 55° DPGW



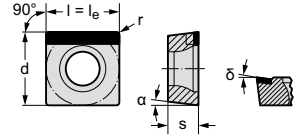
Kesici uçlar

Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 DPGW070204FS-1	1	3,5	7,75	0,4	11°	0°	0,03–0,25	0,1–3,0	⊕	⊕
DPGW11T304FS-1	1	4	11,63	0,4	11°	0°	0,03–0,25	0,1–3,5	⊕	⊕
DPGW11T308FS-1	1	4	11,63	0,8	11°	0°	0,03–0,38	0,1–3,5	⊕	⊕


Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Kare pozitif SCGW



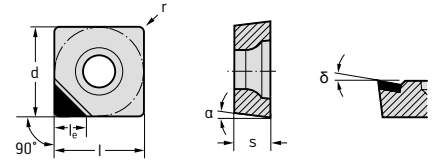
Kesici uçlar

Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 SCGW09T304FS-9	1	9,5	9,53	0,4	7°	0°	0,03–0,25	0,1–9,5	⊕	⊕


Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Kare pozitif SPGW



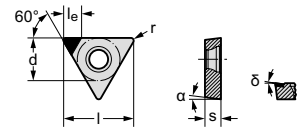
Kesici uçlar

Tanım	Kesme kenarlarının sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 SPGW09T308FS-1	1	4	9,53	0,8	11°	0°	0,03–0,38	0,1–3,5	⊕	⊕











Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Üçgen pozitif 60° TCGW



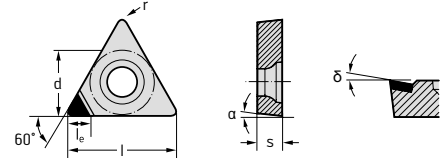
Kesici uçlar

Tanım	Kesme kenarlarının sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 TCGW090202FS-1	1	3,9	9,62	0,2	7°	0°	0,03–0,12	0,1–3,0	⊕	⊕
 TCGW090204FS-1	1	3,8	9,62	0,4	7°	0°	0,03–0,25	0,1–3,0	⊕	⊕
 TCGW110202FS-1	1	4,4	11	0,2	7°	0°	0,03–0,12	0,1–3,0	⊕	⊕
 TCGW110204FS-1	1	4,3	11	0,4	7°	0°	0,03–0,25	0,1–3,0	⊕	⊕
 TCGW110208FS-1	1	4	11	0,8	7°	0°	0,03–0,38	0,1–3,0	⊕	⊕
 TCGW16T304FS-1	1	4,3	16,5	0,4	7°	0°	0,03–0,25	0,1–3,5	⊕	⊕
 TCGW16T308FS-1	1	4	16,5	0,8	7°	0°	0,03–0,38	0,1–3,5	⊕	⊕
 TCGW090204FS-9	1	9	9,62	0,4	7°	0°	0,03–0,25	0,1–9,0	⊕	⊕
 TCGW110204FS-9	1	10,4	11	0,4	7°	0°	0,03–0,25	0,1–10,4	⊕	⊕
 TCGW16T308FS-9	1	15,3	16,5	0,8	7°	0°	0,03–0,38	0,1–15,3	⊕	⊕


Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Üçgen pozitif 60° TPGW



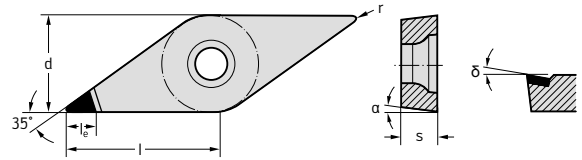
Kesici uçlar

Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 TPGW110204FS-1	1	4,2	11	0,4	11°	0°	0,03–0,25	0,1–3,5	☺	☺
TPGW110208FS-1	1	4	11	0,8	11°	0°	0,03–0,38	0,1–3,5	☺	☺
TPGW16T304FS-1	1	4,2	16,5	0,4	11°	0°	0,03–0,25	0,1–3,5	☺	☺
TPGW16T308FS-1	1	4	16,5	0,8	11°	0°	0,03–0,38	0,1–3,5	☺	☺



Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Eşkenar dörtgen (rombik) pozitif 35° VCGT / VCGW

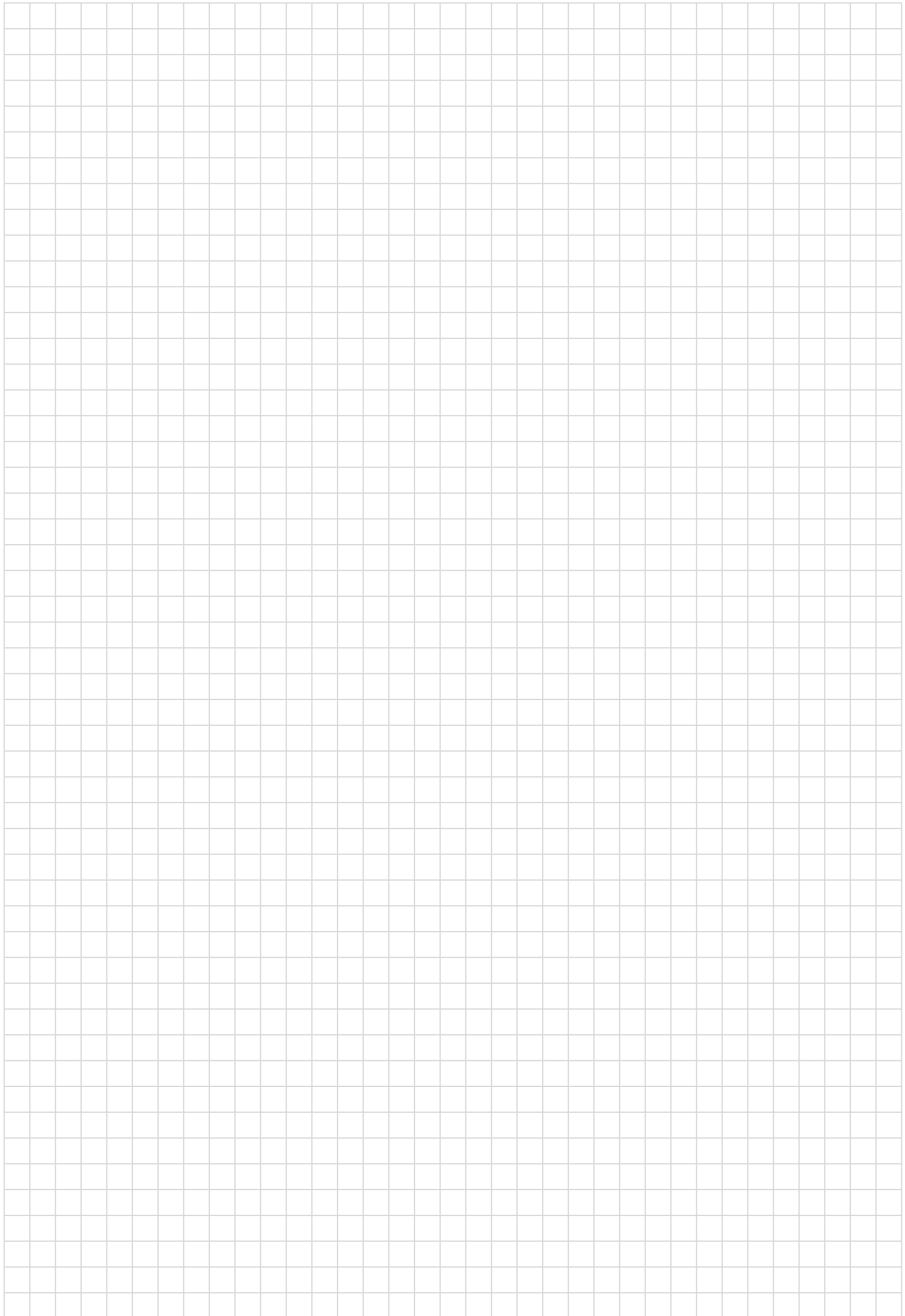


Kesici uçlar

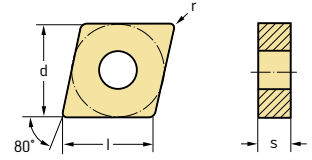
Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	N	O
									DP	DP
									WDN10	WDN10
 VCGT110302FS-1	1	4,1	11,07	0,2	7°	10°	0,03–0,12	0,1–3,0	☺	☺
VCGT110304FS-1	1	3,7	11,07	0,4	7°	10°	0,03–0,25	0,1–3,0	☺	☺
VCGT160404FS-1	1	4,5	16,61	0,4	7°	10°	0,03–0,25	0,1–4,0	☺	☺
VCGT160408FS-1	1	4,5	16,61	0,8	7°	10°	0,03–0,38	0,1–4,0	☺	☺
 VCGW110302FS-1	1	4,1	11,07	0,2	7°	0°	0,03–0,12	0,1–3,0	☺	☺
VCGW110304FS-1	1	3,7	11,07	0,4	7°	0°	0,03–0,25	0,1–3,0	☺	☺
VCGW160404FS-1	1	4,5	16,61	0,4	7°	0°	0,03–0,25	0,1–4,0	☺	☺
VCGW160408FS-1	1	4,5	16,61	0,8	7°	0°	0,03–0,38	0,1–4,0	☺	☺

Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı








DP = Çok kristalli elmas



Eşkenar dörtgen (rombik) negatif 80° CNGG

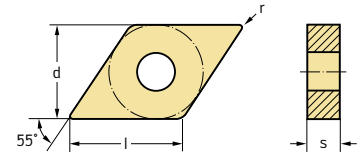


Kesici uçlar






	Tanım	l mm	r mm	f mm	a _p mm	N	
						HC	HW
	CNGG120402M-MN3	12,9	0,17	0,05-0,12	0,5-3,0		
	CNGG120404M-MN3	12,9	0,37	0,08-0,30	0,8-4,0		
	CNGG120408M-MN3	12,9	0,77	0,10-0,40	1,0-4,0		

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Eşkenar dörtgen (rombik) negatif 55° DNGG

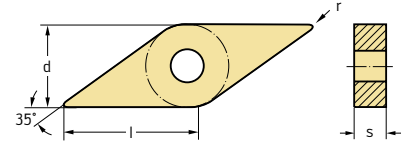


Kesici uçlar






	Tanım	l mm	r mm	f mm	a _p mm	N	
						HC	HW
	DNGG110402M-MN3	11,63	0,17	0,05-0,12	0,5-2,0		
	DNGG110404M-MN3	11,63	0,37	0,08-0,30	0,6-3,0		

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Eşkenar dörtgen (rombik) negatif 35° VNGG



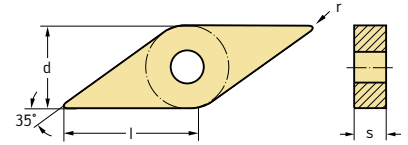
Kesici uçlar

	Tanım	l mm	r mm	f mm	a _p mm	N	
						HC HW	WN10 WN10
	VNGG160402M-MN3	16,61	0,17	0,05–0,12	0,5–2,0		
	VNGG160404M-MN3	16,61	0,37	0,08–0,30	0,6–3,0		






Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Üçgen negatif 80° WNGG

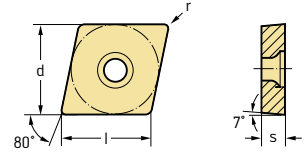


Kesici uçlar



	Tanım	l mm	r mm	f mm	a _p mm	N	
						HC HW	WN10 WN10
	WNGG080404M-MN3	8,69	0,37	0,08–0,30	0,8–4,0		
	WNGG080408M-MN3	8,69	0,77	0,10–0,40	1,0–4,0		

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Eşkenar dörtgen (rombik) pozitif 80° CCGT



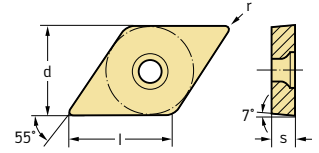
Kesici uçlar

	Tanım	l mm	r mm	f mm	a _p mm	N	
						HC WN10	HW WN10
	CCGT060201-FN2	6,45	0,1	0,02-0,06	0,1-1,5	⊗	
	CCGT060202-FN2	6,45	0,2	0,05-0,12	0,2-2,0	⊗	⊗
	CCGT060204-FN2	6,45	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	CCGT09T301-FN2	9,67	0,1	0,02-0,06	0,1-1,5	⊗	
	CCGT09T302-FN2	9,67	0,2	0,05-0,12	0,2-2,0	⊗	⊗
	CCGT09T304-FN2	9,67	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	CCGT09T308-FN2	9,67	0,8	0,10-0,30	0,3-3,0	⊗	⊗
	CCGT120404-FN2	12,9	0,4	0,08-0,25	0,2-3,0	⊗	⊗
	CCGT120408-FN2	12,9	0,8	0,10-0,30	0,3-3,5	⊗	⊗
	CCGT060201-MN2	6,45	0,1	0,02-0,06	0,5-1,5	⊗	⊗
	CCGT060202-MN2	6,45	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	CCGT060204-MN2	6,45	0,4	0,08-0,25	0,6-3,0	⊗	⊗
	CCGT09T301-MN2	9,67	0,1	0,02-0,06	0,5-1,5	⊗	⊗
	CCGT09T302-MN2	9,67	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	CCGT09T304-MN2	9,67	0,4	0,08-0,25	0,6-4,0	⊗	⊗
	CCGT09T308-MN2	9,67	0,8	0,10-0,35	0,8-4,0	⊗	⊗
	CCGT120402-MN2	12,9	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	CCGT120404-MN2	12,9	0,4	0,08-0,25	0,6-5,0	⊗	⊗
CCGT120408-MN2	12,9	0,8	0,10-0,35	0,8-5,0	⊗	⊗	



Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

HC = Kaplamalı karbür
HW = Kaplamasız karbür

Eşkenar dörtgen (rombik) pozitif 55° DCGT



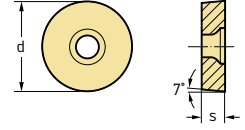
Kesici uçlar

	Tanım	l mm	r mm	f mm	a _p mm	N	
						WNN10 HC	WN10 HW
	DCGT070201-FN2	7,75	0,1	0,02-0,06	0,1-1,5	⊗	
	DCGT070202-FN2	7,75	0,2	0,05-0,12	0,2-2,0	⊗	⊗
	DCGT070204-FN2	7,75	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	DCGT11T301-FN2	11,63	0,1	0,02-0,06	0,1-1,5	⊗	
	DCGT11T302-FN2	11,63	0,2	0,05-0,12	0,2-2,0	⊗	⊗
	DCGT11T304-FN2	11,63	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	DCGT11T308-FN2	11,63	0,8	0,10-0,30	0,3-3,0	⊗	⊗
	DCGT070201-MN2	7,75	0,1	0,02-0,06	0,5-1,5	⊗	⊗
	DCGT070202-MN2	7,75	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	DCGT070204-MN2	7,75	0,4	0,08-0,25	0,6-2,5	⊗	⊗
	DCGT11T301-MN2	11,63	0,1	0,02-0,06	0,5-1,5	⊗	⊗
	DCGT11T302-MN2	11,63	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	DCGT11T304-MN2	11,63	0,4	0,08-0,25	0,6-3,0	⊗	⊗
	DCGT11T308-MN2	11,63	0,8	0,10-0,30	0,8-3,5	⊗	⊗











Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

HC = Kaplamalı karbür
HW = Kaplamasız karbür

Yuvarlak pozitif RCGT



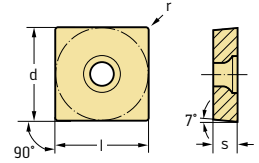
Kesici uçlar

Tanım	d mm	f mm	a _p mm	N	
				HC HW	WN10
	RCGT0602M0-MN2	6	0,10-0,55	0,6-2,5	 
	RCGT0803M0-MN2	8	0,12-0,60	0,7-3,0	 
	RCGT10T3M0-MN2	10	0,15-0,70	0,8-4,0	 
	RCGT120400-MN2	12,7	0,18-0,80	1,0-5,0	
	RCGT1204M0-MN2	12	0,18-0,80	1,0-5,0	 












Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

 HW = Kaplamasız karbür
 HC = Kaplamalı karbür

Kare pozitif SCGT



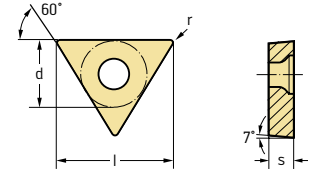
Kesici uçlar

Tanım	l mm	r mm	f mm	a _p mm	N	
					HC HW	WN10
	SCGT09T304-FN2	9,53	0,4	0,08-0,25	0,2-2,5	
	SCGT09T308-FN2	9,53	0,8	0,10-0,30	0,3-3,0	
	SCGT120408-FN2	12,7	0,8	0,10-0,30	0,3-3,0	
	SCGT09T304-MN2	9,53	0,4	0,08-0,25	0,6-4,0	 
	SCGT09T308-MN2	9,53	0,8	0,10-0,35	0,7-4,0	 
	SCGT120408-MN2	12,7	0,8	0,10-0,40	0,8-6,0	 



Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

 HC = Kaplamalı karbür
 HW = Kaplamasız karbür

Üçgen pozitif 60° TCGT



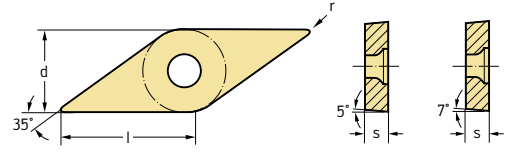
Kesici uçlar

	Tanım	l mm	r mm	f mm	a _p mm	N	
						WNN10 HC	WNN10 HW
	TCGT06T101-FN2	6,87	0,1	0,02-0,06	0,1-1,5	⊗	
	TCGT06T102-FN2	6,87	0,2	0,05-0,12	0,2-2,0	⊗	
	TCGT06T104-FN2	6,87	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	TCGT090202-FN2	9,62	0,2	0,05-0,12	0,2-2,0	⊗	
	TCGT090204-FN2	9,62	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	TCGT110202-FN2	11	0,2	0,05-0,12	0,2-2,0	⊗	
	TCGT110204-FN2	11	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	TCGT16T304-FN2	16,5	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	TCGT16T308-FN2	16,5	0,8	0,10-0,30	0,3-3,0	⊗	⊗
	TCGT110201-MN2	11	0,1	0,02-0,06	0,5-1,5	⊗	
	TCGT110202-MN2	11	0,2	0,05-0,12	0,6-2,0	⊗	⊗
	TCGT110204-MN2	11	0,4	0,08-0,25	0,6-3,0	⊗	⊗
	TCGT16T302-MN2	16,5	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	TCGT16T304-MN2	16,5	0,4	0,08-0,25	0,6-4,0	⊗	⊗
	TCGT16T308-MN2	16,5	0,8	0,10-0,35	0,8-4,0	⊗	⊗



Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

HC = Kaplamalı karbür
HW = Kaplamasız karbür

Eşkenar dörtgen (rombik) pozitif 35° VCGT



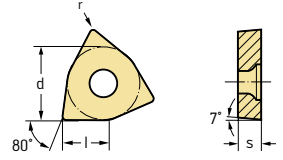
Kesici uçlar

	Tanım	l mm	r mm	f mm	a _p mm	N	
						HC	HW
	VCGT110301-FN2	11,07	0,1	0,02-0,06	0,1-1,5	⊗	
	VCGT110302-FN2	11,07	0,2	0,05-0,12	0,2-2,0	⊗	⊗
	VCGT110304-FN2	11,07	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	VCGT160402-FN2	16,61	0,2	0,05-0,12	0,2-2,0	⊗	⊗
	VCGT160404-FN2	16,61	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	VCGT160408-FN2	16,61	0,8	0,10-0,30	0,3-3,0	⊗	⊗
	VCGT110301-MN2	11,07	0,1	0,02-0,06	0,5-1,5	⊗	⊗
	VCGT110302-MN2	11,07	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	VCGT110304-MN2	11,07	0,4	0,08-0,25	0,6-2,5	⊗	⊗
	VCGT110308-MN2	11,07	0,8	0,10-0,35	0,8-3,0	⊗	⊗
	VCGT130301-MN2	13,1	0,1	0,02-0,06	0,5-1,5	⊗	
	VCGT130302-MN2	13,1	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	VCGT130304-MN2	13,1	0,4	0,08-0,25	0,6-3,0	⊗	⊗
	VCGT160404-MN2	16,61	0,4	0,08-0,25	0,6-3,5	⊗	⊗
	VCGT160408-MN2	16,61	0,8	0,10-0,35	0,8-3,5	⊗	⊗
	VCGT160412-MN2	16,61	1,2	0,10-0,45	1,0-3,5	⊗	⊗


















Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

HC = Kaplamalı karbür
HW = Kaplamasız karbür

Üçgen pozitif 80° WCGT













Kesici uçlar

	Tanım	l mm	r mm	f mm	a _p mm	N
						HC
						WN10
	WCGT020102-FN2	2,7	0,2	0,05-0,12	0,2-1,5	
	WCGT020104-FN2	2,7	0,4	0,08-0,20	0,2-1,5	
	WCGT030202-FN2	3,91	0,2	0,05-0,12	0,2-2,0	
	WCGT030204-FN2	3,91	0,4	0,08-0,25	0,2-2,5	
	WCGT040202-FN2	4,34	0,2	0,05-0,12	0,2-2,0	
	WCGT040204-FN2	4,34	0,4	0,08-0,25	0,2-2,5	
	WCGT06T304-FN2	6,52	0,4	0,08-0,25	0,2-2,5	
	WCGT06T308-FN2	6,52	0,8	0,10-0,30	0,3-3,0	
	WCGT030202-MN2	3,91	0,2	0,05-0,12	0,5-1,5	
	WCGT030204-MN2	3,91	0,4	0,08-0,20	0,6-1,5	
	WCGT040204-MN2	4,34	0,4	0,08-0,25	0,6-2,5	
	WCGT06T302-MN2	6,52	0,2	0,05-0,12	0,6-2,0	
	WCGT06T304-MN2	6,52	0,4	0,08-0,25	0,6-3,0	
	WCGT080404-MN2	8,69	0,4	0,08-0,25	0,6-4,0	
	WCGT080408-MN2	8,69	0,8	0,10-0,35	0,8-4,0	

Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

HC = Kaplamalı karbür

Uçlar

İşleme	Düşük ilerleme		Orta ilerleme	Düşük ilerleme	Orta ilerleme
	Selection	Selection	Selection	Selection	Selection
					
Geometri	CK8	CK8	FS-F1	RK8	FS-M1
P Çelik					
M Paslanmaz çelik	•	•			
K Dökme demir					
N Demir dışı metaller	••	••	••	••	••
S Zor işlenen malzemeler	•	•	•		•
H Sert malzemeler					
O Diğerleri			••	•	••
Kanal açma genişliği s [mm]	1,5-2,0	2,0-4,0	2,0-6,0	6,0	2,0-8,0
a _p [mm]				0,1-4,0	0,1-4,0
f [mm]	0,04-0,12	0,04-0,22	0,04-0,28	0,10-0,60	0,05-0,60
Katalogdaki sayfa	32	32	33	34	33
QR kodu					
www.walter-tools.com/woc/	CK8	CK8	FS-F1	RK8	FS-M1

Düşük ilerleme

Selection



CK8

Selection



SK8

2,0-5,0

1,5-5,0

0,04-0,25

0,03-0,25

34

35



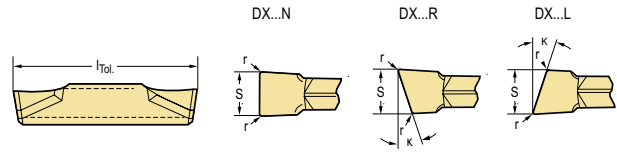
CK8







SK8

Alına kanal açma ve kesme – Uçlar

DX



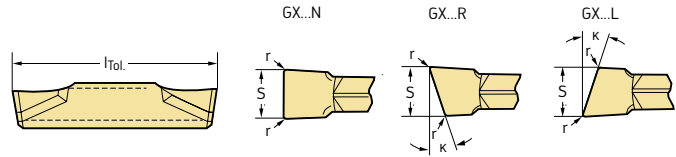
Uçlar

Tanım	s mm	r mm	κ	l mm	f mm	S _{Tol} mm	l _{Tol} mm	N	S
								WN13	WN13
 DX18-2E200L7-CK8	2	0	7°	18	0,04–0,10	±0,05	±0,15	☺	☺
 DX18-1E150N01-CK8	1,5	0,15		18	0,04–0,10	±0,05	±0,15	☺	☺
 DX18-2E200N02-CK8	2	0,2		18	0,04–0,12	±0,05	±0,15	☺	☺
 DX18-2E200R7-CK8	2	0	7°	18	0,04–0,10	±0,05	±0,15	☺	☺





HF = Kaplamasız ince taneli karbür

Alına kanal açma ve kesme – Uçlar

GX



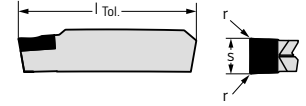
Uçlar

Tanım	s mm	r mm	l mm	f mm	S _{Tol} mm	l _{Tol} mm	N	S
							WK1	WK1
 GX16-1E200N02-CK8	2	0,2	16,6	0,04–0,12	±0,02	±0,03	☺	☺
 GX16-2E300N02-CK8	3	0,2	16,6	0,08–0,20	±0,02	±0,03	☺	☺
 GX24-2E300N02-CK8	3	0,2	24,6	0,08–0,20	±0,02	±0,03	☺	☺
 GX24-3E400N02-CK8	4	0,2	24,6	0,10–0,22	±0,02	±0,03	☺	☺

 l_{Tol} = Bir kesici uç partisi dahilinde kesici uç değişiminde tekrarlanabilirlik
 Radyüs toleransı r_{Tol} = ±0,05 mm


HW = Kaplamasız karbür

PCD – Alına kanal açma ve kesme GX



A2

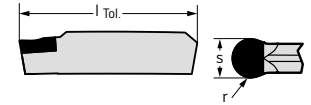
Uçlar

	Tanım	s mm	r mm	l mm	f mm	S _{Tol} mm	l _{Tol} mm	N	O
								DP	DP
								WDN10	WDN10
	GX16-1F200N02FS-F1	2	0,2	16	0,04-0,12	±0,02	±0,02	⊕	⊕
	GX24-2F300N02FS-F1	3	0,2	24	0,05-0,16	±0,02	±0,02	⊕	⊕
	GX24-2F318N02FS-F1	3,18	0,2	24	0,05-0,16	±0,02	±0,02	⊕	⊕
	GX24-3F400N02FS-F1	4	0,2	24	0,06-0,22	±0,02	±0,02	⊕	⊕
	GX24-3F475N02FS-F1	4,75	0,2	24	0,06-0,25	±0,02	±0,02	⊕	⊕
	GX24-3F500N02FS-F1	5	0,2	24	0,06-0,25	±0,02	±0,02	⊕	⊕
	GX24-4F600N02FS-F1	6	0,2	24	0,06-0,28	±0,02	±0,02	⊕	⊕


l_{Tol} = Bir kesici uç partisi dahilinde kesici uç değişiminde tekrarlanabilirlik
Radyüs toleransı r_{Tol} = ±0,05 mm

DP = Çok kristalli elmas

PCD – Kanal açma ve kopya tornalama GX



Uçlar

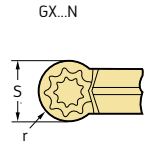
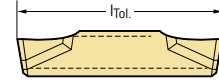
	Tanım	s mm	r mm	l mm	f mm	S _{Tol} mm	l _{Tol} mm	N	O
								DP	DP
								WDN10	WDN10
	GX16-1F200N10FS-M1	2	1	16	0,05-0,25	±0,02	±0,02	⊕	⊕
	GX24-2F300N15FS-M1	3	1,5	24	0,05-0,30	±0,02	±0,02	⊕	⊕
	GX24-2F318N16FS-M1	3,18	1,59	24	0,05-0,30	±0,02	±0,02	⊕	⊕
	GX24-3F400N20FS-M1	4	2	24	0,05-0,35	±0,02	±0,02	⊕	⊕
	GX24-3F475N24FS-M1	4,75	2,38	24	0,05-0,40	±0,02	±0,02	⊕	⊕
	GX24-3F500N25FS-M1	5	2,5	24	0,05-0,40	±0,02	±0,02	⊕	⊕
	GX24-4F600N30FS-M1	6	3	24	0,05-0,50	±0,02	±0,02	⊕	⊕
	GX30-5F800N40FS-M1	8	4	30	0,05-0,60	±0,02	±0,02	⊕	⊕

l_{Tol} = Bir kesici uç partisi dahilinde kesici uç değişiminde tekrarlanabilirlik
Radyüs toleransı r_{Tol} = ±0,05 mm


DP = Çok kristalli elmas

Kanal açma ve kopya tornalama – Uçlar

GX



Uçlar

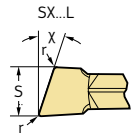
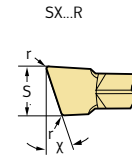
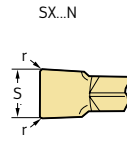
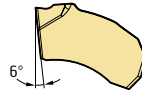
	Tanım	s mm	r mm	l mm	f mm	S _{Tol} mm	l _{Tol} mm	N	S
								HW	HW
	GX24-4R300N-RK8	6	3	25,4	0,10-0,60	±0,02	±0,05	WK1	WK1

l_{Tol} = Bir kesici uç partisi dahilinde kesici uç değişiminde tekrarlanabilirlik
Radyüs toleransı r_{Tol} = ±0,05 mm


HW = Kaplamasız karbür

Alına kanal açma ve kesme – Uçlar

SX



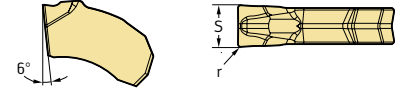
Uçlar

	Tanım	s mm	r mm	f mm	S _{Tol} mm	l _{Tol} mm	N	S
							HW	HW
	SX-2E200N02-CK8	2	0,2	0,04-0,12	±0,02	±0,05	WK1	WK1
	SX-3E300N02-CK8	3	0,2	0,08-0,20	±0,02	±0,05	WK1	WK1
	SX-4E400N02-CK8	4	0,2	0,10-0,22	±0,02	±0,05	WK1	WK1
	SX-5E500N04-CK8	5	0,4	0,10-0,25	±0,02	±0,05	WK1	WK1

l_{Tol} = Bir kesici uç partisi dahilinde kesici uç değişiminde tekrarlanabilirlik
Radyüs toleransı r_{Tol} = ±0,05 mm












HW = Kaplamasız karbür

Frezeleyerek kesme – Uçlar SX



A2

Uçlar

	Tanım	s mm	r mm	f mm	S _{Tol} mm	l _{Tol} mm	N S	
							HW	HW
							WK1	WK1
	SX-1E150N01-SK8	1,5	0,1	0,03–0,08	±0,02	±0,05		
	SX-2E200N02-SK8	2	0,2	0,05–0,10	±0,02	±0,05		
	SX-3E300N02-SK8	3	0,2	0,05–0,15	±0,02	±0,05		
	SX-4E400N02-SK8	4	0,2	0,05–0,20	±0,02	±0,05		
	SX-5E500N04-SK8	5	0,4	0,05–0,25	±0,02	±0,05		

l_{Tol} = Bir kesici uç partisi dahilinde kesici uç değişiminde tekrarlanabilirlik
Radyüs toleransı r_{Tol} = ±0,05 mm

HW = Kaplamasız karbür



B – Delme

B1: Dolu malzemede delik delme

Sayfa

Karbür matkap DC165 Advance	38
Delik delme kalitesi WNN15	39
Ürün programına genel bakış	
Karbür matkaplar – içten soğutmalı	40
Sipariş sayfaları	
Karbür matkaplar – içten soğutmalı	42
Ürün programına genel bakış	
Delme için kesici uçlar	68
Sipariş sayfaları	
Delme için kesici uçlar	74

B2: Delik genişletme ve hassas delik işleme

Sayfa

Teğetsel-yanal kesici uçlara sahip özel takımlar	78
Teğetsel-yanal kesici uçlar P4460	79
Sipariş sayfaları	
Delik genişletme ve hassas delik işleme için kesici uçlar	80

Standart olarak güçlü – özel isteklere uygun.

TAKIM

- Karbür matkap DC165 Advance
- Ø 4–16 mm

Ölçü – Standart:

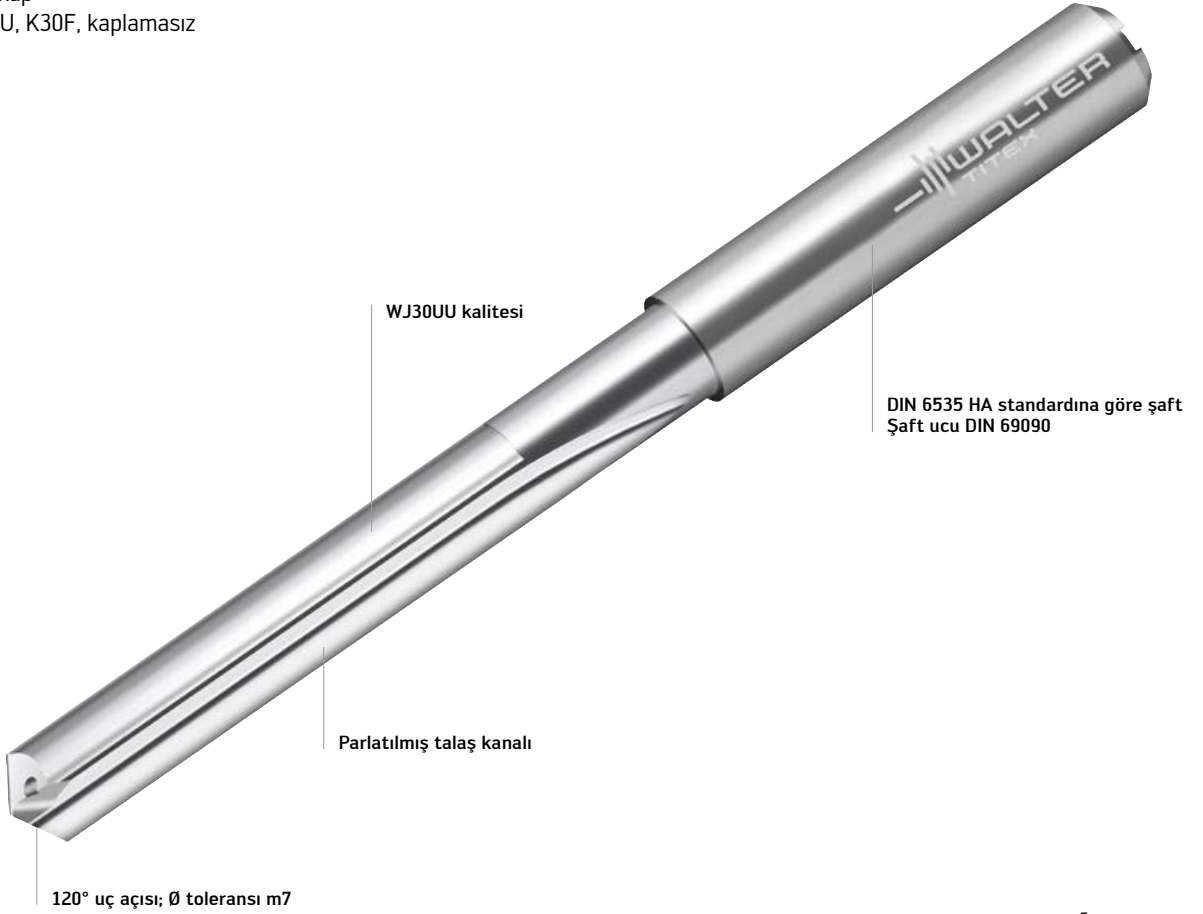
- $5 \times D_c$ Walter standardına göre

Ölçü – Walter Xpress:

- $12 \times D_c$ 'ye kadar
- Kademeli matkap
- Kalite: WJ30UU, K30F, kaplamasız

UYGULAMA

- ISO malzeme grupları K ve N
- Emülsiyon ve yağ ile kullanılabilir
- Kullanım alanları: Genel makine mühendisliği ve otomotiv endüstrisi



Karbür matkap DC165 Advance

Şek.: DC165-05-08.500A1-WJ30UU

Walter Xpress

AVANTAJLARINIZ

- Düz talaş kanalı büyük Ø farklılıklarına sahip kademeli takımların kullanımına izin verir
- 4 pah kırma modeli sayesinde yüksek delme kalitesi
- Parlatılmış talaş kanalları güvenli talaş boşaltma sağlar

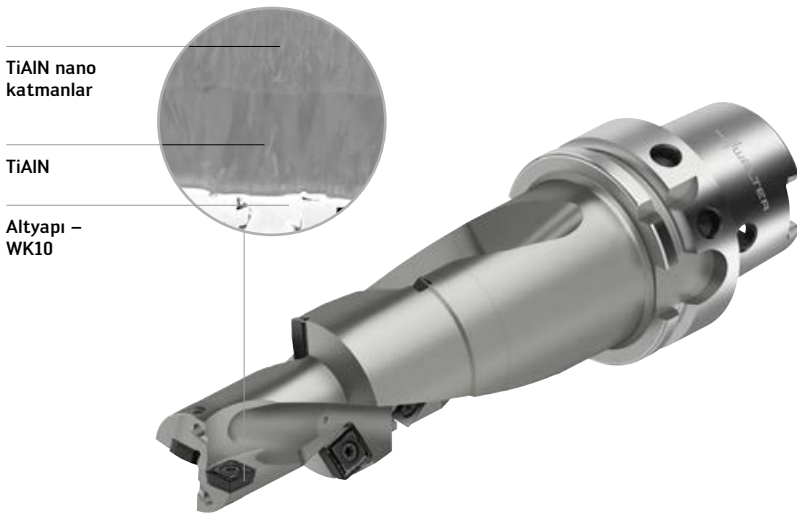
Alüminyum ve kobalt delmede proses güvenilirliği.

PROGRAMDA YENİ

- PVD delik delme kalitesi WNN15
- P4840C (merkez) ve P4840P (dış):
WSP matkap D4120 için 1–8 ölçüleri
- P2840S (merkez ve dış):
WSP matkap D3120 için 1–7 ölçüleri
- LCGX (merkez ve dış):
WSP B3212.DF matkap için 05 ve 06 ölçüleri. – B3214.DF.
yarıçap alanında 10–18 mm

KALİTE

- Özel yapıya sahip TiAlN kaplama: 1. kaba kristalli tabaka;
2. Daha yüksek Al oranına sahip nanoyapılı katman
- Maksimum kesme kenarı stabilitesi için sert altyapı
- Düşük sürtünme için çok düz talaş yüzeyi
- HIPIMS-PVD kaplama teknolojisi



ISO N kalite: WNN15

Şek.: B4273-7497120

AVANTAJLARINIZ

- WNN15 kalitesinin en uygun katman bağlantısı sayesinde en yüksek proses güvenilirliği
- Parlatılmış talaş yüzeyi ve son derece pürüzsüz yüzey sayesinde proses açısından güvenilir talaş boşaltma
- Azaltılmış adhezyon eğilimi ve kesme kenarında talaş yapışması, proses güvenilirliğini ve aşınma dayanıklılığını artırır
- HIPIMS PVD kaplama sayesinde en yüksek kesme hızlarında uzun takım ömrü

GEOMETRİ

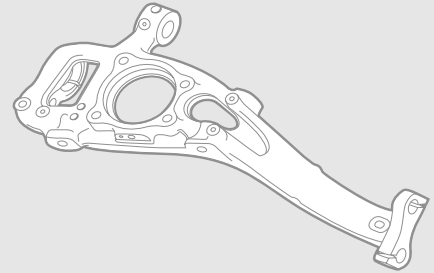
- E77 – Keskin
- Çevresi tamamen taşlanmış – Maksimum hassasiyet için
- Parlatılmış talaş yüzeyi – minimum sürtünme ve yapışma için
- Keskin kesme kenarı sıvanması – düşük kesme kuvvetleri için

UYGULAMA

- Demir dışı metaller (ISO N), özellikle alüminyum dövme alaşımları ve alüminyum döküm alaşımları için uygundur
- Kullanım alanları: Havacılık ve otomotiv endüstrisi, genel makine mühendisliği vb.

UYGULAMA ÖRNEĞİ

Akson taşıyıcı



Malzeme: AlMgSi1 F54 dövme alüminyum, sertleştirilmiş (3.2315); ISO N

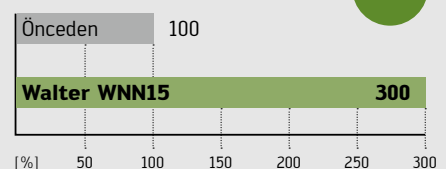
Takım: B4273-7497120

Değiştirilebilir kesici uç: P4840P-5R-E77 WNN15
P4840C-5R-E77 WNN15

Kesme değerleri

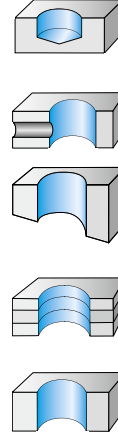
	Önceden	Walter WNN15
v_c (m/dk)	443	443
n [dk ⁻¹]	4700	4700
f_n (mm)	0,22	0,22
v_f (mm/dk)	1034	1034
Delik derinliği (mm)	32	32
Soğutma	Emülsiyon%6	Emülsiyon%6
Takım tutucu	HSK 63	HSK 63

Karşılaştırma: Takım ömrü



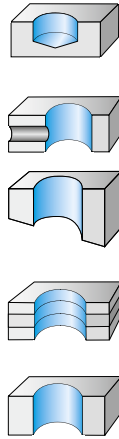
Karbür matkaplar – içten soğutmalı

B1



Delik derinliği	3 x D _C	5 x D _C	8 x D _C	12 x D _C
	Selection	NEW	Selection	Selection
Tanım	DC160 Advance X-treme Evo	DC165 Advance	DC160 Advance X-treme Evo	DC160 Advance X-treme Evo
Diğer hizmetler				
Standart	DIN 6537 K	Walter	DIN 6537 L	Walter
Kaplama / Kalite	WJ30ET	WJ30UU	WJ30ET	WJ30EU
Şaft	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
Çap aralığı [mm]	3–20	4–16	3–25	3–20
P Çelik	●●		●●	●●
M Paslanmaz çelik	●		●	●
K Dökme demir	●●	●●	●●	●●
N Demir dışı metaller	●●	●●	●●	●●
S Zor işlenen malzemeler	●●		●●	●●
H Sert malzemeler	●		●	●
O Diğerleri	●		●	●
Katalogdaki sayfa	42	67	47	52
QR kodu				
	DC160	DC165	DC160	DC160

www.walter-tools.com/woc/

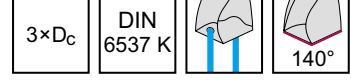
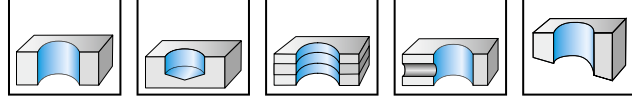


	16 x D _C	20 x D _C	25 x D _C	30 x D _C
	Selection	Selection	Selection	Selection
	DC160 Advance X-treme Evo	DC160 Advance X-treme Evo	DC160 Advance X-treme Evo	DC160 Advance X-treme Evo
	Walter	Walter	Walter	Walter
	WJ30EU	WJ30EU	WJ30EU	WJ30EU
	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA	DIN 6535 HA
	3-16	3-16	3-12	3-12
	••	••	••	••
	•	•	•	•
	••	••	••	••
	••	••	••	••
	••	••	••	••
	•	•	•	•
	•	•	•	•
	59	61	63	65
	DC160	DC160	DC160	DC160

İçten soğutmalı karbür matkaplar

DC160 Advance

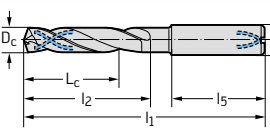
X-treme Evo

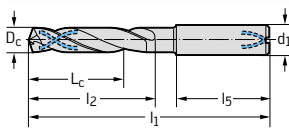


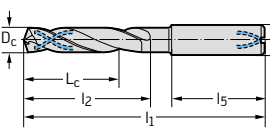
WJ30ET

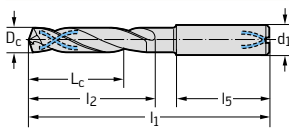
B1

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
<p>DIN 6535 HA</p>	DC160-03-03.000A1-	3		14	62	20	36	6	☺
	DC160-03-03.100A1-	3,1		14	62	20	36	6	☺
	DC160-03-03.175A1-	3,175	1/8"	14	62	20	36	6	☺
	DC160-03-03.200A1-	3,2		14	62	20	36	6	☺
	DC160-03-03.250A1-	3,25		14	62	20	36	6	☺
	DC160-03-03.300A1-	3,3		14	62	20	36	6	☺
	DC160-03-03.400A1-	3,4		14	62	20	36	6	☺
	DC160-03-03.500A1-	3,5		14	62	20	36	6	☺
	DC160-03-03.572A1-	3,572	9/64"	14	62	20	36	6	☺
	DC160-03-03.600A1-	3,6		14	62	20	36	6	☺
	DC160-03-03.650A1-	3,65		14	62	20	36	6	☺
	DC160-03-03.700A1-	3,7		14	62	20	36	6	☺
	DC160-03-03.800A1-	3,8		17	66	24	36	6	☺
	DC160-03-03.900A1-	3,9		17	66	24	36	6	☺
	DC160-03-03.969A1-	3,969	5/32"	17	66	24	36	6	☺
	DC160-03-04.000A1-	4		17	66	24	36	6	☺
	DC160-03-04.100A1-	4,1		17	66	24	36	6	☺
	DC160-03-04.200A1-	4,2		17	66	24	36	6	☺
	DC160-03-04.300A1-	4,3		17	66	24	36	6	☺
	DC160-03-04.366A1-	4,366	11/64"	17	66	24	36	6	☺
	DC160-03-04.400A1-	4,4		17	66	24	36	6	☺
	DC160-03-04.500A1-	4,5		17	66	24	36	6	☺
	DC160-03-04.600A1-	4,6		17	66	24	36	6	☺
	DC160-03-04.650A1-	4,65		17	66	24	36	6	☺
	DC160-03-04.700A1-	4,7		17	66	24	36	6	☺
	DC160-03-04.763A1-	4,763	3/16"	20	66	28	36	6	☺
	DC160-03-04.800A1-	4,8		20	66	28	36	6	☺
	DC160-03-04.900A1-	4,9		20	66	28	36	6	☺
	DC160-03-05.000A1-	5		20	66	28	36	6	☺
	DC160-03-05.100A1-	5,1		20	66	28	36	6	☺
	DC160-03-05.159A1-	5,159	13/64"	20	66	28	36	6	☺
	DC160-03-05.200A1-	5,2		20	66	28	36	6	☺
	DC160-03-05.300A1-	5,3		20	66	28	36	6	☺
DC160-03-05.400A1-	5,4		20	66	28	36	6	☺	
DC160-03-05.500A1-	5,5		20	66	28	36	6	☺	
DC160-03-05.550A1-	5,55		20	66	28	36	6	☺	

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-03-05.556A1-	5,556	7/32"	20	66	28	36	6	☺
	DC160-03-05.600A1-	5,6		20	66	28	36	6	☺
	DC160-03-05.700A1-	5,7		20	66	28	36	6	☺
	DC160-03-05.800A1-	5,8		20	66	28	36	6	☺
	DC160-03-05.900A1-	5,9		20	66	28	36	6	☺
	DC160-03-05.953A1-	5,953	15/64"	20	66	28	36	6	☺
	DC160-03-06.000A1-	6		20	66	28	36	6	☺
	DC160-03-06.100A1-	6,1		24	79	34	36	8	☺
	DC160-03-06.200A1-	6,2		24	79	34	36	8	☺
	DC160-03-06.300A1-	6,3		24	79	34	36	8	☺
	DC160-03-06.350A1-	6,35	1/4"	24	79	34	36	8	☺
	DC160-03-06.400A1-	6,4		24	79	34	36	8	☺
	DC160-03-06.500A1-	6,5		24	79	34	36	8	☺
	DC160-03-06.600A1-	6,6		24	79	34	36	8	☺
	DC160-03-06.700A1-	6,7		24	79	34	36	8	☺
	DC160-03-06.747A1-	6,747	17/64"	24	79	34	36	8	☺
	DC160-03-06.800A1-	6,8		24	79	34	36	8	☺
	DC160-03-06.900A1-	6,9		24	79	34	36	8	☺
	DC160-03-07.000A1-	7		24	79	34	36	8	☺
	DC160-03-07.100A1-	7,1		29	79	41	36	8	☺
	DC160-03-07.144A1-	7,144	9/32"	29	79	41	36	8	☺
	DC160-03-07.200A1-	7,2		29	79	41	36	8	☺
	DC160-03-07.300A1-	7,3		29	79	41	36	8	☺
	DC160-03-07.400A1-	7,4		29	79	41	36	8	☺
	DC160-03-07.500A1-	7,5		29	79	41	36	8	☺
	DC160-03-07.541A1-	7,541	19/64"	29	79	41	36	8	☺
	DC160-03-07.550A1-	7,55		29	79	41	36	8	☺
	DC160-03-07.600A1-	7,6		29	79	41	36	8	☺
	DC160-03-07.700A1-	7,7		29	79	41	36	8	☺
	DC160-03-07.800A1-	7,8		29	79	41	36	8	☺
	DC160-03-07.900A1-	7,9		29	79	41	36	8	☺
	DC160-03-07.938A1-	7,938	5/16"	29	79	41	36	8	☺
	DC160-03-08.000A1-	8		29	79	41	36	8	☺
	DC160-03-08.100A1-	8,1		35	89	47	40	10	☺
	DC160-03-08.200A1-	8,2		35	89	47	40	10	☺
DC160-03-08.300A1-	8,3		35	89	47	40	10	☺	
DC160-03-08.334A1-	8,334	21/64"	35	89	47	40	10	☺	
DC160-03-08.400A1-	8,4		35	89	47	40	10	☺	
DC160-03-08.500A1-	8,5		35	89	47	40	10	☺	
DC160-03-08.600A1-	8,6		35	89	47	40	10	☺	
DC160-03-08.700A1-	8,7		35	89	47	40	10	☺	
DC160-03-08.731A1-	8,731	11/32"	35	89	47	40	10	☺	
DC160-03-08.800A1-	8,8		35	89	47	40	10	☺	
DC160-03-08.900A1-	8,9		35	89	47	40	10	☺	
DC160-03-09.000A1-	9		35	89	47	40	10	☺	
DC160-03-09.100A1-	9,1		35	89	47	40	10	☺	
DC160-03-09.128A1-	9,128	23/64"	35	89	47	40	10	☺	
DC160-03-09.200A1-	9,2		35	89	47	40	10	☺	
DC160-03-09.300A1-	9,3		35	89	47	40	10	☺	

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-03-09.400A1-	9,4		35	89	47	40	10	☺
	DC160-03-09.500A1-	9,5		35	89	47	40	10	☺
	DC160-03-09.525A1-	9,525	3/8"	35	89	47	40	10	☺
	DC160-03-09.550A1-	9,55		35	89	47	40	10	☺
	DC160-03-09.600A1-	9,6		35	89	47	40	10	☺
	DC160-03-09.700A1-	9,7		35	89	47	40	10	☺
	DC160-03-09.800A1-	9,8		35	89	47	40	10	☺
	DC160-03-09.900A1-	9,9		35	89	47	40	10	☺
	DC160-03-09.922A1-	9,922	25/64"	35	89	47	40	10	☺
	DC160-03-10.000A1-	10		35	89	47	40	10	☺
	DC160-03-10.100A1-	10,1		40	102	55	45	12	☺
	DC160-03-10.200A1-	10,2		40	102	55	45	12	☺
	DC160-03-10.300A1-	10,3		40	102	55	45	12	☺
	DC160-03-10.319A1-	10,319	13/32"	40	102	55	45	12	☺
	DC160-03-10.400A1-	10,4		40	102	55	45	12	☺
	DC160-03-10.500A1-	10,5		40	102	55	45	12	☺
	DC160-03-10.600A1-	10,6		40	102	55	45	12	☺
	DC160-03-10.700A1-	10,7		40	102	55	45	12	☺
	DC160-03-10.716A1-	10,716	27/64"	40	102	55	45	12	☺
	DC160-03-10.800A1-	10,8		40	102	55	45	12	☺
	DC160-03-10.900A1-	10,9		40	102	55	45	12	☺
	DC160-03-11.000A1-	11		40	102	55	45	12	☺
	DC160-03-11.100A1-	11,1		40	102	55	45	12	☺
	DC160-03-11.113A1-	11,113	7/16"	40	102	55	45	12	☺
	DC160-03-11.200A1-	11,2		40	102	55	45	12	☺
	DC160-03-11.300A1-	11,3		40	102	55	45	12	☺
	DC160-03-11.400A1-	11,4		40	102	55	45	12	☺
	DC160-03-11.500A1-	11,5		40	102	55	45	12	☺
	DC160-03-11.509A1-	11,509	29/64"	40	102	55	45	12	☺
	DC160-03-11.550A1-	11,55		40	102	55	45	12	☺
	DC160-03-11.600A1-	11,6		40	102	55	45	12	☺
	DC160-03-11.700A1-	11,7		40	102	55	45	12	☺
	DC160-03-11.800A1-	11,8		40	102	55	45	12	☺
	DC160-03-11.900A1-	11,9		40	102	55	45	12	☺
DC160-03-11.906A1-	11,906	15/32"	40	102	55	45	12	☺	
DC160-03-12.000A1-	12		40	102	55	45	12	☺	
DC160-03-12.100A1-	12,1		43	107	60	45	14	☺	
DC160-03-12.200A1-	12,2		43	107	60	45	14	☺	
DC160-03-12.250A1-	12,25		43	107	60	45	14	☺	
DC160-03-12.300A1-	12,3		43	107	60	45	14	☺	
DC160-03-12.303A1-	12,303	31/64"	43	107	60	45	14	☺	
DC160-03-12.400A1-	12,4		43	107	60	45	14	☺	
DC160-03-12.500A1-	12,5		43	107	60	45	14	☺	
DC160-03-12.600A1-	12,6		43	107	60	45	14	☺	
DC160-03-12.700A1-	12,7	1/2"	43	107	60	45	14	☺	
DC160-03-12.750A1-	12,75		43	107	60	45	14	☺	
DC160-03-12.800A1-	12,8		43	107	60	45	14	☺	
DC160-03-12.900A1-	12,9		43	107	60	45	14	☺	
DC160-03-13.000A1-	13		43	107	60	45	14	☺	

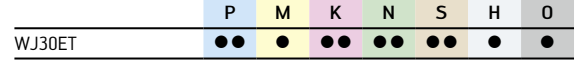
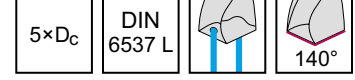
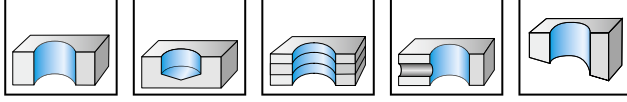
Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-03-13.100A1-	13,1		43	107	60	45	14	☺
	DC160-03-13.200A1-	13,2		43	107	60	45	14	☺
	DC160-03-13.300A1-	13,3		43	107	60	45	14	☺
	DC160-03-13.400A1-	13,4		43	107	60	45	14	☺
	DC160-03-13.494A1-	13,494	17/32"	43	107	60	45	14	☺
	DC160-03-13.500A1-	13,5		43	107	60	45	14	☺
	DC160-03-13.600A1-	13,6		43	107	60	45	14	☺
	DC160-03-13.700A1-	13,7		43	107	60	45	14	☺
	DC160-03-13.800A1-	13,8		43	107	60	45	14	☺
	DC160-03-13.900A1-	13,9		43	107	60	45	14	☺
	DC160-03-14.000A1-	14		43	107	60	45	14	☺
	DC160-03-14.100A1-	14,1		45	115	65	48	16	☺
	DC160-03-14.200A1-	14,2		45	115	65	48	16	☺
	DC160-03-14.288A1-	14,288	9/16"	45	115	65	48	16	☺
	DC160-03-14.300A1-	14,3		45	115	65	48	16	☺
	DC160-03-14.400A1-	14,4		45	115	65	48	16	☺
	DC160-03-14.500A1-	14,5		45	115	65	48	16	☺
	DC160-03-14.600A1-	14,6		45	115	65	48	16	☺
	DC160-03-14.700A1-	14,7		45	115	65	48	16	☺
	DC160-03-14.750A1-	14,75		45	115	65	48	16	☺
	DC160-03-14.800A1-	14,8		45	115	65	48	16	☺
	DC160-03-15.000A1-	15		45	115	65	48	16	☺
	DC160-03-15.100A1-	15,1		45	115	65	48	16	☺
	DC160-03-15.200A1-	15,2		45	115	65	48	16	☺
	DC160-03-15.300A1-	15,3		45	115	65	48	16	☺
	DC160-03-15.500A1-	15,5		45	115	65	48	16	☺
	DC160-03-15.600A1-	15,6		45	115	65	48	16	☺
	DC160-03-15.700A1-	15,7		45	115	65	48	16	☺
	DC160-03-15.800A1-	15,8		45	115	65	48	16	☺
	DC160-03-15.875A1-	15,875	5/8"	45	115	65	48	16	☺
	DC160-03-15.900A1-	15,9		45	115	65	48	16	☺
	DC160-03-16.000A1-	16		45	115	65	48	16	☺
	DC160-03-16.100A1-	16,1		51	123	73	48	18	☺
	DC160-03-16.200A1-	16,2		51	123	73	48	18	☺
DC160-03-16.300A1-	16,3		51	123	73	48	18	☺	
DC160-03-16.400A1-	16,4		51	123	73	48	18	☺	
DC160-03-16.500A1-	16,5		51	123	73	48	18	☺	
DC160-03-16.600A1-	16,6		51	123	73	48	18	☺	
DC160-03-16.700A1-	16,7		51	123	73	48	18	☺	
DC160-03-16.750A1-	16,75		51	123	73	48	18	☺	
DC160-03-16.800A1-	16,8		51	123	73	48	18	☺	
DC160-03-17.000A1-	17		51	123	73	48	18	☺	
DC160-03-17.200A1-	17,2		51	123	73	48	18	☺	
DC160-03-17.300A1-	17,3		51	123	73	48	18	☺	
DC160-03-17.500A1-	17,5		51	123	73	48	18	☺	
DC160-03-17.600A1-	17,6		51	123	73	48	18	☺	
DC160-03-17.700A1-	17,7		51	123	73	48	18	☺	
DC160-03-17.800A1-	17,8		51	123	73	48	18	☺	
DC160-03-18.000A1-	18		51	123	73	48	18	☺	

Takım		D_c m7 mm	D_c Inch/No	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-03-18.200A1-	18,2		55	131	79	50	20	⊕
	DC160-03-18.500A1-	18,5		55	131	79	50	20	⊕
	DC160-03-18.700A1-	18,7		55	131	79	50	20	⊕
	DC160-03-18.800A1-	18,8		55	131	79	50	20	⊕
	DC160-03-19.000A1-	19		55	131	79	50	20	⊕
	DC160-03-19.050A1-	19,05	3/4"	55	131	79	50	20	⊕
	DC160-03-19.500A1-	19,5		55	131	79	50	20	⊕
	DC160-03-19.700A1-	19,7		55	131	79	50	20	⊕
	DC160-03-19.800A1-	19,8		55	131	79	50	20	⊕
	DC160-03-20.000A1-	20		55	131	79	50	20	⊕

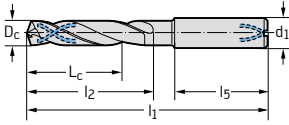
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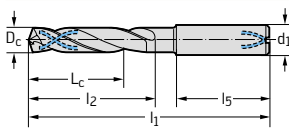
DC160 Advance

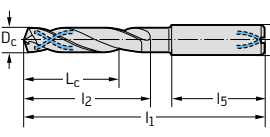
X-treme Evo

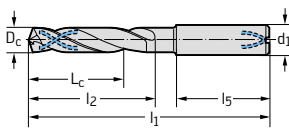


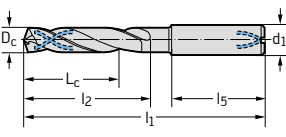
B1

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-05-03.000A1-	3		23	66	28	36	6	☺
	DC160-05-03.100A1-	3,1		23	66	28	36	6	☺
	DC160-05-03.175A1-	3,175	1/8"	23	66	28	36	6	☺
	DC160-05-03.200A1-	3,2		23	66	28	36	6	☺
	DC160-05-03.250A1-	3,25		23	66	28	36	6	☺
	DC160-05-03.300A1-	3,3		23	66	28	36	6	☺
	DC160-05-03.400A1-	3,4		23	66	28	36	6	☺
	DC160-05-03.500A1-	3,5		23	66	28	36	6	☺
	DC160-05-03.572A1-	3,572	9/64"	23	66	28	36	6	☺
	DC160-05-03.600A1-	3,6		23	66	28	36	6	☺
	DC160-05-03.650A1-	3,65		23	66	28	36	6	☺
	DC160-05-03.700A1-	3,7		23	66	28	36	6	☺
	DC160-05-03.800A1-	3,8		29	74	36	36	6	☺
	DC160-05-03.900A1-	3,9		29	74	36	36	6	☺
	DC160-05-03.969A1-	3,969	5/32"	29	74	36	36	6	☺
	DC160-05-04.000A1-	4		29	74	36	36	6	☺
	DC160-05-04.100A1-	4,1		29	74	36	36	6	☺
	DC160-05-04.200A1-	4,2		29	74	36	36	6	☺
	DC160-05-04.300A1-	4,3		29	74	36	36	6	☺
	DC160-05-04.366A1-	4,366	11/64"	29	74	36	36	6	☺
	DC160-05-04.400A1-	4,4		29	74	36	36	6	☺
	DC160-05-04.500A1-	4,5		29	74	36	36	6	☺
	DC160-05-04.600A1-	4,6		29	74	36	36	6	☺
	DC160-05-04.650A1-	4,65		29	74	36	36	6	☺
	DC160-05-04.700A1-	4,7		29	74	36	36	6	☺
	DC160-05-04.763A1-	4,763	3/16"	35	82	44	36	6	☺
	DC160-05-04.800A1-	4,8		35	82	44	36	6	☺
	DC160-05-04.900A1-	4,9		35	82	44	36	6	☺
	DC160-05-05.000A1-	5		35	82	44	36	6	☺
	DC160-05-05.100A1-	5,1		35	82	44	36	6	☺
	DC160-05-05.159A1-	5,159	13/64"	35	82	44	36	6	☺
	DC160-05-05.200A1-	5,2		35	82	44	36	6	☺
	DC160-05-05.300A1-	5,3		35	82	44	36	6	☺
DC160-05-05.400A1-	5,4		35	82	44	36	6	☺	
DC160-05-05.500A1-	5,5		35	82	44	36	6	☺	
DC160-05-05.550A1-	5,55		35	82	44	36	6	☺	

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-05-05.556A1-	5,556	7/32"	35	82	44	36	6	☺
	DC160-05-05.600A1-	5,6		35	82	44	36	6	☺
	DC160-05-05.700A1-	5,7		35	82	44	36	6	☺
	DC160-05-05.800A1-	5,8		35	82	44	36	6	☺
	DC160-05-05.900A1-	5,9		35	82	44	36	6	☺
	DC160-05-05.953A1-	5,953	15/64"	35	82	44	36	6	☺
	DC160-05-06.000A1-	6		35	82	44	36	6	☺
	DC160-05-06.100A1-	6,1		43	91	53	36	8	☺
	DC160-05-06.200A1-	6,2		43	91	53	36	8	☺
	DC160-05-06.300A1-	6,3		43	91	53	36	8	☺
	DC160-05-06.350A1-	6,35	1/4"	43	91	53	36	8	☺
	DC160-05-06.400A1-	6,4		43	91	53	36	8	☺
	DC160-05-06.500A1-	6,5		43	91	53	36	8	☺
	DC160-05-06.600A1-	6,6		43	91	53	36	8	☺
	DC160-05-06.700A1-	6,7		43	91	53	36	8	☺
	DC160-05-06.747A1-	6,747	17/64"	43	91	53	36	8	☺
	DC160-05-06.800A1-	6,8		43	91	53	36	8	☺
	DC160-05-06.900A1-	6,9		43	91	53	36	8	☺
	DC160-05-07.000A1-	7		43	91	53	36	8	☺
	DC160-05-07.100A1-	7,1		43	91	53	36	8	☺
	DC160-05-07.144A1-	7,144	9/32"	43	91	53	36	8	☺
	DC160-05-07.200A1-	7,2		43	91	53	36	8	☺
	DC160-05-07.300A1-	7,3		43	91	53	36	8	☺
	DC160-05-07.400A1-	7,4		43	91	53	36	8	☺
	DC160-05-07.500A1-	7,5		43	91	53	36	8	☺
	DC160-05-07.541A1-	7,541	19/64"	43	91	53	36	8	☺
	DC160-05-07.550A1-	7,55		43	91	53	36	8	☺
	DC160-05-07.600A1-	7,6		43	91	53	36	8	☺
	DC160-05-07.700A1-	7,7		43	91	53	36	8	☺
	DC160-05-07.800A1-	7,8		43	91	53	36	8	☺
	DC160-05-07.900A1-	7,9		43	91	53	36	8	☺
	DC160-05-07.938A1-	7,938	5/16"	43	91	53	36	8	☺
	DC160-05-08.000A1-	8		43	91	53	36	8	☺
DC160-05-08.100A1-	8,1		49	103	61	40	10	☺	
DC160-05-08.200A1-	8,2		49	103	61	40	10	☺	
DC160-05-08.300A1-	8,3		49	103	61	40	10	☺	
DC160-05-08.334A1-	8,334	21/64"	49	103	61	40	10	☺	
DC160-05-08.400A1-	8,4		49	103	61	40	10	☺	
DC160-05-08.500A1-	8,5		49	103	61	40	10	☺	
DC160-05-08.600A1-	8,6		49	103	61	40	10	☺	
DC160-05-08.700A1-	8,7		49	103	61	40	10	☺	
DC160-05-08.731A1-	8,731	11/32"	49	103	61	40	10	☺	
DC160-05-08.800A1-	8,8		49	103	61	40	10	☺	
DC160-05-08.900A1-	8,9		49	103	61	40	10	☺	
DC160-05-09.000A1-	9		49	103	61	40	10	☺	
DC160-05-09.100A1-	9,1		49	103	61	40	10	☺	
DC160-05-09.128A1-	9,128	23/64"	49	103	61	40	10	☺	
DC160-05-09.200A1-	9,2		49	103	61	40	10	☺	
DC160-05-09.300A1-	9,3		49	103	61	40	10	☺	

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-05-09.400A1-	9,4		49	103	61	40	10	⊕
	DC160-05-09.500A1-	9,5		49	103	61	40	10	⊕
	DC160-05-09.525A1-	9,525	3/8"	49	103	61	40	10	⊕
	DC160-05-09.550A1-	9,55		49	103	61	40	10	⊕
	DC160-05-09.600A1-	9,6		49	103	61	40	10	⊕
	DC160-05-09.700A1-	9,7		49	103	61	40	10	⊕
	DC160-05-09.800A1-	9,8		49	103	61	40	10	⊕
	DC160-05-09.900A1-	9,9		49	103	61	40	10	⊕
	DC160-05-09.922A1-	9,922	25/64"	49	103	61	40	10	⊕
	DC160-05-10.000A1-	10		49	103	61	40	10	⊕
	DC160-05-10.100A1-	10,1		56	118	71	45	12	⊕
	DC160-05-10.200A1-	10,2		56	118	71	45	12	⊕
	DC160-05-10.300A1-	10,3		56	118	71	45	12	⊕
	DC160-05-10.319A1-	10,319	13/32"	56	118	71	45	12	⊕
	DC160-05-10.400A1-	10,4		56	118	71	45	12	⊕
	DC160-05-10.500A1-	10,5		56	118	71	45	12	⊕
	DC160-05-10.600A1-	10,6		56	118	71	45	12	⊕
	DC160-05-10.700A1-	10,7		56	118	71	45	12	⊕
	DC160-05-10.716A1-	10,716	27/64"	56	118	71	45	12	⊕
	DC160-05-10.800A1-	10,8		56	118	71	45	12	⊕
	DC160-05-10.900A1-	10,9		56	118	71	45	12	⊕
	DC160-05-11.000A1-	11		56	118	71	45	12	⊕
	DC160-05-11.100A1-	11,1		56	118	71	45	12	⊕
	DC160-05-11.113A1-	11,113	7/16"	56	118	71	45	12	⊕
	DC160-05-11.200A1-	11,2		56	118	71	45	12	⊕
	DC160-05-11.300A1-	11,3		56	118	71	45	12	⊕
	DC160-05-11.400A1-	11,4		56	118	71	45	12	⊕
	DC160-05-11.500A1-	11,5		56	118	71	45	12	⊕
	DC160-05-11.509A1-	11,509	29/64"	56	118	71	45	12	⊕
	DC160-05-11.550A1-	11,55		56	118	71	45	12	⊕
	DC160-05-11.600A1-	11,6		56	118	71	45	12	⊕
	DC160-05-11.700A1-	11,7		56	118	71	45	12	⊕
	DC160-05-11.800A1-	11,8		56	118	71	45	12	⊕
	DC160-05-11.900A1-	11,9		56	118	71	45	12	⊕
DC160-05-11.906A1-	11,906	15/32"	56	118	71	45	12	⊕	
DC160-05-12.000A1-	12		56	118	71	45	12	⊕	
DC160-05-12.100A1-	12,1		60	124	77	45	14	⊕	
DC160-05-12.200A1-	12,2		60	124	77	45	14	⊕	
DC160-05-12.250A1-	12,25		60	124	77	45	14	⊕	
DC160-05-12.300A1-	12,3		60	124	77	45	14	⊕	
DC160-05-12.303A1-	12,303	31/64"	60	124	77	45	14	⊕	
DC160-05-12.400A1-	12,4		60	124	77	45	14	⊕	
DC160-05-12.500A1-	12,5		60	124	77	45	14	⊕	
DC160-05-12.600A1-	12,6		60	124	77	45	14	⊕	
DC160-05-12.700A1-	12,7	1/2"	60	124	77	45	14	⊕	
DC160-05-12.750A1-	12,75		60	124	77	45	14	⊕	
DC160-05-12.800A1-	12,8		60	124	77	45	14	⊕	
DC160-05-12.900A1-	12,9		60	124	77	45	14	⊕	
DC160-05-13.000A1-	13		60	124	77	45	14	⊕	

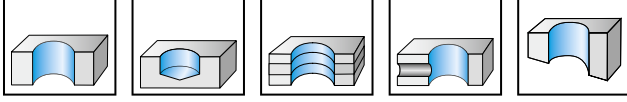
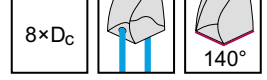
Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-05-13.100A1-	13,1		60	124	77	45	14	☺
	DC160-05-13.200A1-	13,2		60	124	77	45	14	☺
	DC160-05-13.300A1-	13,3		60	124	77	45	14	☺
	DC160-05-13.400A1-	13,4		60	124	77	45	14	☺
	DC160-05-13.494A1-	13,494	17/32"	60	124	77	45	14	☺
	DC160-05-13.500A1-	13,5		60	124	77	45	14	☺
	DC160-05-13.600A1-	13,6		60	124	77	45	14	☺
	DC160-05-13.700A1-	13,7		60	124	77	45	14	☺
	DC160-05-13.800A1-	13,8		60	124	77	45	14	☺
	DC160-05-13.900A1-	13,9		60	124	77	45	14	☺
	DC160-05-14.000A1-	14		60	124	77	45	14	☺
	DC160-05-14.100A1-	14,1		63	133	83	48	16	☺
	DC160-05-14.200A1-	14,2		63	133	83	48	16	☺
	DC160-05-14.288A1-	14,288	9/16"	63	133	83	48	16	☺
	DC160-05-14.300A1-	14,3		63	133	83	48	16	☺
	DC160-05-14.400A1-	14,4		63	133	83	48	16	☺
	DC160-05-14.500A1-	14,5		63	133	83	48	16	☺
	DC160-05-14.600A1-	14,6		63	133	83	48	16	☺
	DC160-05-14.700A1-	14,7		63	133	83	48	16	☺
	DC160-05-14.750A1-	14,75		63	133	83	48	16	☺
	DC160-05-14.800A1-	14,8		63	133	83	48	16	☺
	DC160-05-14.900A1-	14,9		63	133	83	48	16	☺
	DC160-05-15.000A1-	15		63	133	83	48	16	☺
	DC160-05-15.100A1-	15,1		63	133	83	48	16	☺
	DC160-05-15.200A1-	15,2		63	133	83	48	16	☺
	DC160-05-15.300A1-	15,3		63	133	83	48	16	☺
	DC160-05-15.400A1-	15,4		63	133	83	48	16	☺
	DC160-05-15.500A1-	15,5		63	133	83	48	16	☺
	DC160-05-15.600A1-	15,6		63	133	83	48	16	☺
	DC160-05-15.700A1-	15,7		63	133	83	48	16	☺
	DC160-05-15.800A1-	15,8		63	133	83	48	16	☺
	DC160-05-15.875A1-	15,875	5/8"	63	133	83	48	16	☺
	DC160-05-15.900A1-	15,9		63	133	83	48	16	☺
	DC160-05-16.000A1-	16		63	133	83	48	16	☺
DC160-05-16.100A1-	16,1		71	143	93	48	18	☺	
DC160-05-16.200A1-	16,2		71	143	93	48	18	☺	
DC160-05-16.300A1-	16,3		71	143	93	48	18	☺	
DC160-05-16.400A1-	16,4		71	143	93	48	18	☺	
DC160-05-16.500A1-	16,5		71	143	93	48	18	☺	
DC160-05-16.600A1-	16,6		71	143	93	48	18	☺	
DC160-05-16.700A1-	16,7		71	143	93	48	18	☺	
DC160-05-16.750A1-	16,75		71	143	93	48	18	☺	
DC160-05-16.800A1-	16,8		71	143	93	48	18	☺	
DC160-05-16.900A1-	16,9		71	143	93	48	18	☺	
DC160-05-17.000A1-	17		71	143	93	48	18	☺	
DC160-05-17.100A1-	17,1		71	143	93	48	18	☺	
DC160-05-17.200A1-	17,2		71	143	93	48	18	☺	
DC160-05-17.300A1-	17,3		71	143	93	48	18	☺	
DC160-05-17.400A1-	17,4		71	143	93	48	18	☺	

Takım		D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-05-17.500A1-	17,5		71	143	93	48	18	⊕
	DC160-05-17.600A1-	17,6		71	143	93	48	18	⊕
	DC160-05-17.700A1-	17,7		71	143	93	48	18	⊕
	DC160-05-17.800A1-	17,8		71	143	93	48	18	⊕
	DC160-05-17.900A1-	17,9		71	143	93	48	18	⊕
	DC160-05-18.000A1-	18		71	143	93	48	18	⊕
	DC160-05-18.100A1-	18,1		77	153	101	50	20	⊕
	DC160-05-18.200A1-	18,2		77	153	101	50	20	⊕
	DC160-05-18.300A1-	18,3		77	153	101	50	20	⊕
	DC160-05-18.400A1-	18,4		77	153	101	50	20	⊕
	DC160-05-18.500A1-	18,5		77	153	101	50	20	⊕
	DC160-05-18.600A1-	18,6		77	153	101	50	20	⊕
	DC160-05-18.700A1-	18,7		77	153	101	50	20	⊕
	DC160-05-18.800A1-	18,8		77	153	101	50	20	⊕
	DC160-05-18.900A1-	18,9		77	153	101	50	20	⊕
	DC160-05-19.000A1-	19		77	153	101	50	20	⊕
	DC160-05-19.050A1-	19,05	3/4"	77	153	101	50	20	⊕
	DC160-05-19.100A1-	19,1		77	153	101	50	20	⊕
	DC160-05-19.200A1-	19,2		77	153	101	50	20	⊕
	DC160-05-19.300A1-	19,3		77	153	101	50	20	⊕
	DC160-05-19.400A1-	19,4		77	153	101	50	20	⊕
	DC160-05-19.500A1-	19,5		77	153	101	50	20	⊕
	DC160-05-19.600A1-	19,6		77	153	101	50	20	⊕
	DC160-05-19.700A1-	19,7		77	153	101	50	20	⊕
	DC160-05-19.800A1-	19,8		77	153	101	50	20	⊕
DC160-05-19.900A1-	19,9		77	153	101	50	20	⊕	
DC160-05-20.000A1-	20		77	153	101	50	20	⊕	
DC160-05-20.500A1-	20,5		86	166	108	56	25	⊕	
DC160-05-21.000A1-	21		86	166	108	56	25	⊕	
DC160-05-21.500A1-	21,5		86	166	108	56	25	⊕	
DC160-05-22.000A1-	22		86	166	108	56	25	⊕	
DC160-05-22.500A1-	22,5		91	173	115	56	25	⊕	
DC160-05-23.000A1-	23		91	173	115	56	25	⊕	
DC160-05-23.500A1-	23,5		91	173	115	56	25	⊕	
DC160-05-24.000A1-	24		91	173	115	56	25	⊕	
DC160-05-24.500A1-	24,5		97	180	122	56	25	⊕	
DC160-05-25.000A1-	25		97	180	122	56	25	⊕	

İçten soğutmalı karbür matkaplar

DC160 Advance

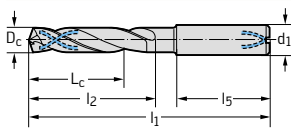
X-treme Evo

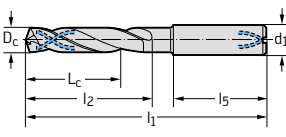


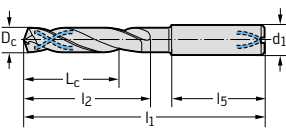
	P	M	K	N	S	H	O
WJ30ET	●	●	●	●	●	●	●

B1

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
<p>DIN 6535 HA</p>	DC160-08-03.000A1-	3		28	74	34	36	6	☺
	DC160-08-03.100A1-	3,1		28	74	34	36	6	☺
	DC160-08-03.175A1-	3,175	1/8"	28	74	34	36	6	☺
	DC160-08-03.200A1-	3,2		28	74	34	36	6	☺
	DC160-08-03.300A1-	3,3		28	74	34	36	6	☺
	DC160-08-03.400A1-	3,4		28	74	34	36	6	☺
	DC160-08-03.500A1-	3,5		28	74	34	36	6	☺
	DC160-08-03.572A1-	3,572	9/64"	28	74	34	36	6	☺
	DC160-08-03.600A1-	3,6		28	74	34	36	6	☺
	DC160-08-03.700A1-	3,7		28	74	34	36	6	☺
	DC160-08-03.800A1-	3,8		37	85	45	36	6	☺
	DC160-08-03.900A1-	3,9		37	85	45	36	6	☺
	DC160-08-03.969A1-	3,969	5/32"	37	85	45	36	6	☺
	DC160-08-04.000A1-	4		37	85	45	36	6	☺
	DC160-08-04.100A1-	4,1		37	85	45	36	6	☺
	DC160-08-04.200A1-	4,2		37	85	45	36	6	☺
	DC160-08-04.300A1-	4,3		37	85	45	36	6	☺
	DC160-08-04.366A1-	4,366	11/64"	37	85	45	36	6	☺
	DC160-08-04.400A1-	4,4		37	85	45	36	6	☺
	DC160-08-04.500A1-	4,5		37	85	45	36	6	☺
	DC160-08-04.600A1-	4,6		37	85	45	36	6	☺
	DC160-08-04.700A1-	4,7		37	85	45	36	6	☺
	DC160-08-04.763A1-	4,763	3/16"	48	97	57	36	6	☺
	DC160-08-04.800A1-	4,8		48	97	57	36	6	☺
	DC160-08-04.900A1-	4,9		48	97	57	36	6	☺
	DC160-08-05.000A1-	5		48	97	57	36	6	☺
	DC160-08-05.100A1-	5,1		48	97	57	36	6	☺
	DC160-08-05.159A1-	5,159	13/64"	48	97	57	36	6	☺
	DC160-08-05.200A1-	5,2		48	97	57	36	6	☺
	DC160-08-05.300A1-	5,3		48	97	57	36	6	☺
	DC160-08-05.400A1-	5,4		48	97	57	36	6	☺
	DC160-08-05.500A1-	5,5		48	97	57	36	6	☺
DC160-08-05.556A1-	5,556	7/32"	48	97	57	36	6	☺	
DC160-08-05.600A1-	5,6		48	97	57	36	6	☺	
DC160-08-05.700A1-	5,7		48	97	57	36	6	☺	
DC160-08-05.800A1-	5,8		48	97	57	36	6	☺	

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-08-05.900A1-	5,9		48	97	57	36	6	⊕
	DC160-08-05.953A1-	5,953	15/64"	48	97	57	36	6	⊕
	DC160-08-06.000A1-	6		48	97	57	36	6	⊕
	DC160-08-06.100A1-	6,1		55	106	66	36	8	⊕
	DC160-08-06.200A1-	6,2		55	106	66	36	8	⊕
	DC160-08-06.300A1-	6,3		55	106	66	36	8	⊕
	DC160-08-06.350A1-	6,35	1/4"	55	106	66	36	8	⊕
	DC160-08-06.400A1-	6,4		55	106	66	36	8	⊕
	DC160-08-06.500A1-	6,5		55	106	66	36	8	⊕
	DC160-08-06.600A1-	6,6		55	106	66	36	8	⊕
	DC160-08-06.700A1-	6,7		55	106	66	36	8	⊕
	DC160-08-06.747A1-	6,747	17/64"	55	106	66	36	8	⊕
	DC160-08-06.800A1-	6,8		55	106	66	36	8	⊕
	DC160-08-06.900A1-	6,9		55	106	66	36	8	⊕
	DC160-08-07.000A1-	7		55	106	66	36	8	⊕
	DC160-08-07.100A1-	7,1		64	116	76	36	8	⊕
	DC160-08-07.144A1-	7,144	9/32"	64	116	76	36	8	⊕
	DC160-08-07.200A1-	7,2		64	116	76	36	8	⊕
	DC160-08-07.300A1-	7,3		64	116	76	36	8	⊕
	DC160-08-07.400A1-	7,4		64	116	76	36	8	⊕
	DC160-08-07.500A1-	7,5		64	116	76	36	8	⊕
	DC160-08-07.541A1-	7,541	19/64"	64	116	76	36	8	⊕
	DC160-08-07.600A1-	7,6		64	116	76	36	8	⊕
	DC160-08-07.700A1-	7,7		64	116	76	36	8	⊕
	DC160-08-07.800A1-	7,8		64	116	76	36	8	⊕
	DC160-08-07.900A1-	7,9		64	116	76	36	8	⊕
	DC160-08-07.938A1-	7,938	5/16"	64	116	76	36	8	⊕
	DC160-08-08.000A1-	8		64	116	76	36	8	⊕
	DC160-08-08.100A1-	8,1		80	139	95	40	10	⊕
	DC160-08-08.200A1-	8,2		80	139	95	40	10	⊕
	DC160-08-08.300A1-	8,3		80	139	95	40	10	⊕
	DC160-08-08.334A1-	8,334	21/64"	80	139	95	40	10	⊕
	DC160-08-08.400A1-	8,4		80	139	95	40	10	⊕
	DC160-08-08.500A1-	8,5		80	139	95	40	10	⊕
	DC160-08-08.600A1-	8,6		80	139	95	40	10	⊕
	DC160-08-08.700A1-	8,7		80	139	95	40	10	⊕
	DC160-08-08.731A1-	8,731	11/32"	80	139	95	40	10	⊕
	DC160-08-08.800A1-	8,8		80	139	95	40	10	⊕
	DC160-08-08.900A1-	8,9		80	139	95	40	10	⊕
	DC160-08-09.000A1-	9		80	139	95	40	10	⊕
DC160-08-09.100A1-	9,1		80	139	95	40	10	⊕	
DC160-08-09.128A1-	9,128	23/64"	80	139	95	40	10	⊕	
DC160-08-09.200A1-	9,2		80	139	95	40	10	⊕	
DC160-08-09.300A1-	9,3		80	139	95	40	10	⊕	
DC160-08-09.400A1-	9,4		80	139	95	40	10	⊕	
DC160-08-09.500A1-	9,5		80	139	95	40	10	⊕	
DC160-08-09.525A1-	9,525	3/8"	80	139	95	40	10	⊕	
DC160-08-09.600A1-	9,6		80	139	95	40	10	⊕	
DC160-08-09.700A1-	9,7		80	139	95	40	10	⊕	

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30ET
 <p>DIN 6535 HA</p>	DC160-08-09.800A1-	9,8		80	139	95	40	10	☺
	DC160-08-09.900A1-	9,9		80	139	95	40	10	☺
	DC160-08-09.922A1-	9,922	25/64"	80	139	95	40	10	☺
	DC160-08-10.000A1-	10		80	139	95	40	10	☺
	DC160-08-10.100A1-	10,1		96	163	114	45	12	☺
	DC160-08-10.200A1-	10,2		96	163	114	45	12	☺
	DC160-08-10.300A1-	10,3		96	163	114	45	12	☺
	DC160-08-10.319A1-	10,319	13/32"	96	163	114	45	12	☺
	DC160-08-10.400A1-	10,4		96	163	114	45	12	☺
	DC160-08-10.500A1-	10,5		96	163	114	45	12	☺
	DC160-08-10.600A1-	10,6		96	163	114	45	12	☺
	DC160-08-10.700A1-	10,7		96	163	114	45	12	☺
	DC160-08-10.716A1-	10,716	27/64"	96	163	114	45	12	☺
	DC160-08-10.800A1-	10,8		96	163	114	45	12	☺
	DC160-08-10.900A1-	10,9		96	163	114	45	12	☺
	DC160-08-11.000A1-	11		96	163	114	45	12	☺
	DC160-08-11.100A1-	11,1		96	163	114	45	12	☺
	DC160-08-11.113A1-	11,113	7/16"	96	163	114	45	12	☺
	DC160-08-11.200A1-	11,2		96	163	114	45	12	☺
	DC160-08-11.300A1-	11,3		96	163	114	45	12	☺
	DC160-08-11.400A1-	11,4		96	163	114	45	12	☺
	DC160-08-11.500A1-	11,5		96	163	114	45	12	☺
	DC160-08-11.509A1-	11,509	29/64"	96	163	114	45	12	☺
	DC160-08-11.600A1-	11,6		96	163	114	45	12	☺
	DC160-08-11.700A1-	11,7		96	163	114	45	12	☺
	DC160-08-11.800A1-	11,8		96	163	114	45	12	☺
	DC160-08-11.900A1-	11,9		96	163	114	45	12	☺
	DC160-08-11.906A1-	11,906	15/32"	96	163	114	45	12	☺
	DC160-08-12.000A1-	12		96	163	114	45	12	☺
	DC160-08-12.303A1-	12,303	31/64"	119	182	133	45	14	☺
	DC160-08-12.500A1-	12,5		119	182	133	45	14	☺
	DC160-08-12.700A1-	12,7	1/2"	119	182	133	45	14	☺
	DC160-08-13.000A1-	13		119	182	133	45	14	☺
DC160-08-13.494A1-	13,494	17/32"	119	182	133	45	14	☺	
DC160-08-13.500A1-	13,5		119	182	133	45	14	☺	
DC160-08-14.000A1-	14		119	182	133	45	14	☺	
DC160-08-14.288A1-	14,288	9/16"	136	204	152	48	16	☺	
DC160-08-14.500A1-	14,5		136	204	152	48	16	☺	
DC160-08-15.000A1-	15		136	204	152	48	16	☺	
DC160-08-15.500A1-	15,5		136	204	152	48	16	☺	
DC160-08-15.875A1-	15,875	5/8"	136	204	152	48	16	☺	
DC160-08-16.000A1-	16		136	204	152	48	16	☺	
DC160-08-16.500A1-	16,5		153	223	171	48	18	☺	
DC160-08-17.000A1-	17		153	223	171	48	18	☺	
DC160-08-17.500A1-	17,5		153	223	171	48	18	☺	
DC160-08-18.000A1-	18		153	223	171	48	18	☺	
DC160-08-18.500A1-	18,5		170	244	190	50	20	☺	
DC160-08-19.000A1-	19		170	244	190	50	20	☺	
DC160-08-19.050A1-	19,05	3/4"	170	244	190	50	20	☺	

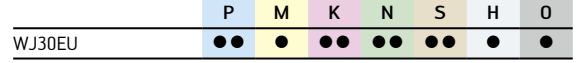
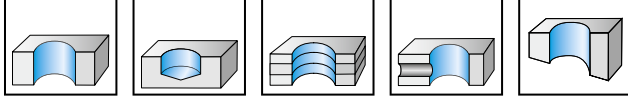
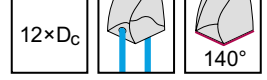
Takım		D_c m7 mm	D_c Inch/No	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30ET
	DC160-08-19.500A1-	19,5		170	244	190	50	20	⊕
	DC160-08-20.000A1-	20		170	244	190	50	20	⊕

DIN 6535 HA

İçten soğutmalı karbür matkaplar

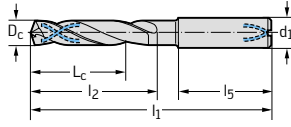
DC160 Advance

X-treme Evo



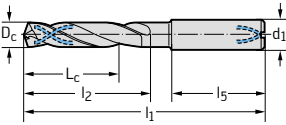
B1

Takım

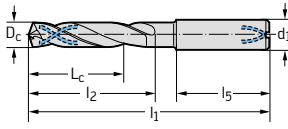


DIN 6535 HA

Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
DC160-12-03.000A1-	3		48	92	54	36	6	☺
DC160-12-03.100A1-	3,1		48	92	54	36	6	☺
DC160-12-03.175A1-	3,175	1/8"	48	92	54	36	6	☺
DC160-12-03.200A1-	3,2		48	92	54	36	6	☺
DC160-12-03.300A1-	3,3		48	92	54	36	6	☺
DC160-12-03.400A1-	3,4		48	92	54	36	6	☺
DC160-12-03.500A1-	3,5		48	92	54	36	6	☺
DC160-12-03.572A1-	3,572	9/64"	48	92	54	36	6	☺
DC160-12-03.600A1-	3,6		48	92	54	36	6	☺
DC160-12-03.700A1-	3,7		48	92	54	36	6	☺
DC160-12-03.800A1-	3,8		56	102	64	36	6	☺
DC160-12-03.900A1-	3,9		56	102	64	36	6	☺
DC160-12-03.969A1-	3,969	5/32"	56	102	64	36	6	☺
DC160-12-04.000A1-	4		56	102	64	36	6	☺
DC160-12-04.100A1-	4,1		56	102	64	36	6	☺
DC160-12-04.200A1-	4,2		56	102	64	36	6	☺
DC160-12-04.300A1-	4,3		56	102	64	36	6	☺
DC160-12-04.366A1-	4,366	11/64"	56	102	64	36	6	☺
DC160-12-04.400A1-	4,4		56	102	64	36	6	☺
DC160-12-04.500A1-	4,5		56	102	64	36	6	☺
DC160-12-04.600A1-	4,6		56	102	64	36	6	☺
DC160-12-04.700A1-	4,7		56	102	64	36	6	☺
DC160-12-04.763A1-	4,763	3/16"	74	121	83	36	6	☺
DC160-12-04.800A1-	4,8		74	121	83	36	6	☺
DC160-12-04.900A1-	4,9		74	121	83	36	6	☺
DC160-12-05.000A1-	5		74	121	83	36	6	☺
DC160-12-05.100A1-	5,1		74	121	83	36	6	☺
DC160-12-05.159A1-	5,159	13/64"	74	121	83	36	6	☺
DC160-12-05.200A1-	5,2		74	121	83	36	6	☺
DC160-12-05.300A1-	5,3		74	121	83	36	6	☺
DC160-12-05.400A1-	5,4		74	121	83	36	6	☺
DC160-12-05.500A1-	5,5		74	121	83	36	6	☺
DC160-12-05.550A1-	5,55		74	121	83	36	6	☺
DC160-12-05.556A1-	5,556	7/32"	74	121	83	36	6	☺
DC160-12-05.600A1-	5,6		74	121	83	36	6	☺
DC160-12-05.700A1-	5,7		74	121	83	36	6	☺

Takım	Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
 <p>DIN 6535 HA</p>	DC160-12-05.800A1-	5,8		74	121	83	36	6	☺
	DC160-12-05.900A1-	5,9		74	121	83	36	6	☺
	DC160-12-06.000A1-	6		74	121	83	36	6	☺
	DC160-12-06.100A1-	6,1		98	148	110	36	8	☺
	DC160-12-06.200A1-	6,2		98	148	110	36	8	☺
	DC160-12-06.300A1-	6,3		98	148	110	36	8	☺
	DC160-12-06.350A1-	6,35	1/4"	98	148	110	36	8	☺
	DC160-12-06.400A1-	6,4		98	148	110	36	8	☺
	DC160-12-06.500A1-	6,5		98	148	110	36	8	☺
	DC160-12-06.600A1-	6,6		98	148	110	36	8	☺
	DC160-12-06.700A1-	6,7		98	148	110	36	8	☺
	DC160-12-06.747A1-	6,747	17/64"	98	148	110	36	8	☺
	DC160-12-06.800A1-	6,8		98	148	110	36	8	☺
	DC160-12-06.900A1-	6,9		98	148	110	36	8	☺
	DC160-12-07.000A1-	7		98	148	110	36	8	☺
	DC160-12-07.100A1-	7,1		98	148	110	36	8	☺
	DC160-12-07.144A1-	7,144	9/32"	98	148	110	36	8	☺
	DC160-12-07.200A1-	7,2		98	148	110	36	8	☺
	DC160-12-07.300A1-	7,3		98	148	110	36	8	☺
	DC160-12-07.400A1-	7,4		98	148	110	36	8	☺
	DC160-12-07.500A1-	7,5		98	148	110	36	8	☺
	DC160-12-07.541A1-	7,541	19/64"	98	148	110	36	8	☺
	DC160-12-07.800A1-	7,8		98	148	110	36	8	☺
	DC160-12-07.900A1-	7,9		98	148	110	36	8	☺
	DC160-12-07.938A1-	7,938	5/16"	98	148	110	36	8	☺
	DC160-12-08.000A1-	8		98	148	110	36	8	☺
	DC160-12-08.100A1-	8,1		123	180	138	40	10	☺
	DC160-12-08.200A1-	8,2		123	180	138	40	10	☺
	DC160-12-08.300A1-	8,3		123	180	138	40	10	☺
	DC160-12-08.400A1-	8,4		123	180	138	40	10	☺
	DC160-12-08.500A1-	8,5		123	180	138	40	10	☺
	DC160-12-08.600A1-	8,6		123	180	138	40	10	☺
	DC160-12-08.700A1-	8,7		123	180	138	40	10	☺
	DC160-12-08.731A1-	8,731	11/32"	123	180	138	40	10	☺
DC160-12-08.800A1-	8,8		123	180	138	40	10	☺	
DC160-12-09.000A1-	9		123	180	138	40	10	☺	
DC160-12-09.128A1-	9,128	23/64"	123	180	138	40	10	☺	
DC160-12-09.200A1-	9,2		123	180	138	40	10	☺	
DC160-12-09.300A1-	9,3		123	180	138	40	10	☺	
DC160-12-09.500A1-	9,5		123	180	138	40	10	☺	
DC160-12-09.525A1-	9,525	3/8"	123	180	138	40	10	☺	
DC160-12-09.600A1-	9,6		123	180	138	40	10	☺	
DC160-12-09.700A1-	9,7		123	180	138	40	10	☺	
DC160-12-09.800A1-	9,8		123	180	138	40	10	☺	
DC160-12-09.922A1-	9,922	25/64"	123	180	138	40	10	☺	
DC160-12-10.000A1-	10		123	180	138	40	10	☺	
DC160-12-10.100A1-	10,1		140	206	158	45	12	☺	
DC160-12-10.200A1-	10,2		140	206	158	45	12	☺	
DC160-12-10.300A1-	10,3		140	206	158	45	12	☺	

Takım



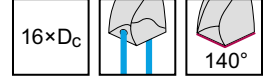
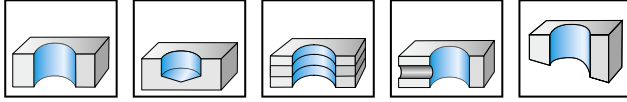
DIN 6535 HA

Tanım	D _c m7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
DC160-12-10.319A1-	10,319	13/32"	140	206	158	45	12	☺
DC160-12-10.400A1-	10,4		140	206	158	45	12	☺
DC160-12-10.500A1-	10,5		140	206	158	45	12	☺
DC160-12-10.716A1-	10,716	27/64"	140	206	158	45	12	☺
DC160-12-10.800A1-	10,8		140	206	158	45	12	☺
DC160-12-11.000A1-	11		140	206	158	45	12	☺
DC160-12-11.100A1-	11,1		140	206	158	45	12	☺
DC160-12-11.113A1-	11,113	7/16"	140	206	158	45	12	☺
DC160-12-11.200A1-	11,2		140	206	158	45	12	☺
DC160-12-11.500A1-	11,5		140	206	158	45	12	☺
DC160-12-11.509A1-	11,509	29/64"	140	206	158	45	12	☺
DC160-12-11.700A1-	11,7		140	206	158	45	12	☺
DC160-12-11.800A1-	11,8		140	206	158	45	12	☺
DC160-12-11.906A1-	11,906	15/32"	140	206	158	45	12	☺
DC160-12-12.000A1-	12		140	206	158	45	12	☺
DC160-12-12.100A1-	12,1		168	230	182	45	14	☺
DC160-12-12.200A1-	12,2		168	230	182	45	14	☺
DC160-12-12.300A1-	12,3		168	230	182	45	14	☺
DC160-12-12.303A1-	12,303	31/64"	168	230	182	45	14	☺
DC160-12-12.500A1-	12,5		168	230	182	45	14	☺
DC160-12-12.600A1-	12,6		168	230	182	45	14	☺
DC160-12-12.700A1-	12,7	1/2"	168	230	182	45	14	☺
DC160-12-13.000A1-	13		168	230	182	45	14	☺
DC160-12-13.494A1-	13,494	17/32"	168	230	182	45	14	☺
DC160-12-13.500A1-	13,5		168	230	182	45	14	☺
DC160-12-14.000A1-	14		168	230	182	45	14	☺
DC160-12-14.288A1-	14,288	9/16"	192	260	208	48	16	☺
DC160-12-14.500A1-	14,5		192	260	208	48	16	☺
DC160-12-15.000A1-	15		192	260	208	48	16	☺
DC160-12-15.500A1-	15,5		192	260	208	48	16	☺
DC160-12-15.875A1-	15,875	5/8"	192	260	208	48	16	☺
DC160-12-16.000A1-	16		192	260	208	48	16	☺
DC160-12-16.500A1-	16,5		216	285	234	48	18	☺
DC160-12-17.000A1-	17		216	285	234	48	18	☺
DC160-12-17.500A1-	17,5		216	285	234	48	18	☺
DC160-12-18.000A1-	18		216	285	234	48	18	☺
DC160-12-18.500A1-	18,5		238	310	258	50	20	☺
DC160-12-19.000A1-	19		238	310	258	50	20	☺
DC160-12-19.500A1-	19,5		238	310	258	50	20	☺
DC160-12-20.000A1-	20		238	310	258	50	20	☺

İçten soğutmalı karbür matkaplar

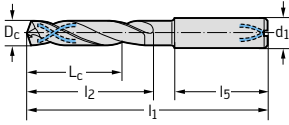
DC160 Advance

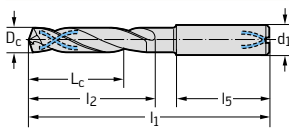
X-treme Evo



	P	M	K	N	S	H	O
WJ30EU	●●●	●	●●●	●●●	●●●	●	●

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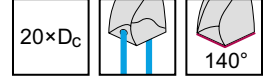
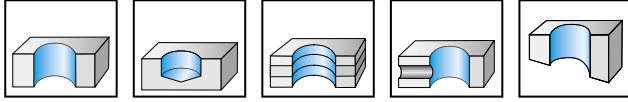
Takım	Tanım	D _c h7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
 <p>DIN 6535 HA</p>	DC160-16-03.000A1-	3		52	89	57	28	4	☺
	DC160-16-03.175A1-	3,175	1/8"	60	98	66	28	4	☺
	DC160-16-03.500A1-	3,5		72	110	78	28	4	☺
	DC160-16-03.572A1-	3,572	9/64"	72	110	78	28	4	☺
	DC160-16-03.969A1-	3,969	5/32"	72	110	78	28	4	☺
	DC160-16-04.000A1-	4		72	110	78	28	4	☺
	DC160-16-04.500A1-	4,5		93	132	100	28	5	☺
	DC160-16-04.763A1-	4,763	3/16"	92	132	100	28	5	☺
	DC160-16-04.800A1-	4,8		92	132	100	28	5	☺
	DC160-16-05.000A1-	5		92	132	100	28	5	☺
	DC160-16-05.500A1-	5,5		101	150	110	36	6	☺
	DC160-16-05.556A1-	5,556	7/32"	111	160	120	36	6	☺
	DC160-16-05.800A1-	5,8		111	160	120	36	6	☺
	DC160-16-06.000A1-	6		111	160	120	36	6	☺
	DC160-16-06.100A1-	6,1		124	175	135	36	8	☺
	DC160-16-06.350A1-	6,35	1/4"	124	175	135	36	8	☺
	DC160-16-06.500A1-	6,5		124	175	135	36	8	☺
	DC160-16-06.800A1-	6,8		124	175	135	36	8	☺
	DC160-16-07.000A1-	7		124	175	135	36	8	☺
	DC160-16-07.144A1-	7,144	9/32"	140	192	152	36	8	☺
	DC160-16-07.400A1-	7,4		140	192	152	36	8	☺
	DC160-16-07.500A1-	7,5		140	192	152	36	8	☺
	DC160-16-07.938A1-	7,938	5/16"	140	192	152	36	8	☺
	DC160-16-08.000A1-	8		140	192	152	36	8	☺
	DC160-16-08.300A1-	8,3		148	206	162	40	10	☺
	DC160-16-08.500A1-	8,5		148	206	162	40	10	☺
	DC160-16-08.731A1-	8,731	11/32"	148	206	162	40	10	☺
	DC160-16-09.000A1-	9		148	206	162	40	10	☺
	DC160-16-09.525A1-	9,525	3/8"	165	224	180	40	10	☺
	DC160-16-09.800A1-	9,8		165	224	180	40	10	☺
DC160-16-10.000A1-	10		165	224	180	40	10	☺	
DC160-16-10.200A1-	10,2		181	247	198	45	12	☺	
DC160-16-10.319A1-	10,319	13/32"	181	247	198	45	12	☺	
DC160-16-11.000A1-	11		181	247	198	45	12	☺	
DC160-16-11.113A1-	11,113	7/16"	198	265	216	45	12	☺	
DC160-16-11.500A1-	11,5		198	265	216	45	12	☺	

Takım	Tanım	D_c h7 mm	D_c Inch/No	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EU
 DIN 6535 HA	DC160-16-11.800A1-	11,8		198	265	216	45	12	⊕
	DC160-16-11.906A1-	11,906	15/32"	198	265	216	45	12	⊕
	DC160-16-12.000A1-	12		198	265	216	45	12	⊕
	DC160-16-12.700A1-	12,7	1/2"	238	301	252	45	14	⊕
	DC160-16-13.000A1-	13		238	301	252	45	14	⊕
	DC160-16-14.000A1-	14		238	301	252	45	14	⊕
	DC160-16-14.288A1-	14,288	9/16"	272	340	288	48	16	⊕
	DC160-16-15.000A1-	15		272	340	288	48	16	⊕
	DC160-16-16.000A1-	16		272	340	288	48	16	⊕

İçten soğutmalı karbür matkaplar

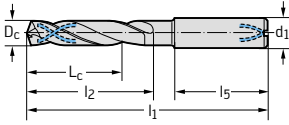
DC160 Advance

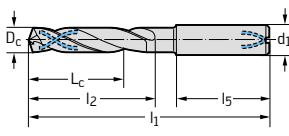
X-treme Evo



	P	M	K	N	S	H	O
WJ30EU	●●●	●	●●●	●●●	●●●	●	●

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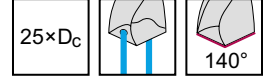
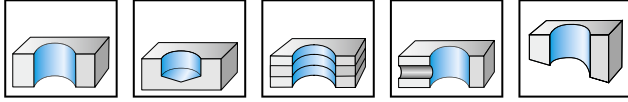
Takım	Tanım	D _c h7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
 <p>DIN 6535 HA</p>	DC160-20-03.000A1-	3		60	97	65	28	4	☺
	DC160-20-03.175A1-	3,175	1/8"	74	112	80	28	4	☺
	DC160-20-03.500A1-	3,5		86	124	92	28	4	☺
	DC160-20-03.572A1-	3,572	9/64"	86	124	92	28	4	☺
	DC160-20-03.969A1-	3,969	5/32"	86	124	92	28	4	☺
	DC160-20-04.000A1-	4		86	124	92	28	4	☺
	DC160-20-04.500A1-	4,5		111	150	118	28	5	☺
	DC160-20-04.763A1-	4,763	3/16"	110	150	118	28	5	☺
	DC160-20-04.800A1-	4,8		110	150	118	28	5	☺
	DC160-20-05.000A1-	5		110	150	118	28	5	☺
	DC160-20-05.500A1-	5,5		123	170	132	36	6	☺
	DC160-20-05.556A1-	5,556	7/32"	135	182	144	36	6	☺
	DC160-20-05.800A1-	5,8		135	182	144	36	6	☺
	DC160-20-06.000A1-	6		135	182	144	36	6	☺
	DC160-20-06.100A1-	6,1		151	200	162	36	8	☺
	DC160-20-06.350A1-	6,35	1/4"	151	200	162	36	8	☺
	DC160-20-06.500A1-	6,5		151	200	162	36	8	☺
	DC160-20-06.800A1-	6,8		151	200	162	36	8	☺
	DC160-20-07.000A1-	7		151	200	162	36	8	☺
	DC160-20-07.144A1-	7,144	9/32"	172	222	184	36	8	☺
	DC160-20-07.400A1-	7,4		172	222	184	36	8	☺
	DC160-20-07.500A1-	7,5		172	222	184	36	8	☺
	DC160-20-07.938A1-	7,938	5/16"	172	222	184	36	8	☺
	DC160-20-08.000A1-	8		172	222	184	36	8	☺
	DC160-20-08.300A1-	8,3		184	240	198	40	10	☺
	DC160-20-08.500A1-	8,5		184	240	198	40	10	☺
	DC160-20-08.731A1-	8,731	11/32"	184	240	198	40	10	☺
	DC160-20-09.000A1-	9		184	240	198	40	10	☺
	DC160-20-09.525A1-	9,525	3/8"	205	262	220	40	10	☺
	DC160-20-09.800A1-	9,8		205	262	220	40	10	☺
DC160-20-10.000A1-	10		205	262	220	40	10	☺	
DC160-20-10.200A1-	10,2		225	289	242	45	12	☺	
DC160-20-10.319A1-	10,319	13/32"	225	289	242	45	12	☺	
DC160-20-11.000A1-	11		225	289	242	45	12	☺	
DC160-20-11.113A1-	11,113	7/16"	246	311	264	45	12	☺	
DC160-20-11.500A1-	11,5		246	311	264	45	12	☺	

Takım	Tanım	D _c h7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
 DIN 6535 HA	DC160-20-11.800A1-	11,8		246	311	264	45	12	⊕
	DC160-20-11.906A1-	11,906	15/32"	246	311	264	45	12	⊕
	DC160-20-12.000A1-	12		246	311	264	45	12	⊕
	DC160-20-12.700A1-	12,7	1/2"	294	357	308	45	14	⊕
	DC160-20-13.000A1-	13		294	357	308	45	14	⊕
	DC160-20-14.000A1-	14		294	357	308	45	14	⊕
	DC160-20-14.288A1-	14,288	9/16"	336	404	352	48	16	⊕
	DC160-20-15.000A1-	15		336	404	352	48	16	⊕
	DC160-20-16.000A1-	16		336	404	352	48	16	⊕

İçten soğutmalı karbür matkaplar

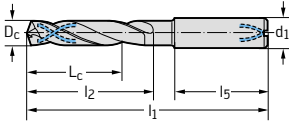
DC160 Advance

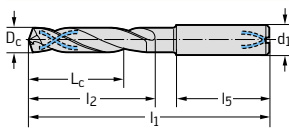
X-treme Evo



	P	M	K	N	S	H	O
WJ30EU	●●●	●	●●●	●●●	●●●	●	●

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Takım	Tanım	D _c h7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
 <p>DIN 6535 HA</p>	DC160-25-03.000A1-	3		79	119	84	28	4	☺
	DC160-25-03.175A1-	3,175	1/8"	96	148	102	28	4	☺
	DC160-25-03.500A1-	3,5		108	148	114	28	4	☺
	DC160-25-03.572A1-	3,572	9/64"	108	148	114	28	4	☺
	DC160-25-03.969A1-	3,969	5/32"	108	148	114	28	4	☺
	DC160-25-04.000A1-	4		108	148	114	28	4	☺
	DC160-25-04.500A1-	4,5		138	177	145	28	5	☺
	DC160-25-04.763A1-	4,763	3/16"	137	177	145	28	5	☺
	DC160-25-04.800A1-	4,8		137	177	145	28	5	☺
	DC160-25-05.000A1-	5		137	177	145	28	5	☺
	DC160-25-05.500A1-	5,5		151	200	160	36	6	☺
	DC160-25-05.556A1-	5,556	7/32"	165	214	174	36	6	☺
	DC160-25-05.800A1-	5,8		165	214	174	36	6	☺
	DC160-25-06.000A1-	6		165	214	174	36	6	☺
	DC160-25-06.100A1-	6,1		183	234	194	36	8	☺
	DC160-25-06.350A1-	6,35	1/4"	183	234	194	36	8	☺
	DC160-25-06.500A1-	6,5		183	234	194	36	8	☺
	DC160-25-06.800A1-	6,8		183	234	194	36	8	☺
	DC160-25-07.000A1-	7		183	234	194	36	8	☺
	DC160-25-07.144A1-	7,144	9/32"	208	260	220	36	8	☺
	DC160-25-07.400A1-	7,4		208	260	220	36	8	☺
	DC160-25-07.500A1-	7,5		208	260	220	36	8	☺
	DC160-25-07.938A1-	7,938	5/16"	208	260	220	36	8	☺
	DC160-25-08.000A1-	8		208	260	220	36	8	☺
	DC160-25-08.300A1-	8,3		229	289	243	40	10	☺
	DC160-25-08.500A1-	8,5		229	289	243	40	10	☺
	DC160-25-08.731A1-	8,731	11/32"	229	289	243	40	10	☺
	DC160-25-09.000A1-	9		229	289	243	40	10	☺
	DC160-25-09.525A1-	9,525	3/8"	255	314	270	40	10	☺
	DC160-25-09.800A1-	9,8		255	314	270	40	10	☺
DC160-25-10.000A1-	10		255	314	270	40	10	☺	
DC160-25-10.200A1-	10,2		280	346	297	45	12	☺	
DC160-25-10.319A1-	10,319	13/32"	280	346	297	45	12	☺	
DC160-25-11.000A1-	11		280	346	297	45	12	☺	
DC160-25-11.113A1-	11,113	7/16"	306	373	324	45	12	☺	
DC160-25-11.500A1-	11,5		306	373	324	45	12	☺	

Takım	Tanım	D_c h7 mm	D_c Inch/No	L_c mm	l_1 mm	l_2 mm	l_5 mm	d_1 h6 mm	WJ30EU
	DC160-25-11.800A1-	11,8		306	373	324	45	12	⊕
	DC160-25-11.906A1-	11,906	15/32"	306	373	324	45	12	⊕
	DC160-25-12.000A1-	12		306	373	324	45	12	⊕

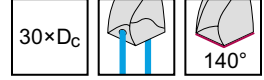
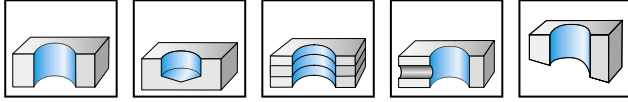
DIN 6535 HA

B1

İçten soğutmalı karbür matkaplar

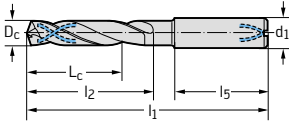
DC160 Advance

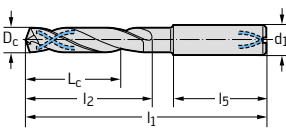
X-treme Evo



	P	M	K	N	S	H	O
WJ30EU	●●●	●	●●●	●●●	●●●	●	●

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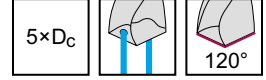
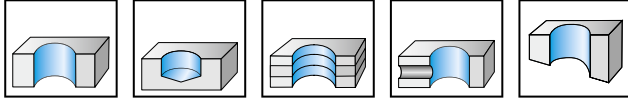
Takım	Tanım	D _c h7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
 <p>DIN 6535 HA</p>	DC160-30-03.000A1-	3		92	132	97	28	4	☺
	DC160-30-03.175A1-	3,175	1/8"	114	166	120	28	4	☺
	DC160-30-03.500A1-	3,5		127	166	133	28	4	☺
	DC160-30-03.572A1-	3,572	9/64"	127	166	133	28	4	☺
	DC160-30-03.969A1-	3,969	5/32"	127	166	133	28	4	☺
	DC160-30-04.000A1-	4		127	166	133	28	4	☺
	DC160-30-04.500A1-	4,5		162	200	169	28	5	☺
	DC160-30-04.763A1-	4,763	3/16"	161	200	169	28	5	☺
	DC160-30-04.800A1-	4,8		161	200	169	28	5	☺
	DC160-30-05.000A1-	5		161	200	169	28	5	☺
	DC160-30-05.500A1-	5,5		178	225	187	36	6	☺
	DC160-30-05.556A1-	5,556	7/32"	195	242	204	36	6	☺
	DC160-30-05.800A1-	5,8		195	242	204	36	6	☺
	DC160-30-06.000A1-	6		195	242	204	36	6	☺
	DC160-30-06.100A1-	6,1		217	268	228	36	8	☺
	DC160-30-06.350A1-	6,35	1/4"	217	268	228	36	8	☺
	DC160-30-06.500A1-	6,5		217	268	228	36	8	☺
	DC160-30-06.800A1-	6,8		217	268	228	36	8	☺
	DC160-30-07.000A1-	7		217	268	228	36	8	☺
	DC160-30-07.144A1-	7,144	9/32"	244	294	256	36	8	☺
DC160-30-07.400A1-	7,4		244	294	256	36	8	☺	
DC160-30-07.500A1-	7,5		244	294	256	36	8	☺	
DC160-30-07.938A1-	7,938	5/16"	244	294	256	36	8	☺	
DC160-30-08.000A1-	8		244	294	256	36	8	☺	
DC160-30-08.300A1-	8,3		273	330	287	40	10	☺	
DC160-30-08.500A1-	8,5		273	330	287	40	10	☺	
DC160-30-08.731A1-	8,731	11/32"	273	330	287	40	10	☺	
DC160-30-09.000A1-	9		273	330	287	40	10	☺	
DC160-30-09.525A1-	9,525	3/8"	305	364	320	40	10	☺	
DC160-30-09.800A1-	9,8		305	364	320	40	10	☺	
DC160-30-10.000A1-	10		305	364	320	40	10	☺	
DC160-30-10.200A1-	10,2		335	401	352	45	12	☺	
DC160-30-10.319A1-	10,319	13/32"	335	401	352	45	12	☺	
DC160-30-11.000A1-	11		335	401	352	45	12	☺	
DC160-30-11.113A1-	11,113	7/16"	364	430	382	45	12	☺	
DC160-30-11.500A1-	11,5		364	430	382	45	12	☺	

Takım	Tanım	D _c h7 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ h6 mm	WJ30EU
	DC160-30-11.800A1-	11,8		364	430	382	45	12	⊕
	DC160-30-11.906A1-	11,906	15/32"	364	430	382	45	12	⊕
	DC160-30-12.000A1-	12		364	430	382	45	12	⊕

DIN 6535 HA

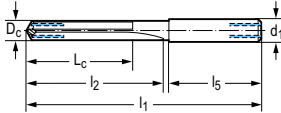
B1

İçten soğutmalı karbür matkaplar, düz. DC165 Advance



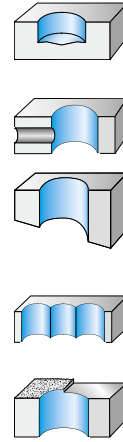
	P	M	K	N	S	H	O
WJ30UU			●●	●●			

B1

Takım	Tanım	D _c k6 mm	D _c Inch/No	L _c mm	l ₁ mm	l ₂ mm	l ₅ mm	d ₁ mm	WJ30UU
 <p>DIN 6535 HA</p>	DC165-05-04.000A1-	4		16	74	31	36	6	⊕
	DC165-05-05.000A1-	5		22	82	40	36	6	⊕
	DC165-05-06.000A1-	6		22	82	40	36	6	⊕
	DC165-05-08.000A1-	8		29	91	49	36	8	⊕
	DC165-05-08.500A1-	8,5		37	103	57	40	10	⊕
	DC165-05-10.000A1-	10		37	103	57	40	10	⊕
	DC165-05-10.200A1-	10,2		43	118	67	45	12	⊕
	DC165-05-11.000A1-	11		43	118	67	45	12	⊕
	DC165-05-12.000A1-	12		43	118	67	45	12	⊕
	DC165-05-14.000A1-	14		45	124	73	45	14	⊕
	DC165-05-15.000A1-	15		55	133	79	48	16	⊕
	DC165-05-16.000A1-	16		55	133	79	48	16	⊕

Kesici uçlu delme takımları

B1



Delik derinliği	3 x D _C	2 x D _C	3 x D _C	4 x D _C	5 x D _C
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Tanım	D4170	D4120	D4120	D4120	D4120
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Ø aralığı

[mm]	65-80	13,5-59	13,5-59	17-59	17-59
[inch]		0,531-2,250	0,531-2,250	0,656-2,250	0,656-2,250

P Çelik	••	••	••	••	••
M Paslanmaz çelik	••	••	••	•	
K Dökme demir	••	••	••	••	••
N Demir dışı metaller	••	••	••	••	••
S Zor işlenen malzemeler	••	••	••	•	
H Sert malzemeler					
O Diğerleri					

Katalogdaki sayfa

QR kodu


www.walter-tools.com/woc/

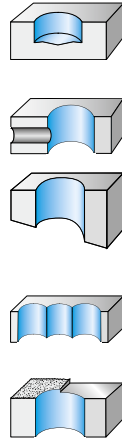
D4170-03

D4120

D4120

D4120

D4120



	2 x D _C	3 x D _C	4 x D _C	2 x D _C	2 x D _C	3 x D _C	3 x D _C
	D3120	D3120	D3120	B3212	B3212	B3213	B3213
	16-42	16-58	16-42	10-18		10-18	
		0,750-1,500	0,750-1,500		0,391-0,625		0,391-0,64
	••	••	••	••	••	••	••
	••	••	•	••	••	••	••
	••	••	••	••	••	••	••
	••	••	••	••	••	••	••
	••	••	•	••	••	••	••



D3120



D3120



D3120



B3212



B3212



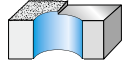
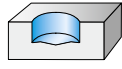
B3213



B3213

Kesici uçlu delme takımları

B1



Delik derinliği

4 x D_C

Tanım

B3214

Ø aralığı

[mm]

10-18

[inch]

P Çelik

M Paslanmaz çelik

K Dökme demir

N Demir dışı metaller

S Zor işlenen malzemeler

H Sert malzemeler

O Diğerleri

••

••

Katalogdaki sayfa

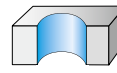
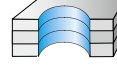
QR kodu

www.walter-tools.com/woc/

B3214

Kesici uçlu delme takımları

B1



Delik derinliği

 $2,5 \times D_C$
 $1,3 \times D_C$
 $3 \times D_C$
 $3 \times D_C$
 $5 \times D_C$


Tanım

D4240

D4140

D4140

D4140

D4140

Ø aralığı

[mm]

12–29,99

12–25,99

0,472–1,22

0,472–1,496

0,472–1,22

[inch]

P Çelik

●●

●●

●●

●●

●●

M Paslanmaz çelik

●●

●●

●●

●●

●●

K Dökme demir

●●

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●●

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●●

N Demir dışı metaller

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S Zor işlenen malzemeler

●●

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●●

●

H Sert malzemeler

O Diğerleri

Katalogdaki sayfa

QR kodu


www.walter-tools.com/woc/

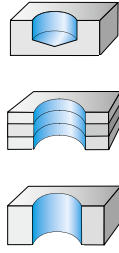
D4240

D4140

D4140

D4140

D4140



5 x D_C

7 x D_C

7 x D_C

10 x D_C



D4140

D4140

D4140

D4140

12-37,99

12-31,99

12-37,99

12-25,99

0,472-1,496

0,472-1,22

0,472-1,496

0,472-1,023

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D4140



D4140



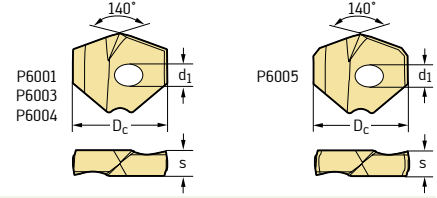
D4140



D4140

Değiştirilebilir uçlar

P6004



Delme uçları

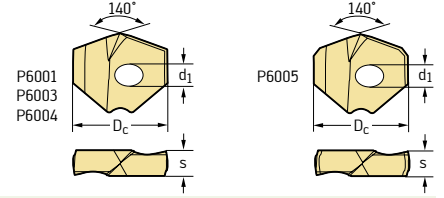
Tanım	Kesme kenarların sayısı	D _c mm	d ₁ mm	s mm	N
					HC
P6004-D12,00R	1	12	3	3,6	HC
P6004-D12,50R	1	12,5	3	3,6	HC
P6004-D13,00R	1	13	3	3,6	HC
P6004-D13,50R	1	13,5	3	3,6	HC
P6004-D14,00R	1	14	3	4	HC
P6004-D14,50R	1	14,5	3	4	HC
P6004-D14,80R	1	14,8	3	4	HC
P6004-D15,00R	1	15	3	4	HC
P6004-D15,50R	1	15,5	3	4	HC
P6004-D16,00R	1	16	4	4,5	HC
P6004-D16,50R	1	16,5	4	4,5	HC
P6004-D16,66R	1	16,66	4	4,5	HC
P6004-D17,00R	1	17	4	4,5	HC
P6004-D17,50R	1	17,5	4	4,5	HC
P6004-D17,70R	1	17,7	4	4,5	HC
P6004-D18,00R	1	18	4	5	HC
P6004-D18,50R	1	18,5	4	5	HC
P6004-D18,65R	1	18,65	4	5	HC
P6004-D19,00R	1	19	4	5	HC
P6004-D19,50R	1	19,5	4	5	HC
P6004-D19,70R	1	19,7	4	5	HC
P6004-D19,84R	1	19,84	4	5	HC
P6004-D20,00R	1	20	5	5,5	HC
P6004-D20,50R	1	20,5	5	5,5	HC
P6004-D21,00R	1	21	5	5,5	HC
P6004-D21,50R	1	21,5	5	5,5	HC
P6004-D21,70R	1	21,7	5	5,5	HC
P6004-D22,00R	1	22	5	6	HC
P6004-D22,50R	1	22,5	5	6	HC
P6004-D23,00R	1	23	5	6	HC
P6004-D23,50R	1	23,5	5	6	HC
P6004-D24,00R	1	24	5	6,5	HC
P6004-D24,50R	1	24,5	5	6,5	HC
P6004-D25,00R	1	25	5	6,5	HC
P6004-D25,50R	1	25,5	5	6,5	HC
P6004-D26,00R	1	26	6	7,1	HC
P6004-D26,50R	1	26,5	6	7,1	HC
P6004-D27,00R	1	27	6	7,1	HC
P6004-D27,50R	1	27,5	6	7,1	HC
P6004-D28,00R	1	28	6	7,7	HC
P6004-D28,50R	1	28,5	6	7,7	HC
P6004-D29,00R	1	29	6	7,7	HC

Sipariş örneği: P60.-D13,00R
 P6003 olarak WMP35 (ISO P, ISO M ve ISO S) kalitesinde mevcuttur: P6003-D13,00R WMP35 veya
 P6001 olarak WPP45C (ISO P) kalitesinde: P6001-D13,00R WPP45C







HC = Kaplamalı karbür

Deđiřtirilebilir uçlar

P6004



Delme uçları

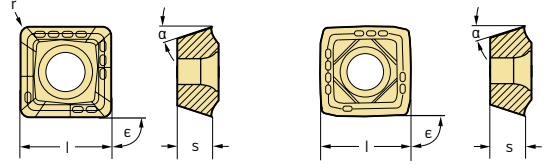
	Tanım	Kesme kenarların sayısı	D _c mm	d ₁ mm	s mm	N
						HC
						WN25
	P6004-D29,50R	1	29,5	6	7,7	
	P6004-D30,00R	1	30	6	8	
	P6004-D30,50R	1	30,5	6	8	
	P6004-D31,00R	1	31	6	8	
	P6004-D31,50R	1	31,5	6	8	

Sipariř örneđi: P60..-D13,00R



P6003 olarak WMP35 (ISO P, ISO M ve ISO S) kalitesinde mevcuttur: P6003-D13,00R WMP35 veya P6001 olarak WPP45C (ISO P) kalitesinde: P6001-D13,00R WPP45C

HC = Kaplamalı karbür

Kare şekilli P484 .

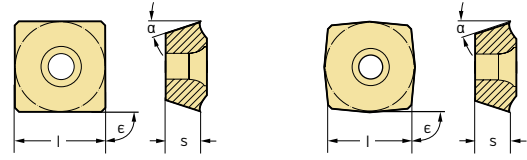


Uçlar







	Tanım	Kesme kenarların sayısı	l mm	r mm	α	ε	N
							HC
	P4840C-1R-E77	4	4,9	0,29	11°	90°	WN15
	P4840C-2R-E77	4	5,95	0,34	11°	90°	HC
	P4840C-3R-E77	4	7	0,4	11°	90°	HC
	P4840C-4R-E77	4	8,4	0,48	11°	90°	HC
	P4840C-5R-E77	4	10,29	0,59	11°	90°	HC
	P4840C-6R-E77	4	12,24	0,7	11°	90°	HC
	P4840C-7R-E77	4	14,69	0,8	11°	90°	HC
	P4840C-8R-E77	4	17,49	1	11°	90°	HC
	P4840P-1R-E77	4	4,55	0,29	11°	90°	HC
	P4840P-2R-E77	4	5,52	0,34	11°	90°	HC
	P4840P-3R-E77	4	6,5	0,4	11°	90°	HC
	P4840P-4R-E77	4	7,8	0,48	11°	90°	HC
	P4840P-5R-E77	4	9,56	0,59	11°	90°	HC
	P4840P-6R-E77	4	11,75	0,7	11°	90°	HC
	P4840P-7R-E77	4	14,03	0,8	11°	90°	HC
	P4840P-8R-E77	4	16,5	1	11°	90°	HC

 =
 HC = Kaplamalı karbür

Kare şekilli P284..



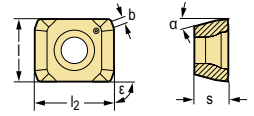
Uçlar

Tanım	Kesme kenarların sayısı	l mm	α	ε	N	
					HC	WNN15
	P2840S-1N-E77	4	6,35	14°	90°	
	P2840S-2N-E77	4	7,8	14°	90°	
	P2840S-3N-E77	4	9,52	11°	96°	
	P2840S-4N-E77	4	11	11°	96°	
	P2840S-5N-E77	4	12,7	11°	96°	
	P2840S-6N-E77	4	15	11°	96°	
	P2840S-7N-E77	4	17,6	11°	96°	




HC = Kaplamalı karbür

B1

Dikdörtgen şekilli LCGX



Uçlar

Tanım	Kesme kenarların sayısı	l mm	l ₂ mm	α	ε	b mm	N	
							HC	WNN15
	LCGX050203-E77	2	4	5,2	7°	90°	0,6	
	LCGX06T204-E77	2	5,2	6,6	7°	90°	0,8	

HC = Kaplamalı karbür

Her uygulama için delik genişletme ve hassas delik işleme.

TAKIM

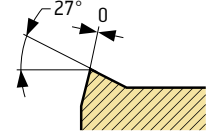
- Teğetsel-yanal yerleştirilmiş kesici uçlara sahip özel takım
- Pah kırma ve delik işleme için birleştirilmiş
- Küçük takım çaplarında yüksek diş sayısı
- Radyal olarak ayarlanabilir çözümler de mümkündür

KESİCİ UÇ

- P4460-R208-G88

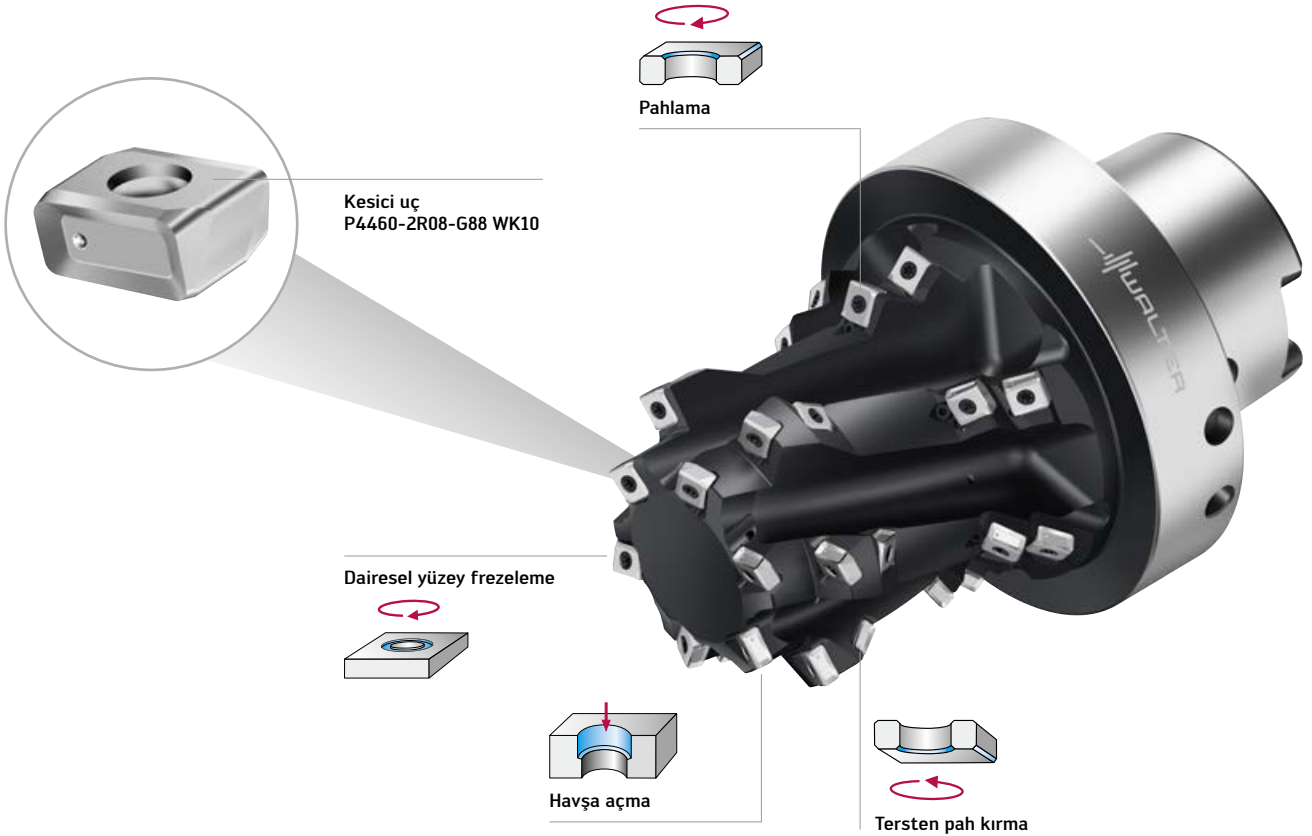
GEOMETRİ

- G88 – keskin:
- Alüminyum işleme için özel



UYGULAMA

- ISO N işleme
- Delik genişletme (darbeli ve darbesiz kesme)
- Frezeleme ve pah kırma
- Müşteriye özel iş parçaları



Delik genişletme için özel takım

B2074-7733613

AVANTAJLARINIZ

- Diş başına çok yüksek ilerleme sayesinde maksimum verimlilik
- Müşteriye özel tasarım sayesinde uzun takım ömürleri ve esnek kullanılabilirlik
- Mükemmel talaş kırma sayesinde yüksek proses güvenilirliği

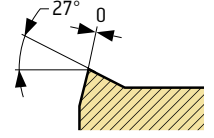
Saniyeler içinde güvenli delik genişletme.

TAKIM

- Teğetsel-yanal yerleştirilmiş kesici uçlara sahip özel takım
- Pah kırma ve delik işleme için birleştirilmiş
- Küçük takım çaplarında yüksek diş sayısı
- Radyal olarak ayarlanabilir çözümler de mümkündür

GEOMETRİ

- G88 – keskin:
- Alüminyum işleme için özel



UYGULAMA

- ISO N malzemeler
- Delik genişletme (darbeli ve darbesiz kesme)
- Frezeleme ve pah kırma
- Müşteriye özel iş parçaları



Kesici uç
P4460-2R08-G88 WK10

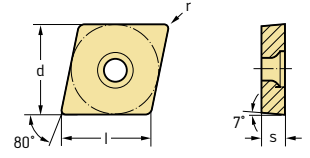
Özel takım: Takma uçlu kademeli matkap

W_Di_Sonder_B2074-7786154_P4460_pol_P_01



AVANTAJLARINIZ

- Diş başına çok yüksek ilerleme sayesinde maksimum verimlilik
- Tek bir takımda birçok işleme adımı
- Müşteriye özel tasarım sayesinde uzun takım ömürleri ve esnek kullanılabilirlik
- Mükemmel talaş kırma sayesinde yüksek proses güvenilirliği

Eşkenar dörtgen (rombik) pozitif 80° CCGT



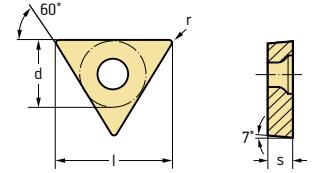
Uçlar

	Tanım	l mm	r mm	f mm	a _p mm	N	
						HC WN10	HW WN10
	CCGT060201-FN2	6,45	0,1	0,02-0,06	0,1-1,5	☹	
	CCGT060202-FN2	6,45	0,2	0,05-0,12	0,2-2,0	☹	☹
	CCGT060204-FN2	6,45	0,4	0,08-0,25	0,2-2,5	☹	☹
	CCGT09T301-FN2	9,67	0,1	0,02-0,06	0,1-1,5	☹	
	CCGT09T302-FN2	9,67	0,2	0,05-0,12	0,2-2,0	☹	☹
	CCGT09T304-FN2	9,67	0,4	0,08-0,25	0,2-2,5	☹	☹
	CCGT09T308-FN2	9,67	0,8	0,10-0,30	0,3-3,0	☹	☹
	CCGT120404-FN2	12,9	0,4	0,08-0,25	0,2-3,0	☹	☹
	CCGT120408-FN2	12,9	0,8	0,10-0,30	0,3-3,5	☹	☹
	CCGT060201-MN2	6,45	0,1	0,02-0,06	0,5-1,5	☹	☹
	CCGT060202-MN2	6,45	0,2	0,05-0,12	0,5-2,0	☹	☹
	CCGT060204-MN2	6,45	0,4	0,08-0,25	0,6-3,0	☹	☹
	CCGT09T301-MN2	9,67	0,1	0,02-0,06	0,5-1,5	☹	☹
	CCGT09T302-MN2	9,67	0,2	0,05-0,12	0,5-2,0	☹	☹
	CCGT09T304-MN2	9,67	0,4	0,08-0,25	0,6-4,0	☹	☹
	CCGT09T308-MN2	9,67	0,8	0,10-0,35	0,8-4,0	☹	☹
	CCGT120402-MN2	12,9	0,2	0,05-0,12	0,5-2,0	☹	☹
	CCGT120404-MN2	12,9	0,4	0,08-0,25	0,6-5,0	☹	☹
CCGT120408-MN2	12,9	0,8	0,10-0,35	0,8-5,0	☹	☹	



Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

HC = Kaplamalı karbür
HW = Kaplamasız karbür

Üçgen pozitif 60° TCGT



Uçlar

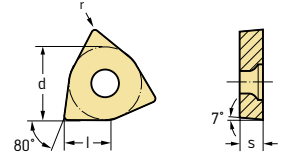
	Tanım	l mm	r mm	f mm	a _p mm	N	
						WNN10 HC	WNN10 HW
	TCGT06T101-FN2	6,87	0,1	0,02-0,06	0,1-1,5	⊗	
	TCGT06T102-FN2	6,87	0,2	0,05-0,12	0,2-2,0	⊗	
	TCGT06T104-FN2	6,87	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	TCGT090202-FN2	9,62	0,2	0,05-0,12	0,2-2,0	⊗	
	TCGT090204-FN2	9,62	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	TCGT110202-FN2	11	0,2	0,05-0,12	0,2-2,0	⊗	
	TCGT110204-FN2	11	0,4	0,08-0,25	0,2-2,5	⊗	⊗
	TCGT16T304-FN2	16,5	0,4	0,08-0,25	0,2-2,5	⊗	⊗
TCGT16T308-FN2	16,5	0,8	0,10-0,30	0,3-3,0	⊗	⊗	
	TCGT110201-MN2	11	0,1	0,02-0,06	0,5-1,5	⊗	
	TCGT110202-MN2	11	0,2	0,05-0,12	0,6-2,0	⊗	⊗
	TCGT110204-MN2	11	0,4	0,08-0,25	0,6-3,0	⊗	⊗
	TCGT16T302-MN2	16,5	0,2	0,05-0,12	0,5-2,0	⊗	⊗
	TCGT16T304-MN2	16,5	0,4	0,08-0,25	0,6-4,0	⊗	⊗
	TCGT16T308-MN2	16,5	0,8	0,10-0,35	0,8-4,0	⊗	⊗

Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı


















HC = Kaplamalı karbür
HW = Kaplamasız karbür

B2

Üçgen pozitif 80° WCGT



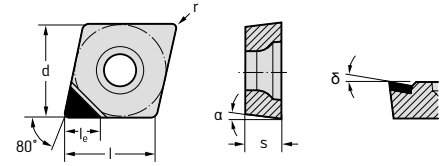
Uçlar

						N
						HC
	Tanım	l mm	r mm	f mm	a _p mm	WN10
	WCGT020102-FN2	2,7	0,2	0,05-0,12	0,2-1,5	
	WCGT020104-FN2	2,7	0,4	0,08-0,20	0,2-1,5	
	WCGT030202-FN2	3,91	0,2	0,05-0,12	0,2-2,0	
	WCGT030204-FN2	3,91	0,4	0,08-0,25	0,2-2,5	
	WCGT040202-FN2	4,34	0,2	0,05-0,12	0,2-2,0	
	WCGT040204-FN2	4,34	0,4	0,08-0,25	0,2-2,5	
	WCGT06T304-FN2	6,52	0,4	0,08-0,25	0,2-2,5	
	WCGT06T308-FN2	6,52	0,8	0,10-0,30	0,3-3,0	
	WCGT030202-MN2	3,91	0,2	0,05-0,12	0,5-1,5	
	WCGT030204-MN2	3,91	0,4	0,08-0,20	0,6-1,5	
	WCGT040204-MN2	4,34	0,4	0,08-0,25	0,6-2,5	
	WCGT06T302-MN2	6,52	0,2	0,05-0,12	0,6-2,0	
	WCGT06T304-MN2	6,52	0,4	0,08-0,25	0,6-3,0	
	WCGT080404-MN2	8,69	0,4	0,08-0,25	0,6-4,0	
	WCGT080408-MN2	8,69	0,8	0,10-0,35	0,8-4,0	












Boyutlar için bkz. ISO 1832 uyarınca kod anahtar

HC = Kaplamalı karbür

PCD – Eşkenar dörtgen (rombik) pozitif 80° CPGW



Uçlar

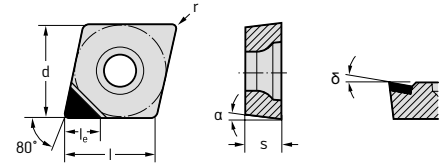
	Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	WDN10	0
											DP
	CPGW050204FS-1		3	5,64	0,4	11°	0°	0,03–0,25	0,1–2,5		
	CPGW060204FS-1		3,5	6,45	0,4	11°	0°	0,03–0,25	0,1–3,0		
	CPGW09T304FS-1		4	9,67	0,4	11°	0°	0,03–0,25	0,1–3,5		
	CPGW09T308FS-1		4	9,67	0,8	11°	0°	0,03–0,38	0,1–3,5		
	CPGW120408FS-1		4	12,9	0,8	11°	0°	0,03–0,38	0,1–3,5		

Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı
















































DP = Çok kristalli elmas

B2

PCD – Eşkenar dörtgen (rombik) pozitif 80° CCGT / CCGW



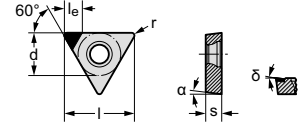
Uçlar

	Tanım	Kesme kenarların sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	WDN10	0
											DP
	CCGT060202FS-1		3,5	6,45	0,2	7°	7°	0,03–0,12	0,1–3,0		
	CCGT060204FS-1		3,5	6,45	0,4	7°	7°	0,03–0,25	0,1–3,0		
	CCGT060208FS-1		3,5	6,45	0,8	7°	7°	0,03–0,38	0,1–3,0		
	CCGT09T304FS-1		4	9,67	0,4	7°	10°	0,03–0,25	0,1–3,5		
	CCGT09T308FS-1		4	9,67	0,8	7°	10°	0,03–0,38	0,1–3,5		
	CCGT060204FS-M1		3,5	6,45	0,4	7°		0,08–0,20	0,1–2,0		
	CCGT09T304FS-M1		4	9,67	0,4	7°		0,08–0,20	0,1–2,0		
	CCGW060202FS-1		3,6	6,45	0,2	7°	0°	0,03–0,12	0,1–3,0		
	CCGW060204FS-1		3,5	6,45	0,4	7°	0°	0,03–0,25	0,1–3,0		
	CCGW060208FS-1		3,5	6,45	0,8	7°	0°	0,03–0,38	0,1–3,0		
	CCGW09T302FS-1		4,1	9,67	0,2	7°	0°	0,03–0,12	0,1–3,5		
	CCGW09T304FS-1		4,1	9,67	0,4	7°	0°	0,03–0,25	0,1–3,5		
	CCGW09T308FS-1		4	9,67	0,8	7°	0°	0,03–0,38	0,1–3,5		
	CCGW120404FS-1		4,1	12,9	0,4	7°	0°	0,03–0,25	0,1–3,5		
	CCGW120408FS-1		4	12,9	0,8	7°	0°	0,03–0,38	0,1–3,5		
	CCGW060204FSL-9		6,4	6,45	0,4	7°	0°	0,03–0,25	0,1–6,4		
	CCGW09T304FSL-9		9,7	9,67	0,4	7°	0°	0,03–0,25	0,1–9,7		
	CCGW09T308FSL-9		9,7	9,67	0,8	7°	0°	0,03–0,38	0,1–9,7		
	CCGW060204FSR-9		6,4	6,45	0,4	7°	0°	0,03–0,25	0,1–6,4		
	CCGW09T304FSR-9		9,7	9,67	0,4	7°	0°	0,03–0,25	0,1–9,7		
	CCGW09T308FSR-9		9,7	9,67	0,8	7°	0°	0,03–0,38	0,1–9,7		













Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

PCD – Üçgen pozitif 60° TCGW



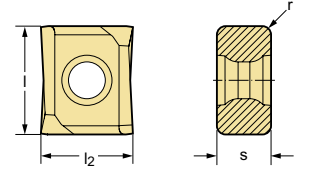
Uçlar

	Tanım	Kesme kenarlarının sayısı	l _e mm	l mm	r mm	α	δ	f mm	a _p mm	0
										DP
										WDN10
	TCGW090202FS-1		3,9	9,62	0,2	7°	0°	0,03–0,12	0,1–3,0	
	TCGW090204FS-1		3,8	9,62	0,4	7°	0°	0,03–0,25	0,1–3,0	
	TCGW110202FS-1		4,4	11	0,2	7°	0°	0,03–0,12	0,1–3,0	
	TCGW110204FS-1		4,3	11	0,4	7°	0°	0,03–0,25	0,1–3,0	
	TCGW110208FS-1		4	11	0,8	7°	0°	0,03–0,38	0,1–3,0	
	TCGW16T304FS-1		4,3	16,5	0,4	7°	0°	0,03–0,25	0,1–3,5	
	TCGW16T308FS-1		4	16,5	0,8	7°	0°	0,03–0,38	0,1–3,5	
	TCGW090204FS-9		9	9,62	0,4	7°	0°	0,03–0,25	0,1–9,0	
	TCGW110204FS-9		10,4	11	0,4	7°	0°	0,03–0,25	0,1–10,4	
	TCGW16T308FS-9		15,3	16,5	0,8	7°	0°	0,03–0,38	0,1–15,3	





Boyutlar için bkz. ISO 1832 uyarınca kod anahtarı

DP = Çok kristalli elmas

Eşkenar dörtgen (rombik) teğetsel P4460



Uçlar

	Tanım	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	N	
						HC	HW
						WNN15	WK10
	P4460-2R04-G88	2	10	9,69	0,4		
	P4460-2R08-G88	2	10	9,69	0,8		

HC = Kaplamalı karbür
HW = Kaplamasız karbür

B2



B – Vida diři açma

B4: Vida diři açma	Sayfa
Ürün programına genel bakış	
HSS-E (-PM) kılavuz	88
Sipariş sayfaları	
HSS-E (-PM) kılavuz	90
B5: Ovalama	Sayfa
TC420 Supreme	128
Ürün programına genel bakış	
HSS-E (-PM) ve karbür ovalama kılavuzu	130
Sipariş sayfaları	
HSS-E (-PM) ve karbür ovalama kılavuzu	132
B6: Diş frezeleme	Sayfa
TC620 Supreme	166
Ürün programına genel bakış	
Diş frezeleme	168
Sipariş sayfaları	
Diş frezeleme	170

Vida dişi açma

İşleme				
Vida dişi derinliği	3 x D _N	2 x D _N	3 x D _N	3 x D _N

Selection

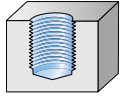
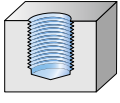
Selection

Selection

Selection



Tanım	Prototex® X-pert N	Paradur® AP	KMB Ms	Paradur® Eco CI
Diş türü				
M	✓	✓	✓	✓
MF				✓
UNC / UNF / UN-8				✓
G / Rc / Rp			✓	✓
MJ / UNJC / UNJF				
NPT / NPTF				
Pg / BSW / Tr				
Tel kovan vida dişi				
Tolerans	6H	6HX	6H / NORMAL	2B / 6HX / NORMAL
Soğutma sıvısı beslemesi	dıştan	dıştan	dıştan	dıştan
Ağızlama şekli	B	C	E / F	C / E
Kaplama / Kalite	Kaplamasız	NIT	Kaplamasız	NiD / TiCN
Kesme malzemesi	HSS-E	HSS-E	HSS-E	HSS-E-PM
P Çelik				
M Paslanmaz çelik				
K Dökme demir				••
N Demir dışı metaller	••	••	••	••
S Zor işlenen malzemeler	•	•		
H Sert malzemeler				
O Diğerleri	•		•	••
Katalogdaki sayfa	90	92	119	121
QR kodu				
www.walter-tools.com/woc/	prototex-xpert-n	paradur-ap	kmb-ms	paradur-eco-ci



3 x DN

3 x DN

Selection

Selection



Paradur® Eco CI

Paradur® X-pert N

✓

✓

✓

✓

✓

✓

✓

6HX

2B / 3B / 6G / 6H /
6HMOD / NORMAL

eksenel / radyal

dıřtan

C / E

C

TICN

Kaplamasız

HSS-E-PM

HSS-E

••

••

••

••

•

••

•

98

123



paradur-eco-ci



paradur-xpert-n

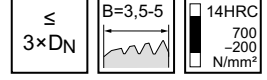
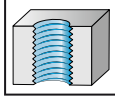
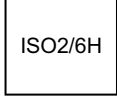
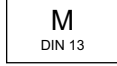
HSS-E kılavuzlar

mm

Prototex® X-pert N

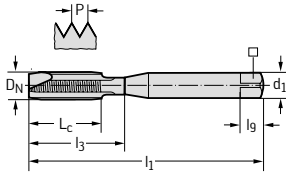


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 371



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N20219-M2	M 2	0,4	45	6	9	2,8	2,1	5	2
N20219-M2.5	M 2.5	0,45	50	8	12,5	2,8	2,1	5	2
N20219-M3	M 3	0,5	56	9	18	3,5	2,7	6	2
N20219-M4	M 4	0,7	63	12	21	4,5	3,4	6	2
N20219-M5	M 5	0,8	70	13	25	6	4,9	8	2
N20219-M6	M 6	1	80	15	30	6	4,9	8	3
N20219-M8	M 8	1,25	90	18	35	8	6,2	9	3
N20219-M10	M 10	1,5	100	20	39	10	8	11	3

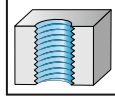
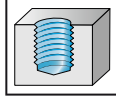
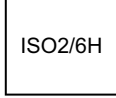
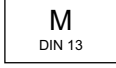
HSS-E kılavuzlar, kısa

mm

KMB Ms

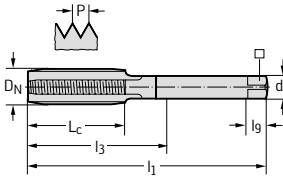


– Kısa talaş veren malzemeler için



	P	M	K	N	S	H	O
kaplamasız				●			●

DIN 2184-2



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
20165-M2	M 2	0,4	36	8	8	2,8	2,1	5	3
20165-M2.5	M 2.5	0,45	40	9	9	2,8	2,1	5	3
20165-M3	M 3	0,5	40	9	13,5	3,5	2,7	6	3
20165-M3.5	M 3.5	0,6	45	10	15	4	3	6	3
20165-M4	M 4	0,7	45	11	16,5	4,5	3,4	6	3
20165-M5	M 5	0,8	50	13	19	6	4,9	8	3
20165-M6	M 6	1	56	15	27	6	4,9	8	3
20165-M8	M 8	1,25	63	19	40	6	4,9	8	3

≤ M 2,5: vida dişi sonunda kısaltılmış boyun bulunmaz

HSS-E kılavuzlar

mm

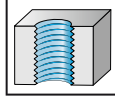
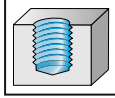
Paradur® AP



- Kısa talaş veren malzemeler için
- Ampco için

M
DIN 13

6HX



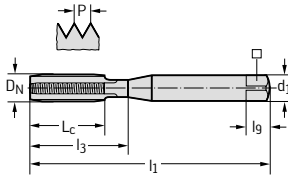
\leq
 $2 \times D_N$

$C=2-3$

47HRC
1500
-700
N/mm²

	P	M	K	N	S	H	O
NIT				•	•		

DIN 371



Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	d_1 mm	l_g mm	N
20312-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
20312-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
20312-M5	M 5	0,8	70	13	25	6	4,9	8	3
20312-M6	M 6	1	80	15	30	6	4,9	8	3
20312-M8	M 8	1,25	90	18	35	8	6,2	9	3
20312-M10	M 10	1,5	100	20	39	10	8	11	3

HSS-E kılavuzlar

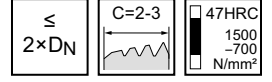
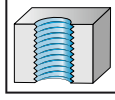
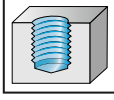
mm

Paradur® AP



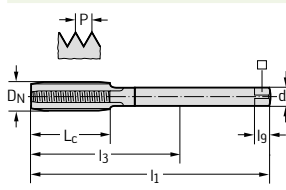
- Kısa talaş veren malzemeler için
- Ampco için

M
DIN 13



	P	M	K	N	S	H	O
NIT				●	●		

DIN 376



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
20362-M12	M 12	1,75	110	23	83	9	7	10	4
20362-M16	M 16	2	110	25	68	12	9	12	4
20362-M20	M 20	2,5	140	30	95	16	12	15	4

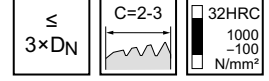
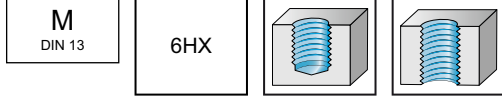
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
NID			●	●			●
TICN			●	●			●

DIN 371

Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E20314-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
E20314-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E20314-M5	M 5	0,8	70	13	25	6	4,9	8	4
E20314-M6	M 6	1	80	15	30	6	4,9	8	4
E20314-M7	M 7	1	80	15	30	7	5,5	8	4
E20314-M8	M 8	1,25	90	18	35	8	6,2	9	4
E20314-M10	M 10	1,5	100	20	39	10	8	11	4
E2031406-M3	M 3	0,5	56	9	18	3,5	2,7	6	3
E2031406-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031406-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031406-M6	M 6	1	80	15	30	6	4,9	8	4
E2031406-M7	M 7	1	80	15	30	7	5,5	8	4
E2031406-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031406-M9	M 9	1,25	90	18	35	9	7	10	4
E2031406-M10	M 10	1,5	100	20	39	10	8	11	4

B4

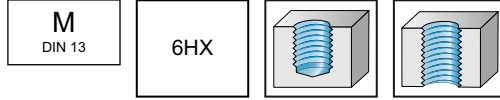
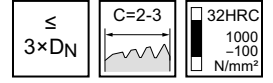
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

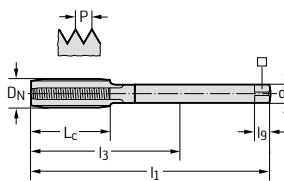
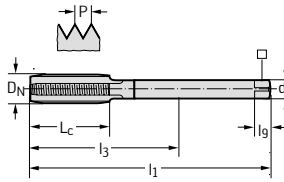


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
NiD			●	●			●
TiCN			●	●			●

DIN 376

Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
 E20364-M12	M 12	1,75	110	23	83	9	7	10	4
E20364-M14	M 14	2	110	25	81	11	9	12	4
E20364-M16	M 16	2	110	25	68	12	9	12	4
E20364-M18	M 18	2,5	125	30	81	14	11	14	4
E20364-M20	M 20	2,5	140	30	95	16	12	15	4
E20364-M22	M 22	2,5	140	30	93	18	14,5	17	4
E20364-M24	M 24	3	160	36	113	18	14,5	17	5
E20364-M30	M 30	3,5	180	42	115	22	18	21	5
 E2036406-M12	M 12	1,75	110	23	83	9	7	10	4
E2036406-M14	M 14	2	110	25	81	11	9	12	4
E2036406-M16	M 16	2	110	25	68	12	9	12	4
E2036406-M18	M 18	2,5	125	30	81	14	11	14	4
E2036406-M20	M 20	2,5	140	30	95	16	12	15	4
E2036406-M22	M 22	2,5	140	30	93	18	14,5	17	4
E2036406-M24	M 24	3	160	36	113	18	14,5	17	5
E2036406-M30	M 30	3,5	180	42	115	22	18	21	5

B4

HSS-E-PM kılavuzlar

mm

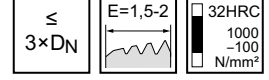
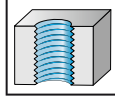
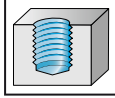
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

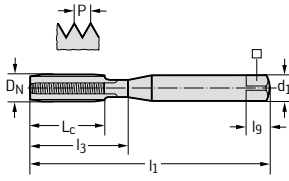
M
DIN 13

6HX



	P	M	K	N	S	H	O
TICN			●	●			●

DIN 371



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E2031466-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031466-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031466-M6	M 6	1	80	15	30	6	4,9	8	4
E2031466-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031466-M10	M 10	1,5	100	20	39	10	8	11	4

HSS-E-PM kılavuzlar

mm

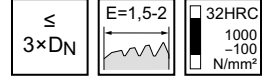
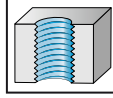
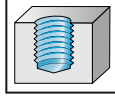
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

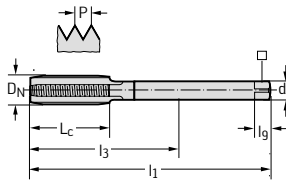
M
DIN 13

6HX



	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 376



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
E2036466-M12	M 12	1,75	110	23	83	9	7	10	4
E2036466-M16	M 16	2	110	25	68	12	9	12	4
E2036466-M20	M 20	2,5	140	30	95	16	12	15	4
E2036466-M24	M 24	3	160	36	113	18	14,5	17	5

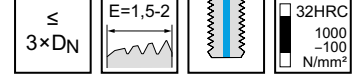
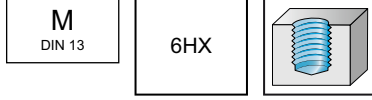
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

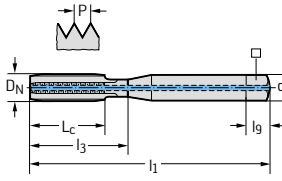


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 371



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E2031456-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031456-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031456-M6	M 6	1	80	15	30	6	4,9	8	4
E2031456-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031456-M10	M 10	1,5	100	20	39	10	8	11	4

HSS-E-PM kılavuzlar

mm

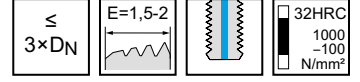
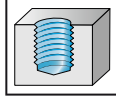
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

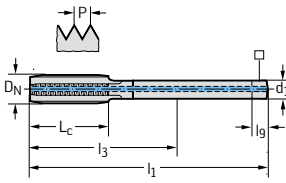
M
DIN 13

6HX



	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 376



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
E2036456-M12	M 12	1,75	110	23	83	9	7	10	4
E2036456-M16	M 16	2	110	25	68	12	9	12	4
E2036456-M20	M 20	2,5	140	30	95	16	12	15	4

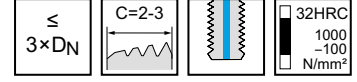
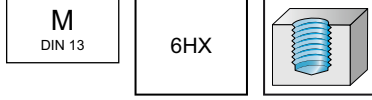
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

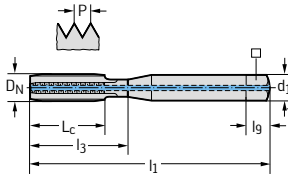


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 371



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E2031416-M4	M 4	0,7	63	12	21	4,5	3,4	6	3
E2031416-M5	M 5	0,8	70	13	25	6	4,9	8	4
E2031416-M6	M 6	1	80	15	30	6	4,9	8	4
E2031416-M7	M 7	1	80	15	30	7	5,5	8	4
E2031416-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031416-M10	M 10	1,5	100	20	39	10	8	11	4

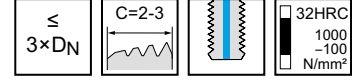
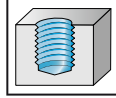
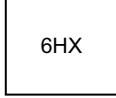
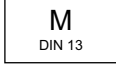
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

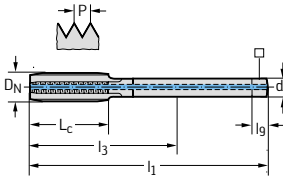


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 376



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
E2036416-M12	M 12	1,75	110	23	83	9	7	10	4
E2036416-M14	M 14	2	110	25	81	11	9	12	4
E2036416-M16	M 16	2	110	25	68	12	9	12	4
E2036416-M18	M 18	2,5	125	30	81	14	11	14	4
E2036416-M20	M 20	2,5	140	30	95	16	12	15	4
E2036416-M24	M 24	3	160	36	113	18	14,5	17	5

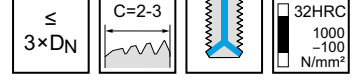
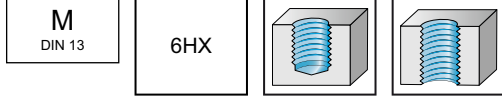
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

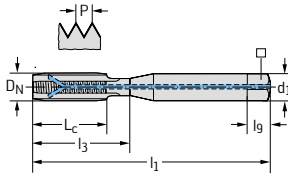


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 371



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E2031446-M6	M 6	1	80	15	30	6	4,9	8	4
E2031446-M8	M 8	1,25	90	18	35	8	6,2	9	4
E2031446-M10	M 10	1,5	100	20	39	10	8	11	4

HSS-E-PM kılavuzlar

mm

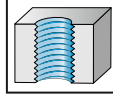
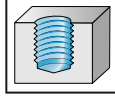
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

M
DIN 13

6HX

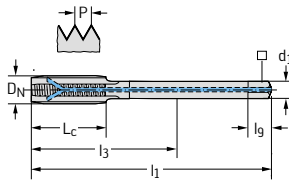

 \leq
3×DN

C=2-3

32HRC
1000
-100
N/mm²

	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 376



Tanım

DN

P
mml₁
mmL_c
mml₃
mmd₁
h9
mm□
mml_g
mm

N

E2036446-M12

M 12

1,75

110

23

83

9

7

10

4

E2036446-M16

M 16

2

110

25

68

12

9

12

4

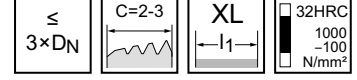
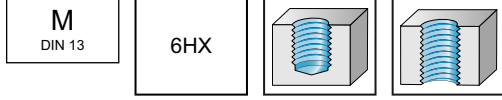
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

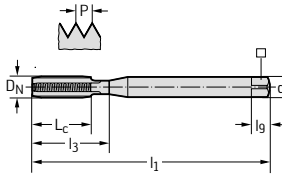


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
TICN			●●	●●			●●

~DIN 371 XL



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
E2031436-M4	M 4	0,7	125	12	21	4,5	3,4	6	3
E2031436-M5	M 5	0,8	140	13	25	6	4,9	8	4
E2031436-M6	M 6	1	160	15	30	6	4,9	8	4
E2031436-M8	M 8	1,25	180	18	35	8	6,2	9	4
E2031436-M10	M 10	1,5	200	20	39	10	8	11	4

HSS-E-PM kılavuzlar

mm

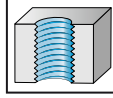
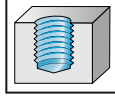
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

M
DIN 13

6HX


 \leq
3×DN

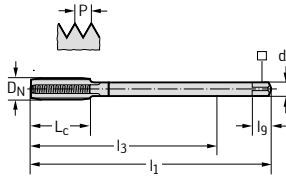
C=2-3

XL

32HRC
1000
-100
N/mm²

	P	M	K	N	S	H	O
TICN			●●	●●			●●

~DIN 376 XL



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E2036436-M12	M 12	1,75	220	23	193	9	7	10	4
E2036436-M16	M 16	2	220	25	178	12	9	12	4
E2036436-M20	M 20	2,5	280	30	235	16	12	15	4

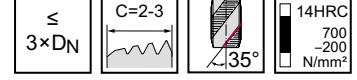
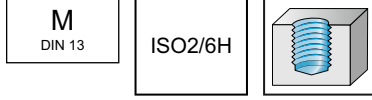
HSS-E kılavuzlar

mm

Paradur® X-pert N

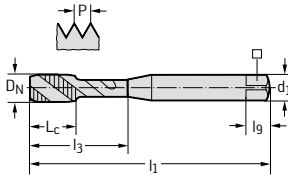


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
kaplamsız				●	●		●

DIN 371



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N20516-M1.6	M 1.6	0,35	40	6	6	2,5	2,1	5	2
N20516-M2	M 2	0,4	45	4	9	2,8	2,1	5	2
N20516-M2.3	M 2.3	0,4	45	4	12	2,8	2,1	5	2
N20516-M2.5	M 2.5	0,45	50	4	12,5	2,8	2,1	5	2
N20516-M3	M 3	0,5	56	6	18	3,5	2,7	6	2
N20516-M3.5	M 3.5	0,6	56	6,5	20	4	3	6	2
N20516-M4	M 4	0,7	63	7	21	4,5	3,4	6	2
N20516-M5	M 5	0,8	70	8	25	6	4,9	8	2
N20516-M6	M 6	1	80	10	30	6	4,9	8	2
N20516-M8	M 8	1,25	90	12	35	8	6,2	9	2
N20516-M10	M 10	1,5	100	15	39	10	8	11	2

B4

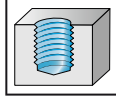
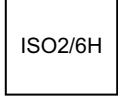
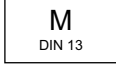
HSS-E kılavuzlar

mm

Paradur® X-pert N

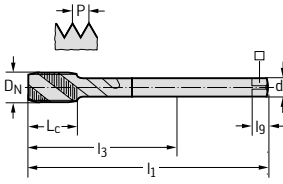


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 376



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
N20566-M6	M 6	1	80	10	59	4,5	3,4	6	2
N20566-M8	M 8	1,25	90	12	67	6	4,9	8	2
N20566-M10	M 10	1,5	100	15	77	7	5,5	8	2
N20566-M12	M 12	1,75	110	16	83	9	7	10	3
N20566-M14	M 14	2	110	20	81	11	9	12	3
N20566-M16	M 16	2	110	20	68	12	9	12	3
N20566-M20	M 20	2,5	140	25	95	16	12	15	3

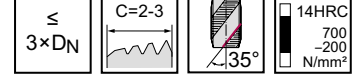
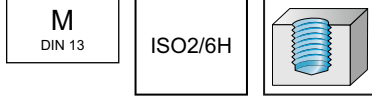
HSS-E kılavuzlar

mm

Paradur® X-pert N

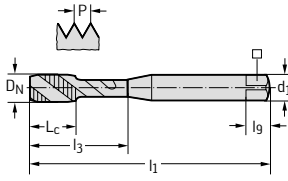


- Daha fazla kanal sayısı
- Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 371



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N205166-M3	M 3	0,5	56	6	18	3,5	2,7	6	3
N205166-M4	M 4	0,7	63	7	21	4,5	3,4	6	3
N205166-M5	M 5	0,8	70	8	25	6	4,9	8	3
N205166-M6	M 6	1	80	10	30	6	4,9	8	3
N205166-M7	M 7	1	80	10	30	7	5,5	8	3
N205166-M8	M 8	1,25	90	12	35	8	6,2	9	3
N205166-M10	M 10	1,5	100	15	39	10	8	11	3

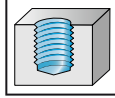
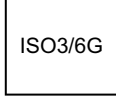
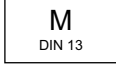
HSS-E kılavuzlar

mm

Paradur® X-pert N

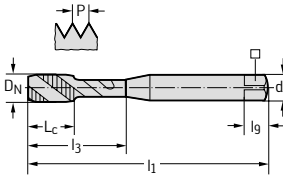


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 371



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N20536-M2	M 2	0,4	45	4	9	2,8	2,1	5	2
N20536-M2,5	M 2,5	0,45	50	4	12,5	2,8	2,1	5	2
N20536-M3	M 3	0,5	56	6	18	3,5	2,7	6	2
N20536-M4	M 4	0,7	63	7	21	4,5	3,4	6	2
N20536-M5	M 5	0,8	70	8	25	6	4,9	8	2
N20536-M6	M 6	1	80	10	30	6	4,9	8	2
N20536-M8	M 8	1,25	90	12	35	8	6,2	9	2

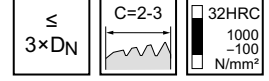
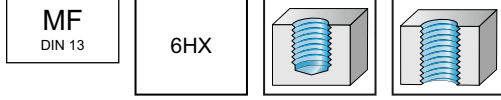
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

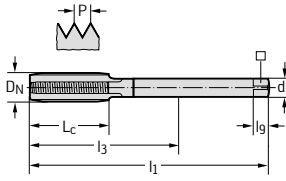


- Kısa talaş veren malzemeler için
- Nitratlanmış

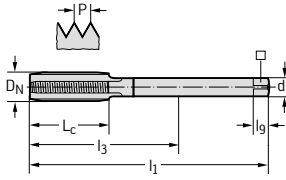


	P	M	K	N	S	H	O
NID			●	●			●
TICN			●	●			●

DIN 374



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
E21364-M8X0.75	MF 8x0.75	0,75	80	15	57	6	4,9	8	4
E21364-M8X1	MF 8x1	1	90	18	67	6	4,9	8	4
E21364-M10X1	MF 10x1	1	90	20	67	7	5,5	8	4
E21364-M12X1	MF 12x1	1	100	21	73	9	7	10	4
E21364-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	4
E21364-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
E21364-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
E21364-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
E21364-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
E21364-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
E21364-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
E21364-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	5
E21364-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	5
E21364-M26X1.5	MF 26x1.5	1,5	140	26	93	18	14,5	17	5
E21364-M30X1.5	MF 30x1.5	1,5	150	26	85	22	18	21	5
E2136406-M6X0.75	MF 6x0.75	0,75	80	15	59	4,5	3,4	6	4
E2136406-M8X0.75	MF 8x0.75	0,75	80	15	57	6	4,9	8	4
E2136406-M8X1	MF 8x1	1	90	18	67	6	4,9	8	4
E2136406-M10X1	MF 10x1	1	90	20	67	7	5,5	8	4
E2136406-M12X1	MF 12x1	1	100	21	73	9	7	10	4
E2136406-M10X1.25	MF 10x1.25	1,25	100	20	77	7	5,5	8	4
E2136406-M12X1.25	MF 12x1.25	1,25	100	21	73	9	7	10	4
E2136406-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
E2136406-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
E2136406-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
E2136406-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
E2136406-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
E2136406-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	5
E2136406-M24X1.5	MF 24x1.5	1,5	140	26	93	18	14,5	17	5
E2136406-M26X1.5	MF 26x1.5	1,5	140	26	93	18	14,5	17	5
E2136406-M30X1.5	MF 30x1.5	1,5	150	26	85	22	18	21	5



HSS-E-PM kılavuzlar

mm

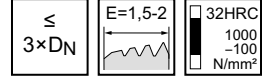
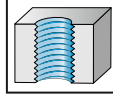
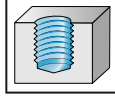
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

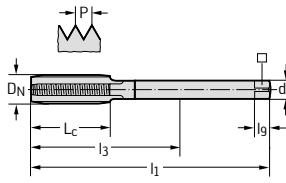
MF
DIN 13

6HX



	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 374



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
E2136466-M8X1	MF 8x1	1	90	18	67	6	4,9	8	4
E2136466-M10X1	MF 10x1	1	90	20	67	7	5,5	8	4
E2136466-M12X1	MF 12x1	1	100	21	73	9	7	10	4
E2136466-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
E2136466-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
E2136466-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
E2136466-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
E2136466-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
E2136466-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	5

B4

HSS-E-PM kılavuzlar

mm

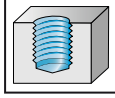
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

MF
DIN 13

6HX



\leq
 $3 \times D_N$

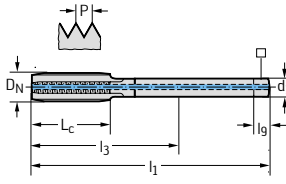
C=2-3



32HRC
1000
-100
N/mm²

	P	M	K	N	S	H	O
TICN			●●	●●			●●

DIN 374



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
E2136416-M8X1	MF 8x1	1	90	18	67	6	4,9	8	4
E2136416-M10X1	MF 10x1	1	90	20	67	7	5,5	8	4
E2136416-M12X1	MF 12x1	1	100	21	73	9	7	10	4
E2136416-M12X1.5	MF 12x1.5	1,5	100	21	73	9	7	10	4
E2136416-M14X1.5	MF 14x1.5	1,5	100	21	71	11	9	12	4
E2136416-M16X1.5	MF 16x1.5	1,5	100	21	58	12	9	12	4
E2136416-M18X1.5	MF 18x1.5	1,5	110	24	66	14	11	14	4
E2136416-M20X1.5	MF 20x1.5	1,5	125	24	80	16	12	15	4
E2136416-M22X1.5	MF 22x1.5	1,5	125	24	78	18	14,5	17	5

B4

HSS-E kılavuzlar

mm

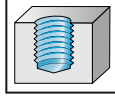
Paradur® X-pert N



– Uzun talaş veren malzemeler için

MF
DIN 13

ISO2/6H


 \leq
3×DN

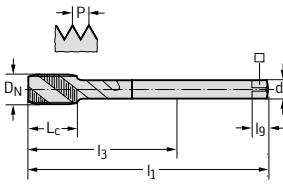
C=2-3



14HRC
700
-200
N/mm²

	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 374



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
N21566-M8X1	MF 8x1	1	90	12	67	6	4,9	8	2
N21566-M10X1	MF 10x1	1	90	12	67	7	5,5	8	3
N21566-M12X1	MF 12x1	1	100	13	73	9	7	10	3
N21566-M16X1	MF 16x1	1	100	15	58	12	9	12	4
N21566-M12X1.5	MF 12x1.5	1,5	100	13	73	9	7	10	3
N21566-M14X1.5	MF 14x1.5	1,5	100	15	71	11	9	12	3
N21566-M16X1.5	MF 16x1.5	1,5	100	15	58	12	9	12	3
N21566-M18X1.5	MF 18x1.5	1,5	110	17	66	14	11	14	4
N21566-M20X1.5	MF 20x1.5	1,5	125	17	80	16	12	15	4

B4

HSS-E-PM kılavuzlar

mm

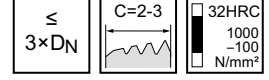
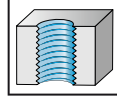
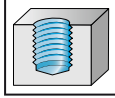
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

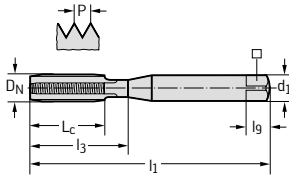
UNC
ASME B1.1

2B



	P	M	K	N	S	H	O
NID			●	●			●

DIN 2184-1



Tanım	D _N -P	D _N mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E22314-UNC6	UNC #6-32	3,505	56	11	20	4	3	6	3
E22314-UNC8	UNC #8-32	4,166	63	12	21	4,5	3,4	6	3
E22314-UNC10	UNC #10- 24	4,826	70	13	25	6	4,9	8	4
E22314-UNC1/4	UNC 1/4-20	6,35	80	15	30	7	5,5	8	4

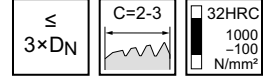
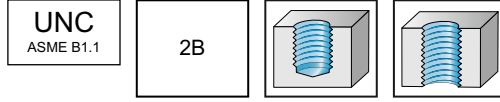
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

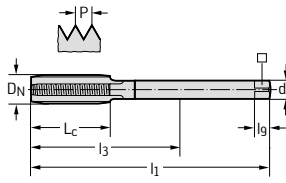


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
NID			●	●			●

DIN 2184-1



Tanım	D _N -P	D _N mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E22364-UNC5/16	UNC 5/16-18	7,938	90	18	67	6	4,9	8	4
E22364-UNC3/8	UNC 3/8-16	9,525	100	20	77	7	5,5	8	4
E22364-UNC7/16	UNC 7/16-14	11,113	100	20	76	8	6,2	9	4
E22364-UNC1/2	UNC 1/2-13	12,7	110	23	83	9	7	10	4
E22364-UNC9/16	UNC 9/16-12	14,288	110	25	81	11	9	12	4
E22364-UNC5/8	UNC 5/8-11	15,875	110	25	68	12	9	12	4
E22364-UNC3/4	UNC 3/4-10	19,05	125	30	81	14	11	14	4
E22364-UNC7/8	UNC 7/8-9	22,225	140	30	93	18	14,5	17	4

B4

HSS-E-PM kılavuzlar

mm

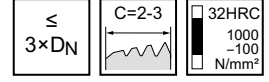
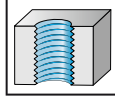
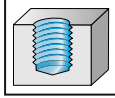
Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

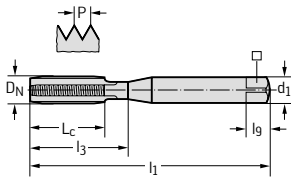
UNF
ASME B1.1

2B



	P	M	K	N	S	H	O
NID			●●	●●			●●

DIN 2184-1



Tanım	D _N -P	D _N mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E23314-UNF10	UNF #10-32	4,826	70	13	25	6	4,9	8	4
E23314-UNF1/4	UNF 1/4-28	6,35	80	15	30	7	5,5	8	4

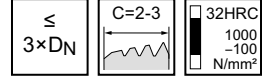
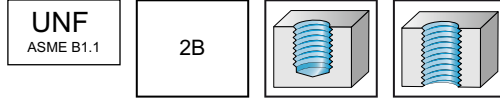
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI

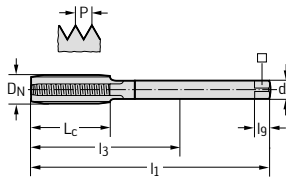


- Kısa talaş veren malzemeler için
- Nitratlanmış



	P	M	K	N	S	H	O
NID			●	●			●

DIN 2184-1



Tanım	D _N -P	D _N mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E23364-UNF5/16	UNF 5/16-24	7,938	90	18	67	6	4,9	8	4
E23364-UNF3/8	UNF 3/8-24	9,525	100	20	77	7	5,5	8	4
E23364-UNF7/16	UNF 7/16-20	11,113	100	20	76	8	6,2	9	4
E23364-UNF1/2	UNF 1/2-20	12,7	100	21	73	9	7	10	4
E23364-UNF9/16	UNF 9/16-18	14,288	100	21	71	11	9	12	4
E23364-UNF5/8	UNF 5/8-18	15,875	100	21	58	12	9	12	4
E23364-UNF3/4	UNF 3/4-16	19,05	110	24	66	14	11	14	4
E23364-UNF7/8	UNF 7/8-14	22,225	125	24	78	18	14,5	17	5

B4

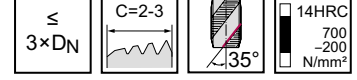
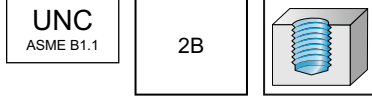
HSS-E kılavuzlar

mm

Paradur® X-pert N

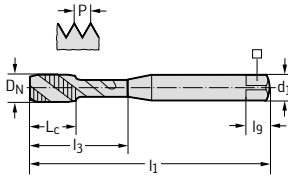


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 2184-1



Tanım	D _N -P	D _N mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N22516-UNC2	UNC #2-56	2,184	45	4	12	2,8	2,1	5	2
N22516-UNC4	UNC #4-40	2,845	56	6	18	3,5	2,7	6	2
N22516-UNC6	UNC #6-32	3,505	56	6,5	20	4	3	6	2
N22516-UNC8	UNC #8-32	4,166	63	7	21	4,5	3,4	6	2
N22516-UNC10	UNC #10- 24	4,826	70	8	25	6	4,9	8	2
N22516-UNC1/4	UNC 1/4-20	6,35	80	10	30	7	5,5	8	2
N22516-UNC5/16	UNC 5/16-18	7,938	90	12	35	8	6,2	9	2
N22516-UNC3/8	UNC 3/8-16	9,525	100	15	39	10	8	11	2

B4

HSS-E kılavuzlar, kısa

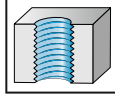
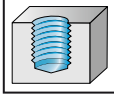
mm

KMB Ms



– Kısa talaş veren malzemeler için

G (BSP)
DIN EN ISO 228



≤
3×DN

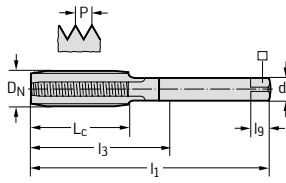
F=1-1,5

S

25HRC
850
-350
N/mm²

	P	M	K	N	S	H	O
kaplamasız				●			●

DIN 5157



Tanım	D _N -P	D _N mm	İç başına diş	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
24165-G1/8	G 1/8-28	9,728	28	63	20	40	7	5,5	8	3
24165-G1/4	G 1/4-19	13,157	19	70	20	41	11	9	12	4
24165-G3/8	G 3/8-19	16,662	19	70	20	28	12	9	12	4
24165-G1/2	G 1/2-14	20,955	14	80	22	35	16	12	15	6
24165-G3/4	G 3/4-14	26,441	14	90	22	27	20	16	19	6
24165-G1	G 1"-11	33,249	11	100	25	33	25	20	23	6

Diş ölçüsü 0,05 mm

HSS-E kılavuzlar, kısa

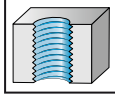
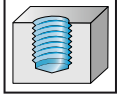
mm

KMB Ms



- Kısa talaş veren malzemeler için

G (BSP)
DIN EN ISO 228



\leq
 $3 \times D_N$

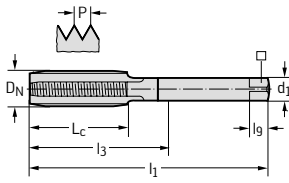
$F=1-1,5$

S

25HRC
850
-350
N/mm²

	P	M	K	N	S	H	O
kaplamasız				●			●

DIN 5157



Tanım	D _N -P	D _N mm	İç başına diş	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
24195-G1/8	G 1/8-28	9,728	28	63	20	40	7	5,5	8	3
24195-G1/4	G 1/4-19	13,157	19	70	20	41	11	9	12	4
24195-G3/8	G 3/8-19	16,662	19	70	20	28	12	9	12	4
24195-G1/2	G 1/2-14	20,955	14	80	22	35	16	12	15	6
24195-G3/4	G 3/4-14	26,441	14	90	22	27	20	16	19	6

Diş ölçüsü 0,1 mm

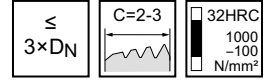
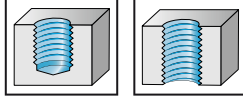
HSS-E-PM kılavuzlar

mm

Paradur® Eco CI



- Kısa talaş veren malzemeler için
- Nitratlanmış

G (BSP)
DIN EN ISO 228

	P	M	K	N	S	H	O
NiD			●●	●●			●●
TiCN			●●	●●			●●

DIN 5156

Tanım	D _N -P	D _N mm	İç başına diş	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
E24364-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	4
E24364-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	4
E24364-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	5
E24364-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	5
E24364-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	6
E24364-G1	G 1"-11	33,249	11	160	28	93	25	20	23	6
E24364-G1.1/4	G 1.1/4-11	41,91	11	170	28	72	32	24	27	6
E2436406-G1/8	G 1/8-28	9,728	28	90	20	67	7	5,5	8	4
E2436406-G1/4	G 1/4-19	13,157	19	100	21	71	11	9	12	4
E2436406-G3/8	G 3/8-19	16,662	19	100	21	58	12	9	12	5
E2436406-G1/2	G 1/2-14	20,955	14	125	24	80	16	12	15	5
E2436406-G3/4	G 3/4-14	26,441	14	140	26	77	20	16	19	6
E2436406-G1	G 1"-11	33,249	11	160	28	93	25	20	23	6
E2436406-G1.1/4	G 1.1/4-11	41,91	11	170	28	72	32	24	27	6
E2436406-G1.1/2	G 1.1/2-11	47,803	11	190	30	87	36	29	32	6

B4

HSS-E kılavuzlar

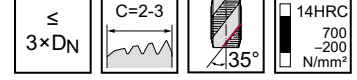
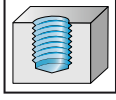
mm

Paradur® X-pert N



– Uzun talaş veren malzemeler için

G (BSP)
DIN EN ISO 228



	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 5156		Tanım	D _N -P	D _N mm	İnç başına diř	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
		N24566-G1/8	G 1/8-28	9,728	28	90	12	67	7	5,5	8	3

HSS-E kılavuzlar

mm

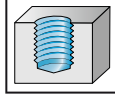
Paradur® X-pert N



– Uzun talaş veren malzemeler için

EgUNC
NASM 33537

3B


 \leq
3×DN

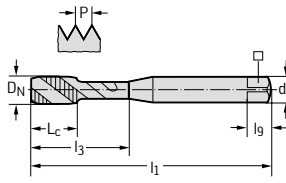
C=2-3



14HRC
700
-200
N/mm²

	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 2184-1



Tanım	D _N -P	D _N mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N225069-EGUNC6	EGUNC #6-32	4,536	70	8	25	6	4,9	8	2
N225069-EGUNC8	EGUNC #8-32	5,197	80	10	30	6	4,9	8	2
N225069-EGUNC10	EGUNC #10-24	6,201	80	10	30	7	5,5	8	2
N225069-EGUNC1/4	EGUNC 1/4-20	8	90	12	35	8	6,2	9	2

HSS-E kılavuzlar

mm

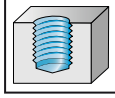
Paradur® X-pert N



– Uzun talař veren malzemeler için

EgUNF
NASM 33537

3B



\leq
 $3 \times D_N$

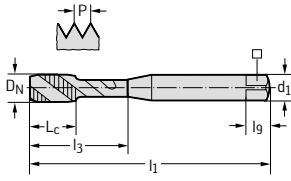
C=2-3

$\angle 35^\circ$

14HRC
700
-200
N/mm²

	P	M	K	N	S	H	O
kaplamasız				•	•		•

DIN 2184-1



Tanım	D _N -P	D _N mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N235069-EGUNF10	EGUNF #10-32	5,857	80	10	30	6	4,9	8	2
N235069-EGUNF1/4	EGUNF 1/4-28	7,528	90	12	35	8	6,2	9	3

HSS-E kılavuzlar

mm

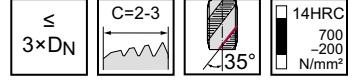
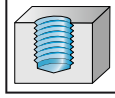
Paradur® X-pert N



– Uzun talaş veren malzemeler için

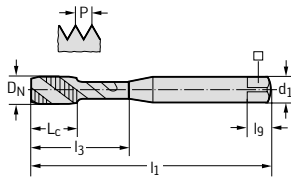
EgM
DIN 8140

6H mod



	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 40435



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N
N205069-EGM2.5	EGM 2.5	0,45	56	6	18	3,5	2,7	6	2
N205069-EGM3	EGM 3	0,5	63	7	21	4,5	3,4	6	2
N205069-EGM4	EGM 4	0,7	70	8	25	6	4,9	8	2
N205069-EGM5	EGM 5	0,8	80	10	30	6	4,9	8	3
N205069-EGM6	EGM 6	1	90	12	35	8	6,2	9	3
N205069-EGM8	EGM 8	1,25	100	15	39	10	8	11	3

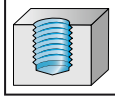
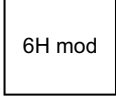
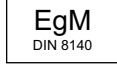
HSS-E kılavuzlar

mm

Paradur® X-pert N

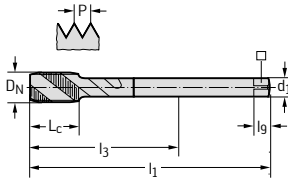


– Uzun talaş veren malzemeler için

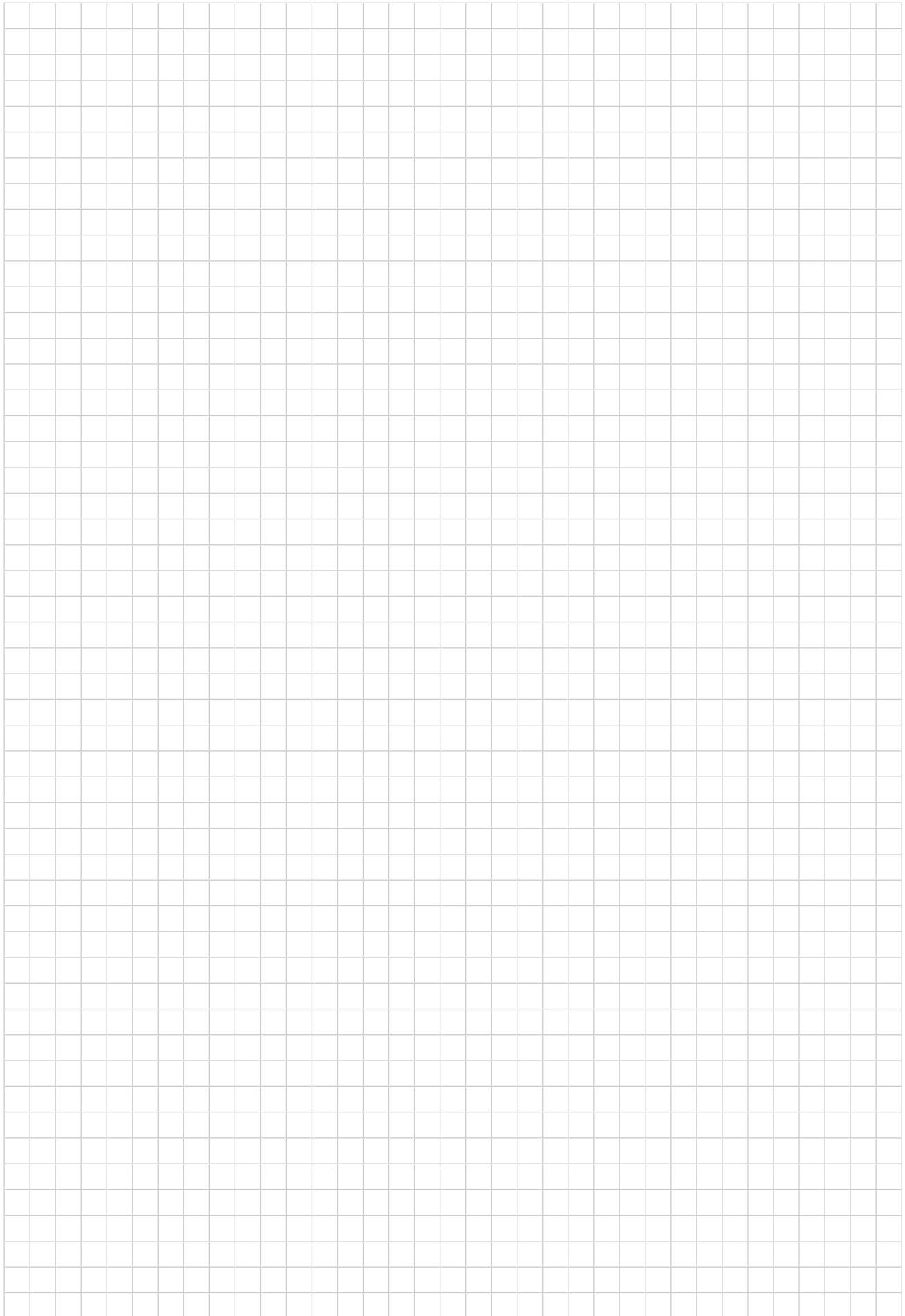


	P	M	K	N	S	H	O
kaplamasız				●	●		●

DIN 40435



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N
N205569-EGM10	EGM 10	1,5	100	13	73	9	7	10	3
N205569-EGM12	EGM 12	1,75	110	20	81	11	9	12	3
N205569-EGM16	EGM 16	2	125	25	81	14	11	14	4



B4

Güçlü performans – azaltılmış dönme torku.

TAKIM

- HSS-E-PM ovalama kılavuzu TC420 Supreme – evrensel
- Yağ kanallı ve kanalsız
- İçten soğutmalı (eksenel/radyal) ve dıştan soğutmalı
- Toleranslar: 6HX ve 6GX

Boyutlar

- Metrik: M2–M24
- Metrik ince: M8×1 – M16×1,5

KALİTE

- WW60AD (HSS-E-PM + TiN)
- WW60BA (HSS-E-PM + TiCN)

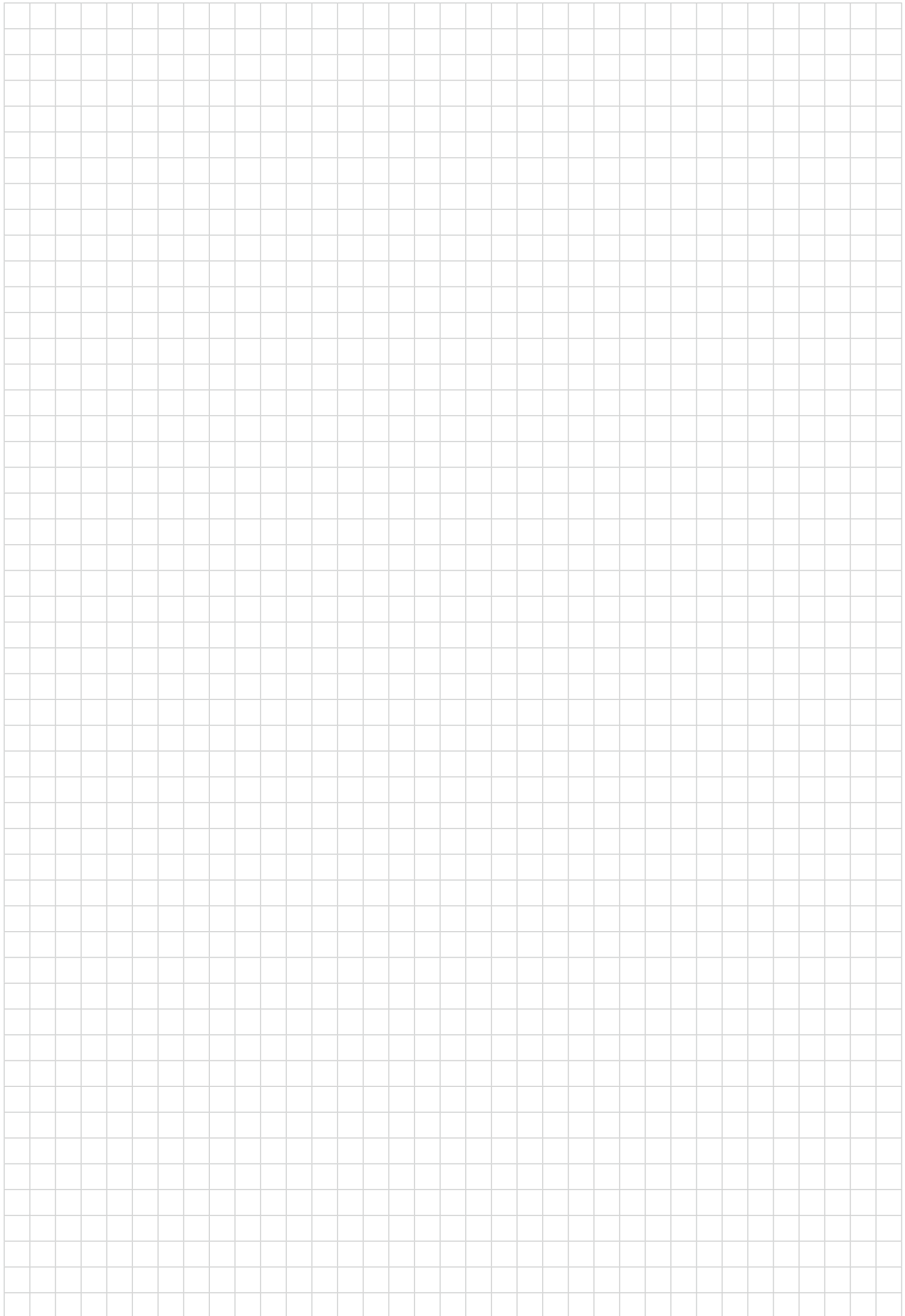
UYGULAMA

- Kör ve açık delik vida dişi
- $3,5 \times D_N$ 'ye kadar vida dişi derinliği
- ISO-malzeme grupları P, M, K ve N
- Tüm biçimlendirilebilir materyaller
- Kullanım alanları: Genel makine mühendisliği, otomotiv ve enerji endüstrisi vb.



AVANTAJLARINIZ

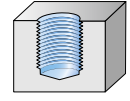
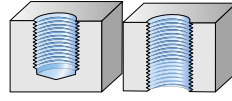
- Üniversal kullanım
- % 30'a kadar daha düşük dönme torku
- Yüksek kesme hızları mümkündür
- Diş açmaya kıyasla daha iyi yüzey



B5

Ovalama

İşleme



Vida dişi derinliği

 $3 \times D_N$
 $3 \times D_N$
 $3,5 \times D_N$
 $3,5 \times D_N$
 $3,5 \times D_N$

Selection

Selection

Selection

Selection

Selection



Tanım

TC420 Supreme

TC470 Supreme

TC420 Supreme

TC470 Supreme

TC420 Supreme

Diş türü

M

✓

✓

✓

✓

✓

MF

✓

✓

✓

UNC / UNF / UN-8

G / Rc / Rp

MJ / UNJC / UNJF

NPT / NPTF

Pg / BSW / Tr

Tel kovan vida dişi

Tolerans

6GX / 6HX

6HX

6GX / 6HX

6HX

6GX / 6HX

Soğutma sıvısı beslemesi

dıştan

dıştan

dıştan / radyal

dıştan / radyal

dıştan / aksenal

Ağızlama şekli

C

C

C

C

C / E

Kaplama / Kalite

WW60AD / WW60BA

WG20EL

WW60AD / WW60BA

WG20EL

WW60AD / WW60BA

Kesme malzemesi

HSS-E-PM

Karbür

HSS-E-PM

Karbür

HSS-E-PM

P Çelik

●●

●●

●●

●●

●●

M Paslanmaz çelik

●

●●

●●

K Dökme demir

●

●

●

●

●

N Demir dışı metaller

●●

●

●●

●

●●

S Zor işlenen malzemeler

●

●

●

H Sert malzemeler

O Diğerleri

Katalogdaki sayfa

132

154

136

155

134

QR kodu


www.walter-tools.com/woc/

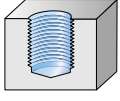
TC420

TC470

TC420

TC470

TC420

3,5 x D_N

Selection



TC470 Supreme

✓

✓

6HX

eksenel

C / E

WG20EL

Karbür

● ●

●

●

156



TC470

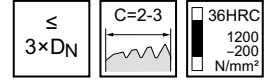
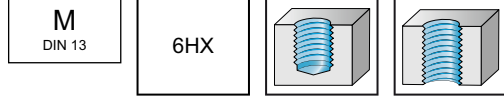
B5

HSS-E-PM ovalama kılavuzu

TC420 Supreme

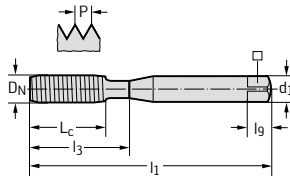


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 mm	h_9 mm	□ mm	l_g mm	N	WW60AD	WW60BA
TC420-M2-C0-	M 2	0,4	45	4	11	2,8	2,1	5	3	3	●	●
TC420-M2.5-C0-	M 2.5	0,45	50	4	14	2,8	2,1	5	3	3	●	●
TC420-M3-C0-	M 3	0,5	56	6	18	3,5	2,7	6	4	4	●	●
TC420-M3.5-C0-	M 3.5	0,6	56	7	20	4	3	6	4	4	●	●
TC420-M4-C0-	M 4	0,7	63	7	21	4,5	3,4	6	5	5	●	●
TC420-M5-C0-	M 5	0,8	70	8	25	6	4,9	8	5	5	●	●
TC420-M6-C0-	M 6	1	80	10	30	6	4,9	8	5	5	●	●
TC420-M8-C0-	M 8	1,25	90	12	35	8	6,2	9	5	5	●	●
TC420-M10-C0-	M 10	1,5	100	15	39	10	8	11	6	6	●	●

HSS-E-PM ovalama kılavuzu

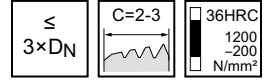
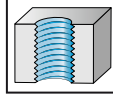
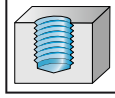
TC420 Supreme



– Uzun talaş veren malzemeler için

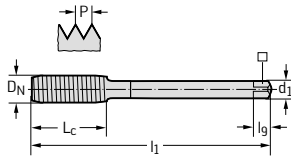
M
DIN 13

6HX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



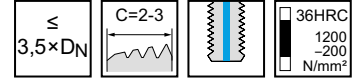
Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N	WW60AD	WW60BA
TC420-M12-L0-	M 12	1,75	110	16	83	9	7	10	6	●	●
TC420-M14-L0-	M 14	2	110	20	81	11	9	12	6	●	●
TC420-M16-L0-	M 16	2	110	20	68	12	9	12	6	●	●
TC420-M20-L0-	M 20	2,5	140	25	95	16	12	15	7	●	

HSS-E-PM ovalama kılavuzu

TC420 Supreme

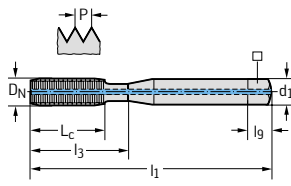


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



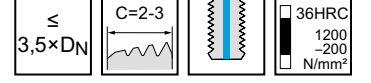
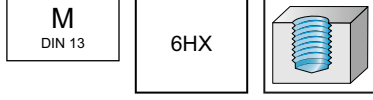
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_g mm	N	WW60AD	WW60BA
TC420-M5-C1-	M 5	0,8	70	8	25	6	4,9	8	5	●	●
TC420-M6-C1-	M 6	1	80	10	30	6	4,9	8	5	●	●
TC420-M8-C1-	M 8	1,25	90	12	35	8	6,2	9	5	●	●
TC420-M10-C1-	M 10	1,5	100	15	39	10	8	11	6	●	●

HSS-E-PM ovalama kılavuzu

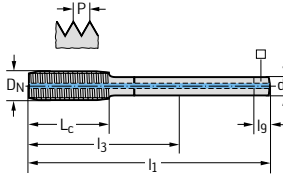
TC420 Supreme



– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

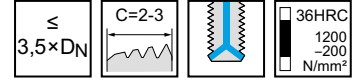
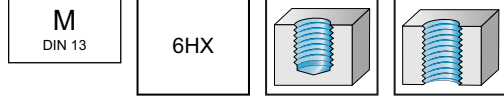
DIN 2174		Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	l_g mm	N	WW60AD	WW60BA
	TC420-M12-L1-	M 12	1,75	110	16	83	9	7	10	6	●	●
	TC420-M14-L1-	M 14	2	110	20	81	11	9	12	6	●	●
	TC420-M16-L1-	M 16	2	110	20	68	12	9	12	6	●	●

HSS-E-PM ovalama kılavuzu

TC420 Supreme

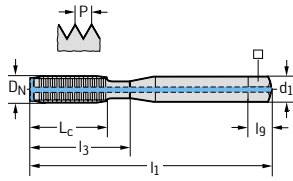


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



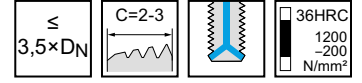
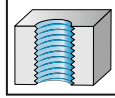
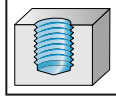
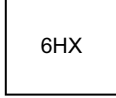
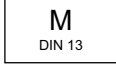
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_g mm	N	WW60AD	WW60BA
TC420-M5-C2-	M 5	0,8	70	8	25	6	4,9	8	5	●	●
TC420-M6-C2-	M 6	1	80	10	30	6	4,9	8	5	●	●
TC420-M8-C2-	M 8	1,25	90	12	35	8	6,2	9	5	●	●
TC420-M10-C2-	M 10	1,5	100	15	39	10	8	11	6	●	●

HSS-E-PM ovalama kılavuzu

TC420 Supreme

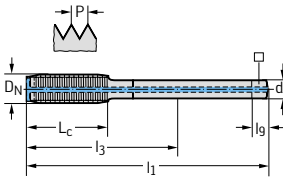


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N	WW60AD	WW60BA
TC420-M12-L2-	M 12	1,75	110	16	83	9	7	10	6	●	●
TC420-M14-L2-	M 14	2	110	20	81	11	9	12	6	●	●
TC420-M16-L2-	M 16	2	110	20	68	12	9	12	6	●	●
TC420-M20-L2-	M 20	2,5	140	25	95	16	12	15	7	●	●
TC420-M24-L2-	M 24	3	160	30	113	18	14,5	17	8	●	●

HSS-E-PM ovalama kılavuzu

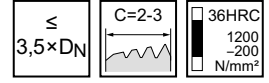
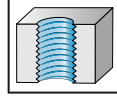
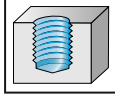
TC420 Supreme



– Uzun talaş veren malzemeler için

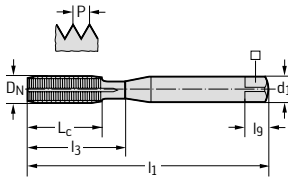
M
DIN 13

6HX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N	WW60AD	WW60BA
TC420-M2-C6-	M 2	0,4	45	4	11	2,8	2,1	5	3	●	●
TC420-M2.5-C6-	M 2.5	0,45	50	4	14	2,8	2,1	5	3	●	●
TC420-M3-C6-	M 3	0,5	56	6	18	3,5	2,7	6	4	●	●
TC420-M3.5-C6-	M 3.5	0,6	56	7	20	4	3	6	4	●	●
TC420-M4-C6-	M 4	0,7	63	7	21	4,5	3,4	6	5	●	●
TC420-M5-C6-	M 5	0,8	70	8	25	6	4,9	8	5	●	●
TC420-M6-C6-	M 6	1	80	10	30	6	4,9	8	5	●	●
TC420-M8-C6-	M 8	1,25	90	12	35	8	6,2	9	5	●	●
TC420-M10-C6-	M 10	1,5	100	15	39	10	8	11	6	●	●

HSS-E-PM ovalama kılavuzu

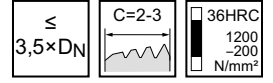
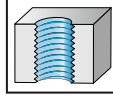
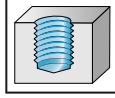
TC420 Supreme



– Uzun talaş veren malzemeler için

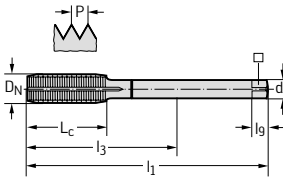
M
DIN 13

6HX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N	WW60AD	WW60BA
TC420-M12-L6-	M 12	1,75	110	16	83	9	7	10	6	●	●
TC420-M14-L6-	M 14	2	110	20	81	11	9	12	6	●	●
TC420-M16-L6-	M 16	2	110	20	68	12	9	12	6	●	●
TC420-M20-L6-	M 20	2,5	140	25	95	16	12	15	7	●	●

HSS-E-PM ovalama kılavuzu

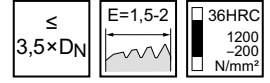
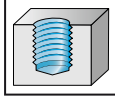
TC420 Supreme



– Uzun talaş veren malzemeler için

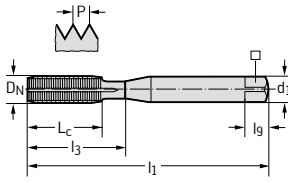
M
DIN 13

6HX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



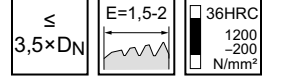
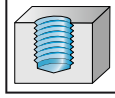
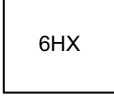
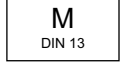
Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N	WW60AD	WW60BA
TC420-M2-CE-	M 2	0,4	45	4	11	2,8	2,1	5	3	●	●
TC420-M2.5-CE-	M 2.5	0,45	50	4	14	2,8	2,1	5	3	●	●
TC420-M3-CE-	M 3	0,5	56	6	18	3,5	2,7	6	4	●	●
TC420-M3.5-CE-	M 3.5	0,6	56	7	20	4	3	6	4	●	●
TC420-M4-CE-	M 4	0,7	63	7	21	4,5	3,4	6	5	●	●
TC420-M5-CE-	M 5	0,8	70	8	25	6	4,9	8	5	●	●
TC420-M6-CE-	M 6	1	80	10	30	6	4,9	8	5	●	●
TC420-M8-CE-	M 8	1,25	90	12	35	8	6,2	9	5	●	●
TC420-M10-CE-	M 10	1,5	100	15	39	10	8	11	6	●	●

HSS-E-PM ovalama kılavuzu

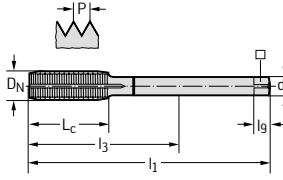
TC420 Supreme



– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

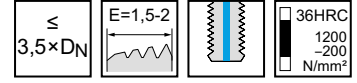
DIN 2174		Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N	WW60AD	WW60BA
	TC420-M12-LE-	M 12	1,75	110	16	83	9	7	10	6	●	●	
	TC420-M14-LE-	M 14	2	110	20	81	11	9	12	6	●	●	
	TC420-M16-LE-	M 16	2	110	20	68	12	9	12	6	●	●	

HSS-E-PM ovalama kılavuzu

TC420 Supreme

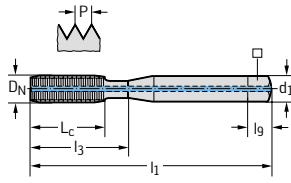


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_g mm	N	WW60AD	WW60BA
TC420-M5-CF-	M 5	0,8	70	8	25	6	4,9	8	5	●	●
TC420-M6-CF-	M 6	1	80	10	30	6	4,9	8	5	●	●
TC420-M8-CF-	M 8	1,25	90	12	35	8	6,2	9	5	●	●
TC420-M10-CF-	M 10	1,5	100	15	39	10	8	11	6	●	●

HSS-E-PM ovalama kılavuzu

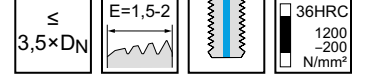
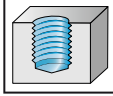
TC420 Supreme



– Uzun talaş veren malzemeler için

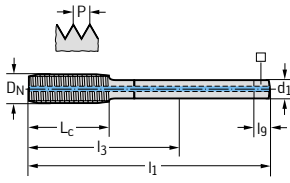
M
DIN 13



6HX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		

DIN 2174



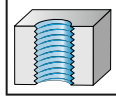
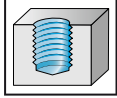
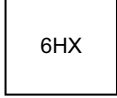
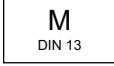
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	\square mm	l_9 mm	N	WW60AD
TC420-M12-LF-	M 12	1,75	110	16	83	9	7	10	6	
TC420-M16-LF-	M 16	2	110	20	68	12	9	12	6	

HSS-E-PM ovalama kılavuzu

TC420 Supreme

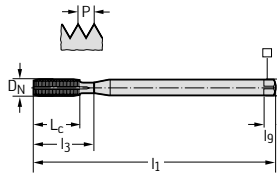


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		

~DIN 371 XL



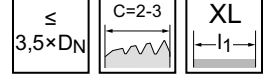
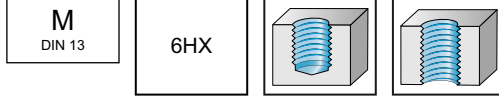
Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N	WW60AD
TC420-M3-CH-	M 3	0,5	125	6	18	3,5	2,7	6	4	●
TC420-M4-CH-	M 4	0,7	125	7	21	4,5	3,4	6	5	●
TC420-M5-CH-	M 5	0,8	140	8	25	6	4,9	8	5	●
TC420-M6-CH-	M 6	1	160	10	30	6	4,9	8	5	●

HSS-E-PM ovalama kılavuzu





TC420 Supreme

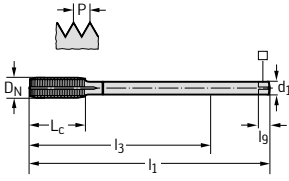


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		

~DIN 376 XL											WW60AD
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	\square mm	l_9 mm	N		
TC420-M8-LH-	M 8	1,25	180	13	157	6	4,9	8	5		
TC420-M10-LH-	M 10	1,5	200	15	177	7	5,5	8	6		
TC420-M12-LH-	M 12	1,75	220	16	193	9	7	10	6		
TC420-M16-LH-	M 16	2	220	20	178	12	9	12	6		

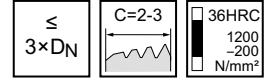
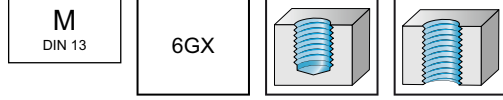


HSS-E-PM ovalama kılavuzu

TC420 Supreme

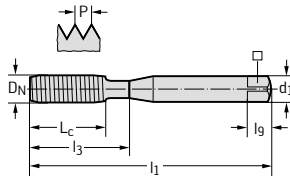


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 mm	h_9 mm	□ mm	l_g mm	N	WW60AD	WW60BA
TC420-M2-E0-	M 2	0,4	45	4	11	2,8	2,1	5	3	3	●	●
TC420-M2.5-E0-	M 2.5	0,45	50	4	14	2,8	2,1	5	3	3	●	●
TC420-M3-E0-	M 3	0,5	56	6	18	3,5	2,7	6	4	4	●	●
TC420-M3.5-E0-	M 3.5	0,6	56	7	20	4	3	6	4	4	●	●
TC420-M4-E0-	M 4	0,7	63	7	21	4,5	3,4	6	5	5	●	●
TC420-M5-E0-	M 5	0,8	70	8	25	6	4,9	8	5	5	●	●
TC420-M6-E0-	M 6	1	80	10	30	6	4,9	8	5	5	●	●
TC420-M8-E0-	M 8	1,25	90	12	35	8	6,2	9	5	5	●	●
TC420-M10-E0-	M 10	1,5	100	15	39	10	8	11	6	6	●	●

HSS-E-PM ovalama kılavuzu

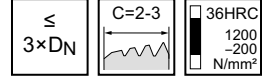
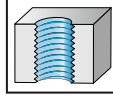
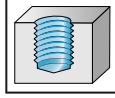
TC420 Supreme



– Uzun talaş veren malzemeler için

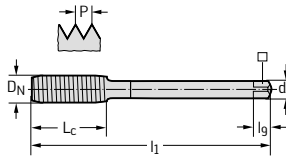
M
DIN 13




6GX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		

DIN 2174



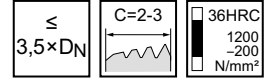
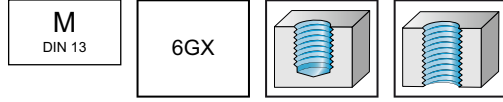
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	\square mm	l_g mm	N	WW60AD
TC420-M12-N0-	M 12	1,75	110	16	83	9	7	10	6	
TC420-M14-N0-	M 14	2	110	20	81	11	9	12	6	
TC420-M16-N0-	M 16	2	110	20	68	12	9	12	6	

HSS-E-PM ovalama kılavuzu

TC420 Supreme

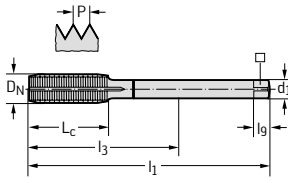


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 mm	h_9 mm	mm	l_9 mm	N	WW60AD	WW60BA
TC420-M2-E6-	M 2	0,4	45	4	11	2,8	2,1	5	3	3	●	●
TC420-M2.5-E6-	M 2.5	0,45	50	4	14	2,8	2,1	5	3	3	●	●
TC420-M3-E6-	M 3	0,5	56	6	18	3,5	2,7	6	4	4	●	●
TC420-M3.5-E6-	M 3.5	0,6	56	7	20	4	3	6	4	4	●	●
TC420-M4-E6-	M 4	0,7	63	7	21	4,5	3,4	6	5	5	●	●
TC420-M5-E6-	M 5	0,8	70	8	25	6	4,9	8	5	5	●	●
TC420-M6-E6-	M 6	1	80	10	30	6	4,9	8	5	5	●	●
TC420-M8-E6-	M 8	1,25	90	12	35	8	6,2	9	5	5	●	●
TC420-M10-E6-	M 10	1,5	100	15	39	10	8	11	6	6	●	●

HSS-E-PM ovalama kılavuzu

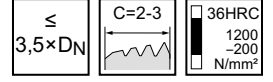
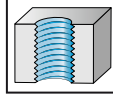
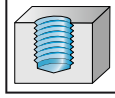
TC420 Supreme



– Uzun talaş veren malzemeler için

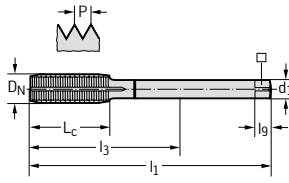
M
DIN 13




6GX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		

DIN 2174



Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_9 mm	N	WW60AD
TC420-M12-N6-	M 12	1,75	110	16	83	9	7	10	6	
TC420-M14-N6-	M 14	2	110	20	81	11	9	12	6	
TC420-M16-N6-	M 16	2	110	20	68	12	9	12	6	

HSS-E-PM ovalama kılavuzu

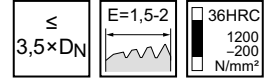
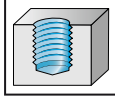
TC420 Supreme



– Uzun talaş veren malzemeler için

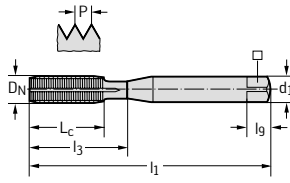
M
DIN 13

6GX



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



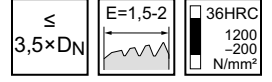
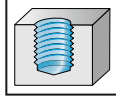
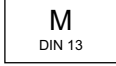
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	\square mm	l_g mm	N	WW60AD	WW60BA
TC420-M2-EE-	M 2	0,4	45	4	11	2,8	2,1	5	3	●	●
TC420-M2.5-EE-	M 2.5	0,45	50	4	14	2,8	2,1	5	3	●	●
TC420-M3-EE-	M 3	0,5	56	6	18	3,5	2,7	6	4	●	●
TC420-M4-EE-	M 4	0,7	63	7	21	4,5	3,4	6	5	●	●
TC420-M5-EE-	M 5	0,8	70	8	25	6	4,9	8	5	●	●
TC420-M6-EE-	M 6	1	80	10	30	6	4,9	8	5	●	●
TC420-M8-EE-	M 8	1,25	90	12	35	8	6,2	9	5	●	●
TC420-M10-EE-	M 10	1,5	100	15	39	10	8	11	6	●	●

HSS-E-PM ovalama kılavuzu

TC420 Supreme

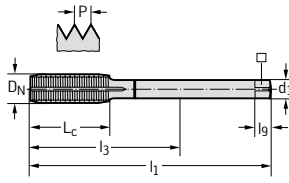





– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		

DIN 2174



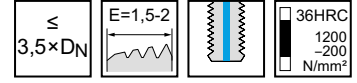
Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N	WW60AD
TC420-M12-NE-	M 12	1,75	110	16	83	9	7	10	6	
TC420-M14-NE-	M 14	2	110	20	81	11	9	12	6	
TC420-M16-NE-	M 16	2	110	20	68	12	9	12	6	

HSS-E-PM ovalama kılavuzu

TC420 Supreme

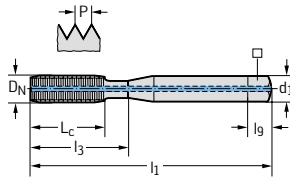


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



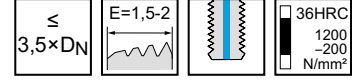
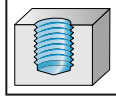
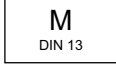
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	□ mm	l_g mm	N	WW60AD	WW60BA
TC420-M5-EF-	M 5	0,8	70	8	25	6	4,9	8	5	●	●
TC420-M6-EF-	M 6	1	80	10	30	6	4,9	8	5	●	●
TC420-M8-EF-	M 8	1,25	90	12	35	8	6,2	9	5	●	●
TC420-M10-EF-	M 10	1,5	100	15	39	10	8	11	6	●	●

HSS-E-PM ovalama kılavuzu

TC420 Supreme

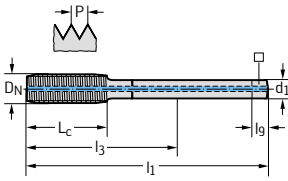




– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●●	●●	●●	●●	●		

DIN 2174



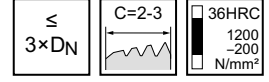
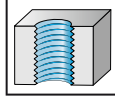
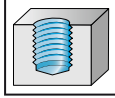
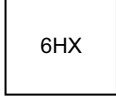
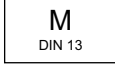
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h9 mm	\square mm	l_9 mm	N	WW60AD
TC420-M12-NF-	M 12	1,75	110	16	83	9	7	10	6	
TC420-M16-NF-	M 16	2	110	20	68	12	9	12	6	

Karbür ovalama kılavuzu

TC470 Supreme

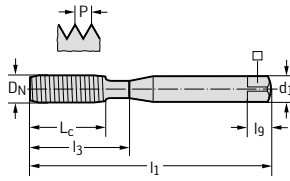


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WG20EL	●●		●	●			

DIN 2174



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h6 mm	□ mm	l ₉ mm	N	WG20EL
TC470-M3-C0-	M 3	0,5	56	10	10	3,5	2,7	6	4	●
TC470-M4-C0-	M 4	0,7	63	13	13	4,5	3,4	6	5	●
TC470-M5-C0-	M 5	0,8	70	16	16	6	4,9	8	5	●
TC470-M6-C0-	M 6	1	80	10	30	6	4,9	8	5	●
TC470-M8-C0-	M 8	1,25	90	12	35	8	6,2	9	6	●
TC470-M10-C0-	M 10	1,5	100	15	39	10	8	11	7	●

Karbür ovalama kılavuzu

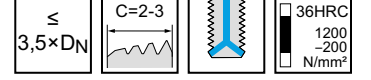
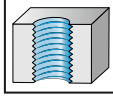
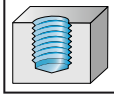
TC470 Supreme



– Uzun talaş veren malzemeler için

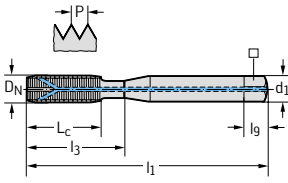
M
DIN 13

6HX



	P	M	K	N	S	H	O
WG20EL	●●	●	●	●	●	●	●

DIN 2174



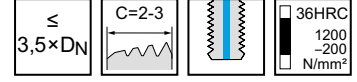
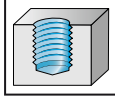
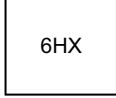
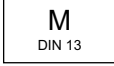
Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h6 mm	□ mm	l _g mm	N	WG20EL
TC470-M6-C2-	M 6	1	80	10	30	6	4,9	8	5	●●
TC470-M8-C2-	M 8	1,25	90	12	35	8	6,2	9	6	●●
TC470-M10-C2-	M 10	1,5	100	15	39	10	8	11	7	●●

Karbür ovalama kılavuzu

TC470 Supreme

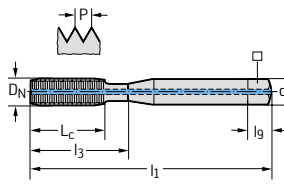


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WG20EL	●	●	●	●			

DIN 2174



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h6 mm	□ mm	l ₉ mm	N	WG20EL
TC470-M5-C5-	M 5	0,8	70	16	16	6	4,9	8	5	●
TC470-M6-C5-	M 6	1	80	10	30	6	4,9	8	5	●
TC470-M8-C5-	M 8	1,25	90	12	35	8	6,2	9	6	●
TC470-M10-C5-	M 10	1,5	100	15	39	10	8	11	7	●

Karbür ovalama kılavuzu

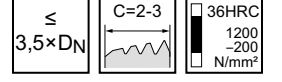
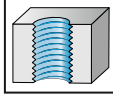
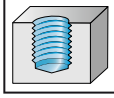
TC470 Supreme



– Uzun talaş veren malzemeler için

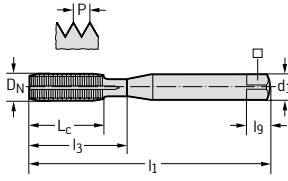
M
DIN 13

6HX



	P	M	K	N	S	H	O
WG20EL	●	●	●	●			

DIN 2174



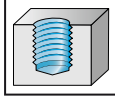
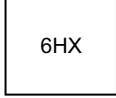
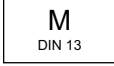
Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h6 mm	□ mm	l _g mm	N	WG20EL
TC470-M3-C6-	M 3	0,5	56	10	10	3,5	2,7	6	4	●
TC470-M4-C6-	M 4	0,7	63	13	13	4,5	3,4	6	5	●
TC470-M5-C6-	M 5	0,8	70	16	16	6	4,9	8	5	●
TC470-M6-C6-	M 6	1	80	10	30	6	4,9	8	5	●
TC470-M8-C6-	M 8	1,25	90	12	35	8	6,2	9	6	●
TC470-M10-C6-	M 10	1,5	100	15	39	10	8	11	7	●

Karbür ovalama kılavuzu

TC470 Supreme

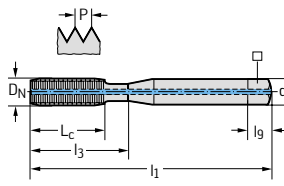


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WG20EL	●	●	●	●			

DIN 2174



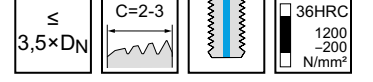
Tanım	D_N	P mm	l_1 mm	L_c mm	l_3 mm	d_1 h6 mm	□ mm	l_g mm	N	WG20EL
TC470-M5-CE-	M 5	0,8	70	16	16	6	4,9	8	5	●
TC470-M6-CE-	M 6	1	80	10	30	6	4,9	8	5	●
TC470-M8-CE-	M 8	1,25	90	12	35	8	6,2	9	6	●
TC470-M10-CE-	M 10	1,5	100	15	39	10	8	11	7	●

HSS-E-PM ovalama kılavuzu

TC420 Supreme

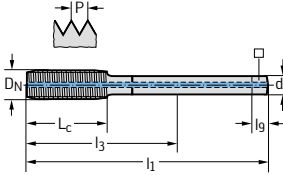


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		

DIN 2174											WW60AD
Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N		
TC420-M8X1-L1-	MF 8x1	1	90	12	67	6	4,9	8	5	●	
TC420-M10X1-L1-	MF 10x1	1	90	12	67	7	5,5	8	6	●	
TC420-M12X1-L1-	MF 12x1	1	100	13	73	9	7	10	6	●	
TC420-M12X1.5-L1-	MF 12x1.5	1,5	100	13	73	9	7	10	6	●	
TC420-M14X1.5-L1-	MF 14x1.5	1,5	100	15	71	11	9	12	6	●	

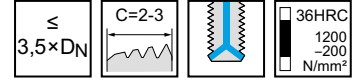
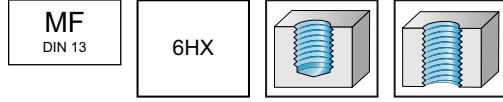


HSS-E-PM ovalama kılavuzu

TC420 Supreme

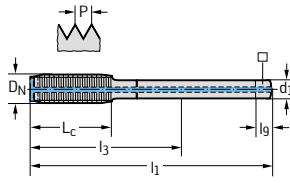


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



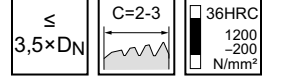
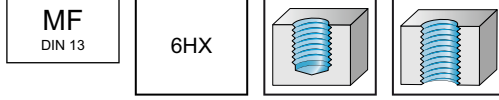
Tanım	DN	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N	WW60AD	WW60BA
TC420-M8X1-L2-	MF 8x1	1	90	12	67	6	4,9	8	5	●	●
TC420-M10X1-L2-	MF 10x1	1	90	12	67	7	5,5	8	6	●	●
TC420-M12X1-L2-	MF 12x1	1	100	13	73	9	7	10	6	●	●
TC420-M12X1.5-L2-	MF 12x1.5	1,5	100	13	73	9	7	10	6	●	●
TC420-M14X1.5-L2-	MF 14x1.5	1,5	100	15	71	11	9	12	6	●	●
TC420-M16X1.5-L2-	MF 16x1.5	1,5	100	15	58	12	9	12	6	●	●

HSS-E-PM ovalama kılavuzu

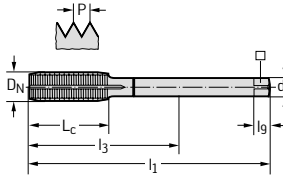
TC420 Supreme



– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

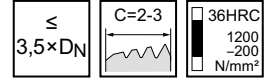
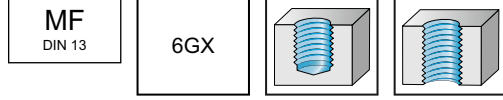
DIN 2174		Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l _g mm	N	WW60AD	WW60BA
	TC420-M8X1-L6-	MF 8x1	1	90	12	67	6	4,9	8	5	●	●	
	TC420-M10X1-L6-	MF 10x1	1	90	12	67	7	5,5	8	6	●	●	
	TC420-M12X1-L6-	MF 12x1	1	100	13	73	9	7	10	6	●	●	
	TC420-M12X1.5-L6-	MF 12x1.5	1,5	100	13	73	9	7	10	6	●	●	
	TC420-M14X1-L6-	MF 14x1	1	100	15	71	11	9	12	6	●	●	
	TC420-M14X1.25-L6-	MF 14x1.25	1,25	100	15	71	11	9	12	6	●	●	
	TC420-M14X1.5-L6-	MF 14x1.5	1,5	100	15	71	11	9	12	6	●	●	
	TC420-M16X1.5-L6-	MF 16x1.5	1,5	100	15	58	12	9	12	6	●	●	

HSS-E-PM ovalama kılavuzu

TC420 Supreme

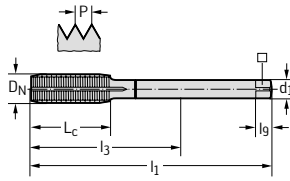


– Uzun talaş veren malzemeler için



	P	M	K	N	S	H	O
WW60AD	●	●	●	●	●		
WW60BA	●	●	●	●	●		

DIN 2174



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h9 mm	□ mm	l ₉ mm	N	WW60AD	WW60BA
TC420-M8X1-N6-	MF 8x1	1	90	12	67	6	4,9	8	5	●	●
TC420-M10X1-N6-	MF 10x1	1	90	12	67	7	5,5	8	6	●	●
TC420-M12X1-N6-	MF 12x1	1	100	13	73	9	7	10	6	●	●
TC420-M12X1.5-N6-	MF 12x1.5	1,5	100	13	73	9	7	10	6	●	●
TC420-M14X1.5-N6-	MF 14x1.5	1,5	100	15	71	11	9	12	6	●	●
TC420-M16X1.5-N6-	MF 16x1.5	1,5	100	15	58	12	9	12	6	●	●

Karbür ovalama kılavuzu

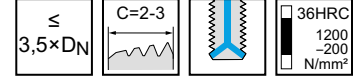
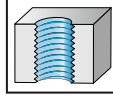
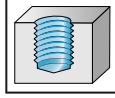
TC470 Supreme



– Uzun talaş veren malzemeler için

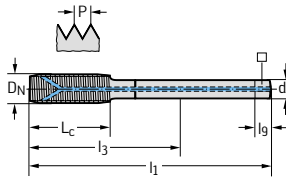
MF
DIN 13

6HX



	P	M	K	N	S	H	O
WG20EL	●●		●	●			

DIN 2174



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h6 mm	□ mm	l ₉ mm	N	WG20EL
TC470-M12X1.5-L2-	MF 12x1.5	1,5	100	13	73	9	7	10	8	●●
TC470-M14X1.5-L2-	MF 14x1.5	1,5	100	15	58	11	9	12	8	●●
TC470-M16X1.5-L2-	MF 16x1.5	1,5	100	15	58	12	9	12	8	●●

Karbür ovalama kılavuzu

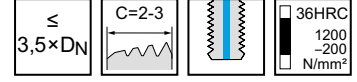
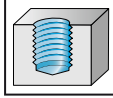
TC470 Supreme



– Uzun talaş veren malzemeler için

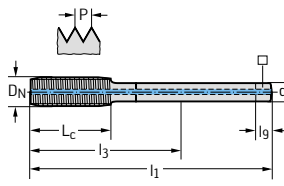
MF
DIN 13

6HX

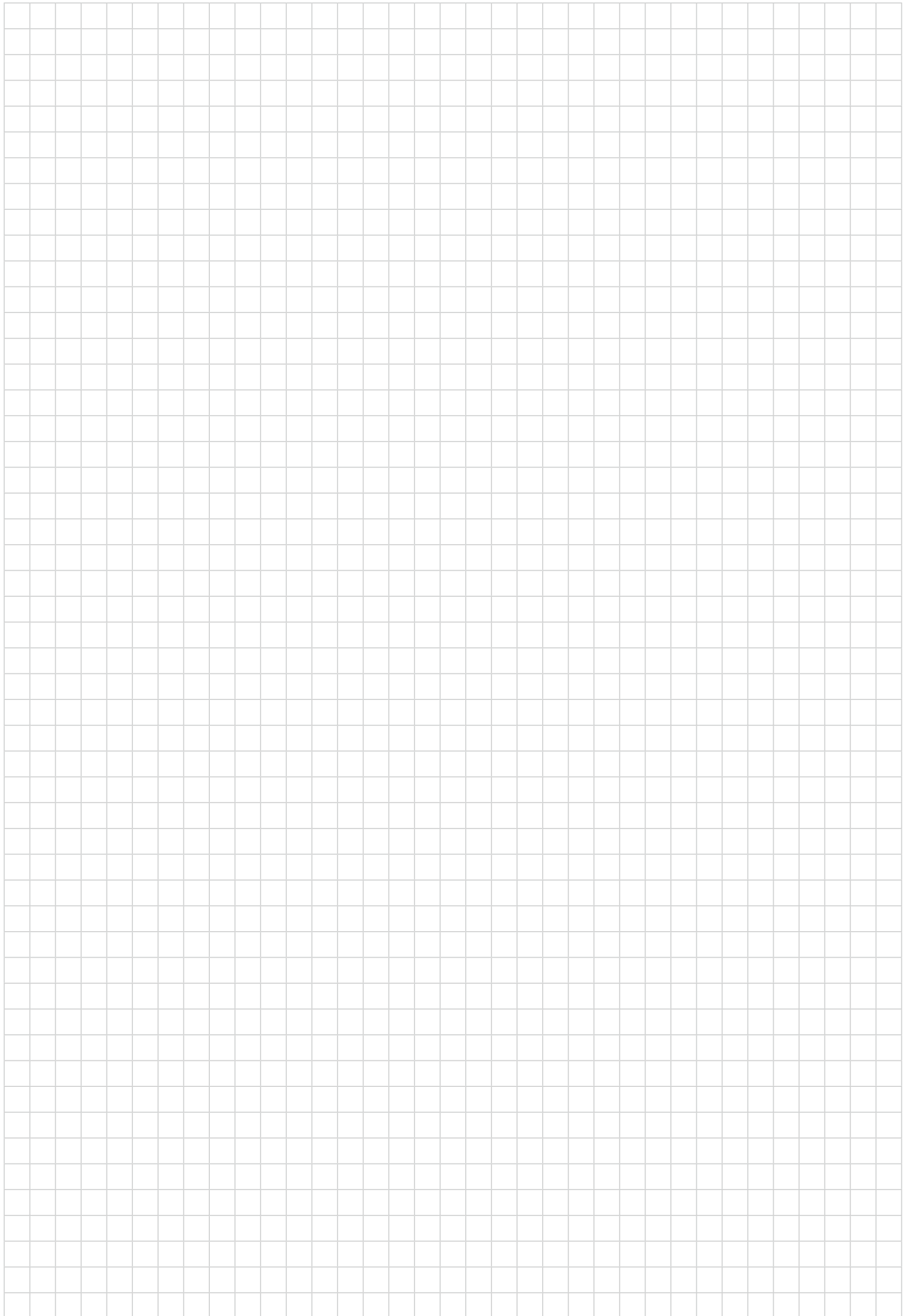


	P	M	K	N	S	H	O
WG20EL	●	●	●	●			

DIN 2174



Tanım	D _N	P mm	l ₁ mm	L _c mm	l ₃ mm	d ₁ h6 mm	□ mm	l ₉ mm	N	WG20EL
TC470-M10X1-L5-	MF 10x1	1	90	14	67	7	5,5	8	7	●
TC470-M12X1.5-L5-	MF 12x1.5	1,5	100	13	73	9	7	10	8	●
TC470-M14X1.5-L5-	MF 14x1.5	1,5	100	15	58	11	9	12	8	●
TC470-M16X1.5-L5-	MF 16x1.5	1,5	100	15	58	12	9	12	8	●



B5

DeVibe ve Multirow tasarımı – daha az titreşim ve kesme baskısı.

TAKIM

- Üniversal uygulama çok sıralı diş frezesi
- Titreşim sönümlenme için Walter DeVibe teknolojisi
- Yüksek diş başı ilerlemelerde de güvenli talaş boşaltma için içten soğutma
- M4–M20 (M8–M20'den DeVibe)
M4×0,5–M20×1,5 (M8×1–M20×1,5'ten DeVibe)
UNC8–UNC¼ (UNC5/16–UNC¼'ten DeVibe)
UNF10–UNF¼ (UNF5/16–UNF¼'ten DeVibe)

UYGULAMA

- 48 HRC'ye kadar ISO malzemeler P, M, K, N ve S
- Kör ve açık delik vida dişi
- Vida dişi derinlikleri 2 ve 2,5 × D_N
- Yüksek proses güvenilirliği talepleri için ideal (örn. pahalı iş parçalarında)



Seçime bağlı: Walter DeVibe
M8, MF8'den itibaren –
UNC 5/16, UNF 5/16



Verimli kalite WB10TJ – çeşitli malzemelerde
çok yüksek performans için

Çok sıralı tasarım – düşük kesme kuvvetleri
ve ölçüye mükemmel uygunluk

İçten soğutma – yüksek diş başı
ilerlemelerde de güvenli talaş boşaltma



TC620 Supreme 2,5 × D_N

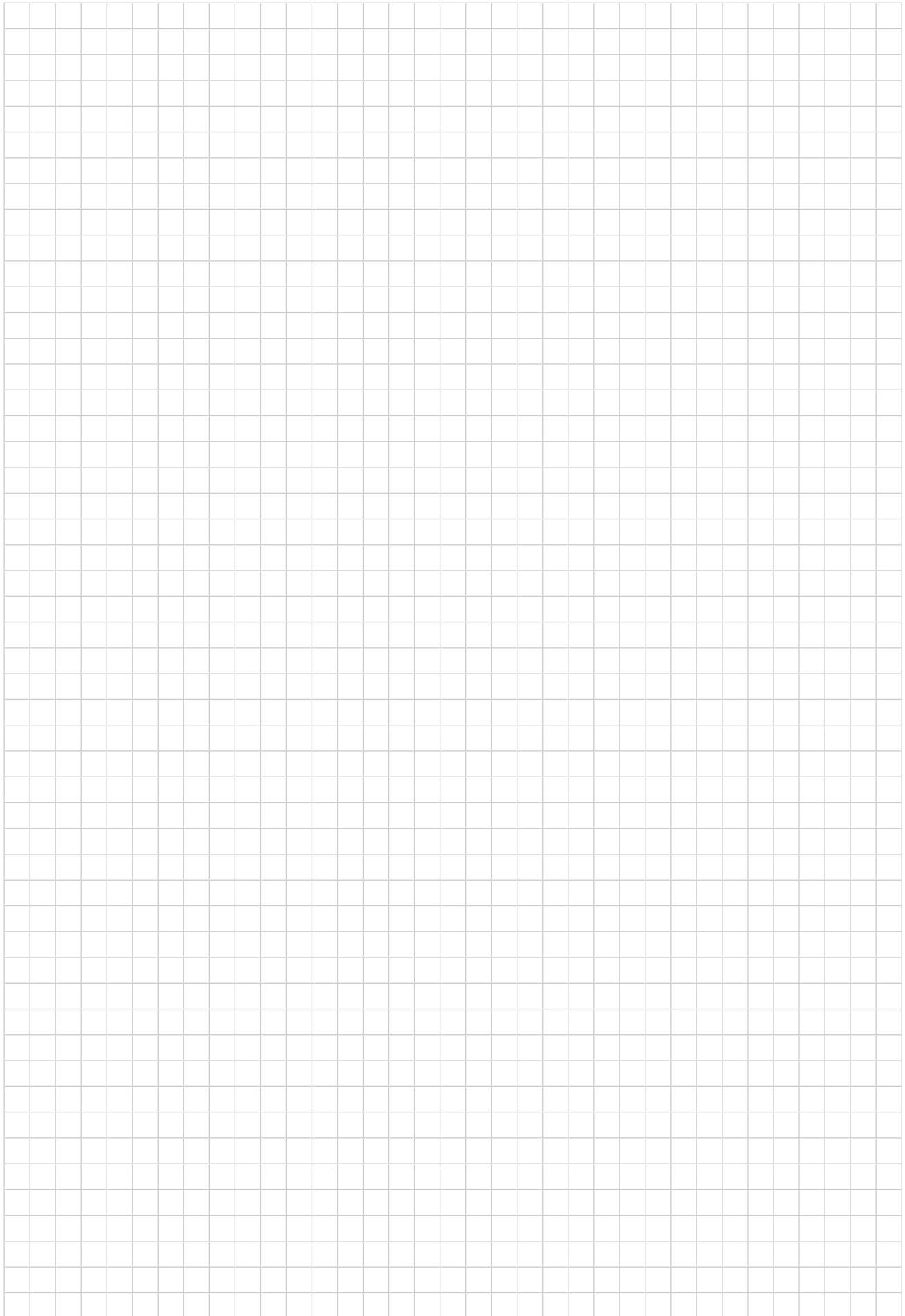
Şek.: TC620E-W_TJ_P_02

TC620 Supreme 2 × D_N

Şek.: TC620D-W_TJ_P_02

AVANTAJLARINIZ

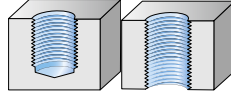
- Kısa işleme zamanı ve yüksek işleme miktarı sayesinde vida dişi başına düşük maliyet
- Çok nadir radyüs düzeltme ihtiyacı ile yüksek proses güvenilirliği ve kolay kullanım
- Walter DeVibe teknolojisi: zorlu koşullarda bile güvenli işleme
- Çok çeşitli malzemelerde üniversal kullanım



B6

Diş frezeleme

İşleme



Vida dişi derinliği



 2 x D_N

 2,5 x D_N

Selection

Selection



Tanım	TC620 Supreme	TC620 Supreme
Diş türü		
M	✓	✓
MF	✓	✓
UNC / UNF / UN-8	✓	✓
G / Rc / Rp		
MJ / UNJC / UNJF		
NPT / NPTF		
Pg / BSW / Tr		
Tel kovan vida dişi	✓	✓
Tolerans		
Soğutma sıvısı beslemesi	eksenel	eksenel
Ağızlama şekli		
Kaplama / Kalite	WB10TJ	WB10TJ
Kesme malzemesi	Karbür	Karbür
P Çelik	●●	●●
M Paslanmaz çelik	●●	●●
K Dökme demir	●●	●●
N Demir dışı metaller	●●	●●
S Zor işlenen malzemeler	●●	●●
H Sert malzemeler		
O Diğerleri	●	●
Katalogdaki sayfa	170	171
QR kodu		
www.walter-tools.com/woc/	TC620	TC620

B6

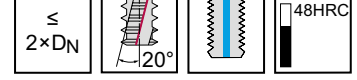
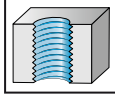
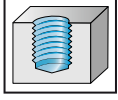
Çok sıralı dış frezesi

TC620 Supreme



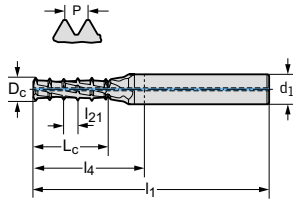
- Üniversal çok sıralı dış frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

M-MF
DIN 13



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım



DIN 6535 HA

Tanım	D _N	P mm	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-M4-A1D-	M 4	0,7	3,1	1,4	8,4	21	57	6	3	●
TC620-M5-A1D-	M 5	0,8	3,9	1,6	10,4	21	57	6	3	●
TC620-M6-A1D-	M 6	1	4,7	2	12	21	57	6	4	●
TC620-M8-A1D-	M 8	1,25	6,3	2,5	16,3	27	63	8	4	●
TC620-M10-A1D-	M 10	1,5	7,9	3	21	27	63	8	4	●
TC620-M12-A1D-	M 12	1,75	9,6	3,5	24,5	32	72	10	4	●
TC620-M14-A1D-	M 14	2	11,2	4	28	38	83	12	4	●
TC620-M16-A1D-	M 16	2	13,1	4	32	44	92	16	5	●
TC620-M20-A1D-	M 20	2,5	16,4	5	40	58	106	18	5	●

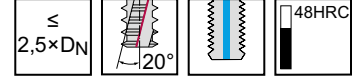
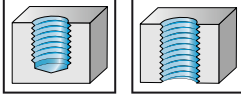
Çok sıralı diş frezesi

TC620 Supreme



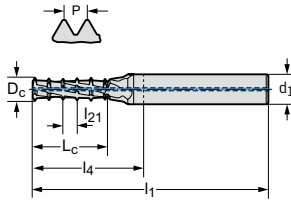
- Ünsersal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

M-MF
DIN 13



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım



DIN 6535 HA

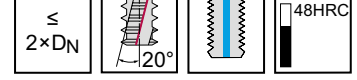
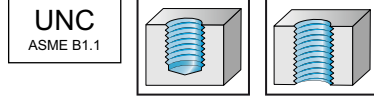
Tanım	D _N	P mm	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-M4-A1E-	M 4	0,7	3,1	2,1	10,5	21	57	6	3	●
TC620-M5-A1E-	M 5	0,8	3,9	2,4	12,8	21	57	6	3	●
TC620-M6-A1E-	M 6	1	4,7	3	15	21	57	6	4	●
TC620-M8-A1E-	M 8	1,25	6,3	3,75	20	27	63	8	4	●
TC620-M10-A1E-	M 10	1,5	7,9	4,5	27	36	72	8	4	●
TC620-M12-A1E-	M 12	1,75	9,6	5,25	31,5	43	83	10	4	●
TC620-M14-A1E-	M 14	2	11,2	6	36	55	100	12	4	●
TC620-M16-A1E-	M 16	2	13,1	6	42	58	106	16	5	●
TC620-M20-A1E-	M 20	2,5	16,4	7,5	52,5	68	116	18	5	●

Çok sıralı dış frezesi

TC620 Supreme



- Üniversal çok sıralı dış frezesi
- Yüksek kesme hızları ve diş başı ilerleme için



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım	Tanım	D_N	İç başına diş	D_c mm	l_{21} mm	L_c mm	l_4 mm	l_1 mm	d_1 mm	Z	WB10TJ
<p>DIN 6535 HA</p>	TC620-UNC8-A1D-	UNC #8-32	32	3,1	1,59	8,7	21	57	6	3	☺
	TC620-UNC10-A1D-	UNC #10-24	24	3,5	2,12	10,6	21	57	6	3	☺
	TC620-UNC1/4-A1D-	UNC 1/4-20	20	4,7	2,54	12,7	21	57	6	3	☺
	TC620-UNC5/16-A1D-	UNC 5/16-18	18	6,1	2,82	16,9	27	63	8	4	☺
	TC620-UNC3/8-A1D-	UNC 3/8-16	16	7,4	3,18	19,1	27	63	8	4	☺
	TC620-UNC1/2-A1D-	UNC 1/2-13	13	10,1	3,91	25,4	38	83	12	4	☺
	TC620-UNC5/8-A1D-	UNC 5/8-11	11	12,7	4,62	32,3	44	92	16	4	☺
	TC620-UNC3/4-A1D-	UNC 3/4-10	10	15,5	5,08	38,1	56	104	16	5	☺
	TC620-UNC7/8-A1D-	UNC 7/8-9	9	18	5,64	45,2	67	115	18	5	☺

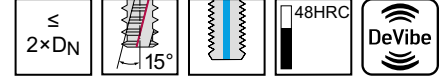
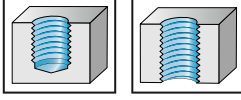
Çok sıralı diş frezesi

TC620 Supreme



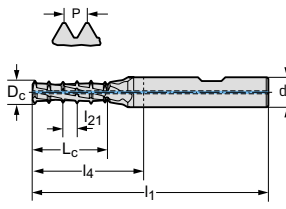
- Ünsersal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

M-MF
DIN 13



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım



DIN 6535 HB

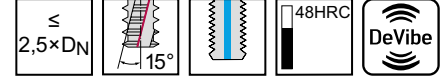
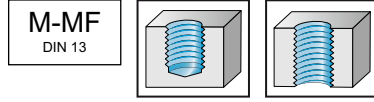
Tanım	D _N	P mm	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-M8-W5D-	M 8	1,25	6,3	2,5	16,3	27	63	8	4	●
TC620-M10-W5D-	M 10	1,5	7,9	3	21	32	68	8	4	●
TC620-M12-W5D-	M 12	1,75	9,6	3,5	24,5	38	78	10	4	●
TC620-M14-W5D-	M 14	2	11,2	4	28	45	90	12	4	●
TC620-M16-W5D-	M 16	2	13,1	4	32	44	92	16	5	●
TC620-M18-W5D-	M 18	2,5	14,5	5	37,5	52	100	16	5	●
TC620-M20-W5D-	M 20	2,5	16,4	5	40	57	105	18	5	●

Çok sıralı diş frezesi

TC620 Supreme

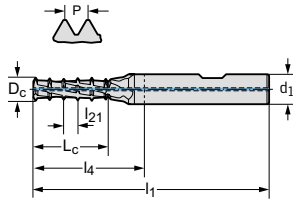


- Üniversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım											WB10TJ
Tanım	D_N	P mm	D_c mm	l_{21} mm	L_c mm	l_4 mm	l_1 mm	d_1 mm	Z		
TC620-M8-W5E-	M 8	1,25	6,3	3,75	20	32	68	8	4	●	
TC620-M10-W5E-	M 10	1,5	7,9	4,5	27	39	75	8	4	●	
TC620-M12-W5E-	M 12	1,75	9,6	5,25	31,5	45	85	10	4	●	
TC620-M14-W5E-	M 14	2	11,2	6	36	55	100	12	4	●	
TC620-M16-W5E-	M 16	2	13,1	6	42	58	106	16	5	●	
TC620-M18-W5E-	M 18	2,5	14,5	7,5	45	60	108	16	5	●	
TC620-M20-W5E-	M 20	2,5	16,4	7,5	52,5	67	115	18	5	●	



DIN 6535 HB

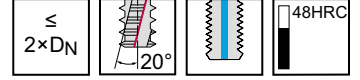
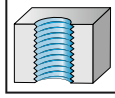
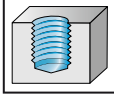
Çok sıralı diş frezesi

TC620 Supreme



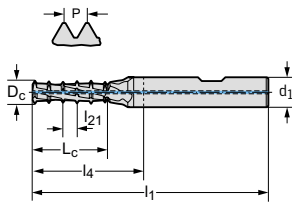
- Üniversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

MF
DIN 13



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım



DIN 6535 HB

Tanım	D _N	P mm	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-M4X0.5-W1D-	MF 4X0.5	0,5	3,2	1	8	21	57	6	4	●
TC620-M6X0.75-W1D-	MF 6X0.75	0,75	4,9	1,5	12	21	57	6	4	●

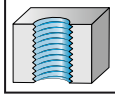
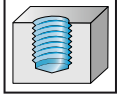
Çok sıralı diş frezesi

TC620 Supreme



- Üniversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

MF
DIN 13



\leq
2×DN

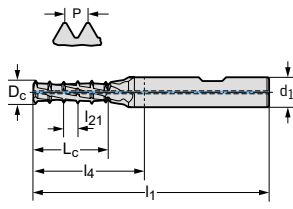


48HRC



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım



DIN 6535 HB

Tanım	DN	P mm	Dc mm	l ₂₁ mm	Lc mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-M8X1-W5D-	MF 8X1	1	6,5	2	16	27	63	8	4	●
TC620-M10X1.25W5D-	M10X1.25	1,25	8,2	2,5	20	32	72	10	5	●
TC620-M10X1-W5D-	MF 10X1	1	8,4	2	20	32	72	10	5	●
TC620-M12X1.5-W5D-	MF 12X1.5	1,5	9,8	3	24	38	78	10	5	●
TC620-M12X1.25W5D-	MF 12X1.25	1,25	10	2,5	25	38	78	10	5	●
TC620-M12X1-W5D-	MF 12X1	1	10,3	2	24	38	83	12	6	●
TC620-M14X1.5-W5D-	MF 14X1.5	1,5	11,7	3	28,5	44	89	12	5	●
TC620-M16X1.5-W5D-	MF 16X1.5	1,5	13,6	3	33	44	92	16	6	●
TC620-M18X1.5-W5D-	MF 18X1.5	1,5	15,5	3	36	52	100	16	6	●
TC620-M20X1.5-W5D-	MF 20X1.5	1,5	17,3	3	40,5	57	105	18	7	●

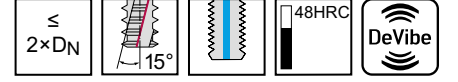
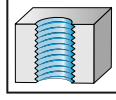
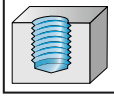
Çok sıralı diş frezesi

TC620 Supreme



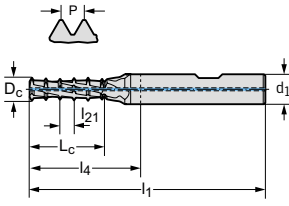
- Ünlversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

UNC
ASME B1.1



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım



DIN 6535 HB

Tanım	D _N	İç başına diş	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-UNC5/16-W5D-	UNC 5/16-18	18	6,1	2,82	16,9	27	63	8	4	●
TC620-UNC3/8-W5D-	UNC 3/8-16	16	7,4	3,18	19,1	32	68	8	4	●
TC620-UNC1/2-W5D-	UNC 1/2-13	13	10,1	3,91	25,4	38	83	12	4	●
TC620-UNC5/8-W5D-	UNC 5/8-11	11	12,7	4,62	32,3	52	100	16	4	●
TC620-UNC3/4-W5D-	UNC 3/4-10	10	15,5	5,08	38,1	52	100	16	5	●

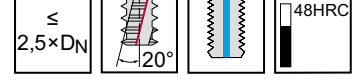
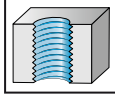
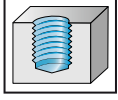
Çok sıralı diş frezesi

TC620 Supreme



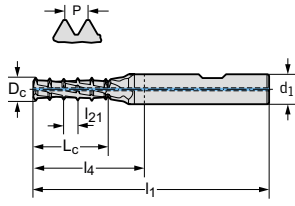
- Üniversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

UNC
ASME B1.1



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●	●	●

Takım



DIN 6535 HB

Tanım	D _N	İç başına diş	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-UNC8-W1E-	UNC #8-32	32	3,1	2,38	10,3	21	57	6	3	●
TC620-UNC10-W1E-	UNC #10-24	24	3,5	3,18	12,7	21	57	6	3	●
TC620-UNC1/4-W1E-	UNC 1/4-20	20	4,7	3,81	16,5	29	65	6	3	●

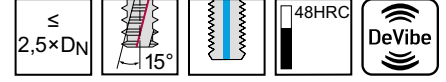
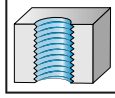
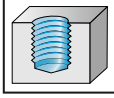
Çok sıralı diş frezesi

TC620 Supreme



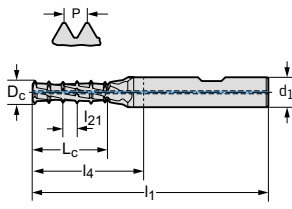
- Ünlversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

UNC
ASME B1.1



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım



DIN 6535 HB

Tanım	D _N	İç başına diş	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-UNC5/16-W5E-	UNC 5/16-18	18	6,1	4,23	21,2	34	70	8	4	●
TC620-UNC3/8-W5E-	UNC 3/8-16	16	7,4	4,76	23,8	36	72	8	4	●
TC620-UNC1/2-W5E-	UNC 1/2-13	13	10,1	5,86	31,3	47	92	12	4	●
TC620-UNC5/8-W5E-	UNC 5/8-11	11	12,7	6,93	41,6	60	108	16	4	●
TC620-UNC3/4-W5E-	UNC 3/4-10	10	15,5	7,62	48,3	62	110	16	5	●

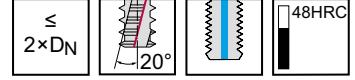
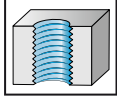
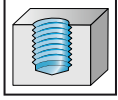
Çok sıralı diş frezesi

TC620 Supreme



- Üniversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için

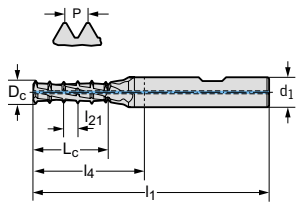
UNF
ASME B1.1



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım

Tanım	D _N	İç başına diş	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
TC620-UNF10-W1D-	UNF #10-32	32	3,7	1,59	10,3	21	57	6	3	●
TC620-UNF1/4-W1D-	UNF 1/4-28	28	5,1	1,81	12,7	21	57	6	4	●



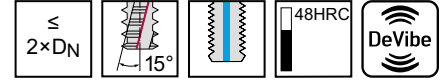
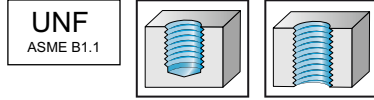
DIN 6535 HB

Çok sıralı diş frezesi

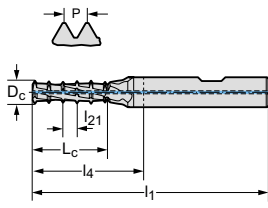
TC620 Supreme



- Üniversal çok sıralı diş frezesi
- Yüksek kesme hızları ve diş başı ilerleme için



	P	M	K	N	S	H	O
WB10TJ	●	●	●	●	●		●

Takım	Tanım	D _N	İç başına diş	D _c mm	l ₂₁ mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WB10TJ
 <p>DIN 6535 HB</p>	TC620-UNF5/16-W5D-	UNF 5/16-24	24	6,4	2,12	15,9	27	63	8	4	☺
	TC620-UNF3/8-W5D-	UNF 3/8-24	24	7,9	2,12	19,1	31	67	8	5	☺
	TC620-UNF7/16-W5D-	UNF 7/16-20	20	9,2	2,54	22,9	32	72	10	5	☺
	TC620-UNF1/2-W5D-	UNF 1/2-20	20	10,7	2,54	25,4	38	83	12	5	☺
	TC620-UNF9/16-W5D-	UNF 9/16-18	18	12	2,82	29,6	45	90	12	5	☺
	TC620-UNF5/8-W5D-	UNF 5/8-18	18	13,5	2,82	32,5	48	96	16	6	☺
	TC620-UNF3/4-W5D-	UNF 3/4-16	16	16,4	3,18	38,1	56	104	18	6	☺



C – Frezeleme

C1: Karbür, seramik ve PCD frezeleme takımları		Sayfa
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Alüminyum uzmanları – yeni karbür freze Supreme ve Advance.

TAKIM

- ISO N işleme için üniversal yüksek performanslı freze ve üniversal freze
- MC267 Advance: z2 ve z3, Ø 1–20 mm, boyunlu ve boyunsuz; radyüs ile ve olmadan; kaplamalı ve kaplamasız; merkezden kesmeli
- MD266 Supreme: z2 ve z3, Ø 2–25 mm, boyunlu; Ø 6 mm'den itibaren içten soğutma; kaplamasız; merkezden kesmeli

UYGULAMA

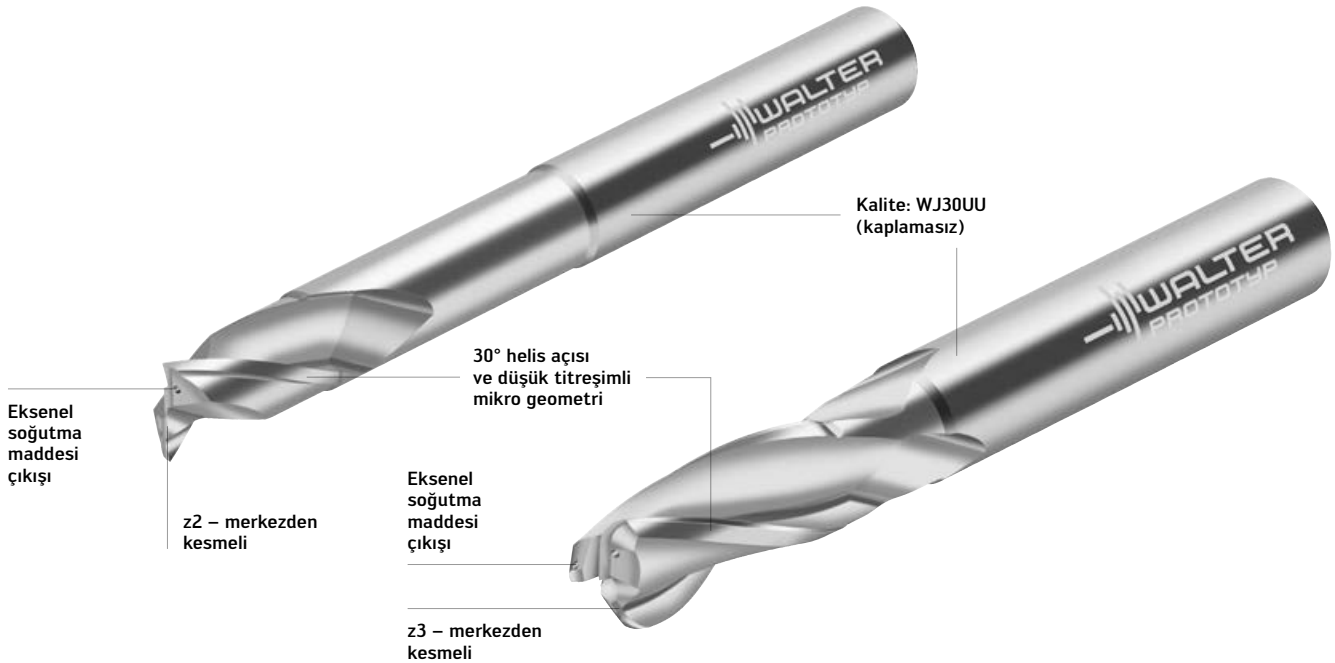
- Havacılık ve uzay sanayi için geliştirilmiştir
- Kaba işleme, yarı hassas işleme ve hassas işleme için üniversal olarak kullanılabilir
- Doludan kanal açma ve rampalama uyumlu
- % 9 kadar silisyum içeren alüminyum dövme ve döküm alaşımları için ideal
- Bakır, magnezyum ve pirinç gibi ISO-N malzemeler için son derece uygundur

MC267 Advance

- Uzay sanayide dar radyüslü artık malzemenin işlenmesi
- Tüm endüstri alanlarında üniversal kullanım

MD266 Supreme

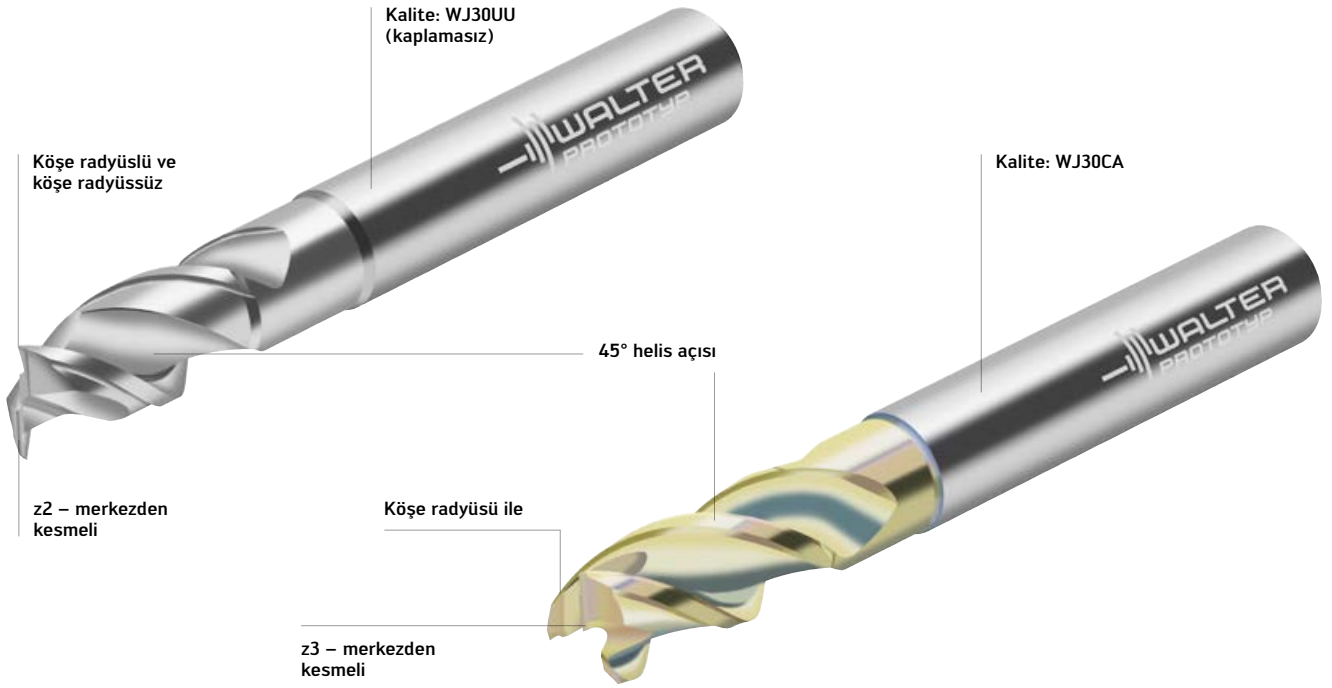
- Havacılık ve uzay sanayi ve genel makine mühendisliği alanındaki yapı parçalarını işlemede yüksek performans



Walter **X**press

Karbür freze MD266 Supreme

Şek.: WJ30UU



Walter Xpress

Karbür freze MC267 Advance

Şek.: MC267 Advance WJ30UU

Karbür freze MC267 Advance

Şek.: MC267 Advance WJ30CA

AVANTAJLARINIZ

MC267 Advance

- Çok yüksek işleme hassasiyeti ve güvenilirliği
- Kaba işleme, yarı hassas işleme ve hassas işleme için universal kullanılabilirlik

MD266 Supreme

- Ünlversal olarak uygulanabilir, özellikle kaba işleme için
- Çok yüksek talaş kaldırma oranları ve proses güvenilirliği
- Özel geometri sayesinde düşük titreşim

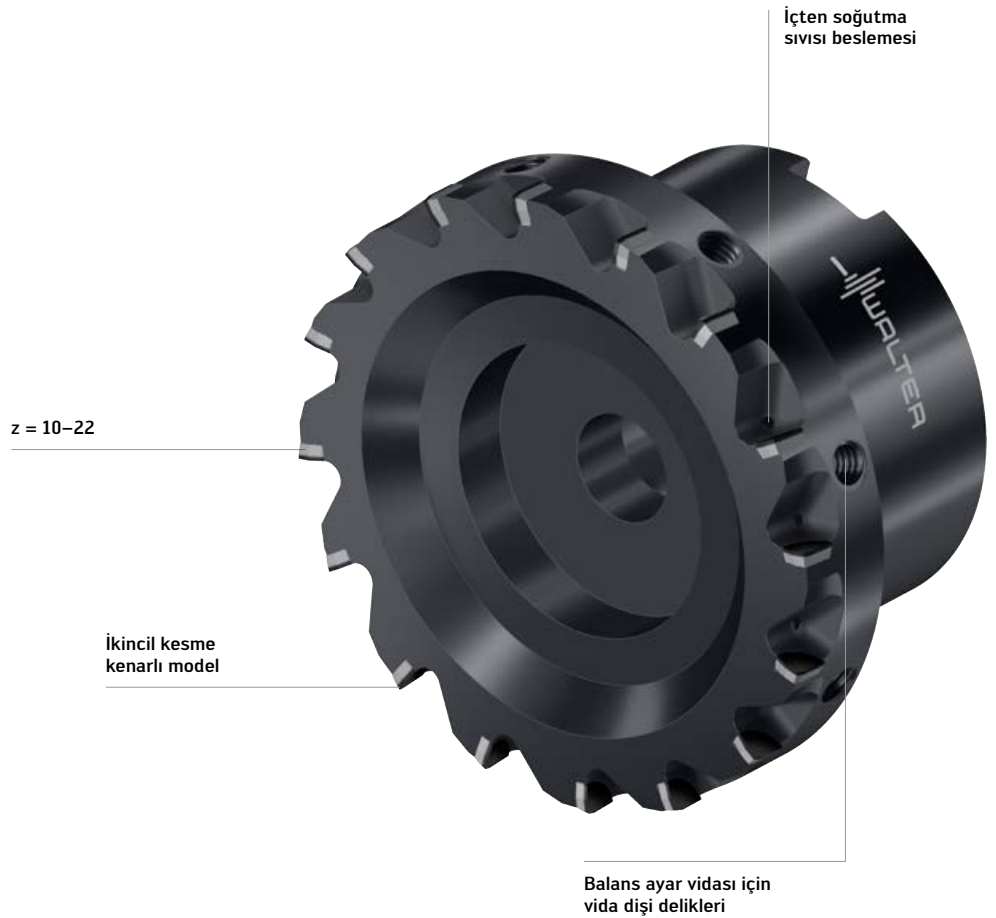
Düşük kesme kuvveti – daha az titreşim.

TAKIM

- Lehimli Ø 4–125 mm PCD kesme kenarına sahip yüzey frezeleme takımı, kenar frezesi ve delme ve kanal açma frezeleri
- Maksimum diş sayısı ile yüzey frezeleme takımı MP060; Ø 40–125 mm
- Silindirik şaft ve ScrewFit takım tutucu ile kenar frezeleme takımı MP160; Ø 16–40 mm
- Silindirik şaft ve ScrewFit takım tutucu ile delme ve kanal açma frezesi MP260; Ø 4–20 mm

UYGULAMA

- Alın veya kenar ve kanal frezeleme
- Çok yüksek yüzey finiş kaliteleri ile freze işlemleri
- Demir olmayan metaller (örn. alüminyum, Al-Si alaşımlar, magnezyum ve magnezyum alaşımları), plastik ve fiber kompozit malzemeler
- Emülsiyon veya az miktarda yağlama (MQL) ile uygulama
- Kullanım alanları: Otomotiv endüstrisi, havacılık ve uzay sanayi, genel makine mühendisliği



PCD freze MP060

Şek.: MP060 WDN20

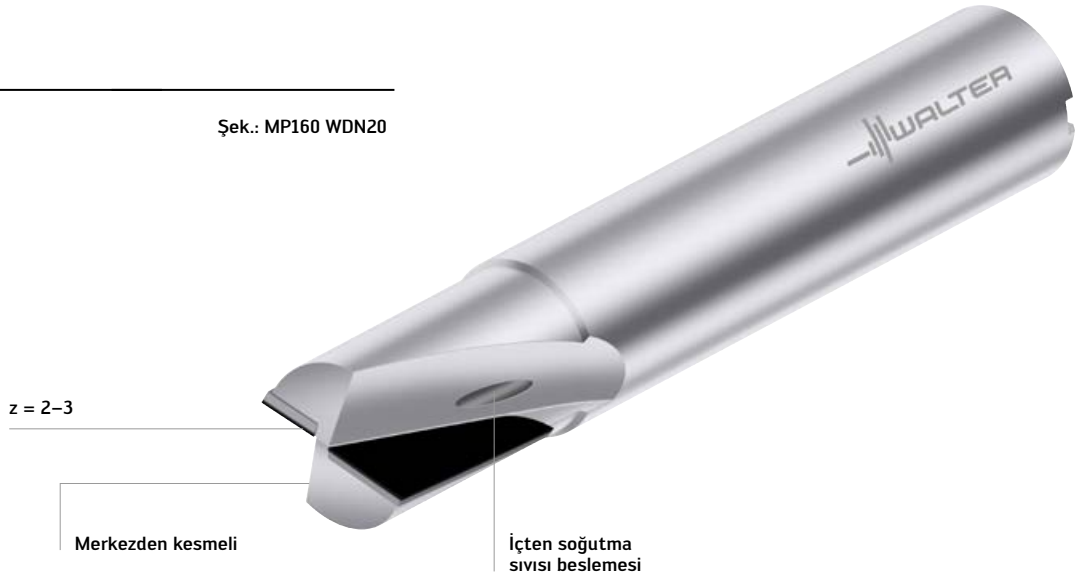


z = 4
(silindirik şaft z = 3-4)

İçten soğutma
sıvısı beslemesi

PCD freze MP160 ve MP260

Şek.: MP160 WDN20



z = 2-3

Merkezden kesmeli

İçten soğutma
sıvısı beslemesi

PCD freze MP160 ve MP260

Şek.: MP260 WDN

AVANTAJLARINIZ

- Ekonomik, hassas işleme
- 20 ila 200 kata kadar daha uzun takım ömürleri (piyasada bulunan karbür takımlara göre)
- İyileştirilmiş geometriler sayesinde düşük kesme kuvvetleri ve düşük titreşim eğilimi
- Yüksek kesme hızları ve diş sayısı sayesinde çok kısa işleme zamanları
- Reconditioning (bileme) ve/veya PCD plaka yenileme seçeneği

Walter Xpress – Takım genel bakışı

KALİTE

- Kaplamasız, neredeyse üniversal olarak uygulanabilir

UYGULAMA

- Havacılık ve uzay sanayi için geliştirilmiştir
- % 9 kadar silisyum içeren alüminyum dövme ve döküm alaşımları için ideal
- Neredeyse tüm uygulamalar için uzman
- Tüm endüstrilerde üniversal olarak kullanılabilir



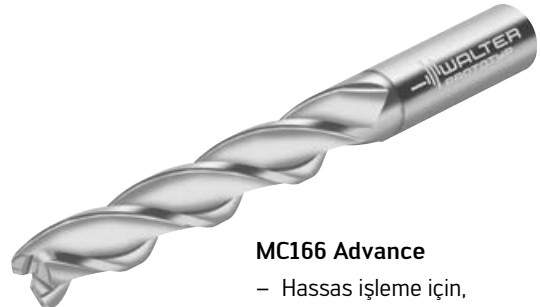
MD266 Supreme

- Merkezden kesmeli
- Kaba işleme ve hassas işleme için
- Yüksek performans için
- z2-3; Ø 5-25 mm



MC267 Advance

- Üniversal takım, problem çözücü
- Merkezden kesmeli
- Kaba işleme ve hassas işleme için
- z2-4; Ø 5-25 mm



MC166 Advance

- Hassas işleme için, dinamik frezeleme
- Uzun kesme kenarı (5 × D_c'ye kadar)
- İnce duvarlar
- z3; Ø 6-25 mm



HPC AI40

- Merkezden kesmeli
- Yarı hassas işleme için, hassas işleme
- Son derece düzgün çalışma
- z4; Ø 5-25 mm



HPC AI30 konik

- Konik küresel freze
- Tam radyüs ile
- 5 eksenli kontur hassas işleme için
- z2



MB265 Supreme

- Kaba işleme uzmanı
- Merkezden kesmeli
- Yüksek performans için
- z3; Ø 6–25 mm



MB464

- Küresel freze
- Tam radyüs ile
- Kontur hassas işleme için
- z2; Ø 6–25 mm



HPC AI38

- Merkezden kesmeli
- Hassas işleme için, dinamik frezeleme
- İnce duvarlar için
- z4; Ø 5–25 mm



HPC AI30

- Merkezden kesmeli
- Daha geniş alanları ve ince çanta diplerini hassas işlemek için
- z6–8; Ø 12–25 mm

AVANTAJLARINIZ

- Takım ailesine bağlı olarak çeşitli içten ve harici soğutma seçenekleri
- Tam olarak işleme göreviniz için çeşitli uzunluklar, radyüsler ve pahlar
- En yüksek verimlilik ve ekonomiklik
- Kısa teslimat süreleri, 2–3 hafta
- Güvenilir yüksek performansa sahip standartlaştırılmış geometriler

Karbür, seramik ve PCD frezeleme takımları

	Selection	Selection	Selection	Selection	Selection



Tanım

MP260

MP260

MP060

MP160

MP260

	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
Ø aralığı	4-6	—	8-12	—	40,6-125,6	—	16-40	—	16-20	—
Diş sayısı	2		2		10-22		3-4		2-3	
Köşe radyüsü	0,1-0,2		0,2		—		0,2		0,2	
Standart										

Şaft

Silindirik şaft

Silindirik şaft

 Silindir delik
Enine kama DIN 138

 ScrewFit
Silindirik şaft

 ScrewFit
Silindirik şaft

P Çelik

M Paslanmaz çelik

K Dökme demir

N Demir dışı metaller

S Zor işlenen malzemeler

H Sert malzemeler

O Diğerleri

Katalogdaki sayfa

200

200

196

197

199

QR kodu


www.walter-tools.com/woc/

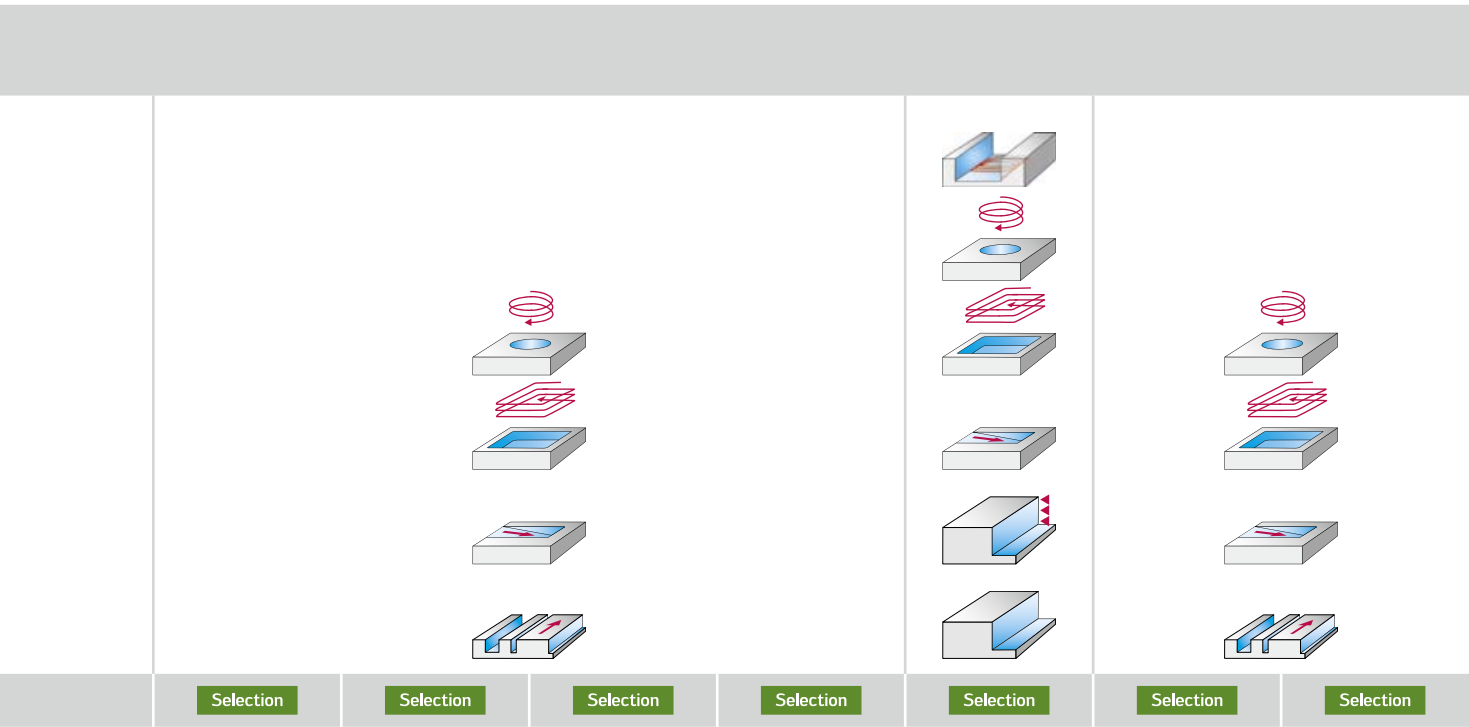
MP260

MP260

MP060

MP160

MP260



Selection

Selection

Selection

Selection

Selection

Selection

Selection



Protostar®



MB265 Supreme



MD266 Supreme



Protostar®



MC166 Advance

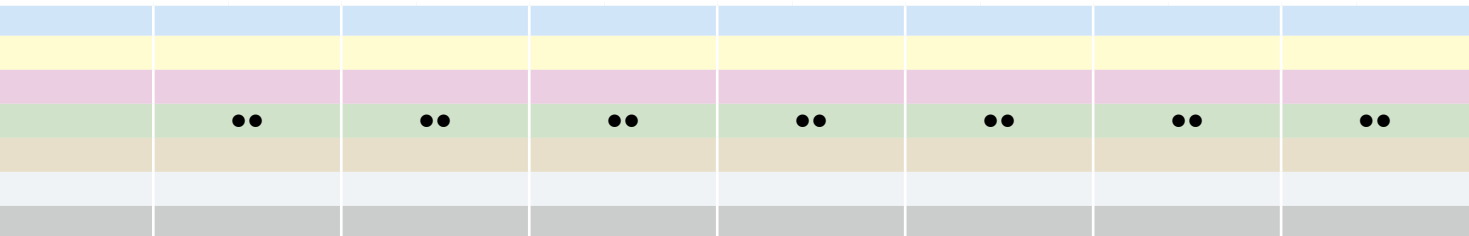


Protostar®



MC267 Advance

[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
2-20	—	16-25	—	2-25	—	2-16	—	12-20	—	6-25	—	1-20	—
2		3		2-3		1-2		3		3		2-3	
—		2-4		0,2-4		1-8		1-5		—		0,2-4	
PWZ STANDARDI L		PWZ STANDARDI XL		DIN 6527 L P STANDARDI L P STANDARDI XL		DIN 6527 L PWZ STANDARDI L		PWZ STANDARDI L PWZ STANDARDI XL		PWZ STANDARDI L DIN 6527 L		DIN 6527 L	
DIN 6535 HA		DIN 6535 HA		DIN 6535 HA		DIN 6535 HA		DIN 6535 HA		DIN 6535 HA DIN 6535 HB		DIN 6535 HA	



201

216

208

202

217

212

204



protostar



MB265



MD266



MC166



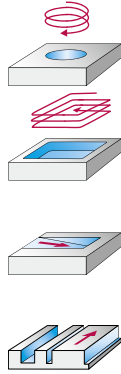
protostar



MC267

C1

Karbür, seramik ve PCD frezeleme takımları



Selection



Tanım	Protostar®	
	[mm]	[inch]
Ø aralığı	6-25	—
Diş sayısı	2-3	
Köşe radyüsü	—	
Standart	PWZ STANDARDI L PWZ STANDARDI	

Şaft DIN 6535 HA
ConeFit

P Çelik	
M Paslanmaz çelik	
K Dökme demir	
N Demir dışı metaller	● ●
S Zor işlenen malzemeler	
H Sert malzemeler	
O Diğerleri	

Katalogdaki sayfa 203

QR kodu



www.walter-tools.com/woc/

protostar

PCD yüzey frezeleme takımları

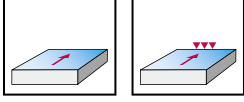
MP060



Z =
10-22

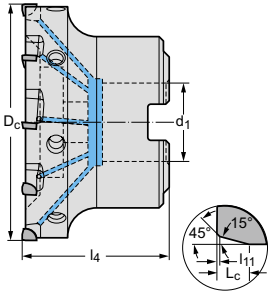


-- $\kappa = 75^\circ$ azami $L_c = 1,1$ mm



	P	M	K	N	S	H	O
WDN20				●●			●

Takım



Silindirik delik
Enine kama DIN 138

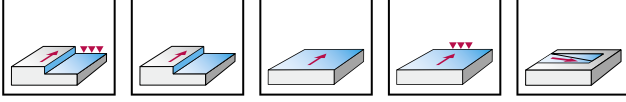
Tanım	D _c mm	l ₁₁ mm	L _c mm	l ₄ mm	d ₁ mm	Z	kg	WDN20
MP060-040B10P	40	0,1	1,1	40	16	10	0,3	⊕
MP060-050B12P	50	0,1	1,1	40	22	12	0,4	⊕
MP060-063B14P	63	0,1	1,1	40	22	14	0,5	⊕
MP060-080B16P	80	0,1	1,1	50	27	16	1	⊕
MP060-100B18P	100	0,1	1,1	50	32	18	1,4	⊕
MP060-125B22P	125	0,1	1,1	63	40	22	3,2	⊕

n = 16.000 dev./dk. için G6,3'te ön balansı alınmış

PCD uçlu kenar frezeleme takımları

MP160 

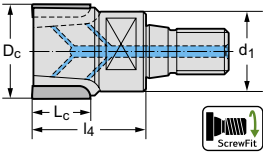
Z=4



	P	M	K	N	S	H	O
WDN20				●			●

Takım

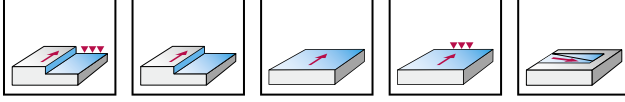
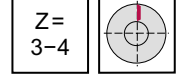
Tanım	D _c mm	R mm	L _c mm	l ₄ mm	d ₁	Z	kg	WDN20
MP160-020T04P	20	0,2	18	30	T18	4	0,05	⊕
MP160-025T04P	25	0,2	20	35	T22	4	0,11	⊕
MP160-032T04P	32	0,2	20	40	T28	4	0,39	⊕
MP160-040T04P	40	0,2	20	40	T36	4	0,37	⊕



ScrewFit

n = 16.000 dev./dk. için G6,3'te ön balansı alınmış

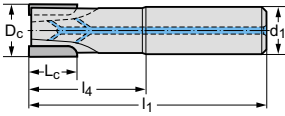
PCD uçlu kenar frezeleme takımları

 MP160


	P	M	K	N	S	H	O
WDN20				●●			●

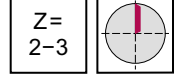
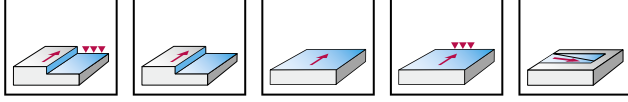
Takım

Tanım	D _c mm	R mm	L _c mm	l ₁ mm	l ₄ mm	d ₁	Z	kg	WDN20
MP160-016A03P	16	0,2	20	90	41	16	3	0,22	⊕
MP160-020A04P	20	0,2	20	100	49	20	4	0,39	⊕
MP160-025A04P	25	0,2	20	100	43	25	4	0,62	⊕



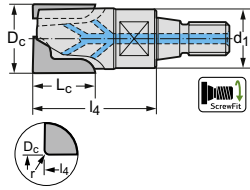
Silindirik shaft

PCD delme ve kanal açma frezeleri

MP260 

	P	M	K	N	S	H	O
WDN20				●			●

Takım

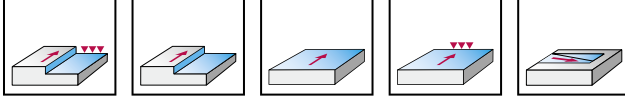
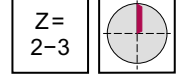


ScrewFit

Tanım	D _c mm	R mm	L _c mm	l ₄ mm	d ₁	Z	kg	WDN20
MP260-016T02P	16	0,2	15	30	T14	2	0,04	⊕
MP260-016T03P	16	0,2	15	30	T14	3	0,03	⊕
MP260-020T03P	20	0,2	18	30	T18	3	0,05	⊕

n = 16.000 dev./dk. için G6,3'te ön balansı alınmış

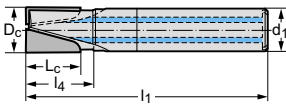
PCD delme ve kanal açma frezeleri

 MP260


	P	M	K	N	S	H	O
WDN20				●●			●

Takım

Tanım	D _c mm	R mm	L _c mm	l ₁ mm	l ₄ mm	d ₁	Z	kg	WDN20
MP260-004A02P	4	0,1	6	52	15	4	2	0,02	☺
MP260-005A02P	5	0,1	8	55	18	5	2	0,02	☺
MP260-006A02P	6	0,2	8	60	23	6	2	0,02	☺
MP260-008A02P	8	0,2	10	70	33	8	2	0,04	☺
MP260-010A02P	10	0,2	12	80	39	10	2	0,08	☺
MP260-012A02P	12	0,2	16	80	34	12	2	0,11	☺
MP260-016A02P	16	0,2	20	90	41	16	2	0,22	☺
MP260-016A03P	16	0,2	20	90	41	16	3	0,22	☺
MP260-020A03P	20	0,2	20	100	49	20	3	0,4	☺

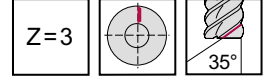
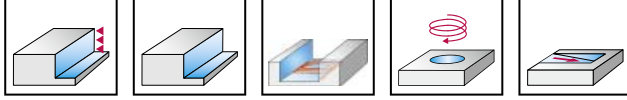


Silindirik şaft

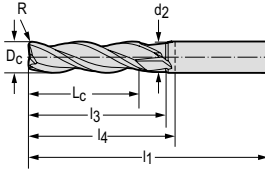
Karbür kenar frezeleme takımları

MC166 Advance 

– Uzun erişim mesafesi



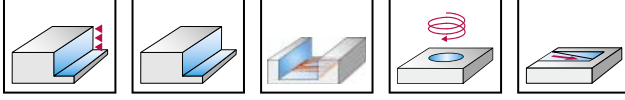
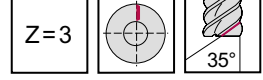
	P	M	K	N	S	H	O
WJ30UU				●●			

Takım	Tanım	D _c mm	R mm	L _c mm	l ₃ mm	d ₂ mm	l ₁ mm	l ₄ mm	d ₁ mm	Z	WJ30UU
 DIN 6535 HA	MC166-12.0A3L100D-	12	1	42	52	11,4	100	55	12	3	☺
	MC166-12.0A3L200D-	12	2	42	52	11,4	100	55	12	3	☺
	MC166-12.0A3L300D-	12	3	42	52	11,4	100	55	12	3	☺
	MC166-12.0A3L400D-	12	4	42	52	11,4	100	55	12	3	☺
	MC166-15.0A3L300D-	15	3	52	64	14,3	115	67	16	3	☺
	MC166-15.0A3L400D-	15	4	52	64	14,3	115	67	16	3	☺
	MC166-16.0A3L100D-	16	1	56	70	15,2	121	73	16	3	☺
	MC166-16.0A3L200D-	16	2	56	70	15,2	121	73	16	3	☺
	MC166-16.0A3L300D-	16	3	56	70	15,2	121	73	16	3	☺
	MC166-16.0A3L400D-	16	4	56	70	15,2	121	73	16	3	☺
	MC166-16.0A3L500D-	16	5	56	70	15,2	121	73	16	3	☺
	MC166-20.0A3L100D-	20	1	70	88	19	141	91	20	3	☺
	MC166-20.0A3L200D-	20	2	70	88	19	141	91	20	3	☺
	MC166-20.0A3L300D-	20	3	70	88	19	141	91	20	3	☺
	MC166-20.0A3L400D-	20	4	70	88	19	141	91	20	3	☺
	MC166-20.0A3L500D-	20	5	70	88	19	141	91	20	3	☺

Kenar frezeleme $a_e \leq 0,3 \times D_a$

Karbür kenar frezeleme takımları

MC166 Advance



	P	M	K	N	S	H	O
WJ30UU				●●			

Takım	Tanım	D _c mm	R mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ mm	Z	WJ30UU
<p>DIN 6535 HA</p>	MC166-12.0A3X100L-	12	1	60	118	73	12	3	☺
	MC166-12.0A3X200L-	12	2	60	118	73	12	3	☺
	MC166-12.0A3X300L-	12	3	60	118	73	12	3	☺
	MC166-12.0A3X400L-	12	4	60	118	73	12	3	☺
	MC166-15.0A3X300L-	15	3	75	139	91	16	3	☺
	MC166-15.0A3X400L-	15	4	75	139	91	16	3	☺
	MC166-16.0A3X100L-	16	1	80	145	97	16	3	☺
	MC166-16.0A3X200L-	16	2	80	145	97	16	3	☺
	MC166-16.0A3X300L-	16	3	80	145	97	16	3	☺
	MC166-16.0A3X400L-	16	4	80	145	97	16	3	☺
	MC166-16.0A3X500L-	16	5	80	145	97	16	3	☺
	MC166-20.0A3X100L-	20	1	100	171	121	20	3	☺
	MC166-20.0A3X200L-	20	2	100	171	121	20	3	☺
	MC166-20.0A3X300L-	20	3	100	171	121	20	3	☺
	MC166-20.0A3X400L-	20	4	100	171	121	20	3	☺
	MC166-20.0A3X500L-	20	5	100	171	121	20	3	☺

Kenar frezeleme $a_e \leq 0,3 \times D_c$

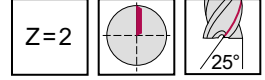
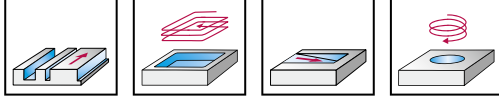
Karbür kenar/kanal frezeleri

H602641

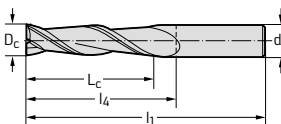
Protostar®



– Tip Al 25



	P	M	K	N	S	H	O
kaplamasız				●●			

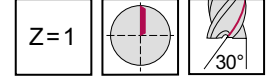
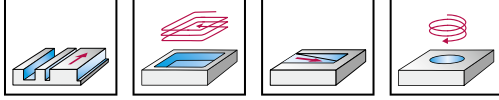
Takım	Tanım	D _c mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ mm	Z
 DIN 6535 HA	H602641-2	2	8	38	10,5	3	2
	H602641-3	3	12	38	10	3	2
	H602641-4	4	14	50	22	4	2
	H602641-5	5	16	57	21	6	2
	H602641-6	6	22	65	29	6	2
	H602641-8	8	28	80	44	8	2
	H602641-10	10	32	90	50	10	2
	H602641-12	12	38	100	55	12	2
	H602641-16	16	50	115	67	16	2
	H602641-20	20	50	125	75	20	2

Kanal frezeleme $a_p \leq 0,5 \times D_c$ Kenar frezeleme $a_e \leq 0,3 \times D_c$

Karbür kenar/kanal frezeleri

 H901451
Protostar®


– Tip Al 30



	P	M	K	N	S	H	O
kaplamasız				●●			

Takım		D _c mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ mm	Z
	H901451-3	3	7	57	21	6	1
	H901451-4	4	8	57	21	6	1
	H901451-5	5	10	57	21	6	1
	H901451-6	6	10	57	21	6	1
	H901451-8	8	16	63	27	8	1
	H901451-10	10	19	72	32	10	1
	DIN 6535 HA						

 Kanal frezeleme $a_p \leq 1,0 \times D_c$
 Kenar frezeleme $a_e \leq 0,6 \times D_c$

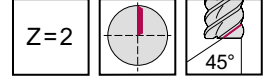
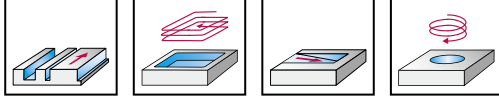
Karbür kenar/kanal frezeleri

H602551

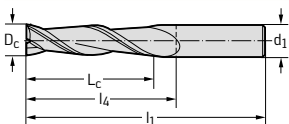
Protostar®



– Tip Al 45 uzun



	P	M	K	N	S	H	O
kaplamasız				●●			

Takım	Tanım	D _c mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ mm	Z
 DIN 6535 HA	H602551-6	6	35	80	44	6	2
	H602551-8	8	45	97	61	8	2
	H602551-10	10	50	118	78	10	2
	H602551-12	12	60	120	75	12	2
	H602551-16	16	65	130	82	16	2
	H602551-20	20	75	145	95	20	2

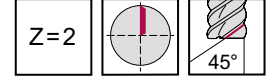
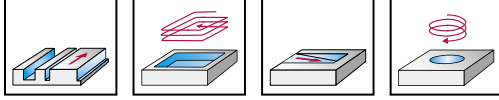
Kanal frezeleme $a_p \leq 1,0 \times D_c$
Kenar frezeleme $a_e \leq 0,5 \times D_c$

Karbür kenar/kanal frezeleri

MC267 Advance

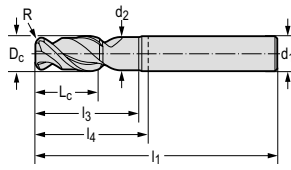


- Tip Al 45



	P	M	K	N	S	H	O
WJ30UU				●●			

Takım



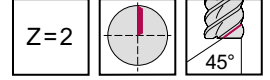
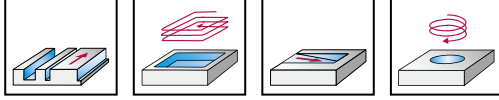
DIN 6535 HA

Tanım	D _c mm	R mm	L _c mm	l ₃ mm	l ₄ mm	l ₁ mm	d ₂ mm	d ₁ mm	Z	WJ30UU
MC267-05.0A2B050C-	5	0,5	10	16	21	57	4,8	6	2	☺
MC267-06.0A2B050C-	6	0,5	10	19	21	57	5,7	6	2	☺
MC267-08.0A2B050C-	8	0,5	16	25	27	63	7,6	8	2	☺
MC267-10.0A2B050C-	10	0,5	19	30	32	72	9,5	10	2	☺
MC267-10.0A2B100C-	10	1	19	30	32	72	9,5	10	2	☺
MC267-10.0A2B200C-	10	2	19	30	32	72	9,5	10	2	☺
MC267-12.0A2B050C-	12	0,5	22	36	38	83	11,4	12	2	☺
MC267-12.0A2B100C-	12	1	22	36	38	83	11,4	12	2	☺
MC267-12.0A2B200C-	12	2	22	36	38	83	11,4	12	2	☺
MC267-12.0A2B300C-	12	3	22	36	38	83	11,4	12	2	☺
MC267-16.0A2B050C-	16	0,5	26	42	44	92	15,2	16	2	☺
MC267-16.0A2B300C-	16	3	26	42	44	92	15,2	16	2	☺
MC267-16.0A2B400C-	16	4	26	42	44	92	15,2	16	2	☺
MC267-20.0A2B050C-	20	0,5	32	52	54	104	19	20	2	☺
MC267-20.0A2B300C-	20	3	32	52	54	104	19	20	2	☺
MC267-20.0A2B400C-	20	4	32	52	54	104	19	20	2	☺

Karbür kenar/kanal frezeleri

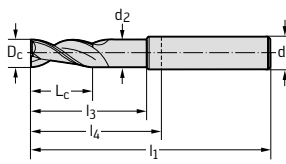
MC267 Advance 

- Tip Al 45



	P	M	K	N	S	H	O
WJ30UU				●●			

Takım



DIN 6535 HA

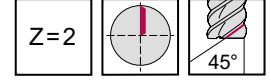
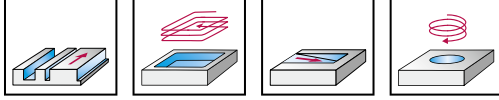
Tanım	D _c mm	L _c mm	l ₃ mm	l ₄ mm	l ₁ mm	d ₂ mm	d ₁ mm	Z	WJ30UU
MC267-01.0A2BC-	1	3	7	21	57	1	6	2	☺
MC267-01.5A2BC-	1,5	3	7	21	57	1,4	6	2	☺
MC267-02.0A2BC-	2	6	10	21	57	1,9	6	2	☺
MC267-02.5A2BC-	2,5	7	10	21	57	2,4	6	2	☺
MC267-03.0A2BC-	3	7	10	21	57	2,9	6	2	☺
MC267-03.5A2BC-	3,5	7	15	21	57	3,3	6	2	☺
MC267-04.0A2BC-	4	8	15	21	57	3,8	6	2	☺
MC267-05.0A2BC-	5	10	16	21	57	4,8	6	2	☺
MC267-06.0A2BC-	6	10	19	21	57	5,7	6	2	☺
MC267-08.0A2BC-	8	16	25	27	63	7,6	8	2	☺
MC267-10.0A2BC-	10	19	30	32	72	9,5	10	2	☺
MC267-12.0A2BC-	12	22	36	38	83	11,4	12	2	☺
MC267-16.0A2BC-	16	26	42	44	92	15,2	16	2	☺
MC267-20.0A2BC-	20	32	52	54	104	19	20	2	☺

Karbür kenar/kanal frezeleri

MC267 Advance



- Tip Al 45



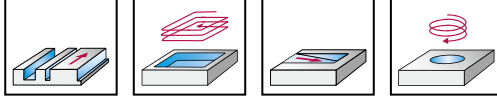
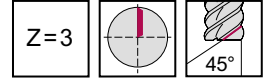
	P	M	K	N	S	H	O
WJ30UU				●●			

Takım	Tanım	D _c mm	L _c mm	l ₄ mm	l ₁ mm	d ₁ mm	Z	WJ30UU
<p>DIN 6535 HA</p>	MC267-01.0A2B-	1	3	21	57	6	2	☺
	MC267-01.5A2B-	1,5	3	21	57	6	2	☺
	MC267-02.0A2B-	2	6	21	57	6	2	☺
	MC267-02.5A2B-	2,5	7	21	57	6	2	☺
	MC267-03.0A2B-	3	7	21	57	6	2	☺
	MC267-03.5A2B-	3,5	7	21	57	6	2	☺
	MC267-04.0A2B-	4	8	21	57	6	2	☺

Karbür kenar/kanal frezeleri

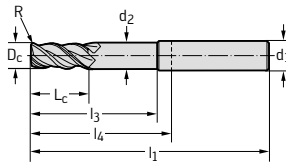
MC267 Advance 

– Tip Al 45



	P	M	K	N	S	H	O
WJ30CA				●●			
WJ30UU				●●			

Takım



DIN 6535 HA

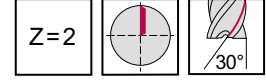
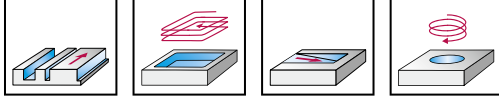
Tanım	D _c mm	R mm	L _c mm	l ₃ mm	l ₄ mm	l ₁ mm	d ₂ mm	d ₁ mm	Z	WJ30CA	WJ30UU
MC267-01.0A3B020C-	1	0,2	3	7	21	57	1	6	3	☺	☺
MC267-02.0A3B020C-	2	0,2	6	10	21	57	1,9	6	3	☺	☺
MC267-03.0A3B020C-	3	0,2	7	10	21	57	2,9	6	3	☺	☺
MC267-04.0A3B030C-	4	0,3	8	15	21	57	3,8	6	3	☺	☺
MC267-05.0A3B050C-	5	0,5	10	16	21	57	4,8	6	3	☺	☺
MC267-06.0A3B050C-	6	0,5	10	19	21	57	5,7	6	3	☺	☺
MC267-08.0A3B050C-	8	0,5	16	25	27	63	7,6	8	3	☺	☺
MC267-10.0A3B050C-	10	0,5	19	30	32	72	9,5	10	3	☺	☺
MC267-12.0A3B050C-	12	0,5	22	36	38	83	11,4	12	3	☺	☺
MC267-16.0A3B050C-	16	0,5	26	42	44	92	15,2	16	3	☺	☺
MC267-20.0A3B050C-	20	0,5	32	52	54	104	19	20	3	☺	☺

Karbür kenar/kanal frezeleri

MD266 Supreme



- Uzun erişim mesafesi



	P	M	K	N	S	H	O
WJ30UU				●●			

Takım

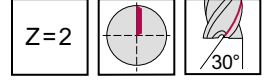
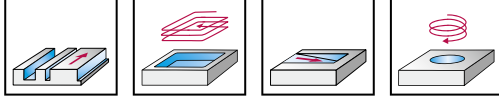
Tanım	D _c mm	R mm	L _c mm	l ₃ mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁ mm	Z	0103CFM
MD266-02.0A2B020E-	2	0,2	6	10	57	20	1,9	6	2	☺
MD266-03.0A2B030D-	3	0,3	7,5	12	57	20	2,9	6	2	☺
MD266-04.0A2B030D-	4	0,3	8	16	57	20	3,8	6	2	☺
MD266-05.0A2B050C-	5	0,5	10	18	57	20	4,8	6	2	☺
MD266-05.0A2L050D-	5	0,5	7,5	20	65	26	4,8	6	2	☺
DIN 6535 HA										
MD266-06.0A2L050D-	6	0,5	10,5	25	65	26	5,7	6	2	☺
MD266-06.0A2L100D-	6	1	10,5	25	65	26	5,7	6	2	☺
MD266-08.0A2L050E-	8	0,5	12	42	80	43	7,6	8	2	☺
MD266-08.0A2L100E-	8	1	12	42	80	43	7,6	8	2	☺
MD266-08.0A2L200E-	8	2	12	42	80	43	7,6	8	2	☺
MD266-10.0A2B050C-	10	0,5	20	30	72	31	9,5	10	2	☺
MD266-10.0A2B100C-	10	1	20	30	72	31	9,5	10	2	☺
MD266-10.0A2B200C-	10	2	20	30	72	31	9,5	10	2	☺
MD266-10.0A2L050D-	10	0,5	15	48	90	49	9,5	10	2	☺
MD266-10.0A2L100D-	10	1	15	48	90	49	9,5	10	2	☺
MD266-10.0A2L200D-	10	2	15	48	90	49	9,5	10	2	☺
MD266-12.0A2L050D-	12	0,5	18	53	100	54	11,4	12	2	☺
MD266-12.0A2L200D-	12	2	18	53	100	54	11,4	12	2	☺
MD266-12.0A2L300D-	12	3	18	53	100	54	11,4	12	2	☺
MD266-16.0A2L050D-	16	0,5	24	65	115	66	15,2	16	2	☺
MD266-16.0A2L200D-	16	2	24	65	115	66	15,2	16	2	☺
MD266-16.0A2L300D-	16	3	24	65	115	66	15,2	16	2	☺
MD266-16.0A2L400D-	16	4	24	65	115	66	15,2	16	2	☺
MD266-20.0A2L050C-	20	0,5	25	73	125	74	19	20	2	☺
MD266-20.0A2L300C-	20	3	25	73	125	74	19	20	2	☺
MD266-20.0A2L400C-	20	4	25	73	125	74	19	20	2	☺

Karbür kenar/kanal frezeleri

MD266 Supreme



– Uzun erişim mesafesi



	P	M	K	N	S	H	O
WJ30UU				●●			

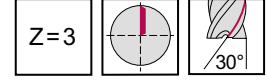
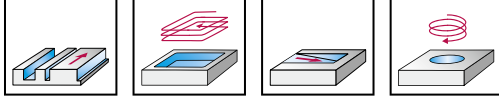
Takım		D _c mm	L _c mm	l ₃ mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁ mm	Z	WJ30UU
DIN 6535 HA	MD266-02.0A2BE-	2	6	10	57	20	1,9	6	2	☺
	MD266-03.0A2BD-	3	7,5	12	57	20	2,9	6	2	☺
	MD266-04.0A2BD-	4	8	16	57	20	3,8	6	2	☺
	MD266-05.0A2BC-	5	10	18	57	20	4,8	6	2	☺
	MD266-05.0A2LD-	5	7,5	20	65	26	4,8	6	2	☺
DIN 6535 HA	MD266-06.0A2LD-	6	10,5	25	65	26	5,7	6	2	☺
	MD266-08.0A2LE-	8	12	42	80	43	7,6	8	2	☺
	MD266-10.0A2BC-	10	20	30	72	31	9,5	10	2	☺
	MD266-10.0A2LD-	10	15	48	90	49	9,5	10	2	☺
	MD266-12.0A2LD-	12	18	53	100	54	11,4	12	2	☺
	MD266-16.0A2LD-	16	24	65	115	66	15,2	16	2	☺
	MD266-20.0A2LC-	20	25	73	125	74	19	20	2	☺

Karbür kenar/kanal frezeleri

MD266 Supreme

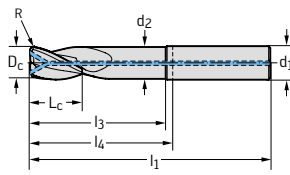


– Uzun erişim mesafesi



	P	M	K	N	S	H	O
WJ30UU				●●			

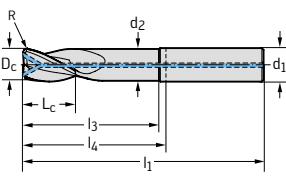
Takım



DIN 6535 HA

Tanım	D _c mm	R mm	L _c mm	l ₃ mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁ mm	Z	WJ30UU
MD266-10.0A3B050C-	10	0,5	20	30	72	31	9,5	10	3	☺
MD266-10.0A3B100C-	10	1	20	30	72	31	9,5	10	3	☺
MD266-10.0A3B200C-	10	2	20	30	72	31	9,5	10	3	☺
MD266-10.0A3L050D-	10	0,5	15	48	90	49	9,5	10	3	☺
MD266-10.0A3L100D-	10	1	15	48	90	49	9,5	10	3	☺
MD266-10.0A3L200D-	10	2	15	48	90	49	9,5	10	3	☺
MD266-12.0A3B050C-	12	0,5	24	36	83	37	11,4	12	3	☺
MD266-12.0A3B200C-	12	2	24	36	83	37	11,4	12	3	☺
MD266-12.0A3B300C-	12	3	24	36	83	37	11,4	12	3	☺
MD266-12.0A3L050D-	12	0,5	18	53	100	54	11,4	12	3	☺
MD266-12.0A3L200D-	12	2	18	53	100	54	11,4	12	3	☺
MD266-12.0A3L300D-	12	3	18	53	100	54	11,4	12	3	☺
MD266-12.0A3X050E-	12	0,5	12	68	115	69	11,4	12	3	☺
MD266-12.0A3X200E-	12	2	12	68	115	69	11,4	12	3	☺
MD266-12.0A3X300E-	12	3	12	68	115	69	11,4	12	3	☺
MD266-16.0A3B050C-	16	0,5	32	42	92	43	15,2	16	3	☺
MD266-16.0A3B200C-	16	2	32	42	92	43	15,2	16	3	☺
MD266-16.0A3B300C-	16	3	32	42	92	43	15,2	16	3	☺
MD266-16.0A3B400C-	16	4	32	42	92	43	15,2	16	3	☺
MD266-16.0A3L050D-	16	0,5	24	65	115	66	15,2	16	3	☺
MD266-16.0A3L200D-	16	2	24	65	115	66	15,2	16	3	☺
MD266-16.0A3L300D-	16	3	24	65	115	66	15,2	16	3	☺
MD266-16.0A3L400D-	16	4	24	65	115	66	15,2	16	3	☺
MD266-16.0A3X050E-	16	0,5	16	80	130	81	15,2	16	3	☺
MD266-16.0A3X200E-	16	2	16	80	130	81	15,2	16	3	☺
MD266-16.0A3X300E-	16	3	16	80	130	81	15,2	16	3	☺
MD266-16.0A3X400E-	16	4	16	80	130	81	15,2	16	3	☺
MD266-20.0A3L050C-	20	0,5	25	73	125	74	19	20	3	☺
MD266-20.0A3L300C-	20	3	25	73	125	74	19	20	3	☺
MD266-20.0A3L400C-	20	4	25	73	125	74	19	20	3	☺
MD266-20.0A3X050D-	20	0,5	20	88	140	89	19	20	3	☺
MD266-20.0A3X300D-	20	3	20	88	140	89	19	20	3	☺
MD266-20.0A3X400D-	20	4	20	88	140	89	19	20	3	☺
MD266-25.0A3B050B-	25	0,5	43,75	52	110	53	23,8	25	3	☺
MD266-25.0A3B300B-	25	3	43,75	52	110	53	23,8	25	3	☺
MD266-25.0A3B400B-	25	4	43,75	52	110	53	23,8	25	3	☺

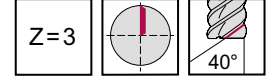
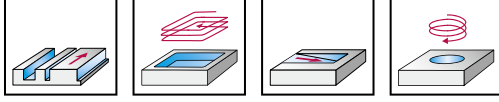
C1

Takım		D _c mm	R mm	L _c mm	l ₃ mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁ mm	Z	WJ30UJ
	Tanım										
	MD266-25.0A3L050B-	25	0,5	37,5	72	130	73	23,8	25	3	☺
	MD266-25.0A3L300B-	25	3	37,5	72	130	73	23,8	25	3	☺
	MD266-25.0A3L400B-	25	4	37,5	72	130	73	23,8	25	3	☺
	MD266-25.0A3X050C-	25	0,5	25	92	150	93	23,8	25	3	☺
	MD266-25.0A3X300C-	25	3	25	92	150	93	23,8	25	3	☺
DIN 6535 HA	MD266-25.0A3X400C-	25	4	25	92	150	93	23,8	25	3	☺

Karbür kenar/kanal frezeleri

 H608771
Protostar®


- Uzun erişim mesafesi
- Tip Al dalgalı dişli G 40



	P	M	K	N	S	H	O
kaplamasız				●●			

Takım

Tanım	D _c mm	L _c mm	l ₃ mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁ mm	Z
H608771-6	6	10	24	63	27	5,5	8	3
H608771-8	8	12	29	72	32	7,5	10	3
H608771-10	10	14	35	83	38	9,5	12	3
H608771-12	12	16	50	100	55	11,4	12	3
H608771-16	16	20	63	115	67	15,2	16	3
H608771-20	20	20	70	125	75	19	20	3

DIN 6535 HA

 Kanal frezeleme $a_p \leq 1,0 \times D_c$
 Kenar frezeleme $a_e \leq 0,6 \times D_c$

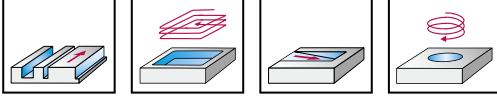
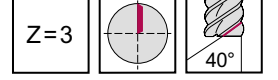
Karbür kenar/kanal frezeleri

H608411

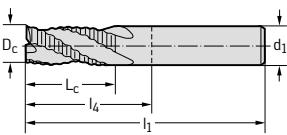
Protostar®



- Tip Al dalgalı dişli G 40
- V-Kesme kenarlı



	P	M	K	N	S	H	O
kaplamasız				●●			

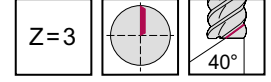
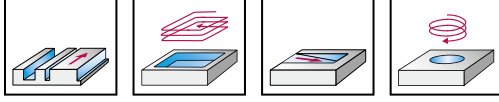
Takım		D _c mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ mm	Z
 DIN 6535 HA	H608411-6	6	13	57	21	6	3
	H608411-8	8	19	63	27	8	3
	H608411-10	10	22	72	32	10	3
	H608411-12	12	26	83	38	12	3
	H608411-16	16	32	92	44	16	3
	H608411-20	20	38	104	54	20	3

Kanal frezeleme $a_p \leq 1,0 \times D_c$
Kenar frezeleme $a_e \leq 0,6 \times D_c$

Karbür kenar/kanal frezeleri

 H608871
Protostar®


- Uzun erişim mesafesi
- V-Kesme kenarlı



	P	M	K	N	S	H	O
kaplamasız				●●			

Takım	Tanım	D _c mm	L _c mm	l ₃ mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁ mm	Z
	H608871-6	6	10	24	63	27	5,5	8	3
	H608871-8	8	12	29	72	32	7,5	10	3
	H608871-10	10	14	35	83	38	9,5	12	3
	H608871-12	12	16	50	100	55	11,4	12	3
	H608871-16	16	20	63	115	67	15,2	16	3
	H608871-20	20	20	70	125	75	19	20	3
	H608871-25	25	25	75	135	79	23,8	25	3

DIN 6535 HA

 Kanal frezeleme $a_p \leq 1,0 \times D_c$
 Kenar frezeleme $a_e \leq 0,6 \times D_c$

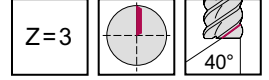
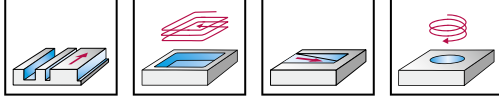
Karbür kenar/kanal frezeleri

H618911

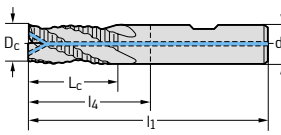
Protostar®



- Tip Al dalgalı dişli G 40



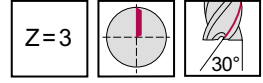
	P	M	K	N	S	H	O
kaplamasız				●●			

Takım		D _c mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ mm	Z
 <p>DIN 6535 HB</p>	H618911-6	6	13	57	21	6	3
	H618911-8	8	19	63	27	8	3
	H618911-10	10	22	72	32	10	3
	H618911-12	12	26	83	38	12	3
	H618911-14	14	26	83	38	14	3
	H618911-16	16	32	92	44	16	3
	H618911-20	20	38	104	54	20	3

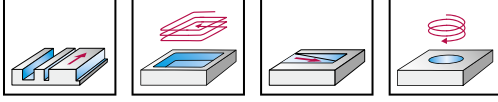
Kanal frezeleme $a_p \leq 1,0 \times D_c$
Kenar frezeleme $a_e \leq 0,6 \times D_c$

Karbür kenar/kanal frezeleri

MB265 Supreme

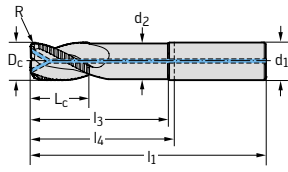


– Uzun erişim mesafesi



	P	M	K	N	S	H	O
WJ30CA				●●			
WJ30UU				●●			

Takım



DIN 6535 HA

Tanım	D _c mm	R mm	L _c mm	l ₃ mm	l ₄ mm	l ₁ mm	d ₂ mm	d ₁ mm	Z	WJ30CA	WJ30UU
MB265-16.0A3X200A-	16	2	20	65	67	115	15,2	16	3	●	●
MB265-16.0A3X200B-	16	2	24	42	44	92	15,2	16	3	●	●
MB265-16.0A3X300A-	16	3	20	65	67	115	15,2	16	3		●
MB265-20.0A3X200A-	20	2	20	88	90	140	19	20	3	●	●
MB265-20.0A3X200B-	20	2	25	73	75	125	19	20	3	●	●
MB265-20.0A3X400B-	20	4	25	73	75	125	19	20	3		●
MB265-25.0A3X200A-	25	2	25	92	94	150	23,8	25	3		●
MB265-25.0A3X200B-	25	2	30	72	74	130	23,8	25	3		●
MB265-25.0A3X200C-	25	2	37	52	54	110	23,8	25	3	●	
MB265-25.0A3X300B-	25	3	30	72	74	130	23,8	25	3		●
MB265-25.0A3X400A-	25	4	25	92	94	150	23,8	25	3		●
MB265-25.0A3X400B-	25	4	30	72	74	130	23,8	25	3	●	●
MB265-25.0A3X400C-	25	4	37	52	54	110	23,8	25	3		●

 Kanal frezeleme $a_p \leq 1,5 \times D_c$
 Kenar frezeleme $a_e \leq 0,6 \times D_c$

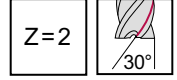
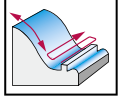
Küresel alınlı karbür kopya freze

H602111

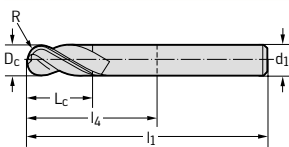
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- Tip Al 30



	P	M	K	N	S	H	O
kaplamasız				●●			

Takım		D _c mm	R mm	L _c mm	l ₄ mm	d ₁	l ₁ mm	Z
 DIN 6535 HA	H602111-2	2	1	6	32	3	60	2
	H602111-3	3	1,5	7	44	6	80	2
	H602111-4	4	2	8	44	6	80	2
	H602111-5	5	2,5	10	44	6	80	2
	H602111-6	6	3	10	44	6	80	2
	H602111-8	8	4	16	64	8	100	2
	H602111-10	10	5	19	60	10	100	2
	H602111-12	12	6	22	55	12	100	2
	H602111-16	16	8	26	52	16	100	2

Şaft çapı d₁ > 10 mm için şaft toleransı h6

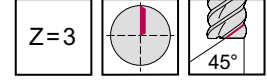
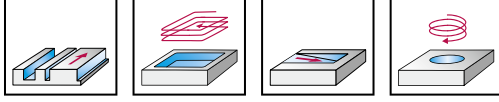
Karbür kenar/kanal frezeleri

H6E2211

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- Tip Al 45



	P	M	K	N	S	H	O
kaplamasız				●●			

Takım	Tanım	D _c mm	L _c mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁	Anahtar geniřliđi mm	Z
	H6E2211-E10-10	10	5,5	23,6	12,4	9,7	E10	8	3
	H6E2211-E12-12	12	6,5	28,3	14,5	11,7	E12	10	3
	H6E2211-E16-16	16	8,5	35,7	18,7	15,5	E16	12	3
	H6E2211-E20-20	20	11	40,8	21,3	19,3	E20	16	3
	H6E2211-E25-25	25	13,5	49,6	25,6	24,2	E25	20	3

ConeFit

Kanal frezeleme $a_p \leq 0,5 \times D_c$
Kenar frezeleme $a_e \leq 0,3 \times D_c$

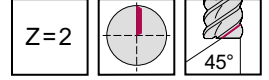
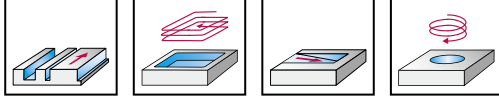
Karbür kenar/kanal frezeleri

H6E2511

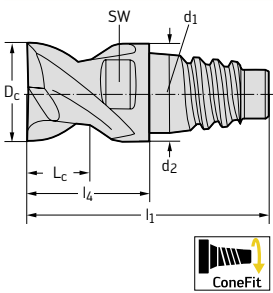
Protostar®



- Tip Al 45



	P	M	K	N	S	H	O
kaplamasız				●●			

Takım	Tanım	D _c mm	L _c mm	l ₁ mm	l ₄ mm	d ₂ mm	d ₁	Anahtar geniřliđi mm	Z
	H6E2511-E10-10	10	5,5	23,6	12,4	9,7	E10	8	2
	H6E2511-E12-12	12	6,5	28,3	14,5	11,7	E12	10	2
	H6E2511-E16-16	16	8,5	35,7	18,7	15,5	E16	12	2

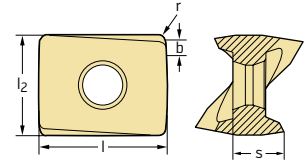
ConeFit

Kanal frezeleme $a_p \leq 0,5 \times D_c$


Kenar frezeleme $a_e \leq 0,5 \times D_c$

Gövde ve montaj parçaları teslimat kapsamına dahildir

Eşkenar dörtgen (rombik) negatif LNGX

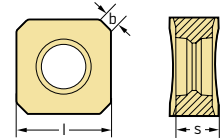


Uçlar


Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	b mm	N	
								HC	HW
								WXN15	WK10
 LNGX130708R-L88	7,74	G	4	13,7	11	0,8	1,2	⊕	⊕
								⊕	⊕

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Kare negatif SNHX

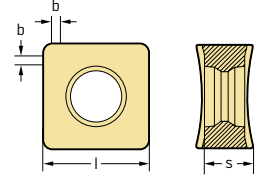


Uçlar


Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	b mm	N	
						HC	HW
						WXN15	WK10
 SNHX0904ANN-K88	4,68	H	8	9,52	1,5	⊕	⊕
						⊕	⊕
SNHX1205ANN-K88	5,54	H	8	12,7	1,5	⊕	⊕

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Kare negatif SNHX

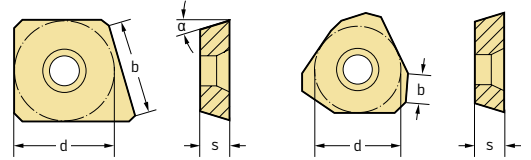


Uçlar


Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	b mm	N	
						HC HW	WXN15 WK10
 SNHX0904ZNN-K88 SNHX1205ZNN-K88	5,01	H	8	9,52	1	☺	☺
	5,89	H	8	12,7	1,2	☺	☺

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Hassas işleme uçları SPHX

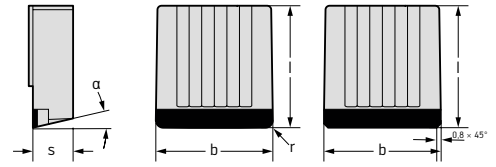


Uçlar


Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	d mm	α	b mm	N	
							DP	WCD10
 SPHX1204PDR-A88	4,76	H	1	12,7	11°	3,5	☺	

DP = Çok kristalli elmas

PCD hassas işleme uçları XOEX

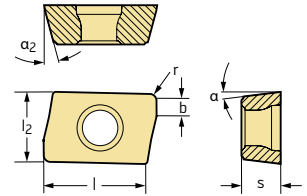


Uçlar


Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	r mm	α	b mm	N	
								WDN20	DP
 XOEX12T308N-F-A88 XOEX12T3AZR-F-A88	4	E	1	12,16	0,8	13°	11,8	⊕	⊕
	4	E	1	12,16	0,8	13°	11,8	⊕	⊕

DP = Çok kristalli elmas

Eşkenar dörtgen (rombik) pozitif ACGT

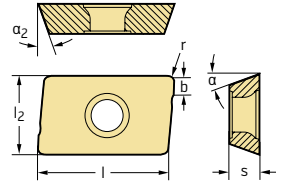


Uçlar

Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	α	α ₂	b mm	N	
										WCN15	HC HW
 ACGT060204R-M85	2,38	G	2	6,7	4,4	0,4	7°	15°	0,9	⊕	⊕
											⊕

 HW = Kaplamasız karbür
 HC = Kaplamalı karbür

Eşkenar dörtgen (rombik) pozitif ADHT

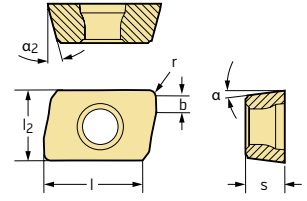


Uçlar



































Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	α	α ₂	b mm	N	
										WCXN15	WK10
ADHT0803PEL-G88	3,35	H	2	9,52	6,75	0,4	15°	20°	1,2	HC	HW
ADHT0803PER-G88	3,35	H	2	9,52	6,75	0,4	15°	20°	1,2	HC	HW
ADHT10T3PER-G88	3,8	H	2	11,3	7,25	0,8	15°	15°	1,2	HC	HW
ADHT120416L-G88	4,76	H	2	13,6	8,4	1,6	15°	20°	1	HC	HW
ADHT120416R-G88	4,76	H	2	13,6	8,4	1,6	15°	20°	1	HC	HW
ADHT120430L-G88	4,76	H	2	13,6	8,4	3	15°	20°	0,8	HC	HW
ADHT120430R-G88	4,76	H	2	13,6	8,4	3	15°	20°	0,8	HC	HW
ADHT120440L-G88	4,76	H	2	13,6	8,4	4	15°	20°	0,4	HC	HW
ADHT120440R-G88	4,76	H	2	13,6	8,4	4	15°	20°	0,4	HC	HW
ADHT1204PEL-G88	4,76	H	2	13,6	8,4	0,8	15°	20°	1,2	HC	HW
ADHT1204PER-G88	4,76	H	2	13,6	8,4	0,8	15°	20°	1,2	HC	HW
ADHT160616L-G88	6,15	H	2	17,5	10,8	1,6	15°	20°	1,4	HC	HW
ADHT160616R-G88	6,15	H	2	17,5	10,8	1,6	15°	20°	1,4	HC	HW
ADHT1606PEL-G88	6,15	H	2	17,5	10,8	0,8	15°	20°	1,6	HC	HW
ADHT1606PER-G88	6,15	H	2	17,5	10,8	0,8	15°	20°	1,6	HC	HW

HC = Kaplamalı karbür
HW = Kaplamasız karbür

Eşkenar dörtgen (rombik) pozitif BCHT

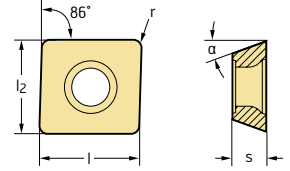


Uçlar




Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	α	α ₂	b mm	N	
										HC	HW
 BCGT090304R-K85	3,21	G	2	10,3	6,3	0,4	7°	15°	1,2		
 BCHT120404R-K85	4,8	H	2	13,8	7,6	0,4	7°	15°	1,7		
BCHT120408R-K85	4,8	H	2	13,8	7,6	0,8	7°	15°	1,3		
BCHT120412R-K85	4,8	H	2	13,8	7,6	1,2	7°	15°	1,2		
BCHT120416R-K85	4,8	H	2	13,8	7,6	1,6	7°	15°	1,1		
BCHT120420R-K85	4,8	H	2	13,8	7,6	2	7°	15°	1,2		
BCHT120425R-K85	4,8	H	2	13,8	7,6	2,5	7°	15°	1		
BCHT120430R-K85	4,8	H	2	13,8	7,6	3	7°	15°	0,7		
BCHT120440R-K85	4,8	H	2	13,8	7,6	4	7°	15°	0,4		
BCHT160508R-K85	5,75	H	2	17,3	9,9	0,8	7°	15°	2		
BCHT160512R-K85	5,75	H	2	17,3	9,9	1,2	7°	15°	1,7		
BCHT160516R-K85	5,75	H	2	17,3	9,9	1,6	7°	15°	1,7		
BCHT160520R-K85	5,75	H	2	17,3	9,9	2	7°	15°	1,5		
BCHT160525R-K85	5,75	H	2	17,3	9,9	2,5	7°	15°	1,4		
BCHT160530R-K85	5,75	H	2	17,3	9,9	3	7°	15°	1,2		
BCHT160540R-K85	5,75	H	2	17,3	9,9	4	7°	15°	1,1		

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Eşkenar dörtgen (rombik) pozitif MPHT / MPHX

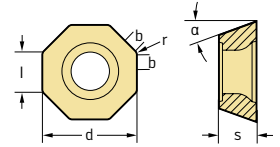


Uçlar



Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	α	N	
								WCXN15	HC
 MPHT120408-G88	4,76	H	2	12,7	12,7	0,8	11°	WCXN15	HC
 MPHX060304-G88	3,18	H	2	6,35	6,35	0,4	11°	WCXN15	HC
 MPHX080305-G88	3,18	H	2	8,3	8,3	0,5	11°	WCXN15	HC

HC = Kaplamalı karbür

Sekiz köşeli pozitif ODHT

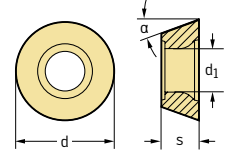


Uçlar














Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	d mm	l mm	r mm	α	b mm	N	
									WCXN15	HC HW
 ODHT0504ZZN-G88	4,76	H	8	12,7	5,26	0,8	15°	1,2	WCXN15	HC HW
 ODHT0605ZZN-G88	5,56	H	8	15,88	6,58	0,8	15°	1,6	WCXN15	HC HW

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Yuvarlak pozitif RDGX

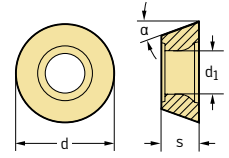


Uçlar
























Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	d mm	α	d ₁ mm	N	
							WK10	HW
 RDGX0501M0-G88	1,45	G	4	5	15°	2,2		
RDGX071M0-G88	1,94	G	4	7	15°	2,8		
RDGX1003M0-G88	3,18	G	4	10	15°	4,4		
RDGX12T3M0-G88	3,97	G	4	12	15°	4,4		
RDGX1604M0-G88	4,76	G	4	16	15°	5,5		
RDGX2006M0-G88	6	G	4	20	15°	5,5		

HW = Kaplamasız karbür

Yuvarlak pozitif RDGT

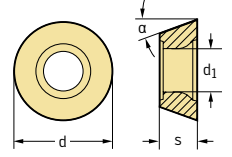


Uçlar




Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	d mm	α	d ₁ mm	N		
							WCN15	WK10	WMG40
 RDGT1204M0-G85	4,76	G	6	12	15°	4,4			
RDGT2006M0-G85	6,35	G	6	20	15°	6,5			
 RDGT0803M0-G88	3,18	G	4	8	15°	3,4			
RDGT10T3M0-G88	3,97	G	4	10	15°	4,4			
RDGT1204M0-G88	4,76	G	6	12	15°	4,4			
RDGT1605M0-G88	5,56	G	6	16	15°	5,5			
RDGT2006M0-G88	6,35	G	6	20	15°	6,5			

 HW = Kaplamasız karbür
 HC = Kaplamalı karbür

Yuvarlak pozitif ROGX

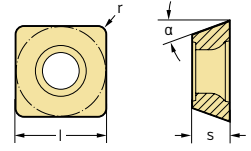


Uçlar








Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	d mm	α	d ₁ mm	N	
							WCN15	WCN10
 ROGX0803M04-G88	3,18	G	4	8	11°	3,4	HC	HW
 ROGX2006M08-G88	6,35	G	8	20	15°	6,5	HC	HW
 ROGX10T3M08-G88	3,97	G	8	10	11°	3,9	HC	HW
ROGX1204M08-G88	4,76	G	8	12	11°	4,4	HC	HW
ROGX1605M08-G88	5,56	G	8	16	15°	5,5	HC	HW

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Kare pozitif SPHT

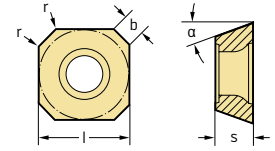


Uçlar










	Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	r mm	α	N	
								HC	HW
								WXN15	WK10
	SPHT060304-G88	3,18	H	4	6,35	0,4	11°		
	SPHT09T308-G88	3,97	H	4	9,52	0,8	11°		
	SPHT120408-G88	4,76	H	4	12,7	0,8	11°		

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Kare pozitif SDGT / SEHT / SPGT

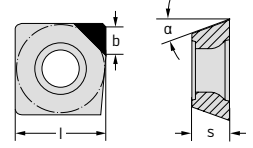


Uçlar



	Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	r mm	α	b mm	N	
									HC	HW
									WXN15	WK10
	SDGT09T3AEN-G88	3,97	G	4	9,52	0,3	15°	1,2		
	SEHT1204AFN-K88	4,76	H	4	12,7	0,8	20°	1,8		
	SPGT1204AEN-K88	4,76	G	4	12,7		11°	1,5		

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Kare pozitif SPHW

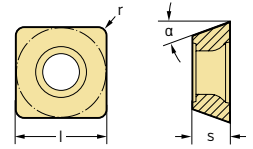


Uçlar


	Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	α	b mm	N	
								DP	WCD10
	SPHW1204EDR-A88	4,76	H	1	12,7	11°	1,5	☺	☺
	SPHW1204PDR-A88	4,76	H	1	12,7	11°	1,5	☺	☺

DP = Çok kristalli elmas

Kare pozitif SDGT

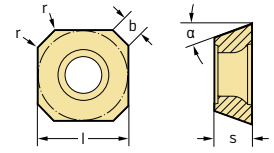


Uçlar










	Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	r mm	α	N	
								HC HW	WXN15 WK10
	SDHT06T204-G88	2,78	H	4	6,35	0,4	15°	☺	☺
	SDHT09T304-G88	3,97	H	4	9,52	0,4	15°	☺	☺
	SDHT09T308-G88	3,97	H	4	9,52	0,8	15°	☺	☺
	SDHT120408-G88	4,76	H	4	12,7	0,8	15°	☺	☺

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Kare pozitif SDGT

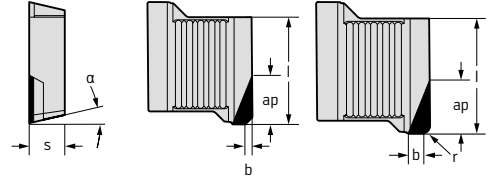


Uçlar










Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	r mm	α	b mm	N	
								HC HW	WXN15 WK10
 SDHT09T3AZN-G88 SDHT1204AZN-G88	3,97	H	4	9,52	0,3	15°	1,2	 	 
	4,76	H	4	12,7	0,3	15°	1,4	 	 

HW = Kaplamasız karbür
HC = Kaplamalı karbür

PCD kesici uçlar XOEN

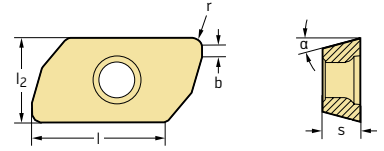


Uçlar

Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	r mm	α	b mm	a _p mm	N	
									DP	WDN20
 XOEN12T3AZR-A-A88	4	E	1	12,21		13°	0,8	5,1		
 XOEN12T308R-A-A88	4	E	1	12,11	0,8	13°	1,2	5		
 XOEN12T308R-F-A88	4	E	1	12,11	0,8	13°	1,2	10,3		

DP = Çok kristalli elmas

Eşkenar dörtgen (rombik) pozitif ZDGT



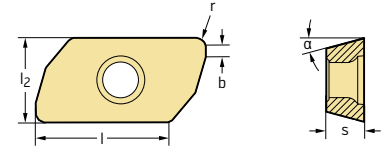
Uçlar

Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	α	b mm	N		
									WNN15	HC WXN15	HW WK10
ZDGT150404R-K85	4,76	G	2	16,2	10,5	0,4	15°	1,2	☺	☺	☺
ZDGT150408R-K85	4,76	G	2	16,2	10,5	0,8	15°	1,2	☺	☺	☺
ZDGT150412R-K85	4,76	G	2	16,2	10,5	1,2	15°	1,2	☺	☺	☺
ZDGT150416R-K85	4,76	G	2	16,2	10,5	1,6	15°	1,2	☺	☺	☺
ZDGT150420R-K85	4,76	G	2	16,2	10,5	2	15°	1,2	☺	☺	☺
ZDGT150425R-K85	4,76	G	2	16,2	10,5	2,5	15°	1,2	☺	☺	☺
ZDGT150430R-K85	4,76	G	2	16,2	10,5	3	15°	1,2	☺	☺	☺
ZDGT150440R-K85	4,76	G	2	16,2	10,5	4	15°	1,2	☺	☺	☺
ZDGT200508R-K85	5,56	G	2	21,2	14	0,8	15°	1,2	☺		☺
ZDGT200512R-K85	5,56	G	2	21,2	14	1,2	15°	1,2			☺
ZDGT200516R-K85	5,56	G	2	21,2	14	1,6	15°	1,2			☺
ZDGT200520R-K85	5,56	G	2	21,2	14	2	15°	1,2	☺		☺
ZDGT200530R-K85	5,56	G	2	21,2	14	3	15°	1,2	☺		☺
ZDGT200540R-K85	5,56	G	2	21,2	14	4	15°	1,2	☺		☺
ZDGT200550R-K85	5,56	G	2	21,2	14	5	15°	1,2			☺
ZDGT200560R-K85	5,56	G	2	21,2	14	6	15°	1,2			☺
ZDGT200564R-K85	5,56	G	2	21,2	14	6,4	15°	1,2			☺














ZDGT1504 ve ZDGT2005, M2131 rampalama frezesinde kullanılabilir

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Eşkenar dörtgen (rombik) pozitif ZDGT



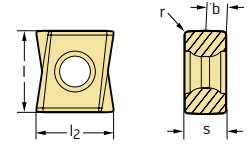
Uçlar

Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	α	b mm	N
									HW
 ZDGT15A404R-K85	4,76	G	2	16,2	10,5	0,4	15°	1,2	
ZDGT15A408R-K85	4,76	G	2	16,2	10,5	0,8	15°	1,2	
ZDGT15A412R-K85	4,76	G	2	16,2	10,5	1,2	15°	1,2	
ZDGT15A416R-K85	4,76	G	2	16,2	10,5	1,6	15°	1,2	
ZDGT15A430R-K85	4,76	G	2	16,2	10,5	3	15°	1,2	
ZDGT15A440R-K85	4,76	G	2	16,2	10,5	4	15°	1,2	
ZDGT20A508R-K85	5,56	G	2	21,2	14	0,8	15°	1,2	
ZDGT20A516R-K85	5,56	G	2	21,2	14	1,6	15°	1,2	
ZDGT20A520R-K85	5,56	G	2	21,2	14	2	15°	1,2	
ZDGT20A530R-K85	5,56	G	2	21,2	14	3	15°	1,2	
ZDGT20A540R-K85	5,56	G	2	21,2	14	4	15°	1,2	
ZDGT20A550R-K85	5,56	G	2	21,2	14	5	15°	1,2	


ZDGT15A4 ve ZDGT20A5, M2131 ve M2331 rampalama frezesinde kullanılabilir

HW = Kaplamasız karbür

Eşkenar dörtgen (rombik) teğetsel LNHU

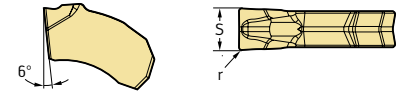


Uçlar


Tanım	s mm	Tolerans sınıfı	Kesme kenarların sayısı	l mm	l ₂ mm	r mm	b mm	N	
								HC	HW
								WXN15	WK10
 LNHU090404R-L85T LNHU130608R-L85T	4,5	H	4	9	8,5	0,4	1,5	☺	☺
	6,8	H	4	13	12	0,8	2,2	☺	☺

HW = Kaplamasız karbür
HC = Kaplamalı karbür

Frezeleyerek kesme – Uçlar SX



Uçlar

Tanım	s mm	r mm	f mm	S _{Tol} mm	l _{Tol} mm	N	
						HW	S
						WK1	WK1
 SX-1E150N01-SK8 SX-2E200N02-SK8 SX-3E300N02-SK8 SX-4E400N02-SK8 SX-5E500N04-SK8	1,5	0,1	0,03–0,08	±0,02	±0,05	☺	☺
	2	0,2	0,05–0,10	±0,02	±0,05	☺	☺
	3	0,2	0,05–0,15	±0,02	±0,05	☺	☺
	4	0,2	0,05–0,20	±0,02	±0,05	☺	☺
	5	0,4	0,05–0,25	±0,02	±0,05	☺	☺

l_{Tol} = Bir kesici uç partisi dahilinde kesici uç değişiminde tekrarlanabilirlik
Radyüs toleransı r_{Tol} = ±0,05 mm

HW = Kaplamasız karbür

Kesici uçlu frezeleme takımları

Ayar açısı κ	90°	90°	90°

Selection

Selection

Selection



Tanım	M2331		M2131		F2250	
Ø aralığı [mm] [inch]	40-50	2,000	25-80	1,000-3,000	63-100	—

Tutucu tipi

DIN 1835 B						
Silindirik delik DIN 138	✓	✓	✓	✓	✓	
ScrewFit			✓	✓		
Silindirik şaft			✓	✓		
Silindirik modüler						
Dik konik						
HSK			✓			
NCT						

P Çelik						
M Paslanmaz çelik						
K Dökme demir						
N Demir dışı metaller	••		••		••	
S Zor işlenen malzemeler						
H Sert malzemeler						
O Diğerleri	•		•			

Kesici uçlar



Kesme kenarların sayısı	2		2		1 / 1	
maks. kesme derinliği [mm]	15 - 20		15 - 20		3	
Katalogdaki sayfa	240		238		242	

QR kodu


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M2331

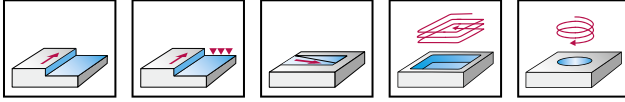
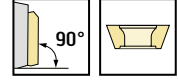
M2131

F2250

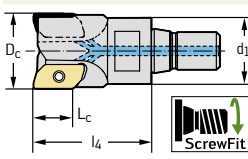
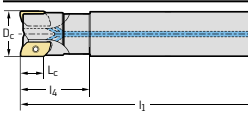
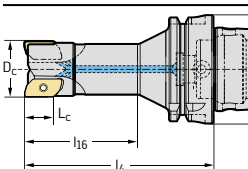
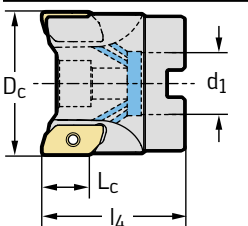
Rampalama frezeleri

M2131 mm


- Cep işleme için
- Kesici uç başına 2 kesme kenarı



M2131	P	M	K	N	S	H	O

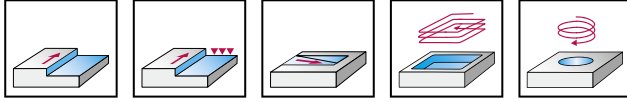
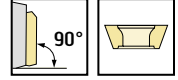
Takım	Tanım	D _c mm	d ₁ mm	l ₄ mm	l ₁₆ mm	l ₁ mm	L _c mm	Z	kg	Kesici uç sayısı	Tip
 ScrewFit	M2131-025-T22-02-15	25	T22	45			15	2	0,12	2	ZD .. 1504 ..
	M2131-032-T28-02-15	32	T28	50			15	2	0,23	2	
	M2131-032-T28-02-20	32	T28	50			20	2	0,19	2	ZD .. 2005 ..
	M2131-032-T28-03-15	32	T28	50			15	3	0,21	3	ZD .. 1504 ..
	M2131-040-T36-02-20	40	T36	50			20	2	0,35	2	ZD .. 2005 ..
	M2131-040-T36-03-15	40	T36	50			15	3	0,39	3	ZD .. 1504 ..
 Silindirik shaft	M2131-025-A20-02-15-S	25	20	40		110	15	2	0,25	2	ZD .. 1504 ..
	M2131-025-A25-02-15-L	25	25	40		150	15	2	0,53	2	
	M2131-032-A20-02-15-S	32	20	40		110	15	2	0,29	2	
	M2131-032-A20-03-15-S	32	20	40		110	15	3	0,26	3	
	M2131-032-A25-02-15-L	32	25	40		175	15	2	0,65	2	
	M2131-032-A25-02-20-L	32	25	40		175	20	2	0,61	2	ZD .. 2005 ..
	M2131-032-A25-03-15-L	32	25	40		175	15	3	0,62	3	ZD .. 1504 ..
	M2131-032-A32-02-15-L	32	32	50		175	15	2	0,97	2	
	M2131-032-A32-02-20-L	32	32	50		175	20	2	0,93	2	ZD .. 2005 ..
	M2131-032-A32-03-15-L	32	32	50		175	15	3	0,96	3	ZD .. 1504 ..
 HSK DIN 69893-1 A	M2131-025-H63-02-15	25	63	110	60		15	2	1	2	ZD .. 1504 ..
	M2131-032-H63-02-15	32	63	110	65		15	2	1,05	2	
	M2131-050-H63-03-20	50	63	110	80		20	3	1,43	3	ZD .. 2005 ..
	M2131-050-H63-04-15	50	63	110	80		15	4	1,48	4	ZD .. 1504 ..
 Silindirik delik Enine kama DIN 138	M2131-040-B16-03-15	40	16	50			15	3	0,27	3	ZD .. 1504 ..
	M2131-050-B22-03-20	50	22	60			20	3	0,44	3	ZD .. 2005 ..
	M2131-050-B22-04-15	50	22	50			15	4	0,38	4	ZD .. 1504 ..
	M2131-063-B22-04-20	63	22	50			20	4	0,52	4	ZD .. 2005 ..
	M2131-063-B22-05-15	63	22	50			15	5	0,61	5	ZD .. 1504 ..
	M2131-080-B27-05-15	80	27	60			15	5	1,39	5	

Takımların ön balansı yapılmıştır
 Oyuk konik şaftlı takımların artık balans düzeltme değeri 3 gmm'dir - Chip deliği ile, chip olmadan
 Dörries Scharmann için M2131-...-D özel arabirimi (HSK-A DIN 69893'e benzer)
 HSK için aksesuarlar - bkz. Montaj parçaları ve aksesuarlar / HSK için aktarma üniteleri
 Gövde ve montaj parçaları teslimat kapsamına dahildir

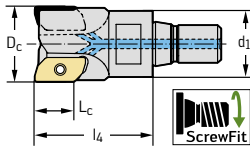
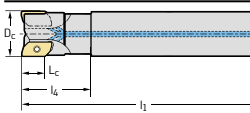
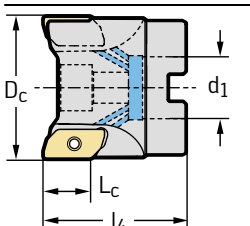
Rampalama frezeleri

M2131 inch

- Cep işleme için
- Kesici uç başına 2 kesme kenarı



M2131	P	M	K	N	S	H	O
				●●			●

Takım	Tanım	D _c inch	d ₁ inch	l ₄ inch	l ₁ inch	L _c inch	Z	lbs	Kesici uç sayısı	Tip
	M2131.026-T22-02-15	1,000	T22	1,752		0,591	2	0,000	2	ZD .. 1504 ..
	M2131.031-T28-02-15	1,250	T28	2,000		0,591	2	0,009	2	
	M2131.031-T28-03-15	1,250	T28	2,000		0,591	3	0,008	3	
	M2131.038-T36-03-15	1,500	T36	2,000		0,591	3	0,015	3	
	M2131.026-A26-02-15-L	1,000	1,000	1,500	6,000	0,591	2	0,021	2	ZD .. 1504 ..
	M2131.031-A26-02-15-L	1,250	1,000	1,500	7,000	0,591	2	0,026	2	
	M2131.031-A26-03-15-L	1,250	1,000	1,500	7,000	0,591	3	0,025	3	
	M2131.038-A31-03-15-L	1,500	1,250	2,252	7,000	0,591	3	0,042	3	
	M2131.051-B19-03-20	2,000	0,750	2,000		0,787	3	0,014	3	ZD .. 2005 ..
	M2131.051-B19-04-15	2,000	0,750	2,000		0,591	4	0,016	4	ZD .. 1504 ..
	M2131.064-B26-04-20	2,500	1,000	2,000		0,787	4	0,019	4	ZD .. 2005 ..
	M2131.064-B26-05-15	2,500	1,000	2,000		0,591	5	0,021	5	ZD .. 1504 ..
	M2131.076-B26-05-15	3,000	1,000	2,000		0,591	5	0,037	5	
	M2131.076-B26-05-20	3,000	1,000	2,000		0,787	5	0,032	5	ZD .. 2005 ..

Silindirik delik
Enine kama DIN 138

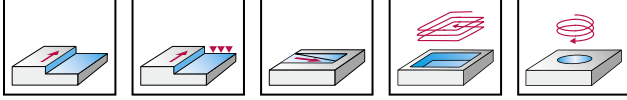
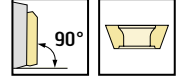
Takımların ön balansı yapılmıştır
Gövde ve montaj parçaları teslimat kapsamına dahildir

Rampalama frezeleri

M2331



- Cep işleme için
- Kesici uç başına 2 kesme kenarı



	P	M	K	N	S	H	O
M2331				●●			●

Takım

Tanım	D _c mm	d ₁ mm	l ₄ mm	l ₁₆ mm	L _c mm	Z	kg	Kesici uç sayısı	Tip
M2331-050-H80F-04-15-MA	50	80	110	80	15	4	1,89	4	ZD .. 15A4 ..
M2331-040-B16-03-15	40	16	50		15	3	0,22	3	ZD .. 15A4 ..
M2331-050-B22-03-15	50	22	50		15	3	0,39	3	ZD .. 20A5 ..
M2331-050-B22-03-20	50	22	60		20	3	0,42	3	ZD .. 20A5 ..
M2331-050-B22-04-15	50	22	50		15	4	0,34	4	ZD .. 15A4 ..

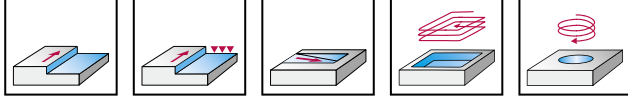
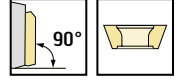
Silindirik delik
Enine kama DIN 138

Takımların ön balansı yapılmıştır
Oyuk konik şaftlı takımların artık balans düzeltme değeri 3 gmm'dir – Chip deliği ile, chip olmadan Makino'ya özgü arabirim M2331-...-MA (HSK-A DIN 69893 ile benzer yapıda)
Gövde ve montaj parçaları teslimat kapsamına dahildir

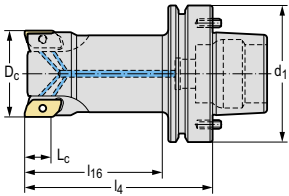
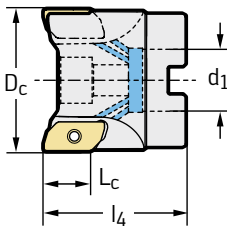
Rampalama frezeleri

M2331 inch

- Cep işleme için
- Kesici uç başına 2 kesme kenarı



	P	M	K	N	S	H	O
M2331				●			●

Takım	Tanım	D _c inch	d ₁ inch	l ₄ inch	l ₁₆ inch	L _c inch	Z	lbs	Kesici uç sayısı	Tip
	M2331.051-H80F-03-20-MA	2,000	3,150	4,331	3,150	0,787	3	0,074	3	ZD .. 20A5 ..
	M2331.051-H80F-04-15-MA	2,000	3,150	4,331	3,150	0,591	4	0,075	4	ZD .. 15A4 ..
	M2331.051-B19-03-15	2,000	0,750	2,000		0,591	3	0,018	3	ZD .. 15A4 ..

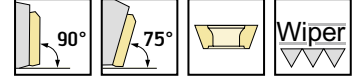
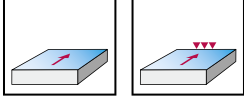
Silindirik delik
Enine kama DIN 138

Takımların ön balansı yapılmıştır
Oyuk konik şaftlı takımların artık balans düzeltme değeri 3 gmm'dir - Chip deliği ile, chip olmadan
Makino'ya özgü arabirim M2331-...-MA (HSK-A DIN 69893 ile benzer yapıda)
Gövde ve montaj parçaları teslimat kapsamına dahildir

Hafif metaller için yüzey frezeleme takımları

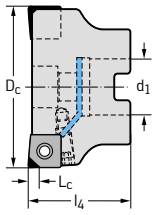
F2250
SPH . 1204 . DR


- Salgı ayarlanabilir
- Kesici uç başına 1 kesme kenarı



	P	M	K	N	S	H	O
F2250				●●			

Takım



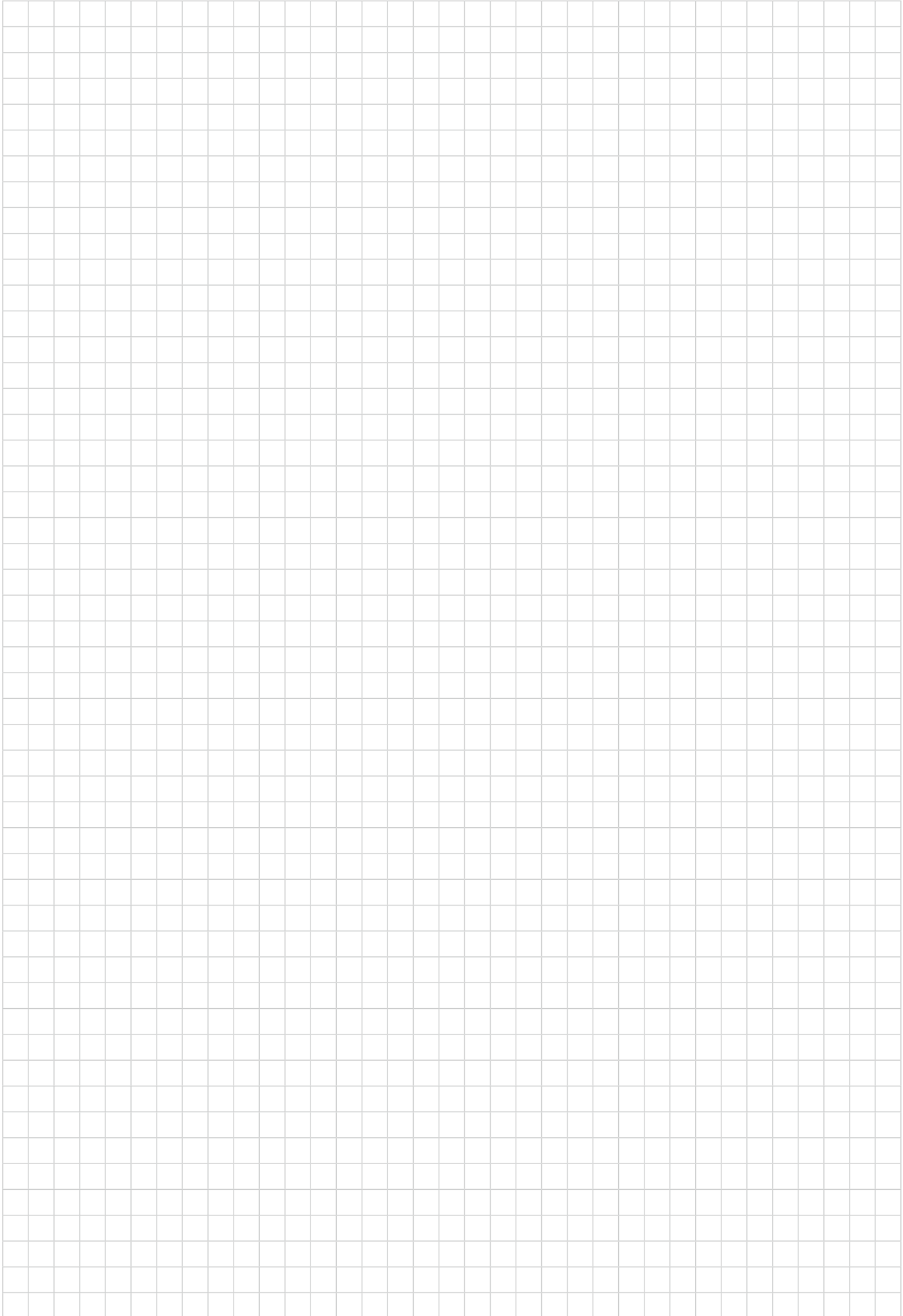
Tanım	D _c mm	d ₁ mm	l ₄ mm	L _c mm	Z	kg	Kesici uç sayısı	Tip
F2250.B22.063.Z05.03	63	22	40	3	5	0,43	5	SPH . 1204 . DR
F2250.B27.080.Z06.03	80	27	50	3	6	0,78	6	
F2250.B32.100.Z07.03	100	32	50	3	7	1,32	7	

Silindirik delik
Enine kama DIN 138

Takımların ön balansı yapılmıştır
D_c 80–100 mm, çelik ana gövde; D_c 125–200 mm, alüminyum ana gövde
* Giriş açısı κ = 75° (EDR)/κ = 90° (PDR)
Gövde ve montaj parçaları teslimat kapsamına dahildir

Genel bakış

Değiştirilebilir uç	Değiştirilebilir uç tipi	Takım	Takım tipi
ACGT0602..	eşkenar dörtgen (rombik) pozitif	M5130	Kenar frezeleme takımları
ADHT0803.. ADHT10T3.. ADHT1204.. ADHT1606..	eşkenar dörtgen (rombik) pozitif	F4042 F4042R F4038 F4138 F4238 F2010 F2252	Kenar frezeleme takımları Kenar frezeleme takımları Sıralı uçlu helisel freze Sıralı uçlu helisel freze Sıralı uçlu helisel freze Kartuş Kanal frezeleri
BCGT0903.. BCHT1204.. BCHT1605..	eşkenar dörtgen (rombik) pozitif	M5130	Kenar frezeleme takımları
MPHX1204..	eşkenar dörtgen (rombik) pozitif	F2252	Kanal frezeleri
ODHT0504.. ODHT0605..	sekiz köşeli pozitif	F4080 F2010	Yüzey frezeleme takımı
RDGT0803.. RDGT10T3.. RDGT1204.. RDGT1605.. RDGT2006..	yuvarlak pozitif	F2231 F2234	Kopya frezeleri
SDHT06T2.. SDHT09T3.. SDHT1204..	kare pozitif	M4002 M4132 M4574 M4575 M4791 F2010	Yüksek ilerlemeli frezeleme takımları Kenar frezeleme takımları Pah kırma frezesi T kanal frezeleri Delme ve kanal açma frezeleri Kartuş
SPHT0603.. SPHT09T3.. SPHT1204..	kare pozitif		
XOEN12T3.. XOEX12T3.. SPHW1204.. SPHX1204..	PCD	M2127 M2127 F2250 F2250	Yüzey frezeleme takımı
ZDGT1504.. ZDGT2005..	eşkenar dörtgen (rombik) pozitif	M2131	Rampalama frezeleri
ZDGT15A4.. ZDGT20A5..	eşkenar dörtgen (rombik) pozitif	M2131 M2331	Rampalama frezeleri
LNGX1307..	eşkenar dörtgen (rombik) negatif	F4041 F2010	Kenar frezeleme takımları Kartuş
SNHX0904.. SNHX1205..	kare negatif	M5009 M5012	Yüzey frezeleme takımı
LNHU0904.. LNHU1306..	eşkenar dörtgen (rombik) teğetsel	F5041 F5038 F5141 F5138 F2010	Kenar frezeleme takımları Sıralı uçlu helisel freze Kenar frezeleme takımları Sıralı uçlu helisel freze Kartuş
SX-1E150N01.. SX-2E200N02.. SX-3E300N02.. SX-4E400N02.. SX-5E500N04..	Kesme frezeleri	F5055	Kanal frezesi



Kanal açma ve kesmede en iyiler kazanır.



Walter Xpress

Walter ile geniş kapsamlı uygulama seçeneklerine sahipsiniz.

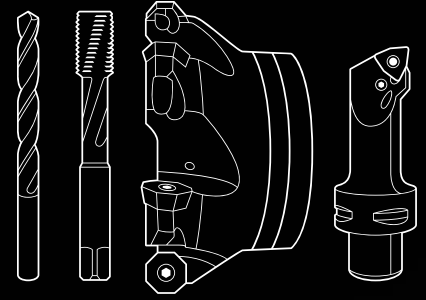
Takım değişime sürelerini %70'e kadar azaltan SmartLock uç bağlama özelliğine sahip Walter Cut DX sisteminden 200 mm'ye kadar büyük çaplar için SX sistemine. Walter, dört kesme kenarlı çok yönlü MX sistemi ve tüm malzemelerde neredeyse her türlü görevin üstesinden gelen Walter Cut GX sistemi için ayrıca Walter Xpress üretim seçeneği de sunmaktadır. Başka bir deyişle: Sizin taleplerinize uyarlanmış özel kesici uçlar ve takımlar sadece dört haftada teslimata hazır!

İşte biz buna Engineering Kompetenz diyoruz.

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