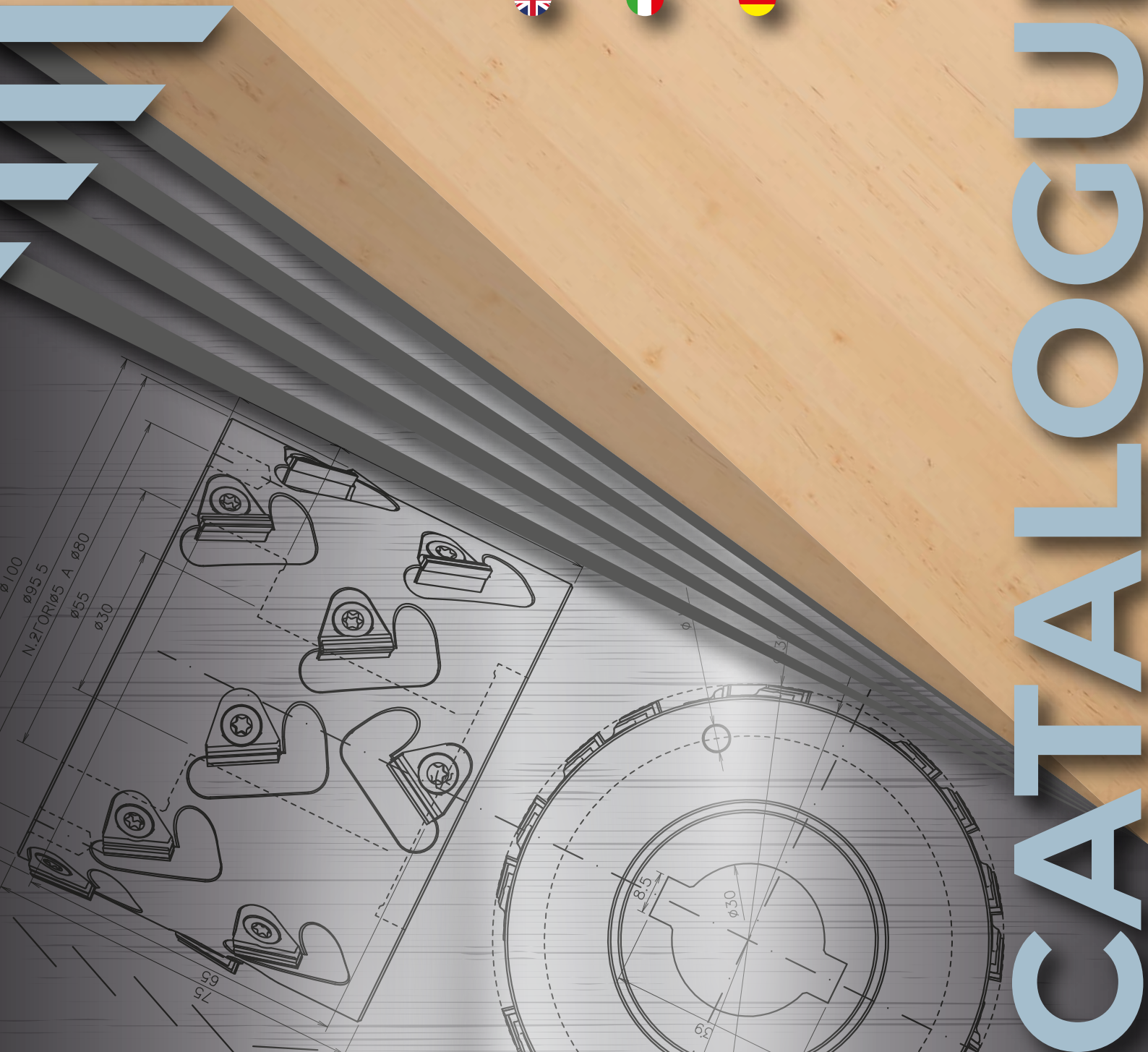
BANER TOOLS

Professional Cutting Tools

CATALOGUE 2019



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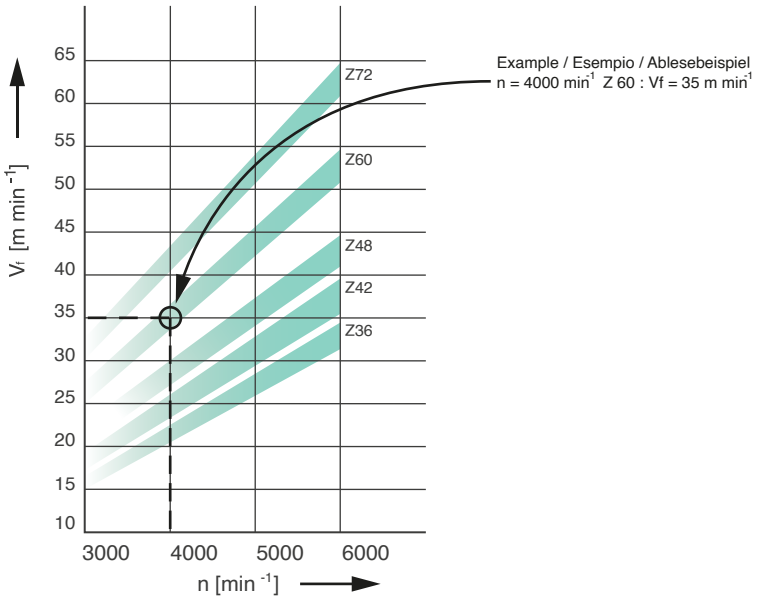
E

E

Circular Saws
Lame Circolari
Kreissägen

Vf Diagram, Diagramma Vf, Vf Schaubild



Optimum application
Applicazione ottimale
Bestanwendung

Max loadless rotations
Giri Max a vuoto
Max Drehzahl (n max)

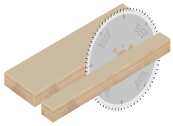
Ø	n max
200	12.000
250	10.000
300	8.000
350	6.000
400	5.500
450	4.500
500	4.500
550	4.000
600	3.500

Tool feed speed Vf depends on the number of teeth (Z) and on the number of rotations (n).

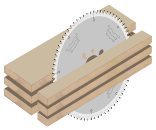
La velocità di avanzamento dell'utensile Vf è in funzione del numero dei denti (Z) e del numero di giri (n).

Der Vorschub Vf ist abhängig von der Zähnezahl (Z) und von der Geschwindigkeit (n)

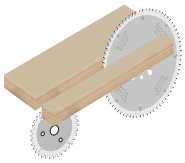
Machining, Lavorazione, Bearbeitungsart



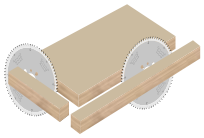
- Single transect
- Sezionare singolo
- Einzelplatt durchschneiden



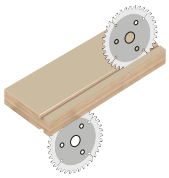
- Transect by deck
- Sezionare a pacco
- Paketschnitt durchschneiden



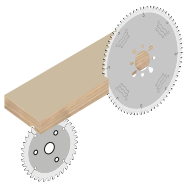
- Lance transect
- Incidere sezionare
- Vorritzen durchschneiden



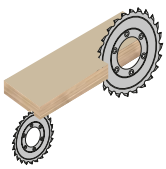
- Universal transect
- Sezionare universale
- Universell durchschneiden



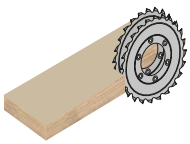
- Lance above under
- Incidere sopra sotto
- Unten und oben vorritzen



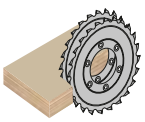
- Lance chip
- Incidere truciolare
- Vorritzen zerspanen



- Chipping
- Truciolare
- Universell.....



- Long side chipping
- Truciolare lato lungo
- Unten.....



- Cross cut chipping
- Truciolare lato trasversale
- Vorritzen.....

Table for cutting speeds

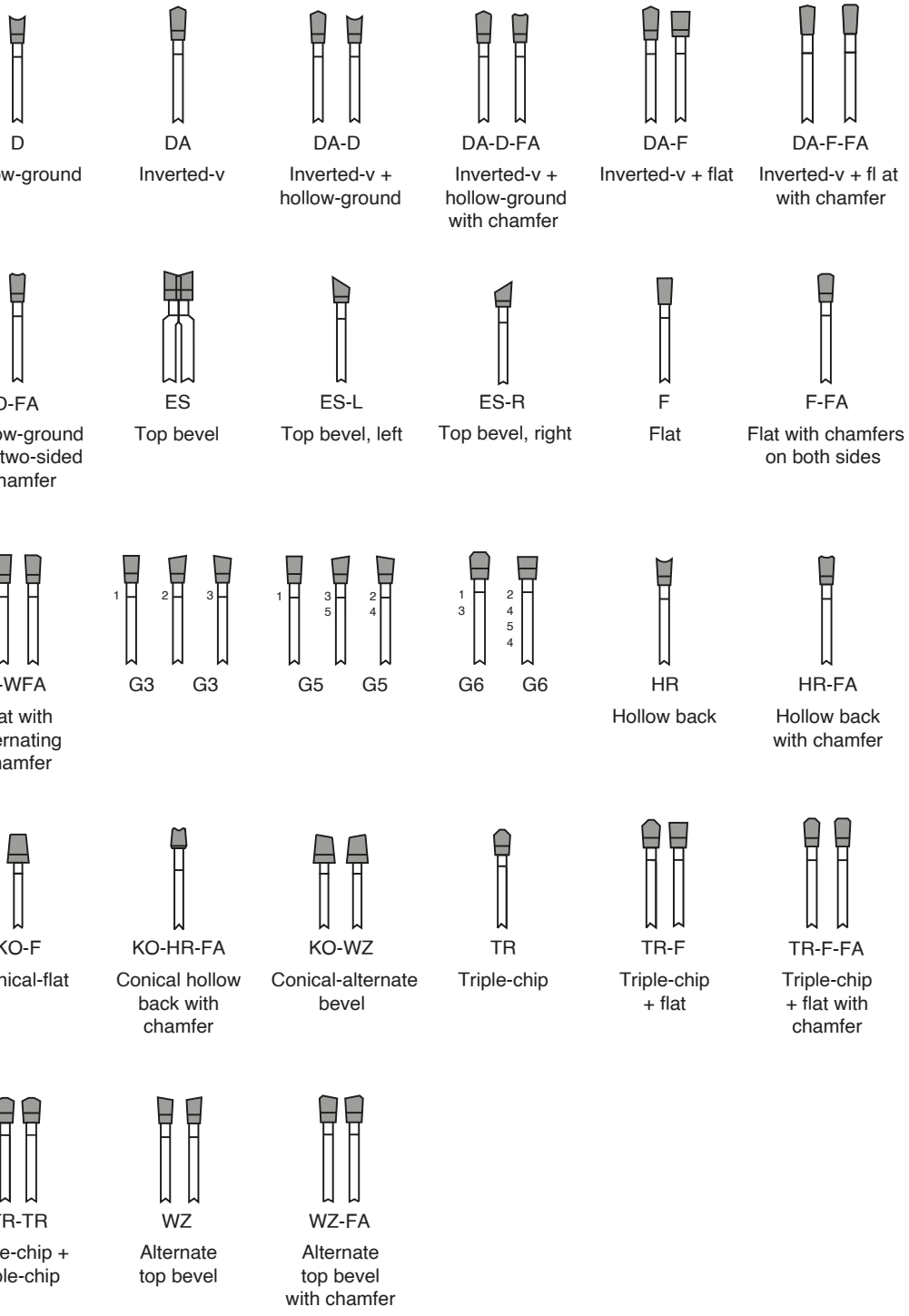
Circular saw blades

	Cutting material	Cutting speeds Vc (m/s)	Feed rate Fz (mm/Z)
Wood and wood-based	Veneer	70 - 100	0,3 - 0,7
	Veneered panels	60 - 90	0,2
	Beaver board	50 - 80	0,15
	Hard wood, exotic, longitudinal	60 - 100	0,3 - 1,0
	HDF (high density fiber board)	60 - 80	0,1 - 0,3
	MDF (medium density fiber board)	60 - 80	0,1 - 0,3
	OSB (oriented strand board)	60 - 80	0,1 - 0,2
	Lumber-core plywood	40 - 65	0,02 - 0,06
	Chipboard, raw	60 - 80	0,3
	Chipboard, plastic coated	60 - 80	0,15
	Plywood, laminated layers	50 - 80	0,05 - 0,25
	Plywood (lumber-core, rod-shaped)	60 - 80	0,1 - 0,2
	Softboard	60 - 100	0,2 - 0,4
	Soft wood, longitudinal	60 - 100	0,5 - 3,0
	Soft wood, cross cut	60 - 100	0,2 - 0,4
Plastic	Duroplast	60 - 70	0,02 - 0,05
	Elastomer	50 - 65	0,01 - 0,03
	HPL (High-Pressure-Laminate) Trespa Resopal	50 - 70	0,01 - 0,08
	Mineral material Corian, noblan, Hi-Macs, Starom, Rausolid	50 - 70	0,02 - 0,04
	Thermoplastic	50 - 65	0,05 - 0,10
Metal	Al wrought alloy *AlMn AlMn1Cu [3003] AlMg AlMg2 [5251]* *AlCuMg AlZnMg3Cu [7022]*	2000 - 4800 m/min 2000 - 4000 m/min	0,005 - 0,03 0,02 - 0,07
	Al die-casting alloy *AlMg3 [51300], AlMg5Si [51400]*	2000 - 4000 m/min	0,005 - 0,03 0,02 - 0,07
	Al die-casting alloy Si *AlSi12*	2000 - 2500 m/min	0,01 - 0,05
	Mg wrought alloy *MgMn2 [3.3520], MgAl3Zn [3.5312]*	2000 - 3500 m/min	0,005 - 0,02 0,01 - 0,05
	Mg die-casting alloy *Cu58*	2000 - 3500 m/min 2000 - 3000 m/min	0,005 - 0,02 0,01 - 0,05
	Copper *CuZn40Pb, CuZn30*	400 - 800 m/min	0,01 0,03 - 0,05
	Brass *CuSn6, CuSn6Zn*	400 - 800 m/min	0,01 0,03 - 0,05
	Bronze *CuSn6, CuSn6Zn*	200 - 400 m/min	0,01 - 0,02 0,04 - 0,08
Others	Fibre cement boards	70 - 100	0,3 - 0,7
	Sandwich-type plaster boards	60 - 90	0,2
	Printed circuit boards	50 - 80	0,15
	Perlif fire protection boards	60 - 100	0,3 - 1,0
	Rockwool	60 - 80	0,1 - 0,3

Technical Information Circular Saw Blades

Number of teeth *The tooth design has a big influence on the edge quality and is depending on the following factors:*

- Direction of cut (along / across the grain)
- Mode of application (with and across the grain)
- Workpiece material



D
Hollow-ground

DA
Inverted-v

DA-D
Inverted-v + hollow-ground

DA-D-FA
Inverted-v + hollow-ground with chamfer

DA-F
Inverted-v + flat

DA-F-FA
Inverted-v + fl at with chamfer

D-FA
Hollow-ground with two-sided chamfer

ES
Top bevel

ES-L
Top bevel, left

ES-R
Top bevel, right

F
Flat

F-FA
Flat with chamfers on both sides

F-WFA
Flat with alternating chamfer

G3 G3

G5 G5

G6 G6

HR
Hollow back

HR-FA
Hollow back with chamfer

KO-F
Conical-flat

KO-HR-FA
Conical hollow back with chamfer

KO-WZ
Conical-alternate bevel

TR
Triple-chip

TR-F
Triple-chip + flat

TR-F-FA
Triple-chip + flat with chamfer

TR-TR
Triple-chip + triple-chip

WZ
Alternate top bevel

WZ-FA
Alternate top bevel with chamfer

Number of teeth *The number of cutting edges subject to feed rate is to be found in section tool description on the respective pages. It is depending on the following criteria.*

- Cutting height (single boards / stack)
- Cutting quality (sizing cut / finish cut)
- Diameter of the circular saw blade
- Feed
- Pass
- RPM of the spindle
- Stack height (no. of single boards)
- Workpiece material

Panel sizing saw blade dimensions and machines

Machine type	D (mm)	B (mm)	b (mm)	d (mm)	Z	Z-form	NL (mm)
Scoring saw blade	180	4,4 - 5,6	3,4	20	28	KO - F	
Scoring saw blade	180	4,4 - 5,2	3,2	20	32	KO - WZ	
Scoring saw blade	180	5,8 - 6,8	4	20	36	KO - F	
Scoring saw blade	180	6,8 - 7,8	5	20	36	KO - F	
Main saw blade	400	4,4	3,2	60	72	FT	2/11/85
Main saw blade	530	5,8	4	60	60	FT	2/11/85
Main saw blade	700	7	5	80	60	FT	2/17/110
Scoring saw blade	200	4,4 - 5,6	3,2	65	36	KO - F	2/9/100 2/9/110
Scoring saw blade	200	4,4 - 5,6	3,2	65	36	KO - WZ	2/9/100 2/9/110
Scoring saw blade	200	4,4 - 5,2	3,5	65	32	KO - F	2/9/100 2/9/110
Scoring saw blade	200	4,8 - 5,8	3,5	65	36	KO - F	2/9/100 2/9/110
Scoring saw blade	200	4,8 - 5,6	3,5	65	32	KO - F	2/9/100 2/9/110
Scoring saw blade	200	3,7 - 4,5	2,8	65	32	KO - F	2/9/100 2/9/110
Scoring saw blade	200	3,7 - 4,5	2,8	65	32	KO - F	2/9/100 2/9/110
Postforming	300	4,8 - 5,6	3,2	65	72	KO - F	2/9/110
Postforming	300	4,55	3,2	65	72	WZ	2/9/100 2/9/110
Postforming	300	4,6	3,2	65	72	WZ	2/9/100 2/9/110
Postforming	300	4,4 - 5,6	3,2	65	48	KO - WZ	2/9/100 2/9/110
Postforming	300	4,8 - 5,6	3,5	65	48	KO - WZ	2/9/110
Postforming	350	4,6	3,2	65	72	WZ	2/9/110
Postforming	350	5	3,5	65	72	WZ	2/9/110
Main saw blade	300	4,4	3,2	65	60	FT	2/9/110
Main saw blade	320	4,4	3,2	65	60	FT	2/9/110
Main saw blade	320	4,4	3,2	65	60	FT	2/9/110
Main saw blade	355	4,4	3,2	65	72	FT	2/9/110
Main saw blade	355	4,4	3,2	80	72	FT	2/9/130 4/19/120
Main saw blade	360	4,4	3,2	65	72	FT	2/9/110
Main saw blade	360	4,4	3,2	65	72	Solution	2/9/110
Main saw blade	360	4,4	3,2	65	72	FT	2/9/110
Main saw blade	380	4,4	3,2	65	72	FT	2/9/110
Main saw blade	380	3,6	2,8	65	72	FT	2/9/110
Main saw blade	400	4,4	3,2	65	72	FT	2/9/110
Main saw blade	400	4,4	3,2	80	72	FT	2/9/130 4/19/120
Main saw blade	400	4,4	3,2	80	72	FFT	2/9/130 4/19/120
Main saw blade	400	4,4	3,2	80	72	FT	2/9/10 4/19/120
Main saw blade	430	4,4	3,2	65	72	FT	2/9/110
Main saw blade	430	4,4	3,2	80	72	FT	2/9/130 4/19/120
Main saw blade	430	4,4	3,2	80	72	FT	2/9/130 4/19/120
Main saw blade	430	4,8	3,5	70	72	FT	4/11/130
Main saw blade	430	4,4	3,2	80	72	FT	2/9/130 4/19/120
Main saw blade	450	4,4	3,2	80	72	FT	2/9/130 4/19/120
Main saw blade	450	4,8	3,5	80	72	FT	2/9/130 4/19/120
Main saw blade	450	4,8	3,5	80	72	FFT	2/9/130 4/19/120
Main saw blade	450	4,8	3,5	80	72	FT	2/9/130 4/19/120
Main saw blade	470	4,8	3,5	70	72	FT	4/11/130
Main saw blade	480	4,8	3,5	80	72	FT	2/9/130 4/19/120
Main saw blade	480	4,8	3,5	80	72	FFT	2/9/130 4/19/120
Main saw blade	510	4,8	3,5	80	72	FT	2/9/130 4/19/120
Main saw blade	520	4,8	3,5	70	72	FT	4/11/130
Scoring saw blade	125	4,4 - 5,6	3,4	20	24	KO - F	
Scoring saw blade	125	4,4 - 5,2	3,4	20	24	KO - F	
Scoring saw blade	160	4,4 - 5,6	3,4	55	36	KO - F	3/7/66
Scoring saw blade	200	4,4 - 5,6	3,2	80	36	KO - F	2/14/110
Scoring saw blade	200	4,4 - 5,2	3,2	80	32	KO - F	2/14/110
Postoforming	300	4,6	3,2	80	72	WZ	2/14/110
Main saw blade	350	4,4	3,2	80	60	FT	2/14/110
Main saw blade	350	4,4	3,2	80	72	FT	2/14/110
Main saw blade	355	4,4	3,2	80	72	FT	4/8,5/100 2/7/110 2/14/110
Main saw blade	355	4,4	3,2	80	54	WZ	

Machine type	D (mm)	B (mm)	b (mm)	d (mm)	Z	Z-form	NL (mm)
Main saw blade	355	4,4	3,2	80	72	WZ	
Main saw blade	380	4,4	3,2	80	72	FT	2/14/110
Main saw blade	380	4,4	3,2	80	72	FT	2/14/110
Main saw blade	400	4,4	3,2	80	60	FT	4/8,5/100 2/7/110 2/14/110
Main saw blade	400	4,4	3,2	80	72	WZ	
Main saw blade	420	4,4	3,2	80	72	FT	2/14/110
Main saw blade	450	4,4	3,2	80	72	FT	4/8,5/100 2/7/110 2/14/110
Scoring saw blade	125	4,4 - 5,6	3,4	45	24	KO - F	
Scoring saw blade	125	4,8 - 5,2	3,4	20	24	KO - F	
Scoring saw blade	127	3,8 - 5,0	2,8	45	24	KO - F	
Scoring saw blade	127	4,0 - 5,2	3,4	45	24	KO - F	
Scoring saw blade	127	4,4 - 5,6	3,4	45	24	KO - F	
Scoring saw blade	127	4,4 - 5,2	3,4	45	24	KO - F	
Scoring saw blade	160	4,4 - 5,6	3,2	45	28	KO - F	3/11/70
Scoring saw blade	180	4,4 - 5,6	3,4	50	42	KO - F	3/13/80
Scoring saw blade	190	4,0 - 5,2	2,8	50	32	KO - WZ	2/7/80
Scoring saw blade	190	3,7 - 4,5	2,8	50	32	KO - F	2/7/80
Scoring saw blade	190	3,7 - 4,5	2,8	50	32	KO - F	2/7/80
Scoring saw blade	200	4,4 - 5,6	3,2	50	42	KO - F	3/13/80
Scoring saw blade	215	4,4 - 5,6	3,2	50	42	KO - F	2/7/80 3/15/80
Scoring / PF saw blade	300	4,4 - 5,6	3,5	50	48	KO - F	3/15/80
Main saw blade	320	4,4	3,2	75	72	FT	3/13/95
Main saw blade	320	4,4	3,2	50	60	Solution	3/13/80 3/13/95
Main saw blade	330	4,4	3,2	50	60	FT	4/13/80
Main saw blade	350	4,4	3,2	50	72	FT	4/13/80
Main saw blade	355	4,4	3,2	75	54	FT	
Main saw blade	355	4,4	3,2	75	72	FT	
Main saw blade	355	4,4	3	75	72	FFT	
Main saw blade	355	4,4	3,5	75	72	FT	
Main saw blade	380	4,4	3,2	50	72	Solution	4/13/80
Main saw blade	380	3,6	2,8	75	72	FT	2/7/110
Main saw blade	400	4,4	3,2	75	72	FT	4/15/105
Main saw blade	400	4,4	3	75	72	FFT	4/15/105
Main saw blade	430	4,4	3,2	75	96	FT	4/15/105
Main saw blade	430	4,4	3,2	75	72	FT	4/15/105
Main saw blade	470	4,4	3,2	75	96	FT	4/15/105
Scoring saw blade	150	4,4 - 5,6	3,4	45	28	KO - F	
Scoring saw blade	150	3,3 - 4,1	2,2	45	28	KO - F	
Scoring saw blade	150	3,3 - 4,1	2,2	45	28	KO - F	
Scoring saw blade	150	4,4 - 5,2	3,2	30	28	KO - F	
Scoring saw blade	175	4,6 - 5,8	3,5	45	28	KO - F	
Scoring saw blade	180	4,4 - 5,6	3,2	45	36	KO - F	
Scoring saw blade	180	4,4 - 5,2	3,2	45	32	KO - F	
Scoring saw blade	180	4,8 - 5,8	3,5	45	36	KO - F	
Scoring saw blade	180	4,8 - 5,6	3,5	45	32	KO - F	
Scoring saw blade	180	4,8 - 5,8	3,5	45	36	KO - WZ	
Scoring saw blade	180	3,7 - 4,5	2,8	45	36	KO - F	
Scoring saw blade	180	3,7 - 4,5	2,8	45	36	KO - F	
Scoring saw blade	200	4,4 - 5,2	3,2	45	36	KO - F	
Scoring saw blade	200	4,4 - 5,2	3,5	45	32	KO - F	
Scoring saw blade	200	3,3 - 4,1	2,2	45	36	KO - F	
Scoring saw blade	200	3,3 - 4,1	2,2	45	36	KO - F	
Scoring saw blade	200	4,8 - 5,8	3,5	45	36	KO - F	
Scoring saw blade	200	4,8 - 5,6	3,5	45	32	KO - F	
Scoring saw blade	200	4,8 - 5,8	3,5	45	36	KO - WZ	
Scoring saw blade	200	5,8 - 6,6	4,5	45	32	KO - F	
Scoring saw blade	200	5,9 - 6,9	3,5	45	36	KO - F	
Scoring saw blade	200	6,2 - 7,2	4,2	45	36	KO - F	
Postforming	200	4,6 - 5,6	3,5	45	36	KO - WZ 30°	

Machine type	D (mm)	B (mm)	b (mm)	d (mm)	Z	Z-form	NL (mm)
Postforming	280	4,8 - 5,8	3,5	45	72	KO - WZ 5°	
Postforming	280	5	3,5	45	84	WZ 30°	
Postforming	340	5	3,5	45	108	WZ 30°	3/14/65
Main saw blade	300	4,4	3,2	60	72	FT	2/14/100
Main saw blade	300	3,2	2,2	60	60	FT	2/14/100
Main saw blade	300	4,4	3,2	75	72	FT	
Main saw blade	300	4,4	3,2	75	72	FT	
Main saw blade	310	4,4	3,2	60	72	FT	2/14/100
Main saw blade	350	4,4	3,2	60	72	FT	2/14/100
Main saw blade	350	4,4	3,2	60	72	Solution	2/14/100
Main saw blade	350	3,6	2,8	60	72	FT	2/14/100
Main saw blade	350	4,4	3,2	60	72	FT	2/14/100
Main saw blade	380	4,4	3,2	60	72	FT	2/14/100 2/14/125
Main saw blade	380	4,8	3,5	60	72	FT	2/14/100 2/14/125
Main saw blade	380	4,8	3,5	60	72	Solution	2/14/100 2/14/125
Main saw blade	380	4,4	3,2	60	72	Solution	2/14/100 2/14/125
Main saw blade	380	3,6	2,8	60	72	FT	2/14/100 2/14/125
Main saw blade	380	4,4	3,2	60	72	FT	2/14/100 2/14/125
Main saw blade	380	4,8	3,5	60	72	FT	2/14/100 2/14/125
Main saw blade	380	4,4	3,2	60	72	FT	2/14/100 2/14/125
Main saw blade	380	4,8	3,5	60	84	FT	2/14/100 2/14/125
Main saw blade	380	4,8	3,5	60	96	FT	2/14/100 2/14/125
Main saw blade	380	4,8	3,5	60	72	FFT	2/14/100 2/14/125
Main saw blade	380	4,8	3,5	60	72	FFT	2/14/100 2/14/125
Main saw blade	420	4,6	3,2	60	72	FT	2/19/120 2/14/125
Main saw blade	420	4,8	3,5	60	72	FT	2/19/120 2/14/125
Main saw blade	420	4,8	3,5	60	84	FT	2/19/120 2/14/125
Main saw blade	420	4,8	3,5	60	72	FFT	2/19/120 2/14/125
Main saw blade	420	4,8	3,5	60	72	FT	2/14/100 2/14/125
Main saw blade	450	4,8	3,5	60	72	FT	2/19/120 2/14/125
Main saw blade	450	4,8	3,5	60	72	FT	2/19/120 2/14/125
Main saw blade	450	4,8	3,5	60	84	FT	2/19/120 2/14/125
Main saw blade	450	4,8	3,5	60	72	FFT	2/19/120 2/14/125
Main saw blade	450	4,8	3,5	60	72	Solution	2/19/120 2/14/125
Main saw blade	450	4,4	3,2	60	72	FT	2/14/100 2/14/125
Main saw blade	450	4,8	3,5	60	72	FT	2/14/100 2/14/125
Main saw blade	480	4,8	3,5	60	72	FT	2/19/120
Main saw blade	480	4,8	3,5	60	72	Solution	2/19/120 2/11/115
Main saw blade	480	4,8	3,5	60	72	FT	2/19/120 2/11/115
Main saw blade	480	4,8	3,5	60	72	FT	2/19/120
Main saw blade	500	4,8	3,5	60	60	FT	2/11/115
Main saw blade	500	4,8	3,5	60	72	FT	2/11/115
Main saw blade	500	4,8	3,5	60	72	FFT	2/11/115
Main saw blade	520	4,8	3,5	60	60	FT	2/19/120 2/11/115
Main saw blade	520	4,8	3,5	60	84	FT	2/19/120 2/11/115
Main saw blade	520	4,8	3,5	60	72	Solution	2/19/120 2/11/115
Main saw blade	570	4,8	3,5	60	60	FT	2/19/120
Main saw blade	570	4,8	3,5	60	60	FFT	2/19/120
Main saw blade	600	5,8	4	60	60	FT	2/19/120 2/11/115
Main saw blade	600	5,8	4	60	72	FT	2/19/120 2/11/115
Main saw blade	600	5,8	4	60	60	FFT	2/19/120 2/11/115
Main saw blade	600	5,8	4	60	60	FT	2/19/120 2/11/115
Main saw blade	730	6,2	4,2	60	60	FT	2/19/120 2/11/148
Scoring saw blade	127	4,0 - 5,2	3,4	45	24	KO - F	
Scoring saw blade until 2007	127	4,4 - 5,6	3,4	45	24	KO - F	
Scoring saw blade	127	4,4 - 5,2	3,4	45	24	KO - F	
Scoring saw blade as from 2007	150	4,4 - 5,6	3,4	30	28	KO - F	
Scoring saw blade as from 2007	150	4,4 - 5,6	3,4	30	28	KO - WZ	
Scoring saw blade	150	3,7 - 4,5	2,8	30	28	KO - F	

Machine type	D (mm)	B (mm)	b (mm)	d (mm)	Z	Z-form	NL (mm)
Scoring saw blade	150	3,7 - 4,5	2,8	30	28	KO - F	
Scoring saw blade	150	4,4 - 5,2	3,2	30	28	KO - F	
Main saw blade	305	4,4	3	30	54	WZ	2/10/60
Main saw blade	305	4	2,8	30	54	FT	2/10/60
Main saw blade	305	4,4	3	30	54	FT	2/10/60
Main saw blade	305	4,4	3	30	60	FT	2/10/60
Main saw blade	305	4,4	3	30	60	FT	2/10/60
Main saw blade	320	4,4	3	30	60	FT	2/10/60
Main saw blade	320	4,4	3	30	60	FT	2/10/60
Main saw blade	350	4,4	3,2	30	54	FT	2/10/60
Main saw blade	350	4,4	3,2	30	72	FT	2/10/60
Main saw blade	350	4,4	3,2	30	72	FT	2/10/60
Main saw blade	350	4,4	3	30	72	FT	2/10/60
Main saw blade	350	3,6	2,8	30	72	FT	2/10/60
Main saw blade	355	4,4	3,2	30	54	WZ	
Main saw blade	355	4,4	3,2	30	72	WZ	
Main saw blade	355	4	2,8	30	72	FT	2/10/60
Main saw blade	355	4,4	3,2	30	72	FT	2/10/60
Main saw blade	355	4,4	3	30	72	FFT	2/10/60
Main saw blade	355	4,4	3,2	30	72	Solution	2/10/60
Main saw blade	355	4,4	3,2	30	72	FT	2/10/60
Main saw blade	400	4,4	3,2	30	60	WZ	
Main saw blade	400	4,4	3,2	30	72	WZ	
Main saw blade	400	4,4	3,2	30	72	FT	2/10/60
Main saw blade	400	4,4	3,2	30	72	FT	KS
Main saw blade	400	4,4	3,2	30	72	FT	2/10/60
Main saw blade	400	4,4	3	30	72	FFT	2/10/60
Main saw blade	400	4,4	3,2	30	72	Solution	2/10/60
Main saw blade	400	4,4	3,2	30	72	FT	2/10/60 2/13/94
Main saw blade	450	4,4	3,2	30	72	FT	2/10/60
Main saw blade	450	4,4	3,2	30	72	FFT	2/10/60
Scoring saw blade	125	3,1 - 4,3	2,8	20	24	KO - F	
Scoring saw blade	125	3,1 - 3,9	2,2	20	24	KO - F	
Scoring saw blade	125	4,4 - 5,6	3,4	20	24	KO - F	
Scoring saw blade	125	4,4 - 5,2	3,4	20	24	KO - F	
Scoring saw blade	180	4,4 - 5,6	3,4	30	28	KO - F	NLK
Scoring saw blade	180	4,4 - 5,2	3,2	20	32	KO - WZ	
Scoring saw blade	180	3,3 - 4,1	2,2	30	28	KO - F	NLK
Scoring saw blade	180	3,3 - 4,1	2,2	30	28	KO - F	NLK
Scoring saw blade	180	4,4 - 5,2	3,2	30	28	KO - F	NLK
Postforming	180	4,55	3,5	30	36	WZ 5°	
Scoring saw blade	200	4,4 - 5,6	3,2	30	36	KO - F	2/8,5/60
Scoring saw blade	200	4,4 - 5,6	3,4	20	36	KO - WZ	
Scoring saw blade	200	4,4 - 5,2	3,5	30	36	KO - F	2/8,5/60
Scoring saw blade	200	3,7 - 4,5	2,8	20	36	KO - F	2/11/66
Scoring saw blade	200	3,7 - 4,5	2,8	30	36	KO - F	2/11/66
Main saw blade	300	4,4	3	30	60	FT	2/10/60
Main saw blade	300	4,4	3	30	60	FFT	2/10/60
Main saw blade	300	3,2	2,2	30	60	FT	NLK
Main saw blade	300	4,4	3	30	60	FT	2/10/60
Main saw blade	350	4,4	3,2	30	54	FT	2/10/60
Main saw blade	350	4,4	3,2	30	72	FT	2/10/60
Main saw blade	350	4,4	3	30	72	FFT	2/10/60
Main saw blade	350	4,4	3	30	72	FT	2/10/60
Main saw blade	350	3,6	2,8	30	72	FT	2/10/60
Main saw blade	350	4,4	3,2	30	72	FT	2/10/60
Main saw blade	355	4,4	3,2	30	72	FT	2/10/60
Main saw blade	355	4,4	3	30	72	FFT	2/10/60
Main saw blade	400	4,4	3,2	30	60	FT	

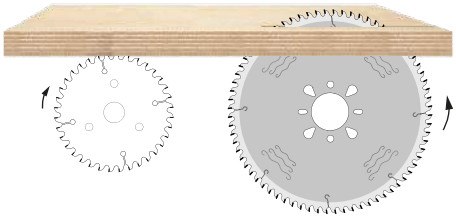
Machine type	D (mm)	B (mm)	b (mm)	d (mm)	Z	Z-form	NL (mm)
Main saw blade	400	4,4	2,8	30	72	FT	2/10/60
Main saw blade	400	4,4	3,2	30	72	FT	KS
Main saw blade	400	4,4	3,2	30	72	FT	2/10/60
Main saw blade	400	4,4	3	30	72	FFT	
Main saw blade	400	4,4	3,2	30	72	Solution	
Main saw blade	450	4,4	3,2	30	72	FT	2/10/60
Main saw blade	450	4,4	3,2	30	72	FFT	2/10/60
Scoring saw blade	180	3,2 - 4,3	2,8	16	42	KO - F	2/6/33
Scoring saw blade	200	4,4 - 5,6	3,2	30	36	KO - F	2/8,5/60
Scoring saw blade	200	4,4 - 5,2	3,5	30	36	KO - F	2/8,5/60
Scoring saw blade	200	3,2 - 4,3	2,8	30	60	KO - F	
Scoring saw blade	200	4,8 - 5,8	3,5	30	36	KO - F	2/8,5/60
Postforming	400	4,25	3,2	30	72	FT	2/10/60
Main saw blade	300	4,4	3	30	60	FFT	2/10/60
Main saw blade	300	4,4	3	30	60	FT	2/10/60
Main saw blade	350	4,4	3,2	30	72	FT	2/8,5/60
Main saw blade	350	4,25	3,2	30	72	FT	2/8,5/60
Main saw blade	350	4,4	3,2	30	72	FT	2/10/60
Main saw blade	400	4,4	3,2	30	60	FT	
Main saw blade	400	4,4	3,2	30	72	FT	
Main saw blade	400	4,4	3,2	30	72	FT	KS
Main saw blade	400	4,4	3,2	30	72	FT	
Main saw blade	400	4,4	3	30	72	FFT	
Main saw blade	400	4,4	3,2	30	72	Solution	
Main saw blade	450	4,4	3,2	30	72	FT	2/10/60
Main saw blade	450	4,8	3,2	30	72	FT	2/8,5/60
Scoring saw blade	180	4,4 - 5,6	3,4	20	28	KO - F	
Scoring saw blade	180	6,8 - 7,8	5	20	36	KO - F	
Scoring saw blade	180	4,4 - 5,2	3,2	20	32	KO - WZ	
Scoring saw blade	200	4,4 - 5,6	3,4	20	24	KO - F	2/11/66
Scoring saw blade	200	4,4 - 5,2	3,4	20	24	KO - F	2/11/66
Scoring saw blade	200	4,4 - 5,6	3,4	20	36	KO - F	2/11/66
Scoring saw blade	200	4,4 - 5,6	3,4	20	36	KO - WZ	2/11/66
Scoring saw blade	200	4,4 - 5,2	3,4	20	32	KO - F	2/11/66
Scoring saw blade	200	5,0 - 5,8	3,5	20	36	KO - F	2/11/66
Scoring saw blade	200	5,5 - 6,6	3,8	20	36	KO - F	2/11/66
Scoring saw blade	200	6,2 - 7,2	4,2	20	36	KO - F	2/11/66
Scoring saw blade	200	3,7 - 4,5	2,8	20	36	KO - F	2/11/66
Scoring saw blade	200	3,7 - 4,5	2,8	20	36	KO - F	2/11/66
Scoring saw blade	220	6,4 - 7,4	4,4	20	36	KO - F	
Postforming	220	4,55	3,6	20	48	WZ m. A.	
Postforming	300	4,4 - 5,2	3,2	30	36	KO - F	
Postforming	300	4,4 - 5,2	3,2	30	48	KO - WZ	
Postforming	300	4,55	3,2	30	72	WZ	
Main saw blade	350	4,4	3,2	30	54	WZ	
Main saw blade	350	4,4	3,2	30	72	WZ	
Main saw blade	350	4,4	3,2	30	54	FT	
Main saw blade	350	4,4	3,2	30	72	FT	
Scoring saw blade	150	3,7 - 4,5	2,8	30	28	KO - F	
Scoring saw blade	150	3,7 - 4,5	2,8	30	28	KO - F	2/11/73
Scoring saw blade	150	4,4 - 5,2	3,2	30	28	KO - F	
Main saw blade	305	4,4	3	30	54	WZ	
Main saw blade	305	4	2,8	30	54	FT	2/10/60
Main saw blade	305	4,4	3	30	54	FT	2/10/60
Main saw blade	350	4,4	3	30	72	FT	2/10/60
Main saw blade	350	4,4	3	30	72	FFT	2/10/60
Main saw blade	350	4,4	3,2	30	72	Solution	2/10/60
Main saw blade	350	3,6	2,8	30	72	FT	2/10/60
Main saw blade	350	4,4	3	30	72	FT	2/10/60

Machine type	D (mm)	B (mm)	b (mm)	d (mm)	Z	Z-form	NL (mm)
Main saw blade	355	4,4	3,2	30	72	FT	2/10/60
Main saw blade	355	4,4	3,2	30	72	FT	2/10/60
Main saw blade	360	4,4	3,2	30	72	FT	2/10/60
Main saw blade	370	4,4	3,2	30	72	FT	
Main saw blade	400	4,4	3,2	30	72	FT	2/10/60 2/13/94
Main saw blade	430	4,4	3,2	30	72	WZ	
Main saw blade	450	4,4	3,2	30	54	WZ	
Main saw blade	450	4,4	3,2	30	72	WZ	
Main saw blade	450	4,6	3,2	30	72	WZ	2/10/60
Main saw blade	450	4,4	3,2	30	72	FT	2/10/60
Main saw blade	450	4,4	3,2	30	72	FFT	2/10/60
Main saw blade	460	4,4	3,2	30	54	WZ	2/13/94
Main saw blade	460	4,4	3,2	30	54	FT	2/13/94
Main saw blade	460	4,4	3,2	30	72	FT	2/13/94
Main saw blade	460	4,4	3,2	30	72	FFT	2/13/94
Main saw blade	460	4,4	3,2	30	72	FT	2/13/94
Main saw blade	480	4,4	3,2	30	80	FT	
Main saw blade	480	4,4	3,2	30	72	FFT	2/13/94
Main saw blade	500	4,4	3,2	30	60	FT	
Main saw blade	520	4,4	3,2	30	44	WZ	2/13/94
Main saw blade	520	4,4	3,2	30	72	FT	2/13/94
Main saw blade	530	5	3,5	30	60	FT	
Main saw blade	580	5,5	4	40	60	FT	2/13/122
Main saw blade	620	6,2	4,2	40	60	FT	2/13/114 2/13/140
Main saw blade	620	6,2	4	40	60	FT	2/13/114 2/13/140
Main saw blade	670	6,2	4,2	40	60	FT	2/13/114 2/13/140
Main saw blade	680	5,8	4	40	60	FT	2/13/114 2/13/140
Main saw blade	680	6,2	4	40	60	FT	2/13/114 2/13/140
Main saw blade	680	6,4	4,4	40	60	FT	2/14/114 2/14/140
Scoring saw blade	160	4,4 - 5,6	3,4	55	36	KO - F	3/7/66
Scoring saw blade	200	4,4 - 5,6	3,2	80	36	KO - F	2/14/110
Scoring saw blade	200	4,4 - 5,2	3,2	80	32	KO - F	2/14/110
Postforming	300	4,6	3,2	80	72	WZ	2/14/110
Main saw blade	300	4,4	3,2	80	60	FT	
Main saw blade	305	4,4	3	80	54	WZ	
Main saw blade	320	4,4	3,2	80	60	TF	
Main saw blade	350	4,4	3,2	80	60	FT	2/14/110
Main saw blade	350	4,4	3,2	80	72	TF	2/14/110
Main saw blade	380	4,4	3,2	80	72	FT	2/14/110
Main saw blade	380	4,4	3,2	80	72	FT	2/14/110
Main saw blade	420	4,4	3,2	80	72	FT	2/14/110

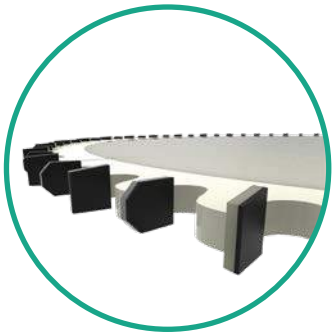
DP Circular Saw Blades | E01

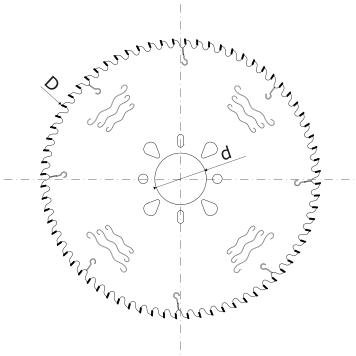
DP Lame Circolari | E01

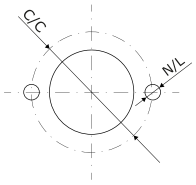
DP Kreissägeblatt | E01



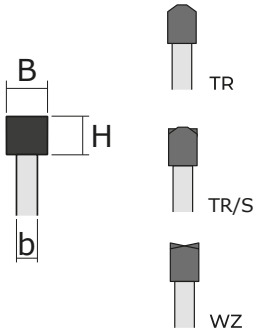
LOW NOISE







** Number, diameter and C/C of the pin holes, by request* **RIF: PAG.10**



** By request other types of teeth* **RIF. PAG.9**

Materials:
Chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine, Alucobond, Trespa (HPL).

Machines:
Traditional, Panel Sizing Horizontal and Vertical, Squaring, Edge Banding.

Teeth:
Pag. 2 teeth types.

Advantages:
- Precise cutting and excellent finishing for both wooden and not wooden based materials.
- Body with noise reducing slots.
- Pinholes suitable by request for most common machines in the market.
- Resharpenable up to 2/3 times.

Materiali:
Pannelli truciolare, LDF, MDF,HDF,HPL, multistrati, rivestiti e non, laminati plastici, Alucobond, Trespa.

Macchine:
Tradizionali, Sezionatrici orizzontali o verticali, Squadratrici, Bordatrici.

Denti:
Pag. 2, tipi di dente.

Vantaggi:
- Ottimo taglio ed eccellente finitura su tutti i materiale in fibra legnosa e non.
- Corpo con asole di silenziatura.
- Fori di trascinamento a richiesta che permettono l'utilizzo sulle più comuni macchine in commercio.
- Affilatura fino a 2/3 volte.

Werkstoff:
Spanplatte, (LDF), MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate, Alucobond, Trespa (HPL).

Maschine:
Traditionell, Vertikale und horizontale Plattenaufteilsäge, Quadrieren, Kantenanleimmaschinen

Zähne:
Pag. 2, Zahntypen.

Vorteile:
- Präzise Schnitte und exzellente Veredelung für Holzwerkstoffe und nicht für Holzwerkstoffe.
- Körper mit geräuschreduzierenden Schlitzen.
- Pinholes auf Anfrage für die meisten gängigen Maschinen auf dem Markt.
- Nachschleifbare bis zu 2/3 mal.

Code	D (mm)	B (mm)
E01 4000-5000-6000	200-450	up to 3,00
E01 4025-5025-6025	200-450	3,2
E01 4050-5050-6050	200-450	3,5
E01 4075-5075-6075	200-450	3,8
E01 4100-5100-6100	200-450	4,0
E01 4125-5125-6125	200-450	4,3
E01 4150-5150-6150	200-450	4,4
E01 4175-5175-6175	200-450	4,7
E01 4200-5200-6200	200-450	5,0
E01 4225-5225-6225	200-450	5,2
E01 4250-5250-6250	200-450	5,4
E01 4275-5275-6275	200-450	5,6
E01 4300-5300-6300	200-450	5,8
E01 4325-5325-6325	200-450	6,2
E01 4350-5350-6350	200-450	6,6
E01 4375-5375-6375	200-450	7,0
E01 4400-5400-6400	200-450	more than 7,00

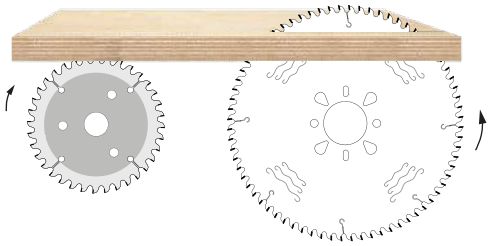
**Bore (d) and NL are to be specified at the time of the order.*
**Foro (d) e NL da specificare al momento dell'ordine.*
**Bohrung (d) und NL sind zum Zeitpunkt der Bestellung anzugeben.*

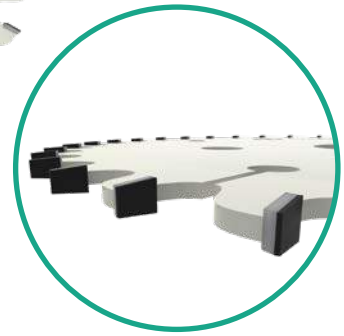
H 4 (mm)	H 5 (mm)	H 6 (mm)
Code	Code	Code
E01 4000	E01 5000	E01 6000
E01 4025	E01 5025	E01 6025
E01 4050	E01 5050	E01 6050
E01 4075	E01 5075	E01 6075
E01 4100	E01 5100	E01 6100
E01 4125	E01 5125	E01 6125
E01 4150	E01 5150	E01 6150
E01 4175	E01 5175	E01 6175
E01 4200	E01 5200	E01 6200
E01 4225	E01 5225	E01 6225
E01 4250	E01 5250	E01 6250
E01 4275	E01 5275	E01 6275
E01 4300	E01 5300	E01 6300
E01 4325	E01 5325	E01 6325
E01 4350	E01 5350	E01 6350
E01 4375	E01 5375	E01 6375
E01 4400	E01 5400	E01 6400

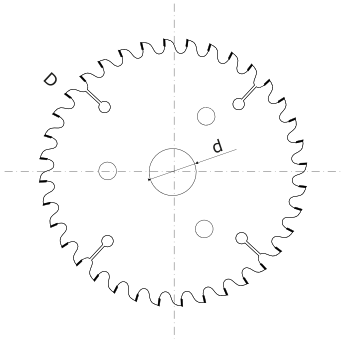
DP Scoring Saw Blades Conical and Conical Alternated | E02 - E03

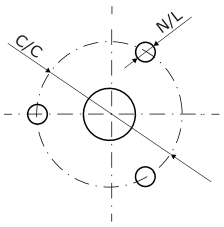
DP Lame Incisore Coniche e Coniche Alternata | E02 - E03

DP Wertsägeblätter Konisches und Konisches Alterniert | E02 - E03

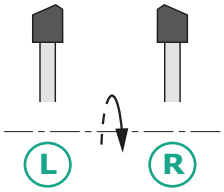


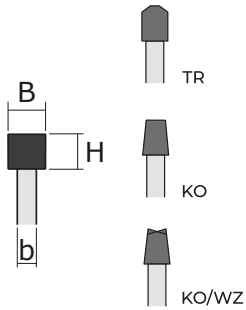






** Number, diameter and C/C of the pin holes, by request*
RIF: PAG.10





** By request other types of teeth.*
RIF: PAG.9

Materials:
Chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine, Alucobond, Trespa (HPL).

Machines:
Traditional, Panel Sizing Horizontal and Vertical, Squaring, Edge Banding.

Teeth:
Pag. 2, teeth types.

Advantages:
- Precise cutting and excellent finishing for both wooden and not wooden based materials.
- Body with noise reducing slots.
- Pinholes suitable by request for most common machines in the market.
- Resharpenable up to 2/3 times.

Materiali:
Pannelli truciolare, LDF, MDF,HDF,HPL, multistrati, rivestiti e non, laminati plastici, Alucobond, Trespa.

Macchine:
Tradizionali, Sezionatrici orizzontali o verticali, Squadratrici, Bordatrici.

Denti:
Pag. 2, tipi di dente.

Vantaggi:
- Ottimo taglio ed eccellente finitura su tutti i materiali in fibra legnosa e non.
- Corpo con asole di silenziatura.
- Fori di trascinamento a richiesta che permettono l'utilizzo sulle più comuni macchine in commercio.
- Affilatura fino a 2/3 volte.

Werkstoff:
Spanplatte, (LDF), MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate, Alucobond, Trespa (HPL).

Maschine:
Traditionell, Vertikale und horizontale Plattenaufteilsäge, Quadrieren, Kantenanleimmaschinen.

Zähne:
Pag. 2, Zahntypen.

Vorteile:
- Präzise Schnitte und exzellente Veredelung für Holzwerkstoffe und nicht für Holzwerkstoffe.
- Körper mit geräuschreduzierenden Schlitzen.
- Pinholes auf Anfrage für die meisten gängigen Maschinen auf dem Markt.
- Nachschleifbare bis zu 2/3 mal.

E02 flat scoring saw blades

Code	D (mm)	B (mm)
E02 4000-5000-6000	100-300	up to 3,00
E02 4025-5025-6025	100-300	3,2
E02 4050-5050-6050	100-300	3,5
E02 4075-5075-6075	100-300	3,8
E02 4100-5100-6100	100-300	4,0
E02 4125-5125-6125	100-300	4,3
E02 4150-5150-6150	100-300	4,4
E02 4175-5175-6175	100-300	4,7
E02 4200-5200-6200	100-300	5,0
E02 4225-5225-6225	100-300	5,2
E02 4250-5250-6250	100-300	5,4
E02 4275-5275-6275	100-300	5,6
E02 4300-5300-6300	100-300	5,8
E02 4325-5325-6325	100-300	6,2
E02 4350-5350-6350	100-300	6,6
E02 4375-5375-6375	100-300	7,0
E02 4400-5400-6400	100-300	more than 7,00

**Bore (d) and NL are to be specified at the time of the order.*
**Foro (d) e NL da specificare al momento dell'ordine.*
**Bohrung (d) und NL sind zum Zeitpunkt der Bestellung anzugeben.*

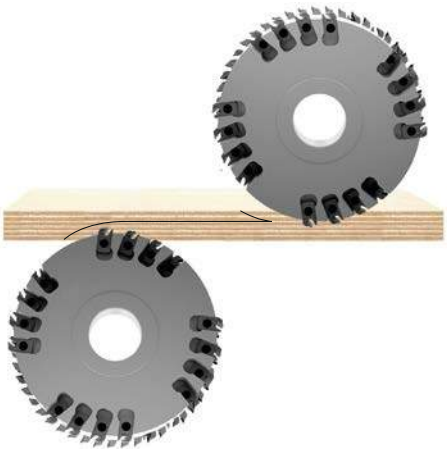
conical and conical alternated E03

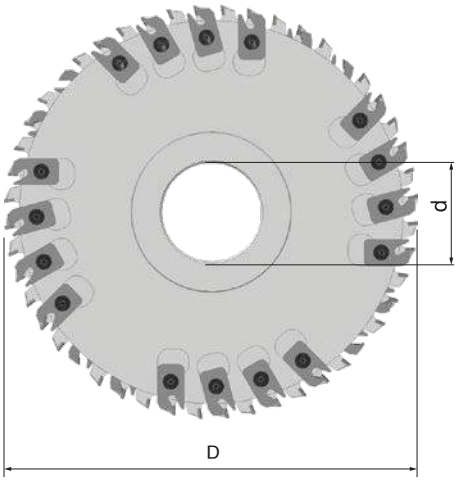
Code	D (mm)	B (mm)
E03 4000-5000-6000	100-300	up to 3,0 / 3,8
E03 4025-5025-6025	100-300	3,2 / 4,0
E03 4050-5050-6050	100-300	3,5 /4,3
E03 4075-5075-6075	100-300	4,0 / 4,8
E03 4100-5100-6100	100-300	4,4 / 5,2
E03 4125-5125-6125	100-300	4,6 / 5,4
E03 4150-5150-6150	100-300	4,8 / 5,6
E03 4175-5175-6175	100-300	5,0 / 5,8
E03 4200-5200-6200	100-300	5,4 / 6,2
E03 4225-5225-6225	100-300	5,8 / 6,6
E03 4250-5250-6250	100-300	more than 5,8 / 6,6

**Bore (d) and NL are to be specified at the time of the order.*
**Foro (d) e NL da specificare al momento dell'ordine.*
**Bohrung (d) und NL sind zum Zeitpunkt der Bestellung anzugeben.*

H 4 (mm) Code	H 5 (mm) Code	H 6 (mm) Code
E02 4000	E02 5000	E02 6000
E02 4025	E02 5025	E02 6025
E02 4050	E02 5050	E02 6050
E02 4075	E02 5075	E02 6075
E02 4100	E02 5100	E02 6100
E02 4125	E02 5125	E02 6125
E02 4150	E02 5150	E02 6150
E02 4175	E02 5175	E02 6175
E02 4200	E02 5200	E02 6200
E02 4225	E02 5225	E02 6225
E02 4250	E02 5250	E02 6250
E02 4275	E02 5275	E02 6275
E02 4300	E02 5300	E02 6300
E02 4325	E02 5325	E02 6325
E02 4350	E02 5350	E02 6350
E02 4375	E02 5375	E02 6375
E02 4400	E02 5400	E02 6400

H 4 (mm) Code	H 5 (mm) Code	H 6 (mm) Code
E03 4000	E03 5000	E03 6000
E03 4025	E03 5025	E03 6025
E03 4050	E03 5050	E03 6050
E03 4075	E03 5075	E03 6075
E03 4100	E03 5100	E03 6100
E03 4125	E03 5125	E03 6125
E03 4150	E03 5150	E03 6150
E03 4175	E03 5175	E03 6175
E03 4200	E03 5200	E03 6200
E03 4225	E03 5225	E03 6225
E03 4250	E03 5250	E03 6250





Materials:
Chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine.

Machines:
Double end tenoners.

Tooth (DP):
Interchangeable inserts, Tip height H 4/6 mm.

Advantages:
- Precise cutting and excellent finishing for both wooden and not wooden based materials.
- Reinforced body.

Materiali:
Pannelli truciolare, LDF, MDF,HDF,HPL, multistrati, rivestiti e non, laminati plastici.

Macchine:
Squadratrici/tenonatrici.

Dente (DP):
Inserti intercambiabili, Altezza dente H 4/6 mm.

Vantaggi:
- Ottimo taglio ed eccellente finitura su tutti i materiale in fibra legnosa e non.
- Corpo rinforzato.

Werkstoff:
Spanplatte, (LDF), MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate.

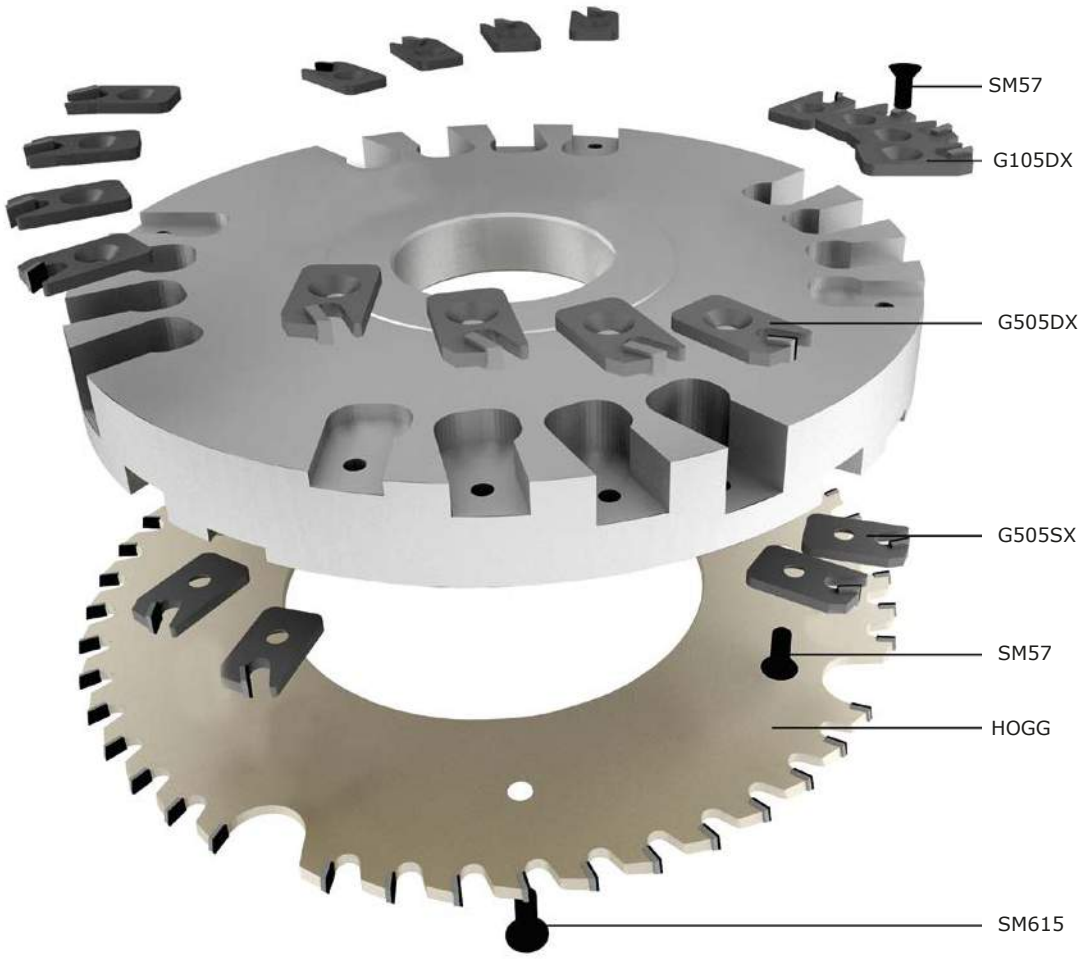
Maschine:
Doppelendprofiler.

Zahn (DP):
Austauschbare Einsätze, Bestückth.he H 4/6 mm.

Vorteile:
- Präzise Schnitte und exzellente Veredelung für Holzwerkstoffe und nicht für Holzwerkstoffe.
- Verstärkter Körper.

RH Code	LH Code	D (mm)	B (mm)	d (mm)	z	h (mm)
E04 4000	E04 4050	225	25	60	20 + 48	4
E04 6000	E04 6050	225	25	60	20 + 48	6
E04 4100	E04 4150	250	30	60	24 + 48	4
E04 6100	E04 6150	250	30	60	24 + 48	6

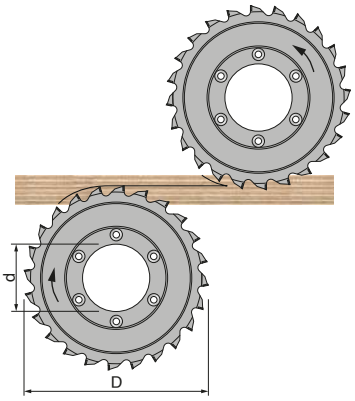
Code	SPARE PARTS		N°
SM57	SCREW	M5X7	16
G105DX	INSERT	5mm	12
G505DX	INSERT	5mm	4
G505SX	INSERT	5mm	8
SM57	SCREW	M5X7	8
HOGG	SAWBLADES		1
SM615	SCREW	M6X15	4

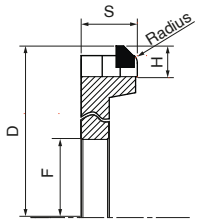


DP Hogging Units with Shaped Profile | E05

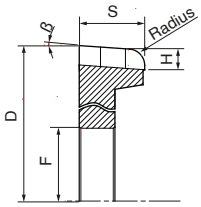
DP Truciolatori sagomati | E05

DP Profiliert Zerspanen | E05

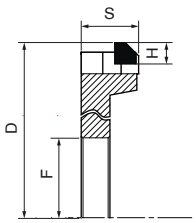




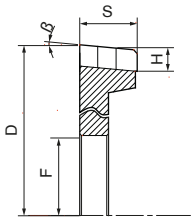
T 1



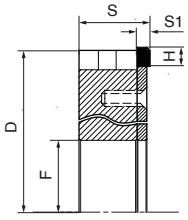
T 2



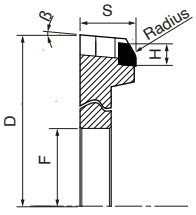
T 3



T 4



T 5



T 6

Materials:
Chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine.

Machines:
Double end tenoners.

Advantages:
- Precise cutting and excellent finishing for both wooden and not wooden based materials.
- Reinforced body.

Materiali:
Pannelli truciolare, LDF, MDF,HDF,HPL, multistrati, rivestiti e non, laminati plastici.

Macchine:
Squadratrici/tenonatrici.

Vantaggi:
- Ottimo taglio ed eccellente finitura su tutti i materiale in fibra legnosa e non.
- Corpo rinforzato.

Werkstoff:
Spanplatte, (LDF), MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate.

Maschine:
Doppelendprofiler.

Vorteile:
- Präzise Schnitte und exzellente Veredelung für Holzwerkstoffe und nicht für Holzwerkstoffe.
- Verstärkter Körper.

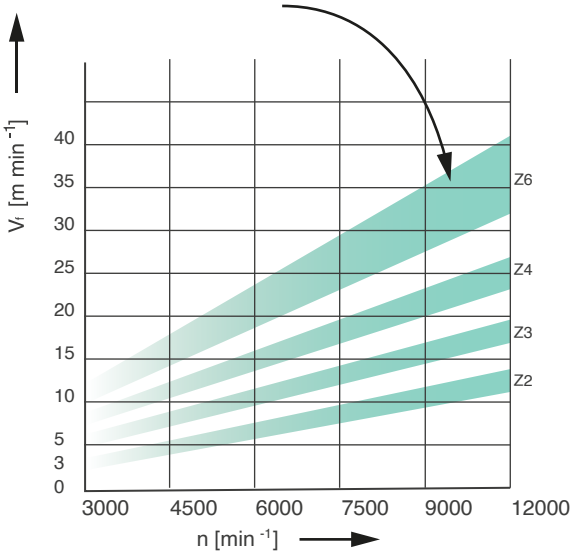
RH Code	LH Code	D (mm)	H (mm)	S (mm)	z	max feed	Type
E05 6101	E05 6102	up to 250	6	16	24DP + 24DP + 12DP	36	T 1
E05 6107	E05 6108	up to 250	6	16	30DP + 30DP + 12DP	45	T 1
E05 6113	E05 6114	up to 250	6	20	20DP + 20DP	30	T 2
E05 6119	E05 6120	up to 250	6	20	30DP + 30DP	48	T 2
E05 6125	E05 6126	up to 250	6	15	24DP + 24DP + 12DP	36	T 3
E05 6131	E05 6132	up to 250	6	20	30DP + 30DP + 12DP	48	T 3
E05 6137	E05 6138	up to 250	6	16	36DP + 12DP	40	T 4
E05 6143	E05 6144	up to 250	6	16	48DP + 16DP	60	T 4
E05 6149	E05 6150	up to 250	4 - 5 - 6	22	40DP + 12HM	30	T 5
E05 6155	E05 6156	up to 250	4 - 5 - 6	22	60DP + 18HM	50	T 5
E05 6161	E05 6162	up to 250	6	16	18DP + 18DP + 12DP	24	T 6
E05 6167	E05 6168	up to 250	6	16	24DP + 24DP + 12DP	36	T 6
E05 6173	E05 6174	up to 250	6	20	36DP + 36DP + 16DP	60	T 6

E

Jointing Heads
Frese a Finire
Fugefräser

Vf Diagram Diagramma Vf Vf Schaubild

Example / Esempio / Ablesebeispiel
n = 6000 min^{-1} Z 6 : Vf = 20 m min^{-1}



Optimum application
Applicazione ottimale
Bestanwendung

Max loadless rotations, Giri Max a vuoto, Max Drehzahl (n max)

ø	n max
100	10.000
125	10.000
150	8.500
180	8.000
200	8.000

- Anti-chipping adjustable tool heads
- Teste antischeggia registrabili
- Fügefräser zweiteilig

ø	n max
80	13.000
100	13.000
125	13.000
150	11.000
180	9.000
200	8.500

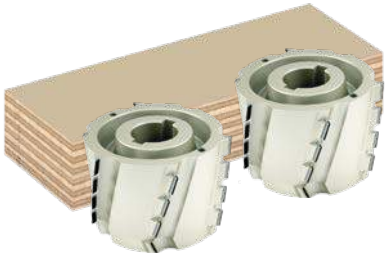
- Anti-chipping solid tool heads
- Teste antischeggia fisse
- Fügefräser einteilig

Tool feed speed Vf depends on the number of teeth (Z) and on the number of rotations (n).

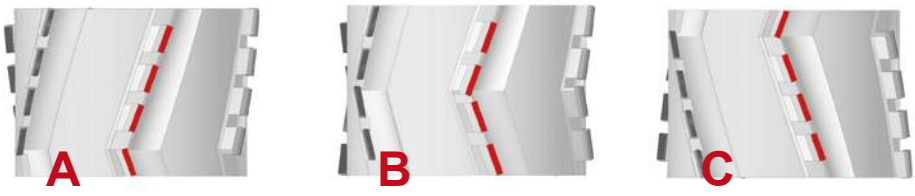
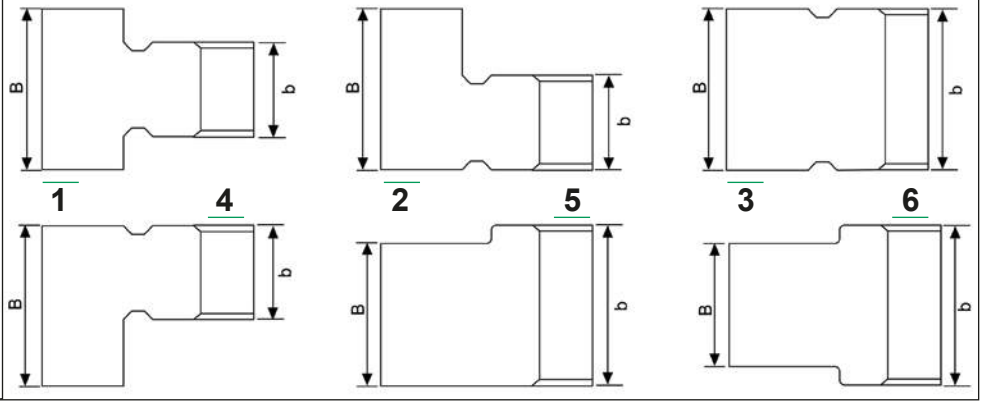
La velocità di avanzamento dell'utensile Vf è in funzione del numero dei denti (Z) e del numero di giri (n).

Der Vorschub Vf ist abhängig von der Zähnezahl (Z) und von der Geschwindigkeit (n)

Machining, Lavorazione, Bearbeitungsart



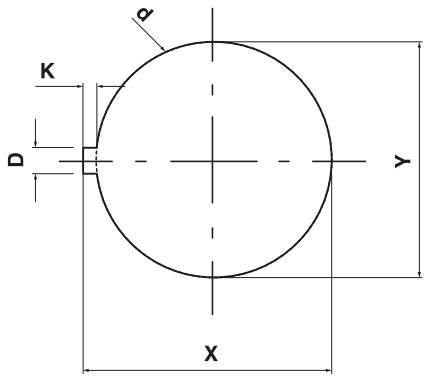
- Vertical finish
- Rifinitura verticale
- Senkrechte Feinbearbeitung

AXIALITY **ASSIALITÀ** **AXIALITÄT**	
DESIGN **COSTRUZIONE** **AUSFÜHRUNG**	

Code	Machine	D	B (mm)	b (mm)	d (mm)	Z	Type axial	Construction type
AD1	Biesse	80	38	53	30 DKN	3+3	B	6
AD2	Biesse	80	47	25	30 DKN	3+3	A	1
AD3	Biesse	80	47	53	30 DKN	3+3	B	6
AD4	Biesse	80	65	53	30 DKN	3+3	B	6
AD5	Ott	85	47	45	30 DKN	3+3	A	1
AD6	Ott	85	65	40,6	30 DKN	3+3	B	2
AD7	IMA, Brandt	100	29	31,6	30 DKN	3+3	A	6
AD8	Brandt	100	38	36	30 DKN	3+3	A	1
AD9	IMA	100	38	37,6	30 DKN	3+3	A	1
AD10	HolzHer up to 2008, SCM	100	47	25	30 DKN	2+2	C	1
AD11	IMA, Brandt, SCM-IDM, Biesse	100	47	40	30 DKN	3+3	A	1
AD12	IMA, Brandt, SCM-IDM, Biesse	100	47	40,6	30 DKN	3+3	A	2
AD13	EBM, Hebrock	100	47	61	30 DKN	2+2	A	5
AD14	Biesse	100	47	75	30 DKN	3+3	B	6
AD15	Cehisa	100	56	25	30 DKN	2+2	A	1
AD16	HolzHer up to 2008, SCM	100	65	25	30 DKN	2+2	C	1
AD17	IMA, Brandt, SCM-IDM	100	65	40,6	30 DKN	3+3	A	1
AD18	Brandt	100	65	40,6	30 DKN	3+3	A	2
AD19	SCM - Stefani	100	65	40,6	30 DKN	3+3	A	2
AD20	Biesse	100	65	75	30 DKN	3+3	B	6
AD21	HolzHer	100	83	25	30 DKN	2+2	C	1
AD22	Brandt	100	83	85	30 DKN	3+3	A	6
AD23	IMA, Biesse	125	38	34	30 DKN	3+3	A	1
AD24	HOMAG Optimat	125	38	36	30 DKN	3+3	A	1
AD25	HOMAG / Biesse	125	47	40	30 DKN	3+3	A	1
AD26	IMA	125	47	42	30 DKN	3+3	A	1
AD27	BIESSE	125	47	47	30 DKN	3+3	B	3
AD28	HOMAG / Biesse	125	65	40	30 DKN	3+3	B	1
AD29	IMA, SCM - Stefani	125	65	40,6	30 DKN	3+3	A	2
AD30	Biesse	125	65	47	30 DKN	3+3	B	1

KEYWAYS REFERENCE

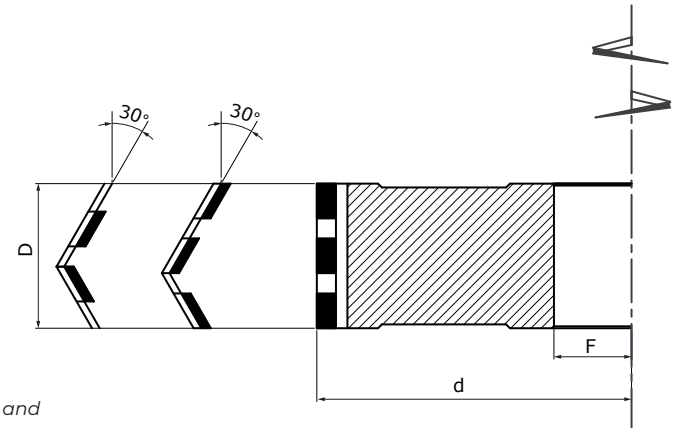
Code	Diameter (d)	Keyway (DKN)	Code	Diameter (d)	Keyway (DKN)
DKN1	from 5 till 8	2x1	DKN14	from 85 till 95	25x5.4
DKN2	from 8 till 10	3x1,4	DKN15	from 95 till 110	28x6,4
DKN3	from 10 till 12	4x1,8	DKN16	from 110 till 130	32x7,4
DKN4	from 12 till 17	5x2,3	DKN17	from 130 till 150	36x8,4
DKN5	from 17 till 22	6x2,8	DKN18	from 150 till 170	40x9,4
DKN6	from 22 till 30	8x3,3	DKN19	from 170 till 200	45x10,4
DKN7	from 30 till 38	10x3,3	DKN20	from 200 till 230	50x11,4
DKN8	from 38 till 44	12x3,3	DKN21	from 230 till 260	56x12,4
DKN9	from 44 till 50	14x3,8	DKN22	from 260 till 290	63x12,4
DKN10	from 50 till 58	16x4,3	DKN23	from 290 till 330	70x14,4
DKN11	from 53 till 65	18x4,4	DKN24	from 330 till 380	80x15,4
DKN12	from 65 till 75	20x4,9	DKN25	from 380 till 440	90x17,4
DKN13	from 75 till 85	22x5,4	DKN26	from 440 till 500	100x19,5



DP Fixed Jointing Heads 30° | E06

DP Frese a Finire Fisse 30° | E06

DP Fester Fügefräser 30° | E06



** Axiality bore recesses and design*
RIF: PAG.26

** DKN* **RIF: PAG.27**

Applications:
Used for sizing and jointing chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine, Alucobond, Trespa (HPL).

Machine:
Squaring, Edge banding, traditional.

Design:
Alternate shear cut angle, 30°, right/left-hand rotation, excellent finishing, anti-chipping and low noisiness.

Tooth (DP):
Tip height H 3/4/6 mm, large regrinding range.

Applicazioni:
Utilizzate per la finitura di pannelli truciolare, MDF,HDF,HPL, multistrati, rivestiti e non, laminati plastici, Alucobond, Trespa (HPL).

Macchine:
Squadratrici, Bordatrici, tradizionali.

Design:
Angolo assiale alternato 30°, rotazione destra/sinistra, ottima finitura, antischeggia e bassa rumorosità.

Dente (DP):
Altezza dente H 3/4/6 mm, ampia aria di raffilatura.

Anwendung:
Zum Formatieren und Fügen von Spanplatte, MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate, Alucobond, Trespa (HPL).

Maschine:
Kreissägen, Bürstmaschine, traditionelle Maschinen.

Ausführung:
Axialwinkel abwechselnd, 30°, Rechtslauf/Linkslauf optimaler Verarbeitung, Schnitte ohne Ausrisse, Geräuscharmes.

Zahn (DP):
Bestückthöhe H 3/4/6 mm, Grosser Nachschärfbereich.

Code	D (mm)	B (mm)	d (mm)	Z
E06 3000-4000-6000	50-220	35,0	from 16 to 30	3+3
E06 3025-4025-6025	50-220	40,0	from 16 to 40	3+3
E06 3050-4050-6050	50-220	45,0	from 16 to 40	3+3
E06 3075-4075-6075	50-220	50,0	from 16 to 40	3+3
E06 3100-4100-6100	50-220	55,0	from 16 to 40	3+3
E06 3125-4125-6125	50-220	60,0	from 16 to 40	3+3
E06 3150-4150-6150	50-220	65,0	from 16 to 40	3+3
E06 3175-4175-6175	100-220	35,0	from 16 to 30	4+4
E06 3200-4200-6200	100-220	40,0	from 16 to 40	4+4
E06 3225-4225-6225	100-220	45,0	from 16 to 40	4+4
E06 3250-4250-6250	100-220	50,0	from 16 to 40	4+4
E06 3275-4275-6275	100-220	55,0	from 16 to 40	4+4
E06 3300-4300-6300	100-220	60,0	from 16 to 40	4+4
E06 3325-4325-6325	100-220	65,0	from 16 to 40	4+4

**Bore (d) and NL are to be specified at the time of the order.*

**Foro (d) e NL da specificare al momento dell'ordine.*

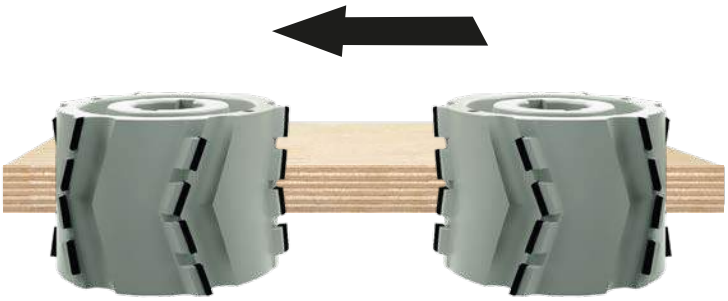
**Bohrung (d) und NL sind zum Zeitpunkt der Bestellung anzugeben.*

H 3 (mm) Code	H 4 (mm) Code	H 6 (mm) Code
E06 3000	E06 4000	E06 6000
E06 3025	E06 4025	E06 6025
E06 3050	E06 4050	E06 6050
E06 3075	E06 4075	E06 6075
E06 3100	E06 4100	E06 6100
E06 3125	E06 4125	E06 6125
E06 3150	E06 4150	E06 6150
E06 3175	E06 4175	E06 6175
E06 3200	E06 4200	E06 6200
E06 3225	E06 4225	E06 6225
E06 3250	E06 4250	E06 6250
E06 3275	E06 4275	E06 4275
E06 3300	E06 4300	E06 4300
E06 3325	E06 4325	E06 4325

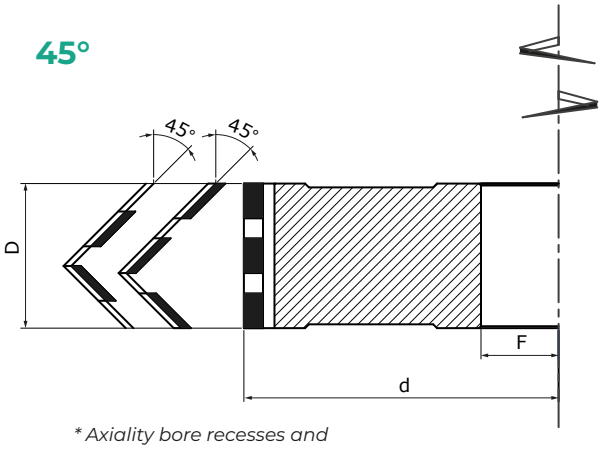
DP Jointing Heads 45° - 55° | E07 - E08

DP Frese a Finire Fisse 45° - 55° | E07 - E08

DP Fester Fügefräser 45° - 55° | E07 - E08



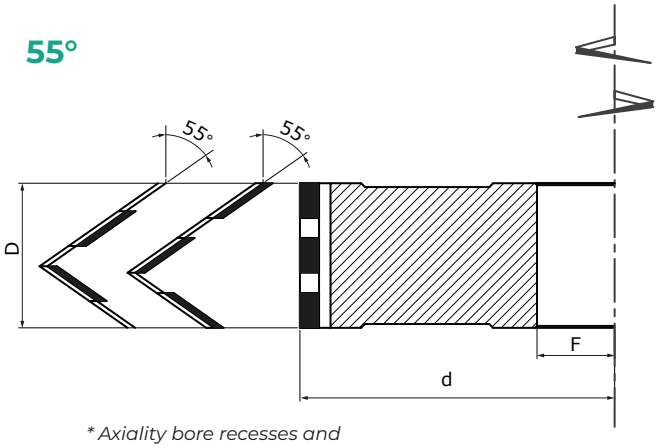
45°



** Axiality bore recesses and design*
RIF: PAG.26

** DKN* **RIF: PAG.27**

55°



** Axiality bore recesses and design*
RIF: PAG.26

** DKN* **RIF: PAG.27**

Applications:
Used for sizing and jointing chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine, Alucobond, Trespa (HPL).

Machine:
Squaring, edge banding, traditional.

Design:
Alternate shear cut angle, 45°, 55°, right/left-hand rotation, excellent finishing, anti-chipping and low noisiness.

Tooth (DP):
Tip height H 4/6 mm, large regrinding range.

Applicazioni:
Utilizzate per la finitura di pannelli truciolare, MDF, HDF, HPL, multistrati, rivestiti e non, laminati plastici, Alucobond, Trespa (HPL).

Macchine:
Squadratrici, bordatrici, tradizionali

Design:
Angolo assiale alternato 45°, 55°, rotazione destra/sinistra, ottima finitura, antischeggia e bassa rumorosità.

Dente (DP):
Altezza dente H 4/6 mm, ampia aria di raffilatura.

Anwendung:
Speziell zum Formatieren und Fügen von Spanplatte, MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate, Alucobond, Trespa (HPL).

Maschine:
Kreissägen, Bürstmaschine, traditionelle Maschinen.

Ausführung:
Axialwinkel abwechselnd, 45°, 55°, Rechtslauf/Linkslauf optimaler Verarbeitung, Schnitte ohne Ausrisse, Geräuscharmes.

Zahn(DP):
Bestückungshöhe H 4/6 mm, Grosser Nachschärfbereich.

Code 45°	Code 55°	D (mm)	B (mm)	d (mm)	Z
E07 4000-6000	E08 4000-6000	100-220	35,0	from 16 to 30	3+3
E07 4025-6025	E08 4025-6025	100-220	40,0	from 16 to 40	3+3
E07 4050-6050	E08 4050-6050	100-220	45,0	from 16 to 40	3+3
E07 4075-6075	E08 4075-6075	100-220	50,0	from 16 to 40	3+3
E07 4100-6100	E08 4100-6100	100-220	55,0	from 16 to 40	3+3
E07 4125-6125	E08 4125-6125	100-220	60,0	from 16 to 40	3+3
E07 4150-6150	E08 4150-6150	100-220	65,0	from 16 to 40	3+3
E07 4175-6175	E08 4175-6175	100-220	35,0	from 16 to 30	4+4
E07 4200-6200	E08 4200-6200	100-220	40,0	from 16 to 40	4+4
E07 4225-6225	E08 4225-6225	100-220	45,0	from 16 to 40	4+4
E07 4250-6250	E08 4250-6250	100-220	50,0	from 16 to 40	4+4
E07 4275-6275	E08 4275-6275	100-220	55,0	from 16 to 40	4+4
E07 4300-6300	E08 4300-6300	100-220	60,0	from 16 to 40	4+4
E07 4325-6325	E08 4325-6325	100-220	65,0	from 16 to 40	4+4

**Bore (d) and NL are to be specified at the time of the order.*
**Foro (d) e NL da specificare al momento dell'ordine.*
**Bohrung (d) und NL sind zum Zeitpunkt der Bestellung anzugeben.*

cutting angle - 45°

H 4 (mm)	H 6 (mm)
Code	Code
E07 4000	E07 6000
E07 4025	E07 6025
E07 4050	E07 6050
E07 4075	E07 6075
E07 4100	E07 6100
E07 4125	E07 6125
E07 4150	E07 6150
E07 4175	E07 6175
E07 4200	E07 6200
E07 4225	E07 6225
E07 4250	E07 6250
E07 4275	E07 6275
E07 4300	E07 6300
E07 4325	E07 6325

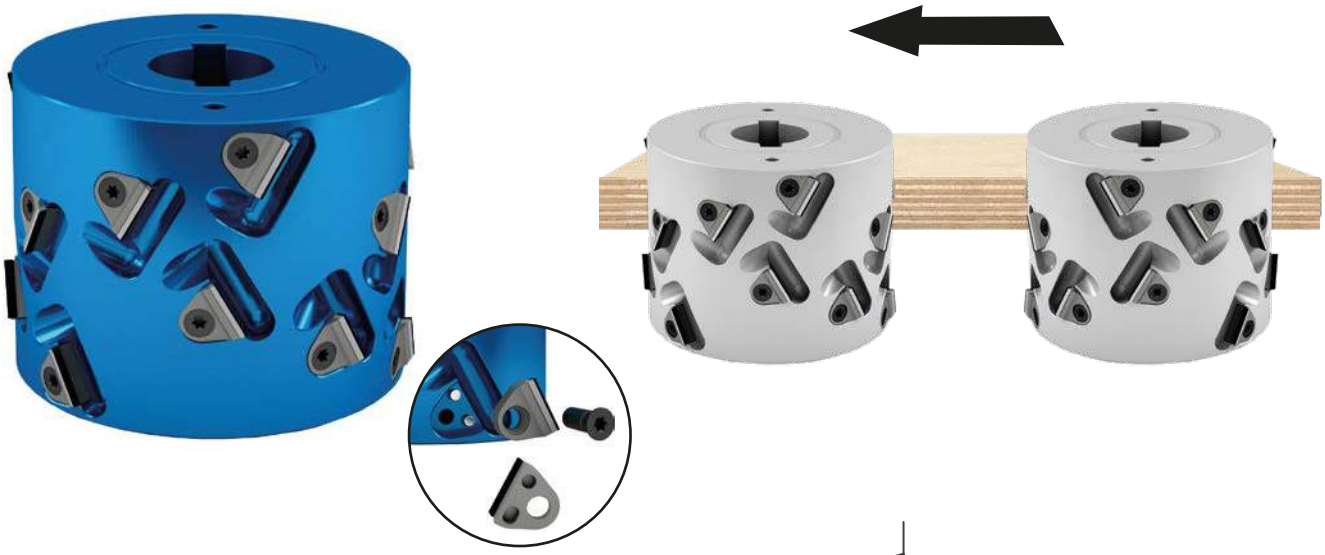
cutting angle - 55°

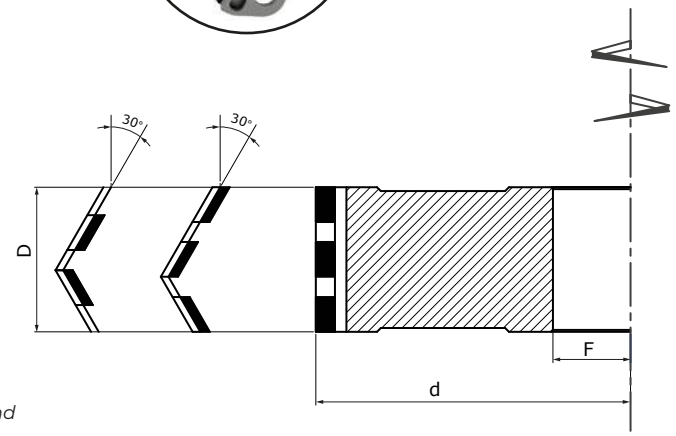
H 4 (mm)	H 6 (mm)
Code	Code
E08 4000	E08 6000
E08 4025	E08 6025
E08 4050	E08 6050
E08 4075	E08 6075
E08 4100	E08 6100
E08 4125	E08 6125
E08 4150	E08 6150
E08 4175	E08 6175
E08 4200	E08 6200
E08 4225	E08 6225
E08 4250	E08 6250
E08 4275	E08 6275
E08 4300	E08 6300
E08 4325	E08 6325

DP Jointing Heads with Inserts 30° | E09

DP Frese a Finire Fisse con Inserti 30° | E09

DP Fügefräser mith Einsätze 30° | E09





** Axiality bore recesses and design*
RIF: PAG.26

** DKN* **RIF: PAG.27**

Applications:
Used for sizing and jointing chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine, Alucobond, Trespa (HPL).

Machine:
Squaring, edge banding, traditional.

Design:
Alternate shear cut angle, 30, 45°, right/left-hand rotation, excellent finishing, anti-chipping and low noisiness.

Tooth (DP):
Interchangeable inserts, Tip height H 3mm.

Applicazioni:
Utilizzate per la finitura di pannelli truciolare, MDF, HDF, HPL, multistrati, rivestiti e non, laminati plastici, Alucobond, Trespa (HPL).

Macchine:
Squadratrici, bordatrici, tradizionali.

Design:
Angolo assiale alternato 30°, 45°, rotazione destra/sinistra, ottima finitura, antischeggia e bassa rumorosità.

Dente (DP):
Inserti intercambiabili, Altezza dente H 3mm.

Anwendung:
Speziell zum Formatieren und Fügen von Spanplatte, MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate, Alucobond, Trespa (HPL).

Maschine:
Kreissägen, Bürstmaschine, traditionelle Maschinen.

Ausführung:
Axialwinkel abwechselnd, 30, 45°, Rechtslauf/Linkslauf optimaler Verarbeitung, Schnitte ohne Ausrisse, Geräuscharmes.

Zahn(DP):
Austauschbare Einsätze, Bestückthöhe H 3mm.

Code	D (mm)	B (mm)	d (mm)	Z
E09 3000	50-220	35,0	from 16 to 30	3+3
E09 3025	50-220	40,0	from 16 to 40	3+3
E09 3050	50-220	45,0	from 16 to 40	3+3
E09 3075	50-220	50,0	from 16 to 40	3+3
E09 3100	50-220	55,0	from 16 to 40	3+3
E09 3125	50-220	60,0	from 16 to 40	3+3
E09 3150	50-220	65,0	from 16 to 40	3+3
E09 3175	100-220	35,0	from 16 to 30	4+4
E09 3200	100-220	40,0	from 16 to 40	4+4
E09 3225	100-220	45,0	from 16 to 40	4+4
E09 3250	100-220	50,0	from 16 to 40	4+4
E09 3275	100-220	55,0	from 16 to 40	4+4
E09 3300	100-220	60,0	from 16 to 40	4+4
E09 3325	100-220	65,0	from 16 to 40	4+4

**Bore (d) and NL are to be specified at the time of the order.*
**Foro (d) e NL da specificare al momento dell'ordine.*
**Bohrung (d) und NL sind zum Zeitpunkt der Bestellung anzugeben.*

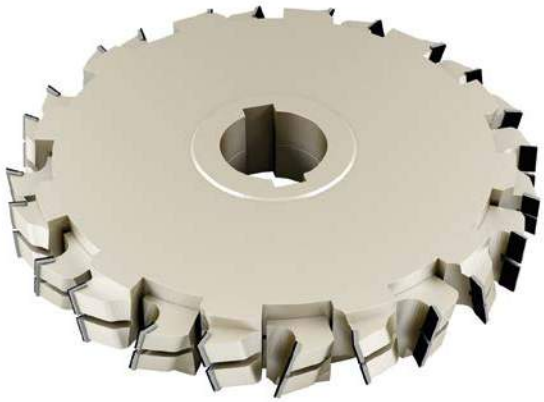
**45° shear cut angle by request*
**Angolo assiale di 45° a richiesta*
**45° pfeilverzahnten auf Anfrage*

H 3 (mm) / Code
E09 3000
E09 3025
E09 3050
E09 3075
E09 3100
E09 3125
E09 3150
E09 3175
E09 3200
E09 3225
E09 3250
E09 3275
E09 3300
E09 3325

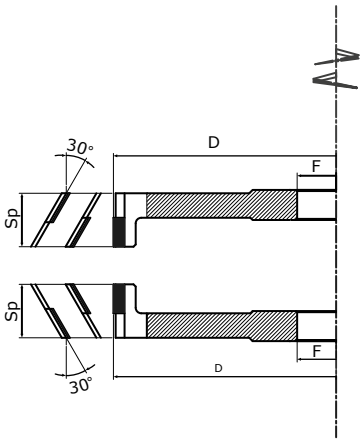
DP Adjustable for Edge Bending/Jointing | E10

DP Frese a Finire Regolabil | E10

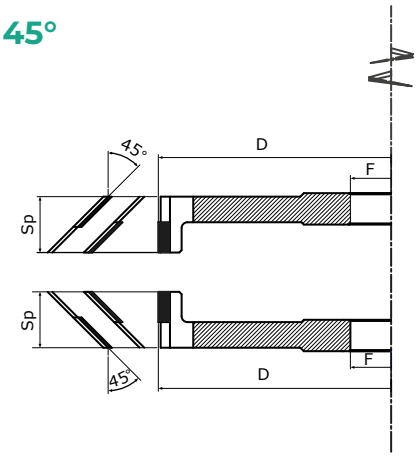
DP Einstellbar Fügefräser | E10



30°



45°



Applications:
Used for sizing and jointing chipboards, MDF, HDF, plywood boards panels, with or without veneers, melamine, Alucobond, Trespa (HPL).

Machine:
Squaring, edge banding.

Design:
ALU body, alternate shear cut angle, 30°, 45°, 55° right/left-hand rotation, excellent finishing, anti-chipping and low noisiness.

Tooth (DP):
Tip height H 4 mm, H 6 mm.

Applicazioni:
Utilizzate per la finitura di pannelli truciolare, MDF, HDF, HPL, multistrati, rivestiti e non, laminati plastici, Alucobond, Trespa (HPL).

Macchine:
Squadratrici, bordatrici.

Design:
Corpo in ALU, angolo assiale alternato 30°, 45°, 55° rotazione destra/sinistra, ottima finitura, antischeggia e bassa rumorosità.

Dente (DP):
Altezza dente H 4 mm, H 6 mm.

Anwendung:
Zum Formatieren und Fügen von Spanplatte, MDF, HDF, Sperrholzplatten Paneele, mit oder ohne furnier, Kunststofflaminate, Alucobond, Trespa (HPL).

Maschine:
Quadrieren, Kantenanleim.

Ausführung:
Tragkörper aus Alu, Mit wechselseitigem Achswinkel, 30°, 45°, 55° Rechtslauf/Linkslauf optimale Verarbeitung, Antiabplatzleistung, Geräuscharm.

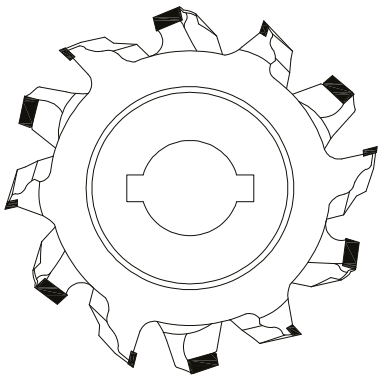
Zahn (DP):
Bestückthöhe H 4, H 6 mm.

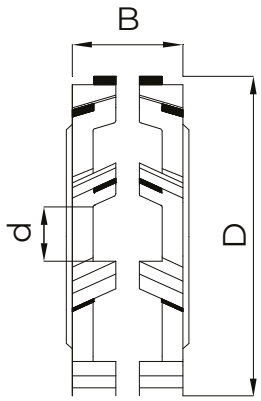
cutting angle - 30°

	Code	D (mm)	B (mm)	d (mm)	Z
H 4 (mm)	E10 4000	50-180	22 / 40	from 16 to 30	3
	E10 4025	100-220	22 / 40	from 16 to 40	4
	E10 4050	120-220	22 / 40	from 16 to 40	5
	E10 4075	150-220	22 / 40	from 16 to 40	6
H 6 (mm)	E10 6000	50-180	22 / 40	from 16 to 30	3
	E10 6025	100-220	22 / 40	from 16 to 40	4
	E10 6050	120-220	22 / 40	from 16 to 40	5
	E10 6075	150-220	22 / 40	from 16 to 30	6

cutting angle - 45°

	Code	D (mm)	B (mm)	d (mm)	Z
H 4 (mm)	E10 1000	80-220	22 / 40	from 16 to 30	3
	E10 1025	100-220	22 / 40	from 16 to 40	4
	E10 1050	120-220	22 / 40	from 16 to 40	5
	E10 1075	150-220	22 / 40	from 16 to 40	6
H 6 (mm)	E10 5000	80-220	22 / 40	from 16 to 30	3
	E10 5025	100-220	22 / 40	from 16 to 40	4
	E10 5050	120-220	22 / 40	from 16 to 40	5
	E10 5075	150-220	22 / 40	from 16 to 30	6

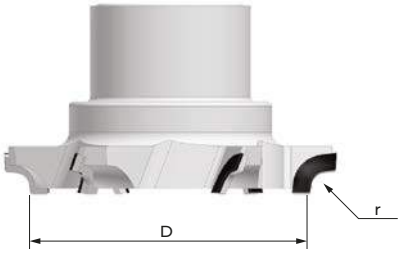


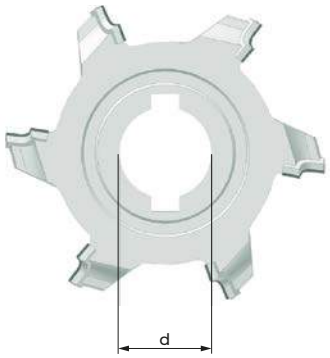


Edge Rounding Cutters | E11

Fresa Sagomata | E11

Kanten-Abrund-Fräser | E11





RH Code	LH Code	D (mm)	d (mm)	r	Z
E11 4000	E11 4010	20 + 2 CH	60	3	6
E11 4015	E11 4020	20 + 2 CH	60	2	6
E11 4025	E11 4030	20 + 2 CH	60	1,5	6
E11 4035	E11 4040	20 + 2 CH	60	1	6
E11 4045	E11 4050	20 + 2 CH	60	25°	6
E11 4055	E11 4060	20 + 2 CH	60	45°	6

Machine:
Edge banding machines.

Application:
For rounding of solid wood, veneer and plastic edge bands.

Macchina:
Bordatrici.

Applicazioni:
Per arrotondare le fasce in legno massiccio, impiallacciature e bordi in plastica.

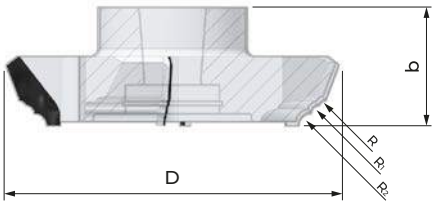
Maschine:
Kantenanleimmaschinen.

Anwendung:
Zum Abrunden von Massivholzanleimern sowie Furnier- und Kunststoff kanten.

Edge Rounding Multi-profile cutter HSK25R | E12

Fresa Sagomata Multiprofilo HSK25R | E12

Kantenverrundung Mehrprofilfräser HSK25R | E12



RH Code	LH Code	D (mm)	b (mm)	d (mm)	Z	R	R_1	R_2
E12 4000	E12 4010	81,1	28	HSK25R	4	3	2	
E12 4015	E12 4020	81,1	28	HSK25R	6	3	2	
E12 4025	E12 4030	81,1	28	HSK25R	4	1,5	2	3
E12 4035	E12 4040	81,1	28	HSK25R	6	1,5	2	3

Machine:
Edge banding machines.

Application:
For rounding of solid wood, veneer and plastic edge bands.

Macchina:
Bordatrici.

Applicazioni:
Per arrotondare le fasce in legno massiccio, impiallacciature e bordi in plastica.

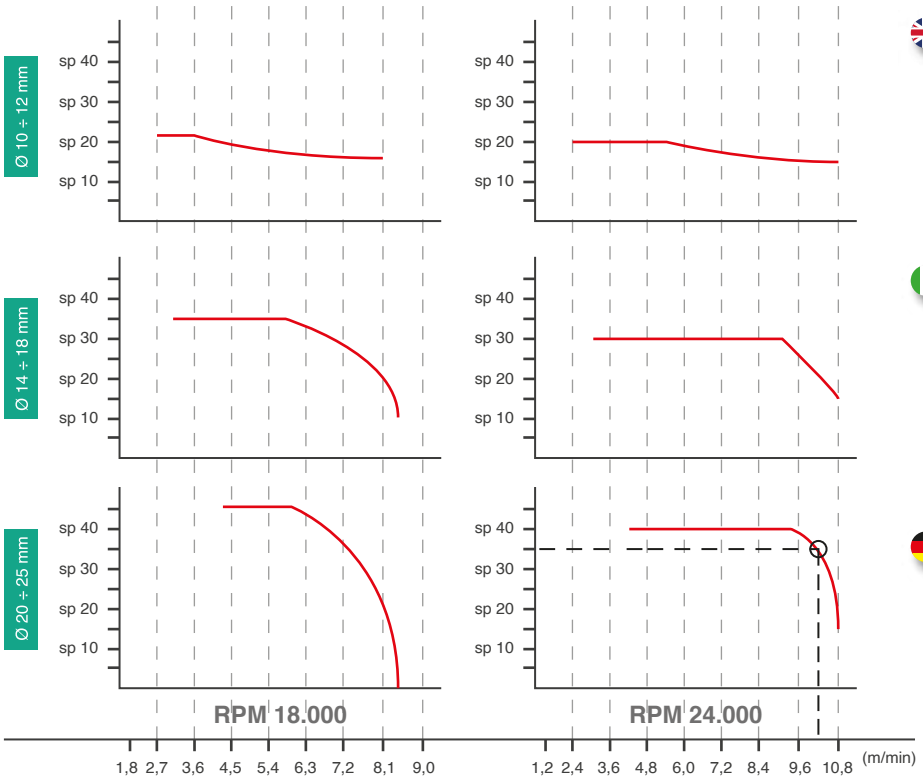
Maschine:
Kantenanleimmaschinen.

Anwendung:
Zum Abrunden von Massivholzanleimern sowie Furnier- und Kunststoff kanten.

E

Shank Cutter
Frese con Gambo
Schaftfräser

Vf Diagram, Diagramma Vf, Vf Schaubild



Example
HP high performance router bit Ø 25 on a 30 mm panel.
RPM 24.000 Feed 10m/min*
actual teeth = 2 = 10x2 = 20 m/min.
Values are to be multiplied by the number of effective cutting edges.

Esempio
Punta HP high performance Ø 25 su pannello da 30 mm.
RPM 24.000 avanzamento 10m/min*
denti effettivi = 2 = 10x2 = 20 m/min.
Valori da moltiplicare per il numero di taglienti effettivi.

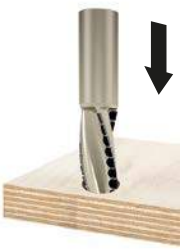
Ablesebeispiel
Schaftfraser high performance Ø 25 auf Platten von 30 mm.
RPM 24.000 Vorschub 10m/min*
Zahne = 2 = 10x2 = 20m/min.
Größe zum Multiplizieren zum Zahl der Schneiden.

Max loadless rotations — Giri Max a vuoto — Max Drehzahl (n max)

Ø	n max	
10 ÷ 25	24.000	PL 25 - PL 40 - Top - Flat router bits - Punta piana - Schaftfräser mit durchgehenden Schneiden HP - HPS
18 ÷ 25	18.000	- Two-way rotation router bits - Punte a doppio senso di rotazione - Schaftfräser rechts/linnks Kombination

Ø	n max	
5 ÷ 10	9.000	- Boring bits - Punte foratrici - Dübelbohrer
15 ÷ 40	7.000	- Hinge boring bits - Punte cerniere - Zylinderkopfbohrer

Machining, Lavorazione, Bearbeitungsart



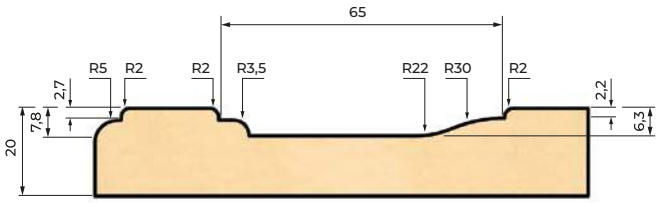
- Drill, mill
- Forare, fresare
- Bohren, fräsen

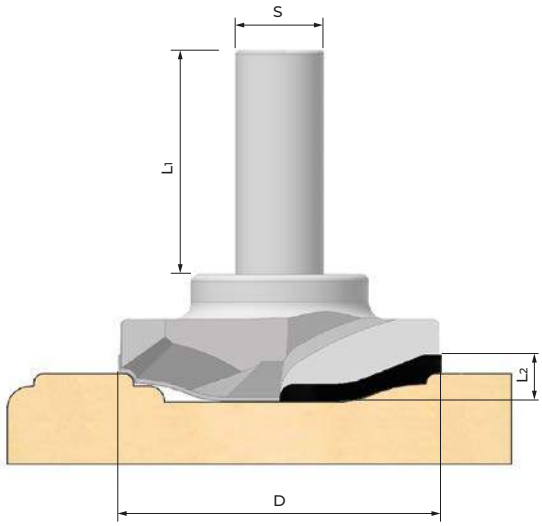
- Profile
- Contornare
- Fügen

Set of profiled router bit A | E13

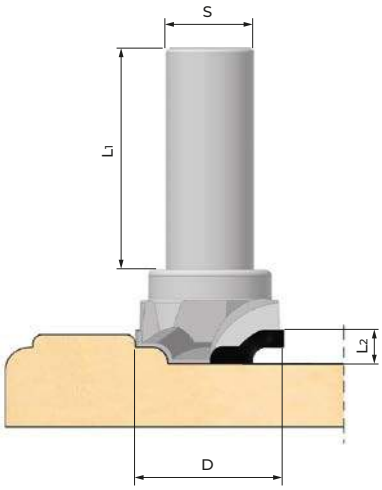
Kit frese sagomate A | E13

Kit Profilfräser A | E13

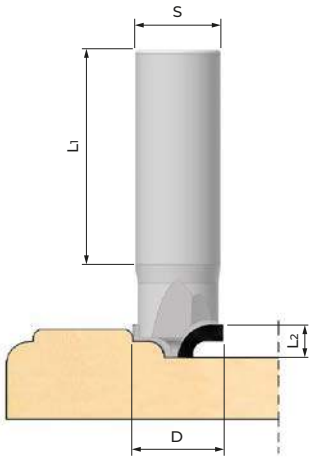




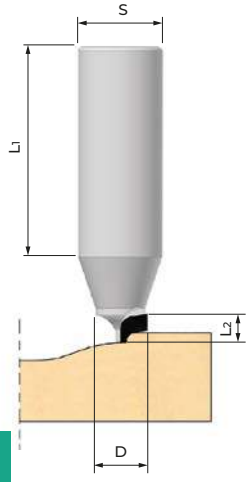
E13 4000



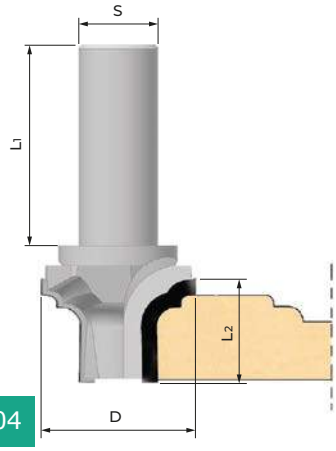
E13 4001



E13 4002



E13 4003



E13 4004

Machine:
CNC

Application:
For profiling kitchen cabinets, furnitures doors panels of MDF and hard wood.

Advantages:
High speed, excellent finishing, low noisiness.

Macchina:
CNC

Applicazioni
Per la pantografatura di antine per mobili e pannelli di porte di legni duri e MDF.

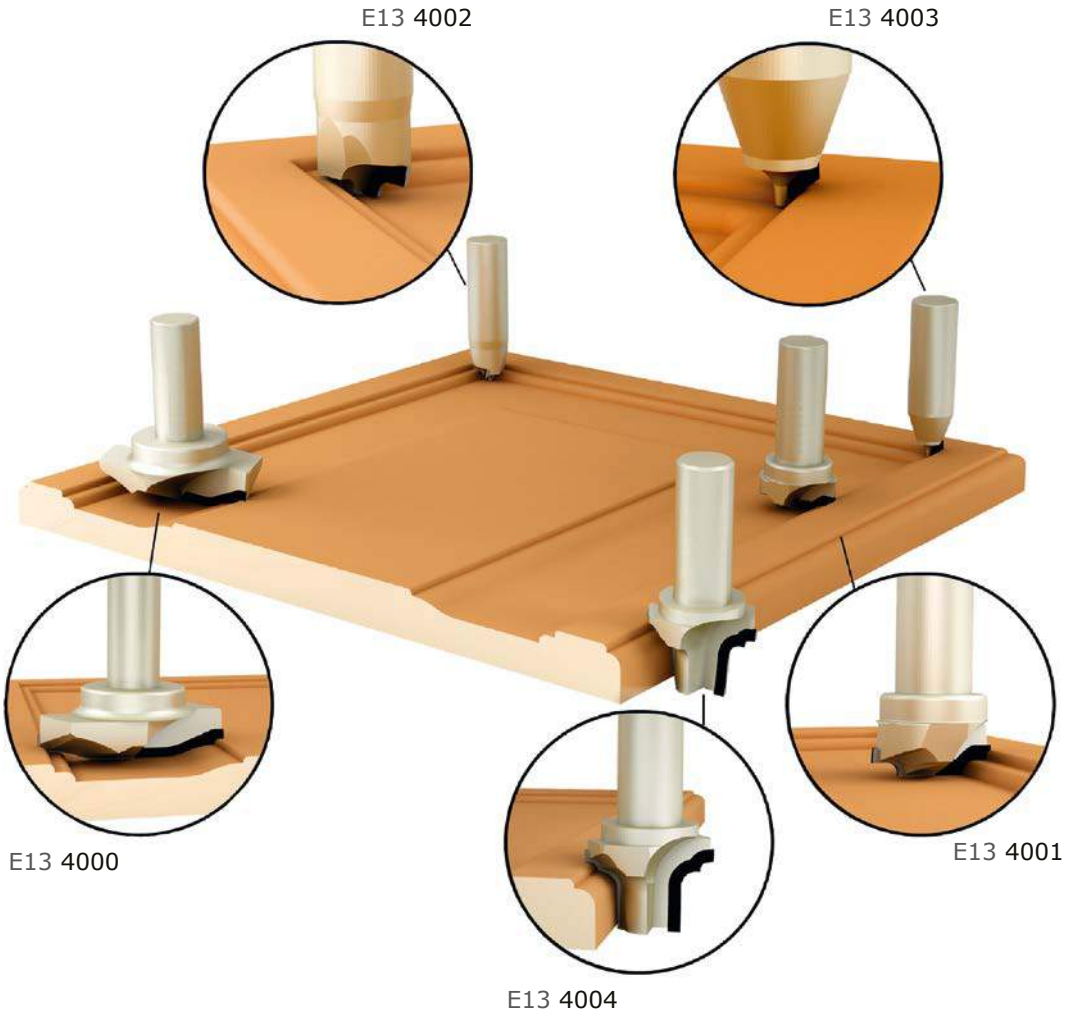
Vantaggi:
Alta velocità, finitura eccellente, bassa rumorosità.

Maschine:
CNC

Anwendung:
für Gravier-Fräsmaschinen für M.beltüren und Türpaneelen, geeignet zur Bearbeitung auf Hartholz und M.D.F.

Vorteile:
Hohe Geschwindigkeit, optimale Verarbeitung, niedrige Geräuschentwicklung.

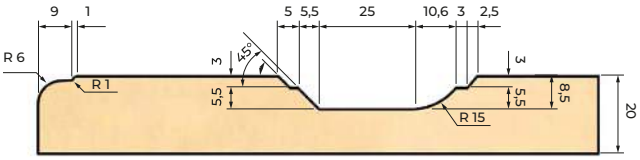
Code	D (mm)	L2 (mm)	S (mm)	L1 (mm)	Z
E13 4000	72,5	11	20	28	2
E13 4001	32,5	8,8	20	28	2
E13 4002	20	8,8	20	28	2
E13 4003	13	7	20	28	1
E13 4004	40	26,5	20	28	2



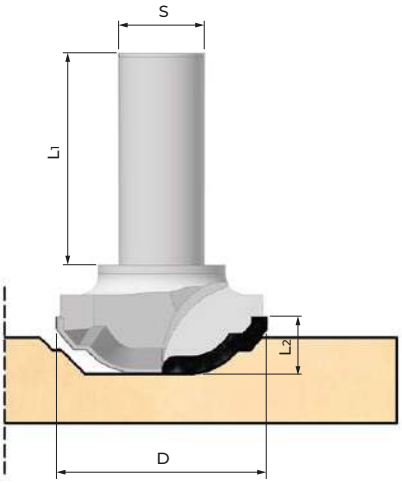
Set of profiled router bit B | E14

Kit frese sagomate B | E14

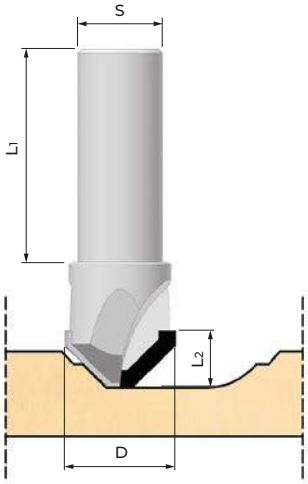
Kit Profilfräser B | E14



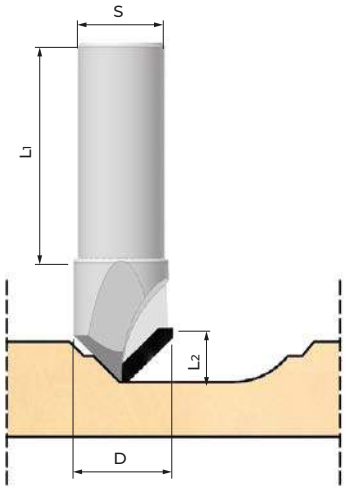
E14 4000



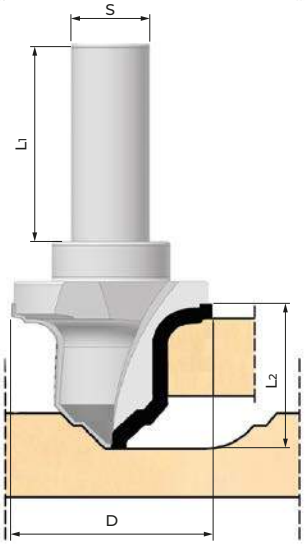
E14 4001



E14 4002



E14 4003



Machine:
CNC

Application:
For profiling kitchen cabinets, furnitures doors panels of MDF and hard wood.

Advantages:
High speed, excellent finishing, low noisiness.

Macchina:
CNC

Applicazioni
Per la pantografatura di antine per mobili e pannelli di porte di legni duri e MDF.

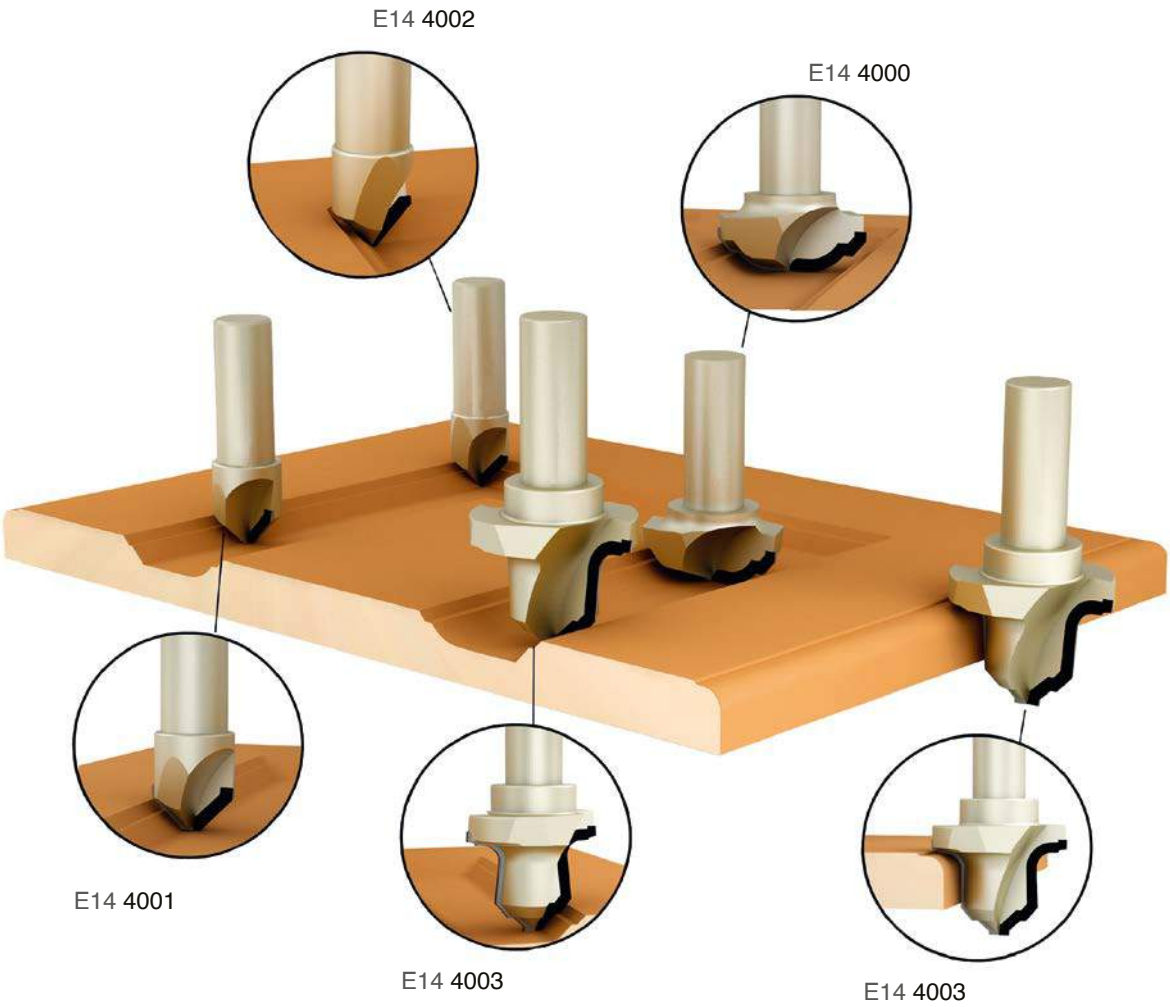
Vantaggi:
Alta velocità, finitura eccellente, bassa rumorosità.

Maschine:
CNC

Anwendung:
für Gravier-Fräsmaschinen für M.beltüren und Türpaneelen, geeignet zur Bearbeitung auf Hartholz und M.D.F.

Vorteile:
Hohe Geschwindigkeit, optimale Verarbeitung, niedrige Geräuschentwicklung.

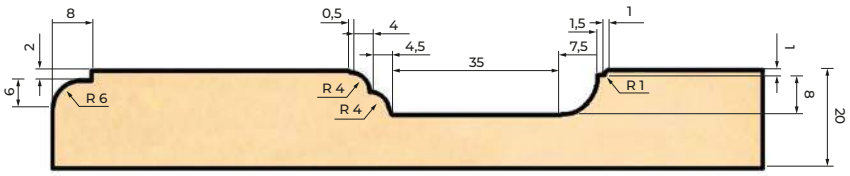
Code	D (mm)	L2 (mm)	S (mm)	L1 (mm)	Z
E14 4000	50	13,5	20	50	2
E14 4001	24	13,5	20	50	2
E14 4002	24	13,5	20	50	1
E14 4003	53	37	20	50	2

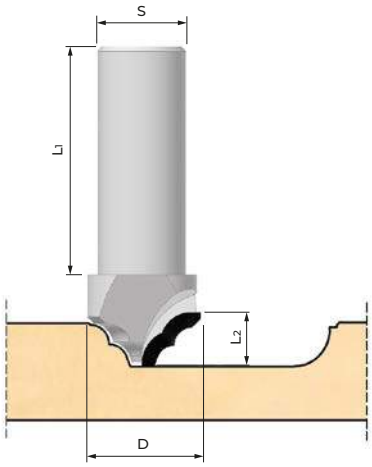


Set of profiled router bit C | E15

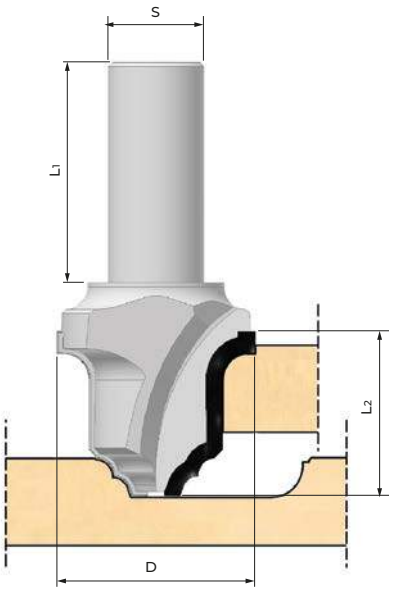
Kit frese sagomate C | E15

Kit Profilfräser C | E15

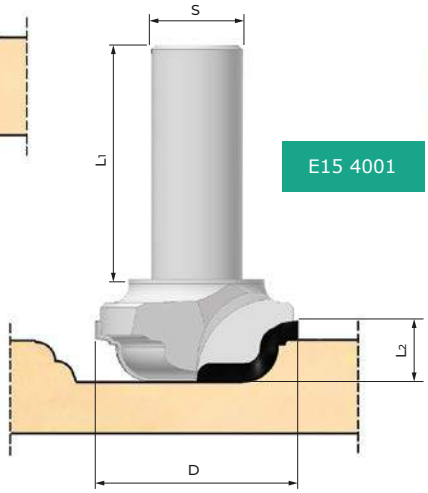




E15 4000



E15 4001



E15 4002

Machine:
CNC

Application:
For profiling kitchen cabinets, furnitures doors panels of MDF and hard wood.

Advantages:
High speed, excellent finishing, low noisiness.

Macchina:
CNC

Applicazioni:
Per la pantografatura di antine per mobili e pannelli di porte di legni duri e MDF.

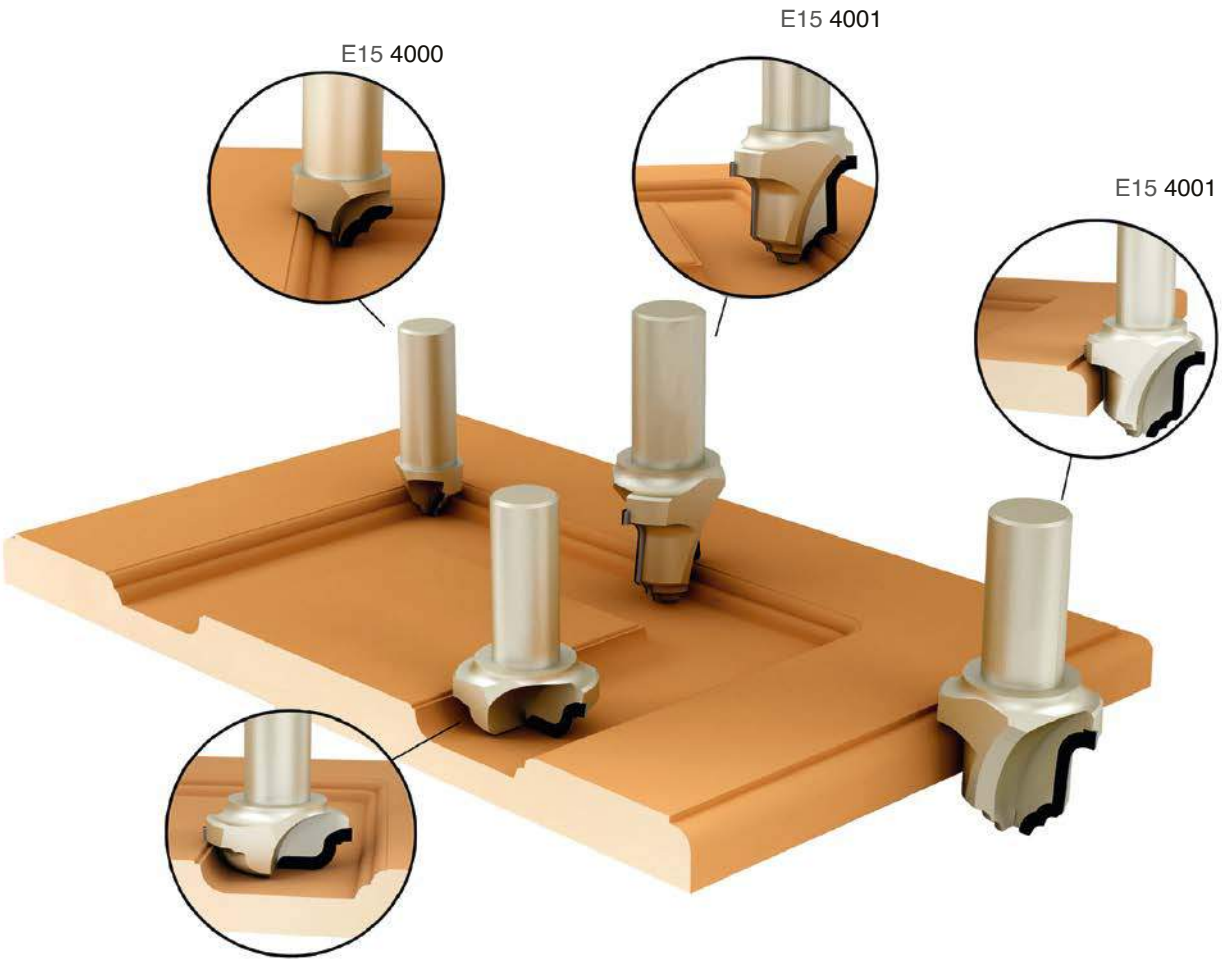
Vantaggi:
Alta velocità, finitura eccellente, bassa rumorosità.

Maschine:
CNC

Anwendung:
für Gravier-Fräsmaschinen für M.beltüren und Türpaneelen, geeignet zur Bearbeitung auf Hartholz und M.D.F.

Vorteile:
Hohe Geschwindigkeit, optimale Verarbeitung, niedrige Geräuschentwicklung.

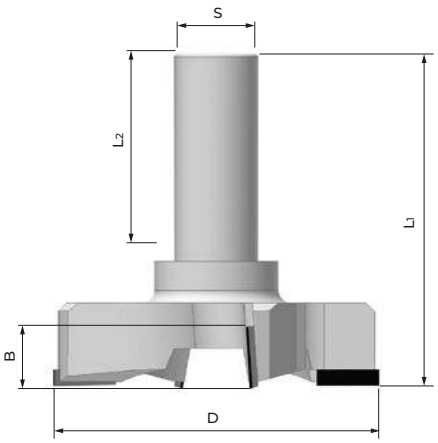
Code	D (mm)	L2 (mm)	S (mm)	L1 (mm)	Z
E15 4000	27	12	20	50	1
E15 4001	49	37	20	50	2
E15 4002	45	13	20	50	2



Planing and Rabbeting CNC Cutter | E16

Fresa CNC a Spianare | E16

Plan- und Falz-schaftfräser | E16



Code	D (mm)	B (mm)	L1 (mm)	S (mm)	L2 (mm)	Z
E16 4000	40	15	75	20	75	2 + 2
E16 4001	60	15	75	20	75	2 + 2
E16 4002	80	15	75	20	75	2 + 2

Machine:
CNC

Application:
For planing, rabbeting and panel raising in wood-based panels.

Macchina:
CNC

Applicazioni:
Per la piallatura, battuta, e piattabanda di panelli a base di legno.

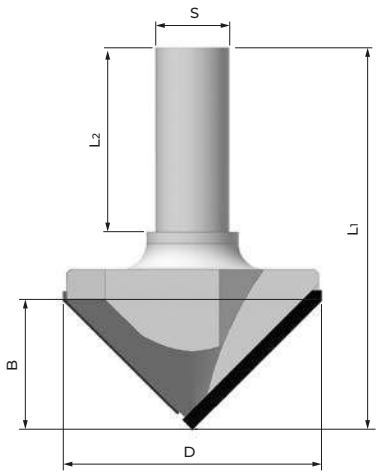
Maschine:
CNC

Einsatzbereich:
Zum Planfräsen, Fälzen und Abplatten von Holzwerkstoff en.

CNC Cutter for Folding | E17

CNC Fresa per Folding | E17

CNC Foldingfråser | E17



Code	D (mm)	B (mm)	L1 (mm)	S (mm)	L2 (mm)	Z
E17 4000	40	15	75	20	75	2 + 2
E17 4001	60	15	75	20	75	2 + 2

Machine:
CNC

Application:
For the realization of particular types of folding in wood-based panels for the processing of chipboard panels, coated with PVC and CTC.

Macchina:
CNC

Applicazioni:
Per la realizzazione di particolari tipi di piegatura (folding) per lavorazioni di pannelli truciolari, rivestiti in PVC e CTC.

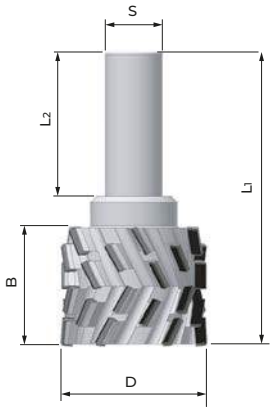
Maschine:
CNC

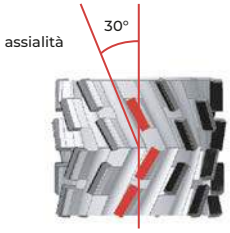
Einsatzbereich:
Zur Realisierung bestimmter Biegungen für die Spanplattenbearbeitung, beschichtet mit PVC und CTC.

CNC Jonting Cutter Plus | E18

CNC Fresa per Contornare Plus | E18

CNC Konturfräser Plus | E18





Code	D (mm)	B (mm)	L_1 (mm)	S (mm)	L_2 (mm)	Z
E18 4000	50	25	85	20	50	4 + 4
E18 4001	50	25	90	25	60	4 + 4
E18 4002	50	25	95	20	50	4 + 4
E18 4003	50	35	95	25	60	4 + 4
E18 4004	50	45	105	20	50	4 + 4
E18 4005	50	45	105	25	60	4 + 4
E18 4006	50	55	115	20	50	4 + 4
E18 4007	50	55	115	25	60	4 + 4
E18 4008	60	50	125	20	50	4 + 4
E18 4009	60	50	125	25	60	4 + 4

Machine:
CNC

Application:
For sizing cuts in raw, melamine, paper, HPL-laminated, foiled and veneered panels.

Advantages:
High-performance tool for finish cuts.
Z3+3 (up to 25m/min)
Z4+4 (up to 35m/min)

Macchina:
CNC

Applicazioni:
Per la scontornatura di pannelli in Truciolare e MDF grezzi o nobilitati, multistrati, HPL.

Vantaggi:
Eccellente per finitura.
Z3+3 (fino a 25m/min)
Z4+4 (fino a 35m/min)

Maschine:
CNC

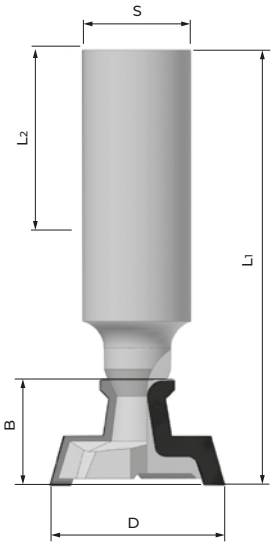
Einsatzbereich:
Für Formatschnitte in rohen, melaminharz- und papierbeschichteten, HPL-belegten und furnierten Holzwerkstoffen.

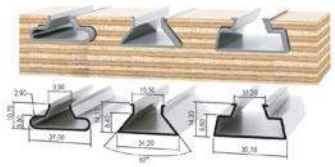
Vorteile:
Hochleistungswerkzeug für Fertigschnitte.
Z3+3 (bis zu 25m/min)
Z4+4 (bis zu 35m/min)

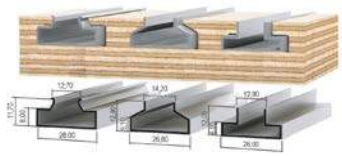
T-Groove Cutter For Alu | E19

Punta a T per Guide in Alu | E19

T-Nut-Profi für Aluminiumführungen | E19







Code	D (mm)	B (mm)	L_1 (mm)	S (mm)	L_2 (mm)	Z
E19 4000	27,9	15,2	75	20	50	2
E19 4001	27,3	16	75	20	50	2
E19 4002	29	15,2	75	20	50	2
E19 4003	28	13,7	75	20	50	2
E19 4004	25,9	17	75	20	50	2
E19 4005	32,7	16,8	75	20	50	2

Machine:
CNC

Application:
Suitable for carrying out aluminium profiles grooving on chipboard panels, surfaced, M.D.F.

Advantages:
Excellent upper finishing of the panel, low noisiness.

Macchina:
CNC

Applicazioni:
Adatta per eseguire scanalature di profili in alluminio su pannelli truciolari, nobilitati, MDF.

Vantaggi:
Ottima finitura superiore del pannello, bassa rumorosità.

Maschine:
CNC

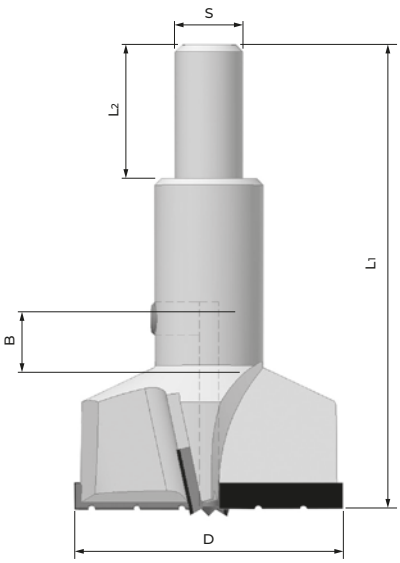
Einsatzbereich:
Geeignet für Profilauskehlungen in Alluminium bei veredelten Holzspanplatten, MDF.

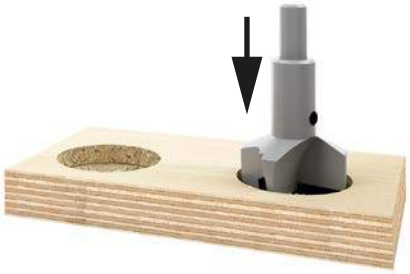
Vorteile:
Optimale Verarbeitung auf der oberen Paneele, niedrige Geräuschentwicklung.

Hinge Boring Bits | E20

Punta per Cerniera | E20

Scharnierefräser | E20





RH Code	LH Code	D (mm)	B (mm)	L_1 (mm)	S (mm)	L_2 (mm)	Z
E20 2001	E20 2004	14	25	57,5	10	20	2 + 2
E20 2005	E20 2008	15	25	57,5	10	20	2 + 2
E20 2009	E20 2012	16	25	57,5	10	20	2 + 2
E20 2013	E20 2016	18	35	57,5	10	20	2 + 2
E20 2017	E20 2020	20	45	57,5	10	20	2 + 2
E20 2021	E20 2024	22	45	57,5	10	20	2 + 2
E20 2025	E20 2028	24	55	57,5	10	20	2 + 2
E20 2029	E20 2032	25	55	57,5	10	20	2 + 2
E20 2033	E20 2036	26	50	57,5	10	20	2 + 2
E20 2037	E20 2040	28	50	57,5	10	20	2 + 2
E20 2041	E20 2044	30	55	57,5	10	20	2 + 2
E20 2045	E20 2048	32	55	57,5	10	20	2 + 2
E20 2049	E20 2052	35	50	57,5	10	20	2 + 2

Machine:
CNC

Application:
Suitable for hinges holes on chipboard panels, coated, laminated, M.D.F.

Advantages:
Excellent finishing.

Macchina:
CNC

Applicazioni
Adatta per fori di cerniere su pannelli truciolari, rivestiti, laminati, M.D.F.

Vantaggi:
Ottima finitura

Maschine:
CNC

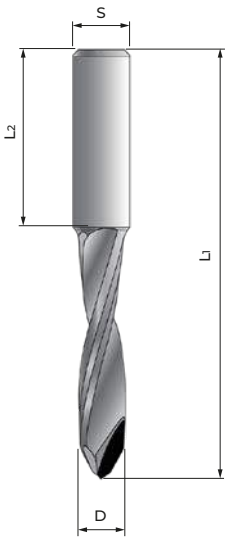
Einsatzbereich:
Geeignet für Schanierlöcher auf verkleideten und laminierten Holzspanplatten, M.D.F.

Vorteile:
Optimale Verarbeitung.

Through Hole Boring Bits | E21

Punta per Fori Passanti | E21

Bohrer für Durchgangslöcher | E21



RH Code	LH Code	D (mm)	L1 (mm)	S (mm)	L2 (mm)	Z
E21 2001	E21 2003	5	57,5	10	20	2
E21 2005	E21 2006	6	57,5	10	20	2
E21 2009	E21 2010	7	57,5	10	20	2
E21 2013	E21 2014	8	57,5	10	20	2
E21 2017	E21 2018	9	57,5	10	20	2
E21 2021	E21 2022	10	57,5	10	20	2
E21 2025	E21 2026	12	57,5	10	20	2

Machine:
CNC

Application:
Suitable for through holes on chipboard panels, coated, laminated, M.D.F.

Macchina:
CNC

Applicazioni:
Adatta per eseguire fori passanti su pannelli truciolari, nobilitati, rivestiti, laminati, M.D.F.

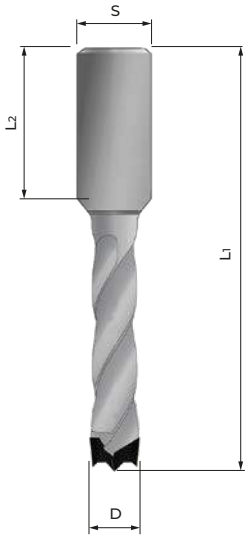
Maschine:
CNC

Einsatzbereich:
Geeignet für Durchlochung auf verkleideten, laminierten und veredelten Holzspanplatten, M.D.F.

Blind Hole Boring Bits | E22

Punte per Fori Chiechi | E22

Sackloch Bohrmeissel | E22



RH Code	LH Code	D (mm)	L1 (mm)	S (mm)	L2 (mm)	Z
E22 2001	E22 2003	5	57,5	10	20	2
E22 2005	E22 2006	6	57,5	10	20	2
E22 2009	E22 2010	7	57,5	10	20	2
E22 2013	E22 2014	8	57,5	10	20	2
E22 2017	E22 2018	9	57,5	10	20	2
E22 2021	E22 2022	10	57,5	10	20	2
E22 2025	E22 2026	12	57,5	10	20	2
E22 2029	E22 2030	5	70	10	20	2
E22 2033	E22 2034	6	70	10	20	2
E22 2037	E22 2038	7	70	10	20	2
E22 2041	E22 2042	8	70	10	20	2

Machine:
CNC

Application:
Suitable for blind holes on chipboard panels, coated, laminated, M.D.F.

Macchina:
CNC

Applicazioni:
Adatta per eseguire fori ciechi su pannelli truciolari, nobilitati, rivestiti, laminati,
M.D.F.

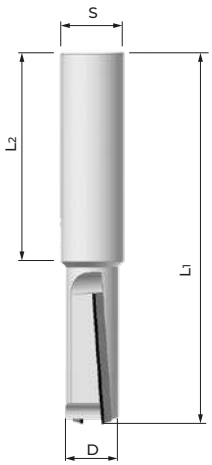
Maschine:
CNC

Einsatzbereich:
Geeignet für Sackloch auf verkleideten, veredelten und laminierten Holzspanplatten, M.D.F.

Grooving Cutter | E23

Punta per Scanalature | E23

Nut-Schaftfräser | E23



RH Code	LH Code	D mm	S mm	Z	S mm
E23 2001	E23 2003	from 4 to 6	up to 6	1DP	10
E23 2005	E23 2006	from 7 to 9	from 6 to 9	1DP	10
E23 2009	E23 2010	from 7 to 9	from 6 to 9	2DP	10
E23 2013	E23 2014	from 10 to 12	from 10 to 12	1DP	10
E23 2017	E23 2018	from 10 to 12	from 10 to 12	2DP	10
E23 2021	E23 2022	from 10 to 12	from 10 to 12	[1+1]DP*	10

Machine:
CNC

Application:
Suitable for grooving on chipboard panels, coated, laminated, M.D.F.

Macchina:
CNC

Applicazioni:
Adatta per scanalature su pannelli truciolari, nobilitati, rivestiti, laminati,
M.D.F.

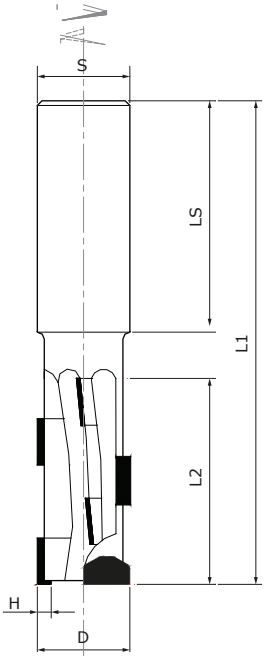
Maschine:
CNC

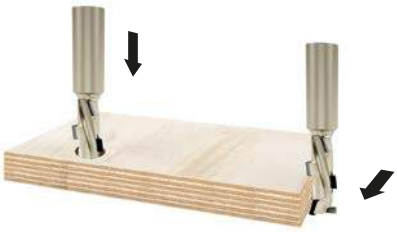
Einsatzbereich:
Geeignet für auskehlungen auf verkleideten, veredelten und laminierten Holzspanplatten, M.D.F.

DP Shank Cutter Z1+1 | E24

DP Fresa con Gambo Z1+1 | E24

DP Schaftfräser Z1+1 | E24





RH Code	LH Code	D (mm)	L2 (mm)	S (mm)	Z	H (mm)
E24 3001	E24 3004	12,0	22	12	4	3
E24 3005	E24 3010	from 16 to 25	28	from 16 to 25	6DT + 1 HM	3 - 4*
E24 3011	E24 3015	from 18 to 25	36	from 20 to 25	8DT + 1 HM	3 - 4*
E24 3016	E24 3019	from 20 to 25	45	from 20 to 25	10DT + 1 HM	3 - 4*
E24 3020	E24 3022	from 20 to 25	53	from 20 to 25	12DT + 1 HM	3 - 4*
E24 3023	E24 3024	from 20 to 25	62	from 20 to 25	14DT + 1 HM	3 - 4
E24 3025	E24 3026	from 20 to 25	70	from 20 to 25	16DT + 1 HM	3 - 4

** Drills with H4 tips only from 20 mm diameter.*

Design:
PCD Shank Cutter Z1+1 with three helical or straight divisions

Application:
Cut outs, rabbeting, grooving, jointing in panel materials.
Feed rate up to 6m/min.

Esecuzione:
Punta in PCD Z1+1 a tre divisioni ad elica o dritte

Applicazioni:
Per tagli, battute, incastri e smussi nei pannelli.
Avanzamento: 6m/min.

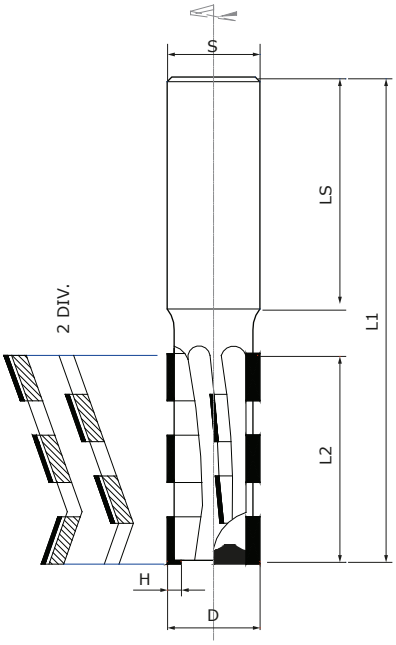
Ausführung:
PCD Schaftfräser Z1+1 mit drei richtung unterteilung, helische oder gerade.

Einsatzbereich:
Austrennschnitte, sowie zum Fälzen, Nuten und Fügen in Plattenwerkstoffen
Vorschub: 6m/min.

DP Shank Cutter Z2+2 | E25

DP Fresa con Gambo Z2+2 | E25

DP Schaftfräser Z2+2 | E25



RH Code	LH Code	D (mm)	L2 (mm)	S (mm)	Z	H (mm)
E25 3001	E25 3004	from 16 to 25	27,5	from 16 to 25	6DT + 1HM	3 - 4*
E25 3005	E25 3007	from 18 to 25	36	from 20 to 25	8DT + 1HM	3 - 4*
E25 3008	E25 3009	from 20 to 25	44,5	from 20 to 25	10DT + 1HM	3 - 4*
E25 3010	E25 3011	from 20 to 25	53	from 20 to 25	12DT + 1HM	3 - 4
E25 3012	E25 3013	from 20 to 25	61,5	from 20 to 25	14DT + 1HM	3 - 4
E25 3014	E25 3015	from 22 to 25	70	from 20 to 25	16DT + 1HM	3 - 4

** Drills with H4 tips only from 20 mm diameter.*

Design:
PCD Shank Cutter Z2+2 with four helical or straight divisions

Application:
Cut outs, rabbeting, grooving, jointing in panel materials.
Feed rate up to 10m/min.

Esecuzione:
Punta in PCD Z2+2 a quattro divisioni ad elica o dritte

Applicazioni:
Per tagli, battute, incastri e smussi nei pannelli.
Avanzamento: 10m/min.

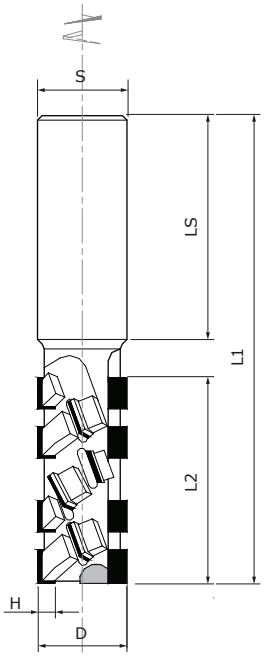
Ausführung:
PCD Schaftfräser Z2+2 met vier richtung unterteilung, helische oder gerade.

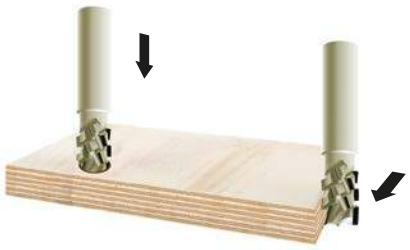
Einsatzbereich:
Austrennschnitte, sowie zum Fälzen, Nuten und Fügen in Plattenwerkstoffen
Vorschub: 10m/min.

DP Shank Cutter Z2+2 MULTI | E26

DP Fresa con Gambo Z2+2 MULTI | E26

DP Schaftfräser Z2+2 MULTI | E26





RH Code	LH Code	D (mm)	L2 (mm)	S (mm)	Z	H (mm)
E26 4001	E26 4003	from 18* to 25	23	from 16 to 25	8DT + 1 HM	3 - 4
E26 4004	E26 4006	from 18* to 25	28	from 16 to 25	10DT + 1 HM	3 - 4
E26 4007	E26 4009	from 18* to 25	34	from 16 to 25	12DT + 1 HM	3 - 4
E26 4010	E26 4011	from 20 to 25	39	from 20 to 25	14DT + 1 HM	3 - 4
E26 4012	E26 4013	from 20 to 25	45	from 20 to 25	16DT + 1 HM	3 - 4
E26 4014	E26 4015	from 20 to 25	50	from 20 to 25	18DT + 1 HM	3 - 4
E26 4016	E26 4017	from 20 to 25	55	from 20 to 25	20DT + 1 HM	3 - 4
E26 4018	E26 4019	from 20 to 25	61	from 20 to 25	22DT + 1 HM	3 - 4

**Drills with diameter 18mm are only made with H3 tips*

Design:
PCD Shank Cutter Z2+2 with four divisions with multi-cutting tips.

Application:
Cut outs, rabbeting, grooving, jointing in panel materials.
Feed rate up to 12m/min.

Esecuzione:
Punta in PCD Z2+2 a quattro divisioni a taglio multiplo

Applicazioni:
Per tagli, battute, incastri e smussi nei pannelli.
Avanzamento: 12m/min.

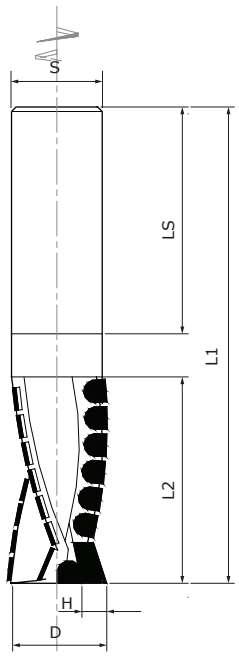
Ausführung:
PCD Schaftfräser Z2+2 met vier richtung unterteilung Schneiden Mehrfaches.

Einsatzbereich:
Austrennschnitte, sowie zum Fälzen, Nuten und Fügen in Plattenwerkstoffen
Vorschub: 12m/min.

DP Shank Cutter Z3+3 | E27

DP Fresa con Gambo Z3+3 | E27

DP Schaftfräser Z3+3 | E27



RH Code	LH Code	D (mm)	L2 (mm)	S (mm)	Z	H (mm)
E27 4001	E27 4004	from 18* to 25	30	from 20 to 25	12DT + 1HM	4 - 5
E27 4005	E27 4008	from 18* to 25	35	from 20 to 25	15DT + 1HM	4 - 5
E27 4009	E27 4012	from 18* to 25	40	from 20 to 25	18DT + 1HM	4 - 5
E27 4013	E27 4016	from 18* to 25	45	from 20 to 25	20DT + 1HM	4 - 5
E27 4017	E27 4020	from 18* to 25	50	from 20 to 25	21DT + 1HM	4 - 5
E27 4021	E27 4023	from 20 to 25	55	from 20 to 25	24DT + 1HM	4 - 5
E27 4024	E27 4026	from 20 to 25	60	from 20 to 25	27DT + 1HM	4 - 5
E27 4027	E27 4030	from 20 to 25	65	from 20 to 25	29DT + 1HM	4 - 5
E27 4031	E27 4032	from 20 to 25	70	from 20 to 25	30DT + 1HM	4 - 5
E27 4033	E27 4034	from 22 to 25	75	from 20 to 25	33DT + 1HM	4 - 5
E27 4035	E27 4036	from 22 to 25	80	from 20 to 25	36DT + 1HM	4 - 5

**Drills with diameter 18mm are only made with H3 tips*

Design:
PCD Shank Cutter Z3+3 with three multi-cutting helical divisions and chip-breaker.

Application:
Sizing, Cut outs, rabbeting , grooving, jointing in panel materials.
Feed rate up to 25m/min.

Esecuzione:
Punta in PCD Z3+3 a tre divisioni multi-taglienti ad elica e rompitrucciolo.

Applicazioni:
Finitura, tagli, battute, incastri e smussi nei pannelli.
Avanzamento: 25m/min.

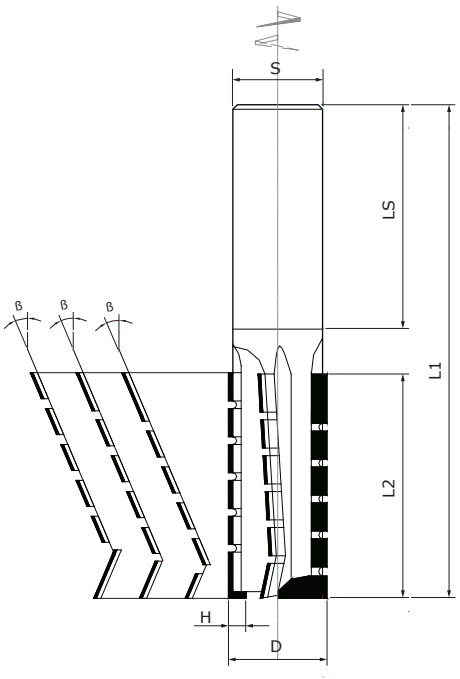
Ausführung:
PCD Schaftfräser Z3+3 mit drei helische richtung unterteilung Schneiden Mehrfaches und Spanbrechers.

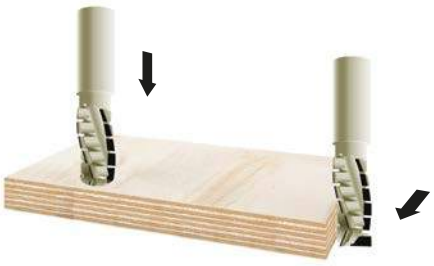
Einsatzbereich:
Format, Austrennschnitte, sowie zum Fälzen, Nuten und Fügen in Plattenwerkstoffen.
Vorschub: 25m/min.

DP Shank Cutter Z3+3 PLUS | E28

DP Fresa con Gambo Z3+3 PLUS | E28

DP Schaftfräser Z3+3 PLUS | E28





RH Code	LH Code	D (mm)	L2 (mm)	S (mm)	Z	H (mm)
E28 4001	E28 4007	from 16* to 25	20**	from 16 to 25	7DT	3 - 4 - 5
E28 4008	E28 4014	from 16* to 25	25**	from 16 to 25	9DT	3 - 4 - 5
E28 4015	E28 4021	from 16* to 25	30**	from 16 to 25	11DT	3 - 4 - 5
E28 4022	E28 4028	from 16* to 25	35**	from 16 to 25	13DT	3 - 4 - 5
E28 4029	E28 4034	from 16* to 25	40**	from 16 to 25	15DT	3 - 4 - 5
E28 4035	E28 4039	from 16* to 25	45	from 16 to 25	17DT	3 - 4 - 5
E28 4040	E28 4046	from 18* to 25	50	from 16 to 25	19DT	3 - 4 - 5
E28 4047	E28 4049	from 20 to 25	55	from 20 to 25	21DT	3 - 4 - 5
E28 4052	E28 4054	from 20 to 25	60	from 20 to 25	23DT	3 - 4 - 5
E28 4055	E28 4059	from 20 to 25	65	from 20 to 25	25DT	3 - 4 - 5
E28 4060	E28 4064	from 22 to 25	70	25	27DT	4 - 5
E28 4068	E28 4072	from 22 to 25	75	25	29DT	4 - 5
E28 4073	E28 4077	from 22 to 25	80	25	31DT	4 - 5

**Drills with diameter up to 14 mm are only made with H3 tips and drills with diameter up to 18 mm are only made with H3/H4 tips.*

*** Drills with cutting length between 20 mm and 40 mm and diameter under 16 mm are available with body made of DENSIMET.*

Design:
PCD Shank Cutter Z3+3 with three multi-cutting helical divisions and chip-breaker.

Application:
Sizing + and cut-outs in panel materials.
Feed rate up to 25m/min.

Esecuzione:
Punta in PCD Z3+3 a tre divisioni multi-taglienti ad elica e rompitrucciolo.

Applicazioni:
Tagli di Finitura + nei pannelli.
Avanzamento: 25m/min.

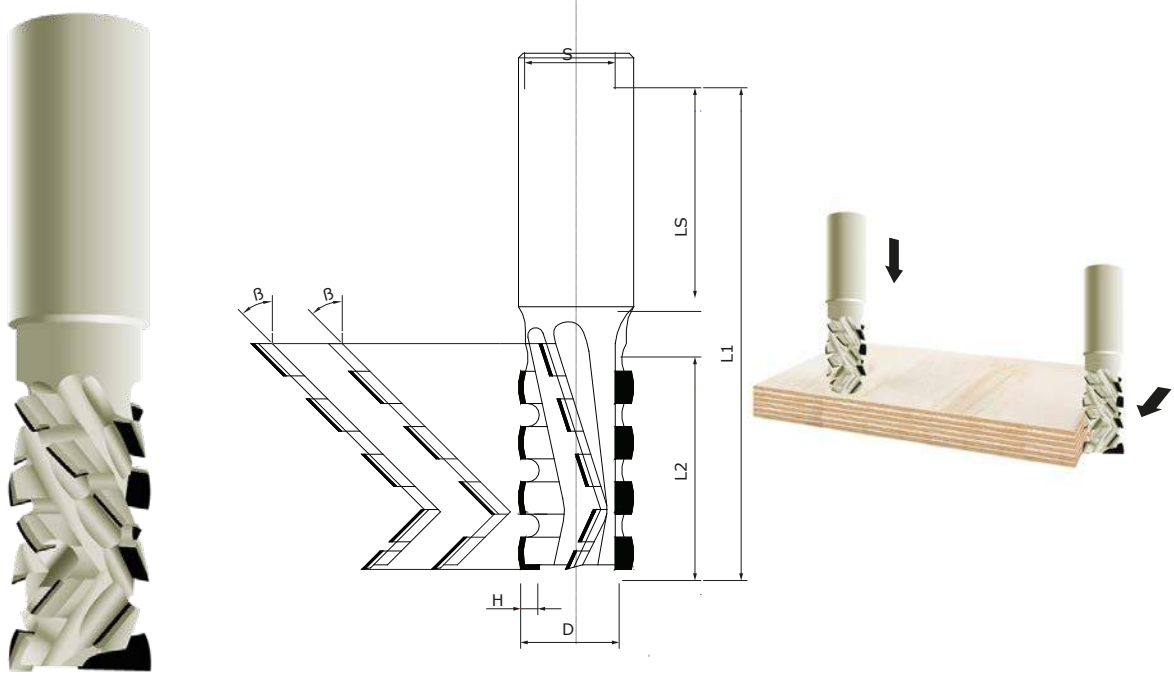
Ausführung:
PCD Schaftfräser Z3+3 mit drei helische richtung unterteilung, Schneiden Mehrfaches und Spanbrechers.

Einsatzbereich:
Format + und Austrennschnitte in Plattenwerkstoffen.
Vorschub: 25m/min

DP Shank Cutter Z4+4 XL | E29

DP Fresa con Gambo Z4+4 XL | E29

DP Schaftfräser Z4+4 XL | E29



RH Code	LH Code	D (mm)	L2 (mm)	S (mm)	Z	H (mm)
E29 4001	E29 4003	from 20 to 25	19	from 20 to 25	[2+6]DT	4
E29 4004	E29 4006	from 20 to 25	25	from 20 to 25	[2+8]DT	4
E29 4007	E29 4009	from 20 to 25	31	from 20 to 25	[2+10]DT	4
E29 4010	E29 4012	from 20 to 25	37	from 20 to 25	[2+12]DT	4
E29 4013	E29 4015	from 20 to 25	43	from 20 to 25	[2+14]DT	4
E29 4016	E29 4018	from 22 to 25	49	from 20 to 25	[2+16]DT	4
E29 4019	E29 4021	from 22 to 25	55	25	[2+18]DT	4
E29 4022	E29 4023	25,0	61	25	[2+20]DT	4
E29 4024	E29 4025	25,0	67	25	[2+22]DT	4
E29 4026	E29 4027	25,0	73	25	[2+24]DT	4
E29 4028	E29 4029	25,0	79	25	[2+26]DT	4

Design:
PCD Shank Cutter Z4+4 with four multi-cutting helical divisions and chip-breaker.

Application:
Sizing ++ and cut-outs in panel materials.
Feed rate up to 25m/min .

Esecuzione:
Punta in PCD Z4+4 a quattro divisioni multi-taglienti ad elica e rompitrucciolo.

Applicazioni:
Tagli di Finitura ++ nei pannelli.
Avanzamento: 25m/min.

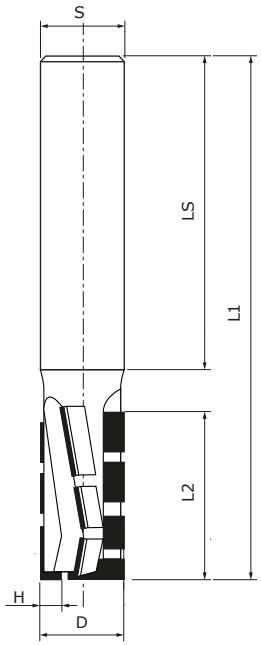
Ausführung:
PCD Schaftfräser Z4+4 mit vier helische richtung unterteilung, Schneiden Mehrfaches und Spanbrechers.

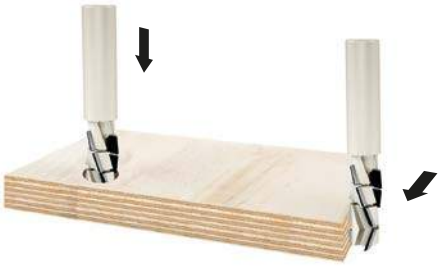
Einsatzbereich:
Format ++ und Austrennschnitte in Plattenwerkstoffen.
Vorschub: 25m/min.

DP Nesting Shank Cutter | E30

DP Fresa con Gambo per Nesting | E30

DP Nesting Schaftfräser | E30





RH Code	LH Code	D (mm)	L (mm)	A (mm)	Z
E30 3001	E30 3002	12,0	20	12	8DP
E30 3003	E30 3004	12,0	27	12	10DP
E30 3005	E30 3006	12,0	31	12	12DP
E30 3007	E30 3008	12,0	35	12	14DP
E30 3009	E30 3010	14,0	20	14	8DP
E30 3011	E30 3012	14,0	27	14	10DP
E30 3013	E30 3014	14,0	31	14	12DP
E30 3015	E30 3016	14,0	35	14	14DP
E30 3017	E30 3018	16,0	20	16	8DP
E30 3019	E30 3020	16,0	27	16	10DP
E30 3021	E30 3022	16,0	31	16	12DP
E30 3023	E30 3024	16,0	35	16	14DP

Design:
PCD Shank Cutter Z3+3 with three helical divisions.

Application:
Sizing, Cut outs, rabbeting, grooving, jointing in panel materials.
Feed rate up to 20-25m/min.

Esecuzione:
Punta in PCD Z3+3 a 3 divisioni ad elica.

Applicazioni:
Finitura, tagli, battute, incastri e smussi nei pannelli.
Avanzamento: 20-25m/min.

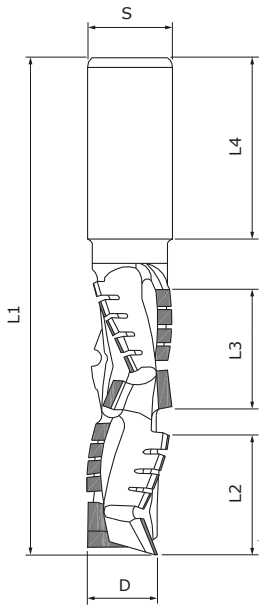
Ausführung:
PCD Schaftfräser Z3+3 mit drei helische richtung unterteilung.

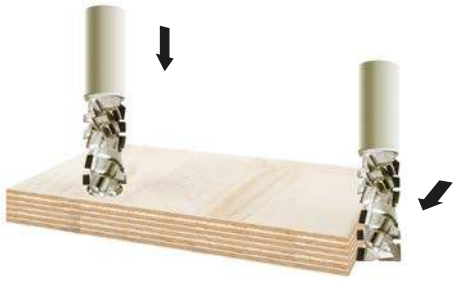
Einsatzbereich:
Format, Austrennschnitte, sowie zum Fälzen, Nuten und Fügen in Plattenwerkstoffen.
Vorschub: 20-25m/min.

Combination RH/LH DP Shank Cutter | E31

DP Fresa con Gambo - Doppia Rotazione DX/SX | E31

DP Kombinations-Schaftfräser R/L | E31





Code	D (mm)	Z	S	L1
E31 4001	20X25	3+3	20X50	120
E31 4002	20X30	3+3	20X50	130
E31 4003	25X25	3+3	25X55	125
E31 4004	25X30	3+3	25X55	135
E31 4005	25X35	3+3	25X55	150
E31 4006	25X40	3+3	25X55	160

Design:
PCD Shank Cutter Z2+2 or Z3+3 with multi-cutting helical divisions.

Application:
Sizing +, Cut outs, rabbeting, grooving, jointing in panel materials. Feed rate up to 25m/min.

Esecuzione:
Punta in PCD Z2+2 o Z3+3 con multi-taglienti ad elica.

Applicazioni:
Finitura +, tagli, battute, incastri e smussi nei pannelli.
Avanzamento: 25m/min.

Ausführung:
PCD Schaftfräser Z2+2 oder Z3+3 mit Schneiden helische Mehrfaches.

Einsatzbereich:
Format +, Austrennschnitte, sowie zum Fälzen, Nuten und Fügen in Plattenwerkstoffen.
Vorschub: 25m/min


G

G01 pag. 67

HWM Shank Cutter Z3 - for Finishing

HWM Fresa con Gambo Z3 - per Finitura

HWM Schaftfräser Z3 - für Schlichten

G02 pag. 68

HWM Shank Cutter Z3 - for Roughing

HWM Fresa con Gambo Z3 - per Sgrossatura

HWM Schaftfräser Z3 - für Schruppen

G03 pag. 69

HWM Shank Cutter Z2 - for Finishing

HWM Fresa con Gambo - Z2 per Finitura

HWM Schaftfräser Z2 - für Schlichten

G04 pag. 70

HWM Shank Cutter Z2 - for Roughing

HWM Fresa con Gambo Z2 - per Sgrossatura

HWM Schaftfräser Z2 - für Schruppen

G05 pag. 71

HWM Shank Cutter, Z 1+1

HWM Fresa con Gambo Z 1+1

HWM Schaftfräser Z 1+1

G06 pag. 71

HWM Shank Cutter, for Finishing Z 2+2

HWM Fresa con Gambo, per Finitura Z 2+2

HWM Schaftfräser Z 2+2

G07 pag. 72

HWM Shank Cutter Z3 - for Locks Case, for Finishing

HWM Fresa con Gambo Z3 per Sedi Serrature, per Finitura

HWM Schloßkasten-Schlichtfräser Z3, Schlichtfräser

G08 pag. 72

HWM Shank Cutter Z3 - with chipbreaker

HWM Fresa con Gambo Z3 - con rompitrucciolo

HWM Schloßkasten-Schruppfräser Z3

G09 pag. 73

HWM Shank Cutter Z3 - top bevel

HWM Fresa con Gambo Z3 - con smusso di testa

HWM Schaftfräser Z3 - mit Schrägschliff

G10 pag. 73

HWM Shank Cutter Z3 - top bevel + Chipbreaker

HWM Fresa con Gambo Z3 - con smusso di testa + rompitruciolo

HWM Schaftfräser Z3 - mit Schrägschliff mit Spänebrecher

G11 pag. 74

HWM Shank Cutter Z1

HWM Fresa con Gambo Z1

HWM Schaftfräser Z1

G12 pag. 74

HWM Shank Cutter Z2 - for Finishing

HWM Fresa con Gambo Z2 - per Finitura

HWM Schaftfräser Z2 - für Schlichten

G13 pag. 75

HWM Shank Cutter Z3 - HSS

HWM Fresa con Gambo Z3 - HSS

HWM Schaftfräser Z3 - HSS

G14 pag. 78

HWM Shank Cutter Z1

HWM Fresa con Gambo Z1

HWM Schaftfräser Z1

G15 pag. 79

HWM Shank Cutter Z2

HWM Fresa con Gambo Z2

HWM Schaftfräser Z2

G16 pag. 80

HWM Shank Cutter Z2 PLUS

HWM Fresa con Gambo Z2 PLUS

HWM Schaftfräser Z2 PLUS

G17	pag. 81	G18	pag. 81

HWM Shank Cutter Z2 - for ALUCOBOND, V Shaped

HWM Fresa con Gambo Z2 - per ALUCOBOND, costruzione a V

HWM Schaftfräser Z2 - für ALUCOBOND, V-Nut-Fräsungen

HWM Shank Cutter Z2 helical shaped - for ALUCOBOND, Helical Shaped

HWM Fresa con Gambo Z2 ad Elica - per ALUCOBOND, ad Elica

HWM Schaftfräser Z2 - für ALUCOBOND Spiralförmiger

Technical information
Nozioni tecniche
Technische Informationen

Cutting Speed

The cutting speed (Vc) is the distance the cutting edge covers per second (m/s) and it is calculated with the following formula:

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = cutting diameter [mm]
n = RPM [da k-1]
π = 3,14

Velocità di taglio

La velocità di taglio (Vc) e' la distanza percorsa da un tagliente in un secondo (m/s) e si calcola con questa formula:

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = diametro di taglio [mm]
n = RPM [da k-1]
π = 3,14

Die Schnittgeschwindigkeit

Die Schnittgeschwindigkeit (Vc) ist die zurückgelegte Dinstanz einer Schneide in einer Sekunde und wird durch die folgende Formel berechnet :

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = Werkzeugdurchmesser [mm]
n = RPM [da k-1]
π = 3,14

Cutting Speed Indicative Values (Vc m/s)		
Material/Materiale Cutter	HSS (Vc m/s)	Cutter HWM (Vc m/s)
Soft wood Legni teneri Weichholz	50 - 80	60 - 90
Chipboards Pannelli truciolari Spannplatten	-	60 - 90
Hard wood Legni duri Hartholz	40 - 70	50 - 90
Core boards Pannelli Tischlerplatten	-	60 - 90
Hard boards Pannelli vena dura Hartfaserplatten	-	40 - 70
Laminated boards Pannelli laminati Beschichtete Platten	-	40 - 70

Indicative Rotation Speed (n=min-1)	
Type of tools Tipologia utensili Typologie der Werkzeuge	Nmax (min-1)
HW milling cutters ø3..ø20 Frese HW ø3..ø20 VHW Fräser ø3..ø20	30.000
HW milling cutters > ø20 Frese HW > ø20 VHW Fräser HW > ø20	24.000
1 flute HW milling cutters Frese HW monotaglienti Fräser Z=1	24.000
Door locks milling cutters Frese per scasso serratura Schloßkastenfräser	18.000

Feeding speed

The feeding speed (Vf) depends on RPM, the number of cutting edges and the chip load. To reduce the machining time an estimated Va is usually set and then increased up to the achievement of a good finish. This value can be calculated with the following formula:

$$Vf = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

Fz = chip load (feed per cutting edge)
Z = number of teeth
n = RPM [da k-1]

Velocità di avanzamento

La velocità di avanzamento (Vf) dipende dal numero di giri dell'utensile, dal numero dei taglienti e dall'avanzamento dei taglienti. Di regola per ridurre i tempi di lavorazione si imposta un valore e poi si aumenta la VA fino a che si è soddisfatti della finitura superficiale. I valori si possono calcolare con la formula:

$$Vf = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

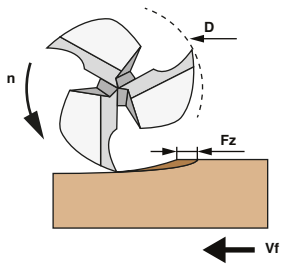
Fz = avanzamento del tagliente (mm)
Z = number di denti
n = RPM [da k-1]

Vorschubgeschwiendigkeit

Die Vorschubgeschwiendigkeit (Vf) hängt von der Drehzahl, von der Zähnezahl and vom Zahnvor schub.
Um die Bearbeitungszeit zu verkürzen, wird Normalerweise einen Wert eingestellt und dann erhöht bis zum Erreichen eine gute Oberfläche. Man kann diese Werte durch die folgende Formel berechnen :

$$Vt = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

Fz = Zahnvorschub (mm)
Z = Zähnezahl
n = RPM [da k-1]



0,3 – 0,8 mm = Fine chip
0,8 – 2,5 mm = Fine chip
2,5 – 5,0 mm = Rough chip

0,3 – 0,8 mm = truciolo semplice
0,8 – 2,5 mm = truciolo semplice
2,5 – 5,0 mm = truciolo sgrossato

0,3 – 0,8 mm = Feinschlichtspan
0,8 – 2,5 mm = Schlichtspan
2,5 – 5,0 mm = Schruppspan

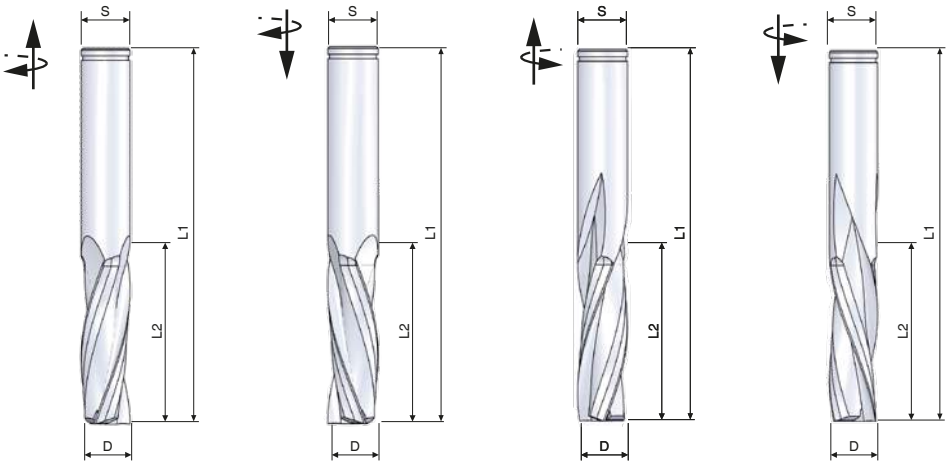
HWM Shank Cutter Z3 - for Finishing | G01

HWM Fresa con Gambo Z3 - per Finitura | G01

HWM Schaftfräser Z3 - für Schlichten | G01

RH		LH		Ø	L2	L1	S
Code Pos	Code Neg	Code Pos	Code Neg				
G01 **0001**	G01 **1001**	G01 **2001**	G01 **3001**	8	22	70	8
G01 **0002**	G01 **1002**	G01 **2002**	G01 **3002**	8	32	80	8
G01 **0003**	G01 **1003**	G01 **2003**	G01 **3003**	8	42	90	8
G01 **0004**	G01 **1004**	G01 **2004**	G01 **3004**	10	32	80	10
G01 **0005**	G01 **1005**	G01 **2005**	G01 **3005**	10	42	90	10
G01 **0006**	G01 **1006**	G01 **2006**	G01 **3006**	10	52	100	10
G01 **0007**	G01 **1007**	G01 **2007**	G01 **3007**	12	32	80	12
G01 **0008**	G01 **1008**	G01 **2008**	G01 **3008**	12	42	90	12
G01 **0009**	G01 **1009**	G01 **2009**	G01 **3009**	12	52	100	12
G01 **0010**	G01 **1010**	G01 **2010**	G01 **3010**	14	32	80	14
G01 **0011**	G01 **1011**	G01 **2011**	G01 **3011**	14	42	90	14
G01 **0012**	G01 **1012**	G01 **2012**	G01 **3012**	14	52	100	14
G01 **0013**	G01 **1013**	G01 **2013**	G01 **3013**	16	42	90	16
G01 **0014**	G01 **1014**	G01 **2014**	G01 **3014**	16	52	100	16
G01 **0015**	G01 **1015**	G01 **2015**	G01 **3015**	16	72	120	16
G01 **0016**	G01 **1016**	G01 **2016**	G01 **3016**	18	52	100	18
G01 **0017**	G01 **1017**	G01 **2017**	G01 **3017**	18	72	120	18
G01 **0018**	G01 **1018**	G01 **2018**	G01 **3018**	18	102	150	18
G01 **0019**	G01 **1019**	G01 **2019**	G01 **3019**	20	52	100	20
G01 **0020**	G01 **1020**	G01 **2020**	G01 **3020**	20	72	120	20
G01 **0021**	G01 **1021**	G01 **2021**	G01 **3021**	20	102	150	20
G01 **0022**	G01 **1022**	G01 **2022**	G01 **3022**	25	42	100	25
G01 **0023**	G01 **1023**	G01 **2023**	G01 **3023**	25	62	120	25
G01 **0024**	G01 **1024**	G01 **2024**	G01 **3024**	25	102	160	25
G01 **0025**	G01 **1025**	G01 **2025**	G01 **3025**	25	120	180	25

Z3



Machine:
CNC

Application:
For finish-cutting in solid woods, plywood and uncoated panels.

Advantages:
RH/LH Positive: Upward chip evacuation, better finish on the bottom side of the panel.
RH/LH Negative: Downwards chip evacuation, better finish on the upper side of the panel.

Macchina:
CNC

Applicazioni:
Per finitura di legni massicci, compensati e pannelli non rivestiti.

Vantaggi:
RX/SX Positiva: evacuazione del truciolo verso l'alto. Migliore finitura parte inferiore del panello.
RH/LH Negativa: evacuazione del truciolo verso il basso. Migliore finitura nella parte alta del pannello.

Maschine:
CNC

Anwendung:
Zum Schlichten von Massivhölzern und Sperrhölzer sowie von unbeschichteten Holzwerkstoffen.

Vorteile:
RH/LH Positive: Spanauswurf nach oben. Besseren Finish auf der Unterseite auf der werkstoffen.
RH/LH Negative: Spanauswurf nach uten.
Besseren Finish auf der oberseite auf der werkstoffen.

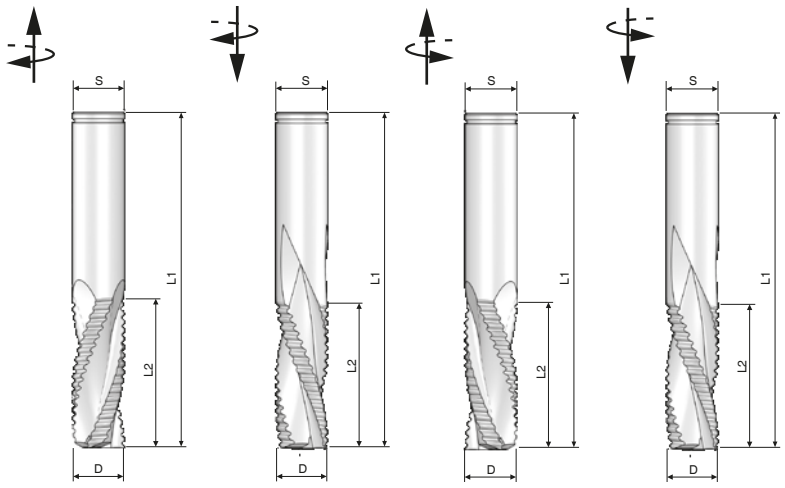
HWM Shank Cutter Z3 - for Roughing | G02

HWM Fresa con Gambo Z3 - per Sgrossatura | G02

HWM Schaftfräser Z3 - für Schruppen | G02

RH		LH		Ø	L2	L1	S
Code Pos	Code Neg	Code Pos	Code Neg				
G02 **0001**	G02 **1001**	G02 **2001**	G02 **3001**	8	22	70	8
G02 **0002**	G02 **1002**	G02 **2002**	G02 **3002**	8	32	80	8
G02 **0003**	G02 **1003**	G02 **2003**	G02 **3003**	8	42	90	8
G02 **0004**	G02 **1004**	G02 **2004**	G02 **3004**	10	32	80	10
G02 **0005**	G02 **1005**	G02 **2005**	G02 **3005**	10	42	90	10
G02 **0006**	G02 **1006**	G02 **2006**	G02 **3006**	10	52	100	10
G02 **0007**	G02 **1007**	G02 **2007**	G02 **3007**	12	32	80	12
G02 **0008**	G02 **1008**	G02 **2008**	G02 **3008**	12	42	90	12
G02 **0009**	G02 **1009**	G02 **2009**	G02 **3009**	12	52	100	12
G02 **0010**	G02 **1010**	G02 **2010**	G02 **3010**	14	32	80	14
G02 **0011**	G02 **1011**	G02 **2011**	G02 **3011**	14	42	90	14
G02 **0012**	G02 **1012**	G02 **2012**	G02 **3012**	14	52	100	14
G02 **0013**	G02 **1013**	G02 **2013**	G02 **3013**	16	42	90	16
G02 **0014**	G02 **1014**	G02 **2014**	G02 **3014**	16	52	100	16
G02 **0015**	G02 **1015**	G02 **2015**	G02 **3015**	16	72	120	16
G02 **0016**	G02 **1016**	G02 **2016**	G02 **3016**	18	52	100	18
G02 **0017**	G02 **1017**	G02 **2017**	G02 **3017**	18	72	120	18
G02 **0018**	G02 **1018**	G02 **2018**	G02 **3018**	18	102	150	18
G02 **0019**	G02 **1019**	G02 **2019**	G02 **3019**	20	52	100	20
G02 **0020**	G02 **1020**	G02 **2020**	G02 **3020**	20	72	120	20
G02 **0021**	G02 **1021**	G02 **2021**	G02 **3021**	20	102	150	20
G02 **0022**	G02 **1022**	G02 **2022**	G02 **3022**	25	42	100	25
G02 **0023**	G02 **1023**	G02 **2023**	G02 **3023**	25	62	120	25
G02 **0024**	G02 **1024**	G02 **2024**	G02 **3024**	25	102	160	25
G02 **0025**	G02 **1025**	G02 **2025**	G02 **3025**	25	120	180	25

Z3



Machine:
CNC

Application:
For rough-cutting in solid woods, plywood and uncoated panels.

Advantages:
RH/LH Positive: Upward chip evacuation, better finish on the bottom side of the panel.
RH/LH Negative: Downwards chip evacuation, better finish on the upper side of the panel.

Macchina:
CNC

Applicazioni:
Per sgrossatura in legno massiccio, compensato e pannelli non rivestiti.

Vantaggi:
RX/SX Positiva: evacuazione del truciolo verso l'alto. Migliore finitura parte inferiore del panello.
RH/LH Negativa: evacuazione del truciolo verso il basso. Migliore finitura nella parte alta del pannello.

Maschine:
CNC

Anwendung:
Zum Schruppen von Massivhölzern und Sperrhölzer sowie von unbeschichteten Holzwerkstoffen.

Vorteile:
RH/LH Positive: Spanauswurf nach oben. Besseren Finish auf der Unterseite auf der werkstoffen.
RH/LH Negative: Spanauswurf nach uten. Besseren Finish auf der oberseite auf der werkstoffen.

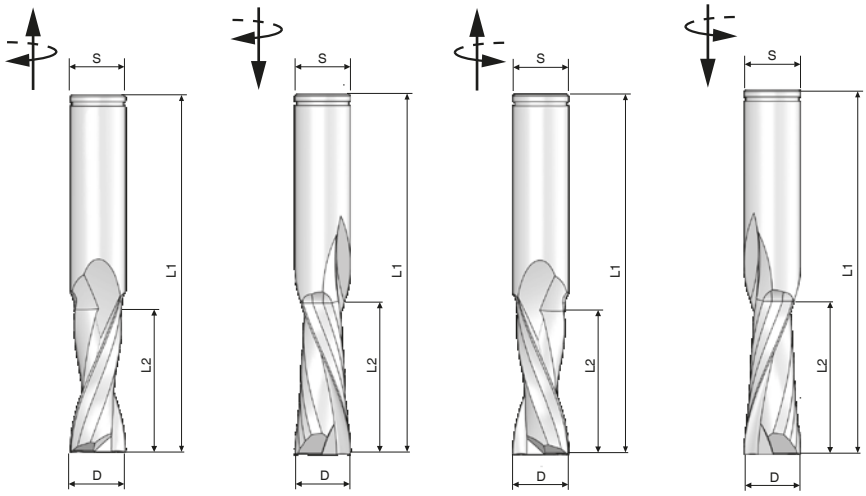
HWM Shank Cutter Z2 - for Finishing | G03

HWM Fresa con Gambo Z2 - per Finitura | G03

HWM Schaftfräser Z2 - für Schlichten | G03

RH		LH		Ø	L2	L1	S
Code Pos	Code Neg	Code Pos	Code Neg				
G03 **0001**	G03 **1001**	G03 **2001**	G03 **3001**	3	12	50	3
G03 **0002**	G03 **1002**	G03 **2002**	G03 **3002**	4	12	50	4
G03 **0003**	G03 **1003**	G03 **2003**	G03 **3003**	5	17	50	5
G03 **0004**	G03 **1004**	G03 **2004**	G03 **3004**	6	22	60	6
G03 **0005**	G03 **1005**	G03 **2005**	G03 **3005**	6	27	60	6
G03 **0006**	G03 **1006**	G03 **2006**	G03 **3006**	8	22	70	8
G03 **0007**	G03 **1007**	G03 **2007**	G03 **3007**	8	32	80	8
G03 **0008**	G03 **1008**	G03 **2008**	G03 **3008**	8	42	90	8
G03 **0009**	G03 **1009**	G03 **2009**	G03 **3009**	10	32	80	10
G03 **0010**	G03 **1010**	G03 **2010**	G03 **3010**	10	42	90	10
G03 **0011**	G03 **1011**	G03 **2011**	G03 **3011**	10	52	100	10
G03 **0012**	G03 **1012**	G03 **2012**	G03 **3012**	12	32	80	12
G03 **0013**	G03 **1013**	G03 **2013**	G03 **3013**	12	42	90	12
G03 **0014**	G03 **1014**	G03 **2014**	G03 **3014**	12	52	100	12
G03 **0015**	G03 **1015**	G03 **2015**	G03 **3015**	14	32	80	14
G03 **0016**	G03 **1016**	G03 **2016**	G03 **3016**	14	52	100	14
G03 **0017**	G03 **1017**	G03 **2017**	G03 **3017**	16	42	90	16
G03 **0018**	G03 **1018**	G03 **2018**	G03 **3018**	16	52	100	16
G03 **0019**	G03 **1019**	G03 **2019**	G03 **3019**	16	72	120	16
G03 **0020**	G03 **1020**	G03 **2020**	G03 **3020**	18	72	120	18
G03 **0021**	G03 **1021**	G03 **2021**	G03 **3021**	20	52	100	20
G03 **0022**	G03 **1022**	G03 **2022**	G03 **3022**	20	72	120	20

Z2



Machine:
CNC

Application:
For finish-cutting in solid woods, plywood and uncoated panels.

Advantages:
RH/LH Positive: Upward chip evacuation. Better finish on the bottom side of the panel.
RH/LH Negative: Downwards chip evacuation. Better finish on the upper side of the panel.

Macchina:
CNC

Applicazioni:
Per finitura di legni massicci, compensati e pannelli non rivestiti.

Vantaggi:
RX/SX Positiva: evacuazione del truciolo verso l'alto. Migliore finitura parte inferiore del panello.
RH/LH Negativa: evacuazione del truciolo verso il basso. Migliore finitura nella parte alta del pannello.

Maschine:
CNC

Anwendung:
Zum Schlichten von Massivhölzern und Sperrhölzer sowie von unbeschichteten Holzwerkstoffen.

Vorteile:
RH/LH Positive: Spanauswurf nach oben. Besseren Finish auf der Unterseite auf der werkstoffen.
RH/LH Negative: Spanauswurf nach uten. Besseren Finish auf der oberseite auf der werkstoffen.

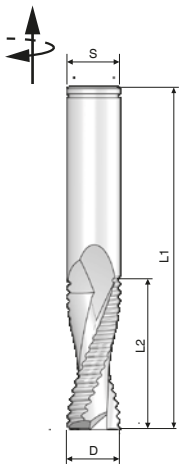
HWM Shank Cutter Z2 - for Roughing | G04

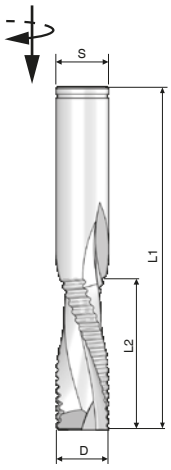
HWM Fresa con Gambo Z2 - per Sgrossatura | G04

HWM Schaftfräser Z2 - für Schruppen | G04

Z2

RH Code Pos	Code Neg	Ø	L2	L1	S
G04 **0001**	G04 **1001**	8	22	70	8
G04 **0002**	G04 **1002**	8	32	80	8
G04 **0003**	G04 **1003**	8	42	90	8
G04 **0004**	G04 **1004**	10	32	80	10
G04 **0005**	G04 **1005**	10	42	90	10
G04 **0006**	G04 **1006**	10	52	100	10
G04 **0007**	G04 **1007**	12	32	80	12
G04 **0008**	G04 **1008**	12	42	90	12
G04 **0009**	G04 **1009**	12	52	100	12
G04 **0010**	G04 **1010**	14	32	80	14
G04 **0011**	G04 **1011**	14	42	90	14
G04 **0012**	G04 **1012**	14	52	100	14
G04 **0013**	G04 **1013**	16	42	90	16
G04 **0014**	G04 **1014**	16	52	100	16
G04 **0015**	G04 **1015**	16	72	120	16
G04 **0016**	G04 **1016**	18	52	100	18
G04 **0017**	G04 **1017**	18	72	120	18
G04 **0018**	G04 **1018**	18	102	150	18
G04 **0019**	G04 **1019**	20	52	100	20
G04 **0020**	G04 **1020**	20	72	120	20
G04 **0021**	G04 **1021**	20	102	150	20
G04 **0022**	G04 **1022**	25	42	100	25
G04 **0023**	G04 **1023**	25	62	120	25
G04 **0024**	G04 **1024**	25	102	160	25
G04 **0025**	G04 **1025**	25	120	180	25





Machine:
CNC

Application:
For rough-cutting in solid woods, plywood and uncoated panels.

Advantages:
RH/LH Positive: Upward chip evacuation. Better finish on the bottom side of the panel.
RH/LH Negative: Downwards chip evacuation. Better finish on the upper side of the panel.

Macchina:
CNC

Applicazioni:
Per sgrossatura in legno massiccio, compensato e pannelli non rivestiti.

Vantaggi:
RX/SX Positiva: evacuazione del truciolo verso l'alto. Migliore finitura parte inferiore del panello.
RH/LH Negativa: evacuazione del truciolo verso il basso. Migliore finitura nella parte alta del pannello.

Maschine:
CNC

Anwendung:
Zum Schruppen von Massivhölzern und Sperrhölzer sowie von unbeschichteten Holzwerkstoffen.

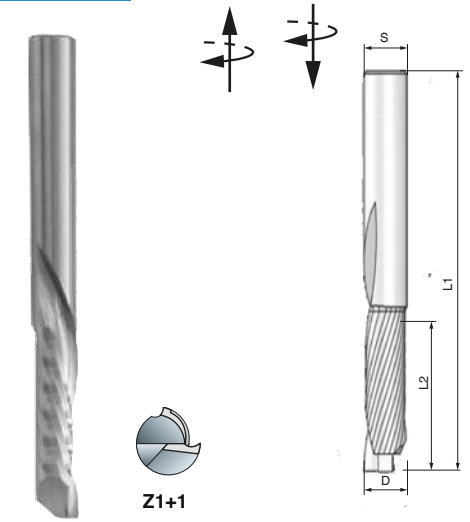
Vorteile:
RH/LH Positive: Spanauswurf nach oben. Besseren Finish auf der Unterseite auf der werkstoffen.
RH/LH Negative: Spanauswurf nach uten. Besseren Finish auf der oberseite auf der werkstoffen.

HWM Shank Cutter Z 1+1 | G05 | Z 2+2 | G06 | for Finishing

HWM Fresa con Gambo Z 1+1 | G05 | Z 2+2 | G06 | per Finitura

HWM Schaftfräser Z 1+1 | G05 | Z 2+2 | G06 | für Schlichten

G05



RH Code Pos	Code Neg	Ø	L2	L1	S
G05 **0001**	G05 **1001**	4	15	50	4
G05 **0002**	G05 **1002**	5	17	50	5
G05 **0003**	G05 **1003**	6	17	60	6
G05 **0004**	G05 **1004**	6	22	60	6
G05 **0005**	G05 **1005**	8	22	70	8
G05 **0006**	G05 **1006**	8	32	80	8
G05 **0007**	G05 **1007**	10	32	80	10
G05 **0008**	G05 **1008**	10	42	100	10
G05 **0009**	G05 **1009**	10	52	100	10
G05 **0010**	G05 **1010**	12	32	80	12
G05 **0011**	G05 **1011**	12	42	100	12
G05 **0012**	G05 **1012**	12	52	110	12

Machine:
CNC

Application:
For cutting of openings and contours of veneered or bilaminates panels.

Advantages:
RH Positive/Negative. Better finish on the bottom and upper side of the panel.

Macchina:
CNC

Applicazioni:
Per la contornatura e la foratura di pannelli impiallacciati o bilaminati.

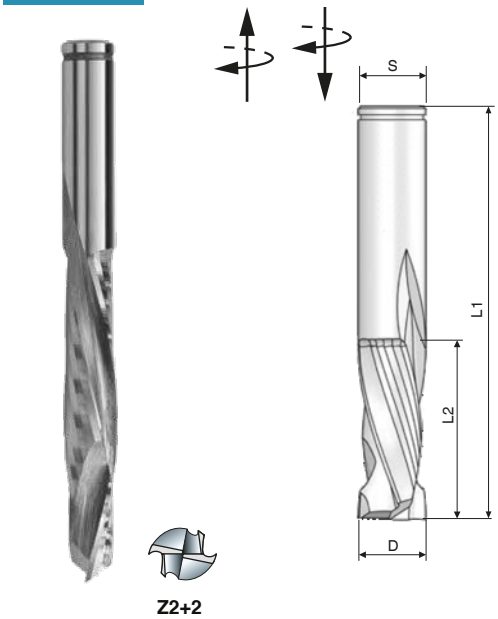
Vantaggi:
RX Positiva/Negativa. Migliore finitura parte inferiore e superiore del panello.

Maschine:
CNC

Anwendung:
Zum Fräsen von Ausschnitten und Konturen für furnierten und beschichteten Holzwerkstoffen.

Vorteile:
RH Positive/Negative. Besseren Finish auf der oberseite und Unterseite auf der werkstoffen.

G06



RH Code Pos	Code Neg	Ø	L2	L1	S
G06 **0001**	G06 **1001**	8	22	70	8
G06 **0002**	G06 **1002**	8	32	80	8
G06 **0003**	G06 **1003**	10	32	80	10
G06 **0004**	G06 **1004**	10	42	100	10
G06 **0005**	G06 **1005**	10	52	100	10
G06 **0006**	G06 **1006**	12	32	80	12
G06 **0007**	G06 **1007**	12	42	100	12
G06 **0008**	G06 **1008**	12	52	110	12
G06 **0009**	G06 **1009**	14	42	100	14
G06 **0010**	G06 **1010**	14	52	110	14
G06 **0011**	G06 **1011**	16	42	100	16
G06 **0012**	G06 **1012**	16	52	110	16
G06 **0013**	G06 **1013**	16	72	130	16
G06 **0014**	G06 **1014**	18	52	110	18
G06 **0015**	G06 **1015**	18	72	130	18
G06 **0016**	G06 **1016**	20	52	120	20
G06 **0017**	G06 **1017**	20	72	130	20

Machine:
CNC

Application:
For cutting of openings and contours of veneered or bilaminates panels.

Advantages:
RH Positive/Negative: better finish on the bottom and upper side of the panel.

Macchina:
CNC

Applicazioni:
Per la contornatura e la foratura di pannelli impiallacciati o bilaminati.

Vantaggi:
RX Positiva/Negativa. Migliore finitura parte inferiore e superiore del panello.

Maschine:
CNC

Anwendung:
Zum Fräsen von Ausschnitten und Konturen für furnierten und beschichteten Holzwerkstoffen.

Vorteile:
RH Positive/Negative. Besseren Finish auf der oberseite und Unterseite auf der werkstoffen.

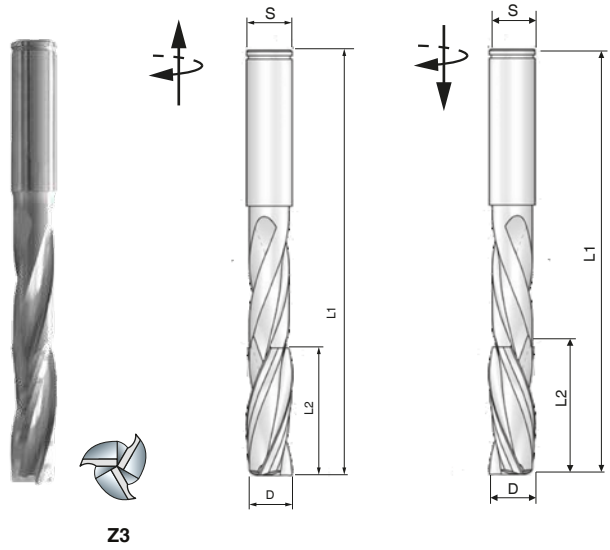
HWM Shank Cutter Z3 for Locks Case | G07 | G08

HWM Fresa con Gambo Z3 per Sedi Serrature | G07 | G08

HWM Schaftfräser für Schruppfräser Z3 | G07 | G08

G07

for Finishing | per Finitura | Schlichtfräser



RH Code Pos	RH Code Neg	Ø	L2	L1	S
G07 **0001**	G07 **1001**	12	45	150	12
G07 **0002**	G07 **1002**	14	45	150	14
G07 **0003**	G07 **1003**	16	45	150	16
G07 **0004**	G07 **1004**	18	45	150	18
G07 **0005**	G07 **1005**	20	45	150	20

Machine:
CNC

Application:
For finish-cutting of openings of lock-cases.

Advantages:
RH Positive/Negative: optimum chip evacuation.

Macchina:
CNC

Applicazioni:
Per la finitura di sedi serrature.

Vantaggi:
RX Positiva/Negativa. Ottima evacuazione del trucciolo.

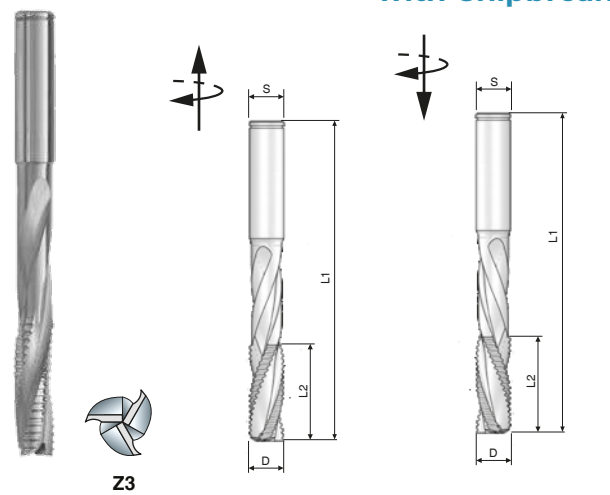
Maschine:
CNC

Anwendung:
Zum Schlichten von Ausschnitten auf Schloßkastens.

Vorteile:
RH Positive/Negative. Optimaler Spanauswurf.

G08

with Chipbreaker | con Rompitruciolo | mit Spänebrecher



RH Code Pos	RH Code Neg	Ø	L2	L1	S
G08 **0001**	G08 **1001**	12	45	150	12
G08 **0002**	G08 **1002**	14	45	150	14
G08 **0003**	G08 **1003**	16	45	150	16
G08 **0004**	G08 **1004**	18	45	150	18
G08 **0005**	G08 **1005**	20	45	150	20

Machine:
CNC

Application:
For rough-cutting of openings of lock-cases.

Advantages:
RH Positive/Negative: optimum chip evacuation .

Macchina:
CNC

Applicazioni:
Per la sgrossatura di sedi serrature.

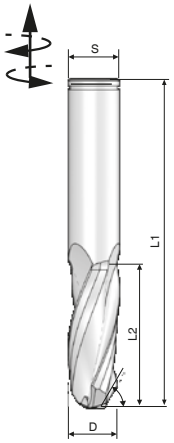
Vantaggi:
RX Positiva/Negativa. Ottima evacuazione del truciolo.

Maschine:
CNC

Anwendung:
Zum Schruppen von Ausschnitten auf Schloßkastens.

Vorteile:
RH Positive/Negative. Optimaler Spanauswurf.

G09



Z3

top bevel | con smusso di testa | mit Schrägschliff

RH Code Pos	LH Code Pos	Ø	L2	L1	S
G09 **0001**	G09 **1001**	14	62	130	14
G09 **0002**	G09 **1002**	16	62	130	16

Machine:
CNC

Application:
For finish-cutting of openings and contours.

Advantages:
50°/60° top bevel. RH Positive. Better finish on the bottom side of the panel.

Macchina:
CNC

Applicazioni:
Per la finitura, la contornatura e la foratura.

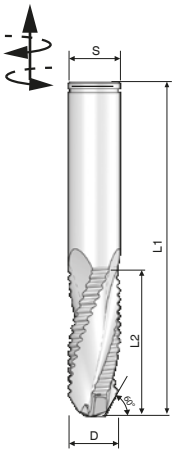
Vantaggi:
50°/60° di smusso di testa RH Positiva. Migliore finitura nella parte inferiore del panello.

Maschine:
CNC

Anwendung:
Zum Schlichten, Fräsen von Ausschnitten und Konturen.

Vorteile:
50°/60° Schrägschliff RH Positive. Besseren Finish auf der Unterseite auf der werkstoffen.

G10



Z3

top bevel + Chipbreaker | con smusso di testa + rompitruciolo | mit Schrägschliff mit Spänebrecher

RH Code Pos	LH Code Pos	Ø	L2	L1	S
G10 **0001**	G10 **1001**	14	62	130	14
G10 **0002**	G10 **1002**	16	62	130	16

Machine:
CNC

Application:
For rough-cutting, openings and contours.

Advantages:
50°/60° top bevel. RH Positive. Better finish on the bottom side of the panel.

Macchina:
CNC

Applicazioni:
per la sgrossatura, la contornatura e la foratura.

Vantaggi:
50°/60° di smusso di testa RX Positiva: Migliore finitura nella parte inferiore del panello.

Maschine:
CNC

Anwendung:
zum Schruppen, Fräsen von Ausschnitten und Konturen

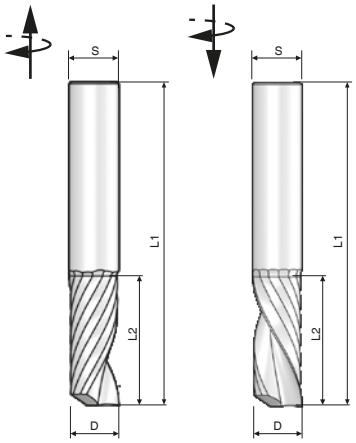
Vorteile:
50°/60° Schrägschliff RH Positive: Besseren Finish auf der Unterseite auf der werkstoffen.

HWM Shank Cutter Z1 | G11 | | G12 | for Finishing Z2

HWM Fresa con Gambo Z1 | G11 | | G12 | per Finitura Z2

HWM Schaftfräser Z1 | G11 | | G12 | für Schlichten Z2

G11



Z1

RH Code Pos	Code Neg	Ø	L2	L1	S
G11 **0001**	G11 **1001**	3	14	50	3
G11 **0002**	G11 **1002**	4	14	50	4
G11 **0003**	G11 **1003**	4	20	50	4
G11 **0004**	G11 **1004**	5	17	50	5
G11 **0005**	G11 **1005**	5	22	60	5
G11 **0006**	G11 **1006**	6	22	60	6
G11 **0007**	G11 **1007**	6	27	60	6
G11 **0008**	G11 **1008**	8	22	70	8
G11 **0009**	G11 **1009**	8	32	80	8
G11 **0010**	G11 **1010**	10	32	80	10
G11 **0011**	G11 **1011**	10	42	90	10
G11 **0012**	G11 **1012**	12	32	80	12
G11 **0013**	G11 **1013**	12	42	90	12

Machine:
CNC

Application:
For finish-cutting in solid woods, plywood and uncoated panels.

Advantages:
RH Positive: Upward chip evacuation. Better finish on the bottom side of the panel.
RH Negative: Downwards chip evacuation. Better finish on the upper side of the panel.

Macchina:
CNC

Applicazioni:
Per finitura di legni massicci, compensati e pannelli non rivestiti.

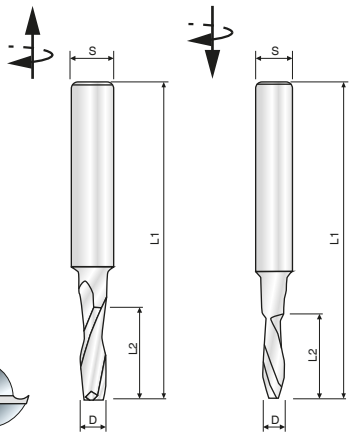
Vantaggi:
RX Positiva: evacuazione del truciolo verso l'alto. Migliore finitura parte inferiore del panello.
RH Negativa: evacuazione del truciolo verso il basso. Migliore finitura nella parte alta del pannello.

Maschine:
CNC

Anwendung:
Zum Schlichten von Massivhölzern und Sperrhölzer sowie von unbeschichteten Holzwerkstoffen.

Vorteile:
RH Positive: Spanauswurf nach oben. Besseren Finish auf der Unterseite auf der werkstoffen.
RH Negative: Spanauswurf nach uten. Besseren Finish auf der oberseite auf der werkstoffen.

G12



Z2

RH Code Pos	Code Neg	Ø	L2	L1	S
G12 **0001**	G12 **1001**	2	6	50	6
G12 **0002**	G12 **1002**	3	12	50	6
G12 **0003**	G12 **1003**	3	8	50	6
G12 **0004**	G12 **1004**	4	12	50	6
G12 **0005**	G12 **1005**	5	12	50	6
G12 **0006**	G12 **1006**	5	17	50	6

Machine:
CNC

Application:
For finish-cutting in solid woods, plywood and uncoated panels.

Advantages:
RH Positive: Upward chip evacuation, better finish on the bottom side of the panel.
RH Negative: Downwards chip evacuation, better finish on the upper side of the panel.

Macchina:
CNC

Applicazioni:
Per finitura di legni massicci, compensati e pannelli non rivestiti.

Vantaggi:
RX Positiva: evacuazione del truciolo verso l'alto. Migliore finitura parte inferiore del panello.
RH Negativa: evacuazione del truciolo verso il basso. Migliore finitura nella parte alta del pannello.

Maschine:
CNC

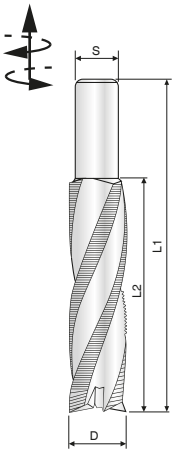
Anwendung:
Zum Schlichten von Massivhölzern und Sperrhölzer sowie von unbeschichteten Holzwerkstoffen.

Vorteile:
RH Positive: Spanauswurf nach oben. Besseren Finish auf der Unterseite auf der werkstoffen.
RH Negative: Spanauswurf nach uten. Besseren Finish auf der oberseite auf der werkstoffen.

HWM Shank Cutter Z3 | G13 (HSS)

HWM Fresa con Gambo Z3 | G13 (HSS)

HWM Schaftfräser Z3 | G13 (HSS)



Z3

for Glulam | per Travi Lamellari | für Brettschichtholz

RH Code Pos	LH Code Pos	Ø	L2	L1	S
G13 **0001**	G13 **1001**	40	165	235	30
G13 **0002**	G13 **1002**	50	215	295	30

Machine:
CNC/HUNDEGGER

Application:
For rough-cutting, of glulam beams.

Advantages:
RH Positive with chip-breaker.

Macchina:
CNC/HUNDEGGER

Applicazioni:
Per la sgrossatura di travi lamellari.

Vantaggi:
RX Positiva con rompitrucciolo.

Macchina:
CNC/HUNDEGGER

Anwendung:
zum Schruppen von Brettschichtholz.

Vorteile:
RH Positive met Spänebrecher.


G
Aluminum
Alluminio
Aluminium

Technical information
Nozioni tecniche
Technische Informationen

Cutting Speed

The cutting speed (Vc) is the distance the cutting edge covers per second (m/s) and it is calculated with the following formula:

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = cutting diameter [mm]
n = RPM [da k-1]
π = 3,14

Velocità di taglio

La velocità di taglio (Vc) e' la distanza percorsa da un tagliente in un secondo (m/s) e si calcola con questa formula:

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = diametro di taglio [mm]
n = RPM [da k-1]
π = 3,14

Die Schnittgeschwindigkeit

Die Schnittgeschwindigkeit (Vc) ist die zurückgelegte Dinstanz einer Schneide in einer Sekunde und wird durch die folgende Formel berechnet :

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = Werkzeugdurchmesser [mm]
n = RPM [da k-1]
π = 3,14

Cutting Speed Indicative Values (Vc m/s)

Material/Materiale	Cutter HWM (VT m/s)
Aluminum (Shoulder milling) Alluminio (fresatura in spallamento) Aluminium (Eckfräsen)	8
Aluminum (Slot milling) Alluminio (fresatura di cave) Aluminium (Fräsen von Nuten)	8
Aluminum (Plunge milling) Alluminio (fresatura a tuffo) Aluminium (Tauchfräsen)	5

Indicative Rotation Speed (n=min-1)

Type of tools Tipologia utensili Typologie der Werkzeuge	Nmax (min-1)
HW milling cutters ø3..ø20 Frese HW ø3..ø20 VHW Fräser ø3..ø20	30.000
HW milling cutters > ø20 Frese HW > ø20 VHW Fräser HW > ø20	24.000
1 flute HW milling cutters Frese HW monotaglienti Fräser Z=1	24.000

Feeding speed

The feeding speed (Vf) depends on RPM, the number of cutting edges and the chip load. To reduce the machining time an estimated Va is usually set and then increased up to the achievement of a good finish. This value can be calculated with the following formula:

$$Vf = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

Fz = chip load (feed per cutting edge) [mm]
Z = number of cutting edges
n = RPM [min-1]

Velocità di avanzamento

La velocità di avanzamento (Vf) dipende dal numero di giri dell'utensile, dal numero dei taglienti e dall'avanzamento dei taglienti. Di regola per ridurre i tempi di lavorazione si imposta un valore e poi si aumenta la VA fino a che si è soddisfatti della finitura superficiale. I valori si possono calcolare con la formula:

$$Vf = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

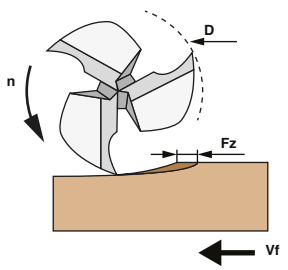
Fz = avanzamento del tagliente [mm]
Z = numero dei taglienti
n = numero di giri [min-1]

Vorschubgeschwiendigkeit

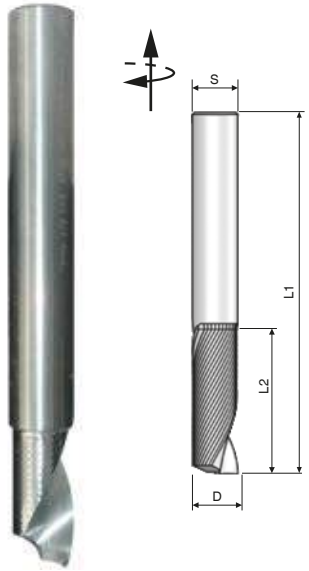
Die Vorschubgeschwiendigkeit (Vf) hängt von der Drehzahl, von der Zähnezahl and vom Zahnvor schub.
Um die Bearbeitungszeit zu verkürzen, wird Normalerweise einen Wert eingestellt und dann erhöht bis zum Erreichen eine gute Oberfläche. Man kann diese Werte durch die folgende Formel berechnen :

$$Vf = \frac{At \times Z \times n}{1000} \text{ [m/min]}$$

Fz = Zahnvorschub [mm]
Z = Zähnezahl
n = Drehzahl [min-1]



ALU



Z1

RH		LH					
Code Pos	Code Neg	Code Pos	Code Neg	Ø	L2	L1	S
G14 **0001**	G14 **2001**	G14 **1001**	G14 **3001**	2	6	50	3
G14 **0002**	G14 **2002**	G14 **1002**	G14 **3002**	2	8	50	3
G14 **0003**	G14 **2003**	G14 **1003**	G14 **3003**	2,5	8	50	3
G14 **0004**	G14 **2004**	G14 **1004**	G14 **3004**	2,5	8	60	6
G14 **0005**	G14 **2005**	G14 **1005**	G14 **3005**	3	8	50	3
G14 **0006**	G14 **2006**	G14 **1006**	G14 **3006**	3	10	60	6
G14 **0007**	G14 **2007**	G14 **1007**	G14 **3007**	4	12	50	4
G14 **0008**	G14 **2008**	G14 **1008**	G14 **3008**	4	12	60	6
G14 **0009**	G14 **2009**	G14 **1009**	G14 **3009**	4	16	60	6
G14 **0010**	G14 **2010**	G14 **1010**	G14 **3010**	5	14	50	5
G14 **0011**	G14 **2011**	G14 **1011**	G14 **3011**	5	14	60	6
G14 **0012**	G14 **2012**	G14 **1012**	G14 **3012**	5	20	60	6
G14 **0013**	G14 **2013**	G14 **1013**	G14 **3013**	6	16	60	6
G14 **0014**	G14 **2014**	G14 **1014**	G14 **3014**	6	20	60	6
G14 **0015**	G14 **2015**	G14 **1015**	G14 **3015**	6	25	60	6
G14 **0016**	G14 **2016**	G14 **1016**	G14 **3016**	8	20	80	8
G14 **0017**	G14 **2017**	G14 **1017**	G14 **3017**	8	25	100	8
G14 **0018**	G14 **2018**	G14 **1018**	G14 **3018**	8	35	100	8
G14 **0019**	G14 **2019**	G14 **1019**	G14 **3019**	10	25	100	10
G14 **0020**	G14 **2020**	G14 **1020**	G14 **3020**	10	35	100	10
G14 **0021**	G14 **2021**	G14 **1021**	G14 **3021**	10	45	100	10
G14 **0022**	G14 **2022**	G14 **1022**	G14 **3022**	12	25	100	12
G14 **0023**	G14 **2023**	G14 **1023**	G14 **3023**	12	35	100	12
G14 **0024**	G14 **2024**	G14 **1024**	G14 **3024**	12	45	100	12
G14 **0025**	G14 **2025**	G14 **1025**	G14 **3025**	14	35	100	12
G14 **0026**	G14 **2026**	G14 **1026**	G14 **3026**	14	45	100	14
G14 **0027**	G14 **2027**	G14 **1027**	G14 **3027**	16	35	100	14
G14 **0028**	G14 **2028**	G14 **1028**	G14 **3028**	16	45	100	16

Machine:
CNC

Application:
For jointing, rabbeting and grooving in aluminum alloys.

Advantages:
Optimal chip removal.
RH/LH Positive: Upward chip evacuation.
RH/LH Negative: Downwards chip evacuation.

Macchina:
CNC

Applicazioni:
Per scanalature, e battute di leghe di alluminio.

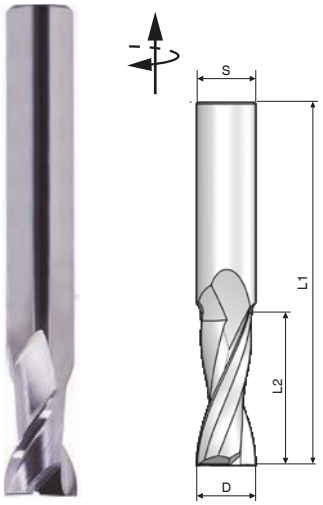
Vantaggi:
Ottima evacuazione del trucciolo.
RX/SX Positiva: evacuazione del truciolo verso l'alto.
RH/SX Negativa: evacuazione del truciolo verso il basso.

Maschine:
CNC

Anwendung:
Zum Fügen, Fälzen und Nuten in Aluminiumlegierungen.

Vorteile:
Optimale Spanentsorgung.
RH/LH Positive: spanauswurf nach oben.
RH/LH Negative: spanauswurf nach uten.

ALU



Z2

RH		LH				
Code Pos	Code Neg	Code Pos	Code Neg	Ø	L2	L1
G15 **0001**	G15 **2001**	G15 **1001**	G15 **3001**	3	10	50
G15 **0002**	G15 **2002**	G15 **1002**	G15 **3002**	3	10	60
G15 **0003**	G15 **2003**	G15 **1003**	G15 **3003**	4	12	50
G15 **0004**	G15 **2004**	G15 **1004**	G15 **3004**	4	12	60
G15 **0005**	G15 **2005**	G15 **1005**	G15 **3005**	4	16	60
G15 **0006**	G15 **2006**	G15 **1006**	G15 **3006**	5	14	50
G15 **0007**	G15 **2007**	G15 **1007**	G15 **3007**	5	14	60
G15 **0008**	G15 **2008**	G15 **1008**	G15 **3008**	5	20	60
G15 **0009**	G15 **2009**	G15 **1009**	G15 **3009**	6	15	60
G15 **0010**	G15 **2010**	G15 **1010**	G15 **3010**	6	20	60
G15 **0011**	G15 **2011**	G15 **1011**	G15 **3011**	6	25	60
G15 **0012**	G15 **2012**	G15 **1012**	G15 **3012**	8	20	80
G15 **0013**	G15 **2013**	G15 **1013**	G15 **3013**	8	25	100
G15 **0014**	G15 **2014**	G15 **1014**	G15 **3014**	8	35	100
G15 **0015**	G15 **2015**	G15 **1015**	G15 **3015**	10	25	100
G15 **0016**	G15 **2016**	G15 **1016**	G15 **3016**	10	35	100
G15 **0017**	G15 **2017**	G15 **1017**	G15 **3017**	10	45	100
G15 **0018**	G15 **2018**	G15 **1018**	G15 **3018**	12	25	100
G15 **0019**	G15 **2019**	G15 **1019**	G15 **3019**	12	35	100
G15 **0020**	G15 **2020**	G15 **1020**	G15 **3020**	12	45	100
G15 **0021**	G15 **2021**	G15 **1021**	G15 **3021**	14	35	100
G15 **0022**	G15 **2022**	G15 **1022**	G15 **3022**	14	45	100
G15 **0023**	G15 **2023**	G15 **1023**	G15 **3023**	16	35	100
G15 **0024**	G15 **2024**	G15 **1024**	G15 **3024**	16	45	100
G15 **0025**	G15 **2025**	G15 **1025**	G15 **3025**	16	55	110
G15 **0026**	G15 **2026**	G15 **1026**	G15 **3026**	16	65	130
G15 **0027**	G15 **2027**	G15 **1027**	G15 **3027**	20	55	110
G15 **0028**	G15 **2028**	G15 **1028**	G15 **3028**	20	65	130

Machine:
CNC

Application:
For jointing, rabbeting and grooving in aluminum alloys.

Advantages:
Optimal chip removal.
RH/LH Positive: upward chip evacuation.
RH/LH Negative: downwards chip evacuation.

Macchina:
CNC

Applicazioni:
Per scanalature, e battute di leghe di alluminio.

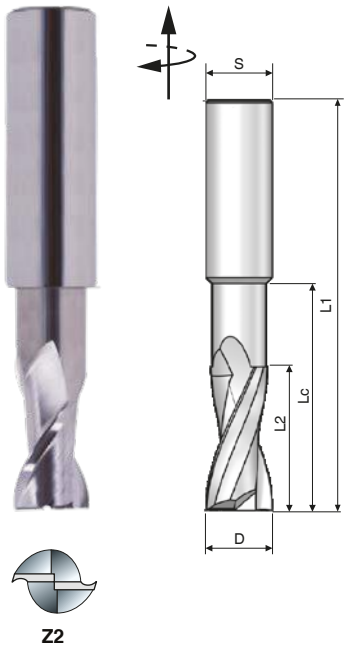
Vantaggi:
Ottima evacuazione del trucciolo.
RX/SX Positiva: evacuazione del truciolo verso l'alto.
RH/SX Negativa: evacuazione del truciolo verso il basso.

Maschine:
CNC

Anwendung:
Zum fügen, fälzen und nuten in Aluminiumlegierungen.

Vorteile:
Optimale spanentsorgung.
RH/LH Positive: Spanauswurf nach oben.
RH/LH Negative: Spanauswurf nach uten.

ALU



Z2

RH Code Pos	Ø	L2	L1	S	Lc
G16 **0001**	3	10	60	6	20
G16 **0002**	4	12	60	6	25
G16 **0003**	5	14	60	6	25
G16 **0004**	5	14	80	8	30
G16 **0005**	6	15	60	6	25
G16 **0006**	6	15	80	8	30
G16 **0007**	8	25	100	8	45
G16 **0008**	10	25	100	10	45
G16 **0009**	12	25	100	12	45
G16 **0010**	14	35	100	14	50
G16 **0011**	16	35	100	16	50
G16 **0012**	16	65	130	16	80
G16 **0013**	20	35	110	20	60
G16 **0014**	20	65	130	20	80

Machine:
CNC

Application:
For jointing, rabbeting and grooving in aluminum alloys.

Advantages:
Optimal chip removal.
RH Positive: upward chip evacuation, reinforced shank.

Macchina:
CNC

Applicazioni:
Per scanalature, e battute di leghe di alluminio.

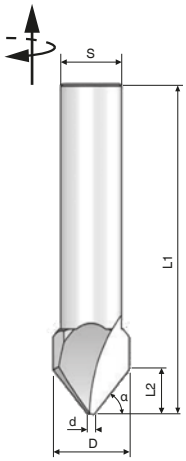
Vantaggi:
Ottima evacuazione del trucciolo.
RX Positiva: evacuazione del truciolo verso l'alto. gambo rinforzato.

Maschine:
CNC

Anwendung:
Zum Fügen, Fälzen und Nuten in Aluminiumlegierungen.

Vorteile:
Optimale Spanentsorgung.
RH Positive: spanauswurf nach oben, verstärkter Schaft.

G17 ALU



Z2

V Shaped | costruzione a V | V-Nut-Fräsungen

RH Code Pos		Ø	L2	L1	S	alpha	d
G17 **0001**	G17 **1001**	25	11,5	85	20	45	2
G17 **0002**	G17 **1002**	25	5	80	16	22,5	2
G17 **0003**	G17 **1003**	12	5	60	12	45	2

Machine:
CNC

Application:
For V-grooves in aluminum composite materials (Alucobond, Dibond, etc.)

Advantages:
Optimal cutting quality.
RH Positive

Macchina:
CNC

Applicazioni:
Per scanalature a V di materiali compositi di alluminio (Alucobond, Dibond, etc.)

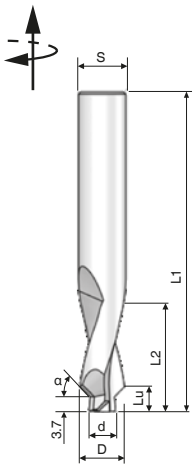
Vantaggi:
Ottima qualità di taglio.
RH Positiva

Maschine:
CNC

Anwendung:
Für V-Nut-Fräsungen in Aluminium Verbundmaterial-ien
(Alucobond, Dibond, etc.)

Vorteile:
Optimale Schnittqualität.
RH Positive

G18 ALU



Z2

Helical Shaped | ad Elica | Spiralförmiger

RH Code Pos		Ø	L2	L1	S	alpha	d	Lu
G18 **0001**	G18 **1001**	12	6,2	80	12	45	7	25

Machine:
CNC

Application:
For grooves in aluminum composite materials (Alucobond, Dibond, etc.)

Advantages:
Optimal cutting quality, helical shaped.
RH Positive

Macchina:
CNC

Applicazioni:
Per scanalature di materiali compositi di alluminio (Alucobond, Dibond, etc.)

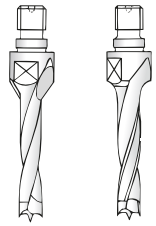
Vantaggi:
Ottima qualità di taglio, forma elicoidale.
RH Positiva

Maschine:
CNC

Anwendung:
Für Fräsungen in Aluminium Verbundmaterial-ien
(Alucobond, Dibond, etc.)

Vorteile:
Optimale Schnittqualität spiralförmiger.
RH Positive

H01 | H02 pag. 87

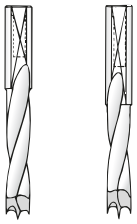


Drill for multi-boring machines

Punta per foratrici multiple

Dübellochbohrer

H03 | H04 pag. 87



Dowel drill for multi-boring machines

Punta componibile per foratrici multiple

Dübellochbohrer

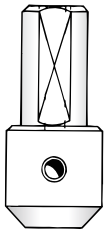
H05 pag. 88

Solid carbide twist drill for small diameter holes

Punta integrale per piccoli fori

Hwm-spiralbohrer für kleine durchmesser

H06 pag. 88

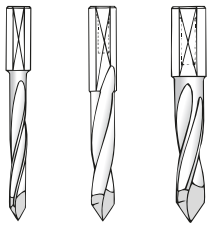


Chuck for solid carbide drills

Mandrino per punte integrali

Reduzierfutter für vollhartmetall - bohrer

H07 | H08 | H09 pag. 88



Through bore dowel drill for multi-boring machines

Punta componibile per foratrici multiple - fori passanti

Hw durchgangsbohrer

H10 pag. 89

Solid carbide through bore drill

Punta componibili in widia integrale per fori passanti

Hwm durchgangsbohrer

H11 pag. 89

Solid carbide dowel drill

Punta componibili in widia integrale

Hwm - dübelsbohrer

H12 pag. 90

Durox - hw dowel drill

Punta componibile in widia “durox” - affilatura speciale

Durox-hw dübellochbohrer

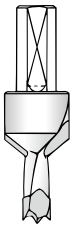
H13 pag. 90

Durox - hw through bore drill

Punta componibile in widia “durox” - affilatura speciale - passante

Zylinderkopfbohrer

H14 pag. 91

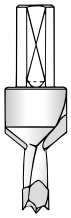


Dowel drill with countersink

Punta svasatore per foratrici multiple

Stufensenker

H15 pag. 91

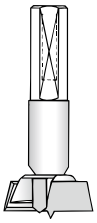


Solid carbide dowel drill

Punta componibili in widia integrale

Hwm - dübelsbohrer

H16 pag. 92

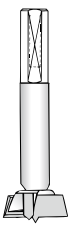


Cylinder boring bit

Punta per fori di precisione

Zylinderkopfbohrer

H17 pag. 92

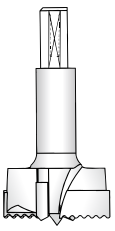


Cylinder boring bit

Punta per fori di precisione

Zylinderkopfbohrer

H18 pag. 93

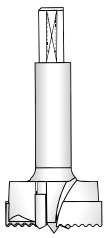


Cylinder boring bit with multiple chip breaker

Punta per fori di precisione con rompitruciolo multiplo

Zylinderkopfbohrer mitspanbrecher

H19 pag. 93

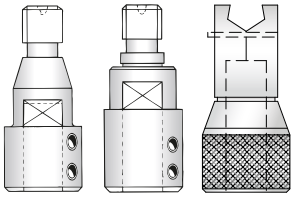


Cylinder boring bit with multiple chip breaker

Punta per fori di precisione con rompitruciolo multiplo

Zylinderkopfbohrer mitspanbrecher

H20 | H21 | H22 pag. 94



Chuck for dowel drills

Mandrino per punte componibili

Spann futter für dübellochbohrer

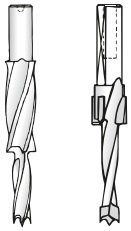
H23 pag. 94

Chuck for cylinder boring bits

Mandrino per punte levanodi

Reduzierfutter für astochbohrer

H24 | H25 pag. 94



Counterbore twist drill

Punta per doppi fori

Stufenbohrer

H26 pag. 95

HS ANUBA Step Drills Z=2

Punte per ANUBA HS Z=2

HS ANUBA Stufenbohrer Z=2

H27 pag. 95

3-Diameter HW Drills Adjustable Z=2

Punte a tre diametri regolabili hw Z=2

HW Stufenbohrer 3-Stufig Verstellbar Z=2

H28 pag. 95

HW/HS 3-Diameter Bits ANUBA Z=2

Punte a tre Diametri per ANUBA Z=2

Stufenbohrer ANUBA Z=2

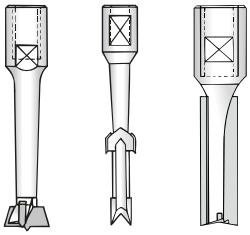
H29 pag. 95

HS ANUBA Twist Drills Z=2

Punte per ANUBA HS Z=2

HS ANUBA Stufenbohrer Z=2

H30 | H31 | H32 pag. 96

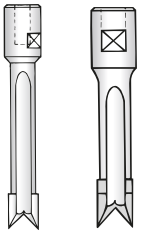


Drill for locks

Punta per cavatrici

Kunstbohrer

H33 | H34 pag. 96

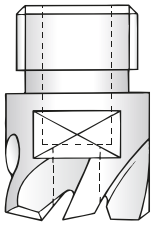


Slot mortise bits

Punta per mortasare a bocca di pesce

Pendelschlitzbohrer

H35 pag. 97

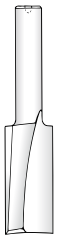


Cutter to wiredraw straight slots

Fresa per trafila bastoncini

Dübelfräser

H36 pag. 97

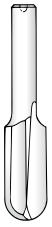


Flat bottomed drill for carving machines

Punta scolpitrice a fondo piano

Flache bohrer für schnitzmaschinen

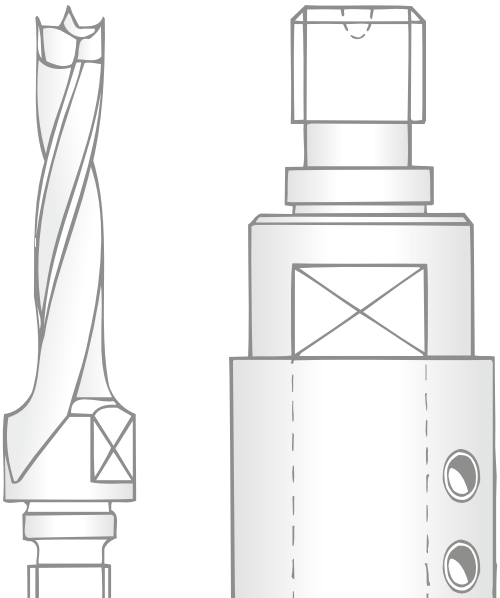
H37 pag. 97



Punta scolpitrice a fondo tondo

Punta scolpitrice a fondo tondo

Runde bohrer für schnitzmaschinen



Technical information
Nozioni tecniche
Technische Informationen

Cutting Speed

The cutting speed (Vc) is the distance the cutting edge covers per second (m/s) and it is calculated with the following formula:

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = cutting diameter [mm]
n = RPM [da k-1]
π = 3,14

Velocità di taglio

La velocità di taglio (Vc) e' la distanza percorsa da un tagliente in un secondo (m/s) e si calcola con questa formula:

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = diametro di taglio [mm]
n = RPM [da k-1]
π = 3,14

Die Schnittgeschwindigkeit

Die Schnittgeschwindigkeit (Vc) ist die zurückgelegte Dinstanz einer Schneide in einer Sekunde und wird durch die folgende Formel berechnet :

$$Vc = \frac{D \times \pi \times n}{1000 \times 60} \text{ [m/s]}$$

D = Werkzeugdurchmesser [mm]
n = RPM [da k-1]
π = 3,14

Feeding speed

The feeding speed (Vf) depends on RPM, the number of cutting edges and the chip load. To reduce the machining time an estimated Va is usually set and then increased up to the achievement of a good finish. This value can be calculated with the following formula:

$$Vf = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

Fz = chip load (feed per cutting edge)
Z = number of teeth
n = RPM [da k-1]

Velocità di avanzamento

La velocità di avanzamento (Vf) dipende dal numero di giri dell'utensile, dal numero dei taglienti e dall'avanzamento dei taglienti. Di regola per ridurre i tempi di lavorazione si imposta un valore e poi si aumenta la VA fino a che si è soddisfatti della finitura superficiale. I valori si possono calcolare con la formula:

$$Vf = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

Fz = avanzamento del tagliente (mm)
Z = number di denti
n = RPM [da k-1]

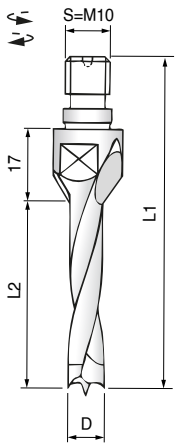
Vorschubgeschwiendigkeit

Die Vorschubgeschwiendigkeit (Vf) hängt von der Drehzahl, von der Zähnezahl and vom Zahnvor schub.
Um die Bearbeitungszeit zu verkürzen, wird Normalerweise einen Wert eingestellt und dann erhöht bis zum Erreichen eine gute Oberfläche. Man kann diese Werte durch die folgende Formel berechnen :

$$Vt = \frac{Fz \times Z \times n}{1000} \text{ [m/min]}$$

Fz = Zahnvorschub (mm)
Z = Zähnezahl
n = RPM [da k-1]

H01

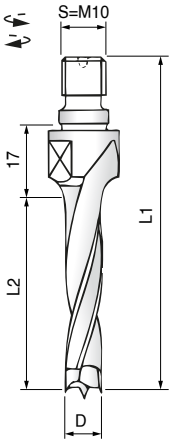


HWM

With countersink
Con svasatore
Mit Ansenkung

For: **Morbidelli, Weeke, Biesse**

H02



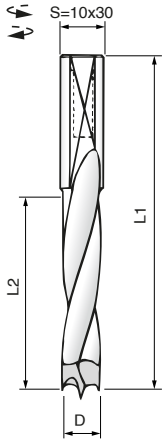
HWM

Without countersink
Senza svasatore
Ohne Ansenkung

For: **Morbidelli, Weeke, Biesse**

With countersink		Without countersink			
Code Dx	Code Sx	Code Dx	Code Sx	D	L2
H01 **0001**	H01 **1001**	H02 **0001**	H02 **1001**	5	20
H01 **0002**	H01 **1002**	H02 **0002**	H02 **1002**	5	30
H01 **0003**	H01 **1003**	H02 **0003**	H02 **1003**	5	40
H01 **0004**	H01 **1004**	H02 **0004**	H02 **1004**	5	50
H01 **0005**	H01 **1005**	H02 **0005**	H02 **1005**	6	20
H01 **0006**	H01 **1006**	H02 **0006**	H02 **1006**	6	30
H01 **0007**	H01 **1007**	H02 **0007**	H02 **1007**	6	40
H01 **0008**	H01 **1008**	H02 **0008**	H02 **1008**	6	50
H01 **0009**	H01 **1009**	H02 **0009**	H02 **1009**	8	20
H01 **0010**	H01 **1010**	H02 **0010**	H02 **1010**	8	30
H01 **0011**	H01 **1011**	H02 **0011**	H02 **1011**	8	40
H01 **0012**	H01 **1012**	H02 **0012**	H02 **1012**	8	50
H01 **0013**	H01 **1013**	H02 **0013**	H02 **1013**	10	20
H01 **0014**	H01 **1014**	H02 **0014**	H02 **1014**	10	30
H01 **0015**	H01 **1015**	H02 **0015**	H02 **1015**	10	40
H01 **0016**	H01 **1016**	H02 **0016**	H02 **1016**	10	50
H01 **0017**	H01 **1017**	H02 **0017**	H02 **1017**	12	20
H01 **0018**	H01 **1018**	H02 **0018**	H02 **1018**	12	30
H01 **0019**	H01 **1019**	H02 **0019**	H02 **1019**	12	40
H01 **0020**	H01 **1020**	H02 **0020**	H02 **1020**	12	50
H01 **0021**	H01 **1021**	H02 **0021**	H02 **1021**	14	20
H01 **0022**	H01 **1022**	H02 **0022**	H02 **1022**	14	30
H01 **0023**	H01 **1023**	H02 **0023**	H02 **1023**	14	40
H01 **0024**	H01 **1024**	H02 **0024**	H02 **1024**	14	50
H01 **0025**	H01 **1025**	H02 **0025**	H02 **1025**	16	20
H01 **0026**	H01 **1026**	H02 **0026**	H02 **1026**	16	30
H01 **0027**	H01 **1027**	H02 **0027**	H02 **1027**	16	40
H01 **0028**	H01 **1028**	H02 **0028**	H02 **1028**	16	50

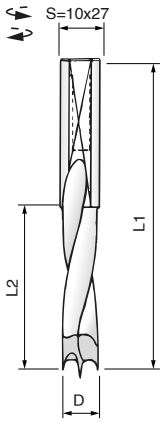
H03



HW

Code Dx	Code Sx	D	L1
H03 **0001**	H03 **1001**	4	70
H03 **0002**	H03 **1002**	5	70
H03 **0003**	H03 **1003**	6	70
H03 **0004**	H03 **1004**	7	70
H03 **0005**	H03 **1005**	8	70
H03 **0006**	H03 **1006**	9	70
H03 **0007**	H03 **1007**	10	70
H03 **0008**	H03 **1008**	11	70
H03 **0009**	H03 **1009**	12	70
H03 **0010**	H03 **1010**	13	70
H03 **0011**	H03 **1011**	14	70
H03 **0012**	H03 **1012**	15	70
H03 **0013**	H03 **1013**	16	70
H03 **0014**	H03 **1014**	5	77
H03 **0015**	H03 **1015**	6	77
H03 **0016**	H03 **1016**	8	77
H03 **0017**	H03 **1017**	10	77
H03 **0018**	H03 **1018**	12	77
H03 **0019**	H03 **1019**	14	77

H04



HW

Code Dx	Code Sx	D	L1
H04 **0001**	H04 **1001**	4	57,5
H04 **0002**	H04 **1002**	5	57,5
H04 **0003**	H04 **1003**	6	57,5
H04 **0004**	H04 **1004**	7	57,5
H04 **0005**	H04 **1005**	8	57,5
H04 **0006**	H04 **1006**	9	57,5
H04 **0007**	H04 **1007**	10	57,5
H04 **0008**	H04 **1008**	11	57,5
H04 **0009**	H04 **1009**	12	57,5
H04 **0010**	H04 **1010**	13	57,5
H04 **0011**	H04 **1011**	14	57,5
H04 **0012**	H04 **1012**	15	57,5
H04 **0013**	H04 **1013**	16	57,5

Adjustable with Screws: **5X10 - 5X15**

Viti di regolazione: **5X10 - 5X15**

Stellschrauben: **5X10 - 5X15**

Solid carbide twist drill for small diameter holes | H05
Punta integrale per piccoli fori | H05
Hwm-spiralbohrer für kleine durchmesser | H05

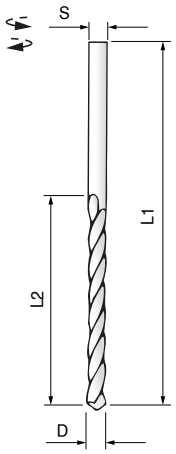
H05

Code Dx	Code Sx	D	L2	L1	S
H05 **0001**	H05 **1001**	2	22	50	2
H05 **0002**	H05 **1002**	2,5	25	50	2,5
H05 **0003**	H05 **1003**	3	25	50	3
H05 **0004**	H05 **1004**	3,5	25	55	3,5
H05 **0005**	H05 **1005**	4	25	55	4
H05 **0006**	H05 **1006**	4,5	25	55	4,5
H05 **0007**	H05 **1007**	5	30	55	5

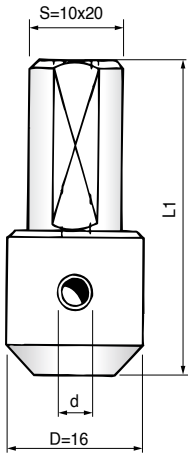
Type A
Sharpering
Affilatura
Schärfer
120°

Type B
Sharpering
Affilatura
Schärfer
Z-2+1

HWM



H06



Chuck for solid carbide drills | H06
Mandrino per punte integrali | H06
Reduzierfutter für vollhartmetall - bohrer | H06

Code Dx	Code Sx	D	L1
H06 **0001**	H06 **1001**	2	37
H06 **0002**	H06 **1002**	2,5	37
H06 **0003**	H06 **1003**	3	37
H06 **0004**	H06 **1004**	3,5	37
H06 **0005**	H06 **1005**	4	37
H06 **0006**	H06 **1006**	4,5	37
H06 **0007**	H06 **1007**	5	37
H06 **0008**	H06 **1008**	5,5	37
H06 **0009**	H06 **1009**	6	37

Through bore dowel drill for multi-boring machines | H07 | H08 | H09
Punta componibile per foratrici multiple - fori passanti | H07 | H08 | H09
Hw durchgangsbohrer | H07 | H08 | H09

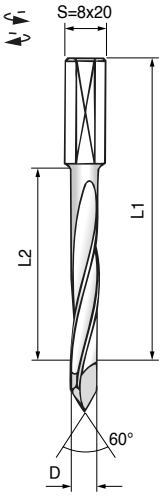
Adjustable with Screws: **5X10 - 5X15**

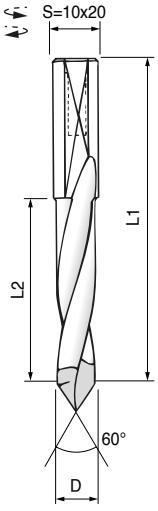
Viti di regolazione: **5X10 - 5X15**

Stellschrauben: **5X10 - 5X15**

H07

Code Dx	Code Sx	D	L2	L1
H07 **0001**	H07 **1001**	5	30	55,7
H07 **0002**	H07 **1002**	5	40	67
H07 **0003**	H07 **1003**	6	30	55,7
H07 **0004**	H07 **1004**	6	40	67
H07 **0005**	H07 **1005**	8	30	55,7
H07 **0006**	H07 **1006**	8	40	67
H07 **0007**	H07 **1007**	10	30	55,7
H07 **0008**	H07 **1008**	10	40	67
H07 **0009**	H07 **1009**	12	30	55,7
H07 **0010**	H07 **1010**	12	40	67



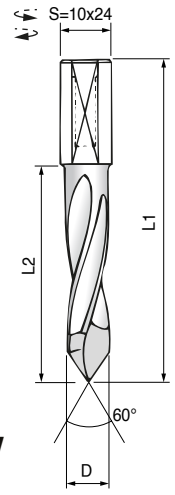


HW

H08

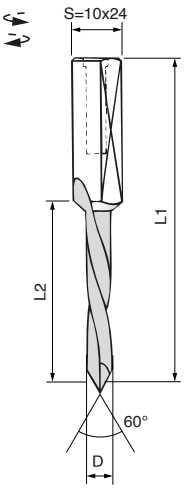
ø 10 x 20 Code Dx	ø 10 x 20 Code Sx	ø 10 x 24 Code Dx	ø 10 x 24 Code Sx	D	L2	L1
H08 **0001**	H08 **1001**	H09 **0001**	H09 **1001**	5	27	57,5
H08 **0002**	H08 **1002**	H09 **0002**	H09 **1002**	5	35	70
H08 **0003**	H08 **1003**	H09 **0003**	H09 **1003**	6	27	57,5
H08 **0004**	H08 **1004**	H09 **0004**	H09 **1004**	6	35	70
H08 **0005**	H08 **1005**	H09 **0005**	H09 **1005**	8	27	57,5
H08 **0006**	H08 **1006**	H09 **0006**	H09 **1006**	8	35	70
H08 **0007**	H08 **1007**	H09 **0007**	H09 **1007**	10	27	57,5
H08 **0008**	H08 **1008**	H09 **0008**	H09 **1008**	10	35	70
H08 **0009**	H08 **1009**	H09 **0009**	H09 **1009**	12	27	57,5
H08 **0010**	H08 **1010**	H09 **0010**	H09 **1010**	12	35	70

H09



HW

H10



HWM

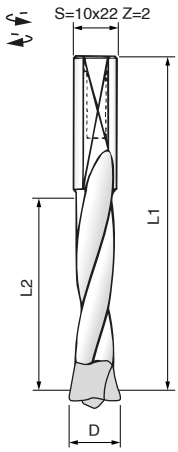
Code Dx	Code Sx	D	L2	L1
H10 **0001**	H10 **1001**	3	27	57,5
H10 **0002**	H10 **1002**	4	27	57,5
H10 **0003**	H10 **1003**	5	27	57,5
H10 **0004**	H10 **1004**	6	27	57,5
H10 **0005**	H10 **1005**	8	27	57,5
H10 **0006**	H10 **1006**	10	27	57,5
H10 **0007**	H10 **1007**	4	35	70
H10 **0008**	H10 **1008**	5	35	70
H10 **0009**	H10 **1009**	6	35	70
H10 **0010**	H10 **1010**	8	35	70
H10 **0011**	H10 **1011**	10	35	70

Adjustable with Screws: **5X10 - 5X15**

Viti di regolazione: **5X10 - 5X15**

Stellschrauben: **5X10 - 5X15**

H11



HWM

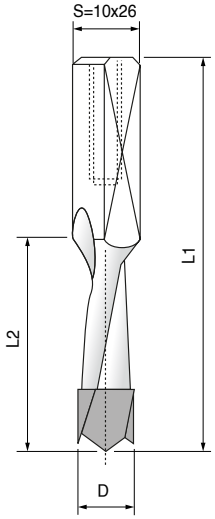
ø 10 x 22 Z=2				
Code Dx	Code Sx	D	L2	L1
H11 **0001**	H11 **1001**	3	27	57,5
H11 **0002**	H11 **1002**	4	27	57,5
H11 **0003**	H11 **1003**	5	27	57,5
H11 **0004**	H11 **1004**	6	27	57,5
H11 **0005**	H11 **1005**	8	27	57,5
H11 **0006**	H11 **1006**	10	27	57,5
H11 **0007**	H11 **1007**	4	35	70
H11 **0008**	H11 **1008**	5	35	70
H11 **0009**	H11 **1009**	6	35	70
H11 **0010**	H11 **1010**	8	35	70
H11 **0011**	H11 **1011**	10	35	70

Adjustable with Screws: **5X10 - 5X15**

Viti di regolazione: **5X10 - 5X15**

Stellschrauben: **5X10 - 5X15**

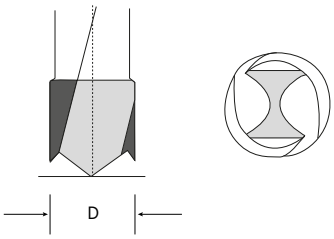
H12



HW Z 2+2

Code Dx	Code Sx	D	L1
H12 **0001**	H12 **1001**	15	57,5
H12 **0002**	H12 **1002**	16	57,5
H12 **0003**	H12 **1003**	18	57,5
H12 **0004**	H12 **1004**	20	57,5
H12 **0005**	H12 **1005**	22	57,5
H12 **0006**	H12 **1006**	24	57,5
H12 **0007**	H12 **1007**	25	57,5
H12 **0008**	H12 **1008**	26	57,5
H12 **0009**	H12 **1009**	28	57,5
H12 **0010**	H12 **1010**	30	57,5
H12 **0011**	H12 **1011**	32	57,5
H12 **0012**	H12 **1012**	35	57,5
H12 **0013**	H12 **1013**	38	57,5
H12 **0014**	H12 **1014**	40	57,5
H12 **0015**	H12 **1015**	50	57,5
H12 **0016**	H12 **1016**	60	57,5

DUROX

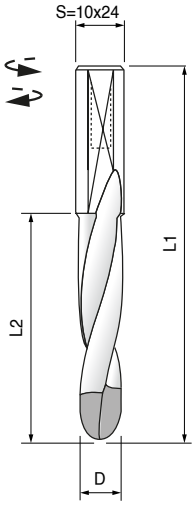


Adjustable with Screws: **5X10 - 5X15**

Viti di regolazione: **5X10 - 5X15**

Stellschrauben: **5X10 - 5X15**

H13



DUROX

Code Dx	Code Sx	D	L2	L1
H13 **0001**	H13 **1001**	5	33	57,5
H13 **0002**	H13 **1002**	6	33	57,5
H13 **0003**	H13 **1003**	8	33	57,5
H13 **0004**	H13 **1004**	10	33	57,5
H13 **0005**	H13 **1005**	12	33	57,5
H13 **0006**	H13 **1006**	5	35	70
H13 **0007**	H13 **1007**	6	35	70
H13 **0008**	H13 **1008**	8	35	70
H13 **0009**	H13 **1009**	10	35	70
H13 **0010**	H13 **1010**	12	35	70

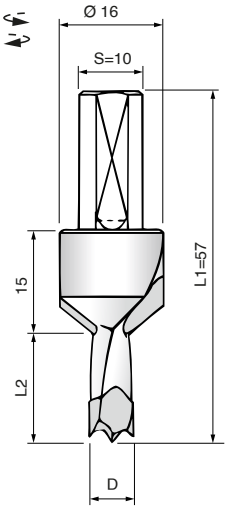
Adjustable with Screws: **5X10 - 5X15**

Viti di regolazione: **5X10 - 5X15**

Stellschrauben: **5X10 - 5X15**

Dowel drill with countersink | H14
Punta svasatore per foratrici multiple | H14
Stufensenker | H14

H14



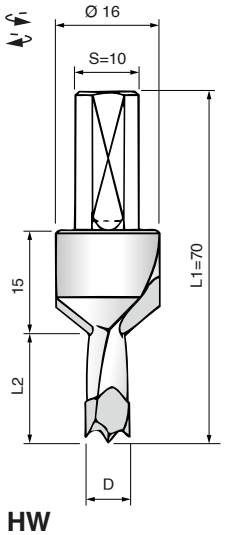
HW

Blind hole / Foro cieco / Sackloch

Code Dx	Code Sx	D	L2	L1
H14 **0001**	H14 **1001**	5	10	57
H14 **0002**	H14 **1002**	5	13	57
H14 **0003**	H14 **1003**	5	15	57
H14 **0004**	H14 **1004**	5	18	57
H14 **0005**	H14 **1005**	5	20	57
H14 **0006**	H14 **1006**	6	10	57
H14 **0007**	H14 **1007**	6	13	57
H14 **0008**	H14 **1008**	6	15	57
H14 **0009**	H14 **1009**	6	18	57
H14 **0010**	H14 **1010**	6	20	57
H14 **0011**	H14 **1011**	8	10	57
H14 **0012**	H14 **1012**	8	13	57
H14 **0013**	H14 **1013**	8	15	57
H14 **0014**	H14 **1014**	8	18	57
H14 **0015**	H14 **1015**	8	20	57
H14 **0016**	H14 **1016**	10	10	57
H14 **0017**	H14 **1017**	10	13	57
H14 **0018**	H14 **1018**	10	15	57
H14 **0019**	H14 **1019**	10	18	57
H14 **0020**	H14 **1020**	10	20	57
H14 **0021**	H14 **1021**	12	10	57
H14 **0022**	H14 **1022**	12	13	57
H14 **0023**	H14 **1023**	12	15	57
H14 **0024**	H14 **1024**	12	18	57
H14 **0025**	H14 **1025**	12	20	57
H14 **0026**	H14 **1026**	14	10	57
H14 **0027**	H14 **1027**	14	13	57
H14 **0028**	H14 **1028**	14	15	57
H14 **0029**	H14 **1029**	14	18	57
H14 **0030**	H14 **1030**	14	20	57

Solid carbide dowel drill | H15
Punta componibili in widia integrale | H15
Hwm - dübelsbohrer | H15

H15

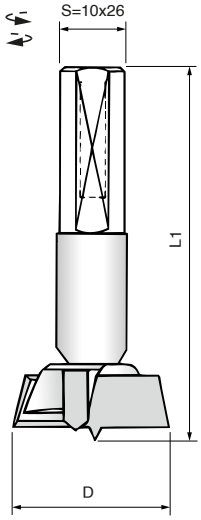


HW

Blind hole / Foro cieco / Sackloch

Code Dx	Code Sx	D	L2	L1
H15 **0001**	H15 **1001**	5	13	70
H15 **0002**	H15 **1002**	5	20	70
H15 **0003**	H15 **1003**	5	25	70
H15 **0004**	H15 **1004**	5	30	70
H15 **0005**	H15 **1005**	6	13	70
H15 **0006**	H15 **1006**	6	20	70
H15 **0007**	H15 **1007**	6	25	70
H15 **0008**	H15 **1008**	6	30	70
H15 **0009**	H15 **1009**	8	13	70
H15 **0010**	H15 **1010**	8	20	70
H15 **0011**	H15 **1011**	8	25	70
H15 **0012**	H15 **1012**	8	30	70
H15 **0013**	H15 **1013**	10	13	70
H15 **0014**	H15 **1014**	10	20	70
H15 **0015**	H15 **1015**	10	25	70
H15 **0016**	H15 **1016**	10	30	70
H15 **0017**	H15 **1017**	12	13	70
H15 **0018**	H15 **1018**	12	20	70
H15 **0019**	H15 **1019**	12	25	70
H15 **0020**	H15 **1020**	12	30	70
H15 **0021**	H15 **1021**	14	13	70
H15 **0022**	H15 **1022**	14	20	70
H15 **0023**	H15 **1023**	14	25	70
H15 **0024**	H15 **1024**	14	30	70
H15 **0025**	H15 **1025**	16	13	70
H15 **0026**	H15 **1026**	16	20	70
H15 **0027**	H15 **1027**	16	25	70
H15 **0028**	H15 **1028**	16	30	70

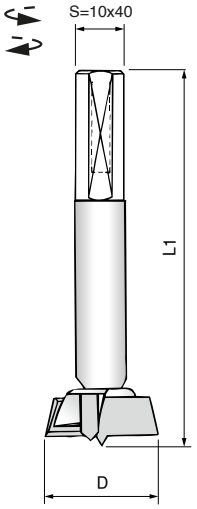
H16



HW Z 2+2

Code Dx	Code Sx	D	L1
H16 **0001**	H16 **1001**	15	57,5
H16 **0002**	H16 **1002**	16	57,5
H16 **0003**	H16 **1003**	18	57,5
H16 **0004**	H16 **1004**	20	57,5
H16 **0005**	H16 **1005**	22	57,5
H16 **0006**	H16 **1006**	24	57,5
H16 **0007**	H16 **1007**	25	57,5
H16 **0008**	H16 **1008**	26	57,5
H16 **0009**	H16 **1009**	28	57,5
H16 **0010**	H16 **1010**	30	57,5
H16 **0011**	H16 **1011**	32	57,5
H16 **0012**	H16 **1012**	35	57,5
H16 **0013**	H16 **1013**	38	57,5
H16 **0014**	H16 **1014**	40	57,5
H16 **0015**	H16 **1015**	50	57,5
H16 **0016**	H16 **1016**	60	57,5

H17

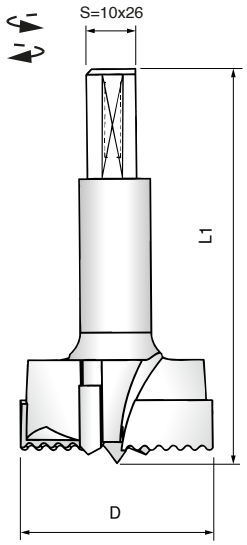


HW Z 2+2

Code Dx	Code Sx	D	L1
H17 **0001**	H17 **1001**	15	70
H17 **0002**	H17 **1002**	16	70
H17 **0003**	H17 **1003**	18	70
H17 **0004**	H17 **1004**	20	70
H17 **0005**	H17 **1005**	22	70
H17 **0006**	H17 **1006**	24	70
H17 **0007**	H17 **1007**	25	70
H17 **0008**	H17 **1008**	26	70
H17 **0009**	H17 **1009**	28	70
H17 **0010**	H17 **1010**	30	70
H17 **0011**	H17 **1011**	32	70
H17 **0012**	H17 **1012**	35	70
H17 **0013**	H17 **1013**	38	70
H17 **0014**	H17 **1014**	40	70
H17 **0015**	H17 **1015**	50	70
H17 **0016**	H17 **1016**	60	70
H17 **0017**	H17 **1017**	15	77
H17 **0018**	H17 **1018**	16	77
H17 **0019**	H17 **1019**	18	77
H17 **0020**	H17 **1020**	20	77
H17 **0021**	H17 **1021**	22	77
H17 **0022**	H17 **1022**	24	77
H17 **0023**	H17 **1023**	25	77
H17 **0024**	H17 **1024**	26	77
H17 **0025**	H17 **1025**	28	77
H17 **0026**	H17 **1026**	30	77
H17 **0027**	H17 **1027**	32	77
H17 **0028**	H17 **1028**	35	77
H17 **0029**	H17 **1029**	38	77
H17 **0030**	H17 **1030**	40	77

Cylinder boring bit with multiple chip breaker | H18
Punta per fori di precisione con rompitruciolo multiplo | H18
Zylinderkopfbohrer mitspanbrecher | H18

H18



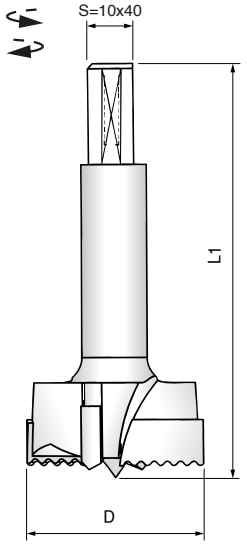
HW Z 2+2

With chip breaker
Con rompitruciolo
Mit spanbreker

Code Dx	Code Sx	D	L1
H18 **0001**	H18 **1001**	15	57,5
H18 **0002**	H18 **1002**	16	57,5
H18 **0003**	H18 **1003**	18	57,5
H18 **0004**	H18 **1004**	20	57,5
H18 **0005**	H18 **1005**	22	57,5
H18 **0006**	H18 **1006**	24	57,5
H18 **0007**	H18 **1007**	25	57,5
H18 **0008**	H18 **1008**	26	57,5
H18 **0009**	H18 **1009**	28	57,5
H18 **0010**	H18 **1010**	30	57,5
H18 **0011**	H18 **1011**	32	57,5
H18 **0012**	H18 **1012**	35	57,5
H18 **0013**	H18 **1013**	38	57,5
H18 **0014**	H18 **1014**	40	57,5
H18 **0015**	H18 **1015**	50	57,5
H18 **0016**	H18 **1016**	60	57,5

Cylinder boring bit with multiple chip breaker | H19
Punta per fori di precisione con rompitruciolo multiplo | H19
Zylinderkopfbohrer mitspanbrecher | H19

H19



HW Z 2+2

With chip breaker
Con rompitruciolo
Mit spanbreker

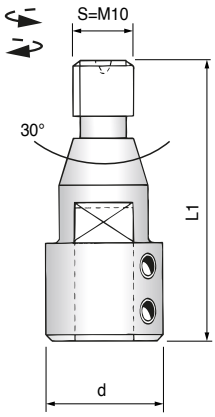
Code Dx	Code Sx	D	L1
H19 **0001**	H19 **1001**	15	70
H19 **0002**	H19 **1002**	16	70
H19 **0003**	H19 **1003**	18	70
H19 **0004**	H19 **1004**	20	70
H19 **0005**	H19 **1005**	22	70
H19 **0006**	H19 **1006**	24	70
H19 **0007**	H19 **1007**	25	70
H19 **0008**	H19 **1008**	26	70
H19 **0009**	H19 **1009**	28	70
H19 **0010**	H19 **1010**	30	70
H19 **0011**	H19 **1011**	32	70
H19 **0012**	H19 **1012**	35	70
H19 **0013**	H19 **1013**	38	70
H19 **0014**	H19 **1014**	40	70
H19 **0015**	H19 **1015**	50	70
H19 **0016**	H19 **1016**	60	70
H19 **0017**	H19 **1017**	15	77
H19 **0018**	H19 **1018**	16	77
H19 **0019**	H19 **1019**	18	77
H19 **0020**	H19 **1020**	20	77
H19 **0021**	H19 **1020**	22	77
H19 **0022**	H19 **1022**	24	77
H19 **0023**	H19 **1023**	25	77
H19 **0024**	H19 **1024**	26	77
H19 **0025**	H19 **1025**	28	77
H19 **0026**	H19 **1026**	30	77
H19 **0027**	H19 **1027**	32	77
H19 **0028**	H19 **1028**	35	77
H19 **0029**	H19 **1029**	38	77
H19 **0030**	H19 **1030**	40	77

Chuck for dowel drills | H20 | H21 | H22
Mandrino per punte componibili | H20 | H21 | H22
Spann futter für dübellochbohrer | H20 | H21 | H22

Code Dx	Code Sx	d	L1
H20 **0001**	H20 **1001**	8	47
H20 **0002**	H20 **1002**	10	47

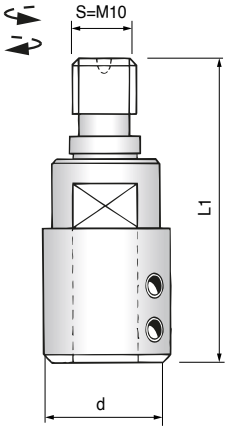
Code Dx	Code Sx	d	L1
H21 **0001**	H21 **1001**	8	40
H21 **0002**	H21 **1002**	10	40

Code Dx	d
H22 **0001**	10



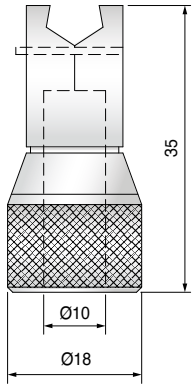
H20

for: **Alberti, Vitap, Busellato**



H21

for: **Morbidelli**

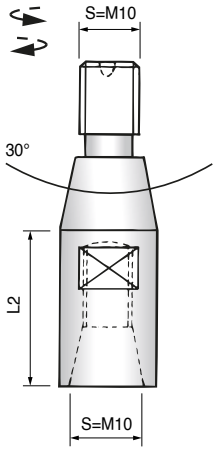


H22

for: **Busellato**

Chuck for cylinder boring bits | H23
Mandrino per punte levanodi | H23
Reduzierfutter für astochbohrer | H23

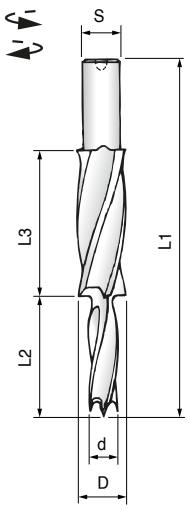
H23



for: **Alberti, Vitap, Busellato**

Code Dx	Code Sx	L2
H23 **0001**	H23 **1001**	15
H23 **0002**	H23 **1002**	20
H23 **0003**	H23 **1003**	25

Counterbore twist drill | H24 | H25
Punta per doppi fori | H24 | H25
Stufenbohrer | H24 | H25

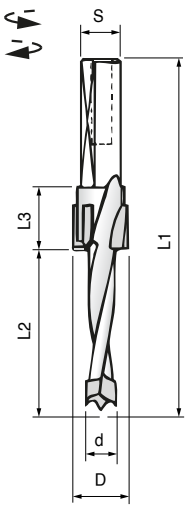


H24

WS

WS Code Dx	WS Code Sx	HW Code Dx	HW Code Sx	D	L1
H24 **0001**	H24 **1001**	H25 **0001**	H25 **1001**	15	130
H24 **0002**	H24 **1002**	H25 **0002**	H25 **1002**	20	130
H24 **0003**	H24 **1003**	H25 **0003**	H25 **1003**	25	130
H24 **0004**	H24 **1004**	H25 **0004**	H25 **1004**	30	130
H24 **0005**	H24 **1005**	H25 **0005**	H25 **1005**	40	130
H24 **0006**	H24 **1006**	H25 **0006**	H25 **1006**	50	130

H25

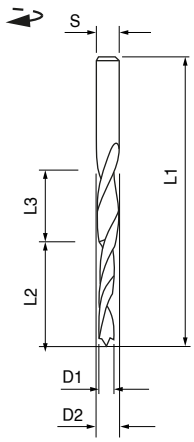


HW

HS ANUBA Step Drills Z=2 I H26
Punte per ANUBA HS Z=2 I H26
HS ANUBA Stufenbohrer Z=2 I H26

H26

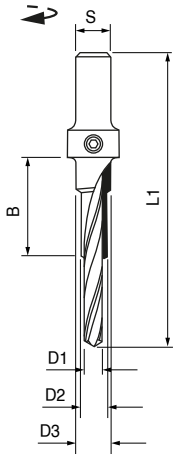
Code Dx	D1	D2	B	B1	L1	S	Anuba
H26 **0001**	5,4	6,5	20	50	80	6,5	13
H26 **0002**	5,7	6,75	20	65	105	6,75	13
H26 **0003**	6	7	20	50	80	7	14
H26 **0004**	6,25	7,25	25	60	90	7,25	14
H26 **0005**	6,25	7,25	20	65	105	7,25	14
H26 **0006**	6,5	7,75	25	60	90	7,25	16
H26 **0007**	6,5	7,75	20	70	110	7,25	16
H26 **0008**	6,7	8,5	25	60	90	8,5	18
H26 **0009**	6,7	8,5	25	70	110	8,5	18



Shank througout cylindrical
Attacco nominale
Schaft durchgangs cylindrisch

3-Diameter HW Drills Adjustable Z=2 | H27
Punte a tre diametri regolabili hw Z=2 | H27
HW Stufenbohrer 3-Stufig Verstellbar Z=2 | H27

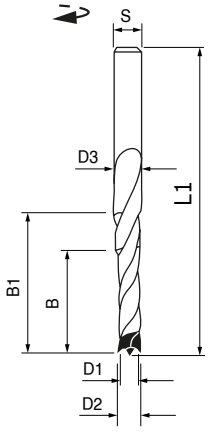
H27



Code Dx	D1	D2	D3	B	L1	S
H27 **0001**	5	8,5	11,5	25	100	10
H27 **0002**	5	**HS Spare drills**				

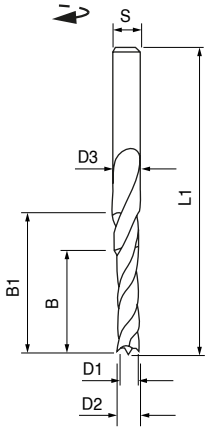
HW/HS 3-Diameter Bits ANUBA Z=2 | H28
Punte a tre Diametri per ANUBA Z=2 | H28
Stufenbohrer ANUBA Z=2 | H28

H28



HW

H28

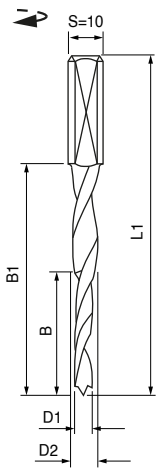


HS

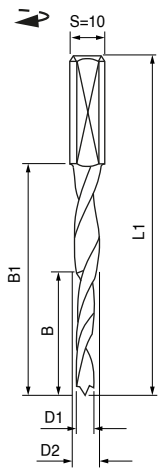
Code Dx	D1	D2	D3	B	B1	L	Mat.	S
H28 **0001**	5,5	7,3	10	35	56	138	HW	10x50
H28 **0002**	5,5	7,3	10	35	56	138	HS	10x50
H28 **0003**	5,5	7,3	10	40	60	120	HS	10x40

HS ANUBA Twist Drills Z=2 | H29
Punte per ANUBA HS Z=2 | H29
HS ANUBA Stufenbohrer Z=2 | H29

H29



H29

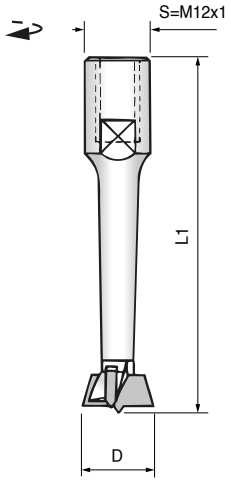


Shank: Ø 10
Machine: **Masterwood**

Anuba SFS INTECK

Code Dx	D1	D2	B1	B	L	S	Anuba
H29 **0001**		5,2	52		132	5,2	9
H29 **0002**		5,7	57		139	5,7	11
H29 **0003**	5,3	6,7	63	12	148	6,7	13
H29 **0004**	5,8	7,2	69	13	156	7,2	14
H29 **0005**	6,3	7,7	75	14	165	7,7	16
H29 **0006**	7,2	8,6	81	14	175	8,6	18
H29 **0007**	7,4	8,8	81	16	175	8,8	20
H29 **0008**	8,8	10,2	87	23	184	10,2	22

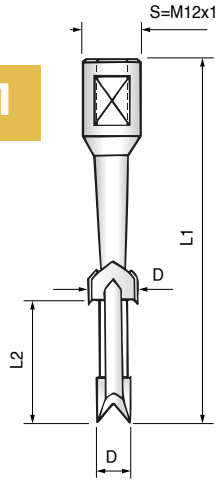
H30



Code RH	D	L1
H30 **0001**	10	105
H30 **0002**	12	105
H30 **0003**	15	105
H30 **0004**	17	105
H30 **0005**	18	105
H30 **0006**	20	105

HW Z 2+2

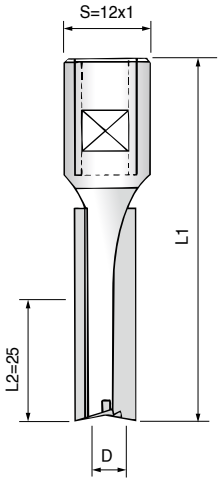
H31



Code	D	L1
H31 **0001**	10/18	155
H31 **0002**	10/20	155
H31 **0003**	10/22	155
H31 **0004**	11/19	155
H31 **0005**	11/22	155
H31 **0006**	12/19	155
H31 **0007**	12/22	155

WS Z2

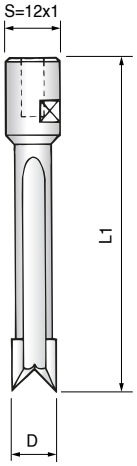
H32



Code	D	L1
H32 **0001**	10	60
H32 **0002**	12	60
H32 **0003**	14	60
H32 **0004**	16	60
H32 **0005**	18	60
H32 **0006**	20	60
H32 **0007**	22	60
H32 **0008**	24	60
H32 **0009**	26	60
H32 **0010**	28	60
H32 **0011**	30	60

HW Z2

H33

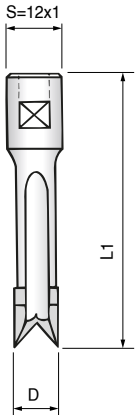


WS Z2 Code	HW Z2 Code	D	L1
H33 **0001**	H34 **0001**	10	105
H33 **0002**	H34 **0002**	12	105
H33 **0003**	H34 **0003**	15	105
H33 **0004**	H34 **0004**	17	105
H33 **0005**	H34 **0005**	18	105
H33 **0006**	H34 **0006**	20	105

WS Z2

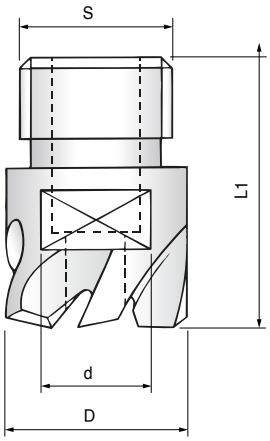
HW Z2

H34



Cutter to wiredraw straight slots | H35
Fresa per trafila bastoncini | H35
Dübelfräser | H35

H35



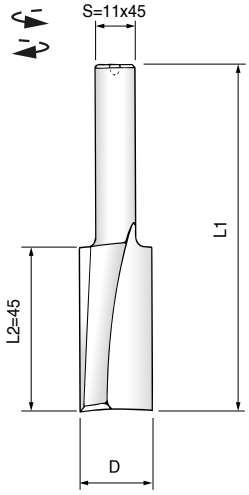
HS Z5

Code	d	L1	S
H35 **0001**	6	25	D21x14THRx1'
H35 **0002**	6,2	25	D21x14THRx1'
H35 **0003**	8	25	D21x14THRx1'
H35 **0004**	8,2	25	D21x14THRx1'
H35 **0005**	10	25	D21x14THRx1'
H35 **0006**	10,2	25	D21x14THRx1'
H35 **0007**	12	25	D21x14THRx1'
H35 **0008**	12,2	25	D21x14THRx1'
H35 **0009**	14,2	32	D21x14THRx1'
H35 **0010**	16,2	32	D21x14THRx1'
H35 **0011**	18,2	32	D21x14THRx1'
H35 **0012**	20,2	32	D21x14THRx1'

*D on request

Flat bottomed drill for carving machines | H36
Punta scolpitrice a fondo piano | H36
Flache bohrer für schnitzmaschinen | H36

H36



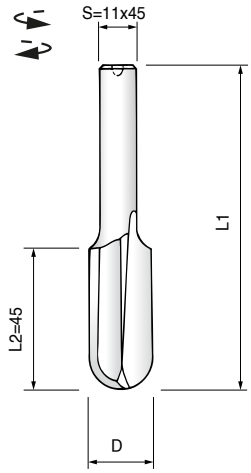
HS

Code Dx	Code Sx	D	L1
H36 **0001**	H36 **1001**	2	90
H36 **0002**	H36 **1002**	3	90
H36 **0003**	H36 **1003**	4	90
H36 **0004**	H36 **1004**	5	90
H36 **0005**	H36 **1005**	6	90
H36 **0006**	H36 **1006**	8	90
H36 **0007**	H36 **1007**	10	90
H36 **0008**	H36 **1008**	12	90
H36 **0009**	H36 **1009**	14	90
H36 **0010**	H36 **1010**	16	90
H36 **0011**	H36 **1011**	18	90
H36 **0012**	H36 **1012**	20	90
H36 **0013**	H36 **1013**	22	90
H36 **0014**	H36 **1014**	24	90

Up to Ø 8 Z1

Round bottomed drill for carving machines | H37
Punta scolpitrice a fondo tondo | H37
Runde bohrer für schnitzmaschinen | H37

H37



HS

Code Dx	Code Sx	D	L1
H37 **0001**	H37 **1001**	2	90
H37 **0002**	H37 **1002**	3	90
H37 **0003**	H37 **1003**	4	90
H37 **0004**	H37 **1004**	5	90
H37 **0005**	H37 **1005**	6	90
H37 **0006**	H37 **1006**	8	90
H37 **0007**	H37 **1007**	10	90
H37 **0008**	H37 **1008**	12	90
H37 **0009**	H37 **1009**	14	90
H37 **0010**	H37 **1010**	16	90
H37 **0011**	H37 **1011**	18	90
H37 **0012**	H37 **1012**	20	90
H37 **0013**	H37 **1013**	22	90
H37 **0014**	H37 **1014**	24	90

Up to Ø 8 Z1

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