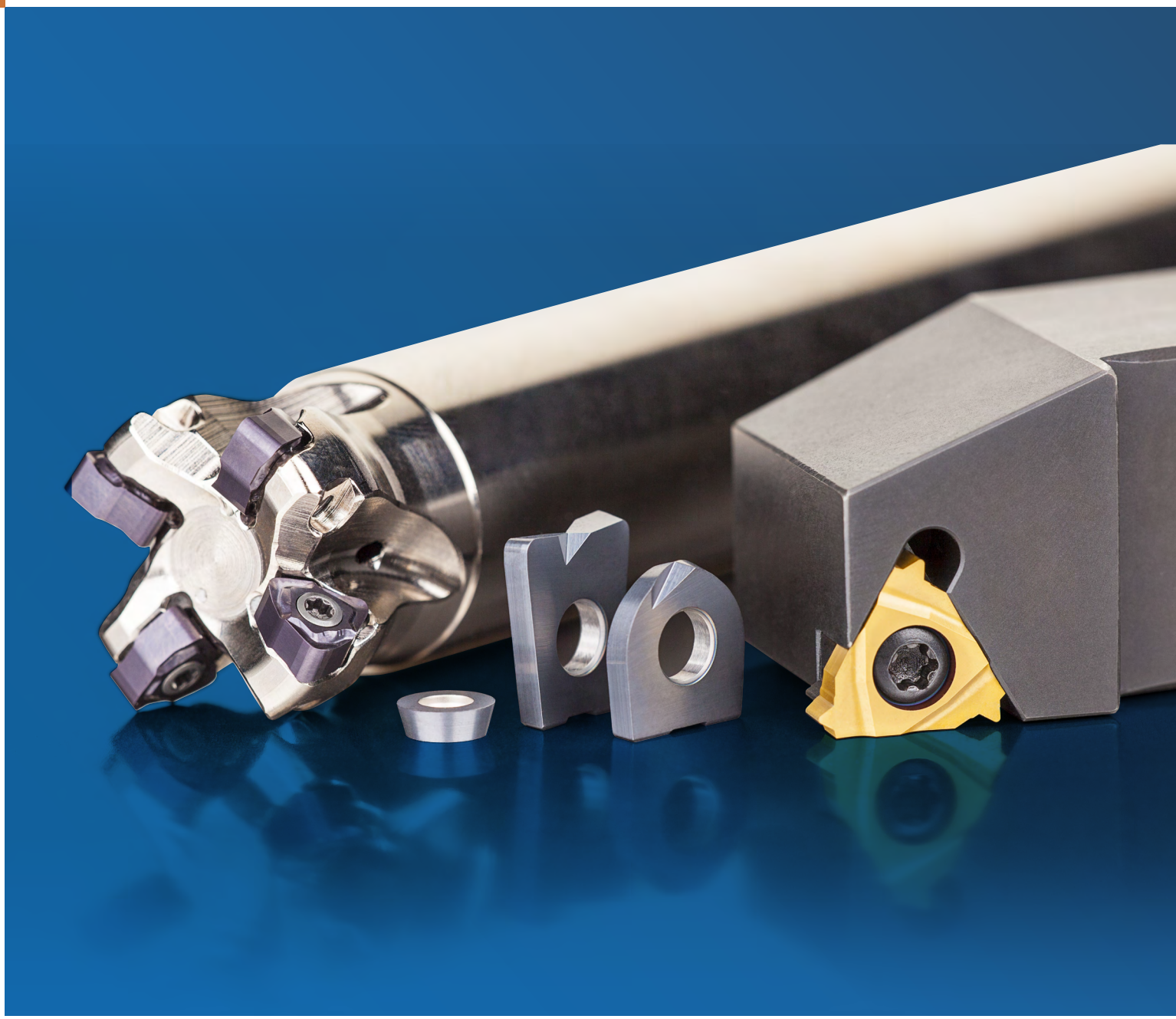
PRAMET

Yeni ürünler

2018



PRAMET

İÇİNDEKİLER

2 **FREZELEME TAKIM VE UÇLARI**

4 • SCN05C / CNHX 05
Yarı finiş ve finiş işlemler için 4 kesme kenarına sahip uçlar ile verimli kopya frezeleme takımları

10 • SWN04C / WNHX 04
Yarı finiş ve finiş işlemler için 6 kesme kenarına sahip uçlar ile Ekonomik ve verimli kopya frezeleme takımları

21 **FREZELEME UÇLARI**

22 • M4303, M4310
Sert malzemelerin frezelenmesi için yüksek performanslı kaliteler

35 **TORNALAMA UÇLARI**

39 • T8010
Güvenilir ve hassas diş tornalama için aşınmaya dayanıklı yüksek kalite

Bu broşürde yalnızca yeni ürünler yer almaktadır. Bu simge mevcut ürün yelpazesinin nerede olduğunu belirlemek ve Pramet 2017 kataloğundaki ve önceki Yeni ürünler broşüründeki ilgili sayfa numarasını belirtmek için kullanılır.

FREZELEME TAKIM VE UÇLARI

YARI FİNİŞ VE FİNİŞ İŞLEMLER İÇİN VERİMLİ KOPYA FREZELEME TAKIMLARI

Ekonomik frezeleme takımları ürün serimiz, tüm kalıp uygulamalarına uygun yeni verimli takım (ø12-20mm) serisi ile geliştirilmiştir. Uzun takım boyu gerektiren işlemlerde düzgün kesim için tasarlanmıştır.
Maksimum verimlilik için daha fazla ağız sayısı ve yüksek yüzey kalitesi sağlayan silici geometrisine sahiptir, bu özellik finiş işlemi için işleme süresini azaltır.

ÖZELLİKLER VE AVANTAJLAR

- **Verimlilik** - Sık ağız yapısı ağız sayısını artırır ve standart ağızlı takımlara oranla en az % 20 daha fazla verimlilik sağlar
- **Yüksek yüzey kalitesi** - Patentli silici kenarlar, parça duvarında ve yüzeyinde üstün finiş oluşturur
- **Azaltılmış titreşim** - Köşelerde ve ceplerde özellikle düzgün kesim ile derin kanal frezeleme için optimize edilmiştir
- **Maliyet tasarrufu** kesme kenarı başına - maks 4 kesme kenarına sahip çift taraflı kesici uçlar.
- İdeal **talaş tahliyesi** - İçten soğutma

UYGULAMALAR

Malzemeler:

- Çelik, sertleştirilmiş çelik ve dökme demir.

İşlem:

- Kontur, profil, dalma ve alın frezeleme.

KESİCİ UÇ TİPLERİ

CNHX 05

CNHX 05

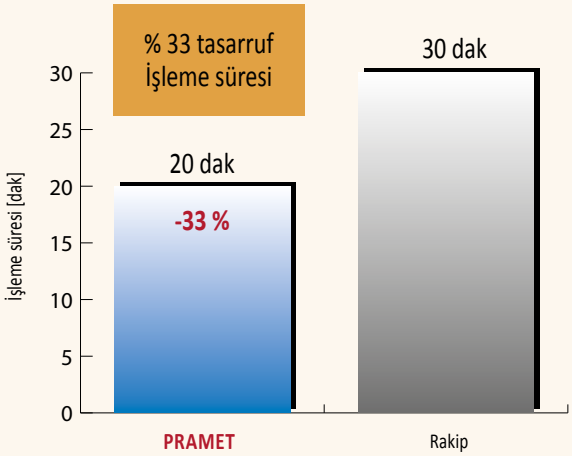
Kenar ve alın frezeleme için silici geometrisi

- 4 kesici kenar
- Yarı finiş ve finiş işlemleri
- Çift taraflı kesici uç
- Pozitif geometri
- 0,5 ve 1,0 mm radyüs

i Sertleştirilmiş malzemeler için geliştirilmiş yeni kalitelere sahiptir (bkz. sayfa 22)

SCN05C / CNHX 05 UYGULAMA ÖRNEĞİ

Malzeme: AISI H13
Malzeme grubu: H
İş parçası: Kalıp
Kesici uç: CNHX 050210ER-WM: M4310
Soğutma: EVET - hava

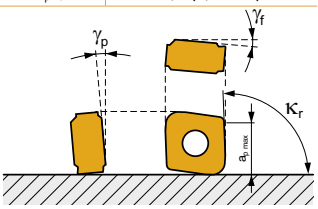


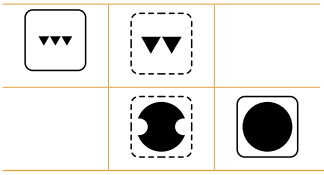
			PRAMET	Rakip
İşlem			**Kontur - finiş**	
Takım			16A3R025M08--SCN05C-C	D16 mm, 2 ağız
Kesme hızı	v_c	m/dak	180	180
Ağız başı ilerleme	f_z	mm/ağız	0,1	0,1
İlerleme	f	mm/dak	1074	716
Eksenel paso	a_p	mm	0,25	0,25
Radyal paso	a_e	mm	0,25	0,25
İşleme süresi	t	dak	20	30
Dayanıklılık	T	dak	45	30

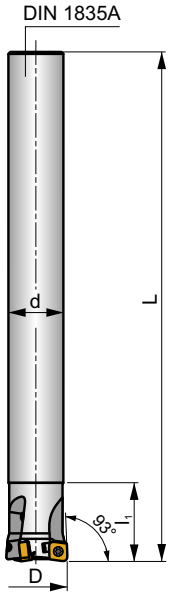
SCN05C

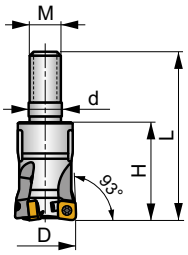
P K H S

κ_r	93
a_{pmax}	0,5 (1,0 mm)









h_m 0,02 - 0,07

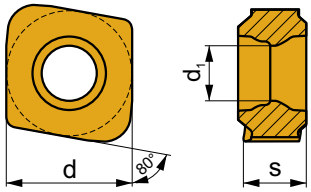
	ISO	D	L	d	l_1	H	M	γ_f°	γ_p°			max.		kg		
DIN 1835A	**12A2R020A10-SCN05C-C**	12	100	10	20	–	–	-15	-8	2	–	48700	✓	0,05	GI330	CO601
	16A3R020A14-SCN05C-C	16	130	14	20	–	–	-13,5	-7,8	3	–	42200	✓	0,13	GI330	CO601
	20A5R020A18-SCN05C-C	20	160	18	20	–	–	-12,7	-7,5	5	✓	37700	✓	0,28	GI330	CO601
MODULAR	**12A2R020M06-SCN05C-C**	12	35	–	–	20	M6	-15	-8	2	–	–	✓	0,01	GI330	CO601
	16A3R025M08-SCN05C-C	16	43	–	–	25	M8	-13,5	-7,8	3	–	–	✓	0,03	GI330	CO601
	20A5R030M10-SCN05C-C	20	49	–	–	30	M10	-12,7	-7,5	5	✓	–	✓	0,05	GI330	CO601

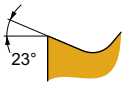
GI330	CNHX 0502..

		Nm			
CO601	US 62005-T06P	0,9	M 2	4,9	Flag T06P

CNHX 05

	d	d_1	s
0502	4,800	2,10	2,40





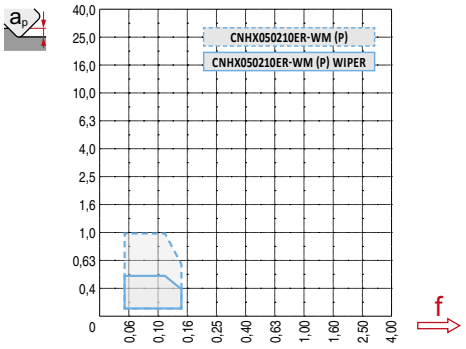
ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
CNHX 050205ER-WM	**M4310**	◪		■			■	●	-	0,5	0,05	0,15	0,1	1,0
	M8330	■		■			◪	⬣	-	0,5	0,05	0,15	0,1	1,0
CNHX 050210ER-WM	**M4310**	◪		■			■	⬣	-	1,0	0,05	0,15	0,1	1,0
	M8330	■		■			◪	⬣	-	1,0	0,05	0,15	0,1	1,0

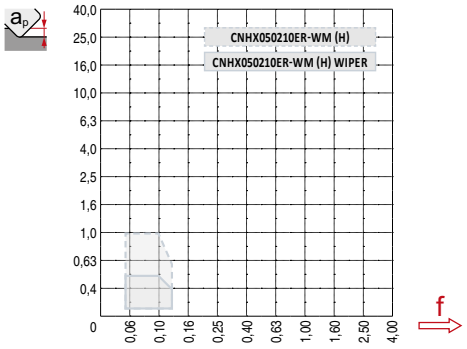
ISO		f_{min}	f_{max}	M4310	M8330
P	●	0,05	0,15	350	365
	⬣	0,05	0,12	315	329
	✖	0,05	0,10	280	292
K	●	0,05	0,15	330	345
	⬣	0,20	0,12	297	311
	✖	0,20	0,10	264	276
H	●	0,05	0,15	71	68
	⬣	0,05	0,12	64	61
	✖	0,05	0,10	57	54

PRAMET

a_e / D	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	CNHX 05-WM	
r_ε	0,5	1,0
a	0,50	0,50





D	max
12	0,4
16	0,4
20	0,5

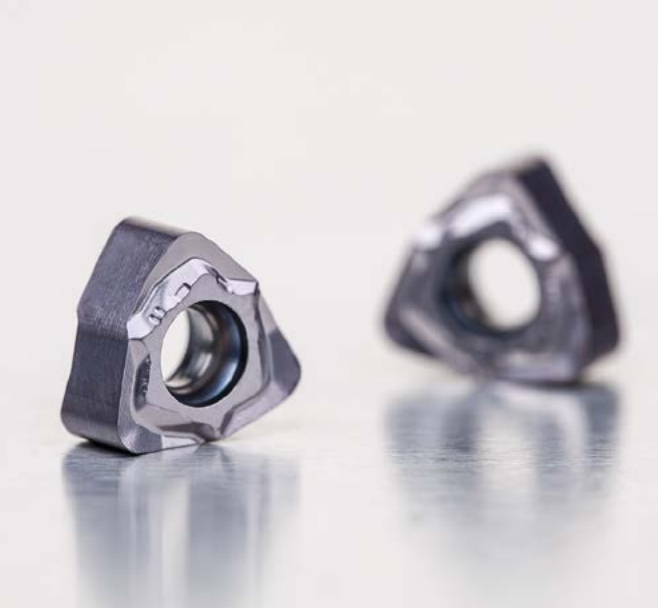
D	α_{max} °	a_p/l
12	2,4	1/25
14	1,5	1/40
16	1,1	1/54

YARI FİNİŞ VE FİNİŞ İŞLEMLERİ İÇİN EKONOMİK VE VERİMLİ KOPYA FREZELEME TAKIMLARI

Ekonomik frezeleme takımları ürün serimiz, tüm kalıp uygulamalarına uygun yeni verimli takım (ø 20-35mm) serisi ile geliştirilmiştir. Uzun takım boyu gerektiren işlemlerde düzgün kesim için tasarlanmıştır.
En ekonomik kullanım için fazla sayıda kesici kenara ve yüksek yüzey kalitesi sağlayan silici geometrisine sahiptir, bu özellik finiş işlemleri için işleme süresini azaltır.

ÖZELLİKLER VE AVANTAJLAR

- **Ekonomik –** daha düşük maliyet seçeneği sunan 6 kesici kenar
- **Yüksek yüzey kalitesi** - Patentli silici kenarlar, parça duvarında ve yüzeyinde üstün finiş oluşturur
- **Azaltılmış titreşim** - Köşelerde ve ceplerde özellikle düzgün kesim ile derin kanal frezeleme için optimize edilmiştir
- **Verimli –** daha yüksek ilerlemeler
- İdeal **talaş tahliyesi** - İçten soğutma



UYGULAMALAR

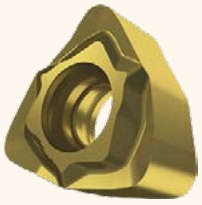
Malzemeler:

- Çelik, sertleştirilmiş çelik ve dökme demir.

İşlem:

- Kontur, profil, dalma ve alın frezeleme.

KESİCİ UÇ TİPLERİ



WNHX 04

WNHX 04

Kenar ve alın frezeleme için silici geometrisi

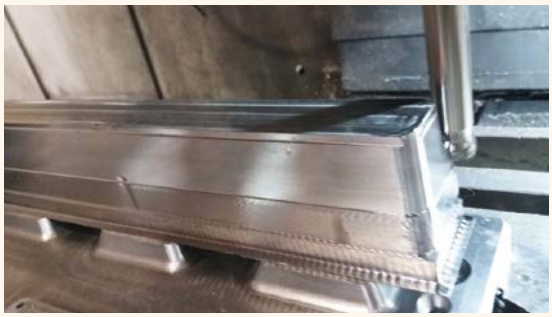
- 6 kesici kenar
- Yarı finiş ve finiş işlemleri
- Çift taraflı kesici uç
- Pozitif geometri
- 0,5, 1,0 ve 1,5 mm radyüs

i Sertleştirilmiş malzemeler için geliştirilmiş yeni kalitelere sahiptir (bkz. sayfa 22)

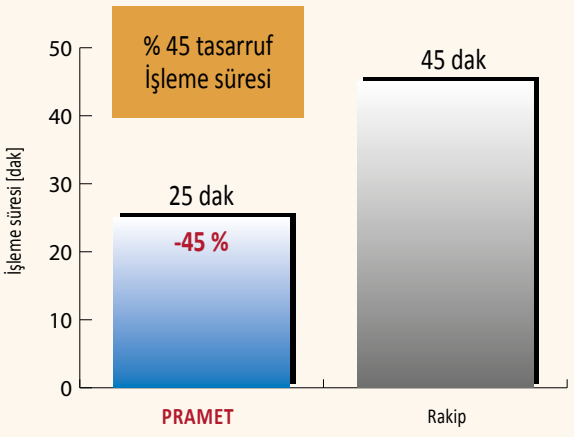
SWN04C / WNHX 04

SWN04C / WNHX 04 UYGULAMA ÖRNEĞİ

Malzeme: DIN 1.2738 (AISI P20)
Malzeme grubu: P
İş parçası: Plastik enjeksiyon kalıbı
Kesici uç: WNHX 040310ER-WM: M4310
Soğutma: EVET - hava



			PRAMET	Rakip
İşlem			Kontur - finiş	
Takım			25A4R020A22-SWN04C-C	D25mm, 4 ağız
Kesme hızı	v_c	m/dak	196	196
Ağız başı ilerleme	f_z	mm/ağız	0,36	0,20
İlerleme	f	mm/dak	3600	2000
Eksenel paso	a_p	mm	0,50	0,50
Radyal paso	a_e	mm	0,70	0,70
İşleme süresi	t	dak	25	45
Dayanıklılık	T	dak	45	45

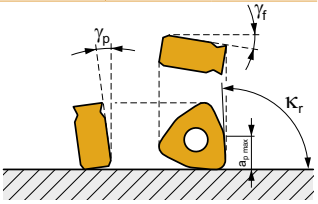


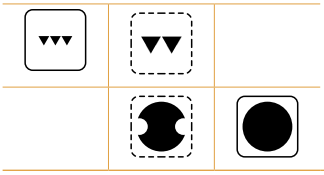
PRAMET

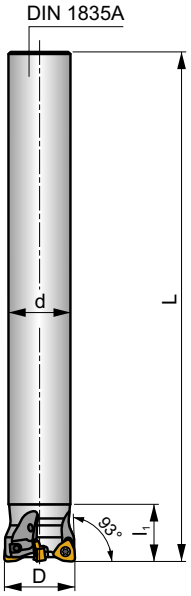
SWN04C

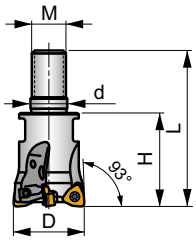
P K H S

κ_r	93
a_{pmax}	0,5 (2,0 mm)









h_m 0,02 - 0,07

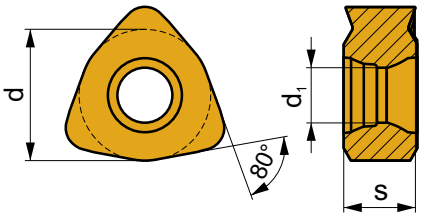
	ISO	D	L	d	l_1	H	M	γ_f°	γ_p°			max.		kg		
DIN 1835A	**20A3R020A18-SWN04C-C**	20	160	18	20	–	–	-12	-8	3	–	19700	✓	0,27	GI331	CO602
	25A4R020A22-SWN04C-C	25	180	22	20	–	–	-11,5	-8	4	✓	26600	✓	0,45	GI331	CO602
	32A6R020A25-SWN04C-C	32	200	25	20	–	–	-11,2	-8	6	✓	23500	✓	0,69	GI331	CO602
MODULAR	**20A3R030M10-SWN04C-C**	20	49	–	–	30	M10	-12	-8	3	–	–	✓	0,05	GI331	CO602
	25A4R033M12-SWN04C-C	25	55	–	–	33	M12	-11,5	-8	4	✓	–	✓	0,08	GI331	CO602
	32A6R040M16-SWN04C-C	32	63	–	–	40	M16	-11,2	-8	6	✓	–	✓	0,19	GI331	CO602
	35A6R043M16-SWN04C-C	35	66	–	–	43	M16	-11,1	-8	6	✓	–	✓	0,22	GI331	CO602

GI331	WNHX 0403..

		Nm			
CO602	US 42507-T07P	1,2	M 2,5	7	Flag T07P

WNHX 04

	d	d_1	s
0403	6,200	2,60	3,38

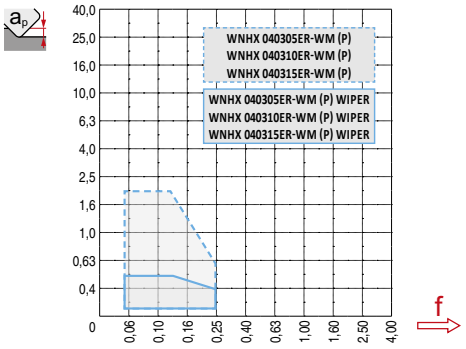


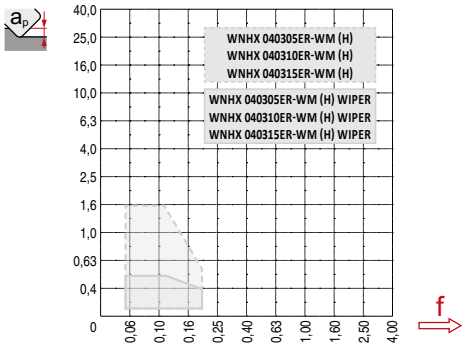
ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
WNHX 040305ER-WM	**M4310**	◪		■			■	●	-	0,5	0,05	0,25	0,1	2,0
	M8330	■		■			◪	⬣	-	0,5	0,05	0,25	0,1	2,0
WNHX 040310ER-WM	**M4310**	◪		■			■	⬣	-	1,0	0,05	0,25	0,1	2,0
	M8330	■		■			◪	⬣	-	1,0	0,05	0,25	0,1	2,0
WNHX 040315ER-WM	**M4310**	◪		■			■	⬣	-	1,5	0,05	0,25	0,1	2,0
	M8330	■		■			◪	⬣	-	1,5	0,05	0,25	0,1	2,0

ISO		f_{min}	f_{max}	M4310	M8330
P	●	0,05	0,15	327	345
	⬣	0,05	0,12	294	311
	✖	0,05	0,10	261	276
K	●	0,05	0,15	308	326
	⬣	0,20	0,12	278	293
	✖	0,20	0,10	247	261
H	●	0,05	0,15	68	64
	⬣	0,05	0,12	61	58
	✖	0,05	0,10	54	51

a_e / D	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	WNHX 04-WM		
r_ε	0,5	1,0	1,5
a	0,50	0,50	0,50





D	max
20	0,4
25	0,5
32	0,5
35	0,5

D	α_{max} °	a_p/l
20	0,7	1,1/100
25	0,5	0,75/100
32	03	0,4/100
35	0,3	0,4/100

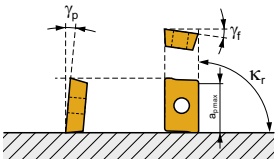
PRAMET

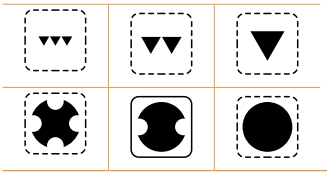
SAD07D

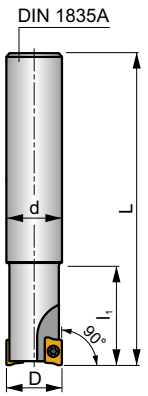
P M K N S

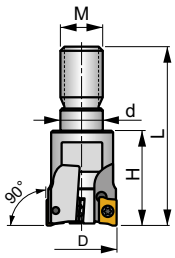
S

κ_r	90°
a_{pmax}	5,0 mm









h_m 0,03 - 0,08

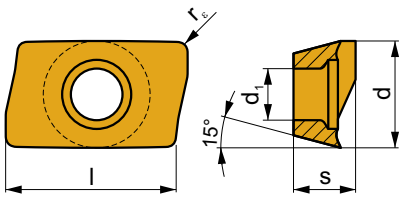
	ISO	D	L	d	l_1	H	M	γ_f°	γ_p°			max.		kg		
DIN 1835A	**10A2R018A08-SAD07D-CF**	10	100	8	18	–	–	-12	+8	2	–	61600	✓	0,03	GI276	SQ010
	10A2R018A10-SAD07D-CF	10	80	10	18	–	–	-12	+8	2	–	61600	✓	0,04	GI276	SQ010
	12A3R020A12-SAD07D-CF	12	90	12	20	–	–	-10	+8	3	–	56200	✓	0,07	GI276	SQ010
	14A3R020A12-SAD07D-CF	14	140	12	20	–	–	-9	+8	3	–	52100	✓	0,10	GI276	SQ010
	14A3R020A14-SAD07D-CF	14	90	14	20	–	–	-9	+8	3	–	52100	✓	0,09	GI276	SQ010
MODULAR	**14A3R023M08-SAD07D-CF**	14	41	8,5	–	23	M8	-9	+8	3	–	–	✓	0,02	GI276	SQ010

GI276	ADMX 0702..	ADEX 0702..

SQ010	US 62003A-T06P	0,6 Nm	M 2	3	Flag T06P

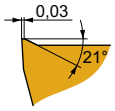
ADMX 07

	d	d_1	l	s
0702	4,482	2,20	6,95	2,48



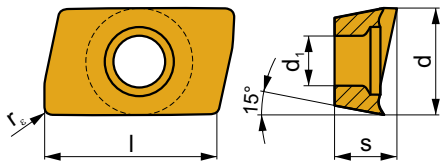
2017
M92

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
ADMX 070208SR-M	**M6330**	■	■			■		●	-	0,8	0,03	0,12	0,1	5,0

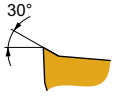


ADEX 07-FA

	d	d_1	l	s
0702	4,497	2,20	6,95	2,48



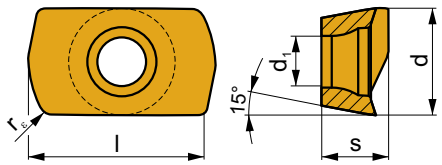
ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
ADEX 070204FR-FA	**M0315**				■			●	++	0,4	0,03	0,20	0,1	5,0
	HF7				■			●	+ / -	0,4	0,03	0,20	0,1	5,0
ADEX 070208FR-FA	**HF7**				■			●	+ / -	0,8	0,03	0,20	0,1	5,0



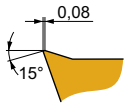
PRAMET

ADEX 07-HF

	d	d_1	l	s
0702	4,439	2,20	6,45	2,48



ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
ADEX 070206SR-HF	M6330	◪	■			◪		⬢	-	0,6	0,20	0,90	0,1	0,3
	M8330	■	◪	□		□	□	⬢	-	0,6	0,20	0,90	0,1	0,3
	M8340	■	■	□		◪		⬢	+ / -	0,6	0,20	0,90	0,1	0,3

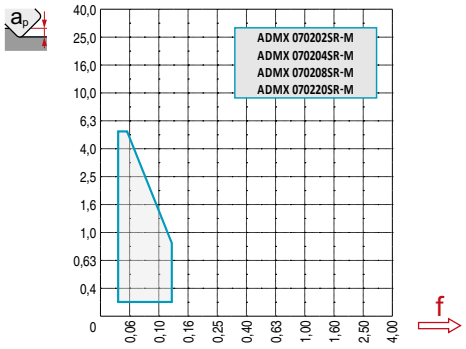


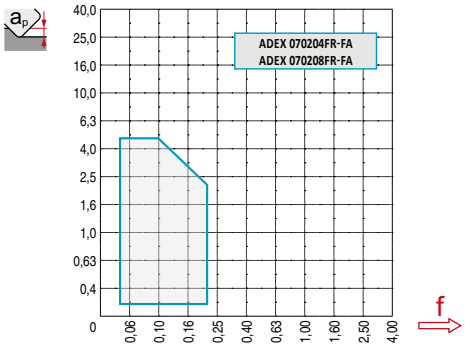
ISO		f_{min}	f_{max}	M9340	M6330	M8310	M8330	M8340	8215	8230	HF7	M0315
P	●	0,03	0,12	280	255	290	278	260	280	255	-	-
	⬢	0,03	0,08	250	225	260	244	225	240	220	-	-
	✖	0,03	0,05	220	200	235	216	195	205	190	-	-
M	●	0,03	0,12	165	165	175	162	155	165	150	-	-
	⬢	0,03	0,08	150	145	155	144	135	140	135	-	-
	✖	0,03	0,05	130	125	140	126	115	120	115	-	-
K	●	0,03	0,12	-	-	275	264	240	260	240	-	-
	⬢	0,03	0,08	-	-	250	238	215	230	210	-	-
	✖	0,03	0,05	-	-	220	210	185	195	180	-	-
N	●	0,03	0,20	-	-	-	-	-	-	-	306	684
	⬢	0,03	0,16	-	-	-	-	-	-	-	275	612
	✖	0,03	0,12	-	-	-	-	-	-	-	239	536
S	●	0,03	0,12	80	80	85	78	75	80	75	-	-
	⬢	0,03	0,08	75	70	75	70	65	70	65	-	-
	✖	0,03	0,05	60	60	65	62	55	60	55	-	-

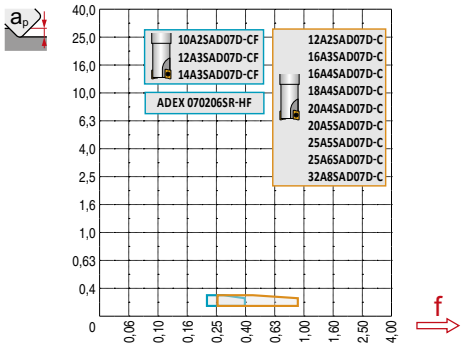
HFC		f_{min}	f_{max}	M8330	M8340	M6330
P	●	0,20	0,90	265	250	235
	⬢	0,20	0,70	235	220	210
	✖	0,20	0,50	205	190	180
M	●	0,20	0,90	160	150	165
	⬢	0,20	0,70	140	130	145
	✖	0,20	0,50	125	115	127
K	●	0,20	0,90	250	235	–
	⬢	0,20	0,70	220	205	–
	✖	0,20	0,50	190	180	–
N	●	0,20	0,70	70	65	73
	⬢	0,20	0,60	60	55	65
	✖	0,20	0,50	55	50	56
S	●	0,10	0,20	52	–	–
	⬢	0,10	0,20	42	–	–
	✖	0,10	0,20	40	–	–

a_e/D	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	ADMX 07-M				ADEX 07-HF	ADEX 07-FA	
r_ε	0,2	0,4	0,8	2,0	0,6	0,4	0,8
a	1,38	0,89	0,54	0,33	–	0,94	0,55







max.
3,9

a_p	1,0	3,0	5,0
1 ⇨f	0,13	0,08	0,05

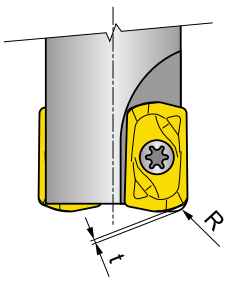
D	α_{max} °	a_p/l	HFC α_{max} °	HFC α_{max} °	HFC a_p/l
10	5,2	5,0/56	3,5	3,5	0,3/6
12	3,4	5,0/86	2,2	2,2	0,3/9
14	2,5	4,2/100	1,6	1,6	0,3/12
16	1,9	3,2/100	1,3	1,3	0,3/15
18	1,7	2,8/100	1,1	1,1	0,3/17
20	1,5	2,5/100	0,9	0,9	0,3/21
25	1,1	1,8/100	0,7	0,7	0,3/26
32	0,8	1,2/100	0,5	0,5	0,3/36

D	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}
10	12,0	20,0	0,5	2,8
12	16,0	24,0	0,7	2,2
14	20,0	28,0	0,8	1,9
16	24,0	32,0	0,8	1,6
18	28,0	36,0	0,9	1,6
20	32,0	40,0	0,9	1,6
25	42,0	50,0	1,0	1,5
32	56,0	64,0	1,0	1,4

	HFC			
D	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}
10	12	20	0,30	0,30
12	16	24	0,30	0,30
14	20	28	0,30	0,30
16	24	32	0,30	0,30
18	28	36	0,30	0,30
20	32	40	0,30	0,30
25	42	50	0,30	0,30
32	56	64	0,30	0,30

a_p	HFC
0,9	0,3

D	µm	3	5	10	15	20	30	40	50	60	80	100
10		0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000
12		0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
14		0,410	0,529	0,748	0,917	1,058	1,296	1,497	1,673	1,833	2,117	2,366
16	f_e	0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
18		0,465	0,600	0,849	1,039	1,200	1,470	1,697	1,897	2,078	2,400	2,683
20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578



ADEX 07	R	t
	[mm]	[mm]
ADEX 070206SR-HF	0,8	0,18

FREZELEME UÇLARI

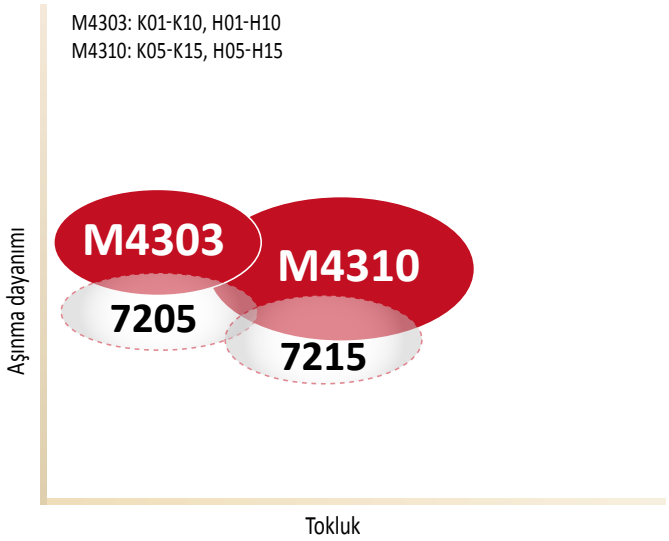
SERT MALZEMELERİN FREZELENMESİ İÇİN YÜKSEK PERFORMANSLI KALİTELER

Sertleştirilmiş çeliklerde ve dökme demirlerde yarı finiş ve finiş işlemleri uygulanırken yüksek performans ve dayanıklılık için geliştirilmiş yeni PVD kaliteleri.

ÖZELLİKLER VE AVANTAJLAR

- **Yüksek performans** - Tüm kalıplar için yüksek hızda sert frezeleme çözümleri sunar
- **Güvenilirlik** - Öngörülebilir davranış (tutarlı aşınma ilerlemesi)
- **Daha uzun takım ömrü** - Yüksek aşınma dayanımı
- **Düzgün kesme özelliği** - Ultra ince PVD kaplama, kesici kenar sertliğini artırır
- **Çapaklanma sebebiyle kırılmayı önler** - Yüksek sertlik (M4303), dengeli sertlik ve aşınma dayanımına (M4310) sahip alt yapı

UYGULAMA ALANI



M4303 KALİTE

M4303

Üstün aşınma dayanımı

Sertleştirilmiş çelik ve dökme demir için ilk tercih (55HRC üzeri)

- Çelik ve demir içermeyen malzemeler için ikinci tercih
- Mevcut 7205 kalitesinin değiştirilmesi

M4310 KALİTE

M4310

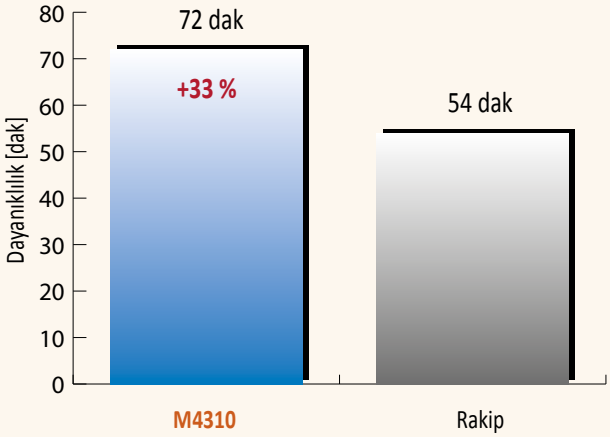
Tokluk ve aşınma dayanımı dengesi

- Sertleştirilmiş çelik ve dökme demir için ilk tercih
- Paslanmaz çelik, çelik ve demir içermeyen malzemeler için ikinci tercih
- Mevcut 7215 kalitesinin değiştirilmesi

M4310 UYGULAMA ÖRNEĞİ

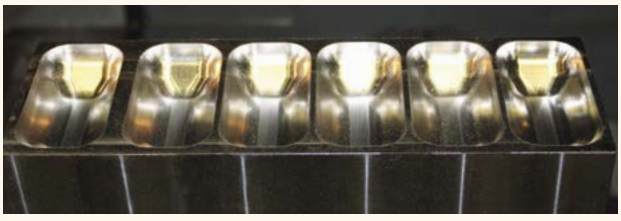
Malzeme: X15CrVMo121 (62 HRC)
Malzeme grubu: H
Kesici uç: RC 16
Soğutma: Hayır

			PRAMET	Rakip
Kalite			M4310	
Kesme hızı	v_c	m/dak	220	220
İlerleme	f_z	mm/ağız	0,2	0,2
Eksenel paso	a_p	mm	0,5	0,5
Dayanıklılık	T	dak	72	54





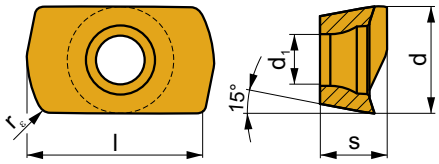

54 dakika sonra 54 dakika sonra



PRAMET

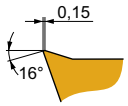
ADEX 11-HF

	d	d_1	l	s
11T3	6,450	2,90	10,67	3,82



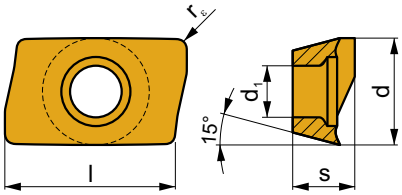
2017 M98

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
HFC, S	**ADEX 11T308SR-HF**	**M6330**	◪	■			◪		✱	-	0,8	0,40	1,30	0,1	0,6



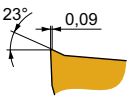
ADMX 11

	d	d_1	l	s
11T3	6,530	2,90	11,00	3,97



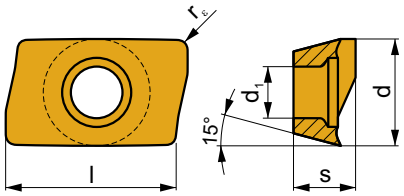
2017 M97

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
1, U, S	**ADMX 11T316SR-M**	**M6330**	◪	■			◪		✖	-	1,6	0,10	0,22	0,2	9,0
	ADMX 11T320SR-M	**M6330**	◪	■			◪		✖	-	2,0	0,10	0,22	0,2	9,0
	ADMX 11T325SR-M	**M6330**	◪	■			◪		✖	-	2,5	0,10	0,22	0,2	9,0
	ADMX 11T330SR-M	**M6330**	◪	■			◪		✖	-	3,0	0,10	0,22	0,2	9,0



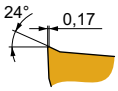
ADMX 16

	d	d_1	l	s
1606	9,950	4,50	16,00	6,25



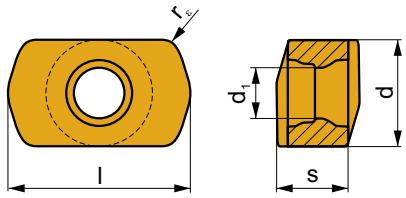
2017
M105

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	ADMX 160620SR-M	**M6330**	◪	■			◪		✖	-	2,0	0,10	0,30	0,3	13,0
	ADMX 160632SR-M	**M6330**	◪	■			◪		✖	-	3,2	0,10	0,30	0,3	13,0
	ADMX 160640SR-M	**M6330**	◪	■			◪		✖	-	4,0	0,10	0,30	0,3	13,0



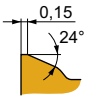
BNGX 10

	d	d_1	l	s
10T3	5,800	2,76	9,92	3,90



2017.2
7

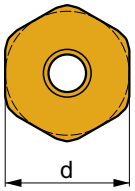
	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	BNGX 10T308SR-M	**M6330**	◪	□					✖	-	0,8	0,20	1,40	0,3	1,0

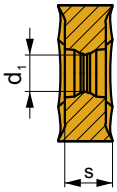


PRAMET

HNGX 06

	d	d_1	s
0604	10,500	3,70	4,76



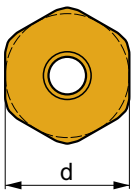


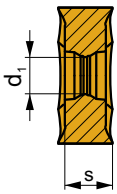
2017 M31

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	HNGX 0604ANSN-F	**M6330**	◪	■						-	–	0,08	0,17	0,3	3,0
	25° 0,05														
1 U	**HNGX 0604ANSN-M**	**M6330**	◪	◪						-	–	0,13	0,25	0,6	3,0
	23° 0,09														

HNGX 09

	d	d_1	s
0906	16,500	4,90	6,35



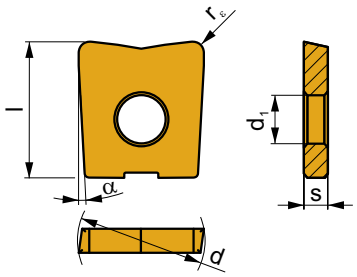


2017 M36

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	HNGX 0906ANSN-F	**M6330**	◪	■						-	–	0,10	0,20	0,5	5,0
	22° 0,07														

LC

	α°	d	d_1	l	s
08	3°	8,000	3,00	9,50	2,00
10	3°	10,000	4,00	11,50	2,50
12	7°	12,000	5,00	14,00	2,50
16	7°	16,000	5,00	16,00	3,00
20	7°	20,000	5,00	18,00	3,00



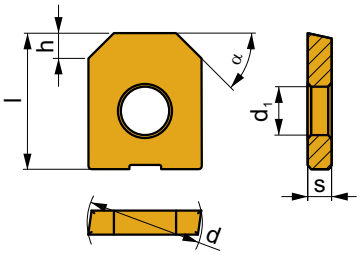
2017

M271, M279

ISO		P	M	K	N	S	H	?		r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
LC 0806-KP	M4310	◪		■			■	●	-	0,6	0,08	0,20	0,1	0,6
	M8330	■		■			◪	⬢	-	0,6	0,08	0,20	0,1	0,6
LC 0810-KP	M4310	◪		■			■	⬢	-	1,0	0,08	0,20	0,1	1,0
LC 1008-KP	M4310	◪		■			■	⬢	-	0,8	0,08	0,25	0,1	0,8
	M8330	■		■			◪	⬢	-	0,8	0,08	0,25	0,1	0,8
LC 1010-KP	M4310	◪		■			■	⬢	-	1,0	0,08	0,25	0,1	1,0
	M8330	■		■			◪	⬢	-	1,0	0,08	0,25	0,1	1,0
LC 1210-KP	M4310	◪		■			■	⬢	-	1,0	0,08	0,25	0,1	1,0
	M8330	■		■			◪	⬢	-	1,0	0,08	0,25	0,1	1,0
LC 1220-KP	M4310	◪		■			■	⬢	-	2,0	0,08	0,25	0,1	2,0
LC 1610-KP	M4310	◪		■			■	⬢	-	1,0	0,08	0,30	0,1	1,0
	M8330	■		■			◪	⬢	-	1,0	0,08	0,30	0,1	1,0
LC 1613-KP	M4310	◪		■			■	⬢	-	1,3	0,08	0,30	0,1	1,3
LC 1630-KP	M4310	◪		■			■	⬢	-	3,0	0,08	0,30	0,1	3,0
LC 2010-KP	M4310	◪		■			■	⬢	-	1,0	0,08	0,35	0,1	1,0
	M8330	■		■			◪	⬢	-	1,0	0,08	0,35	0,1	1,0
LC 2016-KP	M4310	◪		■			■	⬢	-	1,6	0,08	0,35	0,1	1,6
LC 2040-KP	M8330	■		■			◪	⬢	-	4,0	0,08	0,35	0,1	4,0
LC 0806-KPF	M4310	◪		■			■	●	-	0,6	0,05	0,15	0,1	0,6
LC 1008-KPF	M4310	◪		■			■	⬢	-	0,8	0,05	0,20	0,1	0,8
LC 1210-KPF	M4310	◪		■			■	⬢	-	1,0	0,05	0,15	0,1	1,0
	M8330	■		■			◪	⬢	-	1,0	0,05	0,15	0,1	1,0
LC 1613-KPF	M4310	◪		■			■	⬢	-	1,3	0,05	0,15	0,1	1,3
LC 2016-KPF	M4310	◪		■			■	⬢	-	1,6	0,05	0,15	0,1	1,6

LC 12-CH

	α°	d	d_1	h	l	s
1245	45°	12,000	5,00	3,0	14,00	2,50



2017

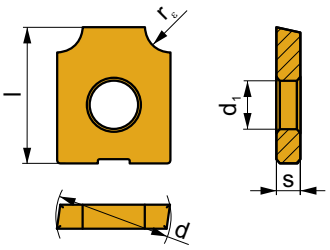
M271

ISO		P	M	K	N	S	H	?		r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
LC 1245-CH	M4310	◪		■			■	⬢	-	–	0,08	0,25	0,1	2,0

PRAMET

LC 12-RE

	d	d_1	l	s
12	12,000	5,00	14,00	2,50

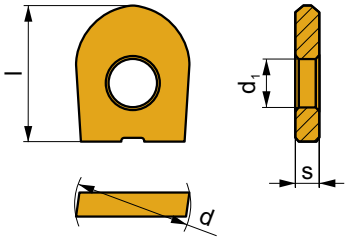


2017 M272

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	LC 1220-RE	M4310	◪		■			■	⬢	-	2,0	0,08	0,25	0,1	2,0
	LC 1230-RE	M4310	◪		■			■	⬢	-	3,0	0,08	0,25	0,1	3,0

RC

	d	d_1	l	s
08	8,000	3,00	9,50	2,00
10	10,000	4,00	11,50	2,50
12	12,000	5,00	12,00	2,50
16	16,000	5,00	14,00	3,00
20	20,000	5,00	16,00	3,00
25	25,000	6,00	21,50	4,00
32	32,000	8,00	25,80	5,00

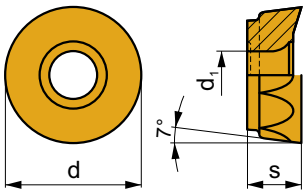


2017 M270

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	RC 08	M4310	◪		■			■	⬢	-	–	0,10	0,30	0,3	0,8
		M8330	■		■			◪	⬢	-	–	0,10	0,30	0,3	0,8
	RC 10	M4310	◪		■			■	⬢	-	–	0,10	0,33	0,3	1,0
		M8330	■		■			◪	⬢	-	–	0,10	0,33	0,3	1,0
	RC 12	M4310	◪		■			■	⬢	-	–	0,10	0,35	0,4	1,2
		M8330	■		■			◪	⬢	-	–	0,10	0,35	0,4	1,2
	RC 16	M4310	◪		■			■	⬢	-	–	0,10	0,40	0,5	1,6
		M8330	■		■			◪	⬢	-	–	0,10	0,40	0,5	1,6
	RC 20	M4310	◪		■			■	⬢	-	–	0,10	0,50	0,6	2,0
		M8330	■		■			◪	⬢	-	–	0,10	0,50	0,6	2,0
	RC 25	M4310	◪		■			■	⬢	-	–	0,10	0,55	0,6	2,5
		M8330	■		■			◪	⬢	-	–	0,10	0,55	0,6	2,5
	RC 32	M4310	◪		■			■	⬢	-	–	0,10	0,60	0,6	3,2
		M8330	■		■			◪	⬢	-	–	0,10	0,60	0,6	3,2
	RC 08-F	M4310	◪		■			■	⬢	-	–	0,05	0,30	0,3	0,8
	RC 10-F	M4310	◪		■			■	⬢	-	–	0,05	0,33	0,3	1,0
	RC 12-F	M4310	◪		■			■	⬢	-	–	0,05	0,35	0,4	1,2
	RC 16-F	M4310	◪		■			■	⬢	-	–	0,05	0,40	0,5	1,6
		M8330	■		■			◪	⬢	-	–	0,05	0,40	0,5	1,6
	RC 20-F	M4310	◪		■			■	⬢	-	–	0,05	0,50	0,5	2,0
		M8330	■		■			◪	⬢	-	–	0,05	0,50	0,5	2,0

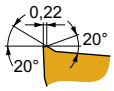
RCMT 20

	d	d_1	s
2006	20,000	6,50	6,35



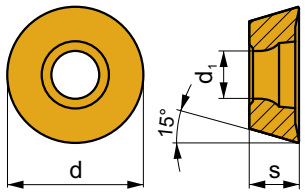
2017 M205

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	RCMT 2006MOSN-M	M6330	◪	■			■		✖	-	–	0,15	0,45	0,3	10,0



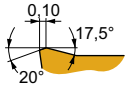
RDGT 10

	d	d_1	s
1003	10,000	3,90	3,18



2017 M219

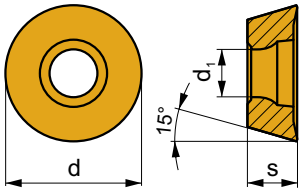
	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	RDGT 1003MOT	M6330	◪	■			◪		✖	-	–	0,10	0,30	0,5	2,5



PRAMET

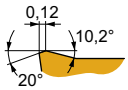
RDGT 12

	d	d_1	s
12T3	12,000	3,90	3,97



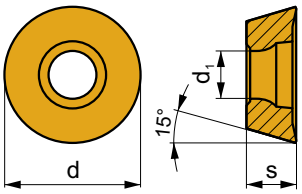
2017 M225

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
RDGT 12T3MOT	**M6330**	◪	■			◪		✖	-	–	0,10	0,35	1,0	3,0



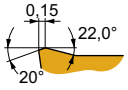
RDGT 16

	d	d_1	s
1604	16,000	5,20	4,76



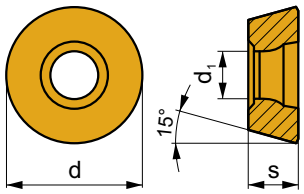
2017 M231

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
RDGT 1604MOT	**M6330**	◪	■			◪		✖	-	–	0,10	0,40	1,0	4,0



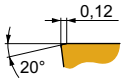
RDHX 07

	d	d_1	s
0702	7,000	2,80	2,38



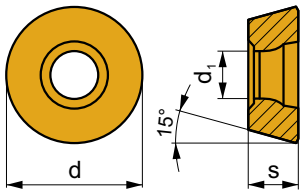
2017 M213

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
RDHX 0702MOT	**M4303**	■	□	■			■	✖	-	–	0,10	0,20	0,5	2,0



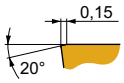
RDHX 10

	d	d_1	s
1003	10,000	3,90	3,18



2017 M218

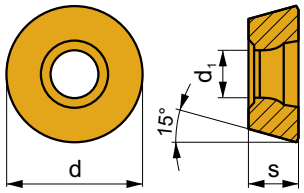
ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
RDHX 1003MOT	**M4303**	■	□	■			■	✖	-	–	0,10	0,30	0,5	2,5



PRAMET

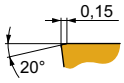
RDHX 12

	d	d_1	s
12T3	12,000	3,90	3,97



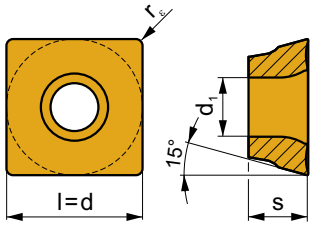
2017 M224

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
RDHX 12T3MOT	**M4303**	◪	□	■			■	✖	-	–	0,10	0,35	1,0	3,0



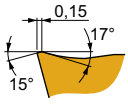
SDKT 12IM

	d	d_1	l	s
1205	12,700	5,5	12,700	5,56



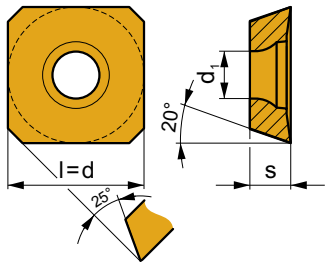
2017.2 53

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
SDKT 1205AESN-FM	**M6330**	◪	◪			□		✖	-	–	0,15	0,35	0,2	10,0



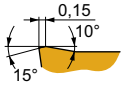
SEET 12-PM

	d	d_1	l	s
12T3	13,400	4,20	13,400	3,97



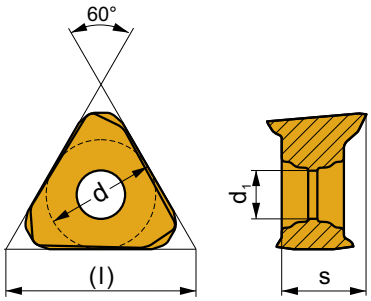
2017 M332

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	SEET 12T3M-PM	M6330	◪	■			◪		●	-	–	0,20	0,35	1,0	6,5



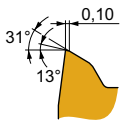
TNGX 10

	d	d_1	l	s
1004	6,000	2,8	10,39	4,69



2017 M127

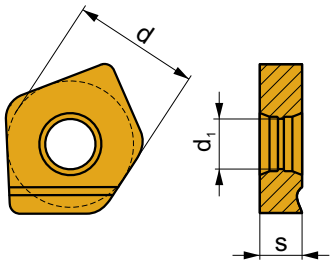
	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	TNGX 100404SR-M	M6330	◪	■			◪		●	-	0,4	0,05	0,15	0,3	5,0



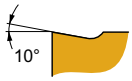
PRAMET

XNGX 13

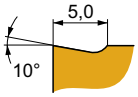
	d	d_1	s
1308	24,180	10,00	7,94

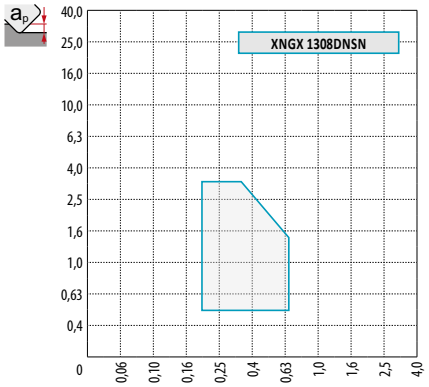


ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
XNGX 1308DNSN	M8330	■	□	■				✖	-	-	0,25	0,70	0,5	3,5



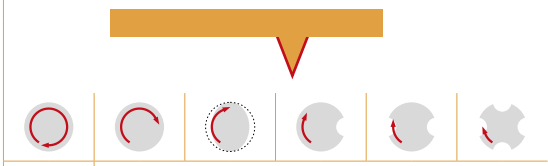
XNGX 13





P	M	K	N	S	H
■	□	■			

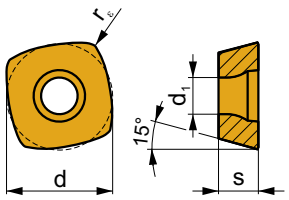
f	0,25 – 0,7
a_p	0,5 – 3,5



XNGX 1308DNSN

ZDEW 12

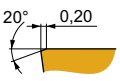
	d	d_1	l	s
1204	12,700	4,40	12,70	4,76



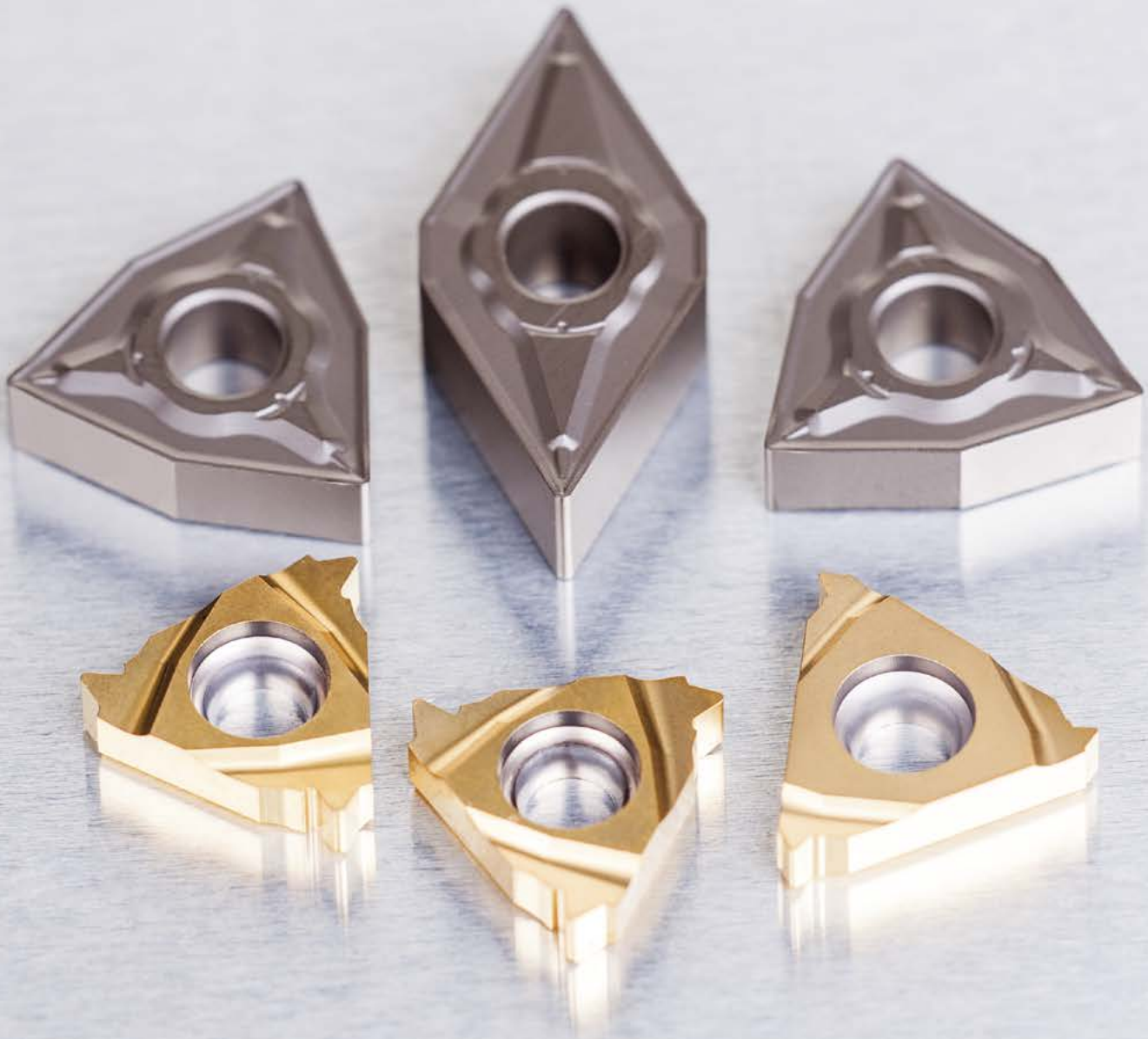
2017 M253

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
ZDEW 120408	M4303	◪		■			■	✱	-	0,8	0,50	3,00	0,3	1,6

HFC

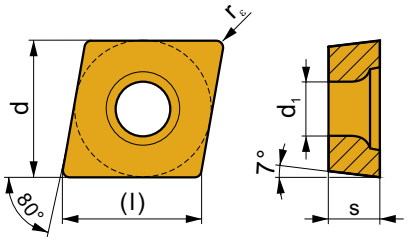


TORNALAMA UÇLARI



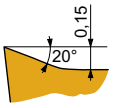
CCGT

	d	d_1	l	s
0602-SF3	6,350	2,80	6,4	2,58
09T3-SF3	9,525	4,40	9,7	4,22
1204-SF3	12,700	5,50	12,9	5,01



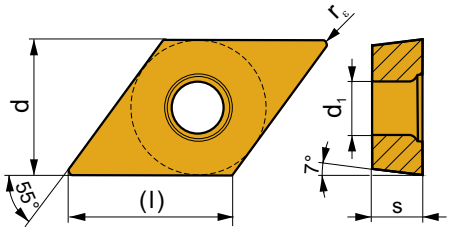
2017 T40

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
CCGT 060201E-SF3	**T6310**		■		◪	■		●	+	0,1	0,02	0,08	0,1	1,6
CCGT 09T301E-SF3	**T6310**		■		◪	■		●	+	0,1	0,02	0,08	0,1	1,6
CCGT 120404E-SF3	**T6310**		■		◪	■		●	+	0,4	0,05	0,20	0,4	2,5



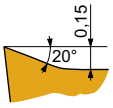
DCGT

	d	d_1	l	s
0702-SF3	6,350	2,80	7,8	2,58
11T3-SF3	9,525	4,40	11,6	4,22



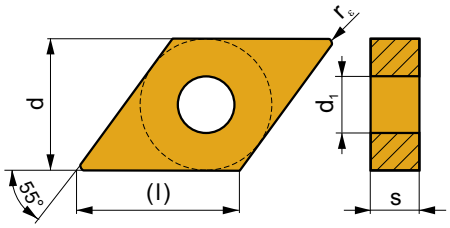
2017 T61

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
DCGT 070201E-SF3	**T6310**		■		◪	■		●	+	0,1	0,02	0,06	0,1	1,6
DCGT 11T301E-SF3	**T6310**		■		◪	■		●	+	0,1	0,02	0,06	0,1	1,8



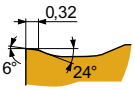
DNMG

	d	d_1	l	s
1504	12,700	5,16	15,5	4,76
1506	12,700	5,16	15,5	6,35



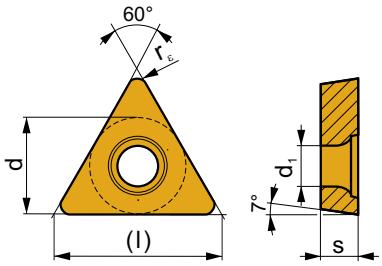
2017 T66

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	DNMG 150408-NRM	**T7325**	◪	■			□		●	++	0,8	0,23	0,45	0,8	4,0
		T7335	◪	■			□		●	+++	0,8	0,23	0,45	0,8	4,0
		T9315	■						●	++	0,8	0,23	0,45	0,8	4,0
	DNMG 150604-NRM	**T7325**	◪	■			□		●	++	0,4	0,15	0,24	0,4	4,0
		T7335	◪	■			□		●	++	0,4	0,15	0,24	0,4	4,0
		T9315	■						●	++	0,4	0,15	0,24	0,4	4,0
	DNMG 150608-NRM	**T7325**	◪	■			□		●	++	0,8	0,23	0,45	0,8	4,0
		T7335	◪	■			□		⬢	+++	0,8	0,23	0,45	0,8	4,0
		T9315	■						●	++	0,8	0,23	0,45	0,8	4,0
	DNMG 150612-NRM	**T7325**	◪	■			□		⬢	+++	1,2	0,25	0,70	1,2	4,0
		T7335	◪	■			□		⬢	+++	1,2	0,25	0,70	1,2	4,0
		T9315	■						⬢	+++	1,2	0,25	0,70	1,2	4,0



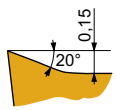
TCGT

	d	d_1	l	s
16T3-SF3	9,525	4,40	16,5	4,22



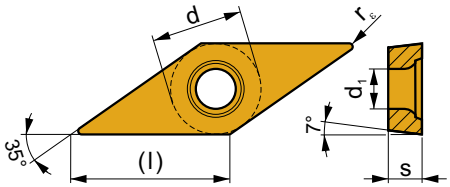
2017 T101

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
	TCGT 16T312E-SF3	**T6310**		■		◪	■		●	++	1,2	0,10	0,60	0,8	3,5



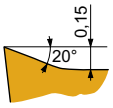
VCGT

	d	d_1	l	s
1102-SF3	6,350	2,80	11,1	2,58
1103-SF3	6,350	2,80	11,1	3,43
1604-SF3	9,525	4,40	16,6	5,01



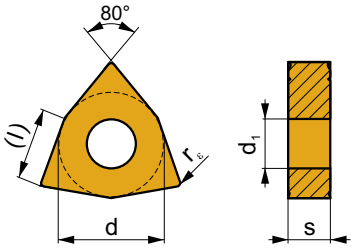
2017 T116

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
VCGT 110201E-SF3	**T6310**		■		◪	■		●	+	0,1	0,02	0,05	0,1	1,6
VCGT 110301E-SF3	**T6310**		■		◪	■		●	+	0,1	0,02	0,05	0,1	1,6
VCGT 110302E-SF3	**T6310**		■		◪	■		●	+	0,2	0,02	0,10	0,2	1,6
VCGT 110304E-SF3	**T6310**		■		◪	■		●	+	0,4	0,04	0,20	0,4	2,0
VCGT 160402E-SF3	**T6310**		■		◪	■		●	+	0,2	0,02	0,10	0,2	2,0



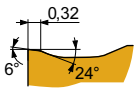
WNMG

	d	d_1	l	s
0804	12,700	5,16	8,7	4,76



2017 T125

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$
WNMG 080404-NRM	**T7325**	◪	■			□		●	+ +	0,4	0,15	0,30	0,4	4,0
	T7335	◪	■			□		●	+ +	0,4	0,15	0,30	0,4	4,0
	T9315	■						●	+ +	0,4	0,15	0,30	0,4	4,0
WNMG 080408-NRM	**T7325**	◪	■			□		⬢	+ +	0,8	0,23	0,55	0,8	5,0
	T7335	◪	■			□		⬢	+ +	0,8	0,23	0,55	0,8	5,0
	T9315	■						⬢	+ +	0,8	0,23	0,55	0,8	5,0
WNMG 080412-NRM	**T7325**	◪	■			□		⬢	+ +	1,2	0,25	0,70	1,2	5,0
	T7335	◪	■			□		⬢	+++	1,2	0,25	0,70	1,2	5,0
	T9315	■						⬢	+ +	1,2	0,25	0,70	1,2	5,0



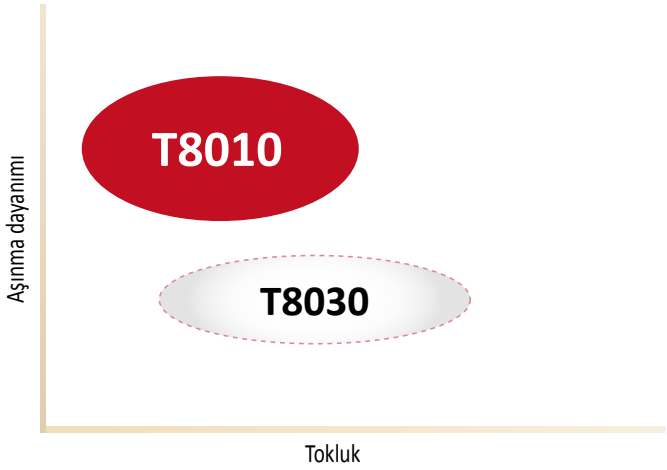
GÜVENİLİR VE HASSAS DİŞ TORNALAMA İÇİN AŞINMAYA DAYANIKLI YÜKSEK KALİTE

Yeni kalite, çelik, paslanmaz çelik, dökme demir ve süper alaşımlarda sürekli yüksek hassasiyetli diş tornalama işlemleri için uygundur. T8010, universal kalite olan T8030'un uygulama alanını genişletir, operasyonel güvenilirliği sağlarken mükemmel aşınma dayanımı sunar.

ÖZELLİKLER VE AVANTAJLAR

- **Hassas ve güvenilir** - Geliştirilmiş plastik deformasyon dayanımına bağlı stabil kesici kenar
- **Daha uzun takım ömrü –** optimize edilmiş iç gerilime sahip sert alt tabaka ve PVD kaplama
- **Aşınmanın kolay gözlemlenebilmesi –** altın finiş kesici uçlar
- **Performans –** Yüksek kesme hızları için yüksek aşınma dayanımlı kalite

UYGULAMA ALANI



MALZEMELER

- Çelik, paslanmaz çelik ve dökme demir. Ayrıca süper alaşımlar için de uygundur

Hangi kalite nerede kullanılır?

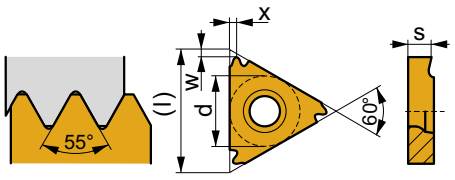
T8010: Yüksek kesme hızı ve hassasiyet gerekli-dir. Ayrıca süper alaşımlar için

T8030: Geniş malzeme grubu için genel seçim

PRAMET

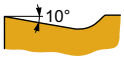
TN 55° PP EXT

	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71



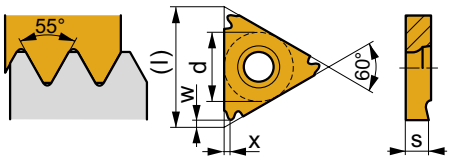
2017 T169

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
1	**TN 16ERAG55**	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 3,00	48,0 - 8,0	1,50	1,10
U	**TN 22ERN55**	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	3,50 - 5,00	7,0 - 5,0	2,50	1,80
E																			



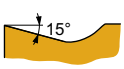
TN 55° PP INT

	d	l	s
16	9,525	16,5	3,47



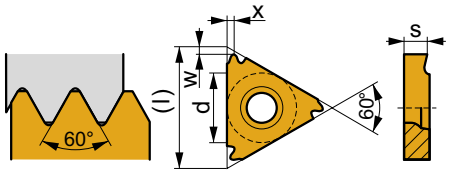
2017 T170

	ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
1	**TN 16NRAG55**	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 3,00	48,0 - 8,0	1,50	1,10
U																			
E																			



TN 60° PP EXT

	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71

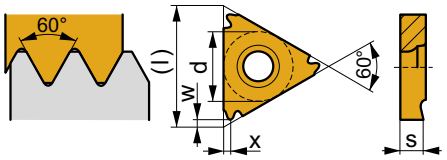


2017 T163

		ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 /1"	x	w
1 U E	10°	TN 16ERA60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 1,50	48,0 - 16,0	0,80	0,60
		TN 16ERAG60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 3,00	48,0 - 8,0	1,50	1,10
		TN 16ERG60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,75 - 3,00	14,0 - 8,0	1,50	1,10
		TN 22ERN60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	3,50 - 5,00	7,0 - 5,0	2,50	1,80
1 U E	10°	TN 16ELAG60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 3,00	48,0 - 8,0	1,50	1,10

TN 60° PP INT

	d	l	s
11	6,350	11,0	3,00
16	9,525	16,5	3,47
22	12,700	22,0	4,71



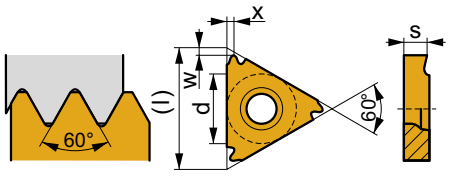
2017 T164

		ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 /1"	x	w
1 U E	15°	TN 11NRA60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 1,50	48,0 - 16,0	0,80	0,70
		TN 16NRA60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 1,50	48,0 - 16,0	0,80	0,70
		TN 16NRAG60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 3,00	48,0 - 8,0	1,50	1,10
		TN 16NRG60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,75 - 3,00	14,0 - 8,0	1,50	1,10
		TN 22NRN60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	3,50 - 5,00	7,0 - 5,0	2,50	1,80
1 U E	15°	TN 16NLAG60	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50 - 3,00	48,0 - 8,0	1,50	1,10

PRAMET

TN M EXT

	d	l	s
16	9,525	16,5	3,47
22	12,700	22,0	4,71

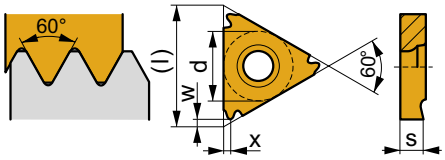


2017
T161

ISO		P	M	K	N	S	H	?		r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
TN 16ER050M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	0,50	–	0,80	0,80
TN 16ER075M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	0,75	–	0,80	0,80
TN 16ER080M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	0,80	–	0,60	0,80
TN 16ER100M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,00	–	0,80	0,80
TN 16ER125M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,25	–	0,80	0,80
TN 16ER150M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,50	–	0,80	0,80
TN 16ER175M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,75	–	1,50	1,20
TN 16ER200M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	2,00	–	1,50	1,20
TN 16ER250M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	2,50	–	1,50	1,20
TN 16ER300M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	3,00	–	1,50	1,20
TN 22ER350M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	3,50	–	2,50	1,80
TN 22ER400M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	4,00	–	2,50	1,80
TN 22ER450M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	4,50	–	2,50	1,80
TN 22ER500M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	5,00	–	2,50	1,80
TN 16EL100M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,00	–	0,80	0,80
TN 16EL125M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,25	–	0,80	0,80
TN 16EL150M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,50	–	0,80	0,80
TN 16EL175M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	1,75	–	1,50	1,20
TN 16EL200M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	2,00	–	1,50	1,20
TN 16EL250M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	2,50	–	1,50	1,20
TN 16EL300M	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	3,00	–	1,50	1,20

TN M INT

	d	l	s
11	6,350	11,0	3,00
16	9,525	16,5	3,47
22	12,700	22,0	4,71



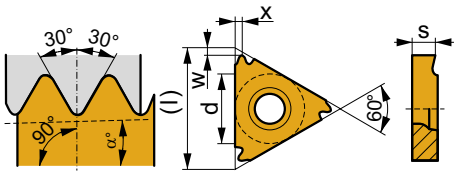
2017
T162

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
TN 11NR050M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50	–	0,80	0,80
TN 11NR075M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,75	–	0,80	0,80
TN 11NR100M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,00	–	0,80	0,80
TN 11NR125M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,25	–	0,80	0,80
TN 11NR150M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,50	–	0,80	0,80
TN 11NR200M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	2,00	–	0,90	0,80
TN 16NR050M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,50	–	0,80	0,80
TN 16NR075M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	0,75	–	0,80	0,80
TN 16NR100M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,00	–	0,80	0,80
TN 16NR125M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,25	–	0,80	0,80
TN 16NR150M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,50	–	0,80	0,80
TN 16NR175M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,75	–	1,50	1,20
TN 16NR200M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	2,00	–	1,50	1,20
TN 16NR250M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	2,50	–	1,50	1,20
TN 16NR300M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	3,00	–	1,50	1,20
TN 22NR350M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	3,50	–	2,50	1,80
TN 22NR400M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	4,00	–	2,50	1,80
TN 22NR450M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	4,50	–	2,50	1,80
TN 22NR500M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	5,00	–	2,50	1,80
TN 11NL150M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,50	–	0,80	0,80
TN 11NL200M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	2,00	–	0,90	0,80
TN 16NL100M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,00	–	0,80	0,80
TN 16NL125M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,25	–	0,80	0,80
TN 16NL150M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,50	–	0,80	0,80
TN 16NL175M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	1,75	–	1,50	1,20
TN 16NL200M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	2,00	–	1,50	1,20
TN 16NL250M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	2,50	–	1,50	1,20
TN 16NL300M	T8010	■	■	■		◪		●	+++	–	–	–	–	–	3,00	–	1,50	1,20

PRAMET

TN NPT EXT

	α°	d	l	s
16	1°47´	9,525	16,5	3,47

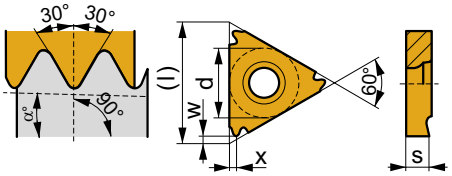


2017 T171

		ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
1 U E	10°	**TN 16ER140NPT**	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	14,0	1,50	1,10
		TN 16ER115NPT	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	11,5	1,50	1,10

TN NPT INT

	α°	d	l	s
16	1°47´	9,525	16,5	3,47

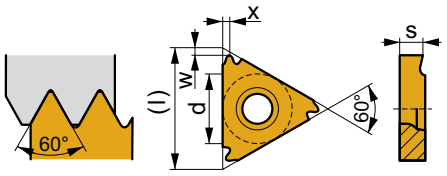


2017 T172

		ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
1 U E	15°	**TN 16NR140NPT**	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–		14,0	1,50	1,10
		TN 16NR115NPT	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–		11,5	1,50	1,10

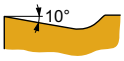
TN UN EXT

	d	l	s
16	9,525	16,5	3,47



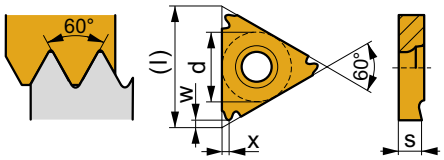
2017 T165

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 /1"	x	w
TN 16ER200UN	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	20,0	0,80	0,80



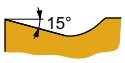
TN UN INT

	d	l	s
16	9,525	16,5	3,47



2017 T166

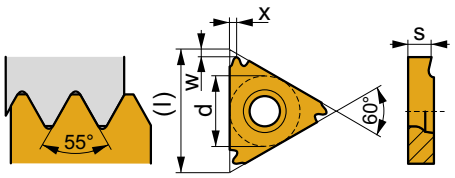
ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 /1"	x	w
TN 16NR200UN	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	20,0	0,80	0,80
TN 16NR120UN	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	12,0	1,50	1,20
TN 16NR080UN	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	8,0	1,50	1,20



PRAMET

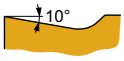
TN W EXT

	d	l	s
16	9,525	16,5	3,47



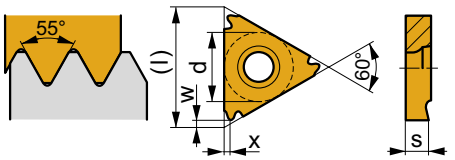
2017 T167

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
TN 16ER190W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	19,0	0,80	0,80
TN 16ER140W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	14,0	1,50	1,20
TN 16ER110W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	11,0	1,50	1,20



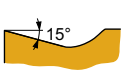
TN W INT

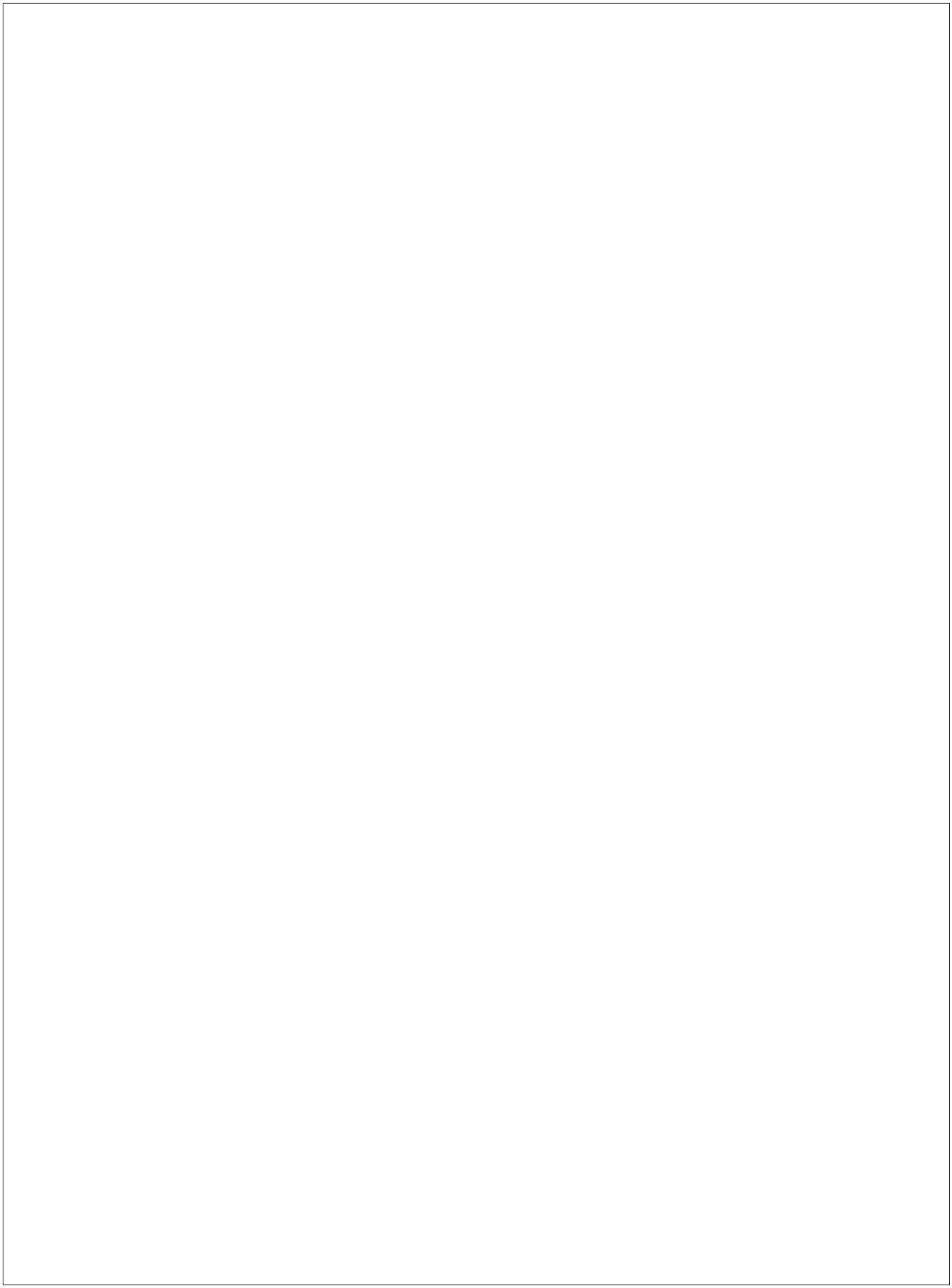
	d	l	s
11	6,350	11,0	3,00
16	9,525	16,5	3,47



2017 T168

ISO		P	M	K	N	S	H			r_ε	f_{min}	f_{max}	$a_{p\,min}$	$a_{p\,max}$		1 2 3 / 1"	x	w
TN 11NR190W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	19,0	0,80	0,80
TN 11NR140W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	14,0	0,90	0,70
TN 16NR190W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	19,0	0,80	0,80
TN 16NR140W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	14,0	1,50	1,20
TN 16NR110W	**T8010**	■	■	■		◪		●	+++	–	–	–	–	–	–	11,0	1,50	1,20





SIMPLY RELIABLE

Profesyoneller sadece talaşa bakarak işin kalitesini değerlendirebilir. Bizim talaşımız kendi öyküsünü anlatan pürüzsüz ve basit şekillidir. Açık ve istikrarlı işaretinden dolayı oldukça güvenilir olmak için sembolümüz olarak talaş şeklini kullanıyoruz.

Argentina
T: 54 (11) 6777-6777
F: 54 (11) 4441-4467
info.ar@dormerpramet.com

Australia
T: 1300 131 274
F: 1300 809 510
info.au@dormerpramet.com

Austria
T: +31 10 2080 240
info.at@dormerpramet.com

Belgium & Luxembourg
T: +32 3 440 59 01
info.be@dormerpramet.com

Brazil
T: +55 11 5660 3000
F: +55 11 5667 5883
info.br@dormerpramet.com

Canada
T: (888) 336 7637
En Français: (888) 368 8457
F: (905) 542 7000
cs.canada@dormerpramet.com

China
T: +86 21 2416 0508
info.cn@dormerpramet.com

Croatia
T: +385 98 407 489
info.hr@dormerpramet.com

Czech Republic
T: +420 583 381 111
F: +420 583 215 401
info.cz@dormerpramet.com

Denmark
T: 808 82106
F: +46 35 16 52 90
info.se@dormerpramet.com

Finland
T: 0205 44 7003
F: 0205 44 7004
info.fi@dormerpramet.com

France
T: +33 (0)2 47 62 57 01
F: +33 (0)2 47 62 52 00
info.fr@dormerpramet.com

Germany
T: +49 9131 933 08 70
F: +49 9131 933 08 742
info.de@dormerpramet.com

Hungary
T: +36-96 / 522-846
F: +36-96 / 522-847
info.hu@dormerpramet.com

India
T: +91 11 4601 5686
info.in@dormerpramet.com

Italy
T: +39 02 38 04 51
F: +39 02 38 04 52 43
info.it@dormerpramet.com

Kazakhstan
T: +7 771 305 11 45
info.kz@dormerpramet.com

Mexico
T: +52 (555) 7293981
F: +52 (555) 7293981
cs.mexico@dormerpramet.com

Netherlands
T: +31 10 2080 240
info.nl@dormerpramet.com

New Zealand
T: 0800 800 922
info.int@dormerpramet.com

Norway
T: 800 10 113
F: +46 35 16 52 90
info.se@dormerpramet.com

Poland
T: +48 32 78-15-890
F: +48 32 78-60-406
info.pl@dormerpramet.com

Portugal
T: +351 21 424 54 21
F: +351 21 424 54 25
info.pt@dormerpramet.com

Romania
T: +4(0)730 015 885
info.ro@dormerpramet.com

Russia
T: +7 (495) 775 10 28
Ф: +7 (499) 763 38 90
info.ru@dormerpramet.com

Slovakia
T: +421 (41) 764 54 60
F: +421 (41) 763 74 49
info.sk@dormerpramet.com

Slovenia
T: +385 98 407 489
info.si@dormerpramet.com

Spain
T: +34 935717722
F: +34 935717765
info.es@dormerpramet.com

Sweden
responsible for **Iceland**
T: +46 35 16 52 96
F: +46 35 16 52 90
info.se@dormerpramet.com

Switzerland
T: +31 10 2080 240
info.ch@dormerpramet.com

Turkey
T: +90 533 212 45 47
info.tr@dormerpramet.com

Ukraine
T: +38 056 736 30 21
F: +38 067 220 97 48
info.ua@dormerpramet.com

United Kingdom
responsible for **Ireland**
T: 0870 850 4466
F: 0870 850 8866
info.uk@dormerpramet.com

United States of America
T: (800) 877-3745
F: (847) 783-5760
cs@dormerpramet.com

Other countries

South America
T: +55 11 5660 3000
F: +55 11 5667 5883
info.br@dormerpramet.com

Central and Eastern Europe
T: +420 583 381 526
F: +420 583 381 401
info.rcee@dormerpramet.com

Rest of the World
Dormer Pramet International UK
T: +44 1246 571338
F: +44 1246 571339
info.int@dormerpramet.com

Dormer Pramet International CZ
T: +420 583 381 520
F: +420 583 215 401
info.int.cz@dormerpramet.com

881057

ZZZUPRACATNEWS2018TR

DORMER PRAMET

www.dormerpramet.com
youtube.com/dormerpramet
facebook.com/dormerprametsocial
linkedin.com/company/dormer-pramet
twitter.com/dormerpramet