freud

Your productive partner

A wide range of top performing products
An extensive variety of precise and high-tech tools.

- Circular Saw Blades: the biggest manufacturer of high quality saw blades worldwide.
- Cutterheads and Brazed Cutters: freud sets the highest standard in the wood industry and window tooling.
- Knives, Spare parts and Accessories: in-house production of all Carbide inserts, unique in the world.
- Drilling, Routing & CNC Tools: a complete range for all applications.

A wide range of industrial cutting tools.

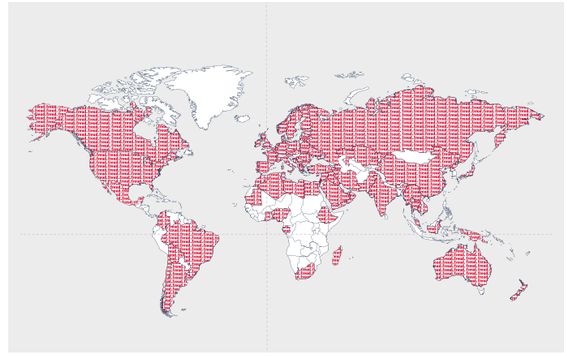
High quality solutions for your applications
Engineering competence and manufacturing know-how.

- Customized-to-Order: products to match special production needs.
- Enhanced technologies: Silver I.C.E., Perma-SHIELD, EXrim, ISOprofil, High Speed ISOprofil and Split-Edge.

Advanced engineering and technology.

Global services wherever you are
A belief in “think global and act local”.

- Our worldwide subsidiaries and partners in over 90 countries ensure an extensive service and distribution network.
- Since 2009 freud is part of Bosch group, leveraging the global network of the world leading technology supplier.

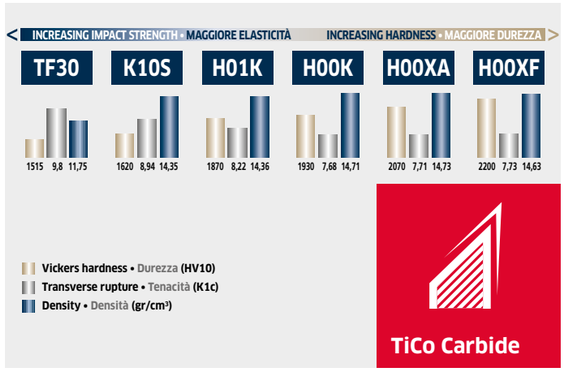


Worldwide presence.

Advanced technology

In-house Tungsten Carbide (HW) production

- TiCo Carbide is a specially formulated, highly compact Titanium Cobalt Carbide, engineered and manufactured in-house by freud.
- Special HW grades are mixed based on application needs and checked according to strict quality criteria.
- Special tooth geometries are developed for perfect cuts.



Overview of different standard HW grades.

Reduced friction: Silver I.C.E. Coating

- A high performing and anticorrosive coating to maintain the blade temperature low during the working process.
- The non-stick feature improves chip ejection and notably reduces resin build-up, significantly reducing friction and extending the life time of the blade.

Silver I.C.E. coating.

Improved precision: Anti-vibration slots for the perfect finishing

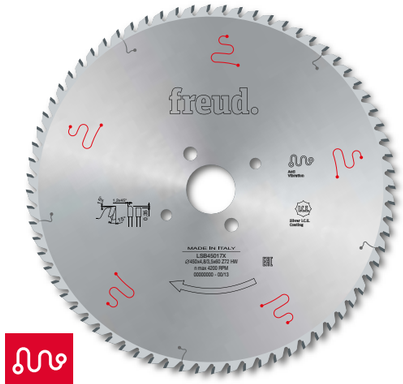
- Body slots laser cut with freud innovative technology.
- Also available with thermoplastic polyurethane filling, that considerably reduces vibration and minimizes noise.

Section view of the antivibration slots.

LSB X

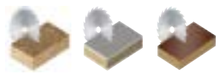
HW - Panel sizing: saw blades for chipboard and MDF

To size single or multiple panels.
Machines: Horizontal panel sizing machines with scorer.
Features: Flat-triple chip tooth with positive cutting angle. **The LSB Extended deliver increased durability per sharpening cycle, due to the latest improvements in the production process. Advanced technology implementation to deliver a superior performance in the panel sizing applications.**
Material: Chipboard or MDF laminated with melamine or plastic materials.

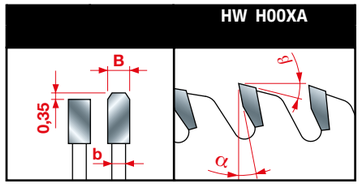


Anti-vibration

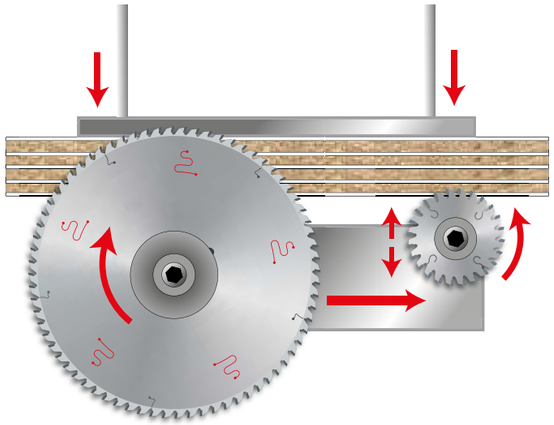
Silver I.C.E. Coating



HW H00XA



Tooth features



D mm	B mm	b mm	d mm	Z	α	β	NL FT	Machines		Code	SAP
300	4,4	3,0	80	60	15°	15°	4/9/100+2/14/110	SCM		**LSB30004X**	F03FS09157
350	4,4	3,2	30	72	15°	15°	2/10/60	Panhans, Scheer		**LSB35003X**	F03FS07630
350	4,4	3,2	60	72	15°	15°	2/14/100	Holzma		**LSB35004X**	F03FS07636
350	4,4	3,2	75	72	15°	15°		Giben, Hansol Machine		**LSB35008X**	F03FS07634
350	4,4	3,2	80	72	15°	15°	4/9/100 + 2/9/110 + 2/14/110	Gabbiani		**LSB35005X**	F03FS07635
380	4,8	3,5	60	72	15°	15°	2/14/100	Holzma		**LSB38004X**	F03FS07632
380	4,4	3,2	80	72	15°	15°	4/9/100 + 2/9/110 + 2/14/110	Gabbiani		**LSB38010X**	F03FS07808

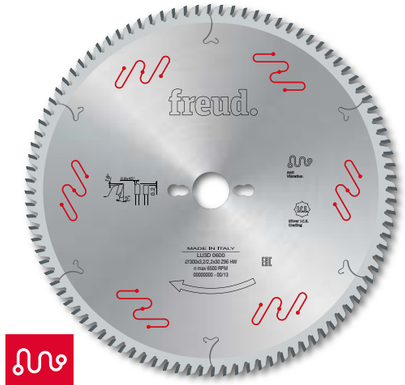
	D mm	B mm	b mm	d mm	Z	α	β	NL	Machines		Code	SAP
new	320	4,4	3,2	80	60	10°	15°	4/9/100+2/9/110+2/14/110			**LSB32006**	F03FS07907

LU3D

HW - Panel sizing: saw blades for chipboard and MDF

To size bilaminated panels with the employment of the scoring saw blade, in detail melamine-coated panels, with good finishing and long cutting life.
Machines: Circular saws, horizontal panel sizing machines.
Features: Flat-triple chip tooth with positive cutting angle.
Material: Bilaminated panels.

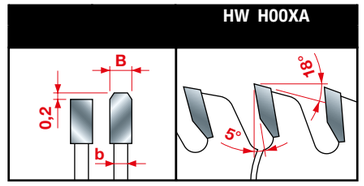
FT01: 2/7/42 + 2/9/46,4 + 2/10/60
FT02: 2/9/46,4 + 2/10/60



Anti-vibration

Silver I.C.E. Coating

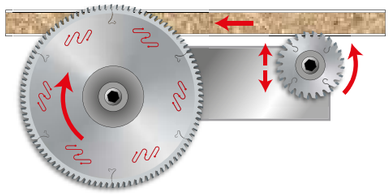
HW H00XA



Tooth features

Hook angle 5° for cutting heights up to 30 mm

D mm	B mm	b mm	d mm	Z	α	NL		Code	SAP
250	3,2	2,2	30	80	5°	FT01		**LU3D 0400**	F03FS05088
300	3,2	2,2	30	96	5°	FT01		**LU3D 0600**	F03FS05093
350	3,5	2,5	30	108	5°	FT02		**LU3D 0900**	F03FS05098

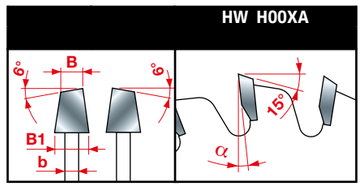


	Ultimate	High	Good
Wood composites	●		
Veneered	●		
Laminates	●		

LI25M

HW - Panel sizing: conical scoring for chipboard and MDF

To score the coating on bilaminated panels.
Machines: Horizontal panel sizing machines that allow vertical adjustment of the scorer in relation to the panel sizing saw blade kerf.
Features: ATB 6° tooth with positive cutting angle.
Material: Bilaminated chipboard or MDF.

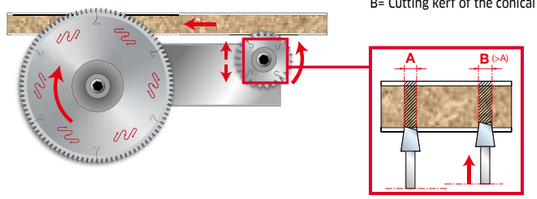


Tooth features

Silver I.C.E. Coating

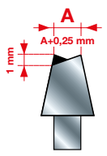
* Dedicated laser marking

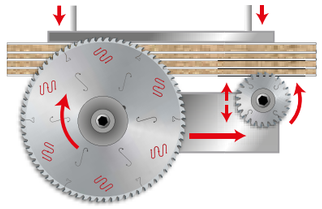
D mm	B - B1 mm	b mm	d mm	Z	α	NL	Machines	Code	SAP
120	3,1 - 4,3	2,2	20	24	0°			**LI25M31EA3**	F03FS02620
120	3,1 - 4,3	2,2	22	24	0°			**LI25M31EB3**	F03FS02622
120	3,4 - 4,6	2,2	20	24	0°		SCM	**LI25M34EA3**	F03FS02632
125	3,1 - 4,3	2,2	20	24	0°		Panhans-Schelling	**LI25M31FA3**	F03FS02623
160	4,3 - 5,5	3,2	55	36	8°	3/6/84 + 3/7/66	Gabbiani - SCM	**LI25M43LG3**	F03FS02657
180	4,3 - 5,5	3,2	45	36	8°		Holzma	**LI25M43NE3**	F03FS02664
180	4,7 - 5,9	3,5	45	36	8°		Holzma	**LI25M47NE3**	F03FS02715
200	4,3 - 5,5	3,2	45	36	8°		Holzma, Hyundai Sangi	**LI25M43PE3**	F03FS02676
200	4,3 - 5,5	3,2	80	36	8°	2/14/110	Gabbiani	**LI25M43PL3**	F03FS02683
300	4,3 - 5,5	3,2	80	72	12°	2/14/110		**LI25M43RL3**	F03FS02691



A= Cutting kerf of main saw blade.
B= Cutting kerf of the conical scorer, which can be adjusted vertically.

For each 1 mm height displacement the cut becomes 0,25 mm wider.





LI16M

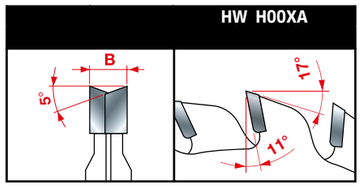
HW - Panel sizing: adjustable scoring for chipboard and MDF

To score the coating on bilaminated panels.
Machines: Horizontal panel sizing machines that do not allow the adjustment of the scoring depth. Max scoring depth 2 mm.
Features: ATB tooth 5° with positive cutting angle.
Material: Bilaminated chipboard or MDF.

D mm	B mm	d mm	Z	Machines	Code	SAP
120	2,8-3,6	20	12+12	Holzher - SCM	**LI16M AA3**	F03FS02485
125	2,8-3,6	20	12+12	Paoloni	**LI16M FA3**	F03FS02500

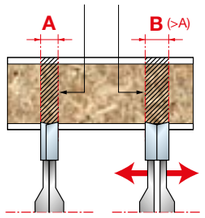
* Thickness adjustment controlled by the machines, no spacers required.

Silver I.C.E. Coating



Tooth features

A= Cutting kerf of main saw blade.
B= Cutting kerf of the adjustable scorer.



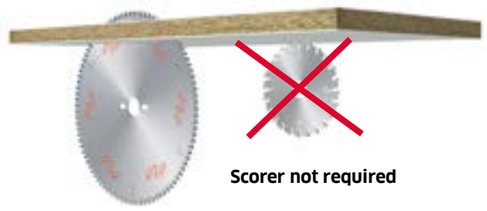
LU3A

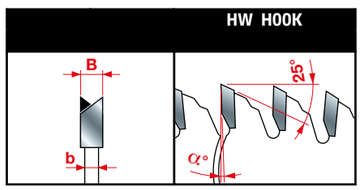
HW - Universal saw blades to cut bilaminated panels

To size bilaminated panels, with perfect finishing on both sides without the employment of the scoring saw blade.
Machines: Circular vertical saws, panel-sizing machines, portable machines.
Features: ATB 38° tooth, with variable cutting angle according to the diameter.
Material: Bilaminated panels with extremely fine coatings, veneered panels.

FT01: 2/7/42 + 2/9/46,4 + 2/10/60

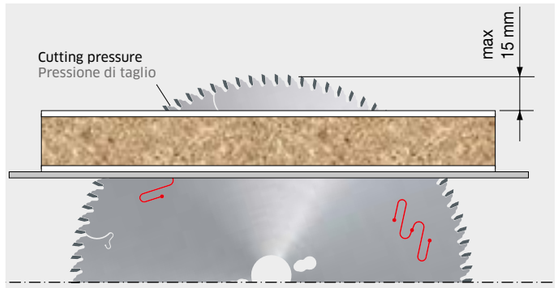
D mm	B mm	b mm	d mm	Z	α	NL	Code	SAP
250	3,2	2,2	30	80	-2°	FT01	**LU3A 0200**	F03FS05061
300	3,2	2,2	30	96	2°	FT01	**LU3A 0300**	F03FS05064





Tooth features

Working with spindle under the working plane



With positive hook angle, the cutting pressure acts over the working plane.
Con mordente positivo la pressione di taglio agisce sul piano di appoggio.

	Ultimate	High	Good
Wood composites	●		
Laminates	●		

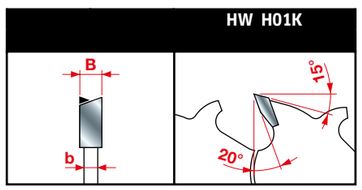
LG1C

HW - Solid wood ripping

Saw blades suitable for ripping.
Machines: Table saws, multiripping machines.
Features: ATB 10° tooth with positive cutting angle.
Material: Soft and hard solid wood, also with loose knots.

FT01: 2/7/42 + 2/9/46,4 + 2/10/60
FT02: 2/9/46,4 + 2/10/60

D mm	B mm	b mm	d mm	Z	NL FT	Code Codice	SAP SAP
250	3,2	2,2	30	22	FT01	**LG1C 0100**	F03FS07559
300	3,2	2,2	30	26	FT01	**LG1C 0400**	F03FS07560
350	3,5	2,5	30	30	FT02	**LG1C 1000**	F03FS07561



Tooth features

	Ultimate Eccellente	High Ottimo	Good Buono
Ripping of softwood		●	
Ripping of hardwood		●	

LU2A

HW - Universal saw blades to cut bilaminated panels

Saw blades suitable to ripping and crosscutting.
Machines: Circular saws, portable machines.
Features: ATB tooth with positive cutting angle.
Material: Soft and hard solid wood, unprocessed chipboard and plywood.

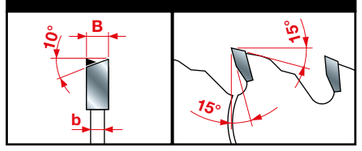
FT01: 2/7/42 + 2/9/46,4 + 2/10/60
FT02: 2/9/46,4 + 2/10/60

D mm	B mm	b mm	d mm	Z	NL		Code	SAP
250	3,2	2,2	30	40	FT01		**LU2A 1700**	F03FS04830
300	3,2	2,2	30	48	FT01		**LU2A 2100**	F03FS04840
350	3,5	2,5	30	54	FT02		**LU2A 2800**	F03FS04849

Anti-vibration

Silver I.C.E. Coating

HW H01K



Tooth features

	Ultimate Eccellente	High Ottimo	Good Buono
Ripping of solid wood		●	
Crosscutting of solid wood	●		
Wood composites		●	

LU2B

HW - Universal saw blades to cut bilaminated panels

Saw blades suitable for ripping and crosscutting.
Machines: Circular saws, portable machines.
Features: ATB 15° tooth with positive cutting angle.
Material: Soft, hard and exotic solid wood, unprocessed chipboard and plywood.

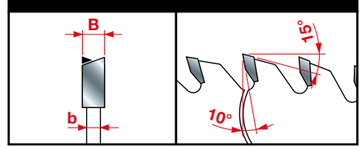
FT01: 2/7/42 + 2/9/46,4 + 2/10/60
FT02: 2/9/46,4 + 2/10/60

D mm	B mm	b mm	d mm	Z	NL		Code	SAP
300	3,2	2,2	30	72	FT01		**LU2B 1100**	F03FS04887
350	3,5	2,5	30	84	FT02		**LU2B 1600**	F03FS04895

Anti-vibration

Silver I.C.E. Coating

HW H00K



Tooth features

	Ultimate	High	Good
Ripping of solid wood		●	
Crosscutting of solid wood	●		
Wood composites		●	

LU5A

HW - Saw blades to cut non-ferrous metals
HW - Lame per il taglio di metalli non ferrosi

To cut solid drawn products with a thickness between 2 and 10 mm.
Machines: Single or double miter saws with mechanical clamping of the piece.
Features: Flat-triple chip tooth with positive cutting angle.
Material: Aluminum and non-ferrous metals.

Per il taglio di trafilati pieni con spessore da 2 a 10 mm.
Macchine: Troncatrici singole o doppie con bloccaggio meccanico del pezzo.
Caratteristiche: Dentatura piano-trapezoidale con angolo di taglio positivo.
Materiale: Alluminio e metalli non ferrosi.

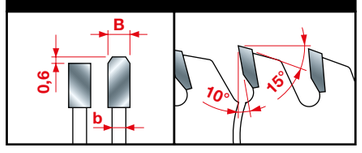
FT02: 2/9/46,4 + 2/10/60

D mm	B mm	b mm	d mm	Z	NL FT	Code Codice	SAP SAP
500	4,0	3,2	32	120	2/11/63	**LU5A 2600**	F03FS05214

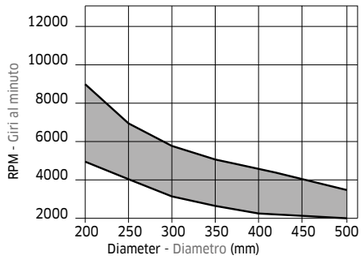
Anti-vibration

Silver I.C.E. Coating

HW H01K



Tooth features - Caratteristiche del dente



Minimum and maximum RPM based on the blade diameter.
Fascia del N. giri minimo e massimo consigliati in funzione del diametro della lama.

	Ultimate Eccellente	High Ottimo	Good Buono
Non-ferrous metals Metalli non ferrosi	●		

LU5C

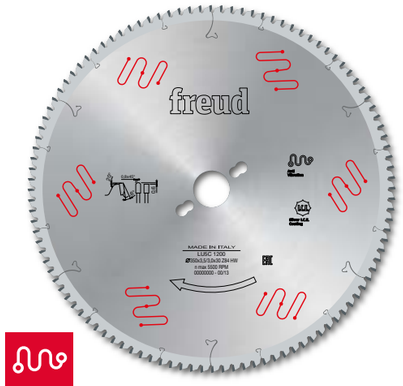
HW - Saw blades to cut non-ferrous metals
HW - Lame per il taglio di metalli non ferrosi

To cut solid drawn products whose thickness exceeds 3 mm. It is recommendable to use it with the saw blade over the workpiece to be cut.
Machines: Miter saws with manual or mechanical clamping of the piece.
Features: Flat-triple chip tooth with negative cutting angle.
Material: Aluminum and non-ferrous metals.

Per il taglio di trafilati pieni con spessore oltre 3 mm. Si consiglia l'uso con la lama sopra il pezzo da tagliare.
Macchine: Troncatrici con bloccaggio manuale o meccanico del pezzo.
Caratteristiche: Dentatura piano-trapezoidale con angolo di taglio negativo.
Materiale: Alluminio e metalli non ferrosi.

FT01: 2/7/42 + 2/9/46,4 + 2/10/60
FT02: 2/9/46,4 + 2/10/60

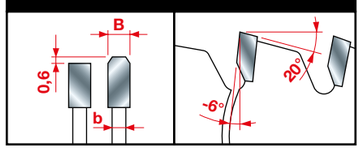
D mm	B mm	b mm	d mm	Z	NL FT	Code Codice	SAP SAP
350	3,5	3,0	32	84	2/11/63	**LU5C 1300**	F03FS05271
400	3,5	3,0	32	96	2/11/63	**LU5C 1900**	F03FS05277
450	4,0	3,2	32	108	2/11/63	**LU5C 2500**	F03FS05283



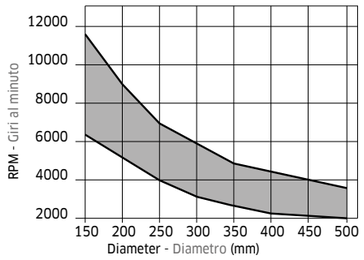
Anti-vibration

Silver I.C.E. Coating

HW H01K



Tooth features - Caratteristiche del dente



Minimum and maximum RPM based on the blade diameter.
Fascia del N. giri minimo e massimo consigliati in funzione del diametro della lama.

	Ultimate Eccellente	High Ottimo	Good Buono
Non-ferrous metals Metalli non ferrosi	●		

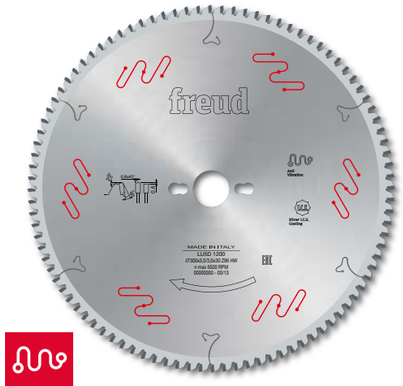
LU5D

HW - Saw blades to cut non-ferrous metals and PVC
HW - Lame per il taglio di metalli non ferrosi e PVC

To cut drawn products and tubes whose thickness doesn't exceed 3 mm. It is recommendable to use it with the saw blade over the workpiece to be cut.
Machines: Miter saws with manual or mechanical clamping of the piece.
Features: Flat-triple chip tooth with negative cutting angle.
Material: Aluminum and non-ferrous metals, PVC extruded profiles.

Per il taglio di profilati e tubolari con spessore fino a 3 mm. Si consiglia l'uso con la lama sopra il pezzo da tagliare.
Macchine: Troncatrici con bloccaggio manuale o meccanico del pezzo.
Caratteristiche: Dentatura piano-trapezoidale con angolo di taglio negativo.
Materiale: Alluminio e metalli non ferrosi, profili estrusi in PVC.

FT02: 2/9/46,4 + 2/10/60

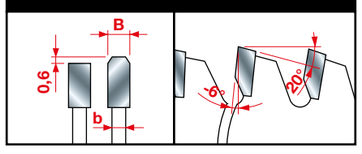


Anti-vibration

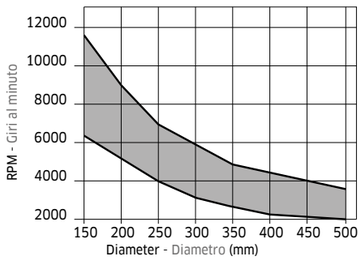
Silver I.C.E. Coating

D mm	B mm	b mm	d mm	Z	NL FT	Code Codice	SAP SAP
230	3,0	2,5	30	64		**LU5D 0700**	F03FS05294
300	3,5	3,0	30	96	FT02	**LU5D 1200**	F03FS05301
350	3,5	3,0	32	108	2/11/63	**LU5D 1800**	F03FS05311
400	3,5	3,0	32	120	2/11/63	**LU5D 2400**	F03FS05317

HW H01K



Tooth features - Caratteristiche del dente



Minimum and maximum RPM based on the blade diameter.
Fascia del N. giri minimo e massimo consigliati in funzione del diametro della lama.

	Ultimate Eccellente	High Ottimo	Good Buono
Non-ferrous metals Metalli non ferrosi	●		
Plastic materials Materiali plastici	●		
PVC PVC		●	

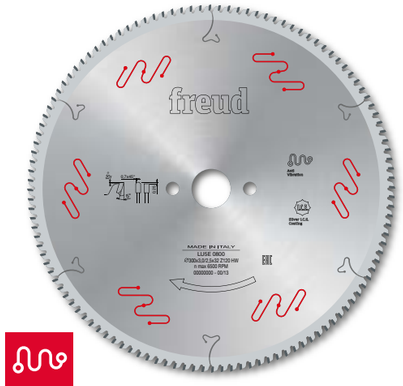
LU5E

HW - Saw blades to cut non-ferrous metals
HW - Lame per il taglio di metalli non ferrosi

To cut special drawn products, such as tubes and similar products having ultrathin walls. The reduced thickness allows an excellent cutting finish, without splintering, and optimises its employment in low-power machines, too.
Machines: Miter saws with mechanical clamping of the piece.
Features: Flat-triple chip tooth with positive cutting angle.
Material: Aluminum, non-ferrous metals.

Per il taglio di profilati speciali come tubolari e similari con spessore di parete ultrasottile. Lo spessore ridotto consente di ottenere un ottimo grado di finitura di taglio, senza scheggiature ed ottimizza l'impiego anche su macchine a bassa potenza.
Macchine: Troncatrici con bloccaggio meccanico del pezzo.
Caratteristiche: Dentatura piano-trapezoidale con angolo di taglio positivo.
Materiale: Alluminio, metalli non ferrosi.

FT01: 2/7/42 + 2/9/46,4 + 2/10/60
FT02: 2/9/46,4 + 2/10/60

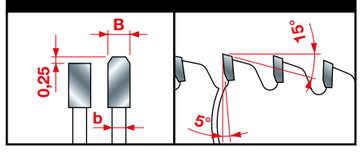


Anti-vibration

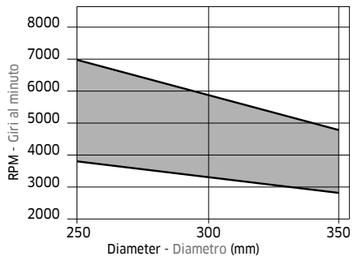
Silver I.C.E. Coating

D mm	B mm	b mm	d mm	Z	NL FT	Code Codice	SAP SAP
250	2,8	2,2	30	100	FT01	**LU5E 0100**	F03FS05324
300	3,0	2,5	30	100	FT02	**LU5E 0500**	F03FS05331

HW H01K



Tooth features - Caratteristiche del dente

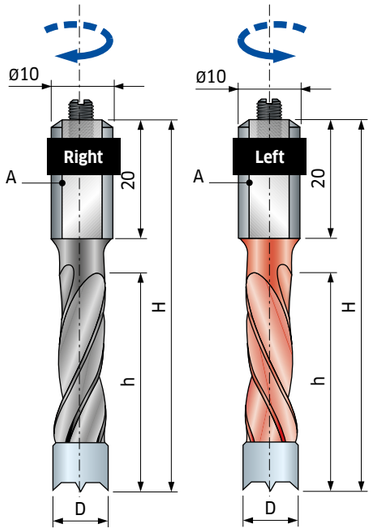


Minimum and maximum RPM based on the blade diameter.
Fascia del N. giri minimo e massimo consigliati in funzione del diametro della lama.

	Ultimate Eccellente	High Ottimo	Good Buono
Non-ferrous metals Metalli non ferrosi	●		

PF07MD - PF07MS

Right Left

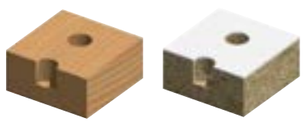


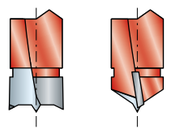
Dowel drills – blind holes

For boring machines with chucks or adapters. Suitable for blind holes on solid wood and laminates. HW with center point and M5x10 mm adjusting screw. Cylindrical shank with clamping surface ø10x20 mm shank.

D mm	h mm	H mm	A mm	Z	Max RPM 1/min.	Code	SAP
5	43	70	10x20	2		**PF07MD AC3**	F03FA02174
6	43	70	10x20	2		**PF07MD BC3**	F03FA02177
8	30	57,5	10x20	2		**PF07MD DA3**	F03FA02181
8	43	70	10x20	2		**PF07MD DC3**	F03FA02183
10	43	70	10x20	2		**PF07MD FC3**	F03FA02189
15	43	70	10x20	2		**PF07MD IC3**	F03FA02198
12	43	70	10x20	2		**PF07MD GC3**	F03FA02192
5	43	70	10x20	2		**PF07MS AC3**	F03FA02207
6	43	70	10x20	2		**PF07MS BC3**	F03FA02210
8	30	57,5	10x20	2		**PF07MS DA3**	F03FA02214
8	43	70	10x20	2		**PF07MS DC3**	F03FA02216
10	43	70	10x20	2		**PF07MS FC3**	F03FA02222
15	43	70	10x20	2		**PF07MS IC3**	F03FA02198
12	43	70	10x20	2		**PF07MS GC3**	F03FA02225

	Spare parts	Dimensions mm	Code	SAP
	Screw	M5x10	**2602M DC9**	F03FA07350

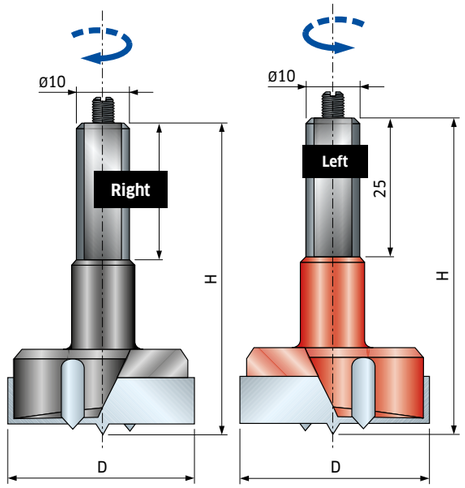




Geometry of the tip Router bit with negative spur.

PC04MD - PC04MS

Right Left

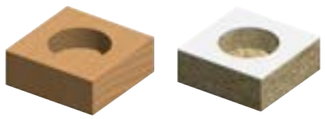


Carbide boring bits for hinges

Fit on multiboring machines with the use of chucks or adapters for obtaining hinge pockets or blind holes on solid wood or laminates. HW with center point and M5x10 mm adjusting screw. Cylindrical shank with clamping surface ø10x25 mm.

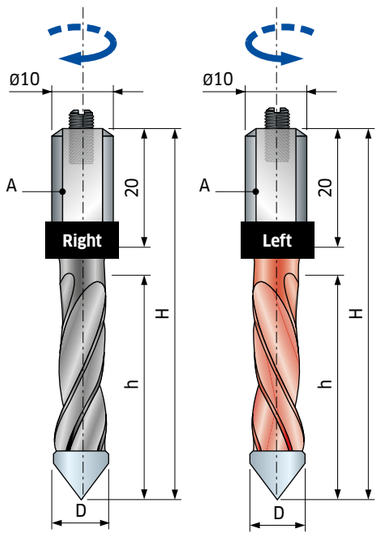
D mm	H mm	A mm	Z	Max RPM 1/min.	Code	SAP
15	57,5	10x25	2+2		**PC04MD 153**	F03FA01784
35	57,5	10x25	2+2		**PC04MD 353**	F03FA01792
15	57,5	10x25	2+2		**PC04MS 153**	F03FA01798
35	57,5	10x25	2+2		**PC04MS 353**	F03FA01806

	Spare parts	Dimensions mm	Code	SAP
	Screw	M5x10	**2602M DC9**	F03FA07350



PF11MD - PF11MS

Right Left



Through holes drills

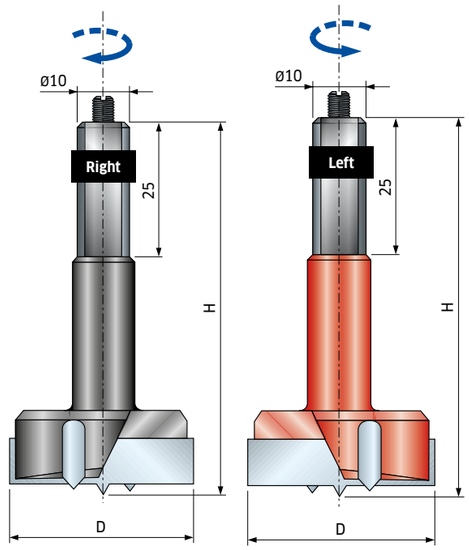
For boring machines with chucks or adapters. Suitable for through holes on solid wood and laminates. HW with center point and M5x10 mm adjusting screw. Cylindrical shank with clamping surface ø 10x20 mm.

D mm	h mm	H mm	A mm	Z	Max RPM 1/min.	Code	SAP
5	43	70	10x20	2		**PF11MD AC3**	F03FA02979
8	43	70	10x20	2		**PF11MD DC3**	F03FA02986
5	43	70	10x20	2		**PF11MS AC3**	F03FA02995
8	43	70	10x20	2		**PF11MS DC3**	F03FA03002

	Spare parts	Dimensions mm	Code	SAP
	Screw	M5x10	**2602M DC9**	F03FA07350

PC05MD - PC05MS

Right Left

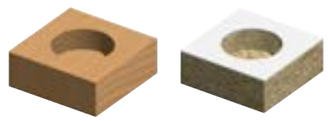


Carbide boring bits for hinges

Fit on multiboring machines with the use of chucks or adapters for obtaining hinge pockets or blind holes on solid wood or laminates.
HW with center point and M5x10 mm adjusting screw.
Cylindrical shank with clamping surface ø10x25 mm.

D mm	H mm	A mm	Z	Max RPM 1/min.	Code	SAP
18	70	10x25	2+2		**PC05MD 183**	F03FA01813
20	70	10x25	2+2		**PC05MD 203**	F03FA01814
35	70	10x25	2+2		**PC05MD 353**	F03FA01819
18	70	10x25	2+2		**PC05MS 183**	F03FA01826
20	70	10x25	2+2		**PC05MS 203**	F03FA01827
35	70	10x25	2+2		**PC05MS 353**	F03FA01832

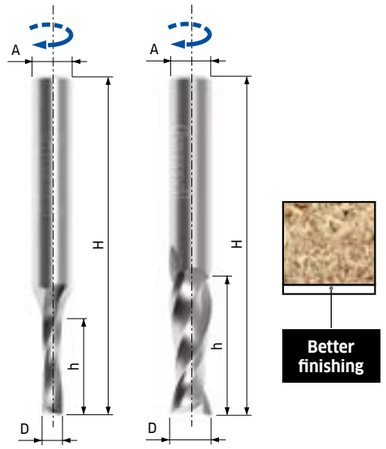
	Spare parts	Dimensions mm	Code	SAP
	Screw	M5x10	**2602M DC9**	F03FA07350



SCH2UF new

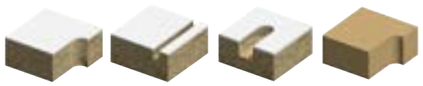
Finishing router cutter - upcut with right-hand Z2

Designed for: CNC routing for general purpose with perfect finishing.
Suitable for: sizing, grooving and plunging with a perfect finishing on laminates, wood composites and solid wood.
Features: upcut helix, good chip flow, upward chip removal for best finish on the lower side of the panel.



Better finishing

	D mm	h mm	H mm	A mm	Quality of HW	Z	Max RPM 1/min.	Code	SAP
new	3	13	50	6	MG10	2	30.000	**SCH2UFN110R**	F03FR03696
new	4	15	50	4	MG10	2	30.000	**SCH2UFN204R**	F03FR03709
new	5	17	50	5	MG10	2	30.000	**SCH2UFN208R**	F03FR03710
new	6	22	60	6	MG10	2	30.000	**SCH2UFN216R**	F03FR03712
new	8	32	80	8	MG10	2	30.000	**SCH2UFN228R**	F03FR03715
new	10	32	80	10	H05MG	2	30.000	**SCH2UFN240R**	F03FR03718



To find suggested feeding speeds see the tables below and apply the following correction factors

MATERIAL
Hardwood: 0,9
MDF, Chipboard: 1,1

DEPTH OF CUT

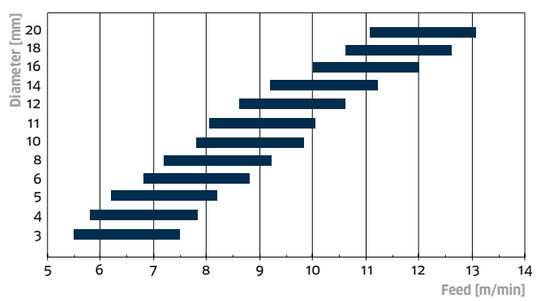
From	1 x **D**	to	2 x **D** :	0,75
From	2 x **D**	to	3 x **D** :	0,5
Over			3 x **D** :	0,4

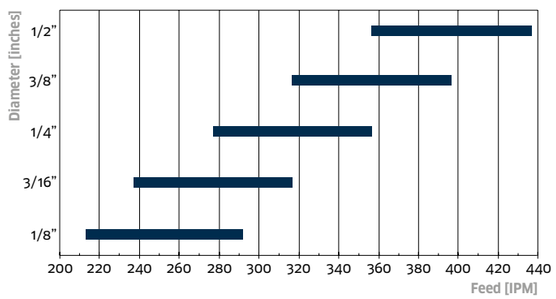
ROTATION SPEED:
Suggested speeds are proportional to RPM.

EXAMPLES:
Factor for 12.000 RPM:
12.000/18.000 = 0,66
Factor for 24.000 RPM
24.000/18.000 =1,33

To maximize the tool lifetime, always set the maximum speed that delivers needed quality of cut.

Suggested speeds for softwood: 18.000 RPM. Depth of cut equal to cutting diameter



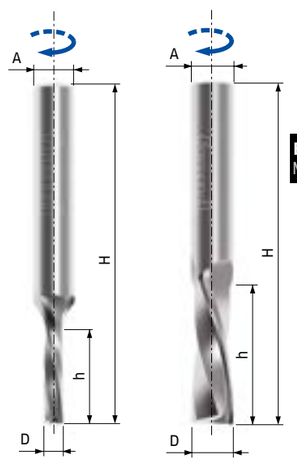


SCH2DF new

Finishing router cutter - downcut with right-hand Z2
Frese per finitura - elica negativa con rotazione destra Z2

Designed for: CNC routing for general purpose with perfect finishing.
Suitable for: sizing, grooving and ramp plunging with a perfect finishing on laminates, wood composites and solid wood.
Features: downcut helix, helps the clamping of the workpiece, downward chip removal for best finish on the upper side of the panel.

Progettata per: fresa CNC per utilizzo generale con una perfetta finitura.
Adatta per: contornatura, scanalatura e foratura in rampa con una perfetta finitura su laminato, composti di legno e legno massiccio.
Caratteristiche: elica negativa, aiuta il bloccaggio del pezzo da lavorare, espulsione del truciolo verso il basso per una perfetta finitura del lato superiore del pannello.



Better finishing
Migliore finitura

	D mm	h mm	H mm	A mm	Quality of HW Qualità del HW	Z	Max RPM 1/min.	Code Codice	SAP SAP
new	3	13	50	6	MG10	2	30.000	**SCH2DFN110R**	F03FR03660
new	4	15	50	4	MG10	2	30.000	**SCH2DFN204R**	F03FR03673
new	5	17	50	5	MG10	2	30.000	**SCH2DFN208R**	F03FR03674
new	6	22	60	6	MG10	2	30.000	**SCH2DFN216R**	F03FR03676
new	8	32	80	8	MG10	2	30.000	**SCH2DFN228R**	F03FR03679

To find suggested feeding speeds see the tables below and apply the following correction factors
Per identificare le velocità di avanzamento suggerite, consultare le seguenti tabelle e applicare i fattori di correzione

MATERIAL / MATERIALE
Hardwood / Legno duro: 0,9
MDF, Chipboard / MDF, Truciolare: 1,1

DEPTH OF CUT / PROFONDITÀ DI TAGLIO

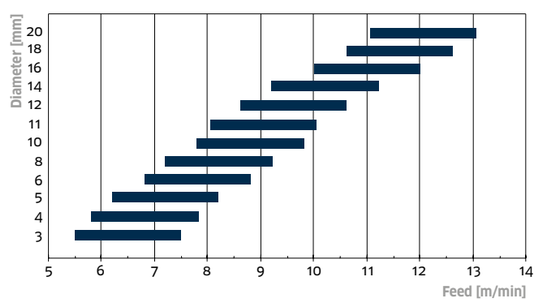
From / da	1 x **D**	to / a	2 x **D** :	0,75
From / da	2 x **D**	to / a	3 x **D** :	0,5
Over / Superiore a			3 x **D** :	0,4

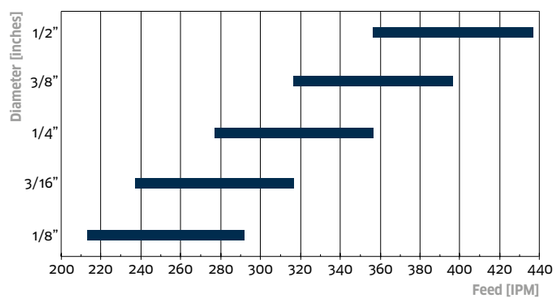
ROTATION SPEED / VELOCITÀ DI ROTAZIONE:
Suggested speeds are proportional to RPM.
Le velocità suggerite sono proporzionali al numero di giri (RPM).

EXAMPLES / ESEMPI:
Factor for / fattore per 12.000 RPM:
12.000/18.000 = 0,66
Factor for / fattore per 24.000 RPM
24.000/18.000 =1,33

To maximize the tool lifetime, always set the maximum speed that delivers needed quality of cut.
Per massimizzare la vita dell'utensile, è necessario impostare sempre la massima velocità che garantisce la qualità di taglio desiderata.

Suggested speeds for softwood: 18.000 RPM. Depth of cut equal to cutting diameter
Velocità suggerita per legno tenero: 18.000 giri. Profondità di taglio uguale al diametro di taglio.



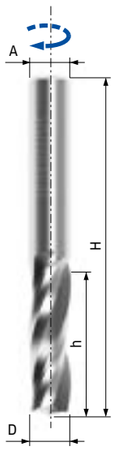


SCH3UF new

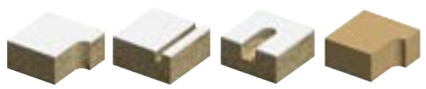
Finishing router cutter - upcut with right-hand Z3
Frese per finitura - elica positiva con rotazione destra Z3

Designed for: CNC routing for high feed rate applications.
Suitable for: sizing, grooving and plunging with a perfect finishing on laminates, wood composites and solid wood.
Features: upcut helix, good chip flow, upward chip removal for best finish on the lower side of the panel.

Progettata per: fresa CNC per applicazioni gravose ad alte velocità di avanzamento.
Adatta per: contornatura, scanalatura e foratura con una perfetta finitura su laminato, composti di legno e legno massiccio.
Caratteristiche: elica positiva, buona evacuazione del truciolo, espulsione del truciolo verso l'alto per una perfetta finitura del lato inferiore del pannello.



	D mm	h mm	H mm	A mm	Quality of HW Qualità del HW	Z	Max RPM 1/min.	Code Codice	SAP SAP
new	12	52	100	12	H05MG	3	30.000	**SCH3UFN240R**	F03FR03815
new	16	62	120	16	H05MG	3	25.000	**SCH3UFN264R**	F03FR03821



To find suggested feeding speeds see the tables below and apply the following correction factors
Per identificare le velocità di avanzamento suggerite, consultare le seguenti tabelle e applicare i fattori di correzione

MATERIAL / MATERIALE
Hardwood / Legno duro: 0,9
MDF, Chipboard / MDF, Truciolare: 1,1

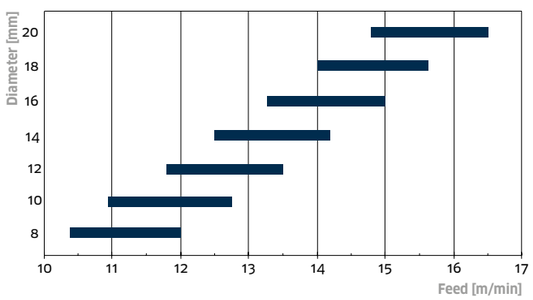
DEPTH OF CUT / PROFONDITÀ DI TAGLIO
From / da 1 x **D** to / a 2 x **D** : 0,75
From / da 2 x **D** to / a 3 x **D** : 0,5
Over / Superiore a 3 x **D** : 0,4

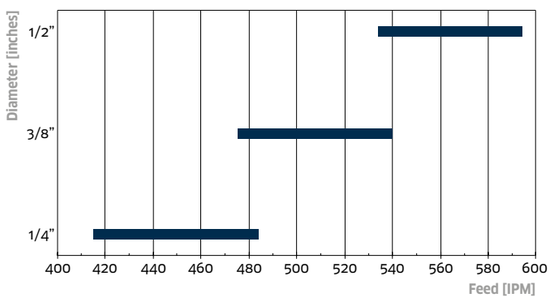
ROTATION SPEED / VELOCITÀ DI ROTAZIONE:
Suggested speeds are proportional to RPM.
Le velocità suggerite sono proporzionali al numero di giri (RPM).

EXAMPLES / ESEMPI:
Factor for / fattore per 12.000 RPM: 12.000/18.000 = 0,66
Factor for / fattore per 24.000 RPM: 24.000/18.000 = 1,33

To maximize the tool lifetime, always set the maximum speed that delivers needed quality of cut.
Per massimizzare la vita dell'utensile, è necessario impostare sempre la massima velocità che garantisce la qualità di taglio desiderata.

Suggested speeds for softwood: 18.000 RPM. Depth of cut equal to cutting diameter
Velocità suggerita per legno tenero: 18.000 giri. Profondità di taglio uguale al diametro di taglio.



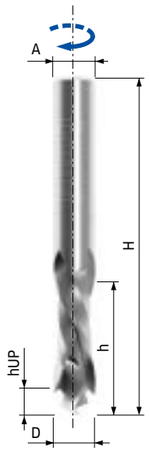


SCH2XF new

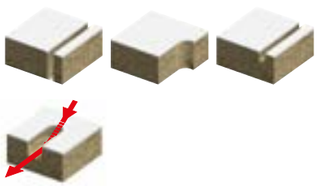
Finishing router cutter - compression with right-hand Z2+2
Frese per finitura - doppia elica con rotazione destra Z2+2

Designed for: CNC routing for general purpose with perfect finishing on both sides of the panel.
Suitable for: nesting, sizing, grooving and ramp plunging with a perfect finishing on laminates, wood composites and solid wood.
Features: up helix and down helix for a best finishing on both sides of the panel.

Progettata per: fresa CNC per utilizzo generale con una perfetta finitura su entrambi i lati del pannello.
Adatta per: nesting, contornatura, scanalatura e foratura in rampa con una perfetta finitura su laminato, composti di legno e legno massiccio.
Caratteristiche: elica positiva ed elica negativa per una perfetta finitura su entrambi i lati del pannello.



	D mm	h mm	hUP mm	H mm	A mm	Quality of HW Qualità del HW	Z	Max RPM 1/min.	Code Codice	SAP SAP
new	8	22	5	70	8	MG10	2+2	30.000	**SCH2XFN310R**	F03FR03732
new	12	32	5	90	12	H05MG	2+2	30.000	**SCH2XFN360R**	F03FR03737



To find suggested feeding speeds see the tables below and apply the following correction factors
Per identificare le velocità di avanzamento suggerite, consultare le seguenti tabelle e applicare i fattori di correzione

MATERIAL / MATERIALE
Softwood / Legno tenero: 0,9
Hardwood / Legno duro: 0,8

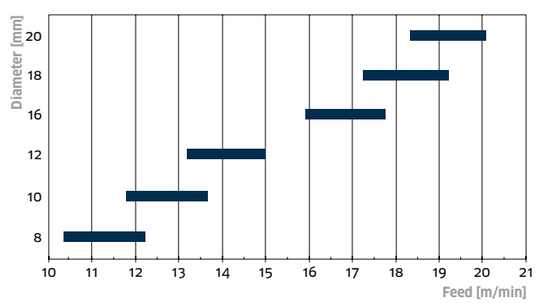
DEPTH OF CUT / PROFONDITÀ DI TAGLIO
2x19mm or / o 2x3/4": 0,75
3x19mm or / o 3x3/4": 0,75

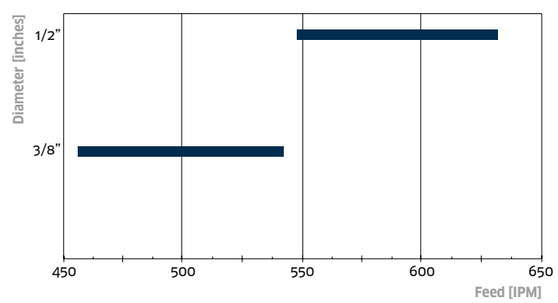
ROTATION SPEED / VELOCITÀ DI ROTAZIONE:
Suggested speeds are proportional to RPM.
Le velocità suggerite sono proporzionali al numero di giri (RPM).

EXAMPLES / ESEMPI:
Factor for / fattore per 12.000 RPM: 12.000/18.000 = 0,66
Factor for / fattore per 24.000 RPM: 24.000/18.000 = 1,33

To maximize the tool lifetime, always set the maximum speed that delivers needed quality of cut.
Per massimizzare la vita dell'utensile, è necessario impostare sempre la massima velocità che garantisce la qualità di taglio desiderata.

Suggested speeds for MDF/chipboard: 18.000 RPM. Depth of cut: 3/4"
Velocità suggerita per MDF/truciolare: 18.000 giri. Profondità di taglio: 19mm



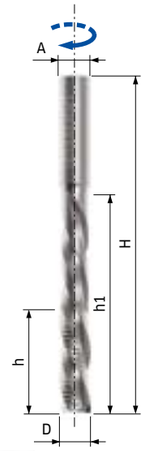


SCH3UM new

Roughing hardware slot router cutter - right-hand Z2 and Z3

Frese a sgrossare per sedi serrature e cerniere - rotazione destra Z2 e Z3

Designed for: CNC machining centres.
Suitable for: windows, shutters and all hardware on solid wood.
Features: upcut helix, good chip flow, upward chip removal.
Progettata per: centri di lavoro CNC.
Adatta per: sedi per serrature e cerniere su porte, finestre e persiane in legno massiccio.
Caratteristiche: elica positiva, buona evacuazione del truciolo, espulsione del truciolo verso l'alto.



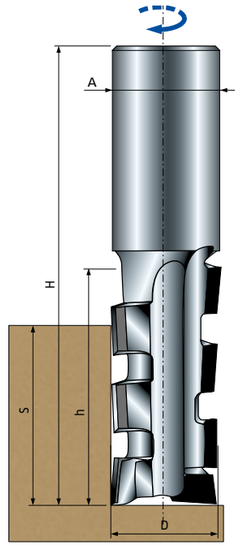
PI06MD BC3**

Upcut - Elica positiva

	D mm	h mm	h1 mm	H mm	A mm	Quality of HW Qualità del HW	Z	Max RPM 1/min.	Code Codice	SAP SAP
new	16	45	95	150	16	H05MG	3	25.000	**SCH3UMN104R**	F03FR03828

Designed for: CNC machining centers.
Suitable for: windows, shutters and all hardware on solid wood.
Features: upcut helix, good chip flow, upward chip removal.
Progettata per: centri di lavoro CNC.
Adatta per: sedi per serrature e cerniere su porte, finestre e persiane in legno massiccio.
Caratteristiche: elica positiva, buona evacuazione del truciolo, espulsione del truciolo verso l'alto.

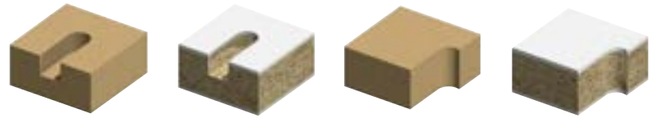
DPD01D



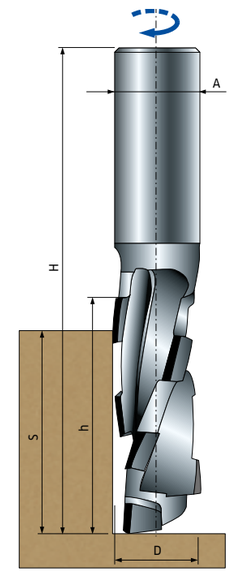
DP - Router cutters with 2 principles, 1 cutting edge for point

Router cutters in DP with HW, with 2 principles and 1 cutting edge on all working points for drilling and edging of hard solid wood (without knots), veneered or coated MDF. These cutters work with material with a thickness of up to 49 mm. **Feed rate:** 3 - 4 m/min.
Considering the wide range of machines and possible applications, and the special nature of the product, when ordering please specify Diameter **(D)**, Thickness of cut **(S)**, Shank **(A)** and type of material to be worked. Also specify the machine and the conditions of use (RPM and feed rate).

D mm	h mm	S mm	H mm	A mm	Z	Tips Placc.	Code Codice	SAP SAP
12	25	18	83,5	12x50	2	3	**DPD01DNGD5**	F03FR00064
12	36	31	81	12x35	2	4	**DPD01DNGF5**	F03FR00065



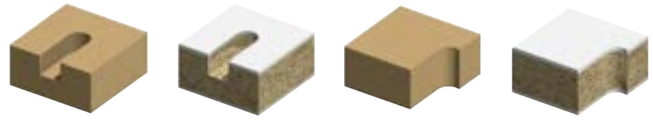
DPD02D



DP - Router cutters with 3 principles, 1 cutting edge for point

Spiral router cutters in DP for working, with excellent finishing (at medium feed rates), of MDF, melamine chipboard, unfinished chipboard, lacquered melamine chipboard and MDF, plastic laminates. It is possible to construct the router cutters with the front tip in DP.
Allowable feed rate: 3 to 4 m/min, depending on the thickness of material to be worked.

D mm	h mm	S mm	H mm	A mm	Z	Tips Placc.	Code Codice	SAP SAP
18	36	31	96	20x50	3	4+1	**DPD02DRNF5**	F03FR02860
20	36	31	96	20x50	3	4+1 HW	**DPD02DROF5**	F03FR00129
20	44,5	40	104,5	20x50	3	5+1 HW	**DPD02DROH5**	F03FR00130

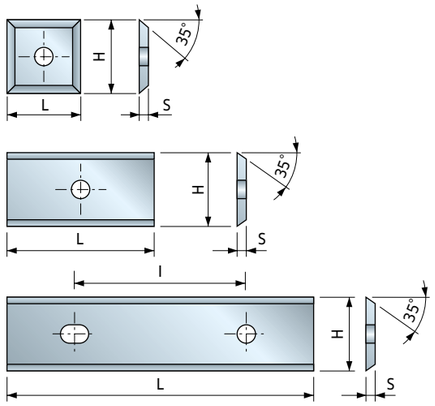


CG08M

HW - 35° Disposable knives
Coltelli reversibili a 35° in HW

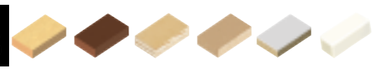
The K01S HW mix in conjunction with a superior cutting edge, which has a positive impact on finishing and tool life. Due the medium hardness, the CG08M range is suitable for a universal utilization.

La miscela di polveri K01S, unita ad un tagliente estremamente sottile e preciso, migliora la finitura e la durata dell'utensile. La gamma CG08M, caratterizzata da una media durezza, si presta ad un utilizzo di tipo "universale".



L mm	H mm	S mm	I mm	Code Codice	SAP SAP
9,6	12	1,5		**CG08MMA3**10	F03FH02910
12	12	1,5		**CG08MBA3**10	F03FH02903
20	12	1,5		**CG08MDA3**10	F03FH02905
30	12	1,5	14	**CG08MEA3**10	F03FH02906
50	12	1,5	26	**CG08MFA3**10	F03FH02907

HW K01S

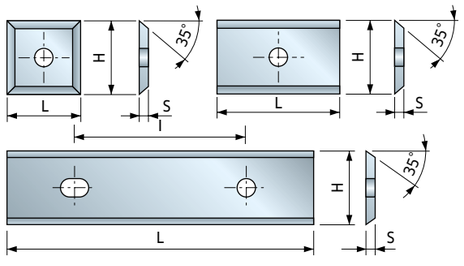


CG20M

HW - 35° Disposable knives
Coltelli reversibili a 35° in HW

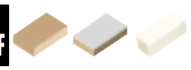
Constructed with a highly resistant HW. Especially indicated to work melamine chipboard panels, MDF, HDF wood composites and plastic materials.

Costruiti in HW ad elevatissima durezza, indicato per truciolare laminato, MDF, HDF, derivati del legno e derivati plastici.



L mm	H mm	S mm	I mm	Code Codice	SAP SAP
20	12	1,5		**CG20MDA3**10	F03FH02924
30	12	1,5	14	**CG20MEA3**10	F03FH02925
50	12	1,5	26	**CG20MFA3**10	F03FH02926

HW HOOXF

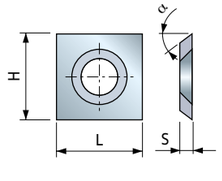


RG01M

HW - Square disposable spurs
Rasanti in HW

The RG01 family benefits from the wide range of in-house manufactured HW grades and different hook angles to provide a variety of options for the most popular applications.

La famiglia RG01 trae vantaggio dalla combinazione dell'ampia gamma di gradi HW prodotti in casa e di diversi angoli di spoglia per offrire una vasta scelta di soluzioni per le applicazioni più diffuse.



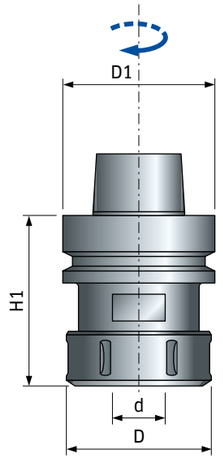
L mm	H mm	S mm	Quality of HW Qualità del HW	α	Code Codice	SAP SAP
14	14	2	K20S	31°	**RG01MAA3**10	F03FH03034

MP10M

High precision chuck - HSK 63 F
Mandrini portapinza - HSK 63 F

For overhead CNC machines. Locking ring: ER32 RH locking ring for item **MP10MD AA9** and ER40 RH for **MP10MD BA9**. Ideal for router bits with cylindrical shank. **Note:** Collet not included.

Per pantografi CNC. Ghiera: ER32 Dx per **MP10MD AA9** e ER40 Dx per **MP10MD BA9**. Adatti per il montaggio di punte con attacco cilindrico. **N.B.:** le pinze non sono comprese nel mandrino.



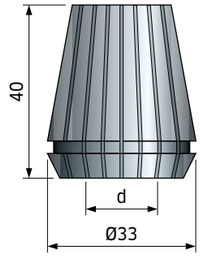
H1 mm	D mm	d mm	D1 mm	Code Codice	SAP SAP
73	50	4-20	63	**MP10MDC AA9**	F03FA19227

MP06M

High precision collet for ER32 locking rings
Pinze di precisione per ghiere ER32

Collets **MP06M** are to be mounted on **MP04MD, MP06MD, MP08MD AA9** and **MP10MD AA9** chucks.

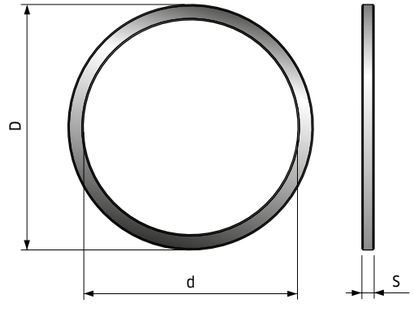
Adatte all'utilizzo con punte con attacco cilindrico. Le pinze **MP06M** vanno montate su mandrini **MP04MD, MP06MD, MP08MD AA9** e **MP10MD AA9**.



d mm	H mm	Clamping range Capacità di serraggio mm	Code Codice	SAP SAP
4	40	4÷3	**MP06M 049**	F03FA01550
6	40	6÷5	**MP06M 069**	F03FA01551
8	40	8÷7	**MP06M 089**	F03FA01553
10	40	10÷9	**MP06M 109**	F03FA01554
12	40	12÷11	**MP06M 129**	F03FA01555
16	40	16÷15	**MP06M 169**	F03FA01558
20	40	20÷19	**MP06M 209**	F03FA01560

BL20M

Standard reduction rings for saw blades
Bussole di riduzione rettificate per lame circolari



D mm	S mm	d mm	Code Codice	SAP SAP
30	2	25,4	**BL20M30254**	F03FC00709
32	2	30	**BL20M32300**	F03FC00712

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