

DIA KESİCİ TAKIM ÜRETİMİ Polycrystalline Diamond (PCD) Tools



www.ankes.net



SAPLI FREZE İLERLEME HIZI TABLOSU (SUNTA - MDF)

KESİM ÇAPI	DEVİR/DK.	Z=1	Z=2	Z=3
Ø 12	18000	2-4 m/dk.	4-7 m/dk.	5-11 m/dk.
	24000	2-5 m/dk.	5-10 m/dk.	7-14 m/dk.
	30000	3-6 m/dk.	6-12 m/dk.	9-18 m/dk.
Ø 16, Ø 18, Ø 20	18000	4-5 m/dk.	7-11 m/dk.	11-16 m/dk.
	24000	5-7 m/dk.	10-14 m/dk.	14-22 m/dk.
	30000	6-79m/dk.	12-18 m/dk.	18-27 m/dk.
Ø 25	18000	5-7 m/dk.	11-14 m/dk.	16-22 m/dk.
	24000	7-10 m/dk.	14-19 m/dk.	22-29 m/dk.
	30000	9-12 m/dk.	18-24 m/dk.	27-36 m/dk.
NESTING	18000		4-7 m/dk.	
	24000		5-10 m/dk	
	30000		6-12 m/dk.	

SAPLI FREZE İLERLEME HIZI TABLOSU (CORIAN - PLASTİK)

KESİM ÇAPI	DEVİR/DK.	Z=1	Z=2	Z=3
Ø 12	18000	1-3 m/dk.	3-5 m/dk.	4-8 m/dk.
	24000	2-4 m/dk.	3-7 m/dk.	5-11 m/dk.
	30000	2-5 m/dk.	4-9 m/dk.	6-14 m/dk.
Ø 16, Ø 18, Ø 20	18000	3-5 m/dk.	5-9 m/dk.	8-14 m/dk.
	24000	4-6 m/dk.	7-12 m/dk.	11-18 m/dk.
	30000	5-8m/dk.	9-15 m/dk.	14-23 m/dk.
Ø 25	18000	5-6 m/dk.	9-13 m/dk.	14-19 m/dk.
	24000	6-8 m/dk.	12-17 m/dk.	18-25 m/dk.
	30000	8-11 m/dk.	15-21 m/dk.	23-32 m/dk.
NESTING	18000		3-5 m/dk.	
	24000		3-7 m/dk	
	30000		4-9 m/dk.	

Çatlamalar ve Kalite Problemleri	Tahmini Çözüm
Üst kenarda iki tarafta çatlamalar veya kırmalar	5-21-23-2-3-4-24-13-1
Üst kenarda tek tarafta çatlamalar veya kırmalar	22-11-12-24
Alt kenarda iki tarafta çatlamalar veya kırmalar	26-6-18-23-5-21-4-2-3-7-1-13-
Alt kenarda tek tarafta çatlamalar veya kırmalar	26-11-12-22-6-18-7
Ara sıra alt kenarda kırmalar (periyodik / eşit aralıklarla)	4-22-24-13-8-14-7
Ara sıra alt kenarda kırmalar (periyodik değil / farklı aralıklarla)	27-8-22-4-24-14-13-7-
Ara sıra üst kenarda kırmalar (periyodik / eşit aralıklarla)	22-24-13-4-8-
Ara sıra üst kenarda kırmalar (periyodik değil / farklı aralıklarla)	27-22-24-13-4-8
Paket kesmede içteki plakalarda kırma	10-14-8
Girişte veya çıkışta ortayı kırma	5-4-8-3-14
Plaka kenarında orta kısmı kırıyor	10-14-8-2-3-

Ayarlama ve Kullanma Problemleri	Tahmini Çözüm
Plaka altında çiziciden belli bir çizgi veya basamağa benzer kesim	26-6-7-18
Paket kesimde testere sıkışması veya motor zorlanması	28-29-8-22-24-14
Dalgali veya zikzak ebatlama kesimi	4-2-22-24-13-11-12-1
Dalgali veya zikzak kenar kesimi	9-24-22-11-12-

Alete Özgü Problemler	Tahmini Çözüm
Oldukça kısa ömür süresi bilindikten sonra	19-17-20
Testere iyi kesiyor fakat çok kısa bir süre	16-15-5-2-1-
Aşırı fazla ses dağılımı	13-20-5-3-4
Ana testerede ciddi diş çıkması kopması	25-4-3-2-20-22-5-11-12-1
Çizici testerede ciddi diş çıkması kopması	7-25-3-2-20-11-12-1
Testere tek taraflı kesim yapıyorsa	22-9-11-12-24-
Yanma izleri bazı dişler üstünde	23-27-1-2
Yanma izleri tüm dişler üstünde	16-15-8
Yanma izleri testerenin bir tarafında	9-22-11-12-24-29
Testere renk değiştirmiş ısınmadan dolayı veya mavimsi yanma izleri	9-24-22-8-11-12-

No	Tahmini Çözümler
1	Motor şaftın üstündeki kelepçe dengesi 0,012 mm olacak. Ölçüm saati ile ölçülebilir.
2	Testere balansı. Motor taraftaki flanş en önemlisi. Balansı daima 0,012 mm den küçük olmalı. Ölçüm saati ile ölçülebilir. Ölçüm noktası flanşın en dıştaki konum alanı.
3	Motor mili titreşimsiz olması lazım.
4	Motor tarafındaki flanşın çapı testerenin çapının 1/3'i kadar olması gerekiyor.
5	Üründen testere çıkış yüksekliği kesinlikle 12 mm'den az olmamalı (tavsiye edilen 25mm).çıkış yüksekliği plaka alt ve üstündeki kesim kalitesini değiştirir. Yüksek çıkış yüksekliği testere ömrünü uzatır alçak çıkış yüksekliği ise kesim kalitesini arttırır.
6	Çizici testere $2/10$ mm ana testereden daha geniş kesmeli.
7	Çizici 2 mm den fazla derin kesmemeli.
8	Çoğu makine masalarında 0,4 mm testere aralığında yükselme var. Bu yükselme testerenin paket kesmede sıkışmasını önüyor.
9	Küçük veya ince kenar kesimleri testerenin balansını bozabilir. Testere yan yatar. Daha yüksek kenar kesim eni seçilmeli ya da kesim hızı azaltılmalı böyle kesimlerde.
10	Makine baskı aparatının yeniden ayarlanması lazım
11	Testerele paralel kesmiyor testere arası yeniden ayarlanması lazım

12	Testere ürünü paralel kesmiyor ürün sabitlemesi
13	Testere deviri uygun olandan fazla olabilir. Çoğu zaman bir testere devire göre uyarlanabilir.
14	Büyük ihtimal plakalar nemli ya da ıslak ortamda kalmış ve orta kısmı ıslak kalmış olabilir.
15	Kesim hızı azdır ve bu da testerenin ısınmasını sağlar ve böylece testere çok hızlı körelir
16	Büyük ihtimal diş sayısı çok fazla

17	Testere doğru bilenirse yaklaşık 18 kez bilenir.
18	Ana testere ve Çizici testere daima set olarak görülmeli ve aynı anda kullanılmalı ve bilenmeli.
19	Açık açısı her bilemeden sonra
20	Dişin açısı ve ana testerenin sırtı değişmiştir.
21	Her diş geometrisi kendine özgü özelliği var. Örneğin TR-FL. Bu özelliklerin hepsi bilemede göz önünde bulundurulması lazım ve bilemeden sonra mevcut olması lazım.
22	Testerede sırt bilemesi dişe ortalanması lazım olmasa da asimetric bilenmesi gerekir.
23	Yeni takılan bir diş diğer dişlerle eşitlenmesi lazım.
24	Testere artık düz değildir /düz takılmamıştır veya gevşemiştir sıkılmıştır.
25	Dişler tamir yapılırken aşırı fazla ısılmıştır.
26	Çizici testerenin ayarları bozulmuştur.
27	Bilemede dişin birisi bilenmemiştir ve diğerlerinden büyüktür.
28	Testere körelmiştir.
29	Testerenin açık açısı yeterli değildir



Profiled Shank Type
Cutters Nesting

	R	D	L2	d	L1	Z
R2	AD 0058-01	12*24	19	20	90	2
R3	AD 0058-02	12*24	19	20	90	2
R4	AD 0058-03	12*24	19	20	90	2
R5	AD 0058-04	12*24	19	20	90	2
R6	AD 0058-04	12*24	19	20	90	3
45°	AD 0059-01	12*24	19	20	90	2



HW / DIA with solid carbide body

	D	L2	d	L1	Z
	5	8	6	70	2
	6	10	6	70	2
	8	15	10	70	2
	8	22	10	70	2
	9	15	10	70	2
	9	22	10	70	2
	10	22	12	70	2
	12	27	12	80	2
	12	32	12	80	2



Shank Type Cutters
Z:1+1

Z	R	D	L2	d	L1	Z
3	92012	9	20	12	70	1+1
3	92412	9	24	12	70	1+1
3	92512	9	25	12	70	1+1
3	102212	10	22	12	70	1+1
3+1	102612	10	26	12	75	1+1
4+1	122712	12	27	12	70	1+1
5	123012	12	30	12	70	1+1
5+1	184316	18	43	16	110	1+1



Shank Type Cutters
Z:2+2

Z	R	D	L2	d	L1	Z
6+1	122812	12	28	12	77	2+2
12+1	90911707	16	40	16	100	2+2
12+1	20911707	16	44	20	100	2+2
12+1	20911706	18	44	20	100	2+2
13+1	5276	18	45	20	110	2+2
14+1	2502	18	45	25	110	2+2
12+1	21181116	20	38	20	100	2+2
12+1	21181118	20	48	20	115	2+2
17+1	20911401	20	57	20	120	2+2

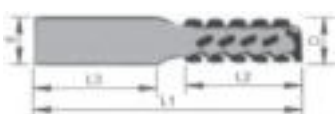


Z:3+3

Z	R	D	L2	d	L1	Z
8+1	Densimite gövde 2122212	12	22	12	70	3+3

Z:3+3

Z	R	D	L2	d	L1	Z
27+1	Twister Cut 5278	20	45	20	120	3+3
27+1	Twister Cut 20045	20	45	25	125	3+3



Z=3+3

Z	R	D	L2	d	L1	Z
27+1	AD0070-13	20	34	20	100	3+3
27+1	5277	20	48	20	130	3+3
11+1	2503	20	48	25	130	3+3



Al / TwisterCut System	Axes°	PA	Z	Makina adı	L	R	D	B	ND	d	NAL	DKN	Form	Z
	40°	150	10	Turanlar	290296	290295	70	50	48	20	2	3x8	AS	2+2
	30°	120	8	Biesse	290303	290303	80	45	53	30	1	3X8	S	2+2
	45°	150	10	Turanlar	290300	290299	80	48	30	20	2	3X8	AS	2+2
	35°	180	12	Biesse	290312	290312	80	65	53	30	2	3X8	S	2+2
	30°	180	12	Biesse	290306	290306	80	45	53	30	1	3x8	S	3+3
	35°	225	15	Biesse, Felder	290305	290304	80	55	60	30	1	3x8	AS	3+3
	35°	180	12	Holz-Her	290311	290310	100	43	25	30	2	3x8	AS	3+3
	35°	270	18	Törk Makine	290298	290297	100	65	40,6	30	3	3x8	AS	3+3
	40°	225	15	SCM	290292	290291	100	51	60	30	1	3x8	AS	3+3
	35°	270	18	Ayza Mızrak	290290	290289	120	63	41	30	3	3x8	AS	3+3
	45°	315	21	Homag	290294	290293	125	65	54	30	3	3x8	AS	3+3
	30°	225	15	IMA	290302	290301	125	54	30	30	3	3x8	AS	3+3
	35°	180	12	IMA	290308	290309	125	43	44,8	30	2	3x8	AS	3+3
	35°	180	12	Homag-Biesse	290307	290307	125	43	40	30	2	3X8	S	3+3



Position of bore (PA) [1]



Position of bore (PA) [2]



Position of bore (PA) [3]



Position of bore (PA) [4]

TwisterCut System	Axes°	PA	Z	Makina adı	L	R	D	B	ND	d	NAL	DKN	Form	Z
	35°	180	18	Holz-Her	2185802	2185803	70	64	41	30	2	3,5x8	AS	2+2
	54°	240	24	İMA	2921304	2921303	125	45	34,3	30	1	3x8	AS	3+3
	54°	330	33	Homag	2921306	2921305	125	63	49	30	2	3x8	AS	3+3
	45	356	24	Hizmet-Him,Turanlar	29221207	29221207	160	50	35	40	2	-	S	4+4
	45°	408	24	Hizmet-Him,Turanlar	2921318	2921318	160	55	35	40	2	-	S	4+4
	35°	240	20	Homag, IMA	2921401	2921402	180	43	44	35	2	5x10	AS	4+4
	30°	504	42	Homag, IMA	2926001	2926002	180	63	46	35	3	-	AS	6+6

Topline System	Axes°	PA	Z	Makina adı	L	R	D	B	ND	d	NAL	DKN	Form	Z
	25°	100	10	Turanlar	2921201	2921202	70	50	31	20	2		AS	2+2
	25°	140	14	Turanlar	2921203	2921204	70	55	34,3	20	2		AS	2+2
	25°	195	15	Turanlar	20921205	20921206	70	50	31	20	2		AS	3+3
	30°	198	18	Holz-Her	2921323	2921323	80	50	25	20	2		S	3+3
	30°	264	24	Biesse, Felder	2921319	2921319	80	65	47,2	30	2	3x8	S	3+3
	30°	240	24	SCM, Stefani	2921330	2921330	85	58	60	30	1	3x8	S	3+3
	30°	198	18	Holz-Her,SCM,Stefani	2921325	2921324	100	48	24	30	2	3x8	AS	3+3
	30°	198	18		29221214	29221215	100	50	27,4	30	3	3,5x8	AS	3+3
	25°	210	21	Holz-Her	2921310	2921309	100	55	31	30	2	3x8	AS	3+3
	30°	264	24		29221208	29221209	100	65	68,1	30	1	3,5x8	AS	3+3
	30°	264	24	Brandt	2921321	2921322	100	65	42,1	30	3	3x8	AS	3+3
	25°	120	12	İMA,Brandt	2921308	2921307	125	35	37	30	1	4x8	AS	3+3
	30°	158	15		2921327	2921326	125	40	30	30	2	3x8	AS	3+3
	30°	158	15		2921329	2921328	125	40	36	30	2	3x8	AS	3+3
	25°	279	18		2921312	2921311	125	63	36	30	3	3x8	S	3+3
	25°	279	18		2921315	2921315	125	63	43	30	2	3x8	S	3+3
	25°	279	18	Biesse	2921331	2921331	125	63	40	30	2	3x8	S	3+3
	40°	270	27		20921203	20921204	125	65	64,5	30	3	3,5X8	AS	3+3



Type A1 is appropriate for arrangement



Type B is appropriate for arrangement



Type A2 is appropriate for arrangement with a narrow line of feed holes

Topline System	Axes°	PA	Z	Makina adı	L	R	D	B	ND	d	NAL	DKN	Form	Z
	25°	210	21	İMA	2421209	2421210	60	50	48,3	20	4	3x8	AS	3+3
	25°	216	21	HOLZ-HER,SCM	2421403	2421404	80	65	30	20	2	3x8	AS°	3+3
	30°	174	15	Ott	2481166	2482165	85	45	47	30	1	3x8	AS°	3+3
	25°	120	12	İMA,Brand	2481153	248152	100	34	37,6	30	1	3x8	AS	3+3
	25°	116	10	HOLZ-HER,SCM	2481516	2481517	100	48	25	30	2	3x8	AS°	2+2
	30°	174	15	İMA,Brand,SCM	2481154	2481155	100	48	40,6	30	3	3x8	AS°	3+3
	25°	125	10	HOLZ-HER,Aggr.	2482173	2482172	100	53	25	30	2	3x8	AS	2+2
	25°	160	16	HOLZ-HER,SCM	2481518	2481519	100	63	25,6	30	2	3x8	AS	2+2
	25°	225	18	Brand,SCM	2482175	2482176	100	63	40,6	30	3	3x8	AS	3+3
	25°	120	6	Homag	2480714	2480714	125	34	34	30	1	3x8	S	3+3
	25°	162	12	Homag	2481175	2481175	125	43	40	30	1	3x8	S	3+3
	30°	225	18	Homag	2481241	2481241	125	63	40,6	30	2	3x8	S	3+3

HP	Axes°	PA	Z		L	R	D	B	ND	d	NAL	DKN	Form	Z
	40°	298	27		29221210	29221211	100	63	42	30	3	3,5x8	AS	3+3
	40°	297	27	IMA	29221212	29221213	125	63	58	30	3	3,5x8	AS	3+3

Turanlar



axes 40° / Z10



form AS



NAL 2 / ND 48

		D	B	d	Z	DKN	AWL	All/LowNoise System	Ident Nr.		
									LH	RH	
		70	50	20	2+2	3,3x8	150		290296	290295	

Biesse



axes 30° / Z8



form S



NAL 1 / ND 53

		D	B	d	Z	DKN	AWL	All/LowNoise System	Ident Nr.		
									LH	RH	
		80	45	30	2+2	3,3x8	120		290303	290303	

Turanlar



axes 45° / Z10



form AS



NAL 2 / ND 30

		D	B	d	Z	DKN	AWL	All/LowNoise System	Ident Nr.		
									LH	RH	
		80	48	20	2+2	3,3x8	150		290300	290299	

Biesse



axes 35° / Z12



form S



NAL 2 / ND 53

		D	B	d	Z	DKN	AWL	All/LowNoise System	Ident Nr.		
									LH	RH	
		80	65	30	2+2	3,3x8	180		290312	290312	

Biesse



axes 30° / Z12



form S



NAL 1 / ND 53

		D	B	d	Z	DKN	AWL	All/LowNoise System	Ident Nr.		
									LH	RH	
		80	45	30	3+3	3,3x8	180		290306	290306	

Biesse, Felder



axes 35° / Z15



form AS



NAL 1 / ND 60

		D	B	d	Z	DKN	AWL	All/LowNoise System	Ident Nr.		
									LH	RH	
		80	55	30	3+3	3,3x8	225		290305	290304	

Holz-Her



axes 35° / Z12



form AS



NAL 2 / ND 25

		D	B	d	Z	DKN	AWL	All/LowNoise System	Ident Nr.		
									LH	RH	
		100	43	30	3+3	3,3x8	180		290311	290310	

Türk Makine



axes 35° / Z18



form AS



NAL 3 / ND 40,6

D	100	All/Noise System	Ident Nr.		
B	65		LH	RH	
d	30		290298	290297	
Z	3+3				
DKN	3,3x8				
AWL	270				

SCM



axes 40° / Z15



form AS



NAL 1 / ND 60

D	100	All/LowNoise System	Ident Nr.		
B	51		LH	RH	
d	30		290292	290291	
Z	3+3				
DKN	3,3x8				
AWL	225				

Ayza Mızrak



axes 35° / Z18



form AS



NAL 3 / ND 41

D	120	All/Noise System	Ident Nr.		
B	63		LH	RH	
d	30		290290	290289	
Z	3+3				
DKN	3,3x8				
AWL	270				

Homag



axes 45° / Z21



form AS



NAL 3 / ND 54

D	125	All/Noise System	Ident Nr.		
B	65		LH	RH	
d	30		290294	290293	
Z	3+3				
DKN	3,3x8				
AWL	315				

IMA



axes 30° / Z15



form AS



NAL 3 / ND 30

D	125	All/LowNoise System	Ident Nr.		
B	54		LH	RH	
d	30		290302	290301	
Z	3+3				
DKN	3,3x8				
AWL	225				

Homag, Biesse



axes 35° / Z12



form S



NAL 2 / ND 40

D	125	All/LowNoise System	Ident Nr.		
B	43		LH	RH	
d	30		290307	290307	
Z	3+3				
DKN	3,3x8				
AWL	180				

IMA



axes 35° / Z12



form AS



NAL 2 / ND 44,8

D	125	All/LowNoise System	Ident Nr.		
B	43		LH	RH	
d	30		290308	290309	
Z	3+3				
DKN	3,3x8				
AWL	180				

Holz-Her



axes 35° / Z18



form AS



NAL 2 / ND 41

D	70	TwisterCut System	Ident Nr.		
B	64		LH	RH	
d	30		2185802	2185803	
Z	2+2				
DKN	3,3x8				
AWL	180				

IMA



axes 54° / Z24



form AS



NAL 1 / ND 34,3

D	125	TwisterCut System	Ident Nr.			
B	45		LH	RH		
d	30		2921304	2921303		
Z	3+3					
DKN	-					
AWL	240					

Homag



axes 54° / Z33



form AS



NAL 2 / ND 49

D	125	TwisterCut System	Ident Nr.		
B	63		LH	RH	
d	30		2921306	2921305	
Z	3+3				
DKN	-				
AWL	330				

Hizmet-Him, Turanlar



axes 45° / Z24



form S



NAL 2 / ND 35

D	160	TwisterCut System	Ident Nr.		
B	55		LH	RH	
d	40		2921318	2921318	
Z	4+4				
DKN	-				
AWL	384				

Homag-IMA



axes 35° / Z20



form AS



NAL 2 / ND 44

D	180	TwisterCut System	Ident Nr.		
B	43		LH	RH	
d	35		2921401	2921402	
Z	4+4				
DKN	5x10				
AWL	240				

Homag-IMA



axes 35° / Z42



form AS



NAL 3 / ND 46

D	180	TwisterCut System	Ident Nr.		
B	63		LH	RH	
d	35		2926001	2926002	
Z	6+6				
DKN	-				
AWL	504				

Hizmet-Him, Turanlar



axes 45° / Z24



form S



NAL 2 / ND 35

D	160	TwisterCut System	Ident Nr.			
B	50		LH	RH		
d	40		29221207	29221207		
Z	4+4					
DKN	-					
AWI	356					

Turanlar



axes 25° / Z10



form AS



NAL 2 / ND 31,3

		D	70	Topline System	Ident Nr.		
					LH	RH	
B	50				2921201	2921202	
d	20						
Z	2+2						
DKN	-						
AWL	120						

Turanlar



axes 25° / Z14



form AS



NAL 2 / ND 34,3

		D	70	Topline System	Ident Nr.		
					LH	RH	
B	55				2921203	2921204	
d	20						
Z	2+2						
DKN	-						
AWL	140						

Turanlar



axes 25° / Z15



form AS



NAL 2 / ND 31,3

		D	70	Topline System	Ident Nr.		
					LH	RH	
B	50				29021205	29021206	
d	20						
Z	3+3						
DKN	-						
AWL	180						

Holz-Her



axes 30° / Z18



form S



NAL 2 / ND 25

		D	80	Topline System	Ident Nr.		
					LH	RH	
B	50				2921323	2921323	
d	20						
Z	3+3						
DKN	3,3x8						
AWL	198						

SCM, Stefani



axes 30° / Z24



form S



NAL 1 / ND 60

		D	85	Topline System	Ident Nr.		
					LH	RH	
B	58				2921330	2921330	
d	30						
Z	3+3						
DKN	3,3x8						
AWL	240						

Biesse, Felder



axes 30° / Z24



form S



NAL 2 / ND 47,2

		D	80	Topline System	Ident Nr.		
					LH	RH	
B	65				2921319	2921319	
d	30						
Z	3+3						
DKN	3,3x8						
AWL	264						

Holz-Her,SCM,Stefani



axes 30° / Z18



form AS



NAL 2 / ND 24

		D	100	Topline System	Ident Nr.		
					LH	RH	
B	48				2921325	2921324	
d	30						
Z	3+3						
DKN	3,3x8						
AWL	198						

			<table><tr><td>D</td><td>100</td><td rowspan="6">Topline System</td><td colspan="2">Ident Nr.</td><td rowspan="6"></td></tr><tr><td>B</td><td>50</td><td>LH</td><td>RH</td></tr><tr><td>d</td><td>30</td><td rowspan="3">29221214</td><td rowspan="3">29221215</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>198</td><td></td><td></td></tr></table>	D	100	Topline System	Ident Nr.			B	50	LH	RH	d	30	29221214	29221215	Z	3+3	DKN	3,3x8	AWL	198		
D	100	Topline System	Ident Nr.																						
B	50		LH	RH																					
d	30		29221214	29221215																					
Z	3+3																								
DKN	3,3x8																								
AWL	198																								
axes 30° / Z18	form AS	NAL 3 / ND 27,4																							

			<table><tr><td>D</td><td>100</td><td rowspan="6">Topline System</td><td colspan="2">Ident Nr.</td><td rowspan="6"></td></tr><tr><td>B</td><td>55</td><td>LH</td><td>RH</td></tr><tr><td>d</td><td>30</td><td rowspan="3">2921310</td><td rowspan="3">2921309</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>210</td><td></td><td></td></tr></table>	D	100	Topline System	Ident Nr.			B	55	LH	RH	d	30	2921310	2921309	Z	3+3	DKN	3,3x8	AWL	210		
D	100	Topline System	Ident Nr.																						
B	55		LH	RH																					
d	30		2921310	2921309																					
Z	3+3																								
DKN	3,3x8																								
AWL	210																								
axes 25° / Z21	form AS	NAL 2 / ND 31																							

			<table><tr><td>D</td><td>100</td><td rowspan="6">Topline System</td><td colspan="2">Ident Nr.</td><td rowspan="6"></td></tr><tr><td>B</td><td>63</td><td>LH</td><td>RH</td></tr><tr><td>d</td><td>30</td><td rowspan="3">29221210 HP</td><td rowspan="3">29221211 HP</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>298</td><td></td><td></td></tr></table>	D	100	Topline System	Ident Nr.			B	63	LH	RH	d	30	29221210 HP	29221211 HP	Z	3+3	DKN	3,3x8	AWL	298		
D	100	Topline System	Ident Nr.																						
B	63		LH	RH																					
d	30		29221210 HP	29221211 HP																					
Z	3+3																								
DKN	3,3x8																								
AWL	298																								
axes 40° / Z27	form AS	NAL 3 / ND 42																							

			<table><tr><td>D</td><td>100</td><td rowspan="6">Topline System</td><td colspan="2">Ident Nr.</td><td rowspan="6"></td></tr><tr><td>B</td><td>65</td><td>LH</td><td>RH</td></tr><tr><td>d</td><td>30</td><td rowspan="3">29221208</td><td rowspan="3">29221209</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>264</td><td></td><td></td></tr></table>	D	100	Topline System	Ident Nr.			B	65	LH	RH	d	30	29221208	29221209	Z	3+3	DKN	3,3x8	AWL	264		
D	100	Topline System	Ident Nr.																						
B	65		LH	RH																					
d	30		29221208	29221209																					
Z	3+3																								
DKN	3,3x8																								
AWL	264																								
axes 30° / Z24	form AS	NAL 1 / ND 68,1																							

			<table><tr><td>D</td><td>100</td><td rowspan="6">Topline System</td><td colspan="2">Ident Nr.</td><td rowspan="6"></td></tr><tr><td>B</td><td>65</td><td>LH</td><td>RH</td></tr><tr><td>d</td><td>30</td><td rowspan="3">2921321</td><td rowspan="3">2921322</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>264</td><td></td><td></td></tr></table>	D	100	Topline System	Ident Nr.			B	65	LH	RH	d	30	2921321	2921322	Z	3+3	DKN	3,3x8	AWL	264		
D	100	Topline System	Ident Nr.																						
B	65		LH	RH																					
d	30		2921321	2921322																					
Z	3+3																								
DKN	3,3x8																								
AWL	264																								
axes 30° / Z24	form AS	NAL 3 / ND 42,1																							

			<table><tr><td>D</td><td>125</td><td rowspan="6">Topline System</td><td colspan="2">Ident Nr.</td><td rowspan="6"></td></tr><tr><td>B</td><td>35</td><td>LH</td><td>RH</td></tr><tr><td>d</td><td>30</td><td rowspan="3">2921308</td><td rowspan="3">2921307</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>4x8</td></tr><tr><td>AWL</td><td>120</td><td></td><td></td></tr></table>	D	125	Topline System	Ident Nr.			B	35	LH	RH	d	30	2921308	2921307	Z	3+3	DKN	4x8	AWL	120		
D	125	Topline System	Ident Nr.																						
B	35		LH	RH																					
d	30		2921308	2921307																					
Z	3+3																								
DKN	4x8																								
AWL	120																								
axes 25° / Z12	form AS	NAL 1 / ND 37																							

			<table><tr><td>D</td><td>125</td><td rowspan="6">Topline System</td><td colspan="2">Ident Nr.</td><td rowspan="6"></td></tr><tr><td>B</td><td>40</td><td>LH</td><td>RH</td></tr><tr><td>d</td><td>30</td><td rowspan="3">2921327</td><td rowspan="3">2921326</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>158</td><td></td><td></td></tr></table>	D	125	Topline System	Ident Nr.			B	40	LH	RH	d	30	2921327	2921326	Z	3+3	DKN	3,3x8	AWL	158		
D	125	Topline System	Ident Nr.																						
B	40		LH	RH																					
d	30		2921327	2921326																					
Z	3+3																								
DKN	3,3x8																								
AWL	158																								
axes 30° / Z15	form AS	NAL 2 / ND 30																							

			<table><tr><td>D</td><td>125</td></tr><tr><td>B</td><td>40</td></tr><tr><td>d</td><td>30</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>158</td></tr></table>	D	125	B	40	d	30	Z	3+3	DKN	3,3x8	AWL	158	Topline System	<table><tr><th colspan="2">Ident Nr.</th></tr><tr><th>LH</th><th>RH</th></tr><tr><td>2921329</td><td>2921328</td></tr></table>	Ident Nr.		LH	RH	2921329	2921328	
D	125																							
B	40																							
d	30																							
Z	3+3																							
DKN	3,3x8																							
AWL	158																							
Ident Nr.																								
LH	RH																							
2921329	2921328																							
axes 30° / Z15	form AS	NAL 2 / ND 36																						

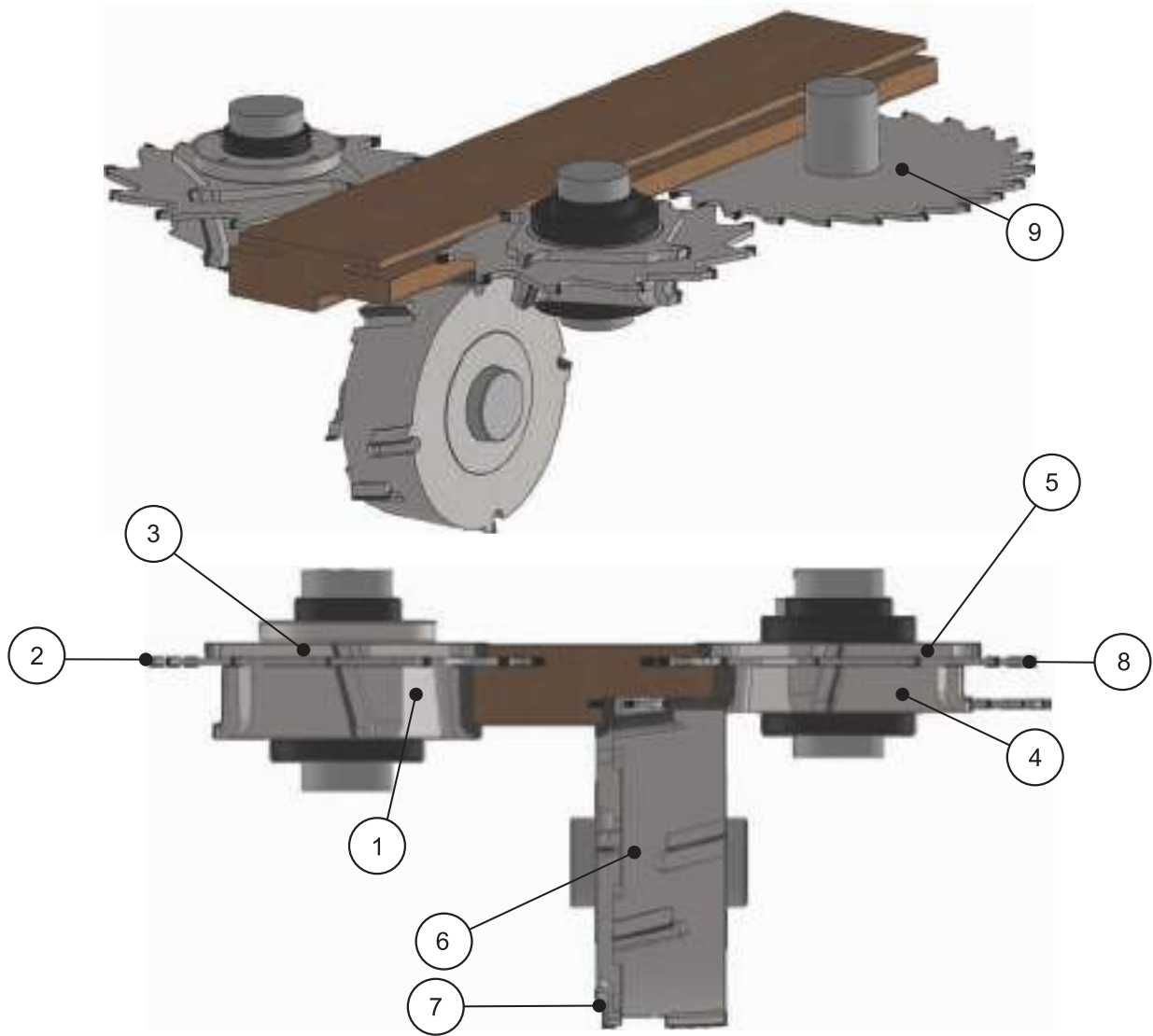
			<table><tr><td>D</td><td>125</td></tr><tr><td>B</td><td>63</td></tr><tr><td>d</td><td>30</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>279</td></tr></table>	D	125	B	63	d	30	Z	3+3	DKN	3,3x8	AWL	279	Topline System	<table><tr><th colspan="2">Ident Nr.</th></tr><tr><th>LH</th><th>RH</th></tr><tr><td>2921312</td><td>2921311</td></tr></table>	Ident Nr.		LH	RH	2921312	2921311	
D	125																							
B	63																							
d	30																							
Z	3+3																							
DKN	3,3x8																							
AWL	279																							
Ident Nr.																								
LH	RH																							
2921312	2921311																							
axes 25° / Z18	form S	NAL 3 / ND 36																						

			<table><tr><td>D</td><td>125</td></tr><tr><td>B</td><td>63</td></tr><tr><td>d</td><td>30</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>279</td></tr></table>	D	125	B	63	d	30	Z	3+3	DKN	3,3x8	AWL	279	Topline System	<table><tr><th colspan="2">Ident Nr.</th></tr><tr><th>LH</th><th>RH</th></tr><tr><td>2921315</td><td>2921315</td></tr></table>	Ident Nr.		LH	RH	2921315	2921315	
D	125																							
B	63																							
d	30																							
Z	3+3																							
DKN	3,3x8																							
AWL	279																							
Ident Nr.																								
LH	RH																							
2921315	2921315																							
axes 25° / Z18	form S	NAL 2 / ND 43																						

Biesse 			<table><tr><td>D</td><td>125</td></tr><tr><td>B</td><td>63</td></tr><tr><td>d</td><td>30</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>279</td></tr></table>	D	125	B	63	d	30	Z	3+3	DKN	3,3x8	AWL	279	Topline System	<table><tr><th colspan="2">Ident Nr.</th></tr><tr><th>LH</th><th>RH</th></tr><tr><td>2921331</td><td>2921331</td></tr></table>	Ident Nr.		LH	RH	2921331	2921331	
D	125																							
B	63																							
d	30																							
Z	3+3																							
DKN	3,3x8																							
AWL	279																							
Ident Nr.																								
LH	RH																							
2921331	2921331																							
axes 25° / Z18	form S	NAL 2 / ND 40																						

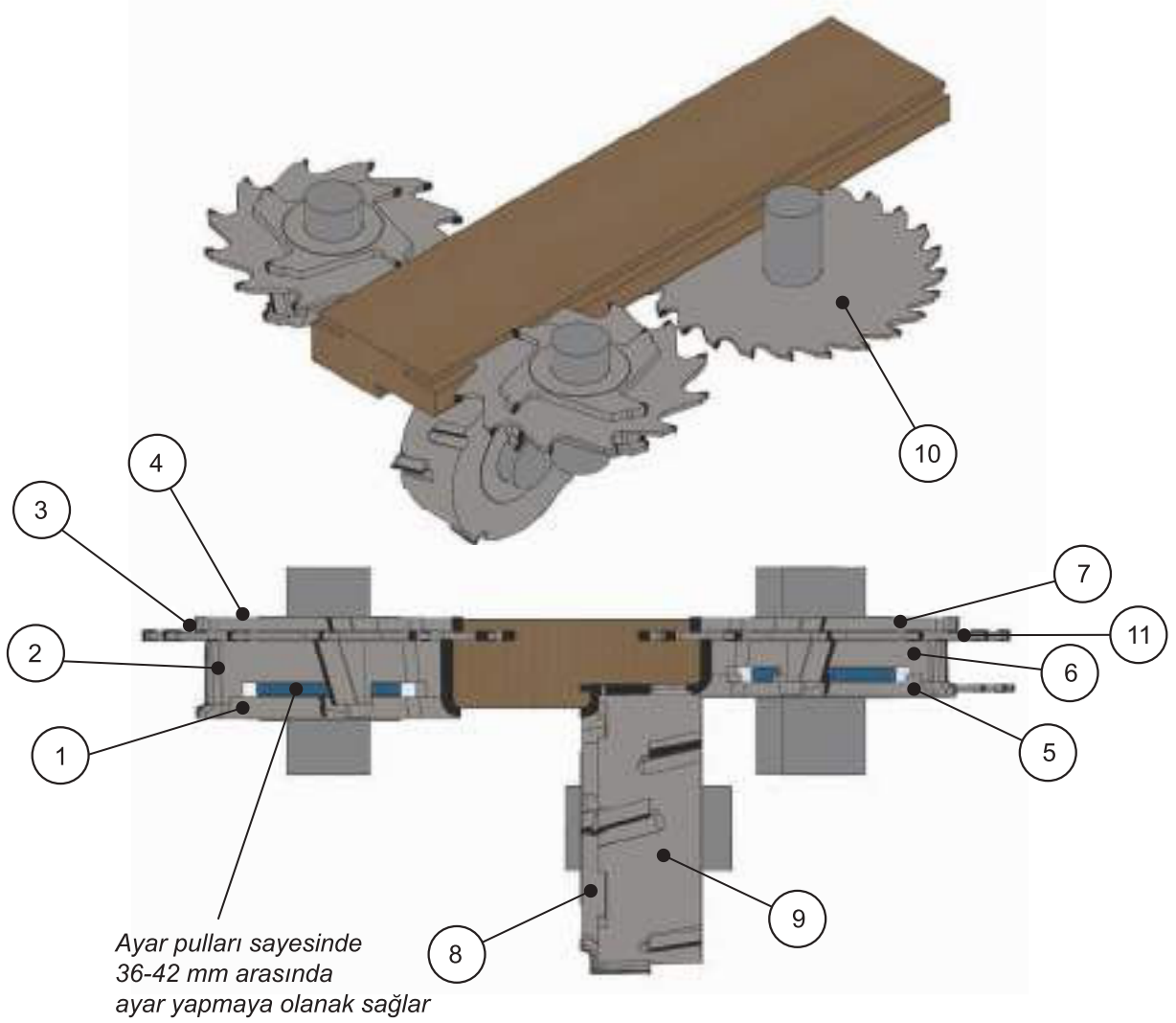
			<table><tr><td>D</td><td>125</td></tr><tr><td>B</td><td>63</td></tr><tr><td>d</td><td>30</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>297</td></tr></table>	D	125	B	63	d	30	Z	3+3	DKN	3,3x8	AWL	297	Topline System	<table><tr><th colspan="2">Ident Nr.</th></tr><tr><th>LH</th><th>RH</th></tr><tr><td>29221212 HP</td><td>29221213 HP</td></tr></table>	Ident Nr.		LH	RH	29221212 HP	29221213 HP	
D	125																							
B	63																							
d	30																							
Z	3+3																							
DKN	3,3x8																							
AWL	297																							
Ident Nr.																								
LH	RH																							
29221212 HP	29221213 HP																							
axes 40° / Z27	form AS	NAL 3 / ND 58																						

			<table><tr><td>D</td><td>125</td></tr><tr><td>B</td><td>65</td></tr><tr><td>d</td><td>30</td></tr><tr><td>Z</td><td>3+3</td></tr><tr><td>DKN</td><td>3,3x8</td></tr><tr><td>AWL</td><td>270</td></tr></table>	D	125	B	65	d	30	Z	3+3	DKN	3,3x8	AWL	270	Topline System	<table><tr><th colspan="2">Ident Nr.</th></tr><tr><th>LH</th><th>RH</th></tr><tr><td>20921203</td><td>20921204</td></tr></table>	Ident Nr.		LH	RH	20921203	20921204	
D	125																							
B	65																							
d	30																							
Z	3+3																							
DKN	3,3x8																							
AWL	270																							
Ident Nr.																								
LH	RH																							
20921203	20921204																							
axes 40° / Z27	form AS	NAL 3 / ND 64.5																						



36 mm Ayarlı Kapı Kasası

S. No	TEKNİK ÖZELLİKLER
1	Sol Motor Alt Bıçak
2	Sol Motor Pervaz Kanal Testeresi
3	Sol Motor Üst Bıçak
4	Sağ Motor Alt Bıçak
5	Sağ Motor Üst Bıçak
6	Alt Motor Lamba Bıçağı
7	Alt Motor Lamba Radius Bıçağı
8	Sağ Motor Pervaz Kanal Testeresi
9	Fitil Kanal Testeresi



36-42 mm Ayarlı Kapı Kasası

S. No	TEKNİK ÖZELLİKLER
1	Ø128XSB10X40 R3 LH Z4
2	Ø120XSB32X40 LH Z4
3	Ø180X4,5X40 Z12
4	Ø130XSB7X40 LH Z4
5	Ø128XSB 10X40 LH Z4
6	Ø120XSB21X40 RH Z4
7	Ø130XSB7X40 RH Z4
8	Ø140XSB11x40 Z4 R3
9	Ø140x52x40 Z4+4
10	Ø210X4,5X40 Z24
11	Ø180X4,5X40 Z12

KON/WZ (alternative top bevel teeth –conical):
For scoring sawblades. Prevents splitting of the
cut edge by the main sawblade as it passes through the
bottom surface of the panel with low cutting pressure.



Çizici Testere

D	B	b	d	Z
125	4,4/5,2	3,5	30	24
150	4,8/5,6	3,5	30	24
180	4,4/5,2	3,5	45	36
180	4,8/5,6	3,5	45	36
200	4,4/5,2	3,5	45	36
200	4,8/5,6	3,5	45	36

TR/TR (trapezoidal/trapezoidal teeth):
Tooth shape for better cutting quality
with non-ferrous and plastic profiles.
If altered from the standard FZ/TR
shape.



Dia Testere

D	B	b	d	Z
300	2,2	1,6	30	60
300	3,2	2,2	30	60
350	3,2	2,2	30	60
350	4,4	3,5	30	72
350	4,8	3,5	30	72
380	4,4	3,5	60	72
380	4,8	3,5	60	72
400	4,4	3,5	30	72
400	4,8	3,5	30	72
450	4,4	3,5	60	72
450	4,8	3,5	60	72

WZ (alternative top bevel teeth):
Multi-purpose tooth shape, economical
to purchase and maintain. Ideal for chipboard, veneered
chipboard, solid wood,
block board, plywood and similar
materials



TR (trapezoidal teeth): Recommended for cutting dry wood
with minimum marking.

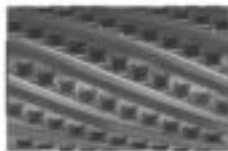
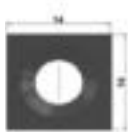


FZ (square teeth):
For multi-purpose application –
particularly suitable for wet and dry
wood.

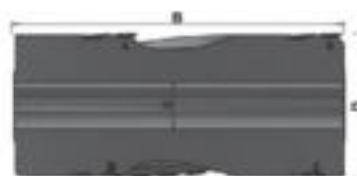
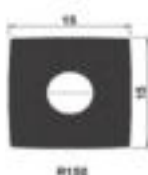


Kanal Testere

D	B	b	d	Z
STD	3	2	30	12
STD	4	3	30	12
STD	5	4	30	12
STD	6	4	30	12
STD	8	6	30	12
STD	9	6	30	12
STD	10	8	30	12
STD	3	2	30	18
STD	4	3	30	18
STD	5	4	30	18
STD	6	4	30	18
STD	8	6	30	18
STD	9	6	30	18
STD	10	8	30	18
STD	3	2	30	24
STD	4	3	30	24
STD	5	4	30	24
STD	6	4	30	24
STD	8	6	30	24
STD	9	6	30	24
STD	10	8	30	24



Ident	D	B	d	Z	Jilet	S
20801001	80	100	30	3+3	14x14x2	24
20801501	80	150	30	3+3	14x14x2	42
20850601	85	60	35	3+3	14x14x2	15
20850801	85	80	35	3+3	14x14x2	21
20851001	85	100	35	3+3	14x14x2	24
20851201	85	120	35	3+3	14x14x2	30
21200801	120	80	40	3+3	14x14x2	21
21202301	120	230	40	3+3	14x14x2	69
21250801	125	80	40	3+3	14x14x2	21
21251201	125	120	40	3+3	14x14x2	33
21251251	125	125	40	3+3	14x14x2	36
21251501	125	150	40	3+3	14x14x2	39
21302301	130	230	40	3+3	14x14x2	57
21602201	160	220	50	5+5	14x14x2	105



Ident	D	B	d	Z	Jilet	S
20901702	90	170	40	3+3	15x15x2,5 R150	45
21200802	120	80	40	3+3	15x15x2,5 R150	21
21201202	120	120	40	3+3	15x15x2,5 R150	36
21201802	120	180	40	3+3	15x15x2,5 R150	51
21202302	120	230	40	3+3	15x15x2,5 R150	69
21251102	125	110	40	3+3	15x15x2,5 R150	33
21251302	125	130	40	3+3	15x15x2,5 R150	36
21251602	125	160	40	3+3	15x15x2,5 R150	45
21251952	125	195	40	3+3	15x15x2,5 R150	57
21252302	125	230	40	3+3	15x15x2,5 R150	63
21252502	125	250	40	3+3	15x15x2,5 R150	69



Dowel Drills for Through Hole



Flute Dowel Drills for Through Hole



Flute Dowel Drills



Economical Dowel Drills for Through Hole



mdf	chipboard	laminated board	hardwood	softwood	plywood
★★★★★	★★★★★	★★★★★	★★★★	★★★	★★★
Ident		Teknik Özellikler			
RH	LH	D	L	d	
40101	40201	3	70	10	
40102	40202	3,5	70	10	
40103	40203	4	70	10	
40104	40204	4,5	70	10	
40105	40205	5	70	10	
40106	40206	5,5	70	10	
40107	40207	6	70	10	
40108	40208	8	70	10	

mdf	chipboard	laminated board	hardwood	softwood	plywood
★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★
Ident		Teknik Özellikler			
RH	LH	D	L	d	
80101	80201	5	70	10	
80102	80202	6	70	10	
80103	80203	7	70	10	
80104	80204	8	57/70	10	
80105	80205	9	70	10	
80106	80206	9,5	70	10	
80107	80207	10	70	10	
80108	80208	12	70	10	

mdf	chipboard	laminated board	hardwood	softwood	plywood
★★★★★	★★★	★★★★★	★★★★★	★★★★★	★★★
Ident		Teknik Özellikler			
RH	LH	D	L	d	
60101	60201	5	57/70	10	
60102	60202	6	70	10	
60103	60203	7	70	10	
60104	60204	8	57/70	10	
60105	60205	8,5	70	10	
60106	60206	9	70	10	
60107	60207	9,8	70	10	
60108	60208	10	70	10	
60109	60209	11	70	10	
60110	60210	12	70	10	
60111	60211	15	70	10	

mdf	chipboard	laminated board	hardwood	softwood	plywood
★★★★★	★★★★★	★★★★★	★★★★	★★	★★
Ident		Teknik Özellikler			
RH	LH	D	L	d	
110101	110201	5	70	10	
110102	110202	6	70	10	
110103	110203	7	70	10	
110104	110204	8	70	10	
110105	110205	9	70	10	
110106	110206	10	70	10	
110107	110207	12	70	10	
110108	110208	15	70	10	

[HW] Dübel Matkap / Dowel Drill

mdf ★★★★★	chipboard ★★★★★	laminated board ★★★★★	hardwood ★★★★★	softwood ★★★★★	plywood ★★★★★
Ident		Teknik Özellikler			
RH	LH	D	L	d	
90101	90201	3	70	10	
90102	90202	3,5	70	10	
90103	90203	4	70	10	
90104	90204	4,5	70	10	
90105	90205	4,8	70	10	
90106	90206	5	70	10	
90107	90207	5,5	70	10	
90108	90208	6	70	10	
90109	90209	6,2	70	10	
90110	90210	6,5	70	10	
90111	90211	7	70	10	
90112	90212	7,5	70	10	
90113	90213	7,8	70	10	
90114	90214	8	70	10	
90115	90215	8,5	70	10	
90116	90216	9	70	10	
90117	90217	9,5	70	10	
90118	90218	9,8	70	10	
90119	90219	10	70	10	
90120	90220	10,2	70	10	
90121	90221	10,5	70	10	
90122	90222	11	70	10	
90123	90223	11,5	70	10	
90124	90224	12	70	10	
90125	90225	13	70	10	
90126	90226	14	70	10	
90127	90227	15	70	10	

Economical Dowel Drills



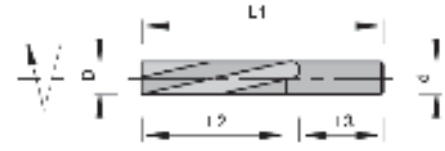
mdf ★★★★★	chipboard ★★★★★	laminated board ★★★★★	hardwood ★★★★★	softwood ★★★★★	plywood ★★★★★
Ident		Teknik Özellikler			
RH	LH	D	L	d	
120101	120201	12	70	10	
120102	120202	15	70	10	
120103	120203	16	70	10	
120104	120204	17	70	10	
120105	120205	18	70	10	
120106	120206	19	70	10	
120107	120207	20	70	10	
120108	120208	21	70	10	
120109	120209	22	70	10	
120110	120210	23	70	10	
120111	120211	24	70	10	
120112	120212	25	70	10	
120113	120213	26	70	10	
120114	120214	27	70	10	
120115	120215	28	70	10	
120116	120216	30	70	10	
120117	120217	32	70	10	
120118	120218	34	70	10	
120119	120219	35	70	10	
120120	120220	36	70	10	
120121	120221	37	70	10	
120122	120222	38	70	10	
120123	120223	40	70	10	
120124	120224	50	70	10	
120125	120225	53	70	10	
120126	120226	55	70	10	
120127	120227	60	70	10	
120128	120228	65	70	10	
120129	120229	70	70	10	
120130	120230	80	70	10	

Hinge Boring Bits



Makine / uygulama

- I CNC freze makineleri
- I masif ahşap ve plastikleri bitirmek için
- I oyukları ve konturları frezelemek için
- I z ekseninde ve x veya y ekseninde eşzamanlı besleme ile delme için



Finishing Cutters with solid carbide body	D	L2	d	L1	Z
	2	10	3	47	2 / 3
	3	14	3	47	2 / 3
	3	20	3	55	2 / 3
	4	20	4	55	2 / 3
	6	22	6	55	2 / 3
	6	32	6	65	2 / 3
	6	55	6	90	2 / 3
	8	25	8	55	2 / 3
	8	32	8	65	2 / 3
	8	42	8	82	2 / 3
	8	52	8	100	2 / 3
	10	25	10	55	2 / 3
	10	32	10	65	2 / 3
	10	42	10	82	2 / 3
	10	52	10	100	2 / 3
	12	32	12	65	2 / 3
	12	42	12	82	2 / 3
	12	52	12	100	2 / 3
	12	62	12	110	2 / 3
	14	32	12	65	2 / 3
	14	42	14	82	2 / 3
	14	52	14	100	2 / 3
	14	62	14	110	2 / 3
	16	42	16	82	2 / 3
	16	52	16	100	2 / 3
	16	62	16	110	2 / 3
	16	72	16	110	2 / 3
	18	52	18	100	2 / 3
	18	72	18	110	2 / 3
	20	52	20	100	2 / 3
	20	72	20	110	2 / 3

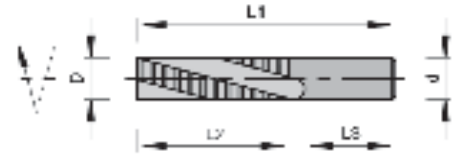
Makine / uygulama

I CNC freze makineleri

I oyukları ve konturları frezelemek için

I z ekseninde ve x veya y ekseninde

I Masif ahşap ve kontrplak ile kaplanmamış ahşap esaslı malzemelerin kaba işlenmesi için



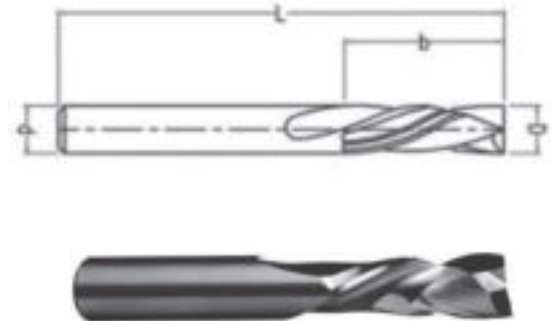
Roughing Cutters with solid carbide body	D	L2	d	L1	Z
	5	22	5	55	3
	6	22	6	55	3
	6	32	6	65	3
	6	55	8	90	3
	8	25	8	55	3
	8	32	8	65	3
	8	42	8	82	3
	8	52	8	100	3
	10	25	10	55	3
	10	32	10	65	3
	10	42	10	82	3
	10	52	10	100	3
	12	32	12	65	3
	12	42	12	82	3
	12	52	12	100	3
	12	62	12	110	3
	14	32	12	65	3
	14	42	14	82	3
	14	52	14	100	3
	14	62	14	110	3
	16	42	16	82	3
	16	52	16	100	3
	16	62	16	110	3
	16	72	16	110	3
	18	52	18	100	3
	18	72	18	110	3
	20	52	20	100	3
	20	72	20	110	3

Makine / uygulama

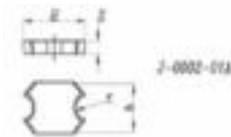
- I CNC freze makineleri
- I oyukları ve konturları frezelemek için
- I z ekseninde ve x veya y ekseninde
- I Kaba talaş Kapı kilit yeri açma



Roughing Cutters with solid carbide body Kapı kilit yeri açma	D	b	B	L	d	Z
	12	40	40	120	12	3
	12	50	50	150	12	3
	14	50	50	150	14	3
	16	50	50	150	16	3
	16	50	70	170	16	3
	18	50	50	150	18	3
	18	50	70	170	18	3
	20	50	50	150	20	3
	20	50	70	170	20	3



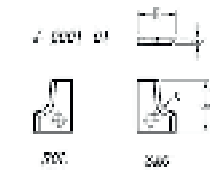
HW / Negatif Pozitif Hassas Kesim	D	b	B	L	d	Z
	4	20	-	65	4	2+2
	5	22	-	65	5	2+2
	6	22	-	65	6	2+2
	8	25	-	65	8	2+2
	8	32	-	82	8	2+2
	8	42	-	82	8	2+2
	10	32	-	82	10	2+2
	10	42	-	82	10	2+2
	12	32	-	82	12	2+2
	12	32	-	82	12	3+3
	12	42	-	82	12	2+2
	14	32	-	82	14	2+2
	16	32	-	82	16	2+2



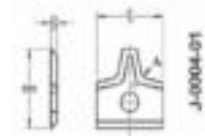
İdent Nr.	b	H	s	r
0002-01 A	12,7	12,7	3,2	2
0002-02 A	12,7	12,7	3,2	3



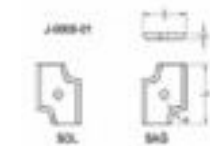
İdent Nr.	b	H	s	r
J-0002-01	12	20	2	2
J-0002-02	12	20	2	3



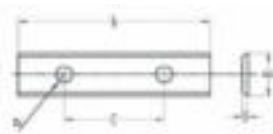
İdent Nr.	b	H	s	r
J-0001-01	14	11	2	3



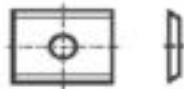
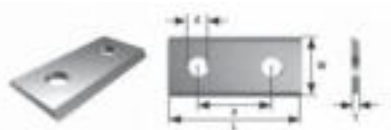
İdent Nr.	b	H	s	r
0004-01	16	17,5	2	2
0004-02	16	17,5	2	3



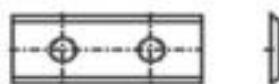
İdent Nr.	b	H	s	r
0005-01	20	16	2	2
0005-02	20	16	2	3



İdent Nr.	b	H	s	r
0003-801322	80	13	2,2	
0003-1001323	100	13	2,2	
0003-1201323	120	13	2,2	



L	W	T			Ident
7,5	12	1,5	35°	35°/T04F-CR	012001
9,6	12	1,5	35°	35°/T04F-CR	012015
20	12	1,5	35°	35°/T04F-CR	012004



L	W	T	a		Ident
30	12	1,5	14	35°/T04F-CR	012005
40	12	1,5	26	35°/T04F-CR	012014
50	12	1,5	26	35°/T04F-CR	012006
60	12	1,5	26	35°/T04F-CR	012007



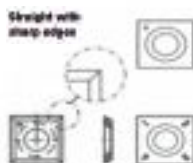
L	W	T		d	Ident
12	12	1,5	35°	D=4/35°/T04F-CR	012002
17	17	2	35°	D=3/35°/T04F-CR	016565



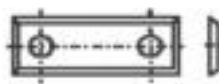
L	W	T		d	Ident
14	14	2	30°	D=6,5/30°/T07MF-CR	013273
14	14	2	30°	D=6,5/R100/R0,5/30°/T04F-CR	150069



L	W	T	R		Ident
15	15	2,5	150	D=6,2/R0,5/30°/T10MG	101540



L	W	T			Ident
15	15	2,5	30°	D=6,2/30°/T10MG	013315



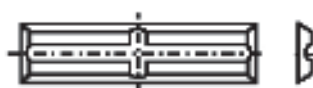
L	W	T	a		Ident
29,5	9	1,5	14	Z4/T04F-CR	013504
29,5	12	1,5	14	Z4/T04F-CR	013507



L	W	T	a		Ident
49,5	12	1,5	26		013520
59,5	12	1,5	26		013523



L	W	T	a		Ident
50	12	1,7	37		013327

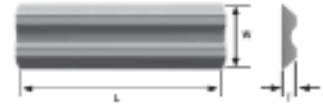


L	W	T	a		Ident
20	4,1	1,1			013403
25	5,5	1,1			013402
30	5,5	1,1			013397
50	5,5	1,1			013401

L	W	T	a		Ident
82	5,5	1,1		HM-HH/ T08MF-Tırnaklı Jilet	013020



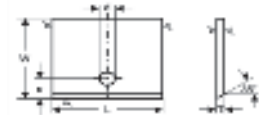
L	W	T		Ident
160	14	2,55	HSS-SHM-18/SYSTEM TERMINUS/160/B.O	114659
230	14	2,55	HSS-SHM-18/SYSTEM TERMINUS/230/B.O	114666



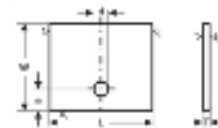
L	W	T	d	e		Ident
15	20,4	2	4,1	6,5	T04MG-CR	106469
15	25,4	2	4,1	6,5	T04MG-CR	106471



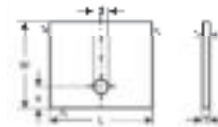
L	W	T	d	e		Ident
15	30,4	2	4,1	6,3	T04MG-CR	106454



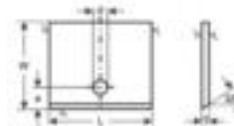
L	W	T	d	e		Ident
16	20,4	2	4,1	6,5	T04MG-CR	105221



L	W	T	d	e		Ident
20	25,4	2	4,5	6,5	HM-BL/D=4,5/E=6,5/T04F-CR	034993
25	20,4	2	4,5	6,5	HM-BL/D=4,5/E=6,5/T04F-CR	041075



L	W	T	d	e		Ident
25	25,4	2	4,5	6,5	T04MG-CR (T08CR) Blanket	106509



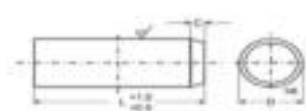
L	W	T	d	e	a		Ident
35	25,4	2	4,1	6,5	14	HM-BL/D=4,1/E=6,5/A=14/T04F-CR	015306



L	W	T	d		Ident
1050	30	3	4,1	HSS - cm/0,24 - cm/0,35 - cm/0,5	111942



D	L	C		Ident
6	330		T03F-CR (T06-CR) h6 HM-HH	114913
8	330		T03F-CR (T06-CR) h6 HM-RD	114928
10	330		T03F-CR (T06-CR) h6 HM-RD	114929
12	330		T03F-CR (T06-CR) h6 HM-RD	114930



INDUSTRIAL CUTTING TOOLS



ANKES
DIA CUTTING TOOLS

Ereğli Caddesi No: 109 Siteler - ANKARA / TÜRKİYE
Telefon: +90 (312) 351 73 36 - 46 -56 • Faks: +90 (312) 351 47 50
www.ankes.net - info@ankes.net