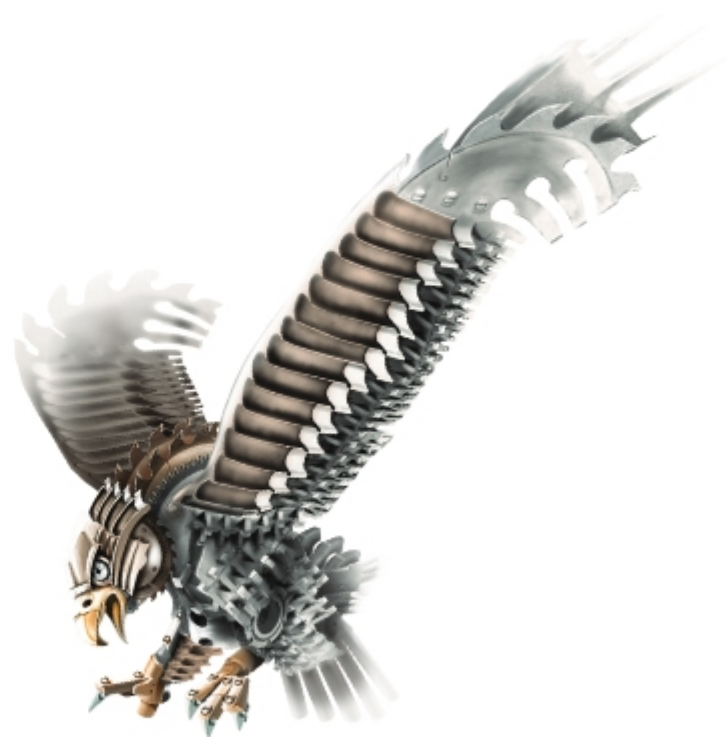




Catalogue

Woodworking tools



Woodworking
without secrets

Edition 1/2023

About us



FABA worldwide.



FABA - 4 ha of area, 4 production halls, 380 employees.

FABA is the biggest producer and supplier of professional woodworking tools for furniture and sawmill industry in Poland. **FABA** is a company with years-long tradition dating back to 1947. **FABA** has exported their tools for many years and became a well-recognizable brand thanks to high quality of tools. Nowadays, **FABA** logo is known in over 40 countries.

FABA is a producer of professional, technologically advanced tools for wood and wood-based materials for furniture and sawmill industry. The whole production plant has an area of 4 hectares with 4 production halls equipped with the state-of-the-art machine park operated by experienced staff of designers and engineers. **FABA** company specializes in professional tools where "professional" means not only a properly manufactured tool but also carefully selected for the type of machined material, parameters of work, type of machining and client's expectations.

FABA as one of few world suppliers offers such a wide range of professional woodworking tools. Saw blades, brazed cutters, cutter heads, shank cutters, tools with hydro or Power-Lock, HSK, ISO30 clamping, jointing tools, sets for window and door production, knives and wide range of DIA tools are produced in one place. A great advantage of **FABA** is very short production time of special tools.



1. SAW BLADES

2. HOGGER UNITS

3. BRAZED CUTTERS

4. TOOLS FOR JOINTS

5. CUTTER HEADS

6. SHANK TOOLS

7. DRILLS

8. KNIVES, SPARE PARTS

9. CLAMPING SYSTEMS

10. WINDOWS AND DOORS

11. DIA TOOLS

1

2

3

4

5

6

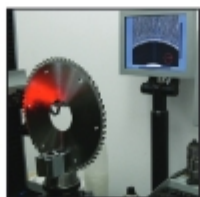
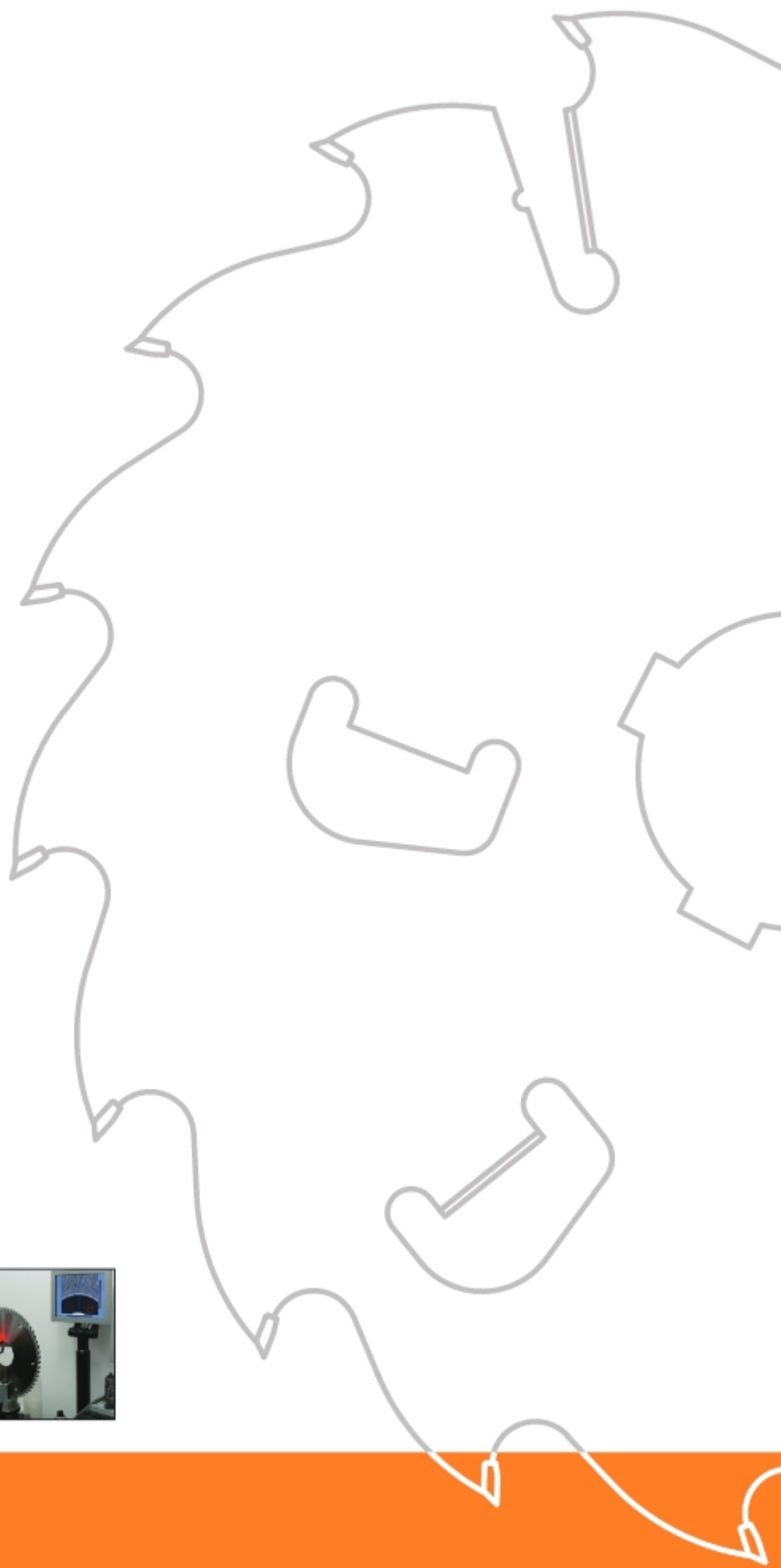
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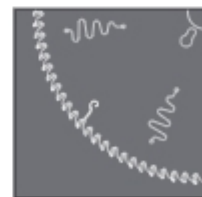
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11





1. Saw blades

Saw blades

1

Saw blades with brazed carbide (HM) tips designed for professional machining of solid soft, hard and glued wood, other wood-based materials, plastics and aluminum alloys. Saw blades are used for longitudinal, cross and angular cutting, formatting and grooving. They have been designed for specialist machines to guarantee optimal efficiency with requested cutting quality.

The tools are designed and manufactured with properly chosen blade geometry, with or without shear angle and optional chip flow. Wide range of teeth types allows to optimize machining efficiency. Additionally, saw blades for multi-blade machines are equipped with wiper knives which guarantee smooth surface, eliminate chip blocking and minimize material burning.

Saw blade bodies are produced from the highest quality steel in a special shaping technology, properly selected for the machining process and material as well as type of work, parameters and conditions prevailing during the machining, in order to guarantee proper and stable work of the tool both in standard and extreme conditions. Various blade types have various carbide types characterized with proper hardness, resilience, abrasion resistance and intergranular corrosion. It allows for precise choice of proper carbide for the type of material and machining.

All types of saw blades are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. Very strict interoperational and final control does not accept any tools which do not meet high tolerance and production standards. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

The *Saw blades* chapter includes only example types of drills with their basic dimensions. On special request, we can (after obtaining proper information) suggest, design and produce any type saw blade for the required type of machining, material, parameters and conditions of work. Offered saw blades diameters range between D=80 and D=800 mm. Time of production usually doesn't exceed 10 working days.

Orders should include:

- outer diameter (D) or diameters range,
- bore diameter (d) and number of key ways or driver holes,
- number of teeth (z) or spindle rotation speed and feed speed,
- cutting depth (H),
- type of machined material,
- flange diameter.



Contents

1

1. SAW BLADES

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Pictograms

1



solid dry softwood



solid dry hardwood



solid wet softwood



solid wet hardwood



solid frozen wood



coniferous wood



deciduous wood



chipboard



plywood



laminated board



glued wood



LDF board



MDF board



HDF board



light alloys



plastics



drywall



construction board



sandwich panels



profiles



flat surface



longitudinal cut



cross cut



cross and longitudinal cut



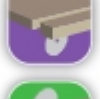
angular cut



cutting in stack



cutting with scoring saw blade



scoring saw blade



saw blade for grooves



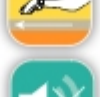
single cut



multi-rip saw blade



mechanical feed



manual feed



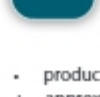
saw blade with noise reduction



saw blade without noise reduction



carbide



stellite

- product available on stock
- + approximate production time 9 days

Tooth configuration

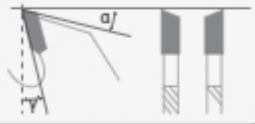
1

GM

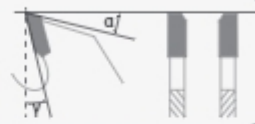
flat

GAM

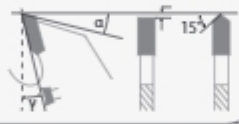
flat with chamfers on both sides

GS

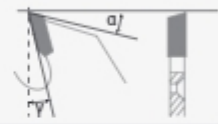
alternate top bevel

GSM

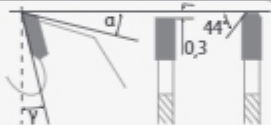
top bevel

GL/GD

hollow / inverted-v + flat

GT

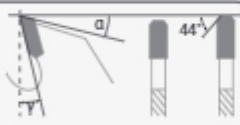
top bevel, right

GA

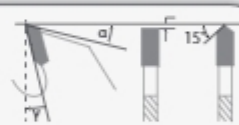
triple-chip + flat

GW

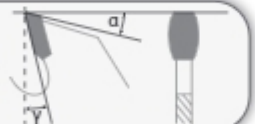
top bevel, left

GA/GA

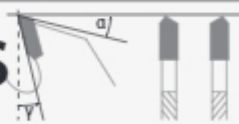
triple-chip

GD

inverted-v + flat

GM-B

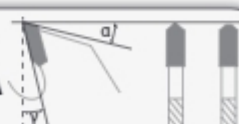
barrel-flat

GF/GS

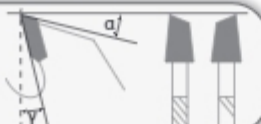
alternate top bevel with chamfer

GR/GM

conical-flat

GD/GA

inverted-v + triple-chip

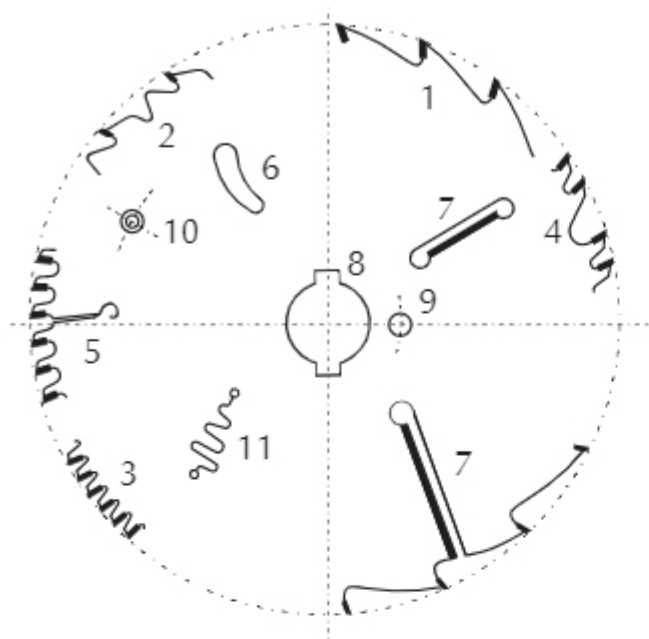
GR/GS

conical-alternate bevel

GV

V-top

Construction



1. Tothing with positive hook angle.
2. Tothing with positive hook angle and feed limiter.
3. Tothing with negative hook angle.
4. Tothing with irregular pitch.
5. Laser compensation slot.
6. Cooling hole (removing heat).
7. Carbide wiper knife.
8. Keyway.
9. Driver hole.
10. Fixing holes.
11. Laser noise-reduction cuts.

Flange

Recommended flange diameters for respective dimensions of saw blades and scorers.

Outer diameter (mm)	Central bore diameter (mm)	Flange diameter	
		minimum (mm)	maximum (mm)
100	20	50	50
125	20	50	50
125	30	60	60
150	30	80	80
180	30	80	90
200	30	90	100
250	30	90	110
300	30	100	120
350	30	110	130
400	30	120	140
450	30	120	150
500	30	130	160
550	30	140	170
600	30	150	180
650	30	160	200
700	30	180	220

Recommended flange diameters for respective dimensions of multi-rip saw blades.

Outer diameter (mm)	Central bore diameter (mm)	Flange diameter	
		minimum (mm)	maximum (mm)
225	40	80	80
225	60	90	120
250	40	90	110
250	60	100	120
250	80	100	120
300	60	100	120
300	80	100	120
300	90	110	130
350	60	100	120
350	80	110	130
350	90	120	140
400	60	110	130
400	80	120	150
400	100	130	160
450	80	120	150
450	100	130	160
500	70	120	150
500	100	130	160
500	150	190	220

Cutting speed

1

Cutting speed depending on the kind of machined material.

Workpiece material	Cutting speed (m/s)
Soft wood	60÷100
Wet soft wood	70÷100
Hard wood	50÷90
Chipboard	60÷80
MDF	60÷80
Hardboard	50÷80
Softboard	60÷100
Plywood	50÷80
Light alloys	40÷60
Plastics	50÷80

Basic formula for determining cutting speed V_c

$$V_c = \frac{\pi \times D \times n}{60.000} \text{ (m/s)}$$

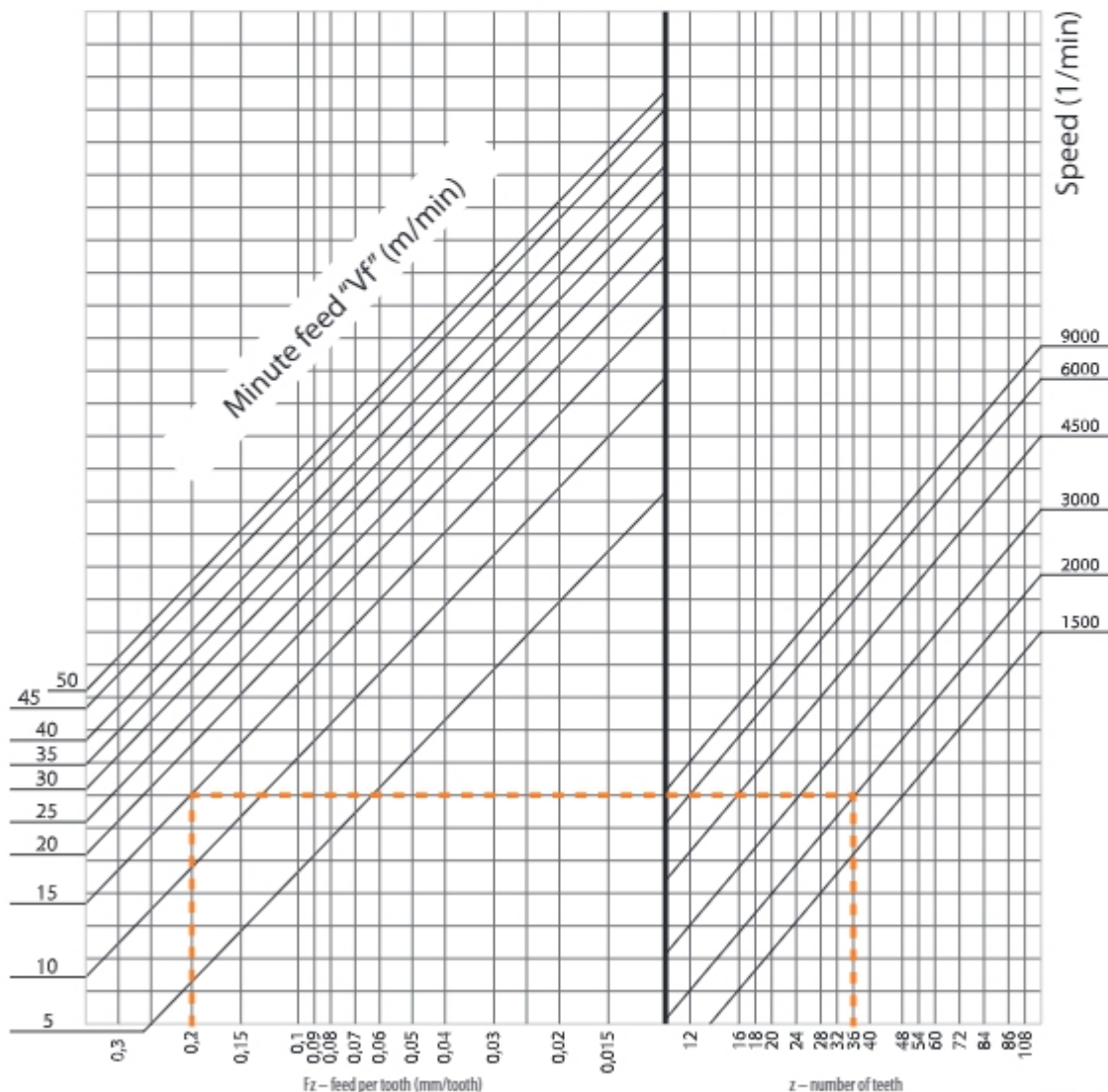
D - tool diameter (mm)

n - spindle speed (r.p.m.)

Determining rotational speed of saw blades and scorers for given cutting speed and tool diameter.

D mm \ n min ⁻¹	2.000	2.500	4.500	5.600	8.000	10.000	13.000
Ø 100	11	15	24	29	42	52	68
Ø 125	13	18	29	37	52	65	85
Ø 150	16	22	35	44	63	78	102
Ø 200	21	29	47	59	84	104	
Ø 250	26	37	59	73	104		
Ø 300	32	44	71	88	125		
Ø 315	33	46	74	92			
Ø 350	37	51	82	102			
Ø 400	42	58	94	117			
Ø 450	47	66	106				
Ø 500	52	73	117				

Determining F_z and V_f depending on rotation and teeth number of a saw blade.



Cutting parameters

Feed
 V_f (m/min) F_z (mm/tooth)

$$V_f = \frac{F_z \times n \times z}{1.000}$$

$$F_z = \frac{P_m \times 1000}{n \times z}$$

F_z - feed per tooth (mm/tooth), V_f - minute feed (m/min), n - speed (rpm), z - number of teeth

Example:

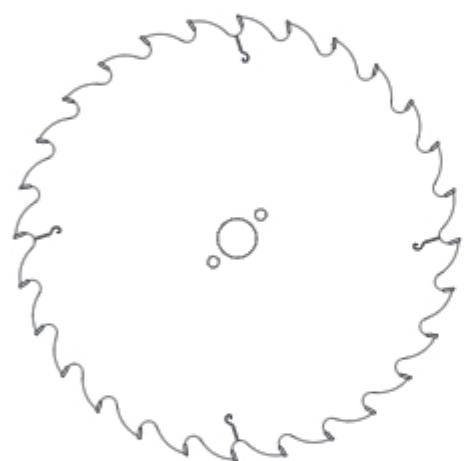
$z=36$

$n=2000$ (1/m)

$V_f=15$ (m/min)

$F_z=0,2$ (mm)

PI-501 EVO2



Saw blade with flat teeth (GM), type **PI-501 EVO2** with carbide tips, designed for longitudinal cutting of dry wood (soft and hard).

Special body coating technology prevents the resin from sticking to the blade and reduces saw blade – wood friction.

Type of cut: single, longitudinal.

Material: dry wood, soft and hard.



EVOLUTION 2



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ		
P0100930-2	PI-501 EVO2	225	2,3	1,6	60	3/10/74	16	18°	GM	+
P0101000-2	PI-501 EVO2	250	2,6	1,9	30	2/10/60	18	18°	GM	•
P0101001-2	PI-501 EVO2	300	3,2	2,1	30	2/10/60	20	18°	GM	•
P0101002-2	PI-501 EVO2	300	3,2	2,1	30	2/10/60	30	18°	GM	•
P0101003-2	PI-501 EVO2	315	3,4	2,3	30	2/10/60	28	18°	GM	•
P0101004-2	PI-501 EVO2	350	3,6	2,6	30	2/10/60	24	18°	GM	•
P0101005-2	PI-501 EVO2	400	3,8	2,6	30	2/10/60	28	18°	GM	•
P0101006-2	PI-501 EVO2	450	4,0	2,9	30	2/10/60	32	18°	GM	•
P0101007-2	PI-501 EVO2	500	4,4	3,1	30	2/10/60	36	18°	GM	•

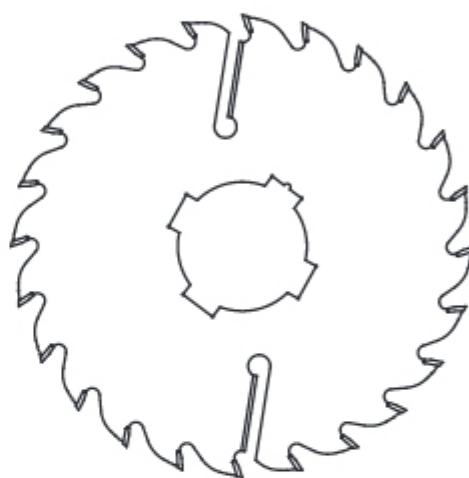
Multi-rip saw blade with flat teeth (GM), type **PI-503 EVO2** with carbide tips, with two open (+2) or two open and two closed (+4) wiper knives designed for longitudinal cutting of solid, dry wood (soft and hard) on a multi-saw blade machine.

Special body coating technology prevents the resin from sticking to the blade and reduces saw blade – wood friction.

Type of cut: longitudinal.

Material: solid wood, soft and hard.

PI-503 EVO2



GM

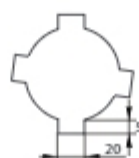


EVOLUTION 2



Catalogue number	Type	D mm	B mm	b mm	d mm	Keyways	z	γ		
P0300800-2	PI-503 EVO2	250	2,8	1,8	30	-	24+2	18°	GM	•
P0300801-2	PI-503 EVO2	250	2,8	1,8	70	4/20x5	24+2	18°	GM	•
P0300802-2	PI-503 EVO2	250	2,8	1,8	80	4/20x5	24+2	18°	GM	•
P0300803-2	PI-503 EVO2	300	3,2	2,1	30	-	18+4	18°	GM	•
P0300804-2	PI-503 EVO2	300	3,2	2,1	70	4/20x5	18+4	18°	GM	•
P0300805-2	PI-503 EVO2	300	3,2	2,1	80	4/20x5	18+4	18°	GM	•
P0300862-2	PI-503 EVO2	300	3,2	2,1	90	4/20x5	18+4	18°	GM	+
P0300806-2	PI-503 EVO2	315	3,5	2,3	70	4/20x5	18+4	18°	GM	•
P0300807-2	PI-503 EVO2	315	3,5	2,3	80	4/20x5	18+4	18°	GM	•
P0300808-2	PI-503 EVO2	350	3,5	2,3	30	-	24+4	18°	GM	•
P0300809-2	PI-503 EVO2	350	3,5	2,3	70	4/20x5	24+4	18°	GM	•
P0300810-2	PI-503 EVO2	350	3,5	2,3	80	4/20x5	24+4	18°	GM	•

Two pairs of angularly displaced key ways are meant to place the set in a way to maximally lower the cutting force during work.



Key ways dimensions in catalogue PI-503 EVO2 saw blades. Other dimensions available on request. When ordering saw blades PI-503 EVO2 with non-standard central bore, quantity and dimensions of key ways must be given.

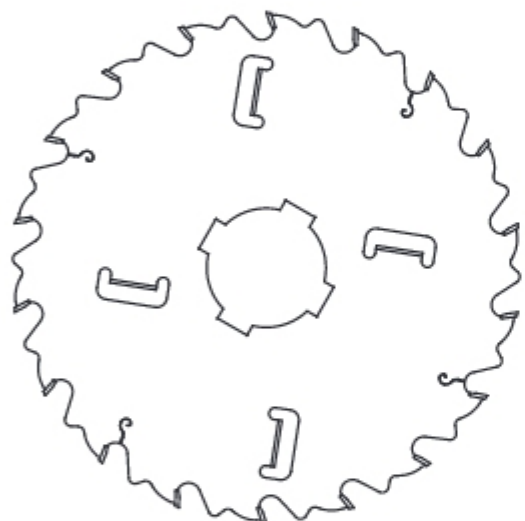
PI-502 EVO2

Multi-rip saw blade with feed limiter and flat teeth (GM), type **PI-502 EVO2** with carbide tips, with two open (+2) or two open and two closed (+4) wiper knives designed for longitudinal cutting of solid, dry wood (soft and hard) on a multi-saw blade machine.

Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

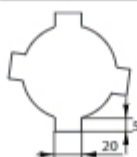
Type of cut: longitudinal.

Material: dry wood, soft and hard.



Catalogue number	Type	D mm	B mm	b mm	d mm	Keyways	z	γ		
P0200301-2	PI-502 EVO2	250	2,4	1,6	70	4/20x5	16+2	18°	GM	+
P0200302-2	PI-502 EVO2	300	2,8	1,8	70	4/20x5	18+4	18°	GM	+
P0200303-2	PI-502 EVO2	300	2,8	1,8	80	4/20x5	18+4	18°	GM	+
P0200304-2	PI-502 EVO2	350	3,0	2,0	70	4/20x5	20+4	18°	GM	+
P0200305-2	PI-502 EVO2	350	3,0	2,0	80	4/20x5	20+4	18°	GM	+

Two pairs of angularly displaced key ways are meant to place the set in a way to maximally lower the cutting force during work.



Key ways dimensions in catalogue PI-502 EVO2 saw blades. Other dimensions available on request. When ordering saw blades PI-502 EVO2 with non-standard central bore, quantity and dimensions of key ways must be given.

Upgraded increased life saw blade type **PI-510 EVO2** with flat (GM) or alternate top bevel (GS) carbide teeth, with two open (+2) or two open and two or four closed (+4, +6) wiper slots designed for longitudinal cutting of wet, soft (conifer) wood on a multi-saw blade machine.

Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

Type of cut: longitudinal, multi-saw blade machine.

Material: wet, soft (coniferous) wood.

PI-510 EVO2



GM



GS

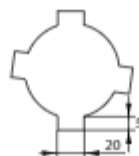


EVOLUTION 2



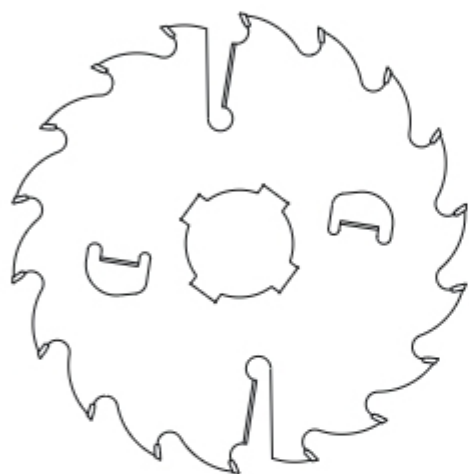
Catalogue number	Catalogue number	Type	D mm	B mm	b mm	d mm	Keyways	z	γ
P1004000-2	GM • P1004050-2	GS + PI-510 EVO2	250	3,1	1,8	70	4/20x5	16+2	23°
P1004001-2	GM • P1004051-2	GS + PI-510 EVO2	250	3,1	1,8	70	4/20x5	20+2	23°
P1004002-2	GM • P1004052-2	GS + PI-510 EVO2	300	3,4	2,1	70	4/20x5	18+4	23°
P1004003-2	GM • P1004053-2	GS + PI-510 EVO2	300	3,4	2,1	80	4/20x5	18+4	23°
P1004004-2	GM • P1004054-2	GS + PI-510 EVO2	315	3,9	2,6	80	4/20x5	18+4	23°
P1004005-2	GM • P1004055-2	GS + PI-510 EVO2	350	3,9	2,6	70	4/20x5	18+4	23°
P1004006-2	GM • P1004056-2	GS + PI-510 EVO2	350	3,9	2,6	80	4/20x5	18+4	23°
P1004007-2	GM • P1004057-2	GS + PI-510 EVO2	350	3,9	2,6	90	4/20x5	18+4	23°
P1004008-2	GM • P1004058-2	GS + PI-510 EVO2	350	3,9	2,6	70	4/20x5	24+4	23°
P1004009-2	GM • P1004059-2	GS + PI-510 EVO2	350	3,9	2,6	80	4/20x5	24+4	23°
P1004010-2	GM • P1004060-2	GS + PI-510 EVO2	400	4,0	2,7	70	4/20x5	18+6	23°
P1004011-2	GM • P1004061-2	GS + PI-510 EVO2	400	4,0	2,7	80	4/20x5	18+6	23°
P1004012-2	GM • P1004062-2	GS + PI-510 EVO2	400	4,0	2,7	70	4/20x5	24+4	23°
P1004157-2	GM + P1004158-2	GS + PI-510 EVO2	450	4,5	3,1	50	4/20x5	18+6	23°
P1004013-2	GM • P1004063-2	GS + PI-510 EVO2	450	4,5	3,1	70	4/20x5	18+6	23°
P1004014-2	GM • P1004064-2	GS + PI-510 EVO2	450	4,5	3,1	80	4/20x5	18+6	23°
P1004159-2	GM + P1004160-2	GS + PI-510 EVO2	450	4,5	3,1	50	4/20x5	24+6	23°
P1004161-2	GM + P1004162-2	GS + PI-510 EVO2	500	4,5	3,1	50	4/20x5	18+6	23°
P1004015-2	GM • P1004065-2	GS + PI-510 EVO2	500	4,5	3,1	70	4/20x5	20+6	23°
P1004163-2	GM + P1004164-2	GS + PI-510 EVO2	500	4,5	3,1	50	4/20x5	24+6	23°
	P1004343-2	GS • PI-510 EVO2	630	6,0	4,1	70	4/20x5	18+6	23°

Two pairs of angularly displaced key ways are meant to place the set in a way to maximally lower the cutting force during work.



Key ways dimensions in catalogue PI-510 EVO2 saw blades. Other dimensions available on request. When ordering saw blades PI-510 EVO2 with non-standard central bore, quantity and dimensions of key ways must be given.

PI-510 EVO2



Upgraded multi-rip saw blades, type **PI-510 EVO2** with flat teeth (GM) with increased body thickness for stabilizing work of sets working in difficult conditions. Saw blades should be installed in extreme positions of the set to stabilize the blades working inside.

Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

Type of cut: longitudinal, multi-saw blade machine.

Material: wet, soft (coniferous) wood.

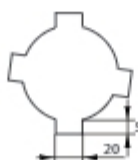


GM



Catalogue number	Type	D mm	B mm	b mm	d mm	Keyways	z	γ		
P1004020-2	PI-510 EVO2	250	4,4	3,1	70	4/20x5	16+2	23°	GM	•
P1004021-2	PI-510 EVO2	300	4,4	3,1	70	4/20x5	16+4	23°	GM	•
P1004022-2	PI-510 EVO2	350	5,0	3,6	70	4/20x5	18+4	23°	GM	•
P1004023-2	PI-510 EVO2	350	5,0	3,6	80	4/20x5	18+4	23°	GM	+
P1004024-2	PI-510 EVO2	350	5,0	3,6	90	4/20x5	18+4	23°	GM	•
P1004025-2	PI-510 EVO2	400	5,2	3,6	70	4/20x5	18+6	23°	GM	•
P1004026-2	PI-510 EVO2	400	5,2	3,6	80	4/20x5	18+6	23°	GM	•
P1004027-2	PI-510 EVO2	450	5,5	4,1	70	4/20x5	18+6	23°	GM	•
P1004028-2	PI-510 EVO2	450	5,5	4,1	80	4/20x5	18+6	23°	GM	+
P1004029-2	PI-510 EVO2	500	5,5	4,1	70	4/20x5	20+6	23°	GM	•

Two pairs of angularly displaced key ways are meant to place the set in a way to maximally lower the cutting force during work.



Key ways dimensions in catalogue PI-510 EVO2 saw blades. Other dimensions available on request. When ordering saw blades PI-510 EVO2 with non-standard central bore, quantity and dimensions of key ways must be given.

Upgraded increased life saw blade type **PI-517 EVO2** with flat (GM) or alternate top bevel (GS) carbide teeth, with two open (+2) or two open and two or four closed (+4, +6) wiper slots designed for longitudinal cutting of wet, soft and hard wood on a multi-saw blade machine.

Special blade geometry together with new, hard carbide increases life of the blade which guarantees long work.

Special body coating technology prevents the resin from sticking to the blade and reduces the blade-wood friction.

Type of cut: longitudinal, multi-saw blade machine.

Material: wet, hard wood.

PI-517 EVO2



GM



GS

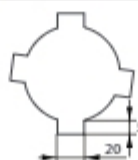


EVOLUTION 2



Catalogue number	Catalogue number	Type	D mm	B mm	b mm	d mm	Keyways	z	γ
P1701000-2	GM + P1701050-2	GS + PI-517 EVO2	250	3,4	2,2	70	4/20x5	16+2	20°
P1701001-2	GM • P1701051-2	GS + PI-517 EVO2	300	3,7	2,5	70	4/20x5	18+4	20°
P1701002-2	GM • P1701052-2	GS + PI-517 EVO2	300	3,7	2,5	80	4/20x5	18+4	20°
P1701003-2	GM + P1701053-2	GS + PI-517 EVO2	315	3,7	2,5	80	4/20x5	18+4	20°
P1701004-2	GM • P1701054-2	GS + PI-517 EVO2	350	4,0	2,7	70	4/20x5	18+4	20°
P1701005-2	GM • P1701055-2	GS + PI-517 EVO2	350	4,0	2,7	80	4/20x5	18+4	20°
P1701006-2	GM • P1701056-2	GS + PI-517 EVO2	350	4,0	2,7	90	4/20x5	18+4	20°
P1701007-2	GM • P1701057-2	GS + PI-517 EVO2	350	4,0	2,7	70	4/20x5	24+4	20°
P1701008-2	GM + P1701058-2	GS + PI-517 EVO2	350	4,0	2,7	80	4/20x5	24+4	20°
P1701009-2	GM • P1701059-2	GS + PI-517 EVO2	400	4,2	2,8	70	4/20x5	18+6	20°
P1701010-2	GM • P1701060-2	GS + PI-517 EVO2	400	4,2	2,8	80	4/20x5	18+6	20°
P1701011-2	GM • P1701061-2	GS + PI-517 EVO2	400	4,2	2,8	70	4/20x5	24+6	20°
P1701012-2	GM • P1701062-2	GS + PI-517 EVO2	450	4,7	3,3	70	4/20x5	18+6	20°
P1701013-2	GM • P1701063-2	GS + PI-517 EVO2	450	4,7	3,3	80	4/20x5	18+6	20°
P1701014-2	GM + P1701064-2	GS + PI-517 EVO2	500	4,7	3,3	70	4/20x5	20+6	20°
P1701015-2	GM + P1701065-2	GS + PI-517 EVO2	500	4,7	3,3	80	4/20x5	20+6	20°
P1701247-2	GM •	PI-517 EVO2	500	5,2	3,3	70	4/20x5	20+6	20°
	P1701120-2	GS • PI-517 EVO2	630	6,2	4,1	70	4/20x5	18+6	20°

Two pairs of angularly displaced key ways are meant to place the set in a way to maximally lower the cutting force during work.



Key ways dimensions in catalogue PI-517 EVO2 saw blades. Other dimensions available on request. When ordering saw blades PI-517 EVO2 with non-standard central bore, quantity and dimensions of key ways must be given.

PI-515 EVO2



Upgraded multi-rip saw blades, type **PI-515 EVO2** with flat (GM) or alternate top bevel (GS) teeth and carbide tips, designed for longitudinal cutting of wet, soft wood with low feed (up to 10 m/min) on a multi-saw blade machine.

Special body coating technology prevents the resin from sticking to the blade and reduces the blade-wood friction.

Type of cut: longitudinal, multi-saw blade machine.

Material: wet, soft (coniferous) wood.



GM

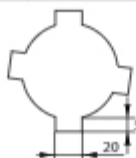


GS



Catalogue number	Catalogue number	Type	D mm	B mm	b mm	d mm	Keyways	z	γ
P1500400-2	GM + P1500450-2	GS + PI-515 EVO2	250	3,4	1,9	70	4/20x5	10+2	23°
P1500401-2	GM • P1500451-2	GS + PI-515 EVO2	300	3,6	2,3	70	4/20x5	10+4	23°
P1500402-2	GM • P1500452-2	GS + PI-515 EVO2	300	3,6	2,3	80	4/20x5	10+4	23°
P1500403-2	GM • P1500453-2	GS + PI-515 EVO2	350	3,9	2,6	70	4/20x5	10+4	23°
P1500404-2	GM • P1500454-2	GS + PI-515 EVO2	350	3,9	2,6	80	4/20x5	10+4	23°
P1500405-2	GM • P1500455-2	GS + PI-515 EVO2	400	4,0	2,7	70	4/20x5	12+4	23°
P1500406-2	GM • P1500456-2	GS + PI-515 EVO2	400	4,0	2,7	80	4/20x5	12+4	23°
P1500407-2	GM • P1500457-2	GS + PI-515 EVO2	450	4,5	3,1	70	4/20x5	14+6	23°
P1500408-2	GM • P1500458-2	GS • PI-515 EVO2	500	5,0	3,6	70	4/20x5	14+6	23°

Two pairs of angularly displaced key ways are meant to place the set in a way to maximally lower the cutting force during work.



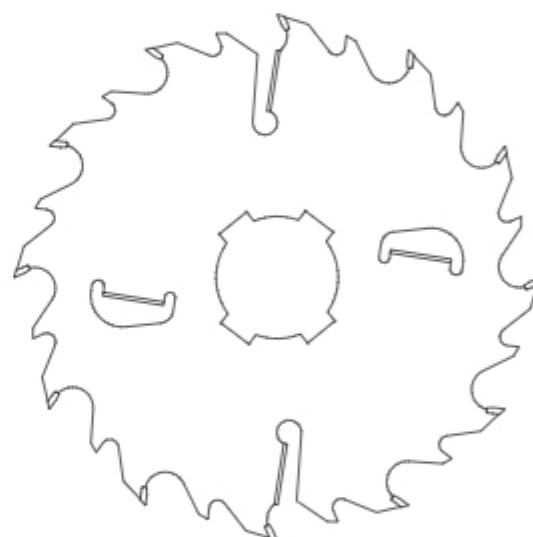
Key ways dimensions in catalogue PI-515 EVO2 saw blades. Other dimensions available on request. When ordering saw blades PI-515 EVO2 with non-standard central bore, quantity and dimensions of key ways must be given.

Upgraded multi-rip saw blades, type **PI-510W EVO2** with flat (GM) or alternate top bevel (GS) carbide teeth with two open and two closed or four closed (+4, +6) wiper knives designed for longitudinal cutting of solid, wet wood on a multi-saw blade machine. Additionally, PI-510W EVO2 saw blades are equipped with chip remover which cools down and stabilises the blade in the material. Wolf tooth geometry allows for regrounding the blades on machines of old type. Special EVO2 gas coating technology prevents the resin from stocking to the blade and reduces saw blade-wood friction.

Type of cut: longitudinal, multi-saw blade machine.

Material: wet softwood (coniferous).

PI-510W EVO2



GM



GS



EVOLUTION 2



Catalogue number	Type	D mm	B mm	b mm	d mm	Keyways	z	γ	
P1005010-2	PI-510W EVO2	300	3,4	2,1	70	4/20x5	12+4	23°	GS •
P1005300-2	PI-510W EVO2	300	3,7	2,5	70	4/20x5	12+4	23°	GS •
P1005330-2	PI-510W EVO2	300	4,2	2,8	70	4/20x5	12+4	23°	GS •
P1004492-2	PI-510W EVO2	350	3,9	2,6	70	4/20x5	14+4	23°	GM •
P1004239-2	PI-510W EVO2	350	3,9	2,6	70	4/20x5	14+4	23°	GS •
P1004493-2	PI-510W EVO2	350	3,9	2,6	80	4/20x5	14+4	23°	GM +
P1005331-2	PI-510W EVO2	350	4,2	2,8	70	4/20x5	14+4	23°	GS •
P1005301-2	PI-510W EVO2	400	4,2	2,8	70	4/20x5	14+4	23°	GS •
P1003933-2	PI-510W EVO2	600	6,0	4,1	80	4/20x5	18+6	23°	GM •
P1005332-2	PI-510W EVO2	630	6,2	4,1	70	4/20x5	18+6	23°	GS •

PI-508 EVO2



EVOLUTION 2



GM



Saw blades with feed limiter and flat teeth (GM), type **PI-508 EVO2** with carbide tips, designed for longitudinal cutting of dry wood (soft and hard).

Special body coating technology prevents the resin from sticking to the blade and reduces the blade-wood friction.

Type of cut: longitudinal, single.

Material: dry wood, soft and hard.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	Y	
P0800150-2	PI-508 EVO2	300	3,2	2,1	30	2/10/60 + 2/7/42 + 2/9,5/46,5	14	18°	GM •
P0800228-2	PI-508 EVO2	300	3,2	2,1	30	2/10/60 + 2/7/42 + 2/9,5/46,5	20	18°	GM •
P0800151-2	PI-508 EVO2	350	3,6	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	16	18°	GM •
P0800278-2	PI-508 EVO2	350	3,6	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	24	18°	GM •
P0800152-2	PI-508 EVO2	400	3,8	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	18	18°	GM •
P0800229-2	PI-508 EVO2	400	3,8	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	28	18°	GM •
P0800153-2	PI-508 EVO2	450	4,0	2,9	30	2/10/60 + 2/7/42 + 2/9,5/46,5	20	18°	GM •
P0800230-2	PI-508 EVO2	450	4,0	2,9	30	2/10/60 + 2/7/42 + 2/9,5/46,5	32	18°	GM +
P0800264-2	PI-508 EVO2	500	4,0	2,9	30	2/10/60 + 2/7/42 + 2/9,5/46,5	36	18°	GM +

PI-508V EVO2



EVOLUTION 2



GS



Saw blades with feed limiter and alternate top bevel teeth (GS), type **PI-508V EVO2** with carbide tips, designed for longitudinal and cross cutting of dry, soft and hard wood.

Special laser cuts (V) reduce the noise by about a half.

Special body coating technology prevents the resin from sticking to the blade and reduces the blade-wood friction.

Type of cut: longitudinal and cross, single.

Material: dry wood, soft and hard.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	Y	
P0800134-2	PI-508V EVO2	250	3,2	2,1	30	2/10/60 + 2/7/42 + 2/9,5/46,5	24	18°	GS •
P0800313-2	PI-508V EVO2	300	3,2	2,1	30	2/10/60 + 2/7/42 + 2/9,5/46,5	28	18°	GS •
P0800314-2	PI-508V EVO2	315	3,2	2,1	30	2/10/60 + 2/7/42 + 2/9,5/46,5	28	18°	GS •
P0800350-2	PI-508V EVO2	355	3,6	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	32	18°	GS •
P0800351-2	PI-508V EVO2	400	4,0	2,9	30	2/10/60 + 2/7/42 + 2/9,5/46,5	36	18°	GS •
P0800141-2	PI-508V EVO2	450	4,0	2,9	30	2/10/60 + 2/7/42 + 2/9,5/46,5	40	18°	GS •
P0800564-2	PI-508V EVO2	500	4,0	2,9	30	2/10/60 + 2/7/42 + 2/9,5/46,5	44	18°	GS •

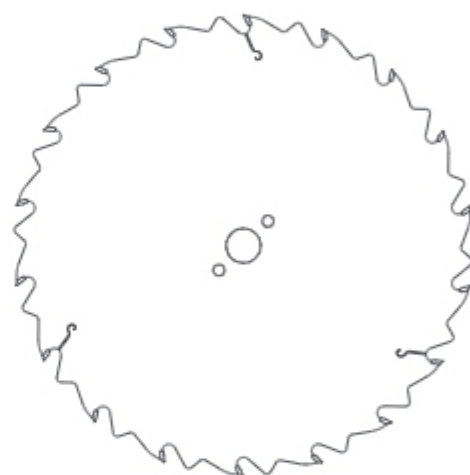
Saw blade with feed limiter and flat teeth (GM), type **PI-509 EVO2** with carbide tips, designed for longitudinal cutting of wet, soft (coniferous) wood.

Special body coating technology prevents the resin from sticking to the blade and reduces the blade-wood friction.

Type of cut: longitudinal, single.

Material: wet, soft (coniferous) wood.

PI-509 EVO2



GM

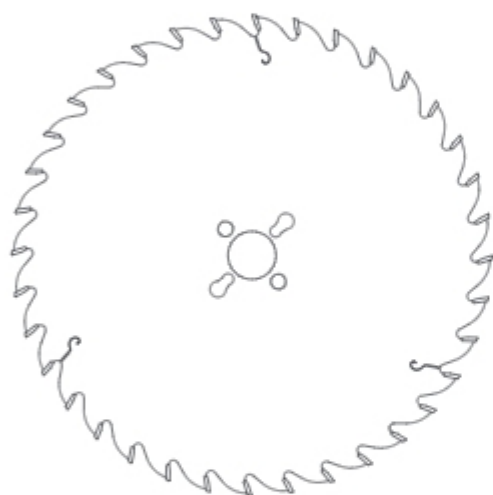


EVOLUTION 2



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
P0900100-2	PI-509 EVO2	300	3,6	2,3	30	2/10/60 + 2/7/42 + 2/9,5/46,5	14	23°	GM •
P0900101-2	PI-509 EVO2	350	3,9	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	16	23°	GM •
P0900102-2	PI-509 EVO2	400	4,0	2,7	30	2/10/60	18	23°	GM •
P0900103-2	PI-509 EVO2	450	4,5	3,1	30	2/10/60	20	23°	GM •

PI-511 EVO2



Saw blades with flat teeth (GM), type **PI-511 EVO2** with carbide tips, designed for longitudinal cutting of wet, hard wood.

Special body coating technology prevents the resin from sticking to the blade and reduces the blade-wood friction.

Type of cut: longitudinal, single.

Material: wet hard wood.



EVOLUTION 2



GM



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ		
P1100251-2	PI-511 EVO2	250	3,5	2,3	30	2/10/60 + 2/7/42 + 2/9,5/46,5	30	18°	GM	•
P1100252-2	PI-511 EVO2	300	3,5	2,3	30	2/10/60 + 2/7/42 + 2/9,5/46,5	36	18°	GM	•
P1100253-2	PI-511 EVO2	350	3,8	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	42	18°	GM	•
P1100254-2	PI-511 EVO2	400	4,0	2,6	30	2/10/60	48	18°	GM	+

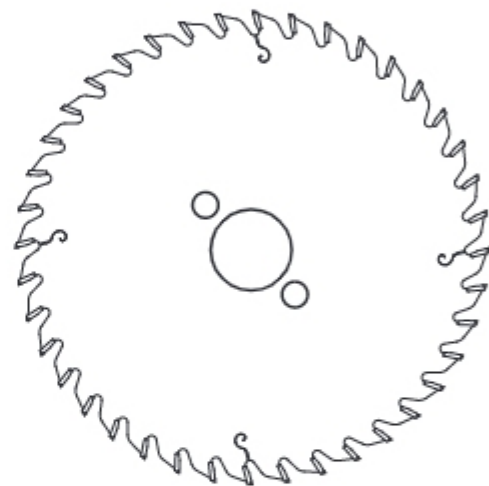
Saw blades for very precise cutting of solid wood, type **PI-513P EVO2** with special barrel-shaped tips (GM-B) smoothing the cut surface.

Saw blades PI-513P EVO2 have more precise body made in the new Premium technology, which together with improved blade geometry and optimal tensioning significantly increase life of the blade. Additionally, the new body coating EVO2 technology aims at reducing body roughness, increasing saw blade stiffness and stability which directly results in longer life of the tool.

Type of cut: very precise, longitudinal, single.

Material: solid dry, soft and hard wood.

PI-513P EVO2

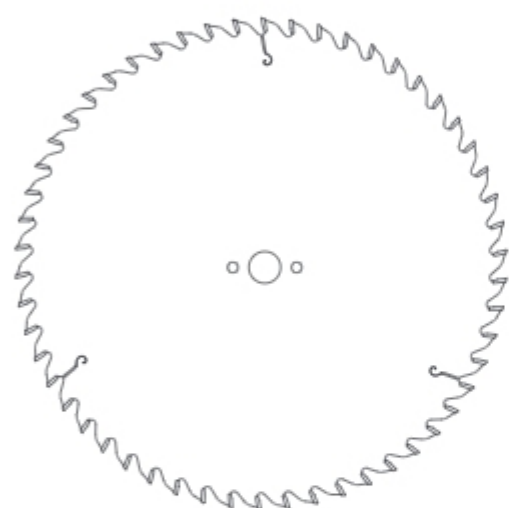


GM-B



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ		
SP1300500	PI-513P EVO2	250	3,0	2,0	60	3/10/74	32	20°	GM-B	+
SP1300501	PI-513P EVO2	300	3,2	2,2	60	3/10/74	36	20°	GM-B	+

PI-504V



Saw blades with medium teeth number and alternate top bevel teeth (GS), type **PI-504V** with carbide tips, designed for longitudinal cutting of glued wood as well as solid, dry wood, used on manual formatting machines and automatic lines.

Special laser cuts (V) reduce the noise by about a half.

Type of cut: longitudinal and cross, single.

Material: glued wood, solid dry wood.



GS



HM

Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
P0405001	PI-504V	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	40	10°	GS •
P0405002	PI-504V	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	48	10°	GS •
P0405003	PI-504V	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	54	10°	GS •
P0405004	PI-504V	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	48	10°	GS •
P0405005	PI-504V	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GS •
P0405006	PI-504V	450	3,8	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	66	10°	GS +
P0405007	PI-504V	500	4,0	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	10°	GS +

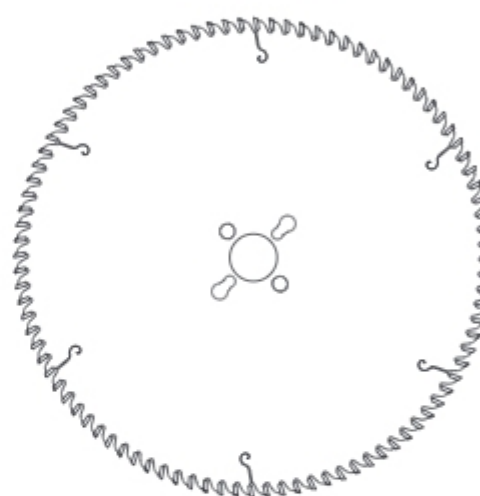
Saw blades with high teeth number and alternate top bevel teeth (GS), type **PI-505V** with carbide tips, designed for longitudinal cutting of glued wood, plywood and solid wood, used on manual formatting machines and automatic lines.

Special laser cuts (V) reduce the noise by about a half.

Type of cut: longitudinal and cross, single.

Material: glued wood, plywood, solid dry wood.

PI-505V

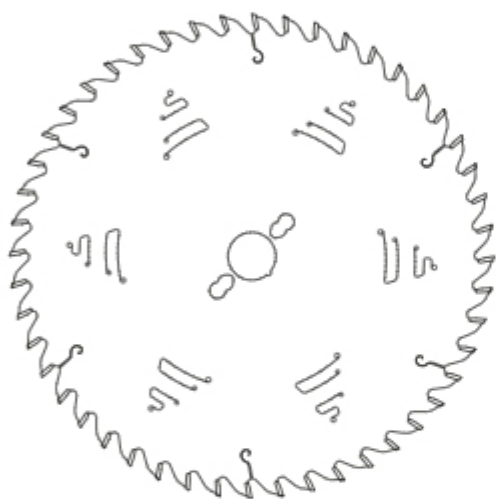


GS



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
P0505001	PI-505V	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GS •
P0505002	PI-505V	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	10°	GS +
P0505003	PI-505V	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GS +
P0505004	PI-505V	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	10°	GS •
P0505005	PI-505V	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	10°	GS •
P0505006	PI-505V	315	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	10°	GS •
P0505008	PI-505V	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	84	10°	GS •
P0505009	PI-505V	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	10°	GS •
P0505010	PI-505V	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	10°	GS •
P0505011	PI-505V	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	120	10°	GS +
P0505012	PI-505V	450	3,8	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	10°	GS +
P0505014	PI-505V	500	4,0	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	120	10°	GS +

PI-504VT Premium

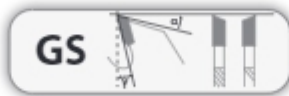


Universal saw blades with medium teeth number type **PI-504VT Premium**, alternate top bevel teeth (GS), with very hard carbide tips (T), designed for longitudinal and cross cutting of glued wood, plywood and chipboard used on manual formatting machines and automatic lines.

Special laser cuts (V) reduce the noise by about a half.

Type of cut: longitudinal and cross, single.

Material: glued wood, plywood, LDF, chipboard, laminated chipboard.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
SP0405001	PI-504VT Premium	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	40	10°	GS •
SP0405002	PI-504VT Premium	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	48	10°	GS •
SP0405003	PI-504VT Premium	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	54	10°	GS •
SP0405004	PI-504VT Premium	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	48	10°	GS •
SP0405005	PI-504VT Premium	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GS •
SP0405006	PI-504VT Premium	450	3,8	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	66	10°	GS •
SP0405007	PI-504VT Premium	500	4,0	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	10°	GS •

Universal saw blades with high teeth number type **PI-505VT Premium**, alternate top bevel teeth (GS), with very hard carbide tips (T), designed for longitudinal and cross cutting of glued wood, plywood and chipboard used on manual formatting machines and automatic lines.

Special laser cuts (V) reduce the noise by about a half.

Type of cut: longitudinal and cross, single.

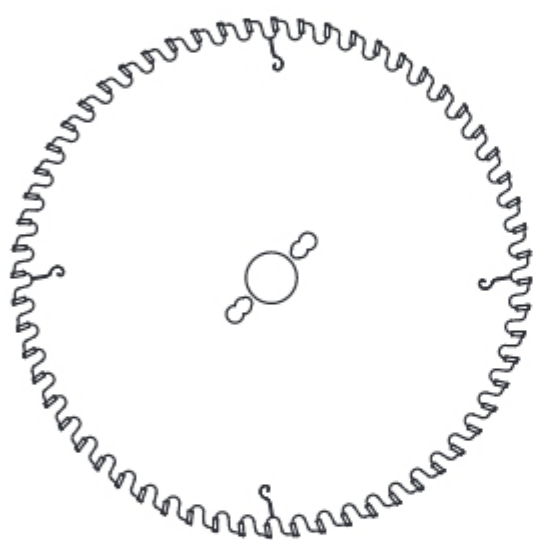
Material: plywood, laminated board, laminates, LDF, MDF.

PI-505VT Premium



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
SP0505001	PI-505VT Premium	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GS •
SP0505002	PI-505VT Premium	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	10°	GS •
SP0505003	PI-505VT Premium	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GS •
SP0505004	PI-505VT Premium	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	10°	GS •
SP0505005	PI-505VT Premium	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	10°	GS •
SP0505006	PI-505VT Premium	315	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	10°	GS •
SP0505007	PI-505VT Premium	315	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	100	10°	GS •
SP0505008	PI-505VT Premium	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	84	10°	GS •
SP0505009	PI-505VT Premium	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	10°	GS •
SP0505010	PI-505VT Premium	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	10°	GS •
SP0505011	PI-505VT Premium	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	120	10°	GS •
SP0505012	PI-505VT Premium	450	3,8	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	10°	GS •
SP0505013	PI-505VT Premium	450	4,8	3,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	138	10°	GS •
SP0505014	PI-505VT Premium	500	4,0	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	120	10°	GS •
SP0505015	PI-505VT Premium	500	4,8	3,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	144	10°	GS •

PI-507S



Universal saw blades with hollow teeth (GL/GD), type **PI-507S** with super hard carbide tips (S), designed for precise longitudinal and cross cutting of chipboard, laminated board, laminates, LDF and MDF and other homogenous materials without a scoring saw.

Type of cut: precise longitudinal and cross, without a scoring saw, single.

Material: plywood, laminated board, laminates, LDF, MDF, other hard homogenous materials.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	Y	
P0700203	PI-507S	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	48	10°	GL/GD +
P0700116	PI-507S	303	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GL/GD •
P0700121	PI-507S	303	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	-5°	GL/GD •
P0700068	PI-507S	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	10°	GL/GD •
P0700120	PI-507S	400	3,5	2,5	30	2/10/60	84	10°	GL/GD +

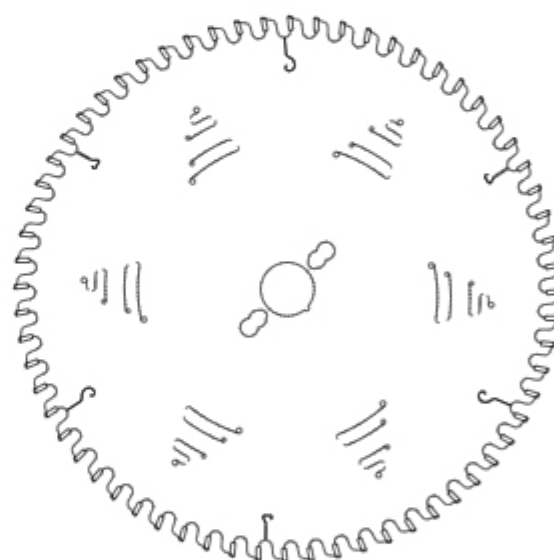
Increased life and noise reduced universal saw blades with hollow teeth (GL/GD), type **PI-507VS Plus** with super hard carbide tips (S), designed for precise longitudinal and cross cutting of chipboard, laminated board, laminates, LDF and MDF and other homogenous materials without a scoring saw.

Thanks to new blade geometry saw blades type **PI-507VS Plus** are characterized by increased life and work efficiency. Special laser cuts (V) reduce the noise by about a half.

Type of cut: precise longitudinal and cross, without a scoring saw, single.

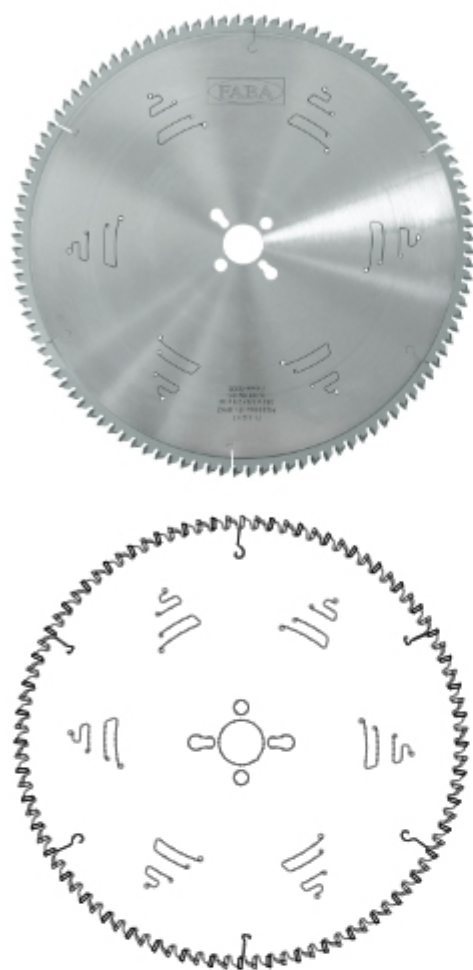
Material: plywood, laminated board, laminates, LDF, MDF, other hard homogenous materials.

PI-507VS Premium



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
SP0700200	PI-507VS Premium	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	52	5°	GL/GD •
SP0700201	PI-507VS Premium	303	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	64	5°	GL/GD •
SP0700202	PI-507VS Premium	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	76	5°	GL/GD •

PI-512VT



Universal saw blades with alternate top bevel teeth with large bevel angle (GS=38°), type **PI-512 VT** with very hard carbide tips (T), designed for very precise (clean) cutting at an angle of solid wood and MDF without a scoring saw. Special laser cuts (V) reduce the noise by about a half.

Type of cut: precise, at an angle, longitudinal and cross, without a scoring saw.

Material: solid wood, MDF.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
P1200002-15	PI-512VT	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	-6°	GS •
P1200001-15	PI-512VT	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	-6°	GS •
P1200004-15	PI-512VT	350	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	-6°	GS •

Universal saw blades with alternate top bevel teeth with large bevel angle (GS=30°), type **PI-516V Premium** with hard carbide tips, designed for dynamic and clean cross cutting of solid wood on automatic lines. Special laser cuts (V) reduce the noise by about a half.

Type of cut: cross, dynamic, clean.

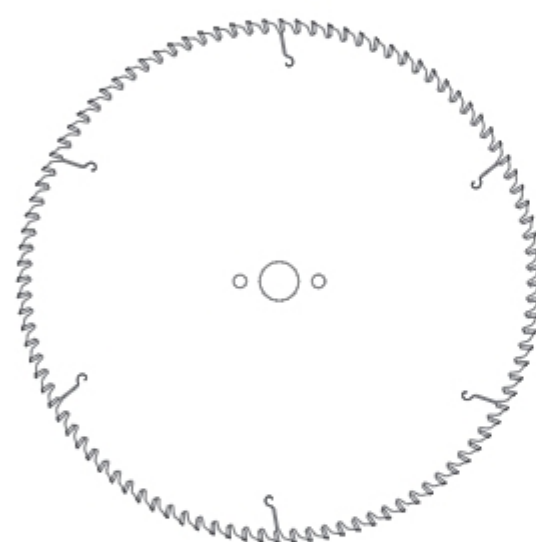
Material: solid wood, MDF.

PI-516V Premium



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
SP1601001	PI-516V Premium	400	3,5	2,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5 + 2/11/150	120	10°	GS •
SP1601002	PI-516V Premium	500	4,0	2,8	35	2/10/60	108	10°	GS •
SP1601003	PI-516V Premium	500	4,8	3,5	30	2/10/60	144	10°	GS •
SP1601004	PI-516V Premium	500	4,8	3,5	35	2/10/60	144	10°	GS •

PI-519 Premium



Universal saw blades with special V-top tooth shape (GV), type **PI-519** designed for dynamic and clean cutting across the grain of solid wood with very high feed speed on automatic lines.

Special tooth shape allows for precise and clean (without ripping) double-side formatting of furniture elements from solid (soft and hard) wood as well as glued wood.

Type of cut: cross, dynamic, clean.

Material: solid wood, plywood, glued wood.



GV



HM

Catalogue number	Type	D mm	B mm	b mm	d mm	z	γ		
SP1900001	PI-519 Premium	400	4,0	3,0	30	100	10°	GV	+
SP1900002	PI-519 Premium	450	4,8	3,5	30	100	10°	GV	+
SP1900003	PI-519 Premium	450	4,8	3,5	30	120	10°	GV	+
SP1900004	PI-519 Premium	500	5,0	3,5	30	144	10°	GV	•

Panel sizing saw blades with high teeth number and group triple-chip + flat teeth (GA), type **PI-506VT**, with very hard carbide tips (T), designed for single board cutting. Special laser cuts (V) reduce the noise by about a half.

Type of cut: cross and longitudinal, single.

Material: plywood, chipboard, laminated board, laminates, MDF.

PI-506VT



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	Y		
P0605001	PI-506VT	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GA	•
P0605002	PI-506VT	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	10°	GA	•
P0605003	PI-506VT	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GA	•
P0605005	PI-506VT	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	10°	GA	•
P0605007	PI-506VT	315	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	100	10°	GA	•
P0605009	PI-506VT	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	10°	GA	•
P0605011	PI-506VT	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	120	10°	GA	•

Increased life panel sizing saw blades type **PI-506VS Premium** with super hard carbide tips (S), designed for cutting chipboard, laminated board, MDF, HDF and other homogenous materials without impurities on manual formatting machines and automatic lines.

Optimal tensioning as well as new type of noise-reduction cuts noticeably increase stiffness and stability of the saw blade which has a direct effect on life of the tool.

Type of cut: cross and longitudinal, single.

Material: chipboard, laminated board, MDF, HDF.

PI-506VS Premium



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	Y		
SP0605002	PI-506VS Premium	250	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	10°	GA	•
SP0605003	PI-506VS Premium	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	10°	GA	•
SP0605005	PI-506VS Premium	300	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	10°	GA	•
SP0605007	PI-506VS Premium	315	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	100	10°	GA	•
SP0605009	PI-506VS Premium	350	3,2	2,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	10°	GA	•
SP0605011	PI-506VS Premium	400	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	120	10°	GA	•

PI-521VT



Panel sizing saw blades with medium teeth number and group triple-chip + flat teeth (GA), type **PI-521VT**, with very hard carbide tips (T), designed for rough cutting of chipboard, laminated board, LDF and MDF in stack. Special laser cuts (V) reduce the noise by about a half.

Type of cut: rough cutting, cross and longitudinal, in stack.

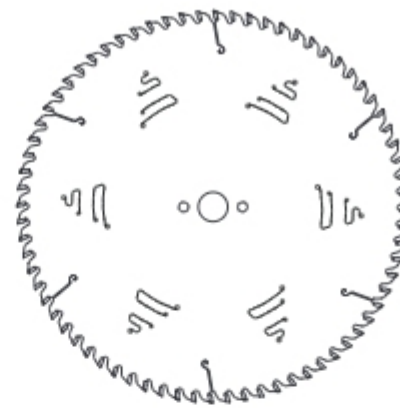
Material: chipboard, laminated board, LDF, MDF.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
P2105001	PI-521VT	300	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	60	15°	GA +
P2105002	PI-521VT	300	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	60	15°	GA +
P2105003	PI-521VT	300	4,4	3,2	65	2/9/110	60	15°	GA +
P2105004	PI-521VT	300	4,4	3,2	80	4/8,5/100+2/7/110+2/14/110	60	15°	GA +
P2105005	PI-521VT	300	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA +
P2105006	PI-521VT	300	4,4	3,2	75	2/9/110	72	15°	GA +
P2105007	PI-521VT	305	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	60	15°	GA +
P2105008	PI-521VT	310	4,4	3,2	60	2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA +
P2105009	PI-521VT	320	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	60	15°	GA +
P2105010	PI-521VT	320	4,4	3,2	65	2/9/110+2/9/100	60	15°	GA +
P2105011	PI-521VT	320	4,4	3,2	75	3/13/95	60	15°	GA +
P2105012	PI-521VT	320	4,4	3,2	80	4/8,5/100+2/7/110+2/14/110	60	15°	GA +
P2105013	PI-521VT	330	4,4	3,2	50	4/13/80	60	15°	GA +
P2105014	PI-521VT	350	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA +
P2105015	PI-521VT	350	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA +
P2105016	PI-521VT	350	4,4	3,2	80	4/8,5/100+2/7/110+2/14/110	72	15°	GA +
P2105017	PI-521VT	355	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA +
P2105018	PI-521VT	355	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA +
P2105019	PI-521VT	355	4,4	3,2	65	2/9/110+2/9/100	72	15°	GA +
P2105020	PI-521VT	355	4,4	3,2	75	-	72	15°	GA +
P2105021	PI-521VT	355	4,4	3,2	80	2/9/130+2/19/120+2/14/110	72	15°	GA +
P2105022	PI-521VT	360	4,4	3,2	65	2/9/110	72	15°	GA +
P2105023	PI-521VT	370	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA +
P2105111	PI-521VT	380	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA +

PI-521VT

1



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	y		
P2105024	PI-521VT	380	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA	+
P2105025	PI-521VT	380	4,4	3,2	65	2/9/100+2/10/110	72	15°	GA	+
P2105026	PI-521VT	380	4,4	3,2	75	3/15/75+2/7/110	72	15°	GA	+
P2105027	PI-521VT	380	4,6	3,2	80	4/9/100+2/14/110	72	15°	GA	+
P2105028	PI-521VT	380	4,8	3,5	60	2/15/100+2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA	+
P2105029	PI-521VT	400	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42+ 2/13/94	72	15°	GA	+
P2105030	PI-521VT	400	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA	+
P2105031	PI-521VT	400	4,4	3,2	75	4/15/105+2/7/110	72	15°	GA	+
P2105032	PI-521VT	400	4,4	3,2	80	2/9/130+2/19/120+2/14/110	72	15°	GA	+
P2105033	PI-521VT	420	4,6	3,2	80	2/14/110+4/9/100	72	15°	GA	+
P2105034	PI-521VT	420	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA	+
P2105110	PI-521VT	430	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA	+
P2105035	PI-521VT	430	4,4	3,2	65	2/9/110	72	15°	GA	+
P2105036	PI-521VT	430	4,4	3,2	75	4/15/105+2/7/110	72	15°	GA	+
P2105037	PI-521VT	430	4,4	3,2	80	2/9/130+4/19/120+2/7/110+2/9/110+2/14/110+4/9/100	72	15°	GA	+
P2105038	PI-521VT	450	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA	+
P2105039	PI-521VT	450	4,4	3,2	80	2/9/100+2/10/130+4/19/120+2/7/110+2/14/110+4/9/100	72	15°	GA	+
P2105040	PI-521VT	450	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA	•
P2105041	PI-521VT	460	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA	+
P2105042	PI-521VT	470	4,4	3,2	75	4/15/105	72	15°	GA	+
P2105060	PI-521VT	470	4,8	3,5	70	4/11/130	72	15°	GA	+
P2105043	PI-521VT	480	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA	+
P2105044	PI-521VT	480	4,8	3,5	80	2/9/100+2/10/130+4/19/120+2/7/110+2/14/110+4/9/100	72	15°	GA	+
P2105045	PI-521VT	500	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA	+

PI-521VS Premium



Super LongLife panel sizing saw blades with medium teeth number and group triple-chip (GA), type **PI-521VS Premium**, with super-extra hard carbide tips, designed for cutting chipboard, laminated board, MDF, HDF and other homogenous materials without impurities in stack.

The construction of the saw blade includes extra longlife type of carbide produced in nanotechnology with addition of chromium and nickel, which, together with new improved blade geometry, has substantially increased life of the saw blade.

Additionally, optimal tensioning as well as new type of noise-reduction cuts noticeably increase stiffness and stability of the saw blade which has a direct effect on life of the tool.

Type of cut: cross and longitudinal, in stack.

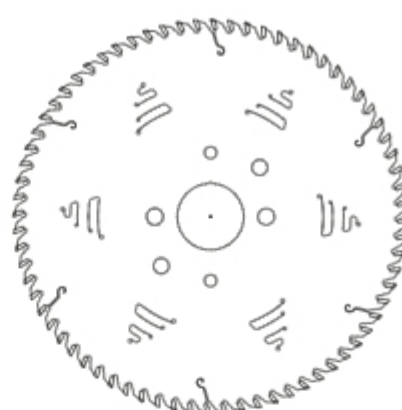
Material: chipboard, laminated board, MDF, HDF.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
SP2105001	PI-521VS Premium	300	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	60	15°	GA +
SP2105002	PI-521VS Premium	300	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	60	15°	GA +
SP2105003	PI-521VS Premium	300	4,4	3,2	65	2/9/110	60	15°	GA +
SP2105004	PI-521VS Premium	300	4,4	3,2	80	4/8,5/100+2/7/110+2/14/110	60	15°	GA +
SP2105005	PI-521VS Premium	300	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA +
SP2105006	PI-521VS Premium	300	4,4	3,2	75	2/9/110	72	15°	GA +
SP2105007	PI-521VS Premium	305	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	60	15°	GA •
SP2105008	PI-521VS Premium	310	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA +
SP2105009	PI-521VS Premium	320	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	60	15°	GA •
SP2105010	PI-521VS Premium	320	4,4	3,2	65	2/9/110+2/9/100	60	15°	GA •
SP2105011	PI-521VS Premium	320	4,4	3,2	75	3/13/95	60	15°	GA +
SP2105012	PI-521VS Premium	320	4,4	3,2	80	4/8,5/100+2/7/110+2/14/110	60	15°	GA +
SP2105013	PI-521VS Premium	330	4,4	3,2	50	4/13/80	60	15°	GA +
SP2105014	PI-521VS Premium	350	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA •
SP2105015	PI-521VS Premium	350	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA •
SP2105016	PI-521VS Premium	350	4,4	3,2	80	4/8,5/100+2/7/110+2/14/110	72	15°	GA +
SP2105017	PI-521VS Premium	355	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA •
SP2105018	PI-521VS Premium	355	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA •
SP2105019	PI-521VS Premium	355	4,4	3,2	65	2/9/110+2/9/100	72	15°	GA •
SP2105020	PI-521VS Premium	355	4,4	3,2	75	-	72	15°	GA •
SP2105021	PI-521VS Premium	355	4,4	3,2	80	2/9/130+2/19/120+2/14/110	72	15°	GA •
SP2105022	PI-521VS Premium	360	4,4	3,2	65	2/9/110	72	15°	GA +
SP2105023	PI-521VS Premium	370	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA +
SP2105111	PI-521VS Premium	380	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA +
SP2105024	PI-521VS Premium	380	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA •
SP2105025	PI-521VS Premium	380	4,4	3,2	65	2/9/100+2/10/110	72	15°	GA +
SP2105026	PI-521VS Premium	380	4,4	3,2	75	3/15/75+2/7/110	72	15°	GA +
SP2105027	PI-521VS Premium	380	4,6	3,2	80	4/9/100+2/14/110	72	15°	GA •

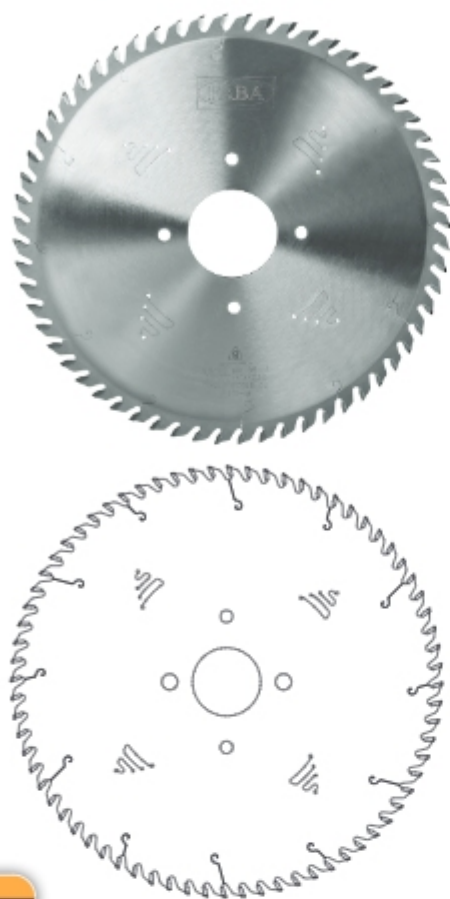
PI-521VS Premium

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Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	y	
SP2105028	PI-521VS Premium	380	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA •
SP2105029	PI-521VS Premium	400	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42+2/13/94	72	15°	GA •
SP2105030	PI-521VS Premium	400	4,4	3,2	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA •
SP2105031	PI-521VS Premium	400	4,4	3,2	75	4/15/105+2/7/110	72	15°	GA •
SP2105032	PI-521VS Premium	400	4,4	3,2	80	2/9/130+2/19/120+2/14/110	72	15°	GA •
SP2105033	PI-521VS Premium	420	4,6	3,2	80	2/14/110+4/9/100	72	15°	GA •
SP2105034	PI-521VS Premium	420	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA •
SP2105110	PI-521VS Premium	430	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA +
SP2105035	PI-521VS Premium	430	4,4	3,2	65	2/9/110	72	15°	GA +
SP2105036	PI-521VS Premium	430	4,4	3,2	75	4/15/105+2/7/110	72	15°	GA +
SP2105037	PI-521VS Premium	430	4,4	3,2	80	2/9/130+4/19/120+2/7/110+2/9/110+2/14/110+4/9/100	72	15°	GA •
SP2105038	PI-521VS Premium	450	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA •
SP2105039	PI-521VS Premium	450	4,4	3,2	80	2/9/100+2/10/130+4/19/120+2/7/110+2/14/110+4/9/100	72	15°	GA •
SP2105040	PI-521VS Premium	450	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA •
SP2105041	PI-521VS Premium	460	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA •
SP2105042	PI-521VS Premium	470	4,4	3,2	75	4/15/105	72	15°	GA +
SP2105060	PI-521VS Premium	470	4,8	3,5	70	4/11/130	72	15°	GA +
SP2105043	PI-521VS Premium	480	4,4	3,2	30	2/10/60+2/13/94+2/9/46+2/9,5/46,5+2/7/42	72	15°	GA •
SP2105044	PI-521VS Premium	480	4,8	3,5	80	2/9/100+2/10/130+4/19/120+2/7/110+2/14/110+4/9/100	72	15°	GA +
SP2105045	PI-521VS Premium	500	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	15°	GA +
SP2105046	PI-521VS Premium	520	4,8	3,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	18°	GA •
SP2105047	PI-521VS Premium	520	4,8	3,5	70	4/11/130	72	18°	GA +
SP2105061	PI-521VS Premium	570	4,8	3,5	60	2/19/120+2/11/115	60	18°	GA •
SP2105048	PI-521S Premium	600	5,8	4,0	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	72	18°	GA •
SP2105049	PI-521S Premium	620	6,2	4,0	40	2/13/115+2/13/140	60	18°	GA +
SP2105050	PI-521S Premium	670	5,8	4,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	60	18°	GA •
SP2105051	PI-521S Premium	720	6,5	4,5	40	2/14/114+2/14/140	60	18°	GA +
SP2105052	PI-521S Premium	730	6,2	4,5	60	2/9/110+2/10/80+2/11/85+2/14/100+2/11/115+2/19/120+2/14/125+2/11/148	60	18°	GA •

PI-521V NG



GA/GA



The New Generation of saw blades, **PI-521V NG** has been equipped with a new type of carbide tip. Superblade, **PI-521V NG** (New Generation) is designed for cutting multiple compact-type board, HDF, MDF, laminated board, chipboard and other homogenous materials.

The design of the blades includes super longlife carbide type produced in nanotechnology process with optimal chromium and nickel additions. It allows for obtaining high hardness with increased resistance to micro-chipping during work. The cutting surface retains its properties longer and is more resistant to breaking.

Super longlife carbide together with a new process of the saw blade's body production, have significantly increased its life. As a result, the blade's life has increased 2 up to 3 times, retaining the high quality of cutting during the whole life span of the blade.

Type of cut: cross and longitudinal, in stack.

Material: chipboard, laminated board, MDF, HDF.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	Y	
SP2102100	PI-521V NG	305	4,4	3,2	30	2/10/60	60	15°	GA/GA +
SP2102101	PI-521V NG	320	4,4	3,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5 + 2/13/94	60	15°	GA/GA +
SP2102102	PI-521V NG	320	4,4	3,2	65	2/9/100 + 2/9/110	60	15°	GA/GA +
SP2102103	PI-521V NG	350	4,4	3,2	30	2/10/60	72	15°	GA/GA +
SP2102104	PI-521V NG	350	4,4	3,2	60	2/15/100	72	15°	GA/GA +
SP2102105	PI-521V NG	350	4,4	3,2	75	-	72	15°	GA/GA +
SP2102106	PI-521V NG	350	4,4	3,2	80	2/9/130 + 2/19/120 + 2/14/110	72	15°	GA/GA +
SP2102107	PI-521V NG	380	4,4	3,2	60	2/15/100 + 2/11/115 + 2/14/125	72	15°	GA/GA +
SP2102108	PI-521V NG	380	4,8	3,5	60	2/15/100 + 2/11/115 + 2/14/125	72	15°	GA/GA +
SP2102109	PI-521V NG	400	4,4	3,2	30	2/10/60	72	15°	GA/GA +
SP2102110	PI-521V NG	400	4,4	3,2	60	2/14/100	72	15°	GA/GA +
SP2102111	PI-521V NG	420	4,6	3,2	80	2/14/110 + 4/9/100	72	15°	GA/GA +
SP2102112	PI-521V NG	450	4,4	3,2	30	2/10/60	72	15°	GA/GA +
SP2102113	PI-521V NG	450	4,4	3,2	60	2/14/125 + 2/10/80 + 2/17/100	72	15°	GA/GA +
SP2102114	PI-521V NG	450	4,4	3,2	80	2/9/100 + 2/10/130 + 4/19/120 + 2/7/110	72	15°	GA/GA +
SP2102115	PI-521V NG	450	4,8	3,5	80	2/9/100 + 2/10/130 + 4/19/120 + 2/7/110	72	15°	GA/GA +
SP2102116	PI-521V NG	450	4,8	3,5	60	2/14/125 + 2/10/80 + 2/17/100	72	15°	GA/GA +
SP2102117	PI-521V NG	460	4,4	3,2	30	2/10/60 + 2/13/94	72	15°	GA/GA +

PI-405T

Set of adjustable scoring saw blades with flat teeth (GM), type **PI-405T** with very hard carbide tips (T), designed for scoring chipboard, laminated board, laminates, LDF and MDF on manual formatting machines and automatic lines.

Type of cut: concurrent scoring.

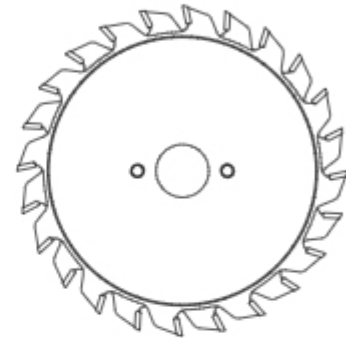
Material: chipboard, laminated board, MDF, plywood.

PI-405S

Set of increased life, adjustable scoring saw blades with flat teeth (GM), type **PI-405S** with super hard carbide tips (S), designed for scoring chipboard, laminated board, LDF, MDF and other homogenous materials on manual formatting machines and automatic lines.

Type of cut: scoring.

Material: chipboard, laminated board, MDF, HDF.

PI-405

Adjusting is made
by spacers as following:



0,05 mm - 1 pc
0,1 mm - 1 pc
0,2 mm - 2 pcs
0,3 mm - 1 pc

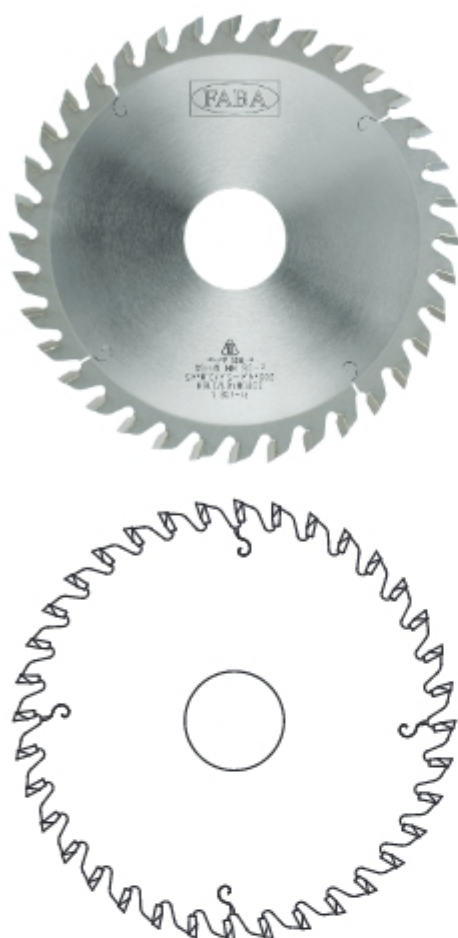
PI-405T**PI-405S**

Catalogue number	Type	D mm	B/B ₂ mm ²	b mm	d mm	z	γ		
S0501001	PI-405S	80	2,8/3,6	1,0-2,2	20	2x10	12°	GM	•
S0501002	PI-405T	100	2,8/3,6	1,0-2,2	20	2x12	12°	GM	•
S0501003	PI-405T	100	2,8/3,6	1,0-2,2	22	2x12	12°	GM	•
S0501004	PI-405S	100	2,8/3,6	1,0-2,2	20	2x12	12°	GM	•
S0501005	PI-405S	100	2,8/3,6	1,0-2,2	22	2x12	12°	GM	•
S0501006	PI-405T	120	2,8/3,6	1,0-2,2	20	2x12	12°	GM	•
S0501007	PI-405T	120	2,8/3,6	1,0-2,2	22	2x12	12°	GM	•
S0500059	PI-405T	120	2,8/3,6	1,0-2,2	50	4/6,4/62	2x12	12°	GM +
S0501008	PI-405S	120	2,8/3,6	1,0-2,2	20	2x12	12°	GM	•
S0501009	PI-405S	120	2,8/3,6	1,0-2,2	22	2x12	12°	GM	•
S0500216	PI-405S	120	2,8/3,6	1,0-2,2	50	4/6,4/62	2x12	12°	GM +
S0501010	PI-405T	125	2,8/3,6	1,0-2,2	20	2x12	12°	GM	•
S0501011	PI-405T	125	2,8/3,6	1,0-2,2	22	2x12	12°	GM	•
S0501012	PI-405S	125	2,8/3,6	1,0-2,2	20	2x12	12°	GM	•
S0501013	PI-405S	125	2,8/3,6	1,0-2,2	22	2x12	12°	GM	•

Set of spacer rings for the tool

Catalogue number	Name	D (mm)	d (mm)	The set includes - spacer rings	
WHAP08160	Set of spacer rings	100 / 120 / 125	20 / 22	0,05x1; 0,1x1; 0,2x2; 0,3x1	•

PI-408T



Scoring saw blades with conical-flat (GR/GM) or conical-alternate bevel teeth (GR/GS), type **PI-408T** with very hard carbide tips (T), designed for scoring chipboard, laminated board, LDF and MDF on manual formatting machines and automatic lines.

Type of cut: scoring.

Material: plywood, chipboard, laminated board, MDF.



GR/GM



GR/GS



HM

Catalogue number	Type	D mm	B ₁ /B ₂ mm	b mm	d mm	z	
S0800600	PI-408T	100	3,1/4,3	2,5	20	24	GR/GM •
S0800601	PI-408T	100	3,1/4,3	2,5	22	24	GR/GM •
S0800249	PI-408T	120	3,1/4,3	2,5	20	24	GR/GM +
S0800002	PI-408T	125	2,8/3,6	2,2	20	24	GR/GM •
S0801600	PI-408T	125	2,8/3,6	2,2	20	24	GR/GS +
S0800014	PI-408T	125	3,1/4,3	2,5	20	24	GR/GM •
S0801601	PI-408T	125	3,1/4,3	2,5	20	24	GR/GS •
S0800602	PI-408T	125	3,1/4,3	2,5	22	24	GR/GM •
S0801602	PI-408T	125	3,1/4,3	2,5	22	24	GR/GS •
S0800402	PI-408T	200	6,2/7,2	4,5	45	36	GR/GS •

Increased life scoring saw blades with conical-flat (GR/GM) or conical-alternate bevel teeth (GR/GS), type **PI-408S** with super hard carbide tips (S), designed for scoring chipboard, laminated board, MDF and HDF and other homogenous materials on manual formatting machines and automatic lines.

Type of cut: scoring.

Material: chipboard, laminated board, MDF, HDF.



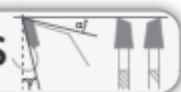
PI-408S



GR/GM



GR/GS



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Catalogue number	Type	D mm	B ₁ /B ₂ mm	b mm	d mm	Driver holes	z	
S0800341	PI-408S	100	3,2/4,3	2,5	22	-	24	GR/GM •
S0800272	PI-408S	125	2,8/3,6	2,2	20	-	24	GR/GM •
S0801603	PI-408S	125	2,8/3,6	2,2	20	-	24	GR/GS +
S0800435	PI-408S	125	2,8/3,6	2,2	22	-	24	GR/GM •
S0801604	PI-408S	125	2,8/3,6	2,2	22	-	24	GR/GS +
S0800507	PI-408S	125	3,0/4,0	2,5	20	-	24	GR/GM •
S0801605	PI-408S	125	3,0/4,0	2,5	20	-	24	GR/GS +
S0800655	PI-408S	125	3,0/4,0	2,5	22	-	24	GR/GM •
S0801606	PI-408S	125	3,0/4,0	2,5	22	-	24	GR/GS +
S0800348	PI-408S	125	3,1/4,3	2,5	20	-	24	GR/GM •
S0801607	PI-408S	125	3,1/4,3	2,5	20	-	24	GR/GS •
S0800350	PI-408S	125	3,1/4,3	2,5	22	-	24	GR/GM •
S0801608	PI-408S	125	3,1/4,3	2,5	22	-	24	GR/GS •
S0802001	PI-408S	125	4,4/5,4	3,2	45	-	24	GR/GM +
S0801616	PI-408S	125	4,4/5,4	3,2	45	-	24	GR/GS +
S0800924	PI-408S	160	4,4/5,6	3,2	45	3/11/70	36	GR/GS +
S0800617	PI-408S	160	4,4/5,6	3,2	55	3/7/66 + 3/9/72	36	GR/GS •
S0802002	PI-408S	160	4,6/5,6	3,2	55	3/7/66 + 3/9/72	36	GR/GS +
S0802003	PI-408S	180	4,4/5,4	3,2	30	2/10/60 + 2/7/42	36	GR/GS •
S0802004	PI-408S	180	4,4/5,4	3,2	45	-	36	GR/GS •
S0800419	PI-408S	180	4,8/5,8	3,5	45	-	36	GR/GS •
S0802005	PI-408S	200	4,4/5,4	3,2	20	2/11/66	36	GR/GS •
S0802006	PI-408S	200	4,4/5,4	3,2	30	2/10/60	36	GR/GS •
S0802007	PI-408S	200	4,4/5,4	3,2	45	-	36	GR/GS •
S0802008	PI-408S	200	4,4/5,4	3,2	65	2/10/110 + 2/10/100	36	GR/GS •
S0802009	PI-408S	200	4,4/5,4	3,2	80	2/14/110	36	GR/GS •
S0800606	PI-408S	200	4,8/5,8	3,5	45	-	36	GR/GS •
S0801358	PI-408S	200	4,8/5,8	3,5	65	2/10/110 + 2/10/100	36	GR/GS +
S0801478	PI-408S	200	5,8/6,8	4,0	20	-	36	GR/GS +
S0800722	PI-408S	200	5,8/6,8	4,0	45	-	36	GR/GS •
S0801019	PI-408S	215	4,4/5,4	3,2	50	3/15/80 + 2/7/80	42	GR/GS +
S0801479	PI-408S	300	4,4/5,4	3,2	50	3/15/80	48	GR/GS +

PI-530



Saw blades with medium and high teeth number and triple-chip + flat teeth (GA), type **PI-530** with special carbide tips, designed for precise cutting of profiles and thin light alloy and plastics sheets on manual feed machines and automatic lines.

Special laser cuts (V) reduce the noise by about a half.

Type of cut: cross and longitudinal.

Material: light alloys and plastics.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ		
P3000654	PI-530	200	2,2	1,6	32	-	100	-6°	GA	•
P3000181	PI-530	216	3,2	2,6	30	2/10/60	64	-6°	GA	•
P3000450	PI-530	250	2,6	2,0	30	2/10/60 + 2/7/42 + 2/9,5/46,5	100	-6°	GA	•
P3000001	PI-530	250	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	-6°	GA	•
P3000002	PI-530	250	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	-6°	GA	•
P3000003	PI-530	300	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	72	-6°	GA	•
P3000051	PI-530V	300	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	-6°	GA	•
P3000382	PI-530	300	3,2	2,6	32	2/12/64	96	-6°	GA	•
P3000114	PI-530	330	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	102	-6°	GA	•
P3000005	PI-530	350	3,8	3,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	84	-6°	GA	•
P3000006	PI-530	350	3,8	3,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	-6°	GA	•
P3000043	PI-530	350	3,8	3,2	32	2/10/60	108	-6°	GA	•
P3000007	PI-530	400	3,8	3,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	-6°	GA	•
P3000008	PI-530	400	3,8	3,2	30	2/10/60	120	-6°	GA	•
P3000392	PI-530	400	3,8	3,2	32	2/12/64	96	-6°	GA	•
P3000314	PI-530	400	3,8	3,2	32	2/12/64	120	-6°	GA	•
P3000377	PI-530	500	4,6	4,0	30	2/10/60 + 2/10/70	120	-6°	GA	•

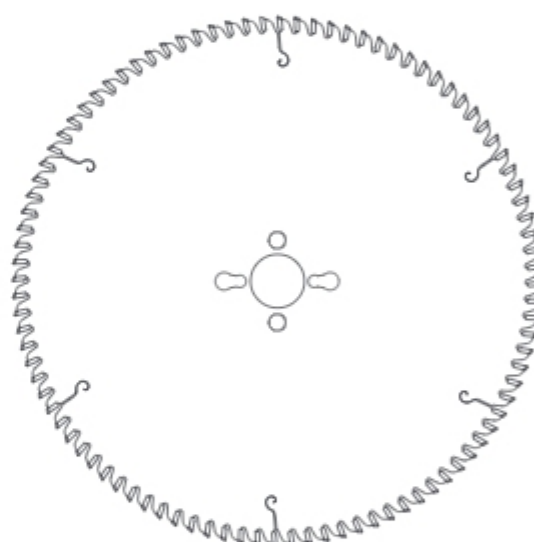
Saw blades with high teeth number and triple-chip + flat teeth (GA), type **PI-531** with special carbide tips, designed for precise cutting of solid materials from light alloys and plastics on automatic feed machines.

Type of cut: cross and longitudinal.

Material: light alloys and plastics.

PI-531

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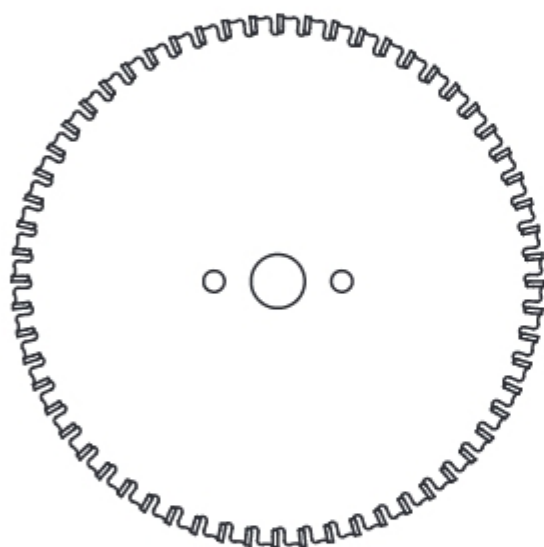
Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ		
P3100002	PI-531	250	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	5°	GA	•
P3100004	PI-531	300	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	5°	GA	•
P3100005	PI-531	330	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	102	5°	GA	+
P3100007	PI-531	350	3,2	2,6	30	2/10/60 + 2/7/42 + 2/9,5/46,5	108	5°	GA	•
P3100008	PI-531	400	3,8	3,2	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	5°	GA	•
P3101250	PI-531	500	4,0	3,4	30	2/10/60 + 2/10,5/70	120	5°	GA	+
P3102105	PI-531	500	4,0	3,4	32	2/12/64	120	5°	GA	+

PI-535

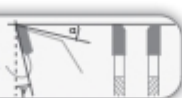
Saw blades with top bevel teeth (GSM), type **PI-535** with special carbide tips, designed for precise cutting of steel, non-ferrous metals, sandwich panels and others.

Type of cut: cross and longitudinal.

Material: steel, non-ferrous metals, sandwich panels, copper alloys, pipes, profiles, angle bars, flat bars, cable closures, metal sheets.



GSM



HM

Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	n _{max}	γ		
P3500023	PI-535	235	2,2	1,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	48	1800	0°	GSM	+
P3500001	PI-535	250	2,2	1,8	25,4	2/10/60	60	1800	0°	GSM	+
P3500002	PI-535	250	2,2	1,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	1800	0°	GSM	•
P3500003	PI-535	300	2,2	1,8	25,4	2/10/60	60	1500	0°	GSM	+
P3500004	PI-535	300	2,2	1,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	60	1500	0°	GSM	+
P3500005	PI-535	300	2,2	1,8	25,4	2/10/60	80	1500	0°	GSM	+
P3500006	PI-535	300	2,2	1,8	30	2/10/60 + 2/7/42 + 2/9,5/46,5	80	1500	0°	GSM	+
P3500007	PI-535	350	2,4	2,0	25,4	2/10/60	96	1500	0°	GSM	+
P3500008	PI-535	350	2,4	2,0	30	2/10/60 + 2/7/42 + 2/9,5/46,5	96	1500	0°	GSM	+

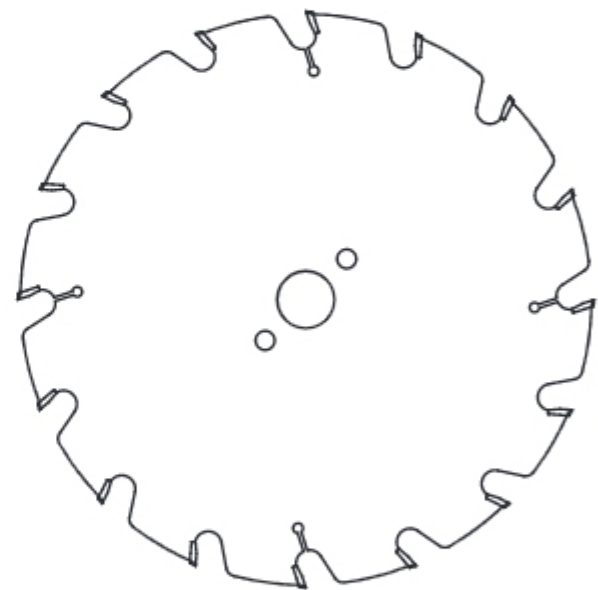
Saw blades with small teeth number and flat teeth with chamfers on both sides (GAM), type **PI-550 EVO2** with carbide tips, designed for cutting gypsum-plaster boards, construction boards, solid wood contaminated with sand, concrete, ferrous intrusions.

Special body coating technology prevents the resin from sticking to the blade and reduces the blade-wood friction.

Type of cut: cross and longitudinal.

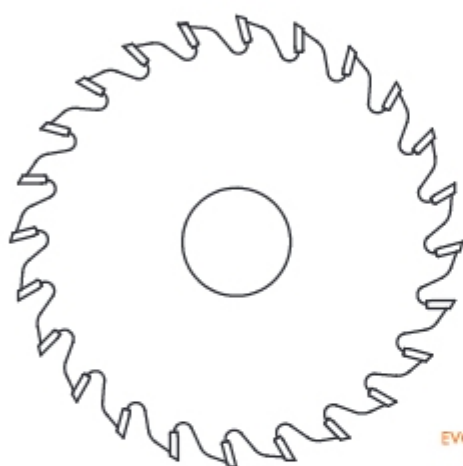
Material: gypsum-plaster boards, construction boards, solid wood, contaminated wood-based materials.

PI-550 EVO2



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
P5000001-2	PI-550 EVO2	300	3,2	2,1	30	2/10/60 + 2/7/42 + 2/9,5/46,5	16	18°	GAM •
P5000002-2	PI-550 EVO2	350	3,5	2,5	30	2/10/60 + 2/7/42 + 2/9,5/46,5	20	18°	GAM •
P5000003-2	PI-550 EVO2	400	3,8	2,8	30	2/10/60	24	18°	GAM •
P5000004-2	PI-550 EVO2	450	4,0	3,0	30	2/10/60	28	18°	GAM •
P5000005-2	PI-550 EVO2	500	4,0	3,0	30	2/10/60	32	18°	GAM •

PI-401 EVO2



GM



GS



HM

Scoring saw blades with flat teeth (GM) and alternate top bevel teeth (GS), type **PI-401** with carbide tips, designed for scoring and grooving in solid wood on manual formatting machines and automatic lines.

Type of cut: scoring, grooving.

Material: solid wood.

Catalogue number	Type	D mm	B mm	b mm	d mm	z	γ		
S0100002	PI-401 EVO2	100	3,2	2,2	30	18	15°	GS	•
S0100004	PI-401 EVO2	100	3,4	2,2	22	18	15°	GS	•
S0100003	PI-401 EVO2	100	3,4	2,2	30	18	15°	GS	•
S0100005	PI-401 EVO2	100	4,0	3,0	30	18	15°	GM	•
S0100010	PI-401 EVO2	125	2,5	1,8	30	12	15°	GS	•
S0100011	PI-401 EVO2	125	3,0	2,0	30	12	15°	GS	•
S0100013	PI-401 EVO2	125	3,2	2,2	30	12	15°	GS	•
S0100023	PI-401 EVO2	125	3,4	2,2	30	24	15°	GS	•
S0100025	PI-401 EVO2	125	3,4	2,2	30	36	10°	GS	•
S0100018	PI-401 EVO2	125	4,0	3,0	30	12	15°	GM	•
S0100052	PI-401 EVO2	125	4,0	3,0	30	24	15°	GM	•
S0100019	PI-401 EVO2	125	5,0	3,5	30	12	15°	GM	•
S0100020	PI-401 EVO2	125	6,0	4,0	30	12	15°	GM	•
S0100021	PI-401 EVO2	125	8,0	5,0	30	12	15°	GM	•

PI-401T

Scoring saw blades type **PI-401T** with very hard carbide tips (T), designed for scoring and grooving in boards on manual formatting machines and automatic lines.

Type of cut: scoring, grooving.

Material: plywood, chipboard, laminated board, MDF.

PI-401S

Increased life scoring saw blades type **PI-401S** with super hard carbide tips (S), designed for scoring and grooving in boards and homogenous materials without impurities on manual formatting machines and automatic lines.

Type of cut: scoring, grooving.

Material: chipboard, laminated board, MDF, HDF.

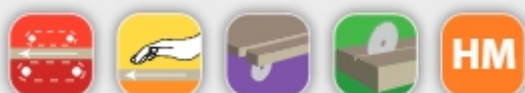
PI-401



PI-401T

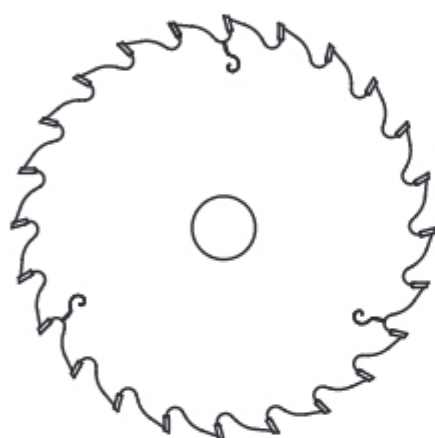


PI-401S



Catalogue number	Type	D mm	B mm	b mm	d mm	z	γ		
S0100717	PI-401T	125	3,2	2,2	20	36	10°	GS	•
S0100850	PI-401T	125	3,2	2,2	30	36	10°	GS	•
S0100263	PI-401T	125	3,4	2,2	20	24	15°	GS	•
S0100200	PI-401T	125	3,4	2,2	20	36	10°	GS	•
S0100673	PI-401S	125	3,4	2,2	20	36	10°	GS	•
S0100596	PI-401T	125	3,4	2,2	22	36	10°	GS	•
S0101288	PI-401S	125	3,4	2,2	22	36	10°	GS	•

PI-402 EVO2



Scoring saw blades with flat teeth (GM) and alternate top bevel teeth (GS), type **PI-402** with carbide tips, designed for scoring and grooving in solid wood on manual formatting machines and automatic lines.

Type of cut: scoring, grooving, splitting.

Material: solid wood.



GM



GS



HM

Catalogue number	Type	D mm	B mm	b mm	d mm	z	γ		
S0200001	PI-402 EVO2	150	2,8	2,0	30	24	15°	GS	•
S0200002	PI-402 EVO2	150	3,0	2,0	30	36	10°	GS	•
S0200003	PI-402 EVO2	150	3,2	2,2	30	36	10°	GS	•
S0200232	PI-402 EVO2	150	3,2	2,2	40	36	10°	GS	•
S0200004	PI-402 EVO2	150	3,4	2,2	30	36	10°	GS	•
S0200006	PI-402 EVO2	150	4,0	3,0	30	36	10°	GM	•
S0200011	PI-402 EVO2	160	3,2	2,2	30	36	10°	GS	•
S0201855	PI-402 EVO2	200	3,0	2,0	40	24	15°	GS	•
S0200014	PI-402 EVO2	200	3,2	2,2	30	24	15°	GS	•
S0200015	PI-402 EVO2	200	3,2	2,2	30	36	15°	GS	•
S0200249	PI-402 EVO2	200	3,2	2,2	40	36	15°	GS	+
S0200077	PI-402 EVO2	200	4,0	3,0	30	48	15°	GS	•

PI-402T

Scoring saw blades type **PI-402T** with very hard carbide tips (T), designed for scoring, grooving and cutting boards on manual formatting machines and automatic lines.

Type of cut: scoring, grooving, splitting.

Material: plywood, chipboard, laminated board, MDF.

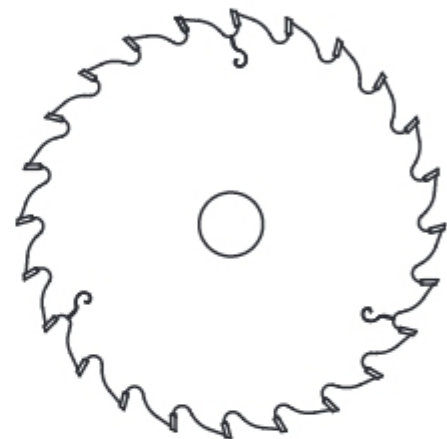
PI-402S

Increased life scoring saw blades type **PI-402S** with super hard carbide tips (S), designed for scoring, grooving and cutting boards and homogenous materials without impurities on manual formatting machines and automatic lines.

Type of cut: scoring, grooving, splitting.

Material: chipboard, laminated board, MDF, HDF.

PI-402



PI-402T



PI-402S



GM

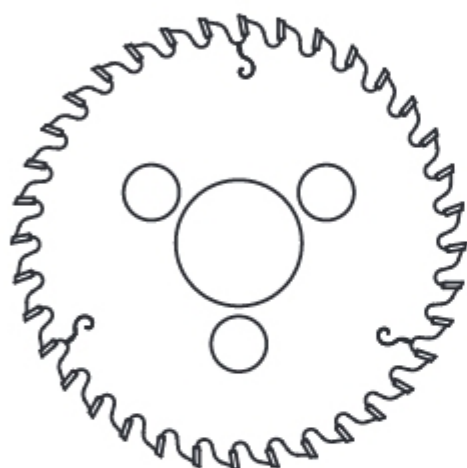


GS



Catalogue number	Type	D mm	B mm	b mm	d mm	z	γ	
S0200031	PI-402T	150	3,2	2,2	30	36	10°	GS •
S0201043	PI-402T	150	4,0	3,0	30	36	10°	GM •
S0200697	PI-402S	150	4,0	3,0	30	36	10°	GM •
S0203575	PI-402T	150	5,0	3,5	30	36	10°	GM •
S0201799	PI-402T	150	6,0	4,0	30	36	10°	GM •
S0200243	PI-402T	150	8,0	5,0	30	36	10°	GM •
S0201110	PI-402T	200	3,0	2,0	30	48	15°	GS •
S0200516	PI-402T	200	3,2	2,2	30	48	15°	GS •
S0201124	PI-402T	200	3,2	2,2	30	60	10°	GS •

PI-403



PI-403T



PI-403S



PI-403T

Scoring saw blades with flat teeth (GM), type **PI-403T** with very hard carbide tips (T), designed for cutting boards on automatic lines with pneumatic clamping systems.

Type of cut: cross and longitudinal.

Material: plywood, chipboard, laminated board, MDF.

PI-403S

Increased life scoring saw blades with flat teeth (GM), type **PI-403S** with super hard carbide tips (T), designed for cutting boards and homogenous materials without impurities on automatic lines with pneumatic clamping systems.

Type of cut: cross and longitudinal.

Material: chipboard, laminated board, MDF, HDF.



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ		
S0300001	PI-403T	180	3,2	2,2	50	3/22/80	36	10°	GM	+
S0300002	PI-403T	180	3,2	2,2	50	3/22/80	48	10°	GM	+
S0300029	PI-403S	180	3,2	2,2	50	3/22/80	48	10°	GM	+
S0300005	PI-403T	200	3,2	2,2	50	3/22/80	60	10°	GM	+

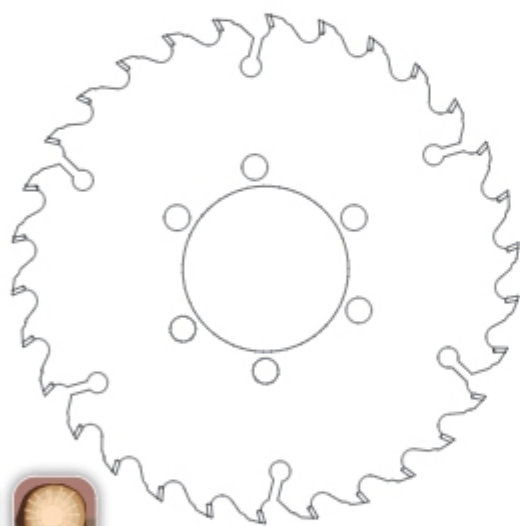
Special saw blades

Thin saw blades designed for 2-spindle automatic splitting lines and special saw blades, rings and hogger segments designed for high performance automatic saw mill lines. The saw blades are manufactured from the highest quality steel using a special technology, adapted to the type of machining (pre-sawing, formatting, splitting), kind of material (frozen, wet or dry wood) and parameters and conditions during cutting in order to guarantee proper work of the saw blade in extremely difficult conditions.

The chapter "Special saw blades" includes only example proposals of saw blades with standard dimensions. On request we can suggest and produce a proper saw blade for the needed type of machining, material as well as parameters and conditions prevailing during work.

Thin saw blades	1.48
Spline & CanDrive	1.50
Saw blades for HewSaw	1.51
Special multi-rip saw blades	1.52
Conical saw blades	1.53
Recessed multi-rip saw blades	1.54
Recessed saw blades for HewSaw	1.55
Recessed ring-saw blades	1.56
Ring-saw blades	1.57

Thin saw blades



GM



GS



Special thin saw blades with straight (GM) or alternate top bevel (GS) teeth and hard, properly chosen carbide tips, designed for splitting solid wood (lamellas) on 2-spindle high-efficiency automatic splitting lines.

Construction of the saw blade guarantees high splitting efficiency with high quality of lamellas and, at the same time, minimizing waste by reducing kerf thickness.

Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

Type of cut: longitudinal.

Material: solid dry wood, soft and hard.



HM

Type	D mm	B mm	b mm	d mm	z		
PI-501	180	1,3	0,9	50	32	GM/GS	+
PI-501	200	1,3	0,9	65	30	GM/GS	+
PI-501	200	1,4	1,0	90	32	GM/GS	+
PI-501	200	1,8	1,2	90	32	GM/GS	+
PI-501	200	2,0	1,4	90	32	GM/GS	+
PI-501	225	1,4	1,0	70	32	GM/GS	+
PI-501	225	1,6	1,2	70	32	GM/GS	+
PI-501	225	1,8	1,2	70	32	GM/GS	+
PI-501	250	1,4	1,0	70	36	GM/GS	+
PI-501	250	1,6	1,2	70	36	GM/GS	+
PI-501	250	2,0	1,4	70	36	GM/GS	+

Special thin saw blades with wiper knives and with straight (GM) or alternate top bevel (GS) teeth and hard, properly chosen carbide tips, designed for splitting solid wood (lamellas) on 1 or 2-spindle high-efficiency automatic splitting lines.

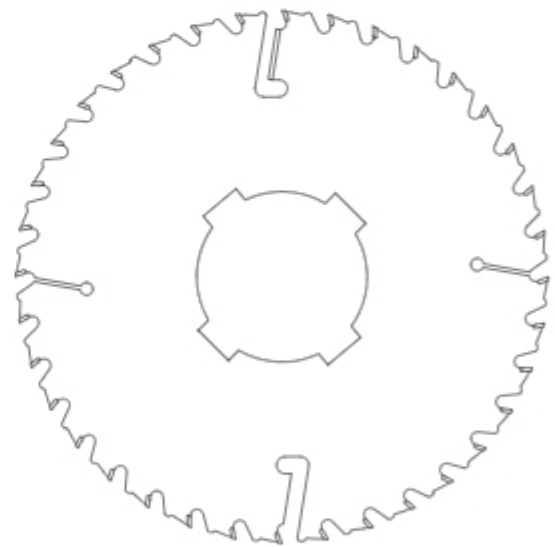
Construction of the saw blade guarantees high splitting efficiency with high quality of lamellas and, at the same time, minimizing wastes by reducing kerf thickness.

Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

Type of cut: longitudinal.

Material: solid dry wood, soft and hard.

Thin saw blades with wiper knives



GM



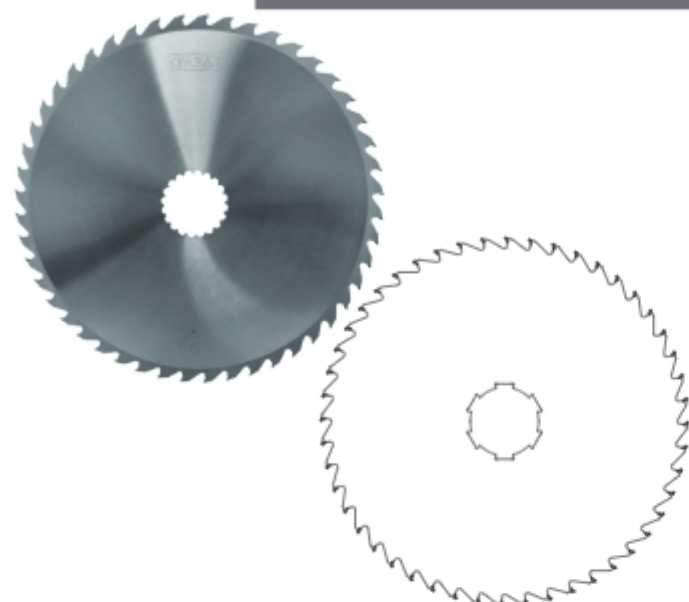
Type	D mm	B mm	b mm	d mm	z		
PI-502	200	1,8	1,2	60	16+2	GM	+
PI-502	225	1,8	1,2	60	20+4	GM	+
PI-502	225	2,0	1,4	65	20+4	GM	+
PI-502	225	2,2	1,4	60	20+4	GM	+
PI-502	250	1,8	1,2	80	36+2	GM	+
PI-502	250	2,0	1,4	60	24+4	GM	+
PI-502	325	2,0	1,6	60	42+4	GM	+

Spline & CanDrive

Special saw blades with the central bore type Spline & Can-Drive with flat (GM) or alternate top bevel (GS) teeth. Saw blades with hard, properly chosen carbide or stellite tips designed for cutting fresh (wet and frozen) wood. Ripping saw blades are equipped with special design of chip breaker, to guarantee optimal work efficiency of the tool.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.



GM



HM

STL

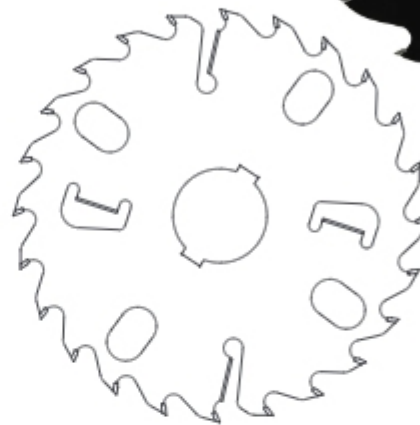
Type	D mm	B mm	b mm	d mm	z		
PI-501	428	3,4	2,4	Spline or Can Drive	30	GM	+
PI-501	500	3,4	2,2	Spline or Can Drive	36	GS	+
PI-501	500	3,4	2,6	Spline or Can Drive	36	GS	+
PI-501	500	4,8	3,5	Spline or Can Drive	48	GM	+
PI-501	500	5,0	3,5	Spline or Can Drive	48	GM	+
PI-501	500	5,0	3,5	Spline or Can Drive	60	GM	+
PI-501	508	3,4	2,4	Spline or Can Drive	36	GM	+
PI-501	508	3,4	2,4	Spline or Can Drive	42	GM	+
PI-501	508	3,8	2,4	Spline or Can Drive	48	GM	+
PI-501	508	3,8	2,4	Spline or Can Drive	60	GM	+
PI-501	600	4,0	2,8	Spline or Can Drive	48	GM	+
PI-501	610	4,2	2,8	Spline or Can Drive	40	GM	+
PI-501	660	4,6	3,0	Spline or Can Drive	18	GM	+
PI-501	660	4,0	2,6	Spline or Can Drive	24	GM	+
PI-501	660	4,6	4,0	Spline or Can Drive	32	GM	+
PI-501	700	4,0	2,8	Spline or Can Drive	42	GM	+
PI-501	700	4,0	2,8	Spline or Can Drive	48	GM	+
PI-501	700	4,2	2,8	Spline or Can Drive	42	GM	+
PI-501	700	4,2	2,8	Spline or Can Drive	48	GM	+
PI-501	700	4,4	3,0	Spline or Can Drive	48	GM	+
PI-501	710	4,2	2,8	Spline or Can Drive	48	GM	+
PI-501	710	4,2	2,8	Spline or Can Drive	56	GM	+
PI-501	720	4,4	3,0	Spline or Can Drive	48	GM	+
PI-501	800	4,2	2,8	Spline or Can Drive	56	GM	+

Special multi-rip saw blades with straight teeth (GM) and hard, properly chosen carbide or stellite tips. Saw blades with wiper knives or wiper knives and special holes enabling the blade to work in a set with a formatting cutter, designed for longitudinal cutting of wood on high-efficiency automatic HewSaw sawmill lines produced by Veisto. Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.

Saw blades for HewSaw



GM



Machine	Type	D mm	B mm	b mm	d mm	z			
Hew Saw	PI-510	251	3,6	2,4	55	18+3	GM	L/R	+
Hew Saw	PI-510	251	4,0	2,8	55	18+3	GM	L/R	+
Hew Saw	PI-510	351	2,8	1,8	70	30+4	GM	L/R	+
Hew Saw	PI-510	351	3,3	2,1	70	30+4	GM	L/R	+
Hew Saw	PI-510	351	3,6	2,4	70	30+4	GM	L/R	+
Hew Saw	PI-510	351	3,8	2,6	70	24+4	GM	L/R	+
Hew Saw	PI-510	351	3,8	2,6	70	30+4	GM	L/R	+
Hew Saw	PI-510	351	4,0	2,8	70	24+4	GM	L/R	+
Hew Saw	PI-510	351	4,0	2,8	70	30+2	GM	L/R	+
Hew Saw	PI-510	351	4,0	2,8	99	30+4	GM	L/R	+
Hew Saw	PI-510	401	4,0	2,8	70	24+4	GM	L/R	+
Hew Saw	PI-510	401	4,0	2,8	99	40+2	GM	L/R	+
Hew Saw	PI-510	450	3,9	2,6	99	30+6	GM	L/R	+
Hew Saw	PI-510	450	4,2	2,8	200	36+3	GM	L/R	+
Hew Saw	PI-510	450	4,4	3,1	99	30+6	GM	L/R	+
Hew Saw	PI-510	450	4,6	3,0	115	28+4	GM	L/R	+
Hew Saw	PI-510	450	5,0	3,4	115	24+4	GM	L/R	+
Hew Saw	PI-510	450	5,4	4,1	99	24+6	GM	L/R	+
Hew Saw	PI-510	451	3,8	2,4	99	28+4	GM	L/R	+
Hew Saw	PI-510	451	4,5	3,0	99	28+4	GM	L/R	+

Special multi-rip saw blades



GM



Special multi-rip saw blades with straight teeth (GM) and hard, properly chosen carbide or stellite tips, with wiper knives, designed for ripping wood on high-efficiency automatic machines such as HewSaw, Linck, EWD, Heinola, Ari-Vislanda, Soederhamn and others.

Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.



Machine	Type	D mm	B mm	b mm	d mm	z			
Linck	PI-510	360	3,6	2,2	150	20+4	GM	L/R	+
Linck	PI-510	410	4,0	2,6	150	20+4	GM	L/R	+
Soederhamn	PI-510	435	4,2	2,8	144,5	30+6	GM	L/R	+
Linck	PI-510	440	4,2	2,8	120	20+4	GM	L/R	+
Linck	PI-510	440	4,6	3,1	120	24+4	GM	L/R	+
Linck	PI-510	440	5,0	3,6	120	32+6	GM	L/R	+
Linck	PI-510	470	4,0	2,6	150	28+4	GM	L/R	+
Soederhamn	PI-510	485	4,5	3,3	144,5	24+6	GM	L/R	+
Linck	PI-510	490	4,6	3,1	120	32+6	GM	L/R	+
Linck	PI-510	490	5,0	3,6	120	32+6	GM	L/R	+
Linck	PI-510	505	4,6	3,1	120	24+4	GM	L/R	+
Linck	PI-510	520	3,6	2,2	150	28+6	GM	L/R	+
EWD	PI-510	520	4,2	2,9	160	36+6	GM	L/R	+
Linck	PI-510	540	3,6	2,4	300	30+3	GM	L/R	+
Linck	PI-510	540	4,2	3,1	225	30+6	GM	L/R	+
Linck	PI-510	540	4,6	3,3	150	24+4	GM	L/R	+
Linck	PI-510	540	5,0	3,6	150	30+6	GM	L/R	+
Hew Saw	PI-510	550	4,6	3,0	115	42+6	GM	L/R	+
Hew Saw	PI-510	550	5,2	3,4	115	30+6	GM	L/R	+
Heinola	PI-510	556	3,6	2,4	160/260	36+3	GM	L/R	+
Heinola	PI-510	556	3,6	2,4	160/260	42+3	GM	L/R	+
Heinola	PI-510	556	4,2	2,8	160/260	38+4	GM	L/R	+
Heinola	PI-510	556	4,6	3,2	160/260	30+6	GM	L/R	+
Heinola	PI-510	556	4,6	3,2	160/260	32+4	GM	L/R	+
Hew Saw	PI-510	600	3,9	2,6	99	42+6	GM	L/R	+
Hew Saw	PI-510	600	4,4	3,1	99	42+6	GM	L/R	+
Linck	PI-510	600	5,0	3,6	120	28+6	GM	L/R	+
Linck	PI-510	648	5,0	3,6	165	20+6	GM	L/R	+

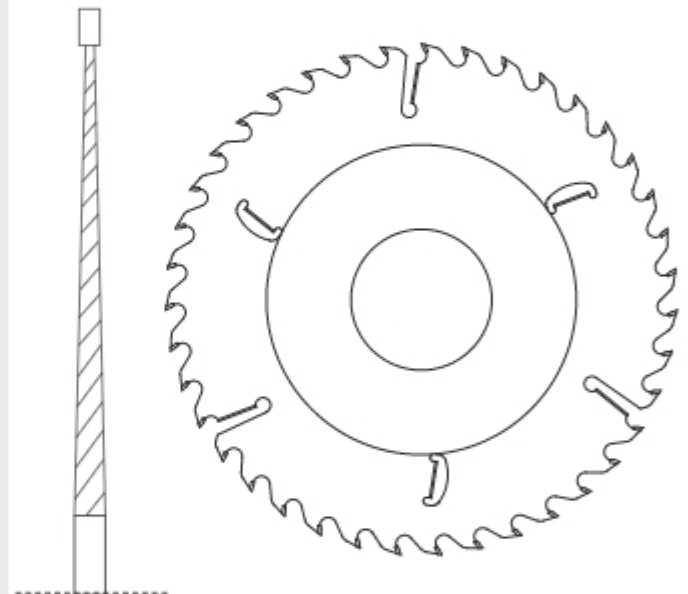
Special conical-shaped body saw blades with straight teeth (GM) and hard, properly chosen carbide or stellite tips, with or without wiper knives, designed for ripping wood on high-efficiency automatic sawmill lines.

Conical construction of the saw blade body guarantees high cutting efficiency and, at the same time, minimizing waste by reducing kerf thickness in spite of large diameters. Special body coating technology prevents the resin from sticking to the blade and lowers the blade-wood friction.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.

Conical saw blades



GM



Machine	Type	D mm	B mm	b-b ₁ mm	d mm	z			
Art	PI-501	550	5,5	3,5-3,8	120	30	GM	L/R	+
Link	PI-510	390	3,4	2,0-2,6	150	34+4	GM	L/R	+
Link	PI-510	440	3,2	2,0-2,4	150	32+4	GM	L/R	+
Link	PI-510	515	3,6	2,2-2,6	150	42+4	GM	L/R	+
Link	PI-510	530	3,6	2,2-2,6	150	44+4	GM	L/R	+
Link	PI-510	530	3,8	2,4-2,8	150	44+4	GM	L/R	+
Link	PI-510	545	3,4	1,9-2,2	150	39+6	GM	L/R	+

Recessed multi-rip saw blades



Special recessed-body saw blades for multi-rip machines with straight teeth (GM) and hard, properly chosen carbide or stellite tips, with wiper knives, designed for longitudinal cutting of wood on high-efficiency automatic sawmill lines. Special recessed construction of the saw blade body guarantees high splitting efficiency and, at the same time, minimizing waste by reducing kerf thickness in spite of large diameters.



GM



Machine	D mm	B mm	b-b ₁ mm	d mm	z		↗	
Artiglio	450	5,0	3,0-7,2	60	36+4	GM	L/R	+
Linck	505	5,2	3,6-6,8	120	20+4	GM	L/R	+
Linck	505	5,2	3,6-6,8	120	28+4	GM	L/R	+
Linck	530	5,4	3,6-6,8	105	36+6	GM	L/R	+
Linck	540	4,4	2,8-5,0	150	30+6	GM	L/R	+
Linck	540	5,0	3,4-6,8	150	30+6	GM	L/R	+
Linck	540	5,5	4,0-7,0	150	24+6	GM	L/R	+
Linck	540	5,4	3,6-6,8	150	26+6	GM	L/R	+
Linck	550	5,2	3,5-6,8	150	26+6	GM	L/R	+
Linck	550	5,4	3,5-6,8	150	32+6	GM	L/R	+
Linck	580	5,2	3,8-6,8	140	26+6	GM	L/R	+
Artiglio	600	5,6	4,0-7,2	106	24+6	GM	L/R	+
Linck	620	5,6	3,9-6,8	170	28+6	GM	L/R	+
Heinola	620	5,4	4,2-6,5	160/260	40+4	GM	L/R	+
Heinola	620	4,6	3,4-6,5	160/260	40+4	GM	L/R	+
Linck	650	5,6	4,0-6,7	160	24+6	GM	L/R	+

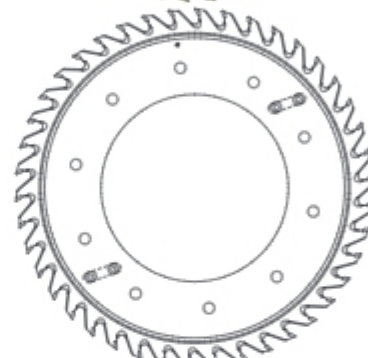
Special recessed-body saw blades with straight teeth (GM) and hard, properly chosen carbide or stellite tips, with or without wiper knives, designed for pre-sawing wood and formatting (D=252 and D=316) on high-efficiency automatic HewSaw sawmill lines produced by Veisto.

Special construction of the saw blade with properly directed chip flow achieved by shaping the gullet guarantees high work efficiency of the blades.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.

Recessed saw blades for HewSaw



GM



GW



GT

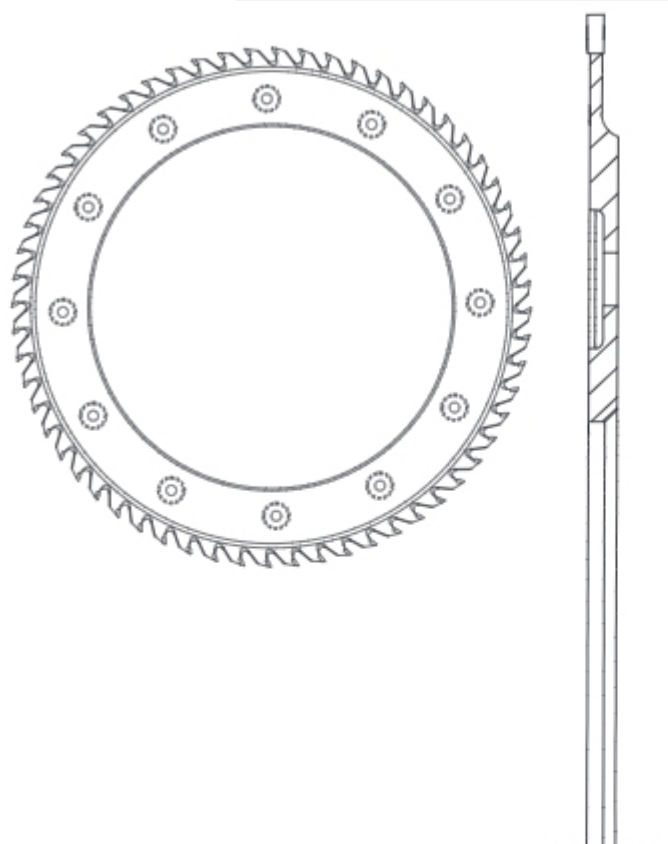


Machine	Type	D mm	B mm	b-b ₁ mm	d mm	z				
Hew Saw	PI-518	252	4,0	3,5–6,9	70/99	20	GM	L/R	CF	+
Hew Saw	PI-518	252	4,0	3,5–6,9	70/99	20	GT or GW	L/R	CF	+
Hew Saw	PI-518	252	4,0	3,5–6,9	70/99	22	GM	L/R	CF	+
Hew Saw	PI-518	252	4,0	3,5–6,9	70/99	22	GT or GW	L/R	CF	+
Hew Saw	PI-518	316	4,0	3,5–6,9	70	27	GM	L/R	CF	+
Hew Saw	PI-518	316	4,0	3,5–6,9	70	27	GT or GW	L/R	CF	+
Hew Saw	PI-518	345	3,8	2,9–10,7	144,2	36	GM	L/R	CF, KP	+
Hew Saw	PI-518	345	4,1	3,2–10,7	144,2	36	GM	L/R	CF, KP	+
Hew Saw	PI-518	345	4,5	3,6–10,7	144,2	36	GM	L/R	CF, KP	+
Hew Saw	PI-518	390	4,1	3,3–8,7	190	39	GM	L/R	CF, KP	+
Hew Saw	PI-518	390	4,3	3,3–8,7	190	39	GM	L/R	CF, KP	+
Hew Saw	PI-518	390	5,3	4,3–8,7	190	39	GM	L/R	CF, KP	+
Hew Saw	PI-518	460	4,0	3,1–8,7	240	42	GM	L/R	CF, KP	+
Hew Saw	PI-518	460	4,1	3,1–8,7	240	42	GM	L/R	CF, KP	+
Hew Saw	PI-518	460	4,5	3,3–8,7	240	42	GM	L/R	CF, KP	+

CF – with or without chip flow

KP – with or without special knives pockets

Recessed ring-saw blades



Recessed ring-saw blades with straight teeth (GM) and hard, properly chosen carbide or stellite tips, with wiper knives, designed for pre-sawing wood on high-efficiency automatic machines such as Ari/Heinola, AriVislanda, Söderhamn, Iggesund and others.

Special construction of the saw blade with properly directed chip flow achieved by shaping the gullet guarantees high work efficiency of the blades and, at the same time, minimizing waste by optimizing kerf thickness in spite of large diameters.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.



GM



Machine	D mm	B mm	b-b ₁ mm	d mm	z				
Söderhamn	625	4,0	3,2-6,0	480	48	GM	L/R	CF	+
Söderhamn	625	4,8	3,2-6,0	480	48	GM	L/R	CF	+
Söderhamn	650	4,0	3,2-6,0	480	48	GM	L/R	CF	+
Ari / Vislanda	660	3,7	2,5-7,0	460	60	GM	L/R	CF	+
Ari / Vislanda	660	4,1	3,0-7,0	460	60	GM	L/R	CF	+
Ari / Vislanda	660	4,5	3,5-7,0	460	60	GM	L/R	CF	+
Söderhamn	660	4,8	4,0-6,0	480	48	GM	L/R	CF	+
Ari / Vislanda	660	5,5	4,0-7,0	460	60	GM	L/R	CF	+
Söderhamn	710	4,4	3,3-6,0	560	64	GM	L/R	CF	+
Söderhamn	710	4,5	3,5-6,0	560	64	GM	L/R	CF	+
Söderhamn	720	4,0	3,2-6,0	560	60	GM	L/R	CF	+
Igesund	720	4,1	3,2-7,0	520	60	GM	L/R	CF	+
Ari / Heinola	720	5,6	4,0-7,0	460	72	GM	L/R	CF	+
Söderhamn	725	3,9	3,2-6,0	560	60	GM	L/R	CF	+
Söderhamn	725	4,7	3,2-6,0	560	60	GM	L/R	CF	+
Linck	730	4,5	3,5-6,0	586	64	GM	L/R	CF	+
Ari / Heinola	735	4,6	3,6-7,0	460	72	GM	L/R	WCF	+

CF – with or without chip flow

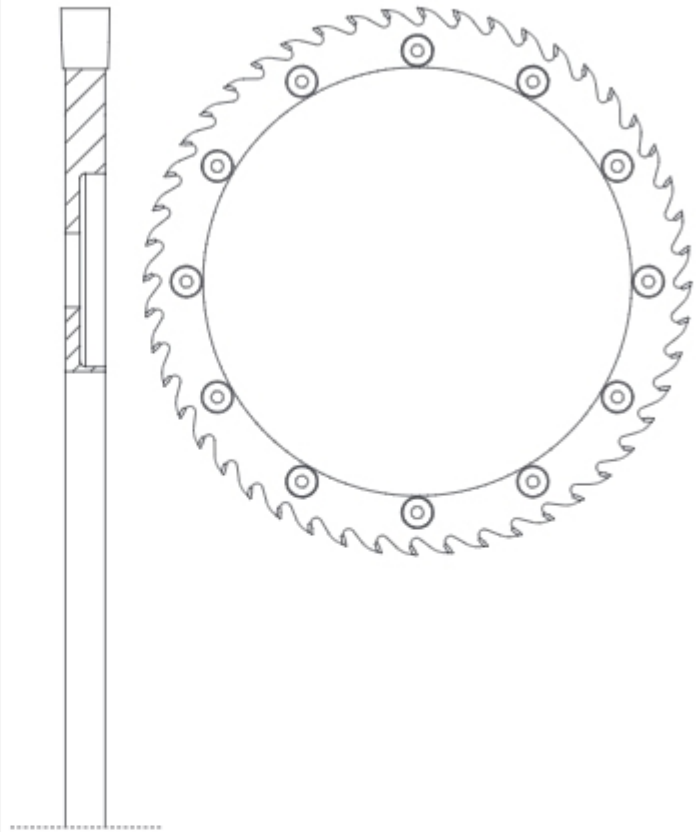
WCF – without chip flow only

Special ring-saw blades with straight teeth (GM) and hard, properly chosen carbide or stellite tips, with wiper knives, designed for pre-sawing wood on high-efficiency automatic sawmill lines.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.

Ring-saw blades

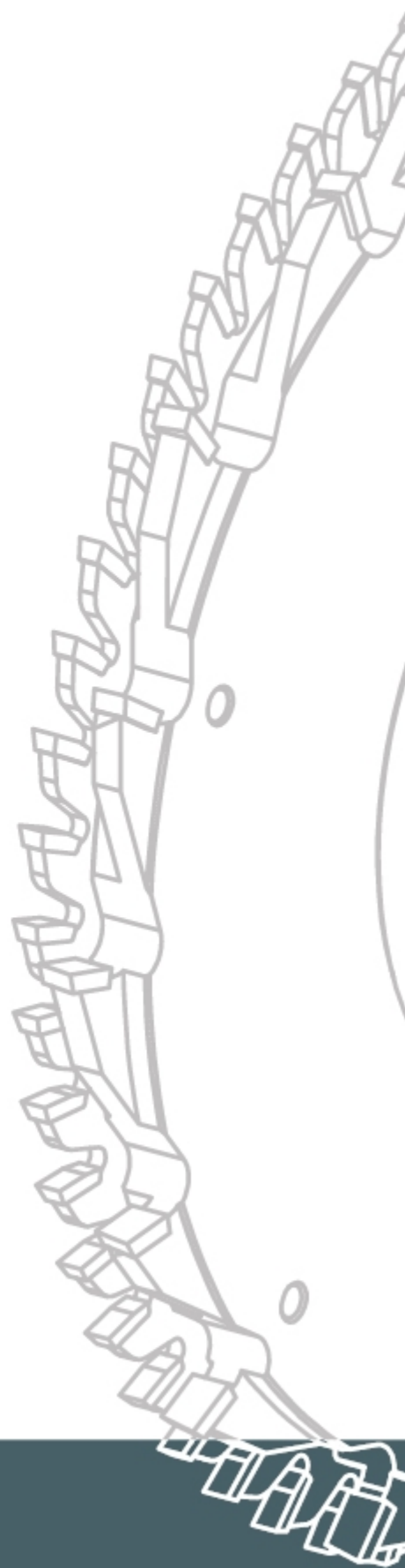


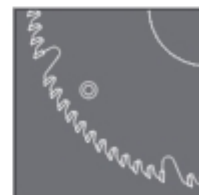
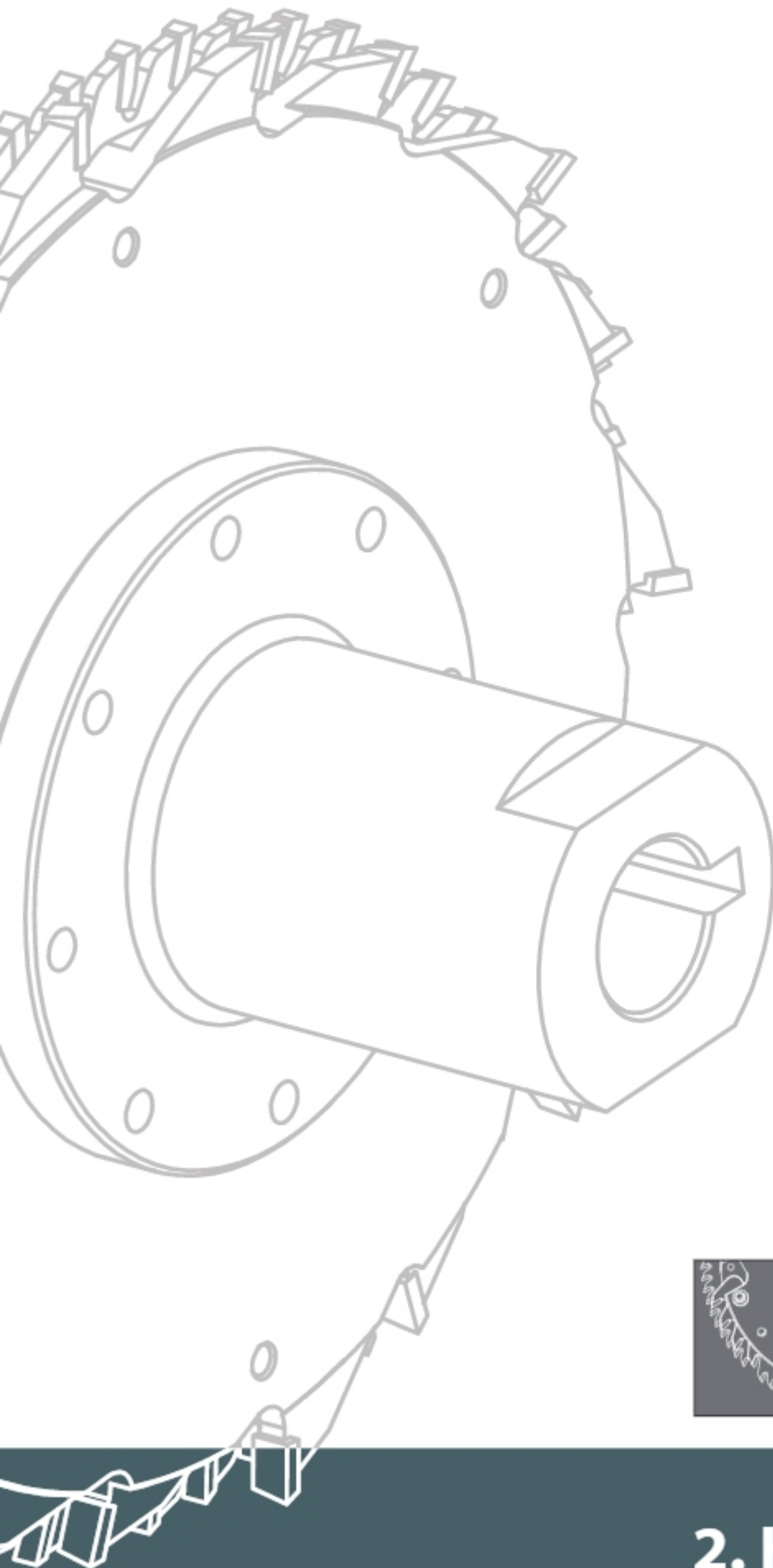
GM



Machine	D mm	B mm	b mm	d mm	z				
	510	7,0	6,0	320	44	GM	L/R	CF	+
	540	7,3	6,0	320	44	GM	L/R	CF	+
Ari / Vislanda	588	7,5	6,0	460	48	GM	L/R	CF	+
Ari / Vislanda	588	8,4	7,0	460	48	GM	L/R	CF	+
Ari / Vislanda	590	7,0	5,0	460	48	GM	L/R	CF	+
Ari / Vislanda	630	8,4	7,0	460	60	GM	L/R	CF	+
Ari / Slabber	650	7,8	6,6	460	48	GM	L/R	CF	+
Iggesund	650	8,0	7,0	520	60	GM	L/R	CF	+
Söderhamn	680	6,5	5,0	560	56	GM	L/R	CF	+
Söderhamn	700	8,4	6,0	560	60	GM	L/R	CF	+

CF – with or without chip flow





2. Hogger Units

Hoggers with carbide tips (HM) designed for professional machining of solid soft and hard wood, glued wood and other wood-based materials. As standard, each hogger GSZ-01 includes a saw blade, a hogger with segments and a special sleeve; GSZ-02 and GSZ-03 include a saw blade, a cutter and a sleeve. Hoggers during formatting solid wood work unassisted and during machining wood-based materials they work together with a scoring saw blade.

Hoggers are made from the highest quality steel in special heat treatment technology, in a vacuum heater, which has been properly selected for the type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work of the tool, both in standard and extreme conditions.

The *Hogger Units* chapter includes only example types and models of hoggers with basic dimensions. Big part of our offer are hoggers on client's special request, meeting buyer's specific demands. Before we start designing and production process we take into consideration many issues connected with client's requirements such as expected machining quality, type and parameters of the machine, workpiece material and many others. Hoggers are produced with various types of clamping. Clamping construc-

tion guarantees easy installation of the whole sets on the machine. Designing and production time of hoppers or sets of hoppers made on client's request, in most cases, does not take more than 10 working days after agreeing all the details.

All types of hoppers are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. Interoperational and final control verifies tools production and guarantees that every tool sent to the client is manufactured according to technical documentation and standards. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

Orders should include:

- outer diameter (D) or diameters range,
- bore diameter (d),
- width of formatted element (s),
- number of teeth (z) or spindle rotation speed and feed speed,
- type of machined material,
- other information relevant for designing and production process.



Contents

2. HOGGER UNITS

Pictograms	2.3
2.1 Hoggers	2.4
2.2 Saw blades	2.8
2.3 Hogger segments	2.10
2.4 Special hogger segments	2.11

Pictograms



solid dry softwood



solid dry hardwood



solid wet softwood



solid wet hardwood



solid frozen wood



chipboard



plywood



laminated board



MDF board



HDF board



longitudinal cut



cross and longitudinal cut



cutting with scoring saw blade



mechanical feed



carbide



stellite

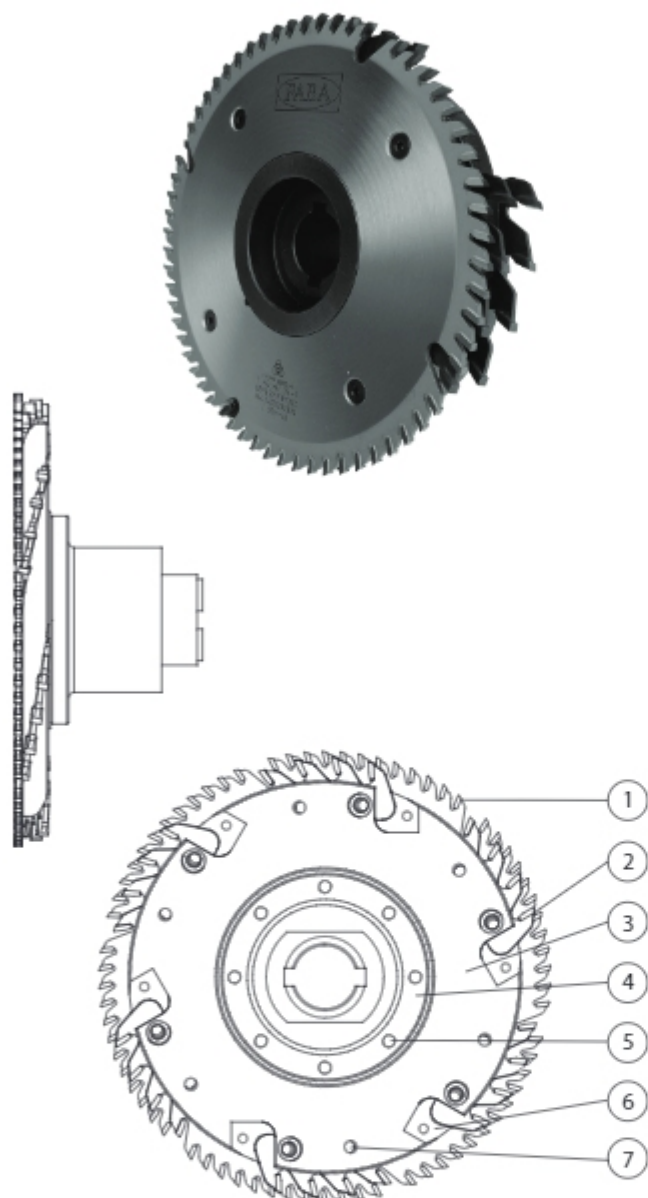
- product available on stock
- + approximate production time 9 days

GSZ-01

Complete hogger unit, type **GSZ-01** with very hard carbide tips (T), designed for gross formatting and hogging of chipboard and MDF on automatic lines.

Type of cut: cross and longitudinal, formatting with and without a scoring saw blade.




Przeznaczenie: gross chipboard and MDF.



GM



Type	D mm	B mm	d mm	z segment	z	↗		
GSZ-01	250	19	35	6x4	48	L/R	GM	+
GSZ-01	250	19	35	6x4	72	L/R	GM	+
GSZ-01	300	30	35	6x7	72	L/R	GM	+
GSZ-01	350	40	35	6x10	72	L/R	GM	+

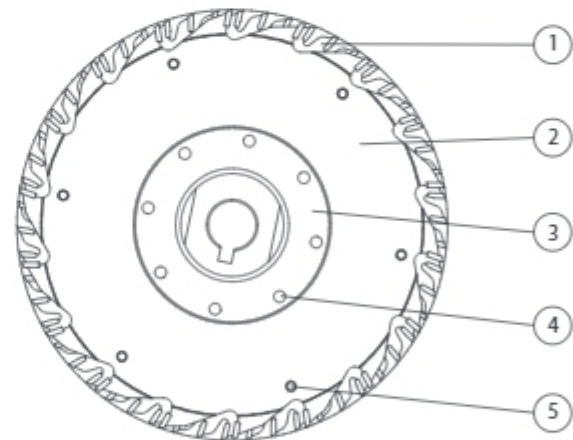
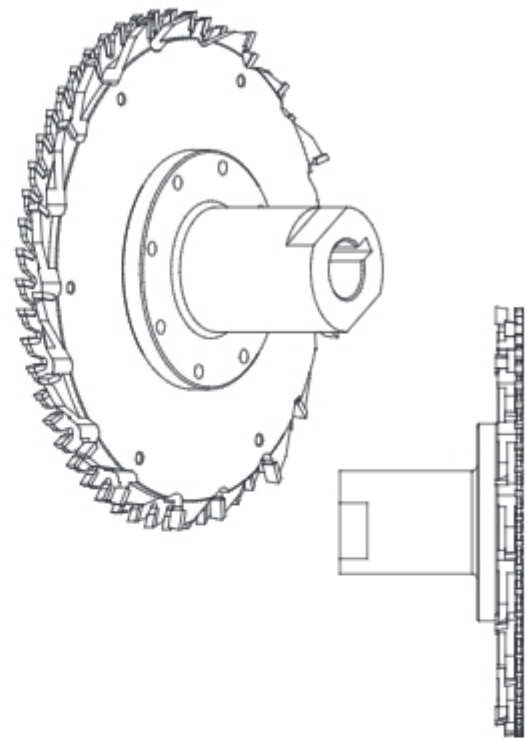
Elements							
	1. Saw blade	2. Hogger segment	3. Body	4. Sleeve	5. M8x20	6. M8x12	7. M6x16
GSZ-01 D=250	PI-406T 250x4,0/80 z=72	PI-541 250x6,0/2,8 z=4					
Quantity	1	6	1	1	4	12	6

Complete hogger unit, type **GSZ-02** with very hard carbide tips (T), designed for formatting and hogging solid wood.

Type of cut: cross and longitudinal.

Material: solid wood.

GSZ-02



GM



Type	D mm	B mm	d mm	z Cutter	z	↕		
GSZ-02	251	15,1	35	9+9	54	L/R	GM	+
GSZ-02	301	15,7	35	12+12	72	L/R	GM	+

Elements



1. Saw blade



2. Cutter



3. Sleeve



4. M8x20



5. M6x10
TOR1128

GSZ-02 D=251

PI-404T 250x4,4/80 z=54

251x12x80 z=9+9

Quantity

1

1

1

8

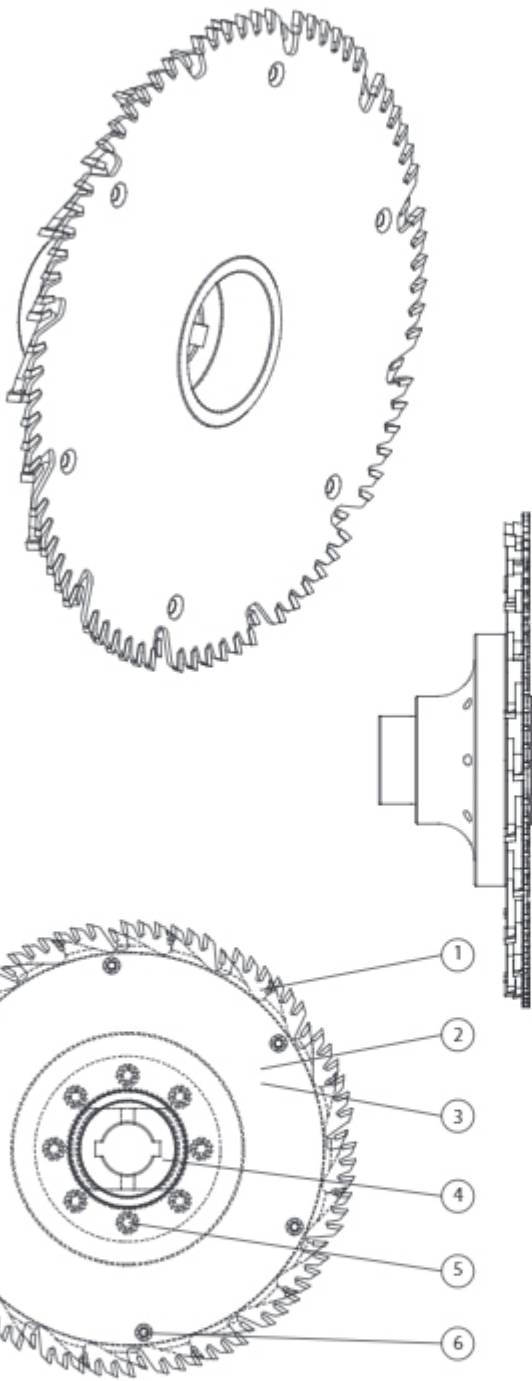
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GSZ-03

Complete hogger unit, type **GSZ-03** with very hard carbide tips (T), designed for formatting and hogging solid wood.

Type of cut: cross and longitudinal.

Material: solid wood.



GM



HM

Type	D mm	B mm	d mm	Z Cutter	z			
GSZ-03	250	16,5	35	2x6	72	L/R	GM	+

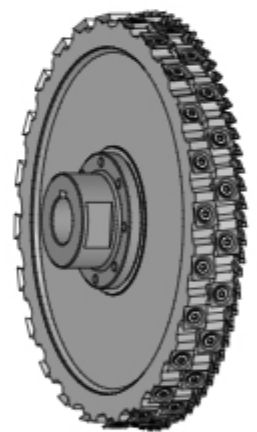
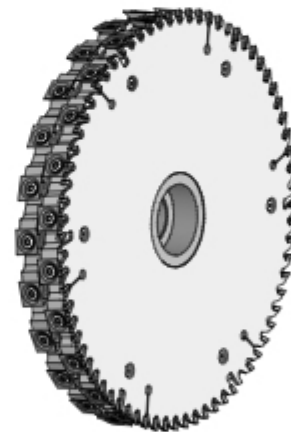
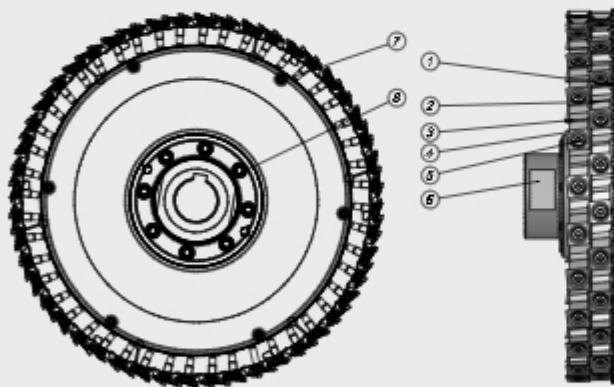
Elements						
	1. Saw blade	2. Cutter	3. Cutter	4. Sleeve	5. M8x20	6. TOR1244
GSZ-03 D=250	PI-406T 250x4,0/80 z=72	245x8,0/6,0x80 z=6	250x8,0/6,0x80 z=6			
Quantity	1	1	1	1	4	6

Complete hogger unit, type **GSZ-04** with exchangeable very hard carbide tips (T), designed for formatting and hogging solid wood.

Type of cut: cross and longitudinal.

Material: solid wood.

GSZ-04



GT

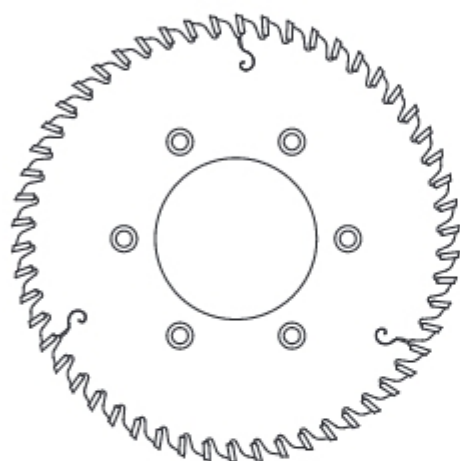


GW



Type	D mm	B mm	d mm	z (cutter)	z (saw blade)	↕		
GSZ-04	350	42	40	24+24	72	L/R	GW/GT	+
Elements	1. Saw blade	2. Cutter (ST)	3. Cutter (AL)	4. Insert	5. Screw	6. Sleeve	7. Screw	8. Screw
GSZ-04	PI-406T							
D=355	355x4,4/80 z=72	350x21x80	350x21x80	N0000705 21x21x5,5	TOR6344 M7x16,5		TOR1244 M6x16	PN 82302 M8x48/40
Quantity	1	1	1	48	48	1	6	8

PI-404



PI-404T

Scoring and formatting saw blades with flat teeth (GM), type **PI-404T** with very hard carbide tips (T), designed for cutting boards on automatic lines, mounted on sleeves.

Type of cut: cross and longitudinal.

Material: plywood, chipboard, laminated board, MDF.

PI-404S

Scoring and formatting saw blades with flat teeth (GM), type **PI-404S** with super hard carbide tips (S), designed for cutting homogenous materials without impurities on automatic lines, mounted on sleeves.

Type of cut: cross and longitudinal.

Material: laminated board, MDF, HDF.

PI-404T



PI-404S



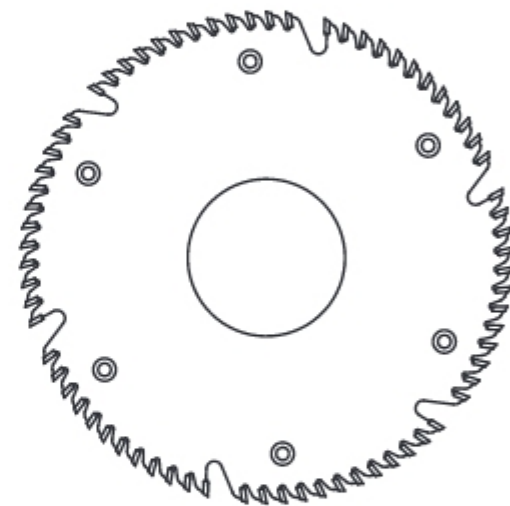
Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z	γ	
S0400001	PI-404T	180	3,2	2,2	65	6/6,5-10,5/90	48	10°	GM-P •
S0400002	PI-404T	180	3,2	2,2	65	6/6,5-10,5/90	48	10°	GM-L •
S0400358	PI-404T	180	3,2	2,2	65	6/6,5-10,5/90	54	10°	GM-P +
S0400359	PI-404T	180	3,2	2,2	65	6/6,5-10,5/90	54	10°	GM-L +
S0400511	PI-404S	220	4,0	2,8	80	6/6,5-10,5/154	48	12°	GM-P +
S0400510	PI-404S	220	4,0	2,8	80	6/6,5-10,5/154	48	12°	GM-L +
S0400820	PI-404T	250	4,4	2,8	80	6/7,0-11,6/200	54	10°	GM-P +
S0400821	PI-404T	250	4,4	2,8	80	6/7,0-11,6/200	54	10°	GM-L +

Formatting saw blade with flat teeth (GM), type **PI-406T** with very hard carbide tips (T), designed for working in a set with the hogger GSZ-01.

Type of cut: cross and longitudinal.

Material: chipboard, veneered board, laminated board, MDF.

PI-406T



2



Catalogue number	Type	D mm	B mm	b mm	d mm	Driver holes	z		
S0600021	PI-406T	200	4,0	2,8	80	4/6,5-10,5/140	60	GM-P	•
S0600022	PI-406T	200	4,0	2,8	80	4/6,5-10,5/140	60	GM-L	•
S0600007	PI-406T	250	4,0	3,0	80	6/6,5-10,5/200	72	GM-P	•
S0600008	PI-406T	250	4,0	3,0	80	6/6,5-10,5/200	72	GM-L	•
S0600011	PI-406T	250	4,0	3,0	100	6/6,5-10,5/200	72	GM-P	•
S0600012	PI-406T	250	4,0	3,0	100	6/6,5-10,5/200	72	GM-L	•

PI-540

Special hogger segment with flat teeth (GM), type **PI-540** with carbide tips.



GM



Type	D mm	z	γ		
PI-540	250	10	15°	GM	+
PI-540	330	16	15°	GM	+

PI-541

Hogger segment with flat teeth (GM), type **PI-541** with very hard carbide tips.



GM



Catalogue number	Type	D mm	B mm	b mm	Driver holes	z	γ		
P4100001	PI-541	200/250	6	2,8	2/9,5/33	4	15°	GM	•

PI-542

Hogger segment with flat teeth (GM), type **PI-542** with very hard carbide tips.



GM



Catalogue number	Type	D mm	B mm	b mm	Driver holes	z	γ		
P4200001	PI-542	250	5,0	2,8	2/8,5/50	7	15°	GM	+

Segments are made only on request according to client's dimensions and requirements.

A special milling (hogging) segment with straight teeth (GM), type **PI-540** and carbide tips.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.

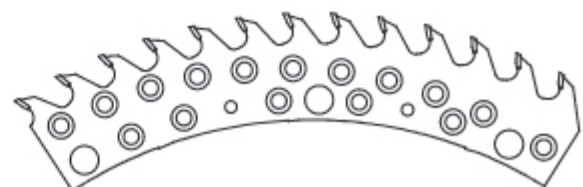
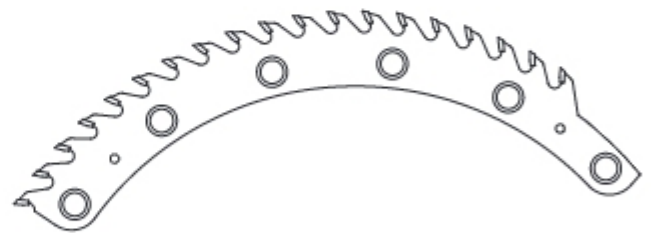
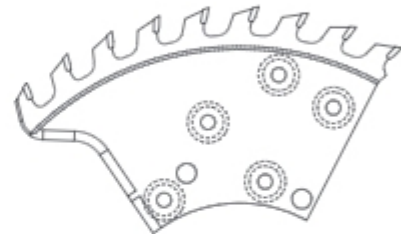


Type	D mm	B mm	b-b ₁ mm	z		
PI-540	413,5	3,5	2,5-7,0	9	GM	+
PI-540	414	3,5	2,5-7,0	11	GM	+

Type	D mm	B mm	b mm	z		
PI-540	555	5,8	5,0	19	GM	+
PI-540	555	6,0	5,0	19	GM	+
PI-540	555	6,2	5,0	19	GM	+

Type	D mm	B mm	b mm	z		
PI-540	730	4,5	3,5	13	GM	+

Special hogger segments PI-540



Segments are made only on request according to client's dimensions and requirements.

Special hogger segments

PI-540

A special milling (hogging) segment with straight teeth (GM), type **PI-540** and carbide tips.

Type of cut: longitudinal.

Material: solid wet wood (soft and hard), frozen wood.

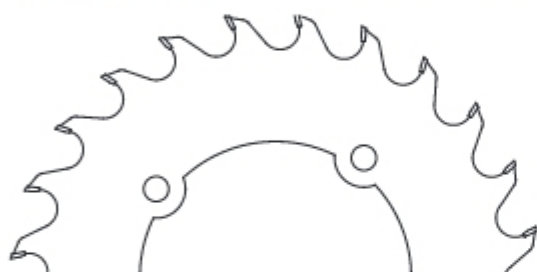


GM

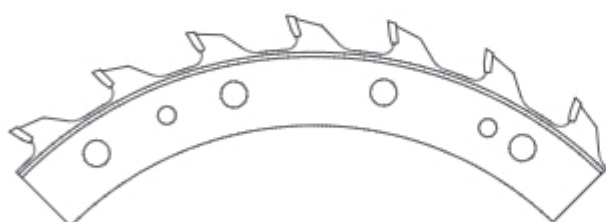


HM

STL



Type	D mm	B mm	b mm	z		
PI-540	338	6,5	5,0	19	GM	+
PI-540	360	4,8	3,6	12	GM	+



Type	D mm	B mm	b-b ₁ mm	z		
PI-540	400	3,5	2,5-5,0	8	GM	+
PI-540	403	3,5	2,5-5,0	7	GM	+
PI-540	403	3,5	2,5-5,0	11	GM	+
PI-540	411	4,0	3,0-5,0	7	GM	+
PI-540	570	4,5	3,5-5,0	19	GM	+

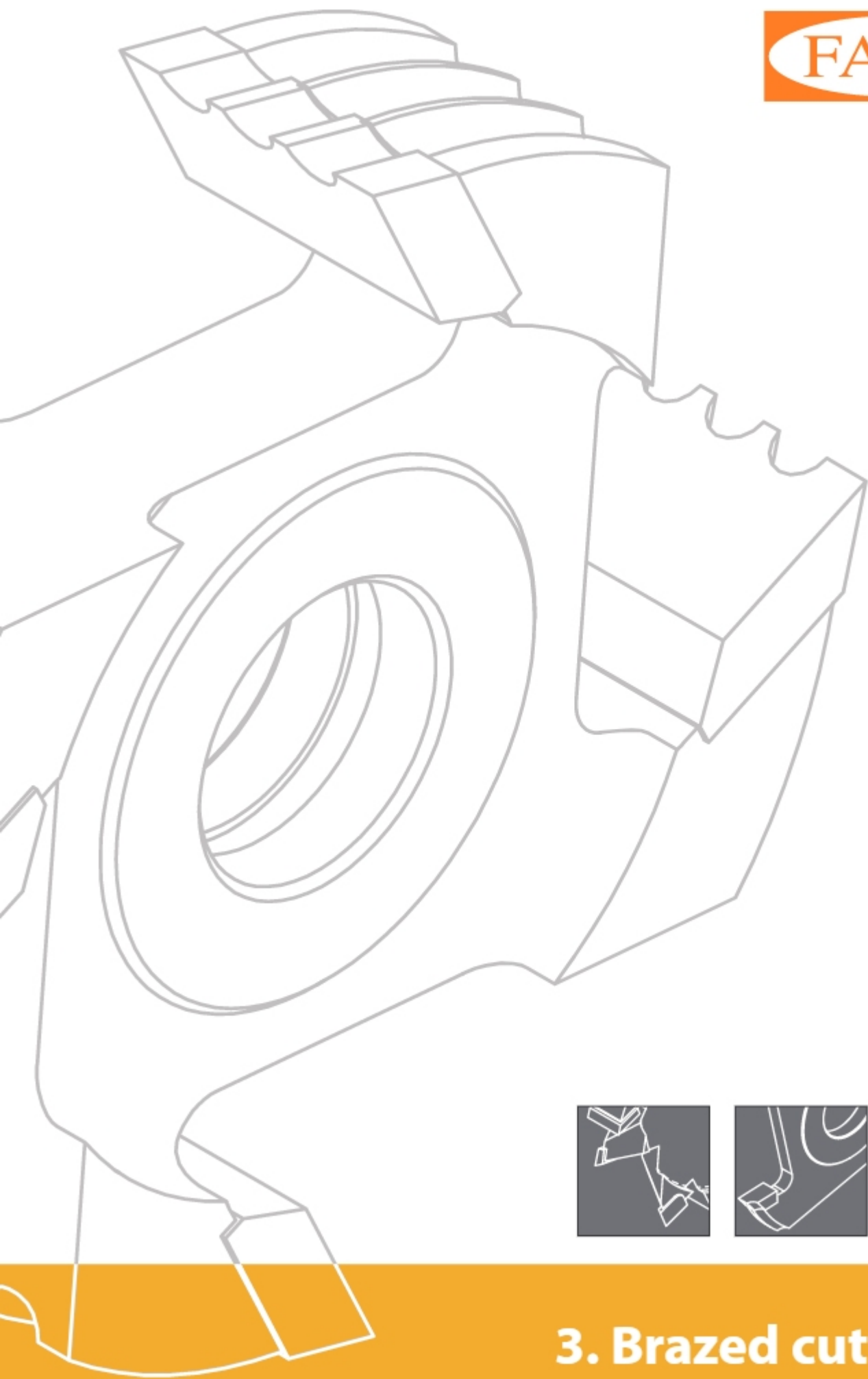


Type	D mm	B mm	b-b ₁ mm	z		
PI-540	401	3,2	2,4-6,0	11 FSW	GM	+
PI-540	405	3,2	2,4-6,0	11	GM	+

Segments are made only on request according to client's dimensions and requirements.



FABA



3. Brazed cutters

Brazed cutters

3

Brazed cutters with high speed steel tips (HSS) designed for professional machining of solid soft wood and brazed cutters with carbide tips (HM) designed for professional machining of solid soft and hard wood, glued wood and other wood-based materials. They are used for machining flat surfaces, grooves, rebates and decorative boards with complex shapes.

Cutters and sets of cutters are made from the highest quality high speed cutting steel in special heat treatment technology, which has been properly selected for the type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work of the tools both in standard and extreme conditions.

All types of cutters are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. The construction and production remain in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

Brazed cutters chapter includes only examples of cutters and sets of cutters with basic dimensions.

Optionally, we offer cutters and sets with shear angle and optimized chip flow, mounted on hydro sleeves, designed for professional, very precise machining of solid wood and wood-based materials with feed speed up to 200 m/min. On request, we can suggest, design and manufacture a proper tool for the required type of work, material, parameters and conditions during machining. The production time of catalogue cutters or sets indicated with "+" as well as special tools made on client's request, in most cases does not take more than 10 working days.

Orders should include

- outer diameter (D) or diameters range,
- bore diameter (d),
- number of teeth (z) or spindle rotation speed and feed speed,
- type of machined material,
- profile drawing with dimensions or profile sample.



Contents

3. BRAZED CUTTERS

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Pictograms



solid dry softwood



solid dry hardwood



chipboard



glued wood



MDF



carbide



high-speed cutting steel



hydro clamping



quiet and steady work



flat surfaces



rebating



grooving



edge machining



profiling



resin pockets machining



tongue-groove joint



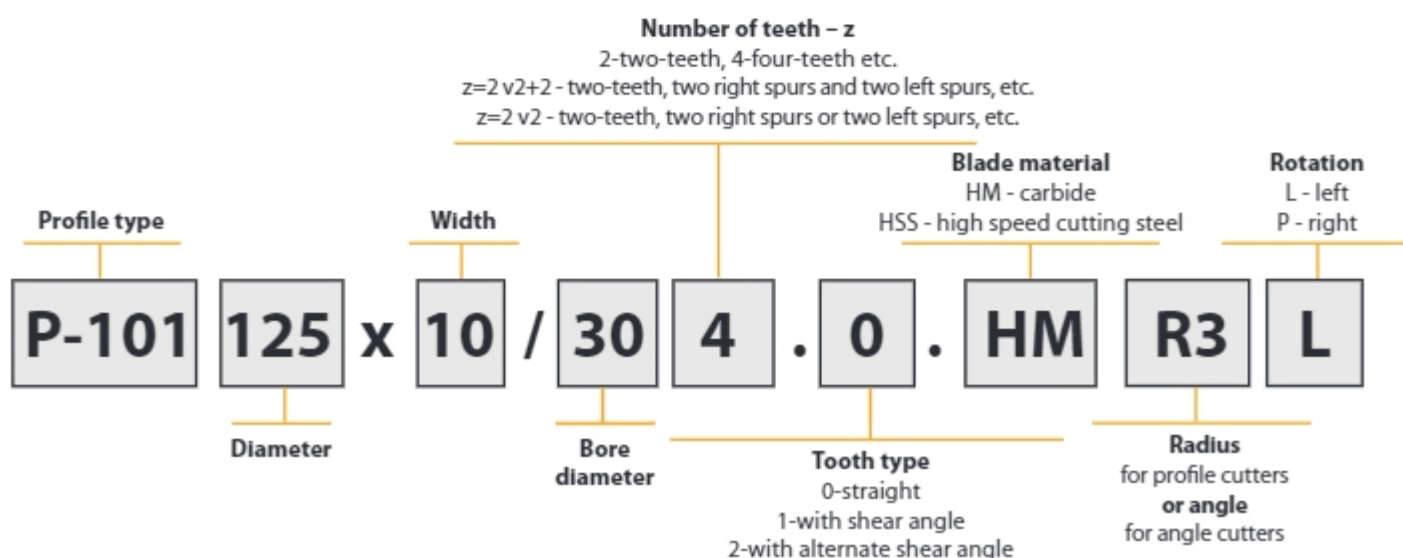
mechanical feed



manual feed

- available / stock product
- + production time 9–15 working days.

Cutters coding system

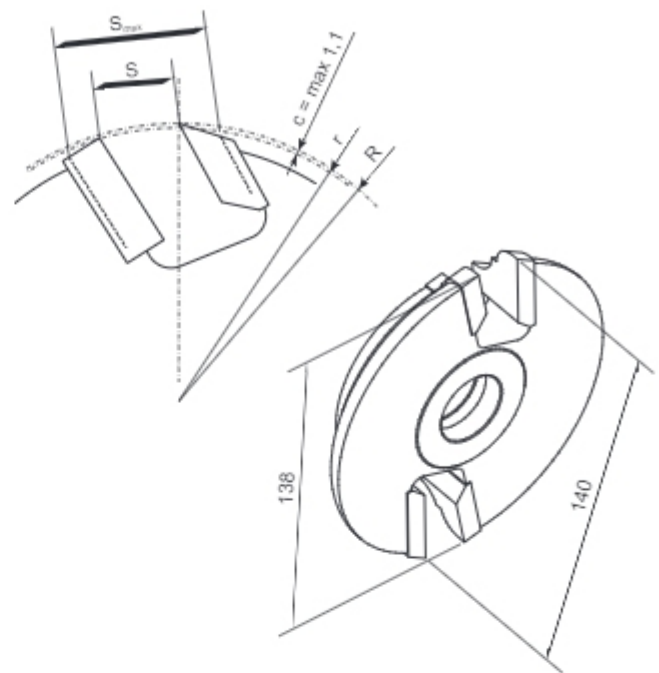


Tools for manual feed – with lower kick back force

As standard, FABA tools are offered for machines with mechanical feed (*MEC*).

On request, we suggest, design and produce also tools for machines with manual feed (*MAN*). Special construction of tools for manual feed guarantees lower kick back force.

1. *MAN* type tools should work within limited cutting speed range $V = 40 \div 70$ m/s.
2. Blade projection $c < 1,1$ mm.
3. Prices of *MAN* type tools are calculated as follows:
 - price of two-teeth *MAN* type tool equals to price of four-teeth *MEC* (mechanical) type tool
 - price of three-teeth *MAN* type tool equals to price of six-teeth *MEC* (mechanical) type tool

Manual feed

3

Basic cutting parameters**Cutting speed V_c**

$$V_c = \frac{D \times n \times \pi}{60\,000} \text{ [m/s]}$$

D - tool diameter [mm]

n - rotation speed [1/min]

p_z - feed per tooth [mm]

p_{min} - feed per minute [m/min]

z - number of teeth

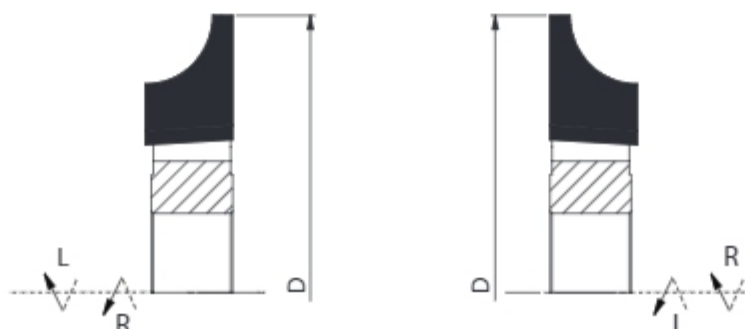
$\pi = 3,14$

Feed p_{min} / p_z

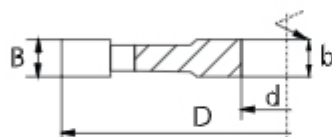
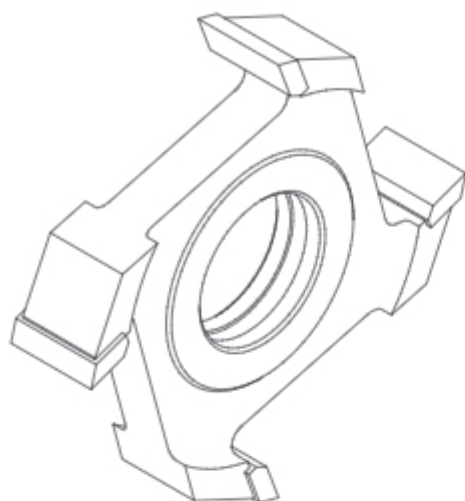
$$p_{min} \text{ [m/min]} \longleftrightarrow p_z \text{ [mm/tooth]}$$

$$p_{min} = \frac{p_z \times n \times z}{1\,000}$$

$$p_z = \frac{p_{min} \times 1\,000}{n \times z}$$

Rotation direction


3110 4.0




Brazen slotting cutter, type **3110** with four cutting teeth, designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others. Compact construction guarantees precise positioning on the spindle. Cutting edge is parallel to the tool's axis.

Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF





D n d _{max}	63 12000 25		80 9000 30		100 9000 40		125 9000 50		140 6000 60		160 6000 60		180 6000 60		200 6000 60	
B mm	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM
6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
25	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
35	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
40	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
45	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
55	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
60	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Brazen slotting cutter, type **3110** with six cutting teeth, designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others.

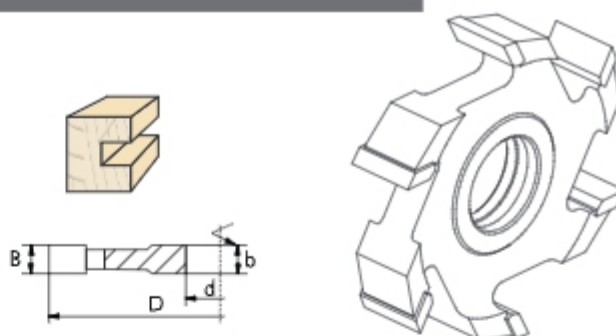
Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF

3110 6.0



3

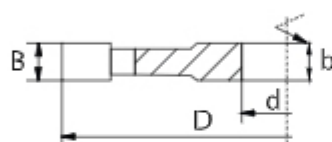
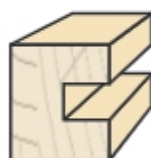
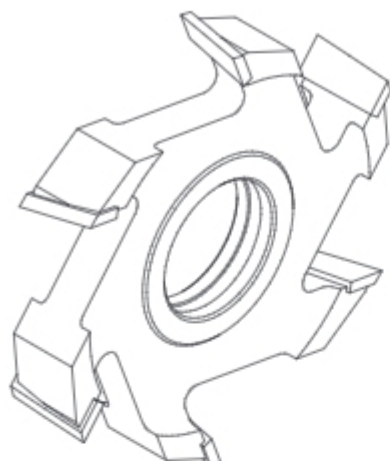
D n d max hole	80 9000 30		100 9000 40		125 9000 50		140 6000 60		160 6000 60		180 6000 60		200 6000 60	
B mm	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM
6	+	+	+	+	+	+	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+	+	+	+	+	+	+
25	+	+	+	+	+	+	+	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+	+	+	+	+	+	+	+
35	+	+	+	+	+	+	+	+	+	+	+	+	+	+
40	+	+	+	+	+	+	+	+	+	+	+	+	+	+
45	+	+	+	+	+	+	+	+	+	+	+	+	+	+
50	+	+	+	+	+	+	+	+	+	+	+	+	+	+
55	+	+	+	+	+	+	+	+	+	+	+	+	+	+
60	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Catalogue number	Type	D mm	B mm	b mm	d mm	z
3110W125-0023	3110	125	6	6	40	6 HM •
3110W125-0001	3110	125	10	10	30	6 HM •
3110S125-0037	3110	125	10	10	40	6 HSS •
3110W125-0004	3110	125	10	10	40	6 HM •
3110W125-0007	3110	125	12	12	30	6 HM •
3110S125-0059	3110	125	12	12	40	6 HSS •
3110W125-0009	3110	125	14	12	30	6 HM •
3110S125-0060	3110	125	14	12	40	6 HSS •
3110W125-0010	3110	125	16	14	30	6 HM •
3110S125-0038	3110	125	16	14	40	6 HSS •
3110W125-0011	3110	125	18	16	30	6 HM •
3110S125-0061	3110	125	18	16	40	6 HSS •
3110W125-0012	3110	125	20	18	30	6 HM •
3110S125-0039	3110	125	20	18	40	6 HSS •

Catalogue number	Type	D mm	B mm	b mm	d mm	z
3110W125-0013	3110	125	25	23	30	6 HM •
3110W125-0014	3110	125	30	16	30	6 HM •
3110W125-0008	3110	125	35	18	30	6 HM •
3110W125-0015	3110	125	40	22	30	6 HM •
3110W125-0016	3110	125	45	24	30	6 HM •
3110W125-0035	3110	125	60	32	40	6 HM •
3110S140-0005	3110	140	10	10	40	6 HSS •
3110W140-0001	3110	140	10	10	40	6 HM •
3110S140-0016	3110	140	12	12	40	6 HSS •
3110W140-0097	3110	140	12	12	40	6 HM •
3110W140-0003	3110	140	20	14	40	6 HM •
3110W140-0102	3110	140	30	16	40	6 HM •
3110W140-0104	3110	140	40	22	40	6 HM •
3110W160-0025	3110	160	10	10	40	6 HM •

Reduction sleeves are shown on page 8.19.

3110 6.2



Brazen slotting cutter, type **3110** with six cutting teeth and alternative shear angle designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others. Alternative shear angle allows for high quality of the machined surface.

Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

Material:

solid softwood

solid hardwood, glued wood, chipboard, MDF





D n d _{max}	80 9000 30		100 9000 40		125 9000 50		140 6000 60		160 6000 60		180 6000 60		200 6000 60	
B mm	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM
6	+	+	+	+	+	+	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+	+	+	+	+	+	+
25	+	+	+	+	+	+	+	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+	+	+	+	+	+	+	+
35	+	+	+	+	+	+	+	+	+	+	+	+	+	+
40	+	+	+	+	+	+	+	+	+	+	+	+	+	+
45	+	+	+	+	+	+	+	+	+	+	+	+	+	+
50	+	+	+	+	+	+	+	+	+	+	+	+	+	+
55	+	+	+	+	+	+	+	+	+	+	+	+	+	+
60	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Brazen slotting cutter, type **3110** with eight cutting teeth designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others. Large number of teeth allows for higher feed speed and guarantees optimal workload of the machine spindle.

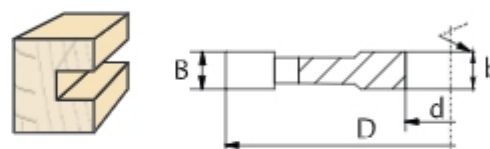
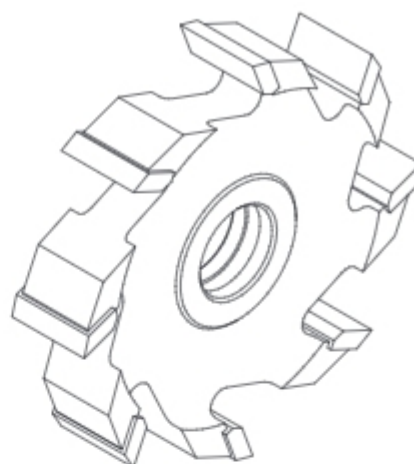
Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF

3110 8.0



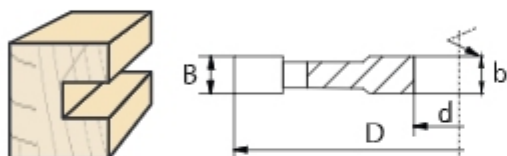
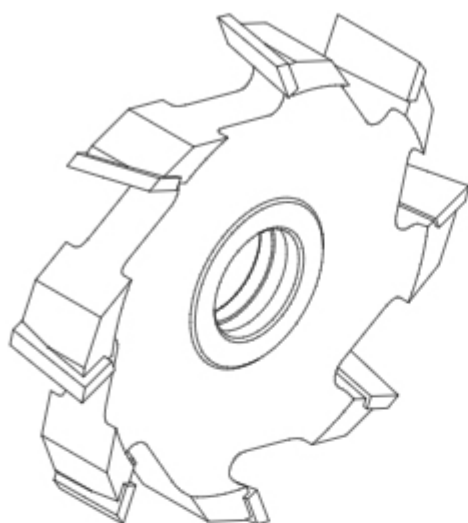
3



D mm	100 9000 40		125 9000 40		140 6000 50		160 6000 60		180 6000 60		200 6000 60		
	B mm	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM
6		+	+	+	+	+	+	+	+	+	+	+	+
8		+	+	+	+	+	+	+	+	+	+	+	+
10		+	+	+	+	+	+	+	+	+	+	+	+
12		+	+	+	+	+	+	+	+	+	+	+	+
14		+	+	+	+	+	+	+	+	+	+	+	+
16		+	+	+	+	+	+	+	+	+	+	+	+
18		+	+	+	+	+	+	+	+	+	+	+	+
20		+	+	+	+	+	+	+	+	+	+	+	+
25		+	+	+	+	+	+	+	+	+	+	+	+
30		+	+	+	+	+	+	+	+	+	+	+	+
35		+	+	+	+	+	+	+	+	+	+	+	+
40		+	+	+	+	+	+	+	+	+	+	+	+
45		+	+	+	+	+	+	+	+	+	+	+	+
50		+	+	+	+	+	+	+	+	+	+	+	+
55		+	+	+	+	+	+	+	+	+	+	+	+
60		+	+	+	+	+	+	+	+	+	+	+	+

Catalogue number	Type	D mm	B mm	b mm	d mm	z
3110W200-0433	3110	200	10	10	30	8 HM •
3110W200-0434	3110	200	12	12	30	8 HM •
3110W200-0438	3110	200	20	14	30	8 HM •

3110 8.2





Brazed slotting cutter, type **3110** with eight cutting teeth and alternative shear angle designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others. Alternative shear angle allows for high quality of the machined surface. Large number of teeth allows for higher feed speed and guarantees optimal workload of the machine spindle.

Alternative shear angle allows for high quality of the machined surface with very low energy consumption.

Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF





D n d _{max}	125 9000 40		140 6000 50		160 6000 60		180 6000 60		200 6000 60	
	B mm	HSSHM	HSSHM	HSSHM	HSSHM	HSSHM	HSSHM	HSSHM		
6	+	+	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+	+	+
25	+	+	+	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+	+	+	+
35	+	+	+	+	+	+	+	+	+	+
40	+	+	+	+	+	+	+	+	+	+
45	+	+	+	+	+	+	+	+	+	+
50	+	+	+	+	+	+	+	+	+	+
55	+	+	+	+	+	+	+	+	+	+
60	+	+	+	+	+	+	+	+	+	+

Braided slotting cutter, type **3110** with twelve cutting teeth designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others. Large number of teeth allows for higher feed speed and guarantees optimal workload of the machine spindle.

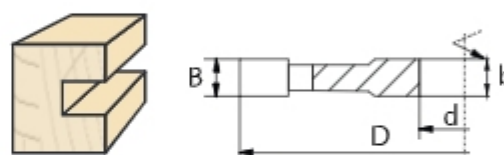
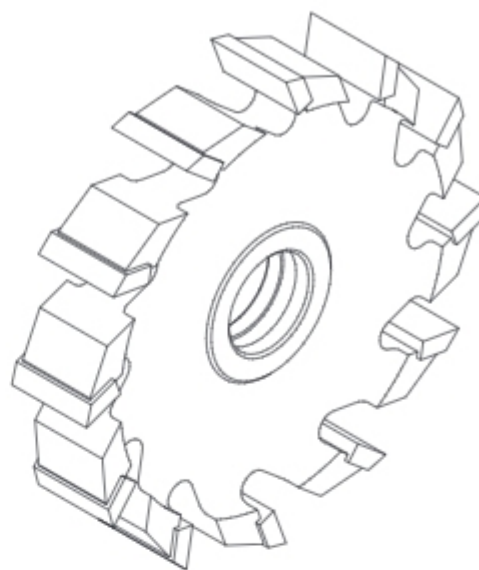
Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

Material:

 solid softwood

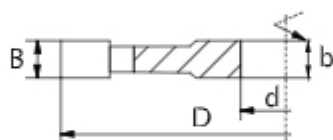
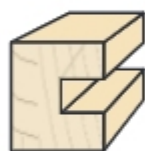
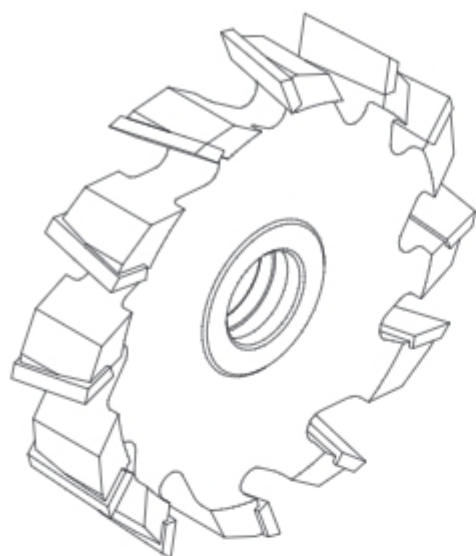
 solid hardwood, glued wood, chipboard, MDF

3110 12.0



D mm	125 6000 40		140 6000 50		160 6000 60		180 6000 60		200 6000 60	
	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM
6	+	+	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+	+	+
25	+	+	+	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+	+	+	+
35	+	+	+	+	+	+	+	+	+	+
40	+	+	+	+	+	+	+	+	+	+
45	+	+	+	+	+	+	+	+	+	+
50	+	+	+	+	+	+	+	+	+	+
55	+	+	+	+	+	+	+	+	+	+
60	+	+	+	+	+	+	+	+	+	+

3110 12.2



Brazen slotting cutter, type **3110** with twelve cutting teeth and alternative shear angle designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others. Alternative shear angle allows for high quality of the machined surface. Large number of teeth allows for higher feed speed and guarantees optimal workload of the machine spindle.

Alternative shear angle allows for high quality of the machined surface with very low energy consumption.

Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

Material:

solid softwood



solid hardwood, glued wood, chipboard, MDF



D n d _{max}	140 6000 50		160 6000 60		180 6000 60		200 6000 60	
	B mm	HSSHM	HSSHM	HSSHM	HSSHM	HSSHM		
6	+	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+
25	+	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+	+
35	+	+	+	+	+	+	+	+
40	+	+	+	+	+	+	+	+
45	+	+	+	+	+	+	+	+
50	+	+	+	+	+	+	+	+
55	+	+	+	+	+	+	+	+
60	+	+	+	+	+	+	+	+

Braided slotting cutter, type **3110-1** with two cutting teeth and two left and two right spurs ($z=2 \text{ v}2+2$) or four cutting teeth and four right and four left spurs ($z=4 \text{ v}4+4$) allowing for precise grooving and rebating, designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others.

Type of work: flat surfaces, rebates and grooves with dimension equal to cutter's width.

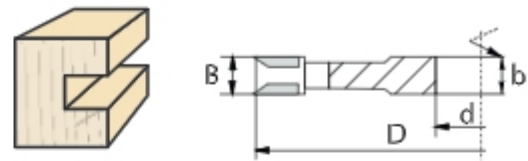
Material:

HSS solid softwood

HM solid hardwood, glued wood, chipboard, MDF

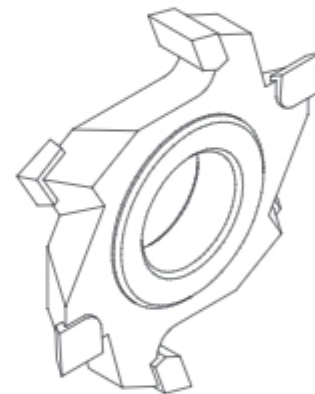


3110-1



D n d	100 9000 30	125 9000 35	140 6000 40	160 6000 50
B mm	HSS	HM	HSS	HM
6	+	+	+	+
8	+	+	+	+
10	+	+	+	+
12	+	+	+	+
14	+	+	+	+
16	+	+	+	+
18	+	+	+	+
20	+	+	+	+
25	+	+	+	+
30	+	+	+	+

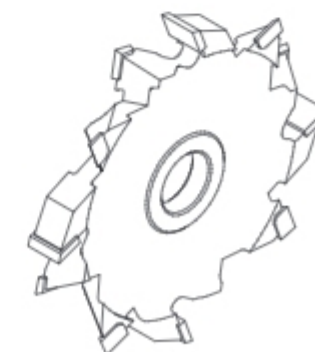
z=2 v2+2



Catalogue number	Type	D mm	B mm	b mm	d mm	z
3111w125-0005	3110-1	125	10	10	30	z=2 v2+2 HM •

D n d	160 6000 50	200 6000 50
B mm	HSS	HM
6	+	+
8	+	+
10	+	+
12	+	+
14	+	+
16	+	+
18	+	+
20	+	+
25	+	+
30	+	+
35	+	+

z=4 v4+4



Catalogue number	Type	D mm	B mm	b mm	d mm	z
3111w140-0100	3110-1	140	10	10	40	z=4 v4+4 HM •


3110-2 R or L




Brazed straight cutter, type 3110-2 with two cutting teeth and two left or right spurs ($z=2$ v2) or four cutting teeth and four right or four left spurs ($z=4$ v4) allowing for precise rebating, designed for professional cutting of wood and wood-based materials such as chipboard, MDF and others.

Type of work: precise machining of rebates and grooves with dimension smaller than to cutter's width.

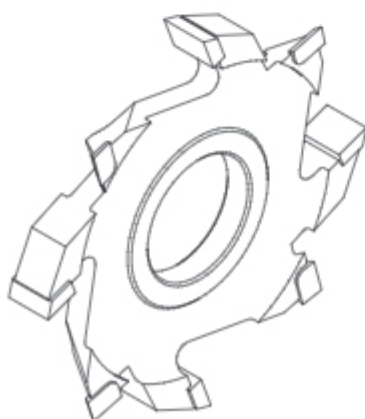
Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF

 $z=2$ v=2

D n d _{max}	100 9000 30		125 9000 35		140 6000 40		160 6000 50		180 6000 50		200 6000 50	
	B mm	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM		
6		+	+	+	+	+	+	+	+	+	+	+
8		+	+	+	+	+	+	+	+	+	+	+
10		+	+	+	+	+	+	+	+	+	+	+
12		+	+	+	+	+	+	+	+	+	+	+
14		+	+	+	+	+	+	+	+	+	+	+
16		+	+	+	+	+	+	+	+	+	+	+
18		+	+	+	+	+	+	+	+	+	+	+
20		+	+	+	+	+	+	+	+	+	+	+
25		+	+	+	+	+	+	+	+	+	+	+
30		+	+	+	+	+	+	+	+	+	+	+
35		+	+	+	+	+	+	+	+	+	+	+

 $z=4$ v=4

D n d	100 9000 30		125 9000 35		140 6000 40		160 6000 50		180 6000 50		200 6000 50	
	B mm	HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM	
6	+	+	+	+	+	+	+	+	+	+	+	
8	+	+	+	+	+	+	+	+	+	+	+	
10	+	+	+	+	+	+	+	+	+	+	+	
12	+	+	+	+	+	+	+	+	+	+	+	
14	+	+	+	+	+	+	+	+	+	+	+	
16	+	+	+	+	+	+	+	+	+	+	+	
18	+	+	+	+	+	+	+	+	+	+	+	
20	+	+	+	+	+	+	+	+	+	+	+	
25	+	+	+	+	+	+	+	+	+	+	+	
30	+	+	+	+	+	+	+	+	+	+	+	
35	+	+	+	+	+	+	+	+	+	+	+	

Diameters

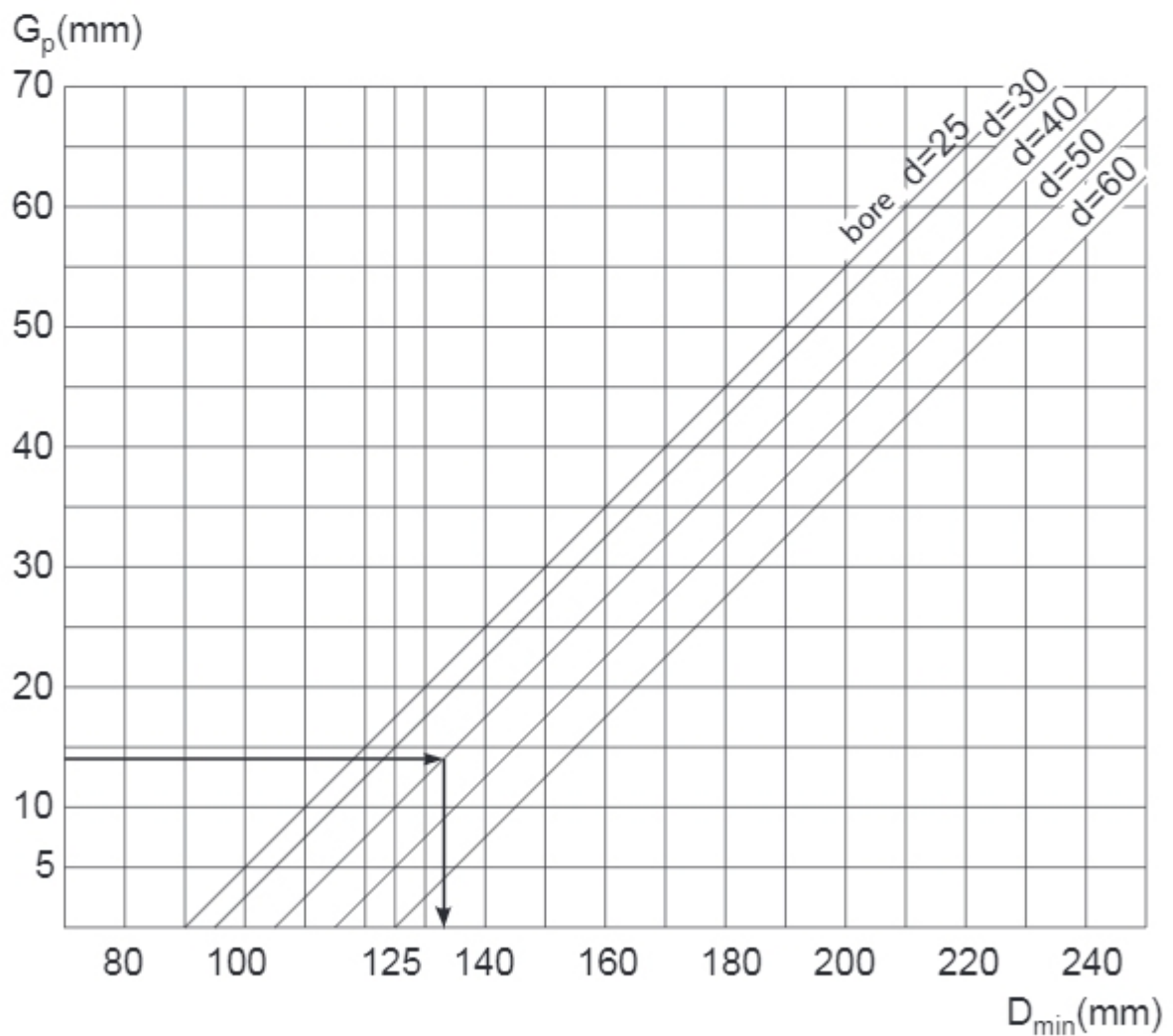
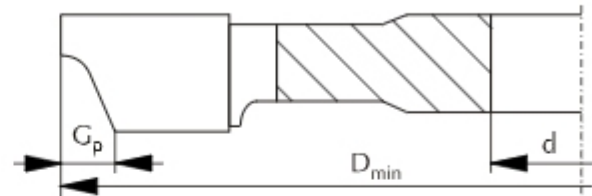
Outer diameter of profile cutter (D) is tightly connected and depends on bore diameter (d) and profile depth (G_p). In order to precisely determine minimum diameter of the cutter (D_{min}) the following formula or diagram should be used:

$$D_{min} = 60 + d + 2 \times G_p$$

D_{min} - minimum diameter

d - bore diameter

G_p - profile depth



Example:

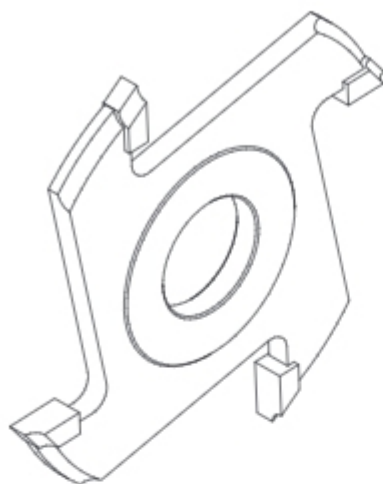
$$d = 40 \text{ mm}$$

$$G_p = 14 \text{ mm}$$

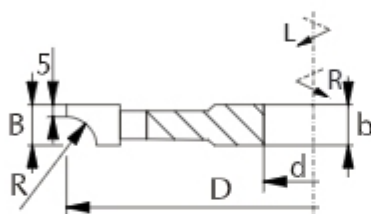
$$D_{min} = 60 + 40 + 2 \times 14 = 128 \text{ mm}$$

Round to closest typical bigger than D_{min} $D = 130 \text{ mm}$.

P-101 4.0 R or L




$$R = B - 5$$




Brazen profiled cutter, type **P-101** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for cutting quarter rounds with radius R.

Type of work: quarter rounds cutting.

Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF



D n d _{max}	100 9000 30		125 9000 40		140 6000 50		160 6000 60	
B mm	HSS	HM	HSS	HM	HSS	HM	HSS	HM
8	+	+	+	+	+	+	+	+
9	+	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+	+
11	+	+	+	+	+	+	+	+
13	+	+	+	+	+	+	+	+
15	+	+	+	+	+	+	+	+
17	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+
25			+	+			+	+
30							+	+




Catalogue number right	Catalogue number left	Type	D mm	B mm	b mm	d mm	R mm	z
P101W125P0009	P101W125L0009	P-101	125	8	7	30	3	4
P101S125P0016	P101S125L0016	P-101	125	10	9	30	5	4
P101W125P0001	P101W125L0001	P-101	125	10	9	30	5	4
P101W125P0003	P101W125L0003	P-101	125	11	10	30	6	4
P101S125P0003	P101S125L0003	P-101	125	13	12	30	8	4
P101W125P0004	P101W125L0004	P-101	125	13	12	30	8	4
P101S125P0005	P101S125L0005	P-101	125	15	14	30	10	4
P101W125P0005	P101W125L0005	P-101	125	15	14	30	10	4
P101W125P0006	P101W125L0006	P-101	125	17	16	30	12	4
P101S125P0004	P101S125L0004	P-101	125	20	19	30	15	4
P101W125P0007	P101W125L0007	P-101	125	20	19	30	15	4
P101S125P0001	P101S125L0001	P-101	125	25	24	30	20	4
P101W125P0008	P101W125L0008	P-101	125	25	24	30	20	4
P101S140P0004	P101S140L0004	P-101	140	30	29	30	25	4
P101W140P0007	P101W140L0007	P-101	140	30	26	30	25	4

Profile cutter diameter (D) may change - more information on page 3.15

Braided profiled cutter, type **P-102** or **P-103** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for edge rounding with radius R according to client's request.

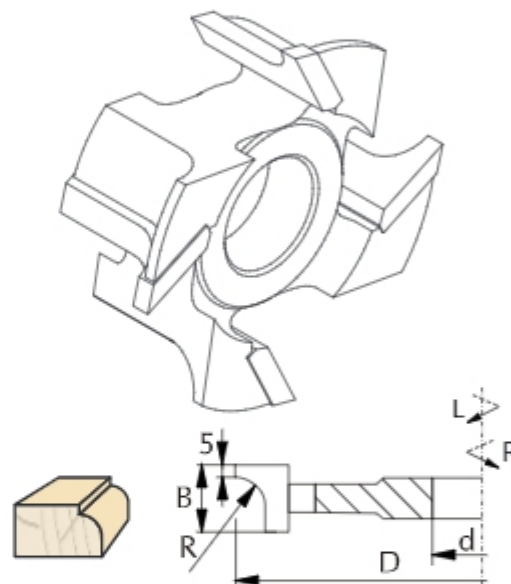
Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF

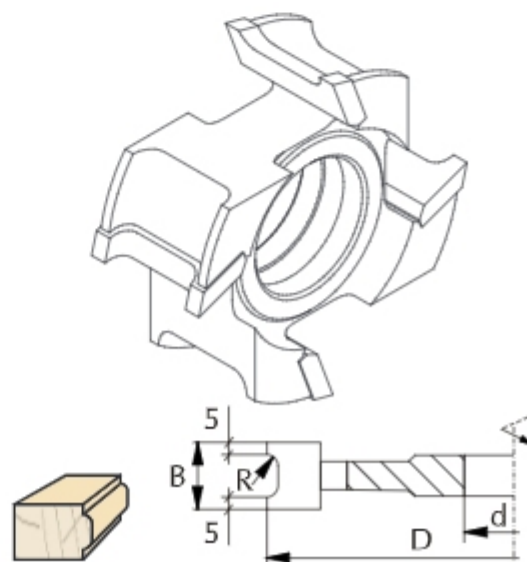


Type of work: edge rounding

P-102 4.0 R or L

D mm	100 9000 30		125 9000 40		140 6000 50		160 6000 60	
	HSS	HM	HSS	HM	HSS	HM	HSS	HM
10	+	+	+	+	+	+	+	+
15	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+
25	+	+	+	+	+	+	+	+
30	+	+	+	+	+	+	+	+
35	+	+	+	+	+	+	+	+
40	+	+	+	+	+	+	+	+
45	+	+	+	+	+	+	+	+
50	+	+	+	+	+	+	+	+

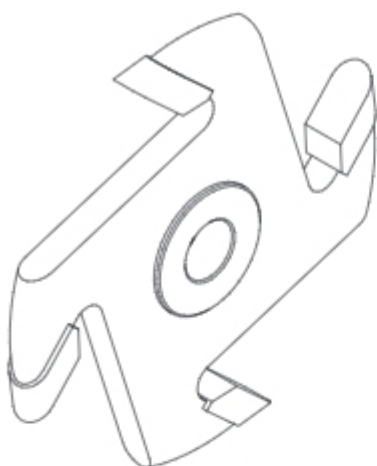
Type of work: two-sided edge rounding

P-103 4.0

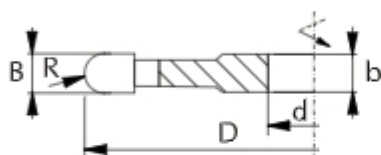
D mm	100 9000 30		125 9000 40		140 6000 50	
	HSS	HM	HSS	HM	HSS	HM
25	+	+	+	+	+	+
30	+	+	+	+	+	+
35	+	+	+	+	+	+
40	+	+	+	+	+	+
45	+	+	+	+	+	+
50	+	+	+	+	+	+

Profile cutter diameter (D) may change - more information on page 3.15

P-105 4.0



$$B = 2 \times R$$



Brazed profiled cutter, type **P-105** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for grooving semi-circles with radius R according to client's request.

Type of work: grooving semi-circles with radius R.

Material:

solid softwood

solid hardwood, glued wood, chipboard, MDF



MDF



HSS

HM

D mm	R mm	100 9000 30		125 9000 40		140 6000 50		160 6000 60		180 6000 60	
		HSS	HM	HSS	HM	HSS	HM	HSS	HM	HSS	HM
6	3	+	+	+	+	+	+	+	+	+	+
8	4	+	+	+	+	+	+	+	+	+	+
10	5	+	+	+	+	+	+	+	+	+	+
12	6	+	+	+	+	+	+	+	+	+	+
16	8	+	+	+	+	+	+	+	+	+	+
20	10	+	+	+	+	+	+	+	+	+	+
24	12	+	+	+	+	+	+	+	+	+	+
30	15	+	+	+	+	+	+	+	+	+	+
40	20			+	+	+	+	+	+	+	+
50	25					+	+	+	+	+	+

Catalogue number	Type	D mm	B mm	b mm	d mm	R mm	z	
P105W125-0001	P-105	125	8	8	30	4	4	HM •
P105W125-0002	P-105	125	10	10	30	5	4	HM •
P105W125-0003	P-105	125	12	12	30	6	4	HM •
P105W125-0004	P-105	125	16	16	30	8	4	HM •
P105W125-0005	P-105	125	20	18	30	10	4	HM •
P105W125-0006	P-105	125	24	22	30	12	4	HM •
P105W125-0007	P-105	125	30	28	30	15	4	HM •

Profile cutter diameter (D) may change - more information on page 3.15

Braided profiled cutter, type **P-106** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for grooving quarter-circles with radius R according to client's request.

Type of work: grooving quarter-circles with radius R .

Material:

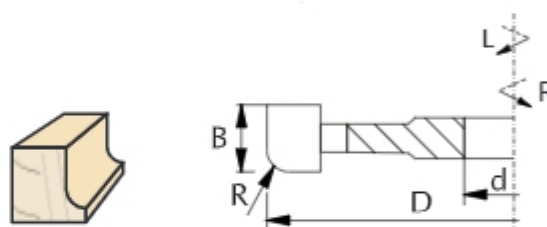
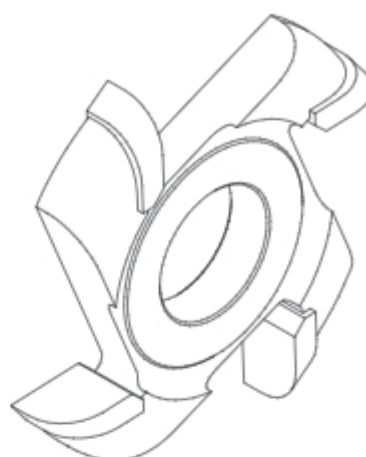


solid softwood



solid hardwood, glued wood, chipboard, MDF

P-106 4.0 R or L



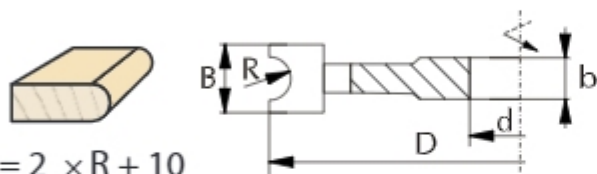
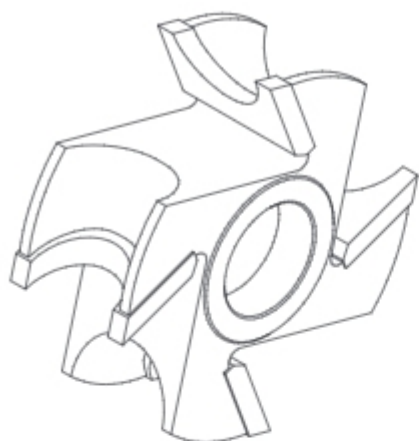
3



D mm	100 9000 30		125 9000 40		140 6000 50	
	HSS	HM	HSS	HM	HSS	HM
10	+	+	+	+	+	+
15	+	+	+	+	+	+
20	+	+	+	+	+	+
25	+	+	+	+	+	+
30	+	+	+	+	+	+
35	+	+	+	+	+	+
40	+	+	+	+	+	+

Profile cutter diameter (D) may change - more information on page 3.15

P-107 4.0





$$B = 2 \times R + 10$$

Brazed profiled cutter, type **P-107** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making semi-rounds with radius R according to client's request.

Type of work: profiling semi-rounds with radius R .

Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF



D mm		100 9000 30		125 9000 40		140 6000 50		160 6000 60	
		B mm	R mm	HSS	HM	HSS	HM	HSS	HM
16	3	+	+	+	+	+	+	+	+
18	4	+	+	+	+	+	+	+	+
20	5	+	+	+	+	+	+	+	+
22	6	+	+	+	+	+	+	+	+
26	8	+	+	+	+	+	+	+	+
30	10	+	+	+	+	+	+	+	+
34	12	+	+	+	+	+	+	+	+
40	15			+	+	+	+	+	+
50	20			+	+			+	+
60	25							+	+


Catalogue number	Type	D mm	B mm	b mm	d mm	R mm	z	
P107W125-0003	P-107	125	22	22	30	6	4	HM •
P107W125-0004	P-107	125	26	26	30	8	4	HM •
P107W125-0005	P-107	125	30	30	30	10	4	HM •
P107W125-0006	P-107	125	34	34	30	12	4	HM •
P107W125-0007	P-107	125	40	40	30	15	4	HM •
P107W125-0008	P-107	125	50	50	30	20	4	HM •


Profile cutter diameter (D) may change - more information on page 3.15

Braided profiled cutter, type **P-109** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making multiple-dowels with radius R according to client's request.

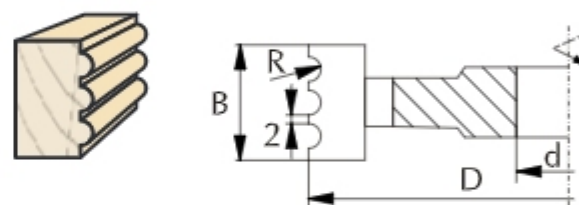
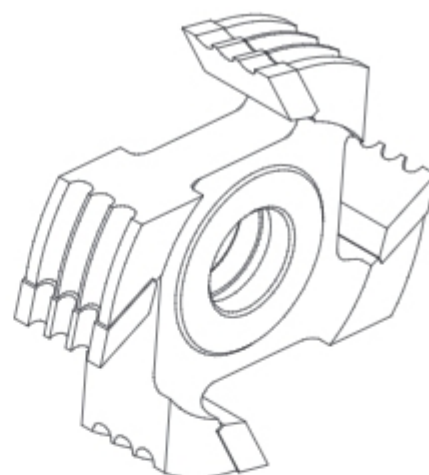
Type of work: profiling multiple dowels with radius R.

Material:

 solid softwood

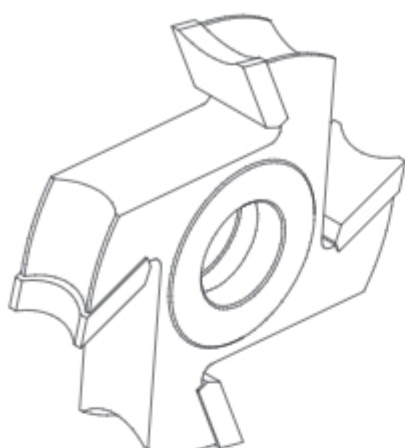
 solid hardwood, glued wood, chipboard, MDF

P-109 4.0



D mm	B mm	d _{max}	R mm	z		n _{max}	
125	32	40	3 x R3	4	HSS	9000	+
125	32	40	3 x R3	4	HM	9000	+
125	38	40	3 x R4	4	HSS	9000	+
125	38	40	3 x R4	4	HM	9000	+
125	44	40	3 x R5	4	HSS	9000	+
125	44	40	3 x R5	4	HM	9000	+
125	36	40	2 x R6	4	HSS	9000	+
125	36	40	2 x R6	4	HM	9000	+
125	44	40	2 x R8	4	HSS	9000	+
125	44	40	2 x R8	4	HM	9000	+


P-116 4.0




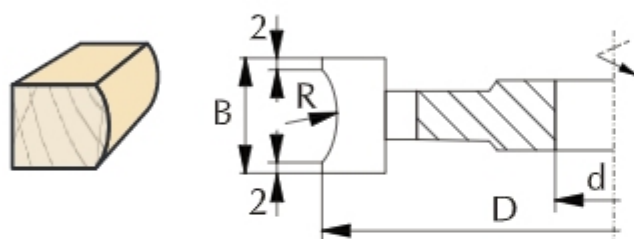
Brazen profiled cutter, type **P-116** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for edge rounding with radius R according to client's request.

Type of work: edge rounding.

Material:

 solid softwood

 solid hardwood, glued wood, chipboard, MDF



D mm	100 9000 30		125 9000 40		140 6000 50	
	B mm	HSS HM	HSS HM	HSS HM		
20	+	+	+	+	+	+
30	+	+	+	+	+	+
40	+	+	+	+	+	+
50	+	+	+	+	+	+

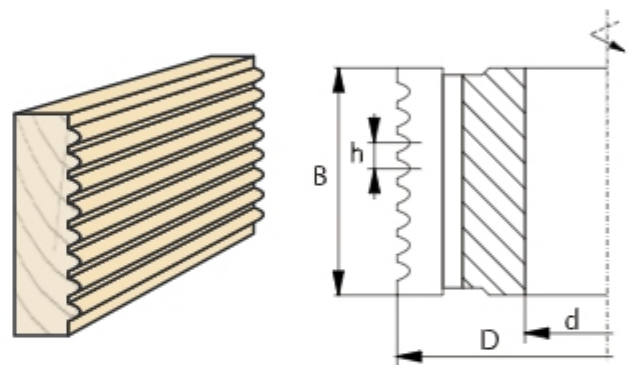
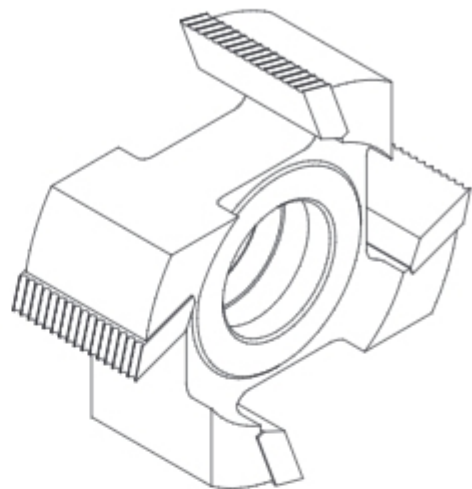
Profile cutter diameter (D) may change - more information on page 3.15

Brazen profile cutter, type **FDR-01** with four cutting teeth, designed for professional machining of wood. The cutter is used for fluting flat surfaces.

Type of work: profiling flat surfaces.

Material: solid wood.

FDR-01 4.0



3



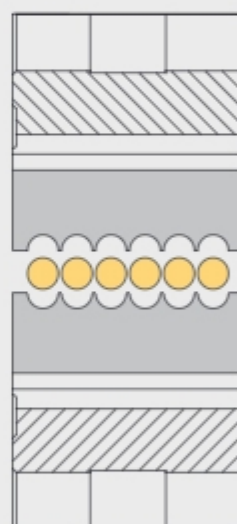
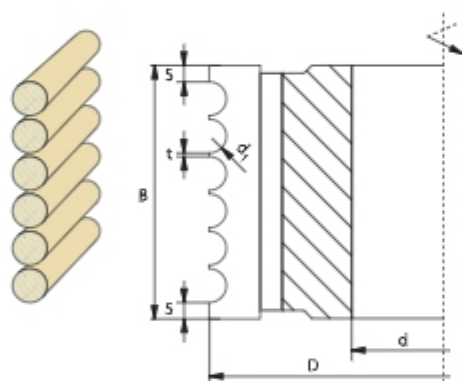
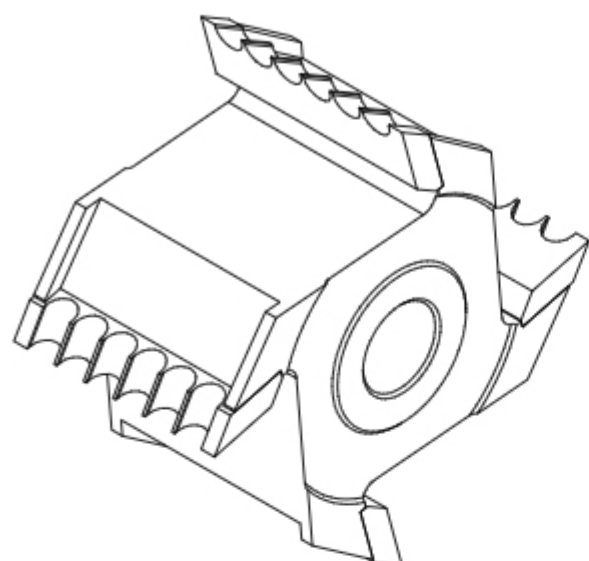
D n d z			100 9000 30 4	125 9000 40 4	140 6000 50 4
	B mm	h mm	HSS	HSS	HSS
	65	3	+	+	+
	65	4	+	+	+
	85	3	+	+	+
	85	4	+	+	+
	105	3	+	+	+
	105	4	+	+	+

FDKO

Brazed straight cutter, type **FDKO**, designed for profiling wooden dowel pins with round profile of various dimensions.

Type of work: longitudinal.

Material: solid soft wood.



HSS

D mm	125	125	125	125	125	125	125	125	140	140	140	140
n_{max}	9000	9000	9000	9000	9000	9000	9000	9000	6000	6000	6000	6000
d_1 mm	3	4	5	6	8	10	12	15	18	20	25	30
t_{min} mm	1	1	1	1	1	1	1,5	1,5	1,5	2	2	2
Max. pins number	12	12	10	10	8	8	6	6	5	4	3	3
Profile FDKO	+	+	+	+	+	+	+	+	+	+	+	+

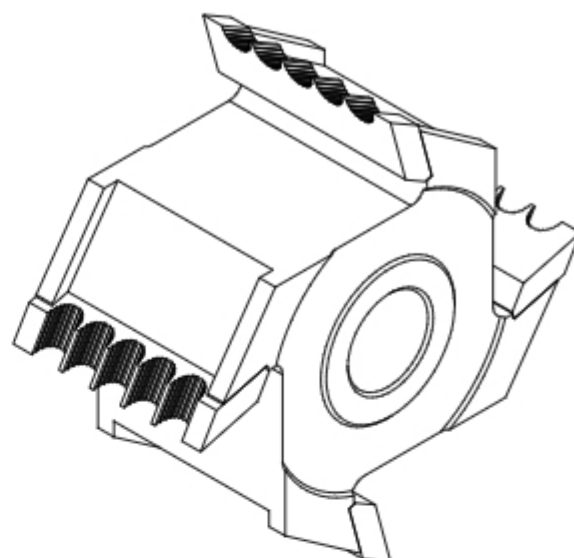
When ordering FDKO cutters, please give tool dimensions (D, d, z) as well as type of material, number of pins, their diameter (d_1) and distance between pins (t).

Braided straight cutter, type FDKR, designed for profiling wooden dowel pins with serrated profile of various dimensions.

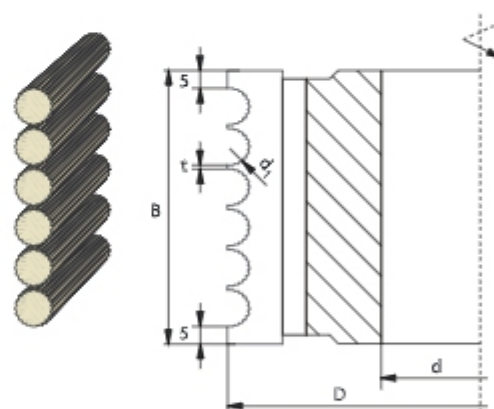
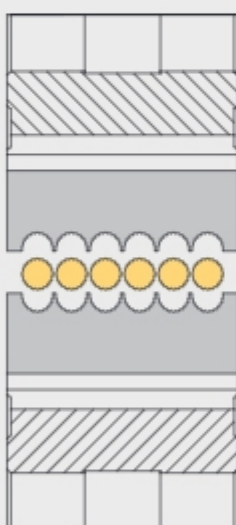
Type of work: longitudinal.

Material: solid soft wood.

FDKR



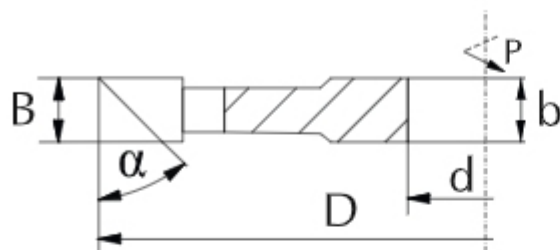
3



D mm	125	125	125	125	125	140	140	140	140
n _{max}	9000	9000	9000	9000	9000	6000	6000	6000	6000
d ₁ mm	6	8	10	12	15	18	20	25	30
t _{mm}	1	1	1	1,5	1,5	1,5	2	2	2
Max. pins number	10	8	8	6	6	5	4	3	3
Profile FDKR	+	+	+	+	+	+	+	+	+

When ordering FDKR cutters, please give tool dimensions (D, d, z) as well as type of material, number of pins, their diameter (d₁) and distance between pins (t).

Diameters



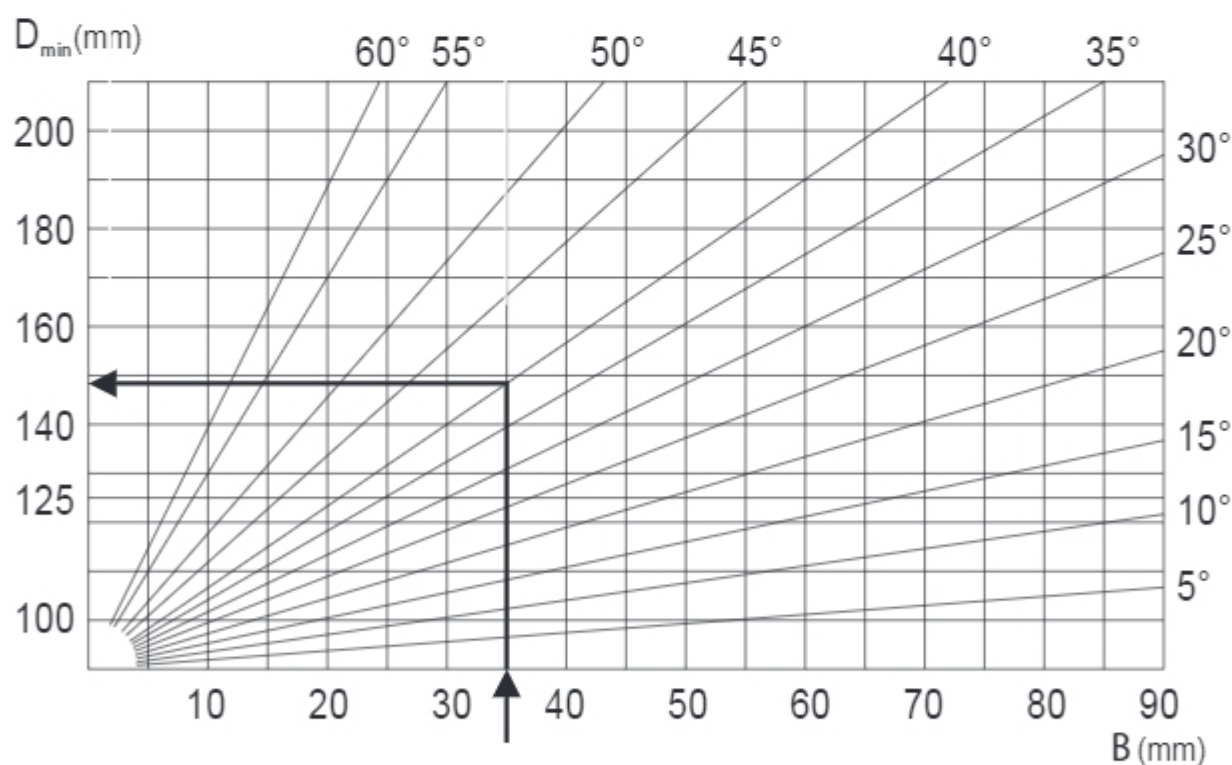
Outer diameter of angle cutter (D) is tightly connected with and depends on bore diameter (d), cutter width (B) and angle (α).

In order to determine the minimum diameter of angle cutter, the following diagram should be used.

Diagram is valid for bore $d=30$ mm

For bore 40 mm: $D + 10$ mm

For bore 50 mm: $D + 20$ mm



Example:

$B = 35$ mm

$\alpha = 40^\circ$

$d = 30$ mm

according to diagram $D_{min} = 148$ mm

Round for nearest typical bigger than D_{min} $D = 160$ mm

Braided profile cutter, type **1201** with four cutting teeth and shear angle, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for edge beveling of the machined elements.

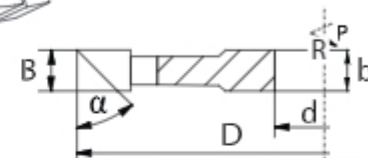
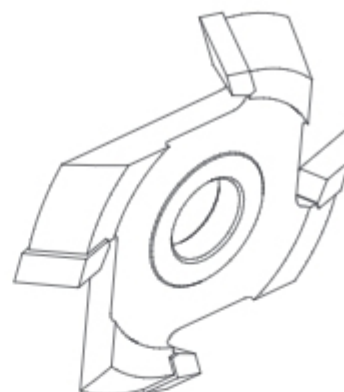
Type of work: edge beveling at 45° angle.

Material:

HSS solid softwood

HM solid hardwood, glued wood, chipboard, MDF

1201 4.1 $\angle 45^\circ$



D mm	100 9000 25		125 9000 35		160 6000 40	
	B mm	HSSHM	HSSHM	HSSHM	HSSHM	
10	+	+	+	+	+	+
15	+	+	+	+	+	+
20			+	+	+	+
25			+	+	+	+
30					+	+

Catalogue number	Type	D mm	B mm	b mm	d mm	z				
1201W125P0001	1201	125	10	10	40	4	HM	45°	R	•
1201W125L0001	1201	125	10	10	40	4	HM	45°	L	•
1201S125P0001	1201	125	25	24,5	30	4	HSS	45°	R	•
1201S125L0001	1201	125	25	24,5	30	4	HSS	45°	L	•
1201W125P0002	1201	125	25	24,5	30	4	HM	45°	R	•
1201W125L0004	1201	125	25	24,5	30	4	HM	45°	L	•

Type of work: edge beveling at 30° or 15° angle

1201 4.1 $\angle 30^\circ$ or $\angle 15^\circ$ R or L

D n d a	100 9000 25 15°		100 9000 25 30°		125 9000 30 15°		125 9000 30 30°		160 6000 40 15°		160 6000 40 30°	
	B mm	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM	HSS HM			
10	+	+	+	+	+	+	+	+	+	+	+	+
15	+	+	+	+	+	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+	+	+	+	+	+
25					+	+	+	+	+	+	+	+

Angle cutter diameter may change - more information on page 3.26.

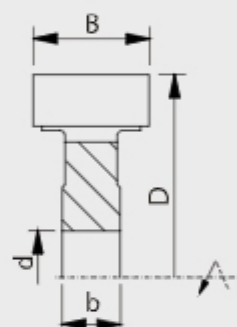
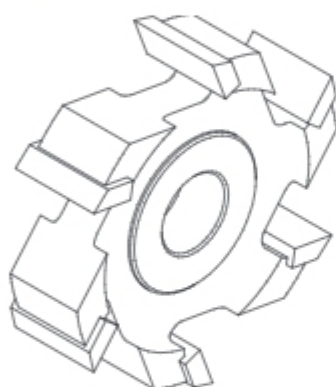
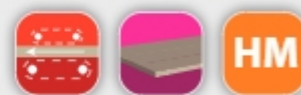
3110 6.0

Brazed straight cutter, type **3110** with six cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for removing veneer overplus and machining flat surfaces.

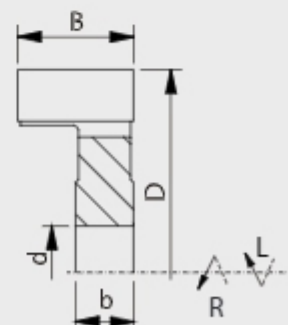
Type of work: removing veneer overplus.

Material: solid hardwood, glued wood, chipboard, MDF.

3



Catalogue number	Type	D mm	B mm	b mm	d mm	z		
3110W070-0019	3110	70	20	10	16	6	HM	+



Catalogue number	Type	D mm	B mm	b mm	d mm	z			
3110W070P0001	3110	70	20	10	16	6	HM	R	+
3110W070L0001	3110	70	20	10	16	6	HM	L	+

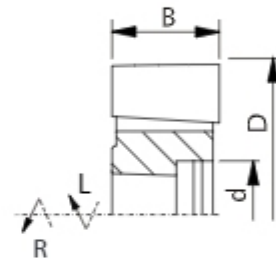
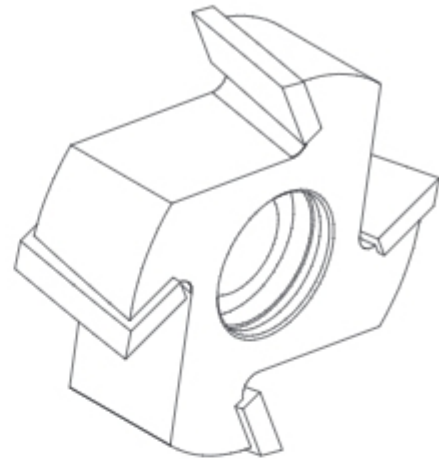
Brazed straight cutter, type **3110 HSK25** with four cutting teeth and shear angle, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for removing veneer overplus and machining flat surfaces.

HSK25 clamping guarantees precise tool positioning. Shear angle enabling optimal chip flow allows for high quality of the machined surface.

Type of work: removing veneer overplus and machining flat surfaces.

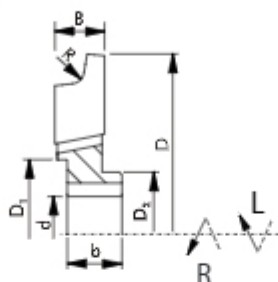
Material: solid hardwood, glued wood, chipboard, MDF.

3110 HSK25



Catalogue number	Type	D mm	B mm	d	z		n _{min}	↺	
F52-0048WP	3110	70	25	HSK25	4	HM	18000	R	+
F52-0048WL	3110	70	25	HSK25	4	HM	18000	L	+
F52-0032WP	3110	70	35	HSK25	4	HM	18000	R	+
F52-0032WL	3110	70	35	HSK25	4	HM	18000	L	+

F56-A 6.1



Brazed profile cutter, type **F56-A** with six cutting teeth and shear angle, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for edge rounding with radius according to client's request. Shear angle enabling optimal chip flow allows for high quality of the machined surface.

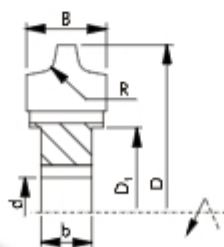
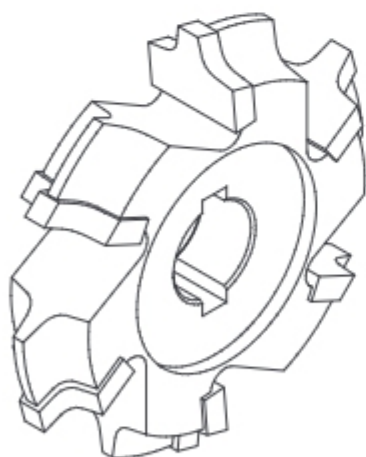
Type of work: edge rounding with radius R.

Material: solid hardwood, glued wood, chipboard, MDF.



Catalogue number	Type	D mm	D ₁ mm	D ₂ mm	B mm	b mm	d mm	R mm	z	n _{min}	↗	
F56-0055WP	F56	73	30	25	10	11	16	3	6	18000	R	+
F56-0055WL	F56	73	30	25	10	11	16	3	6	18000	L	+

F56-B 6.0



Brazed profile cutter, type **F56-B** with six cutting teeth and shear angle, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter is used for two-sided edge rounding with radius according to client's request.

Type of work: edge rounding with radius R.

Material: solid hardwood, glued wood, chipboard, MDF.





Catalogue number	Type	D mm	D ₁ mm	B mm	b mm	d mm	R mm	z	n _{min}	
F56-0056W	F56	73	37	17,4	11	16	3	6	18000	+

Braided profile cutter, type **FL-01** with four or six cutting teeth and alternative shear angle, designed for professional machining of wood and glued wood. The cutter is used for repairing resin pockets. Alternative shear angle enabling optimal chip flow allows for high quality of the machined surface.

Type of work: repairing resin pockets.

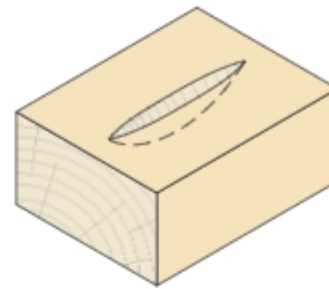
Material:

 solid softwood

 solid hardwood, glued wood

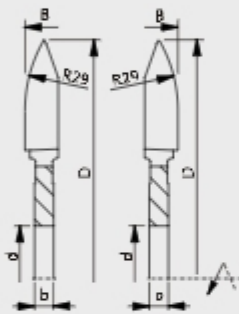


FL-01



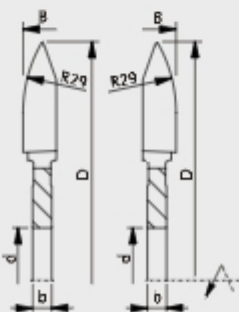
3

FL-01-A 4.2



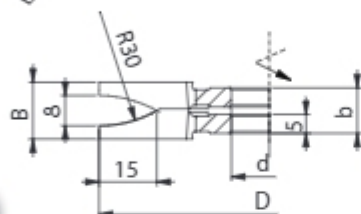
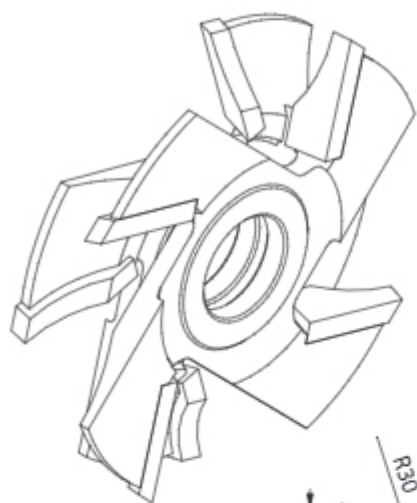
Catalogue number	Type	D mm	B mm	b mm	d mm	z		
FL01S100-001	FL-01-A	100	8	4	22	4	HSS	•
FL01W100-001	FL-01-A	100	8	4	22	4	HM	•

FL-01-B 6.2



Catalogue number	Type	D mm	B mm	b mm	d mm	z		
FL01S100-006	FL-01-B	100	8	4	22	6	HSS	+
FL01W100-006	FL-01-B	100	8	4	22	6	HM	+



PATE 01

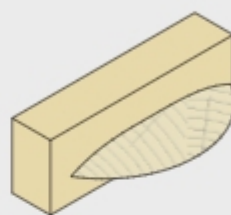


Set of brazed profile cutters type **PATE 01** with four cutting teeth and shear angle, designed for professional machining of wood and glued wood. The cutter is used for repairing resin pockets. Special construction of the set and shear angle allow for high quality of the machined surface. Special geometry enables working together with profile cutters type FL-01.

Type of work: machining resin pockets fillings.

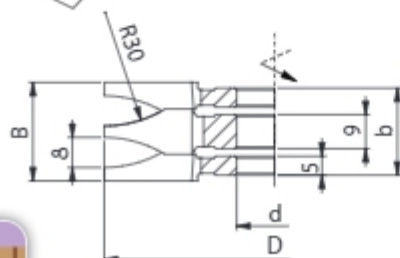
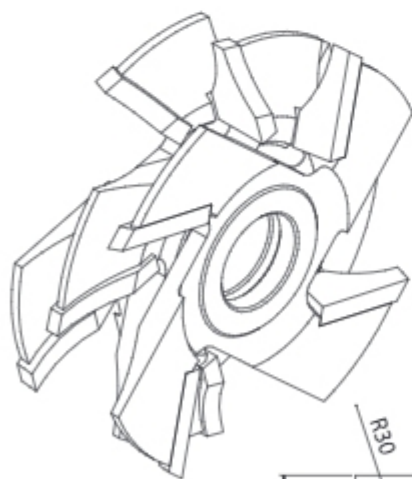
Material:

-  solid softwood
-  solid hardwood, glued wood



Catalogue number	Type	D mm	B mm	b mm	d mm	z	n _{max}
PATE-01-00W	PATE 01	90	15	12	16	4	HM 12000 +



PATE 09

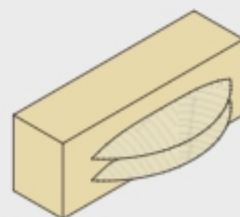


Set of brazed profile cutters type **PATE 09** with four cutting teeth and shear angle, designed for professional machining of wood and glued wood. The cutter is used for repairing resin pockets. Special construction of the set and shear angle allow for high quality of the machined surface. Special geometry enables working together with profile cutters type FL-01. The set machines two elements with the same dimensions at the same time.

Type of work: machining resin pockets fillings.

Material:

-  solid softwood
-  solid hardwood, glued wood





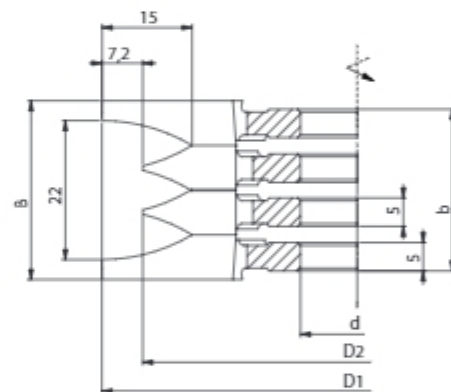
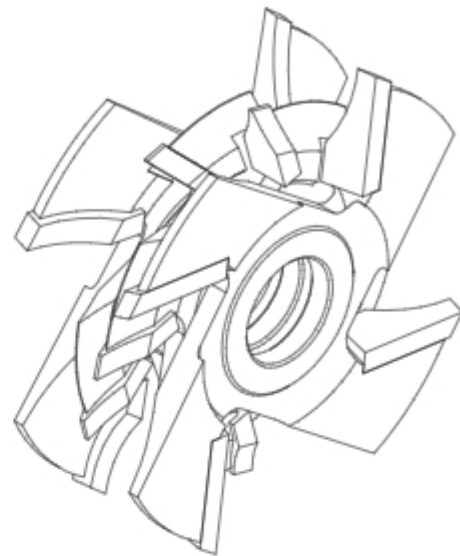
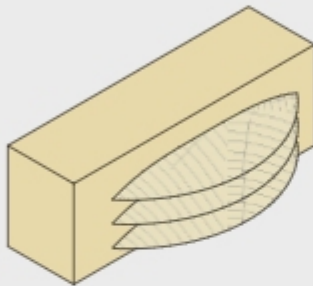
Catalogue number	Type	D mm	B mm	b mm	d mm	z	n _{max}
PATE-09-00W	PATE 09	90	26	23	16	4	HM 12000 +

Set of brazed profile cutters type **PATE 10** with four cutting teeth and shear angle, designed for professional machining of wood and glued wood. The cutter is used for repairing resin pockets. Special construction of the set and shear angle allow for high quality of the machined surface. Special geometry enables working together with profile cutters type FL-01. The set machines several elements with various depth at the same time.

Type of work: machining resin pockets fillings.

Material:

-  solid softwood
-  solid hardwood, glued wood



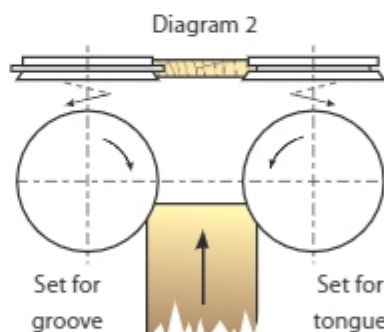
Catalogue number	Type	D ₁ mm	D ₂ mm	B mm	b mm	d mm	z	n _{max}	
PATE-10-00W	PATE 10	90	75,6	29	26	16	4	HM	12000 +

Brazed profile cutter sets designed for professional machining of solid wood, for tongue-groove joints (wainscots, parquet, floor board, casing board) and wood-based materials such as chipboard, MDF etc., for furniture door machining, edge rounding and others.

Sets for making tongue-groove joints are designed for working on 2 spindle machines with feed speed up to 30 m/min. The set includes spacer rings allowing for proper adjustment of tongue-groove width. Optionally, we offer the sets with shear angle mounted on hydro sleeves designed for professional, very precise machining of solid wood and other wood-based materials with feed speed up to 200 m/min.

On request, we suggest, design and manufacture the proper set of cutters for the required type of work, material and machine as well as parameters and conditions of work.

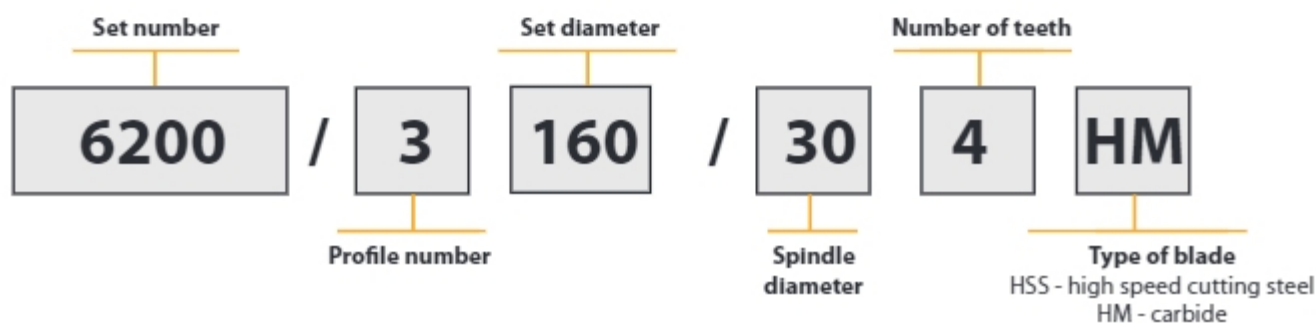
As standard, we offer the sets according to diagram 1. On client's request we offer also the sets according to diagram 2.



Standard

On request

Sets of cutters coding system





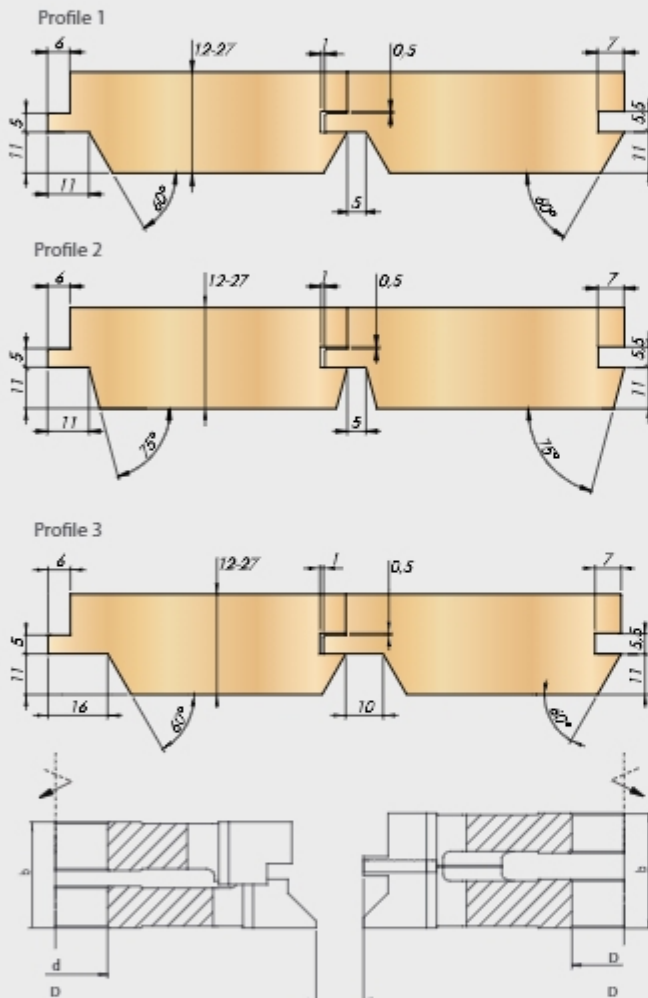
6200

Set of brazed profile cutters type **6200** with four cutting teeth, designed for professional machining of solid wood. The set is used for making tongue and groove in wainscots production. Width is regulated with spacer rings included in the set. The set can work on 2-spindle machines.

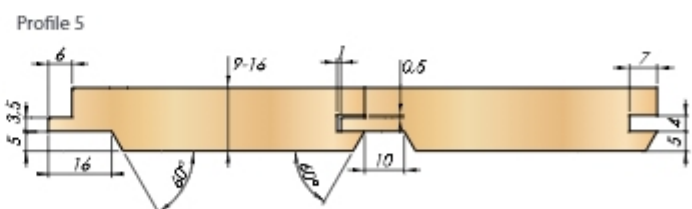
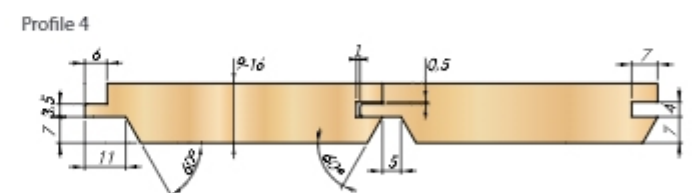
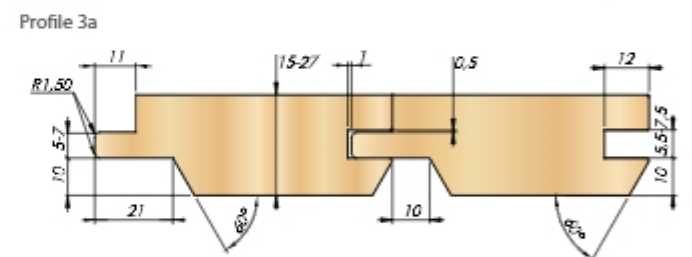
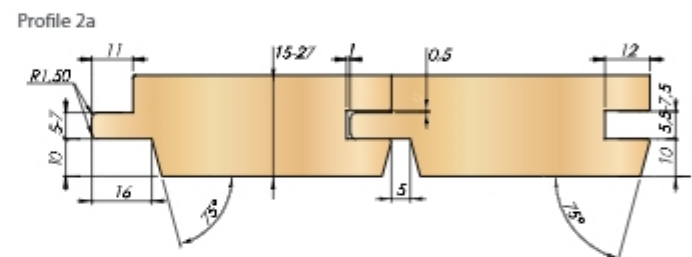
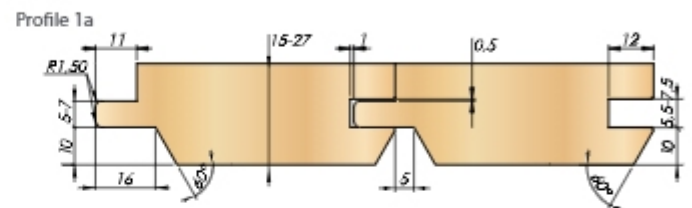
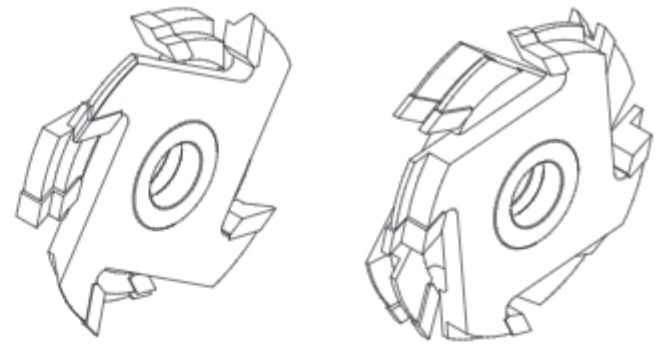
Type of work: longitudinal profiling of tongue and groove.

Material:

-  solid softwood
-  solid hardwood



D mm	d mm	n
125	30	9000 +
140	40	9000 +
160	40	9000 +

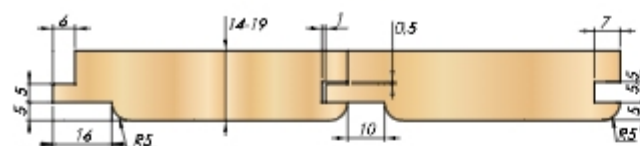


Catalogue number	Type	Profile	D mm	d mm	b mm	z	n
B0100S140A0001	6200	1	140	40	29	4	HSS 9000 +
B0100S150A0001	6200	1a	150	40	36	4	HSS 9000 •
B0300S140A0003	6200	3	140	40	29	4	HSS 9000 +

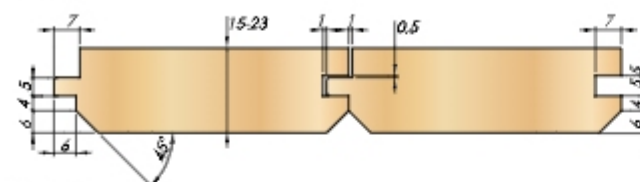
* Profiles 4 and 5 are made as HM in set with scoring saw blade for groove.

6200

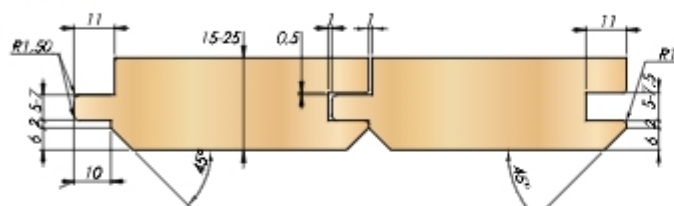
Profile 6



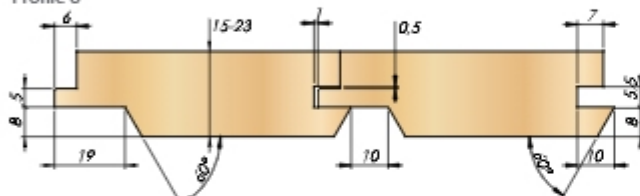
Profile 7



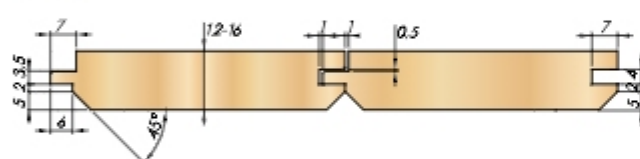
Profile 7b



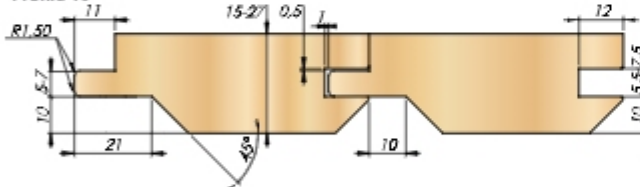
Profile 8



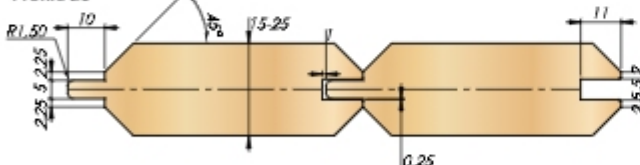
Profile 9



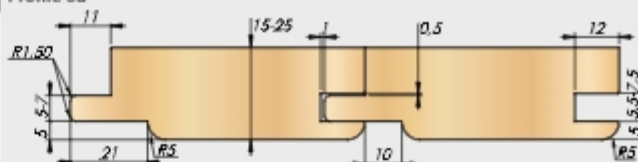
Profile 1



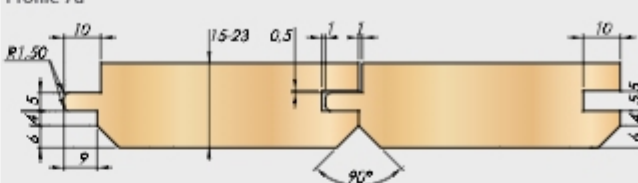
Profile 20



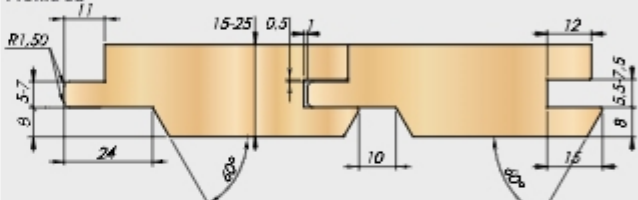
Profile 6a



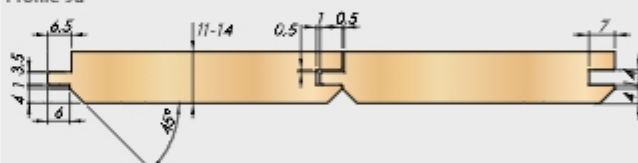
Profile 7a



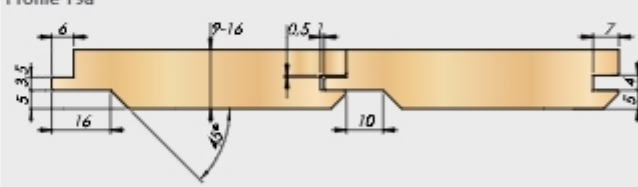
Profile 8a



Profile 9a



Profile 19a



Catalogue number	Type	Profile	D mm	d mm	b mm	z		n _{max}	
B0600S140A0003	6200	6	140	40	29	4	HSS	9000	+
B0600S160A0023	6200	6a	160	40	36	4	HSS	9000	•
B0700S125A0002	6200	7	125	30	31	4	HSS	9000	•
B0700S140A0004	6200	7	140	40	31	4	HSS	9000	•
B0700W140A0003	6200	7	140	40	31	4	HM	9000	+
B0700S160A0021	6200	7b	160	40	34	4	HSS	9000	•
B0700W160A0005	6200	7b	160	40	34	4	HM	9000	•
B0800S160A0008	6200	8a	160	40	34	4	HSS	9000	•
B1900S170A0001	6200	19	170	40	36	4	HSS	9000	•
B2000S160-0001	6200	20	160	40	35	4	HSS	9000	•

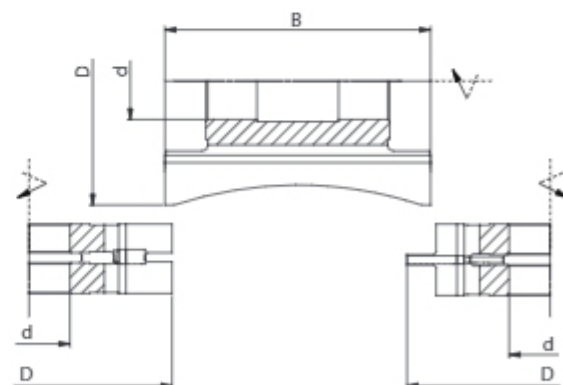
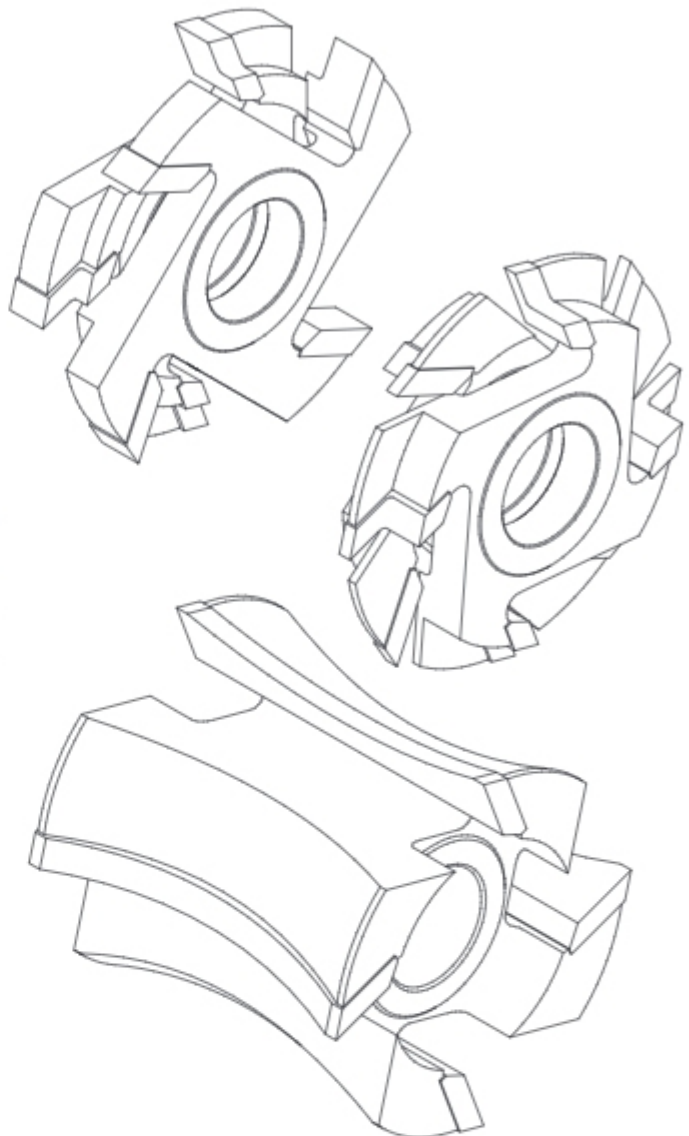
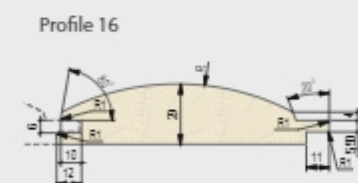
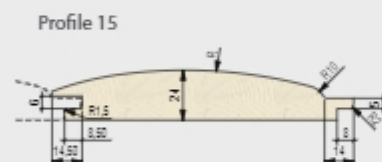
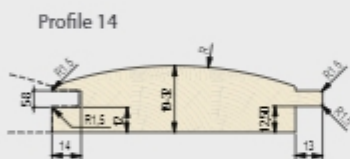
* Profile 9 made as HM in set with scoring saw blade for groove.

Set of brazed profile cutters type **6200-2** with four cutting teeth, designed for professional machining of solid wood. The set is used for making tongue and groove in profile wainscots production. Width is regulated with spacer rings included in the set. The set can work on 4-spindle machines.

Type of work: longitudinal profiling of tongue and groove.

Material:

D mm	d _{max} mm	n _{max}	
140	40	6000	+
160	40	6000	+



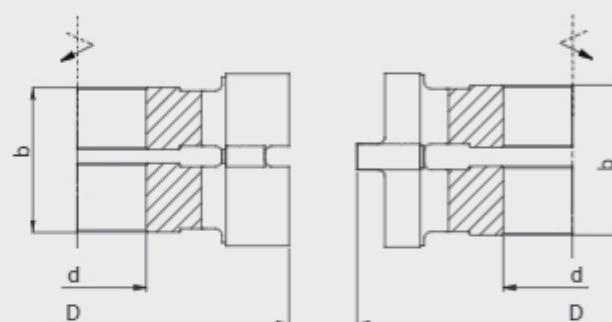
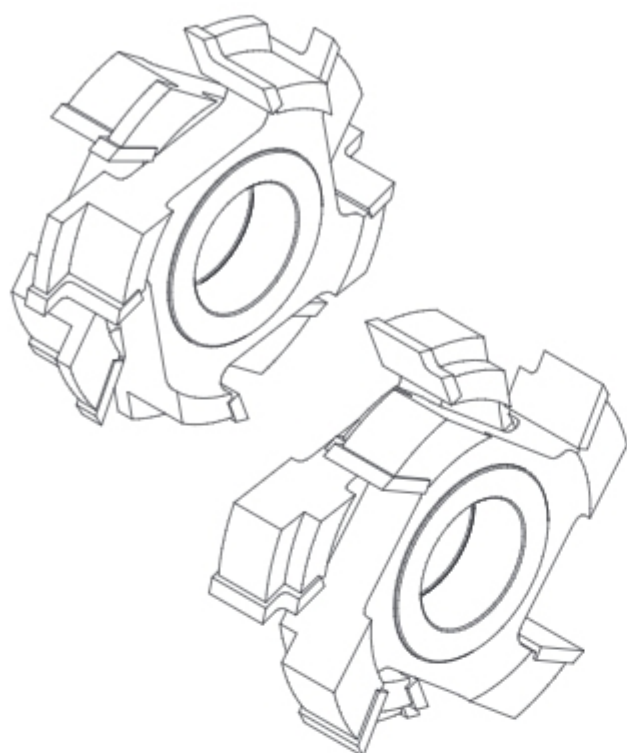
Catalogue number	Type	Profile	D mm	B mm	R mm	d mm	z		n _{max}	
F01-1283-00SP	6200-2	16	140	121	120,9	40	4	HSS	9000	+
F02-0946-00S	6200-2	14	140	130	176	40	4	HSS	9000	+
F04-0800-00BSP	6200-2	15	140	153	237	40	4	HSS	9000	+

Set of brazed profile cutters type **6200** with four cutting teeth, designed for professional machining of solid wood. The set is used for making tongue and groove in floor board production. Width is regulated with spacer rings included in the set. The set can work on 2-spindle machines.

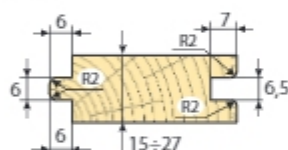
Type of work: longitudinal profiling of tongue and groove.

Material:

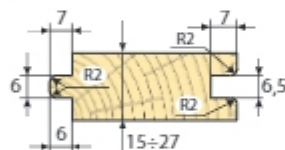
HM solid hardwood



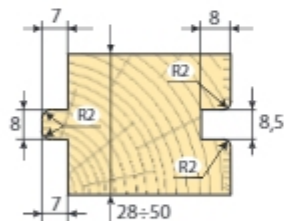
Profile 10



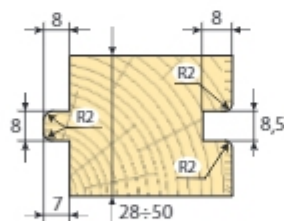
Profile 11



Profile 12



Profile 13





D mm d _{max} mm n _{max}	125 30 9000		140 40 6000		160 40 6000	
B mm	HSS	HM	HSS	HM	HSS	HM
15-27	+	+	+	+	+	+
28-50	+	+	+	+	+	+

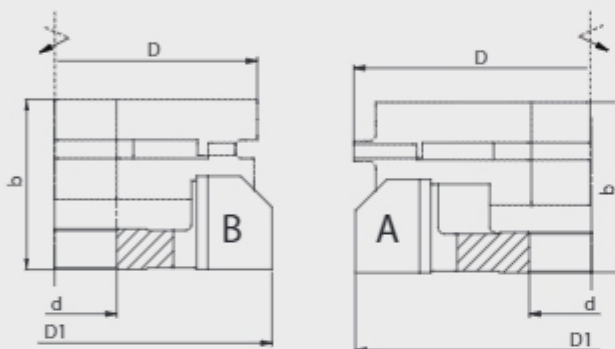
Catalogue number	Type	Profile	D mm	b mm	d mm	z		n _{max}	
D1000S140A0002	6200	10	140	34	40	4	HSS	9000	•
D1000W140A0001	6200	10	140	34	40	4	HM	9000	+
D1100S140A0001	6200	11	140	34	40	4	HSS	9000	•
D1100W140A0001	6200	11	140	34	40	4	HM	9000	•
D1200S140A0001	6200	12	140	44	40	4	HSS	9000	•
D1200W140A0001	6200	12	140	44	40	4	HM	9000	+
D1300S140A0002	6200	13	140	44	40	4	HSS	9000	•
D1300W140A0001	6200	13	140	44	40	4	HM	9000	•
D1300S160A0001	6200	13	160	44	40	4	HSS	9000	•
D1300W160A0001	6200	13	160	44	40	4	HM	9000	+

Brazed profile cutters type **6200** with four cutting teeth, designed for professional machining of solid wood. Side cutter is used for edge beveling of the machined elements. Special geometry allows for working together with sets for floor board.

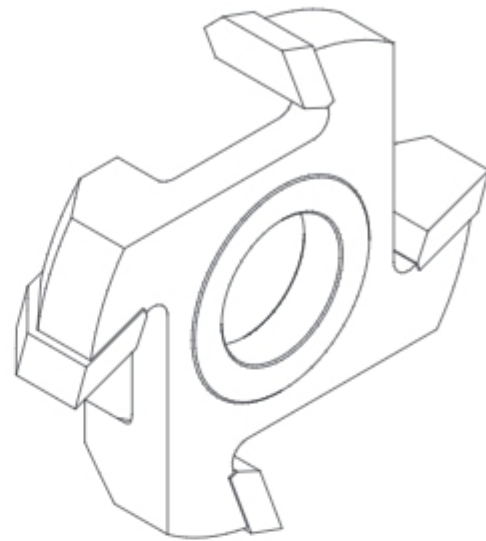
Type of work: edge beveling of floor board.

Material:

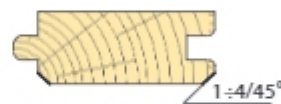
-  solid softwood
 solid hardwood



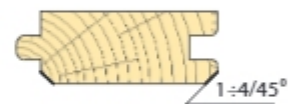
6200 Side cutters



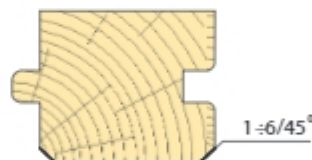
Profile 10



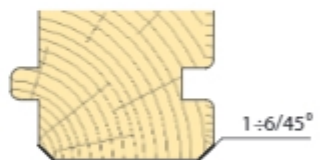
Profile 11



Profile 12

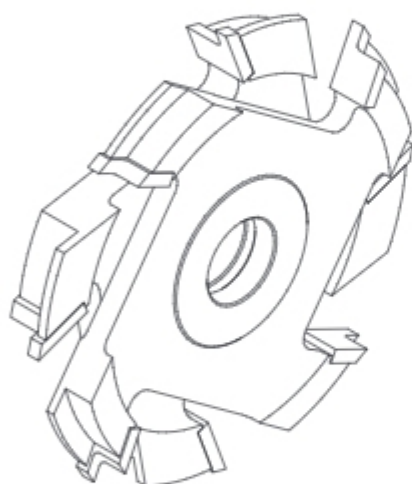


Profile 13



Catalogue number	Type	Profile	D1 mm	D mm	b mm		d mm	z		n _{mm}		
					Profile 10/11	Profile 12/13						
F04-1787SL	6200A	10/11/12/13	140	140	53	68	40	4	HSS	9000	L	•
F04-1786SP	6200B	10/11/12/13	152	140	53	68	40	4	HSS	9000	R	•
F04-1787CWL	6200A	10/11/12/13	140	140	53	68	40	4	HM	9000	L	•
F04-1786CWP	6200B	10/11/12/13	152	140	53	68	40	4	HM	9000	R	•
F04-1787ASL	6200A	10/11/12/13	160	160	53	68	40	4	HSS	9000	L	+
F04-1786OSP	6200B	10/11/12/13	172	160	53	68	40	4	HSS	9000	R	+
F04-1787AWL	6200A	10/11/12/13	160	160	53	68	40	4	HM	9000	L	+
F04-1786AWP	6200B	10/11/12/13	172	160	53	68	40	4	HM	9000	R	+

7311



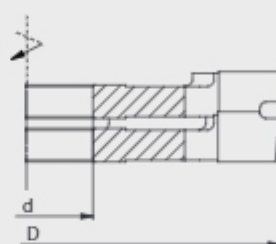
Set of brazed profile cutters type **7311** with four cutting teeth, designed for professional machining of solid wood. The set is used for making tongue and groove in parquet board production. Width is regulated with spacer rings included in the set. The set can work on 2-spindle machines.

Type of work: longitudinal profiling of tongue and groove.

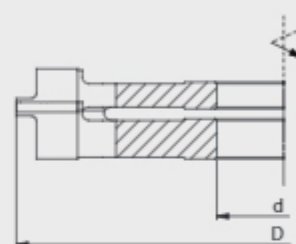
Material:

solid softwood

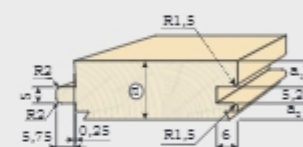
hardwood, glued wood, MDF



Profile P1



Profile P2



D mm d mm n max	140 40 6000		160 50 6000	
	HSS	HM	HSS	HM
Profile P1	+	+	+	+
Profile P2	+	+	+	+

Profile	a	a1	a2
P1 i P2	16	7	3,9
P1 i P2	19	8,5	5,3
P1 i P2	22	10	6,8





Catalogue number	Type	Profile	D mm	d mm	z	n max	
P1-00S140A001	7311	P1	140	40	4	HSS	9000 +
P1-00W140A001	7311	P1	140	40	4	HM	9000 +
P1-00S160A001	7311	P1	160	50	4	HSS	9000 +
P1-00W160A001	7311	P1	160	30	4	HM	9000 +
P2-00S140A001	7311	P2	140	40	4	HSS	9000 +
P2-00W140A001	7311	P2	140	40	4	HM	9000 +
P2-00S160A001	7311	P2	160	50	4	HSS	9000 +
P2-00W160A001	7311	P2	160	30	4	HM	9000 +

Set of brazed profile cutters type **FP-03** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for making longitudinal profiling and tenoning of furniture doors. Width is regulated with spacer rings included in the set. Regulation range 22-35 mm. One set can be used for several profiles.

Type of work: longitudinal profiling of furniture doors.

Material:

 solid softwood

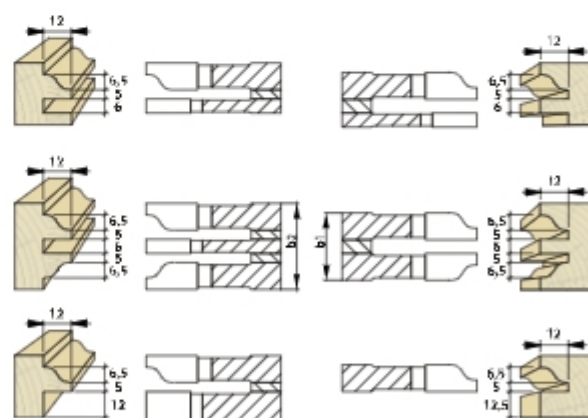
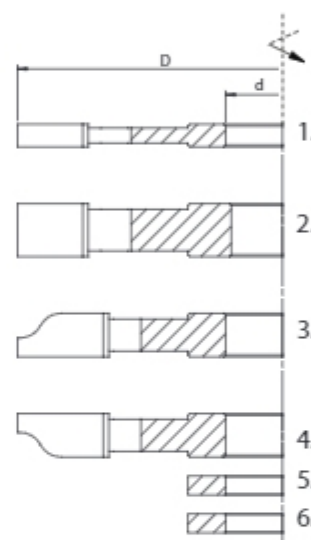
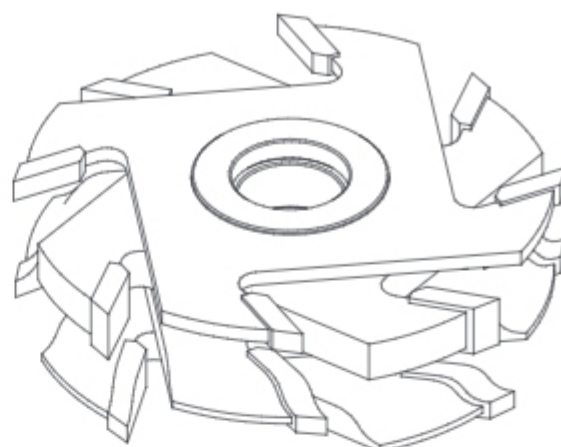
 glued wood, chipboard, MDF

Nr	D mm	B mm	d _{max} mm	R mm	n _{max}	
1.	140	6	40		9000	+
2.	140	14	40	6	9000	+
3.	140	11,5	40	6	9000	L +
4.	140	11,5	40		9000	R +
5.	63	6	40		Distance ring 1 pc.	+
6.	63	5	40		Distance ring 2 pcs.	+

D mm	140	160
d _{max} mm	40	40
n _{max}	6000	6000
	HSS	HM
	+	+

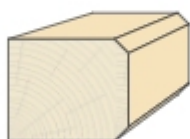
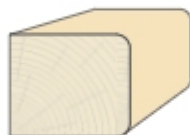
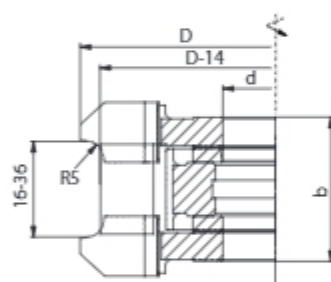
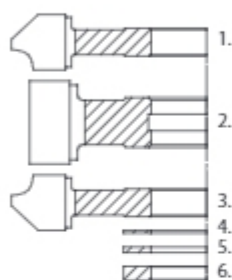
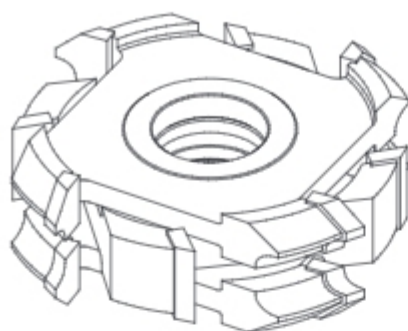


FP-03



Catalogue number	Type	D mm	b1/b2 mm	d mm	z	n _{max}	
FP0300S140-0006	FP-03	140	29/39	40	4	HSS	9000 +
FP0300W140-0001	FP-03	140	29/39	40	4	HM	9000 +
FP0300W160-0001	FP-03	160	29/39	40	4	HM	9000 +

FP-05



Set of brazed profile cutters type **FP-05** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for edge rounding and beveling of the machined elements. Width is regulated with spacer rings included in the set.

Type of work: edge profiling, rounding, beveling.

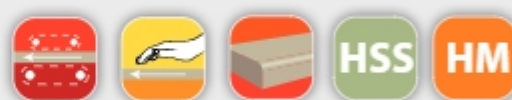
Material:

solid softwood




glued wood, chipboard, MDF

Nr	D mm	B mm	d mm	R mm/↙	n _{mm}	↗	
1.	134	20	40	5/45°	9000	L	
2.	120	30	40		9000		
3.	134	20	40	5/45°	9000	R	
4.	60	1	40	Distancer 2 pc. WHAP00017			•
5.	60	2	40	Distancer 4 pcs. WHAP00018			•
6.	60	5	40	Distancer 2 pcs. WHAP00019			•





D mm d mm n _{mm}	100 30 9000	134 50 9000	144 50 9000	154 50 6000	164 50 6000	174 50 6000
B mm	HSS	HM	HSS	HM	HSS	HM
16-36	+	+	+	+	+	+

Catalogue number	Type		D mm	B mm	b mm	d mm	R mm / 	z		n _{min}	
FP0500S134-0001	FP-05	Set	134	16-36	52	30	5/45°	4	HSS	9000	•
FP0500W134-0002	FP-05	Set	134	16-36	52	30	5/45°	4	HM	9000	•
FP0500S134-0002	FP-05	Set	134	16-36	52	40	5/45°	4	HSS	9000	•
FP0500W134-0001	FP-05	Set	134	16-36	52	40	5/45°	4	HM	9000	•
FP0500S164-0001	FP-05	Set	164	16-36	52	50	5/45°	4	HSS	9000	+
FP0500W164-0001	FP-05	Set	164	16-36	52	50	5/45°	4	HM	9000	+
FP0501S134P0002	FP-05.03	Cutter	134	20		40	5/45°	4	HSS	9000	•
FP0501S134L0002	FP-05.01	Cutter	134	20		40	5/45°	4	HSS	9000	•
FP0502S134-0002	FP-05.02	Cutter	120	30		40		4	HSS	9000	•
FP0501W134P0001	FP-05.03	Cutter	134	20		40	5/45°	4	HM	9000	•
FP0501W134L0001	FP-05.01	Cutter	134	20		40	5/45°	4	HM	9000	•
FP0502W134-0001	FP-05.02	Cutter	120	30		40		4	HM	9000	•

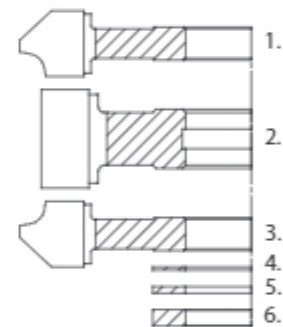
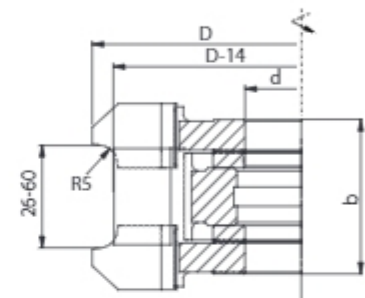
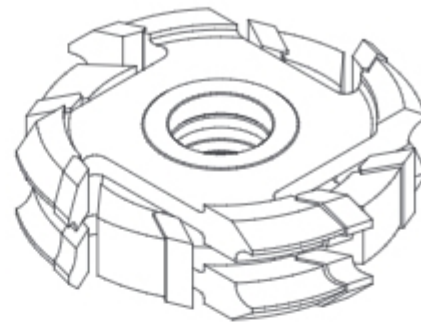
Set of brazed profile cutters type **FP-06** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for edge rounding and beveling of the machined elements. Increased regulation range. Width is regulated with spacer rings included in the set.


Type of work: edge profiling, rounding, beveling.

Material:

-  solid softwood
 glued wood, chipboard, MDF

FP-06



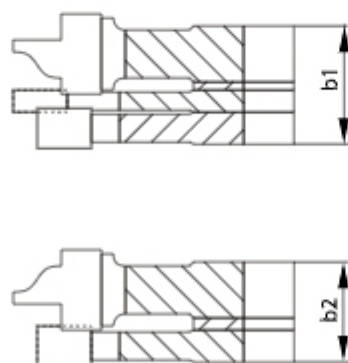
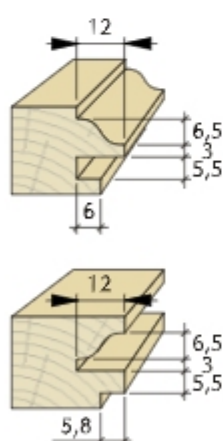
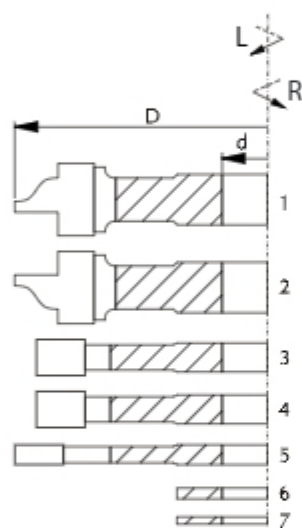
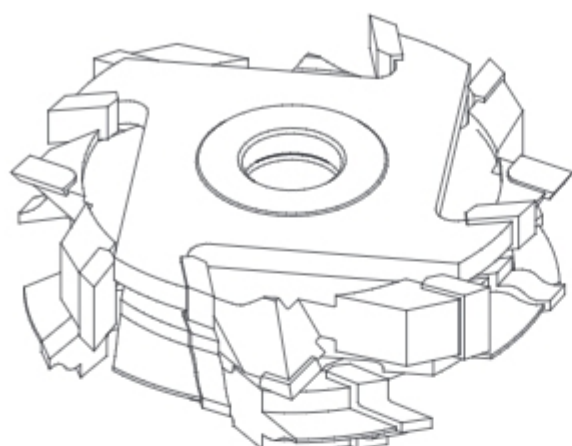
Nr	D mm	B mm	d mm	R mm / \angle	n _{max}	
1.	134	20	40	5/45°	9000	L
2.	120	55	40		9000	
3.	134	20	40	5/45°	9000	R
4.	60	1	40	Distancer 2 pc. WHAP00017 •		
5.	60	2	40	Distancer 4 pcs. WHAP00018 •		
6.	60	5	40	Distancer 2 pcs. WHAP00019 •		



D mm d _{max} mm n _{max}	100 30 9000	134 50 9000	144 50 9000	154 50 6000	164 50 6000	174 50 6000
B mm	HSS	HM	HSS	HM	HSS	HM
26-60	+	+	+	+	+	+

Catalogue number	Type		D mm	B mm	b mm	d mm	R mm / \angle	z		n _{max}	
FP0600S134-0001	FP-06	Set	134	26-60	76	30	5/45°	4	HSS	9000	•
FP0600W134-0010	FP-06	Set	134	26-60	76	30	5/45°	4	HM	9000	•
FP0600S134-0002	FP-06	Set	134	26-60	76	40	5/45°	4	HSS	9000	•
FP0600W134-0001	FP-06	Set	134	26-60	76	40	5/45°	4	HM	9000	•
FP0501S134P0002	FP-06.03	Cutter	134	20		40	5/45°	4	HSS	9000	•
FP0501S134L0002	FP-06.01	Cutter	134	20		40	5/45°	4	HSS	9000	•
FP0602S134-0001	FP-06.02	Cutter	120	55		40		4	HSS	9000	•
FP0501W134P0001	FP-06.03	Cutter	134	20		40	5/45°	4	HM	9000	•
FP0501W134L0001	FP-06.01	Cutter	134	20		40	5/45°	4	HM	9000	•
FP0602W134-0001	FP-06.02	Cutter	120	55		40		4	HM	9000	•

FP-10



Set of brazed profile cutters type **FP-10** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for cutting longitudinal profiling and tenoning of one-sided furniture doors. Width is regulated with spacer rings included in the set. One set can be used for several profiles.

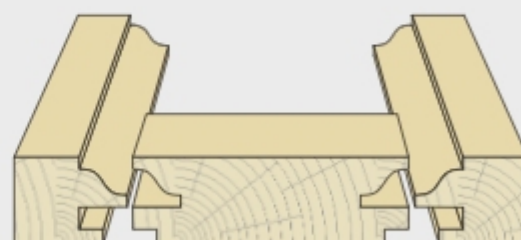
Type of work: Profiling furniture doors with one-sided profile.

Material:

HSS solid softwood

HM glued wood, chipboard, MDF

Nr	D mm	B mm	d mm	R mm	n	↗
1.	140	20	40	6	9000	R +
2.	140	20	40	6	9000	L +
3.	128	10	40		9000	+
4.	128	10	40		9000	+
5.	140	5,5	40		9000	+
6.	63	3	40		Distance ring 1 pc.	+
7.	63	2	40		Distance ring 1 pc.	+



Catalogue number	Type	D mm	b1/b2 mm	d mm	z	n	
FP1000S140-0001	FP-10	140	29,5/25	30	4	HSS	9000 +
FP1000W140-001	FP-10	140	29,5/25	30	4	HM	9000 +

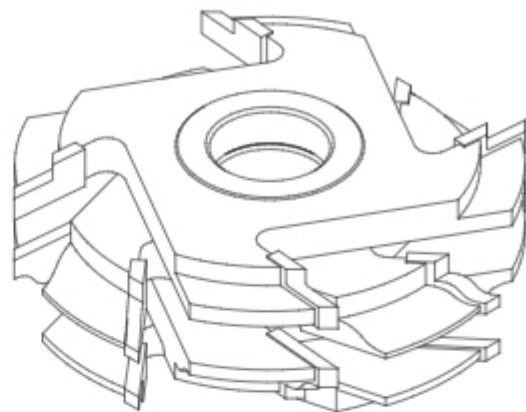
Set of brazed profile cutters type **FP-12** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for longitudinal profiling and tenoning of one-sided furniture doors. Width is regulated with spacer rings included in the set. One set can be used for several profiles.


Type of work: Longitudinal profiling of furniture doors with one-sided profile.

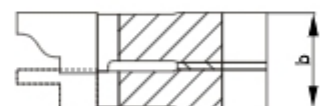
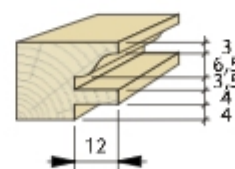
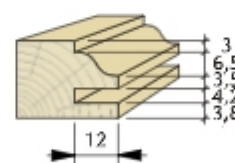
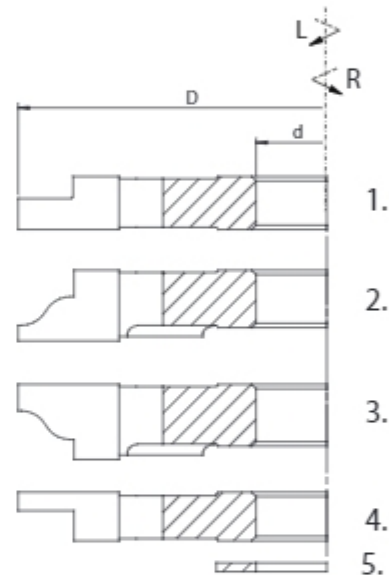
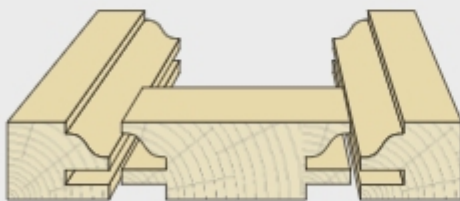
Material:

HM glued wood, chipboard, MDF

FP-12



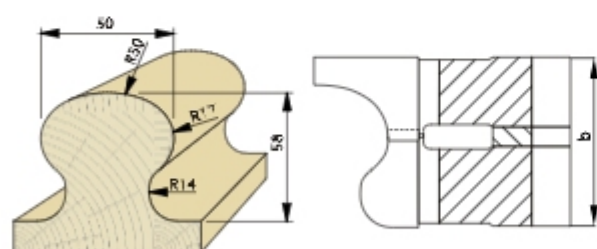
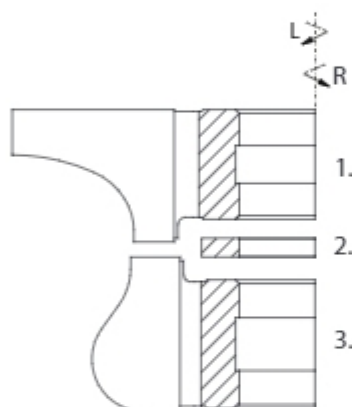
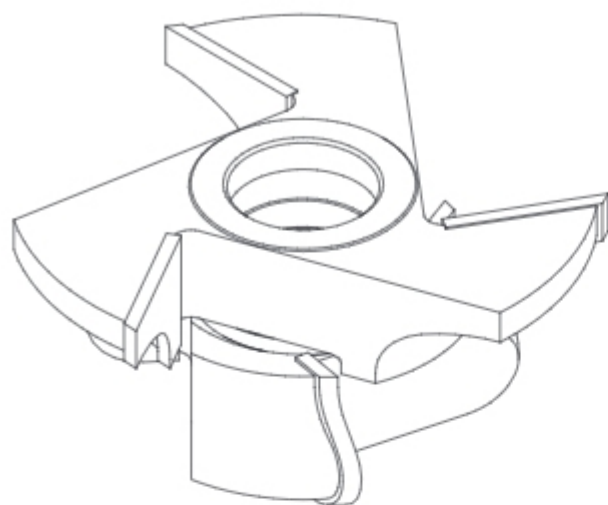
Nr	D mm	B mm	d _{max} mm	R mm	n _{max}	
1.	140	12	40		9000	L +
2.	140	16	40	6	9000	L +
3.	140	17	40	6	9000	R +
4.	140	11	40		9000	R +
5.	63	2	40	Distance ring 2 pcs.		+



MDF

Catalogue number right		Catalogue number left		Type	D mm	b mm	d mm	z		n _{min}
FP1200S140P001	•	FP1200S140L001	+	FP-12	140	27/27	30	4	HSS	9000
FP1200W140P001	•	FP1200W140L001	+	FP-12	140	27/27	30	4	HM	9000
FP1200S160P001	+	FP1200S160L001	+	FP-12	160	27/27	40	4	HSS	9000


FP-14




Set of brazed profile cutters type **FP-14** with three cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for cutting surface in railing production.

Type of work: railing edge profiling.

Material:

 solid softwood

 solid hardwood

Nr	D mm	B mm	d mm	R mm	n	↗	
1.	160	35	35	50/17	9000	R	+
3.	118	41	35	14/17	9000	L	+
2.	58	6	35	Distance ring 1 pc.			+

Nr	D mm	B mm	d mm	R mm	n	↗	
1.	180	35	50	50/17	9000	R	+
3.	138	41	50	14/17	9000	L	+
2.	70	6	50	Distance ring 1 pc.			+

D mm	160	180
d mm	35	50
n	9000	9000
	HSS	HM
Profile 1	+	+



Catalogue number figth		Catalogue number left		Type	D mm	b mm	d mm	z		n _{max}
FP1400S160P001	•	FP1400S160L001	+	FP-14	160	69	30	3	HSS	9000
FP1400W180P001	+	FP1400W180L001	+	FP-14	180	69	30	3	HM	6000
FP1400S180P001	+	FP1400S180L001	+	FP-14	180	69	50	3	HSS	6000

FP-15

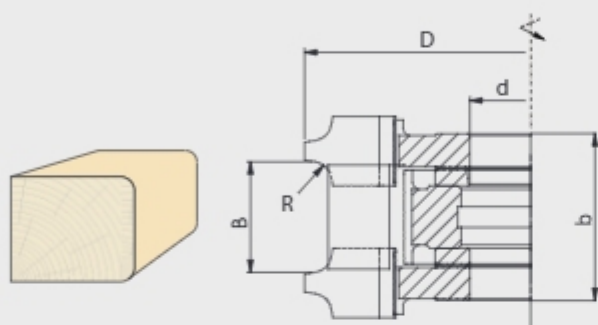
Set of brazed profile cutters type **FP-15** with four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for edge rounding of the machined elements. Width is regulated with spacer rings included in the set.

Type of work: edge profiling, corner rounding.

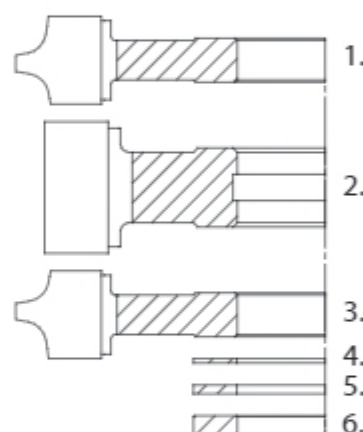
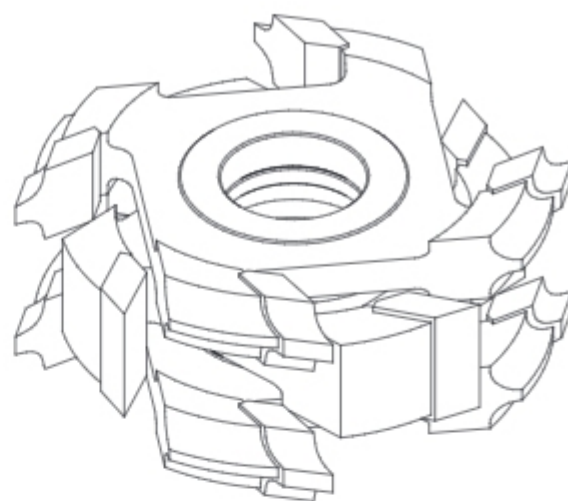
Material:

HSS solid softwood

HM glued wood, chipboard, MDF



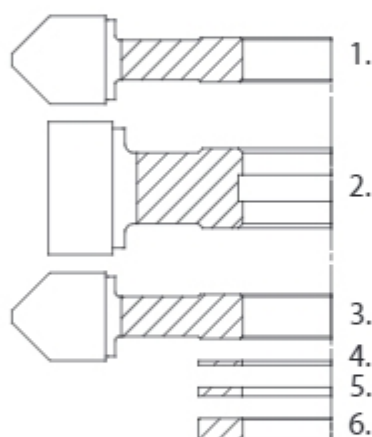
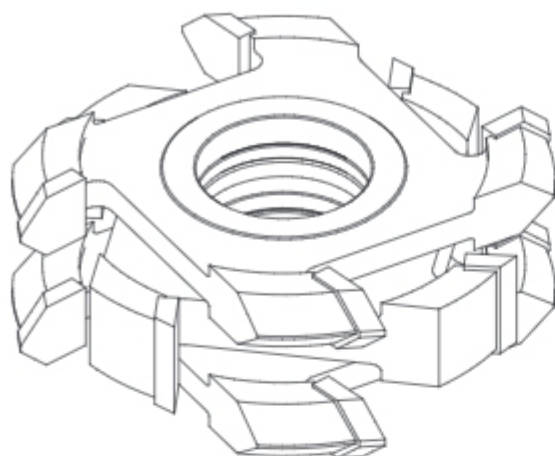
Nr	D mm	B mm	d mm	R/R mm	n _{max}
1,3	134	20	40	5/5	9000
2.	120	30	40		9000
4.	63	1	40	Distancer 2 pc. WHAP00017 •	
5.	63	2	40	Distancer 4 pcs. WHAP00018 •	
6.	63	5	40	Distancer 2 pcs. WHAP00019 •	



D mm	130	132	134	136	138	140
d _{max} mm	40	40	50	50	50	50
n _{max}	9000	9000	9000	9000	9000	9000
B mm	16-34	16-36	16-36	16-38	20-40	20-42
R/R mm	3/3	4/4	5/5	6/6	7/7	8/8
	HSS	HM	HSS	HM	HSS	HM
	+	+	+	+	+	+

Catalogue number	Type		D mm	B mm	b mm	d mm	R/R mm	z	n _{max}
FP1500S134-0002	FP-15	Set	134	16-36	52	40	5/5	4 HSS	9000 •
FP1500W134-0001	FP-15	Set	134	16-36	52	40	5/5	4 HM	9000 •
FP0502S134-0002	FP-15.02	Cutter	120	30		40		4 HSS	9000 •
FP0502W134-0001	FP-15.02	Cutter	120	30		40		4 HM	9000 •
FP0602S134-0001	FP-15.02	Cutter	120	55		40		4 HSS	9000 •
FP0602W134-0001	FP-15.02	Cutter	120	55		40		4 HM	9000 •

FP-16



Set of brazed profile cutters type **FP-16** with four or six cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for edge beveling of the machined elements. Width is regulated with spacer rings included in the set.

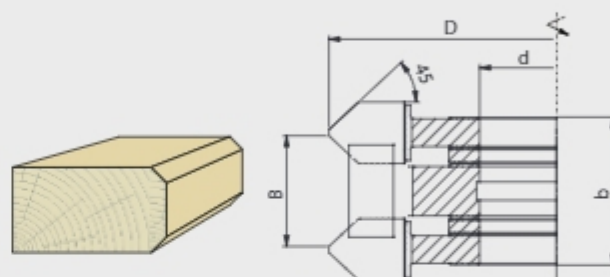
Type of work: edge profiling, corner beveling.

Material:

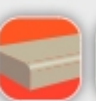
solid softwood



glued wood, chipboard, MDF



Nr	D mm	d mm	∠/∠	n
1,3	134	40	45°/45°	9000
2.	120	40		9000
4.	63	40	Distancer 2 pcs. WHAP00017	•
5.	63	40	Distancer 4 pcs. WHAP00018	•
6.	63	40	Distancer 2 pcs. WHAP00019	•



D mm	134	134	134	154	154	174	174	194
d mm	50	50	50	60	60	70	70	80
n	9000	9000	9000	9000	9000	6000	6000	6000
B mm	16-36	26-60	30-70	16-36	26-60	16-36	26-60	26-60
∠/∠	45°/45°	45°/45°	45°/45°	45°/45°	45°/45°	45°/45°	45°/45°	45°/45°
	HSS	HM	HSS	HM	HSS	HM	HSS	HM


+ + + + + + + + + + + + + + + +


| Catalogue number | Type | | D mm | B mm | b mm | d mm | ∠/∠ | z | n |
|------------------|----------|--------|------|-------|------|------|---------|-------|--------|
| FP1600S134-0001 | FP-16 | Set | 134 | 16-36 | 52 | 40 | 45°/45° | 4 HSS | 9000 • |
| FP1600W134-0002 | FP-16 | Set | 134 | 16-36 | 52 | 40 | 45°/45° | 4 HM | 9000 • |
| FP0502S134-0002 | FP-16.02 | Cutter | 120 | 30 | | 40 | | 4 HSS | 9000 • |
| FP0502W134-0001 | FP-16.02 | Cutter | 120 | 30 | | 40 | | 4 HM | 9000 • |
| FP0602S134-0001 | FP-16.02 | Cutter | 120 | 55 | | 40 | | 4 HSS | 9000 • |
| FP0602W134-0001 | FP-16.02 | Cutter | 120 | 55 | | 40 | | 4 HM | 9000 • |

Brazen profile cutters type **FPO-01** with four cutting teeth, designed for professional machining of solid wood. The cutter is used for cutting surface in production of garden programme elements. Special geometry allows for making profiles with a single cutter.

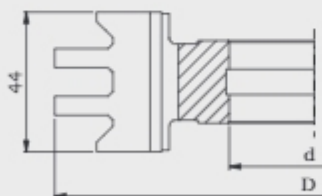
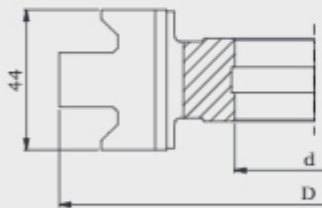
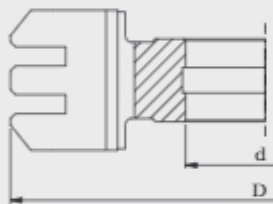
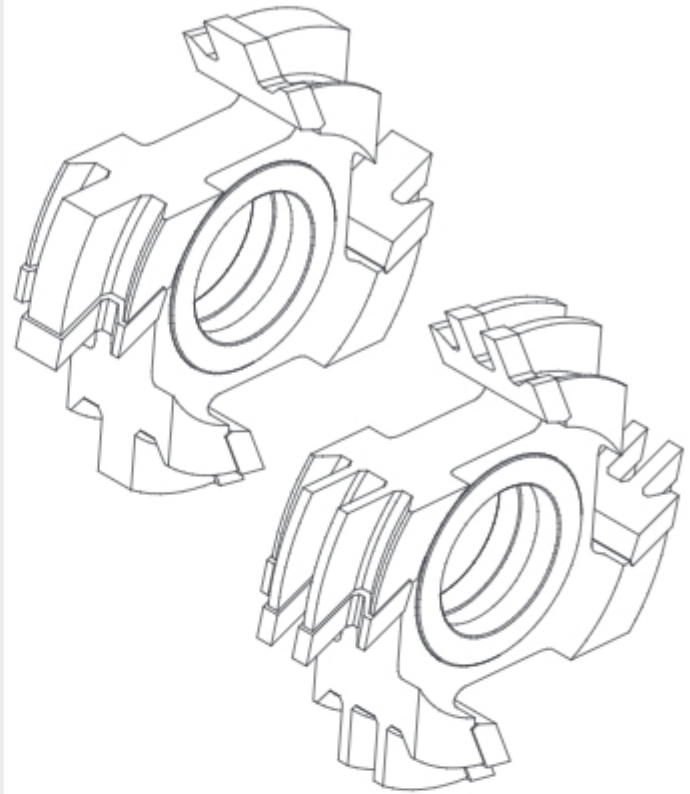
Type of work: surface profiling.

Material:

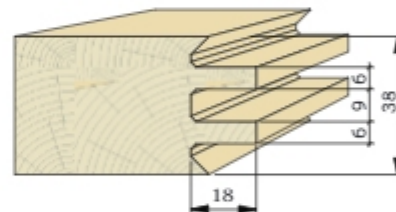
 solid softwood

 solid hardwood

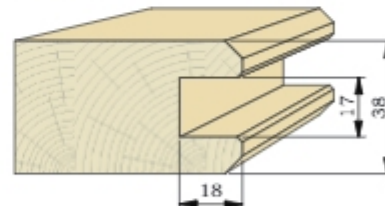
FPO-01



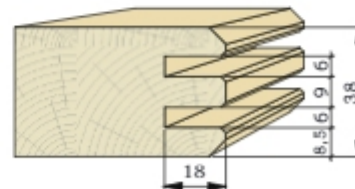
Profile P1



Profile P2

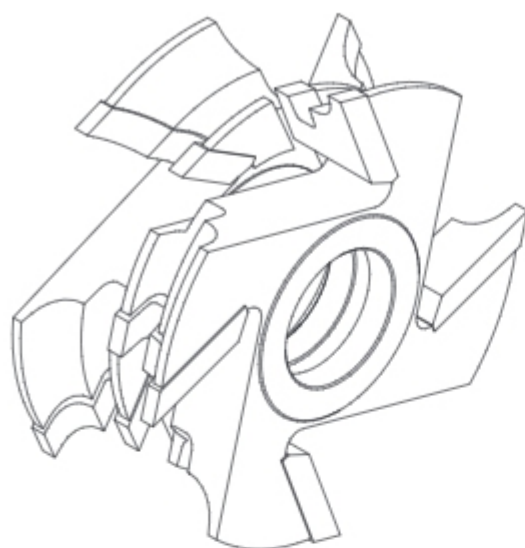


Profile P3



| Catalogue number | Type | Profile | D mm | d mm | z | n _{max} | |
|------------------|--------|---------|------|------|---|------------------|--------|
| F02-2234S | FPO-01 | P1 | 160 | 50 | 4 | HSS | 9000 + |
| F02-2236S | FPO-01 | P2 | 160 | 50 | 4 | HSS | 9000 + |
| F02-2237S | FPO-01 | P3 | 160 | 50 | 4 | HSS | 9000 + |

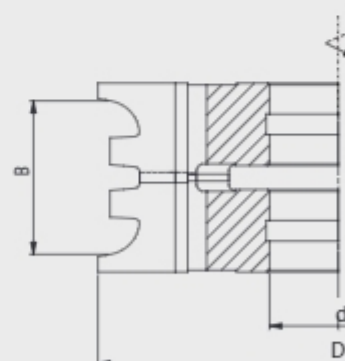
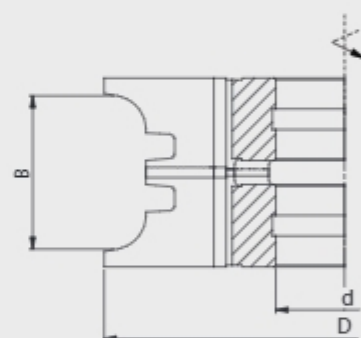
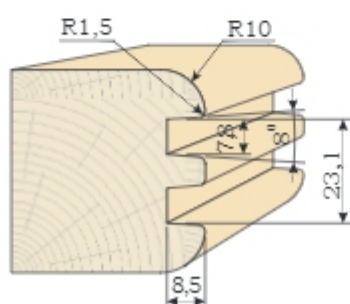
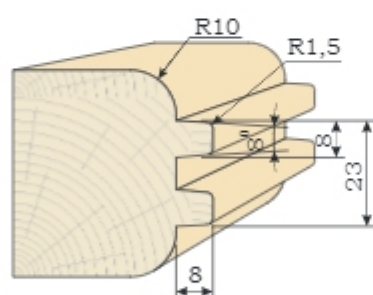
FPO-02



Set of brazed profile cutters type **FPO-02** with four cutting teeth, designed for professional machining of solid wood. The set is used for cutting surface in production of wooden walls. Width is regulated with spacer rings included in the set. Special geometry allows for making profiles with a single cutter.

Type of work: surface profiling.

Material: solid wood

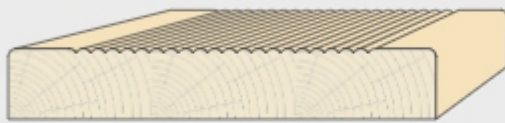


| Catalogue number | Type | D mm | B mm | d mm | R | z | n | |
|------------------|--------|------|------|------|----|---|-----|--------|
| F04-0814-005 | FPO-02 | 140 | 45 | 40 | 10 | 4 | HSS | 9000 + |

Set of brazed profile cutters type **FPO-03** with four cutting teeth, designed for professional machining of solid wood. The set is used for cutting terrace floor surface. Width is regulated with spacer rings included in the set.

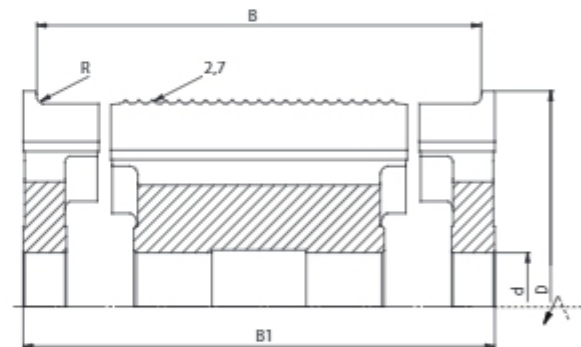
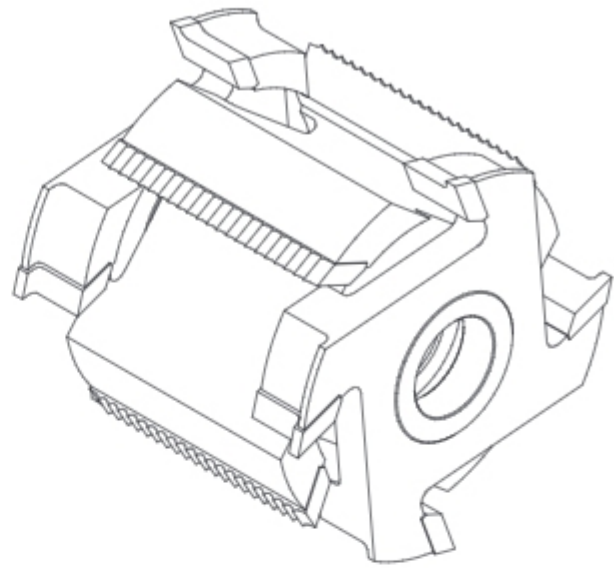
Type of work: terrace floor surface profiling.

Material: solid wood



| D mm
d mm
n | 160
40
6000 | 180
50
6000 |
|-------------------|-------------------|-------------------|
| B | | |
| 120-135 | + | + |
| 120-145 | + | + |

FPO-03

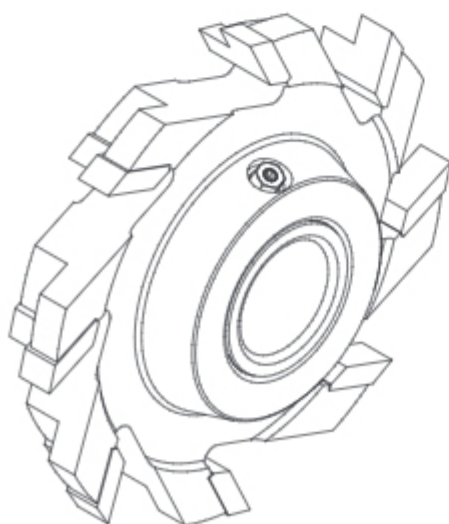
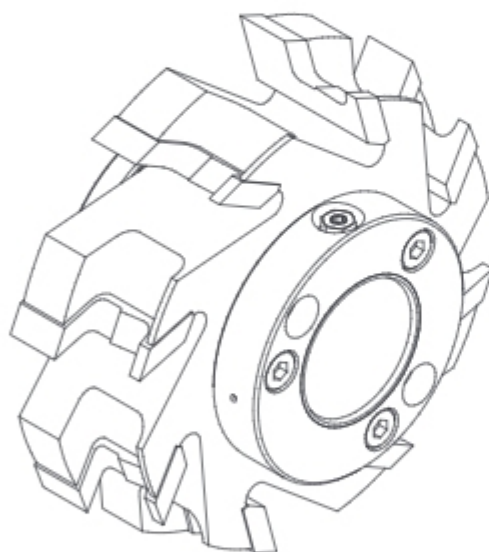
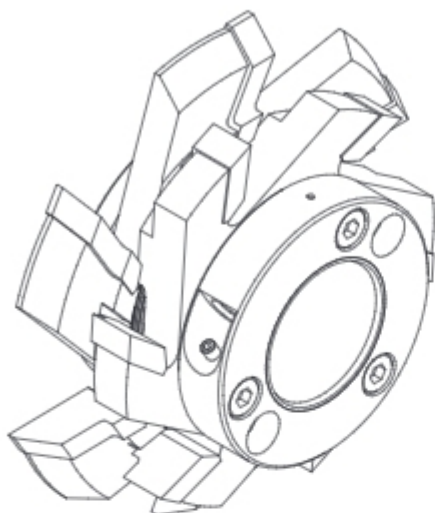


3



| Catalogue number | Type | D mm | B mm | B1 mm | d mm | R mm | z | n | |
|------------------|--------|------|---------|-------|------|------|---|-----|--------|
| F04-0653-00AS | FPO-03 | 160 | 120-135 | 145 | 40 | 2,7 | 4 | HSS | 9000 + |
| F04-0653-00S | FPO-03 | 160 | 120-145 | 155 | 40 | 2,7 | 4 | HSS | 9000 + |

Cutters with hydro clamping



Cutter or set of cutters with hydraulic clamping system is designed for professional, very precise machining of solid wood. The tools mounted on hydro sleeve are designed for very precise profiling as well as pre-planing and finishing flat surfaces.

The construction of tools with hydro clamping or hydro sleeve guarantees narrowed tolerance of radial run-out reduced to minimum as fitting tolerance after installing the system on the machine spindle (developing pressure 300 bar) equals to zero, which automatically results in very precise positioning of the tool on the machine spindle. The hydro system which also allows for perfect balancing of the tools, apart from very high machined surface quality, enables working with high cutting and feed speed as well as guarantees significantly increased life of the tool due to even wear of all the blades.

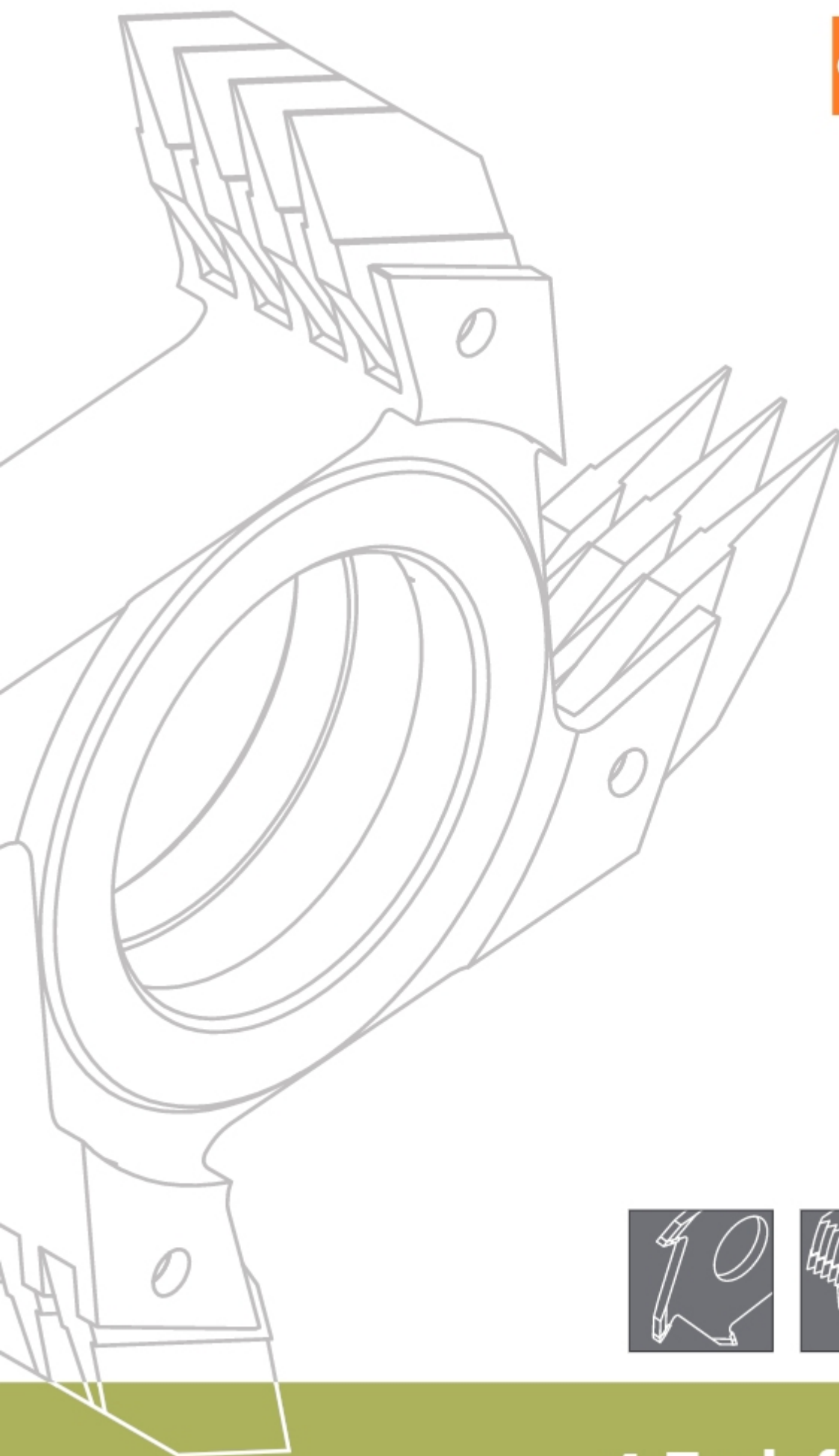
On request, we can suggest and manufacture a proper tool (cutter or set of cutters on a hydro sleeve) for the required type of work, material, parameters and conditions during machining. The set includes set of cutting tools, spacer rings and precise hydro sleeve in a version with a key (available only for $L \leq 110$ mm) or with a pump (for $L \leq 250$).

Advantages:

- precise mounting of the tool on the machine spindle,
- narrowed radial run-out tolerance,
- very high quality of machined material surface,
- increased life of the tool,
- perfect balancing of the tool,
- low vibration level,
- quiet and steady running of the tool,
- ability to work with high speed cutting and feed speed up to 200 m/min.

Hydro cutters (hydro monolith)

We also offer a solution of monolith cutter where the hydro system is an integral part of the cutter's hub. The whole system can't be dismantled which allows for more precise sharpening and balancing of the tool. The sleeve is clamped tight with a pump and loosened with a discharge valve. The valve system is placed on the cutter's hub to enable the operator easy and fast access.



4. Tools for jointing

Tools for joints

4

Tools for joints are used for permanent jointing of wooden elements. In window and construction woodworking this solution is used to obtain long elements from shorter ones. After removing all material flaws (knags, ripped parts, cracks, resin contamination), short elements are jointed together to obtain material which is stronger and mechanically more resistant compared to a single, solid (not glued) element. It can be especially important when long wooden elements are subject to deformation caused by weather conditions (window profiles, doors, building constructions etc.). Additional advantage of the jointing process is reduction of production waste.

Joint sizes are standardized and we keep these measures when designing our products. The overall width of the jointed element is given by the client and FABA is responsible for choosing the proper number of cutters. For pitch size (distance between neighbouring joint fingers) we use one of the standard values: 3,8; 4,0 or 6,2. Standard heights include joints of 10 mm, 15 mm and 20 mm with the following division:

- 10/10, 15/15, 20/20 – for machines without formatting /cutting unit,
- 10/11, 15/16,5, 20/22 – for machines with formatting /cutting unit.

Therefore, we divide the tools in the following categories:

- Tools for machines with formatting (cutting). Enable continuous quality control and regulation of joint clamping force which is important because of wear of tools during work and inaccuracies resulting from regrinding,
- Tools for machines without formatting (cutting) – allowing for saving on costs of this operation (cost of tool + time) but needing very precise regrinding in order to maintain the required depth of joints made on the machine.

The following types of jointing are used:

- continuous joint (fingers along the whole joint width), which may give irregular jointing line, visible on the edge,
- joint with shoulder, where fingers are "hidden" below the cross cut of the element. There are many types of such joints as shoulder can be placed symmetrically in the middle of finger height, at the top or at the bottom. Also non-symmetrical version are possible, where one side is at the top and the other one at the bottom etc.

We present a range of tools for various joint depth, divided into brazed cutters and cutter heads with exchangeable knives.

With the order the following information must be given:

- species and type of the machined wood,
- approximate dimensions of the requested joint,
- machine type,
- kind of glue which is used for the joint,
- feed type (manual, mechanical),
- clamp type.



Contents

4. TOOLS FOR JOINTING

| | |
|---|------|
| Pictograms | 4.3 |
| Joint fitting | 4.4 |
| Basic work parameters | 4.4 |
| 4.1 Cutters for joints 4/10/15/20 | 4.5 |
| 4.2 Cutter heads for joints 10/15/20 | 4.13 |
| 4.3 Cutters with HM tips – disc cutters | 4.18 |
| 4.4 Cutters for longitudinal and cross jointing | 4.20 |
| 4.5 Cutters with regulated width | 4.24 |
| 4.6 Cutter heads with exchangeable knives | 4.25 |

Pictograms



solid dry softwood



solid dry hardwood



glued wood



mechanical feed



manual feed



longitudinal jointing



cross-jointing



carbide



high performance coating

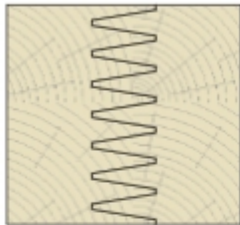


high-speed cutting steel

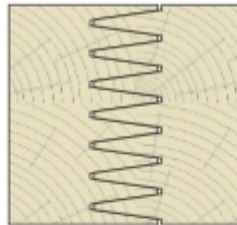
- available/stock product
- + possible production time 9-15 working days.

Joint fitting

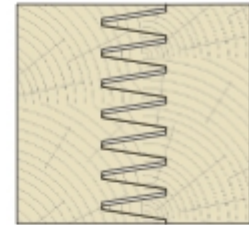
Proper fitting of two elements connected with micro joints made with tool FZK 11/17/20



Correct joint



Incorrect joint
(tight)

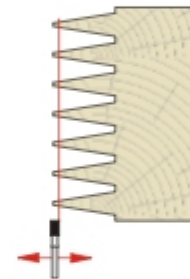


Incorrect joint
(loose)

Cutting joint endings in order to obtain properly fitted joint is necessary because of various hardness and dampness of the material and used clamping.

With loose joint the saw blade (cutting) should be moved right (towards the material)

With tight joint the saw blade (cutting) should be moved left (away from the material)



Basic cutting parameters

Cutting speed V_c

$$V_c = \frac{D \times n \times \pi}{60\,000} \text{ [m/s]}$$

D - tool diameter [mm]

n - rotation speed [1/min]

p_z - feed per tooth [mm]

p_{min} - feed per minute [m/min]

z - number of teeth

$\pi = 3,14$

Feed p_{min} / p_z

$$p_{min} \text{ [m/min]} \longleftrightarrow p_z \text{ [mm/tooth]}$$

$$p_{min} = \frac{p_z \times n \times z}{1\,000}$$

$$p_z = \frac{p_{min} \times 1\,000}{n \times z}$$

Finger joint brazed cutters for jointing solid wood. Exceptional precision of the tool for micro-joint allows for making perfectly fitted elements and 4 mm pitch guarantees economical use of material. The tools are designed for jointing light elements, producing picture frames, mirror frames and light furniture elements. Combining more than one tool allows for obtaining the requested joint width. The cutter can be produced with face cutting (formatting) (FZK-14N, joint 4/4,5) or without face cutting (FZK-15N, joint 4/4).

Type of jointing: cross-joint.

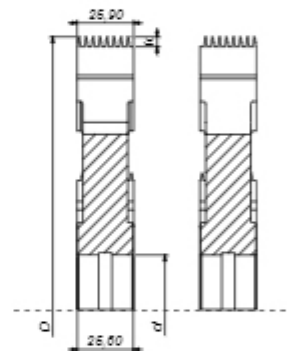
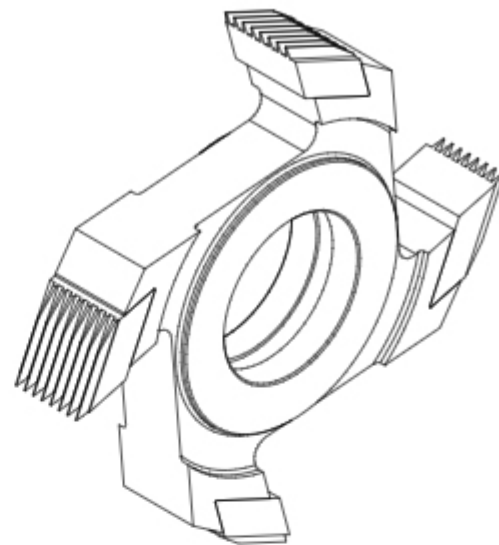
Material: solid dry softwood.



| B ₂
mm | Maximum wood width
for pitch 1,6 | Number
of cutters |
|----------------------|-------------------------------------|----------------------|
| 25,9 | 24 | 1 |
| 51,5 | 50 | 2 |
| 77,1 | 75 | 3 |
| 102,7 | 101 | 4 |
| 128,3 | 126 | 5 |
| 153,9 | 152 | 6 |
| 179,5 | 177 | 7 |
| 205,1 | 203 | 8 |



FZK-14N/15N



| D
mm | 140 | 160 | 180 | 200 | 250 |
|------------------------|------|------|------|------|------|
| n _{mm} | 9000 | 9000 | 8000 | 7000 | 6000 |
| z | 40 | 60 | 60 | 60 | 70 |
| B ₂
mm | 2+2 | 2+2 | 3+3 | 3+3 | 4+4 |
| B ₂
mm | 25,9 | 25,9 | 25,9 | 25,9 | 25,9 |
| FZK-14N
k=4/4,5x1,6 | + | + | + | + | + |
| FZK-15N
k=4/4x1,6 | + | + | + | + | + |

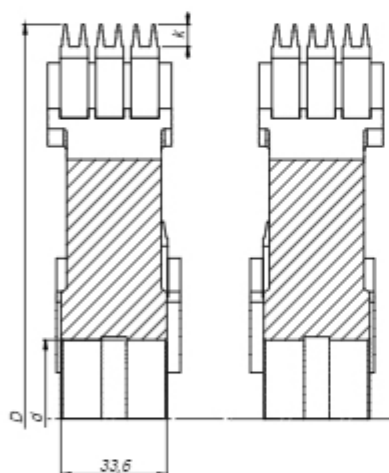
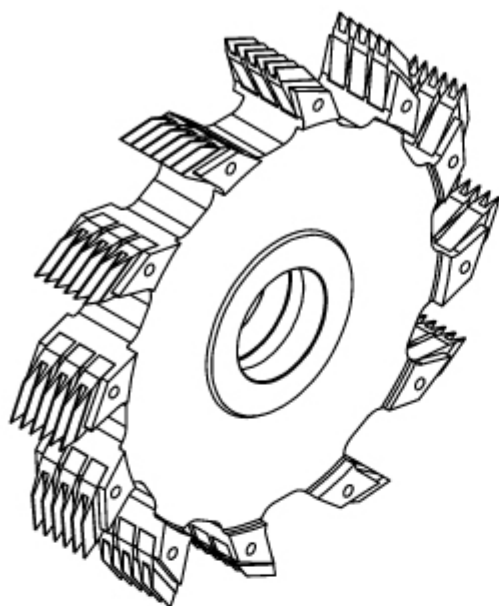
| Catalogue number | Type | D
mm | B
mm | d
mm | k
mm | z | n _{mm} | |
|------------------|-------------|---------|---------|---------|-----------|-----|-----------------|---|
| FZK14NS160-001 | HSS FZK-14N | 160 | 25,9 | 50 | 4/4,5x1,6 | 2+2 | 9000 | + |
| FZK14NS250-001 | HSS FZK-14N | 250 | 25,9 | 50 | 4/4,5x1,6 | 3+3 | 6000 | + |
| FZK15NS160-002 | HSS FZK-15N | 160 | 25,9 | 50 | 4/4x1,6 | 2+2 | 9000 | + |
| FZK15NS250-001 | HSS FZK-15N | 250 | 25,9 | 50 | 4/4x1,6 | 3+3 | 6000 | + |

With orders for FZK type cutters, please give type of machined material.

Optionally, the tools can be offered with HP coating.

More information on page 4.17.

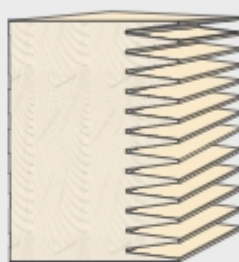
FZK-23N



FZK-23N - finger joint brazer cutter for jointing soft solid wood. Exceptional precision of the tool for micro-joint allows for making perfectly fitted elements. Small joint depth 6/7 guarantees economical use of material. The tools are designed for jointing light elements, production of picture frames, mirror frames and other light furniture elements. Combining more than one tool allows for obtaining the requested joint width.

Type of jointing: cross-joint.

Material: solid softwood.



| B _z
mm | Maximum wood width
for pitch 2.8 | Number
of cutters |
|----------------------|-------------------------------------|----------------------|
| 34 | 31 | 1 |
| 67,6 | 65 | 2 |
| 101,2 | 98 | 3 |
| 134,8 | 132 | 4 |
| 168,4 | 165 | 5 |
| 202 | 199 | 6 |
| 235,6 | 233 | 7 |
| 269,2 | 266 | 8 |



| D
mm | 160 | 160 | 250 | 250 | 250 |
|----------------------|------|------|------|------|------|
| n | 9000 | 9000 | 6000 | 6000 | 6000 |
| d | 60 | 60 | 70 | 70 | 70 |
| z | 2+2 | 3+3 | 3+3 | 4+4 | 6+6 |
| B | 34 | 34 | 34 | 34 | 34 |
| FZK-23N
k=6/7x2,8 | + | + | + | + | + |

| Catalogue number | Type | D
mm | B
mm | d
mm | k
mm | z | n _{max} | |
|------------------|-------------|---------|---------|---------|---------|-----|------------------|---|
| FZK23NS160-002 | HSS FZK-23N | 160 | 34 | 50 | 6/7x2,8 | 2+2 | 9000 | + |
| FZK23NS160-003 | HSS FZK-23N | 160 | 34 | 50 | 6/7x2,8 | 3+3 | 9000 | + |
| FZK23NS250-001 | HSS FZK-23N | 250 | 34 | 50 | 6/7x2,8 | 6+6 | 6000 | + |

With orders for FZK type cutters, please give type of machined material.

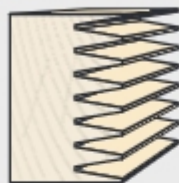
Optionally, the tools can be offered with HP coating.

More information on page 4.17.

Finger joint brazed cutters for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. The cutter can be produced in two versions: with face cutting (formatting) (FZK-11N, joint 10/11) or without cutting (FZK-12N, joint 10/10).

Type of jointing: cross-joint.

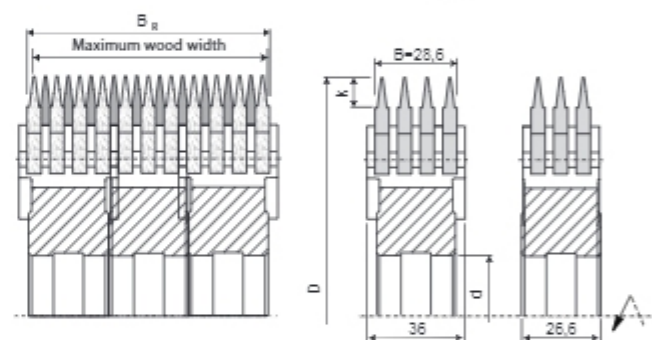
Material: solid wood.



| B _g
mm | Maximum wood width
for pitch 3,8 | Number
of cutters |
|----------------------|-------------------------------------|----------------------|
| 28,6 | 24 | 1 |
| 55,2 | 51 | 2 |
| 81,8 | 77 | 3 |
| 108,4 | 104 | 4 |
| 135,0 | 131 | 5 |
| 161,6 | 157 | 6 |
| 188,2 | 184 | 7 |
| 214,8 | 210 | 8 |



FZK-11N/12N



| D
n _{max}
d _{max}
z _{max}
B | 140
9000
40
2+2
28,6 | 160
9000
60
3+3
28,6 | 180
8000
60
3+3
28,6 | 200
7000
60
3+3
28,6 | 250
6000
70
4+4
28,6 |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| FZK-11N
k=10/11x3,8 | + | + | + | + | + |
| FZK-12N
k=10/10x3,8 | + | + | + | + | + |

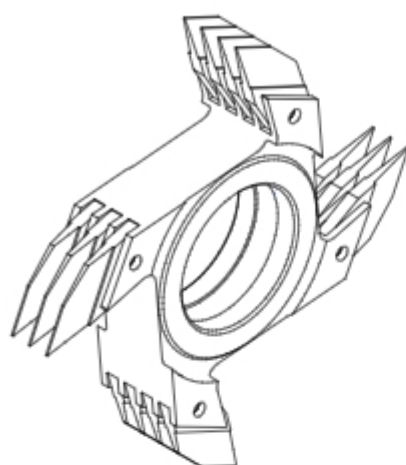
| Catalogue number | Type | D
mm | B
mm | d
mm | k
mm | z | n _{max} |
|------------------|-------------|---------|---------|---------|-----------|-----|------------------|
| FZK11NS160-001 | HSS FZK-11N | 160 | 28,6 | 50 | 10/11x3,8 | 2+2 | 9000 |
| FZK11NS250-001 | HSS FZK-11N | 250 | 28,6 | 50 | 10/11x3,8 | 3+3 | 6000 |
| FZK12NS140-002 | HSS FZK-12N | 140 | 28,6 | 30 | 10/10x3,8 | 2+2 | 9000 |
| FZK12NS140-001 | HSS FZK-12N | 140 | 28,6 | 40 | 10/10x3,8 | 2+2 | 9000 |
| FZK12NS160-001 | HSS FZK-12N | 160 | 28,6 | 40 | 10/10x3,8 | 2+2 | 9000 |
| FZK12NS160-002 | HSS FZK-12N | 160 | 28,6 | 50 | 10/10x3,8 | 2+2 | 9000 |
| FZK12NS250-001 | HSS FZK-12N | 250 | 28,6 | 50 | 10/10x3,8 | 3+3 | 6000 |

With orders for FZK type cutters, please give type of machined material.

Optionally, the tools can be offered with HP coating.

More information on page 4.17.

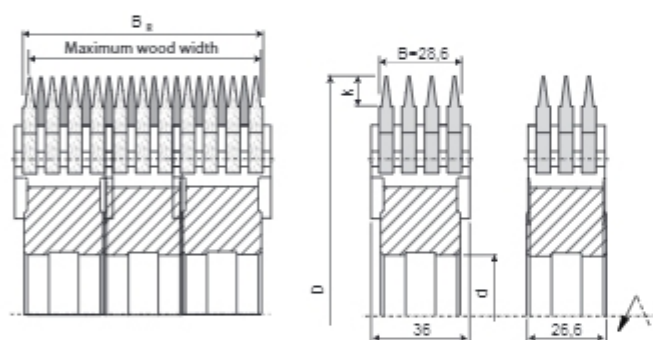
FZK-17N/18N



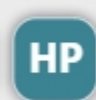
Finger joint brazed cutters for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. The cutter can be produced in two versions: with face cutting (formatting) (FZK-17N, joint 15/16,5) or without cutting (FZK-18N, joint 15/15).

Type of jointing: cross-joint.

Material: solid wood.



| B _s
mm | Maximum wood width
for pitch 3,8 | Number
of cutters |
|----------------------|-------------------------------------|----------------------|
| 28,6 | 24 | 1 |
| 55,2 | 51 | 2 |
| 81,8 | 77 | 3 |
| 108,4 | 104 | 4 |
| 135,0 | 131 | 5 |
| 161,6 | 157 | 6 |
| 188,2 | 184 | 7 |
| 214,8 | 210 | 8 |



| D
mm | 140 | 160 | 170 | 170 | 180 | 200 | 250 | 260 |
|--------------------------|------|------|------|------|------|------|------|------|
| n _{mm} | 9000 | 9000 | 8000 | 8000 | 7000 | 6000 | 6000 | 6000 |
| d _{mm} | 35 | 50 | 60 | 60 | 60 | 70 | 70 | 70 |
| z _{mm} | 2+2 | 2+2 | 2+2 | 3+3 | 3+3 | 3+3 | 3+3 | 3+3 |
| B _{mm} | 28,6 | 28,6 | 28,6 | 28,6 | 28,6 | 28,6 | 28,6 | 28,6 |
| FZK-17N
k=15/16,5x3,8 | + | + | + | + | + | + | + | + |
| FZK-18N
k=15/15x3,8 | + | + | + | + | + | + | + | + |

| Catalogue number | Type | D
mm | B
mm | d
mm | k
mm | z | n _{mm} | |
|------------------|-------------|---------|---------|---------|-------------|-----|-----------------|---|
| FZK17NS170-002 | HSS FZK-17N | 170 | 28,6 | 50 | 15/16,5x3,8 | 2+2 | 8000 | + |
| FZK17NS260-001 | HSS FZK-17N | 260 | 28,6 | 50 | 15/16,5x3,8 | 3+3 | 6000 | + |
| FZK18NS170-001 | HSS FZK-18N | 170 | 28,6 | 50 | 15/15x3,8 | 2+2 | 8000 | + |
| FZK18NS260-001 | HSS FZK-18N | 260 | 28,6 | 50 | 15/15x3,8 | 3+3 | 6000 | + |

With orders for FZK type cutters, please give type of machined material.

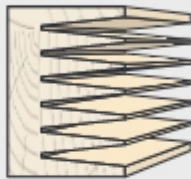
Optionally, the tools can be offered with HP coating.

More information on page 4.17.

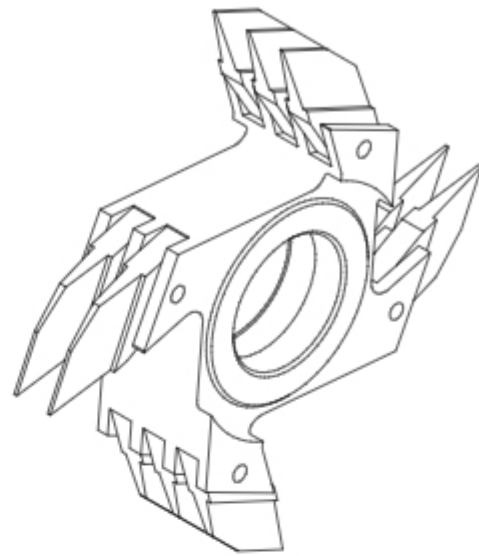
Finger joint brazed cutters for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. The cutter can be produced in two versions: with face cutting (formatting) (FZK-20N, joint 20/22) or without cutting (FZK-19N, joint 20/20).

Type of jointing: cross-joint.

Material: solid wood.

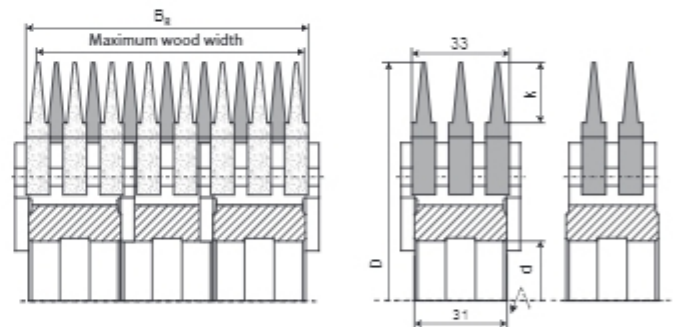


FZK-19N/20N






4

| B ₂
mm | Maximum wood width
for pitch 6.2 | Number
of cutters |
|----------------------|-------------------------------------|----------------------|
| 33,0 | 28 | 1 |
| 66,0 | 59 | 2 |
| 99,0 | 90 | 3 |
| 132,0 | 121 | 4 |
| 165,0 | 152 | 5 |
| 198,0 | 183 | 6 |
| 231,0 | 214 | 7 |
| 264,0 | 245 | 8 |



| D
mm | 160
9000
40
2+2
33 | 170
8000
50
3+3
33 | 180
7000
60
2+2
33 | 180
7000
60
3+3
33 | 200
6000
60
3+3
33 | 250
6000
70
3+3
33 | 260
6000
80
3+3
33 |
|------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| FZK-19N
k=20/20x6,2 | + | + | + | + | + | + | + |
| FZK-20N
k=20/22x6,2 | + | + | + | + | + | + | + |

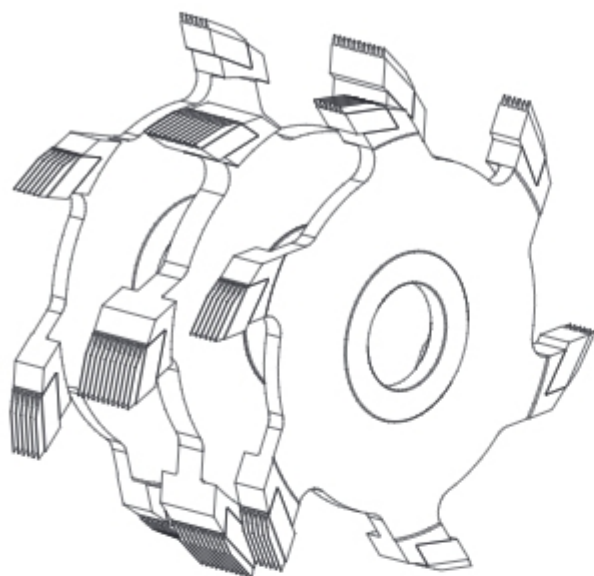
| Catalogue number | | Type | D
mm | B
mm | d
mm | k
mm | z | n _{mm} | |
|------------------|---|---------|---------|---------|---------|-----------|-----|-----------------|---|
| FZK19NS180-002 |  | FZK-19N | 180 | 33 | 50 | 20/20x6,2 | 2+2 | 6000 | + |
| FZK20NS180-001 |  | FZK-20N | 180 | 33 | 50 | 20/22x6,2 | 2+2 | 6000 | + |
| FZK20NS260-001 |  | FZK-20N | 260 | 33 | 50 | 20/22x6,2 | 3+3 | 6000 | + |

With orders for FZK type cutters, please give type of machined material.

Optionally, the tools can be offered with HP coating.

More information on page 4.17.

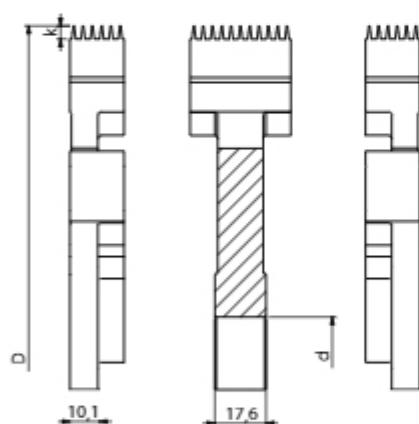
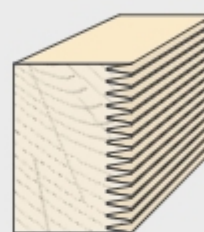
FZK-14A/14B



Finger joint brazed cutters for jointing solid wood. Exceptional precision of the tool for micro-joint allows for making perfectly fitted elements and 4 mm pitch guarantees economical use of material. The tools are designed for jointing light elements, producing picture frames, mirror frames and light furniture elements. Combining more that one tool allows for obtaining the requested joint width. Minimum set consist of one cutter type A and two side cutters type B. Increasing joint width is done by adding a proper number of middle cutters type A. The cutter can be produced with face cutting (formatting) (FZK-14N, joint 4/4,5) or without face cutting (FZK-15N, joint 4/4).

Type of jointing: cross-joint.

Material: solid wood.



| B ₂
mm | Maximum wood width
for pitch 1,6 | Number of
middle cutters
FZK-14A | Number of
side cutters
FZK-14B |
|----------------------|-------------------------------------|--|--------------------------------------|
| 37,2 | 35 | 1 | 2 |
| 54,8 | 53 | 2 | 2 |
| 72,4 | 70 | 3 | 2 |
| 90 | 88 | 4 | 2 |
| 107,6 | 105 | 5 | 2 |
| 125,2 | 123 | 6 | 2 |
| 142,8 | 140 | 7 | 2 |
| 160,4 | 158 | 8 | 2 |



| Catalogue number | Type | D
mm | B
mm | d
mm | k
mm | z | n _{max} | |
|------------------|--------------------|---------|---------|---------|-----------|---|------------------|---|
| FZK14AS250-001 | HSS FZK-14A middle | 250 | 34,6 | 50 | 4/4,5x1,6 | 6 | 6000 | + |
| FZK14BS250-01L | HSS FZK-14B left | 250 | 18,6 | 50 | 4/4,5x1,6 | 6 | 6000 | + |
| FZK14BS250-01P | HSS FZK-14B right | 250 | 18,6 | 50 | 4/4,5x1,6 | 6 | 6000 | + |

With orders for FZK type cutters, please give type of machined material.

Optionally, the tools can be offered with HP coating.

More information on page 4.17.

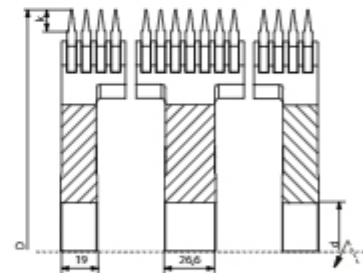
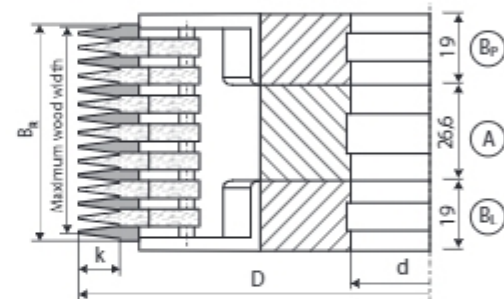
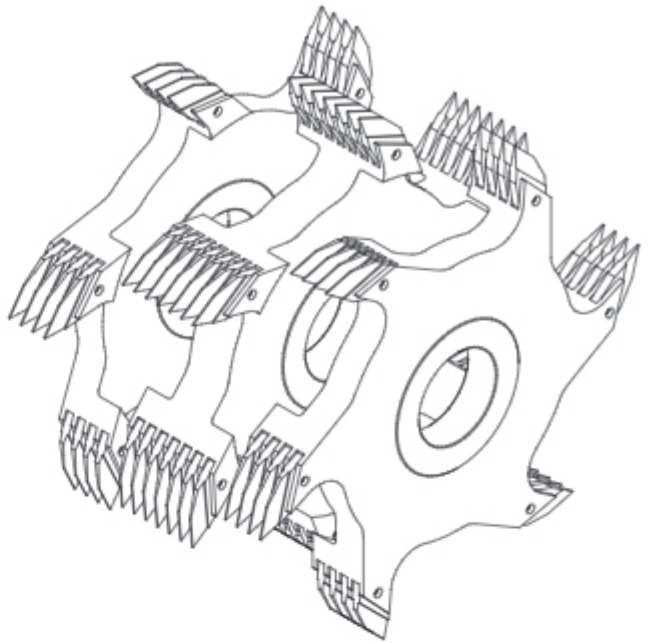
High-efficient finger joint brazed cutters, type **FZK-11A/11B** are characterized by increased life thanks to double quantity of working teeth (real $z=6$). A minimum set consists of one middle cutter type A and two side cutters type B. Obtaining bigger width of the machined material requires only adding the proper quantity of middle cutters type A. Cutters type FZK-11A/11B are available in the version with cutting (formatting) (joint 10/11).

Type of jointing: cross-joint.

Material: solid wood.



| B_z
mm | Maximum wood width
for pitch 3.8 | Number of
middle cutters
FZK-11A | Number of
side cutters
FZK-11B |
|-------------|-------------------------------------|--|--------------------------------------|
| 55,2 | 53 | 1 | 2 |
| 81,8 | 79,6 | 2 | 2 |
| 108,4 | 106,2 | 3 | 2 |
| 135,0 | 132,8 | 4 | 2 |
| 161,6 | 159,4 | 5 | 2 |
| 188,2 | 186 | 6 | 2 |
| 214,8 | 212,6 | 7 | 2 |
| 241,4 | 239,2 | 8 | 2 |



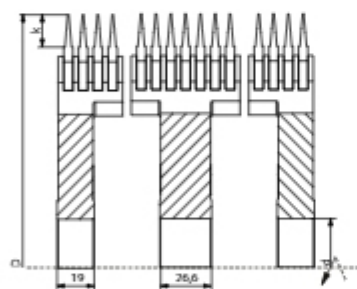
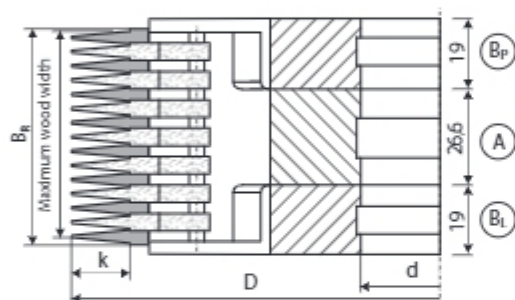
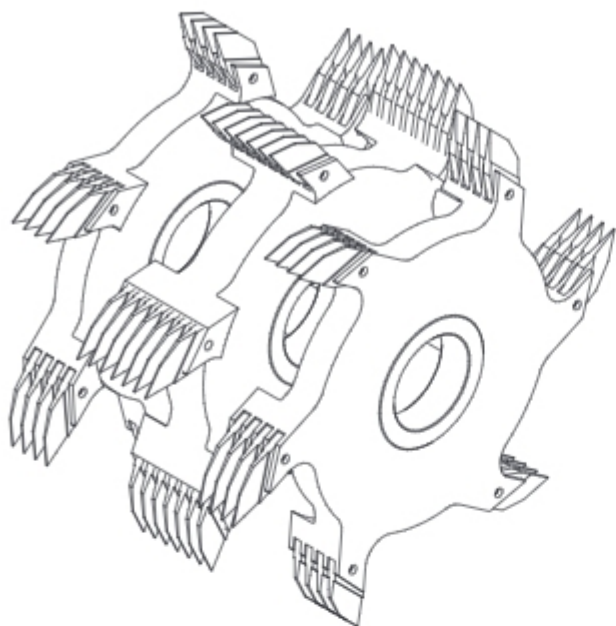
| Catalogue number | Type | D
mm | B
mm | d
mm | k
mm | z | n_{min} |
|------------------|--------------------|---------|---------|---------|-----------|---|------------------|
| FZK11AS160-001 | HSS FZK-11A middle | 160 | 51,4 | 50 | 10/11x3,8 | 4 | 6000 + |
| FZK11BS160-01L | HSS FZK-11B left | 160 | 28,6 | 50 | 10/11x3,8 | 4 | 6000 + |
| FZK11BS160-01P | HSS FZK-11B right | 160 | 28,6 | 50 | 10/11x3,8 | 4 | 6000 + |
| FZK11AS250-001 | HSS FZK-11A middle | 250 | 51,4 | 50 | 10/11x3,8 | 6 | 6000 • |
| FZK11BS250-01L | HSS FZK-11B left | 250 | 28,6 | 50 | 10/11x3,8 | 6 | 6000 • |
| FZK11BS250-01P | HSS FZK-11B right | 250 | 28,6 | 50 | 10/11x3,8 | 6 | 6000 • |

With orders for FZK type cutters, please give type of machined material.

Optionally, the tools can be offered with HP coating.

More information on page 4.17.

FZK-17A/17B



High-efficient finger joint brazed cutters, type **FZK-17A/17B** are characterized by increased life thanks to double quantity of working teeth. A minimum set consists of one middle cutter type A and two side cutters type B. Obtaining bigger width of the machined material requires only adding the proper quantity of middle cutters type A. Cutters type FZK-17A/17B are available in the version with cutting (formatting) (joint 15/16,5).

Type of jointing: cross-joint.

Material: solid wood.



| B _t
mm | Maximum wood width
for pitch 3,8 | Number of
middle cutters
FZK-17A | Number of
side cutters
FZK-17B |
|----------------------|-------------------------------------|--|--------------------------------------|
| 55,2 | 53 | 1 | 2 |
| 81,8 | 79,6 | 2 | 2 |
| 108,4 | 106,2 | 3 | 2 |
| 135,0 | 132,8 | 4 | 2 |
| 161,6 | 159,4 | 5 | 2 |
| 188,2 | 186 | 6 | 2 |
| 214,8 | 212,6 | 7 | 2 |
| 241,4 | 239,2 | 8 | 2 |



| Catalogue number | Type | D
mm | B
mm | d
mm | k
mm | z | n _{min} | |
|------------------|--------------------|---------|---------|---------|-------------|---|------------------|---|
| FZK17AS170-0001 | HSS FZK-17A middle | 170 | 51,4 | 50 | 15/16,5x3,8 | 4 | 8000 | + |
| FZK17BS170-01L | HSS FZK-17B left | 170 | 36,6 | 50 | 15/16,5x3,8 | 4 | 8000 | + |
| FZK17BS170-01P | HSS FZK-17B right | 170 | 36,6 | 50 | 15/16,5x3,8 | 4 | 8000 | + |
| FZK17AS260-001 | HSS FZK-17A middle | 260 | 51,4 | 50 | 15/16,5x3,8 | 6 | 6000 | + |
| FZK17BS260-01L | HSS FZK-17B left | 260 | 36,6 | 50 | 15/16,5x3,8 | 6 | 6000 | + |
| FZK17BS260-01P | HSS FZK-17B right | 260 | 36,6 | 50 | 15/16,5x3,8 | 6 | 6000 | + |
| FZK17AS350-001 | HSS FZK-17A middle | 350 | 51,4 | 80 | 15/16,5x3,8 | 8 | 4500 | + |
| FZK17BS350-01L | HSS FZK-17B left | 350 | 36,6 | 80 | 15/16,5x3,8 | 8 | 4500 | + |
| FZK17BS350-01P | HSS FZK-17B right | 350 | 36,6 | 80 | 15/16,5x3,8 | 8 | 4500 | + |

With orders for FZK type cutters, please give type of machined material.

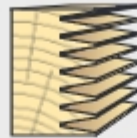
Optionally, the tools can be offered with HP coating.

More information on page 4.17.

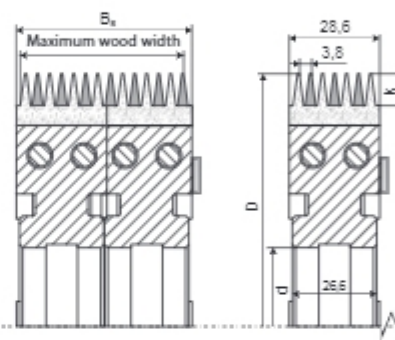
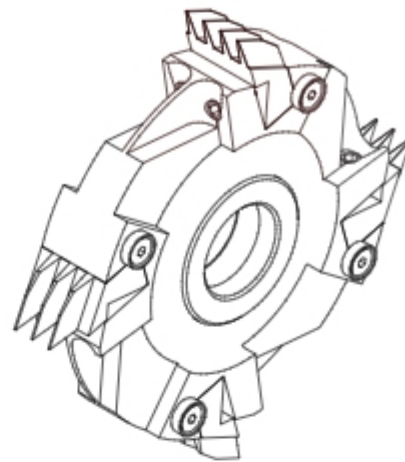
Finger joint cutter heads with exchangeable knives for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. Knives for the cutter head are available in the version with face cutting (formatting) (GZK-11, joint 10/11) or without cutting (GZK-12, joint 10/10).

Type of jointing: cross-joint.

Material: solid wood.



GZK-11/12



| D
mm | 160/162
9000
60
2+2
28,6 | 200/202
7000
60
2+2
28,6 | 250/252
6000
70
3+3
28,6 |
|---------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| GZK-11
10/11x3,8 | + | + | + |
| GZK-12
10/10x3,8 | + | + | + |

| Catalogue number | | Type | D
mm | B
mm | d
mm | k
mm | z | n _{max} | |
|------------------|--------------|--------|---------|---------|---------|-----------|-----|------------------|---|
| GZ11-4164-0 | Cutter heads | GZK-11 | 162 | 28,6 | 40 | 10/11x3,8 | 2+2 | 9000 | + |
| GZ11-6164-0 | Cutter heads | GZK-11 | 162 | 28,6 | 50 | 10/11x3,8 | 2+2 | 9000 | + |
| GZ11-6256-0 | Cutter heads | GZK-11 | 252 | 28,6 | 50 | 10/11x3,8 | 3+3 | 6000 | • |
| GZ12-2164-0 | Cutter heads | GZK-12 | 160 | 28,6 | 30 | 10/10x3,8 | 2+2 | 9000 | • |
| GZ12-4164-0 | Cutter heads | GZK-12 | 160 | 28,6 | 40 | 10/10x3,8 | 2+2 | 9000 | • |
| GZ12-6164-0 | Cutter heads | GZK-12 | 160 | 28,6 | 50 | 10/10x3,8 | 2+2 | 9000 | • |

Spare parts for cutter heads GZK 11/12

| Cat. nr | Name | Type | Dimensions | Quantity |
|----------|-------------|--------|----------------|----------|
| N2060111 | HSS Knife A | GZK-11 | 28,6 x 39 x 14 | 2/3 pcs. |
| N2060112 | HSS Knife B | GZK-11 | 28,6 x 39 x 14 | 2/3 pcs. |
| N2060121 | HSS Knife A | GZK-12 | 28,6 x 38 x 14 | 2/3 pcs. |
| N2060122 | HSS Knife B | GZK-12 | 28,6 x 38 x 14 | 2/3 pcs. |

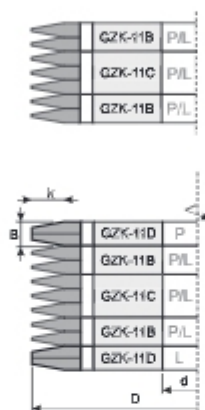
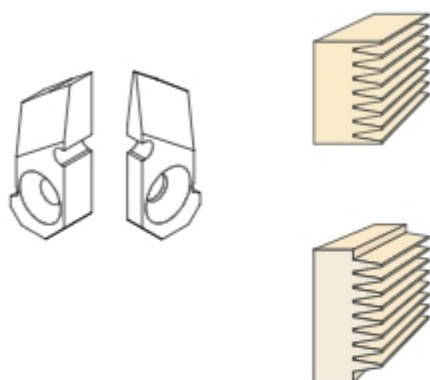
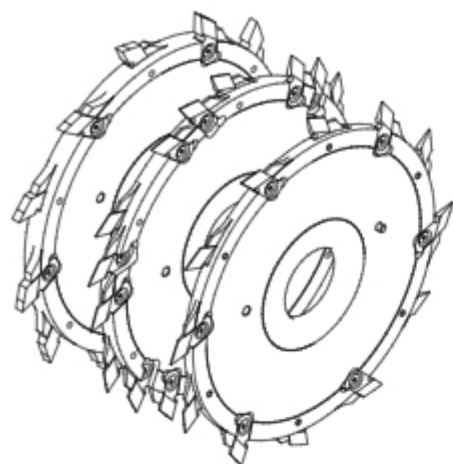
| Cat. nr | Name | Dimensions | Quantity |
|-----------|-----------------|-------------|-----------|
| WHAW00005 | Clamp screw | M8 x 16 | 8/12 pcs. |
| WHAT00044 | Locating sleeve | Ø12x3,6/6,5 | 4/6 pcs. |
| WHAS00006 | Set screw | M6 x 10 | 4/6 pcs. |

With orders for GZK type cutters, please give type of machined material.

Optionally, the knives can be offered with HP coating.

More information on page 8.8.

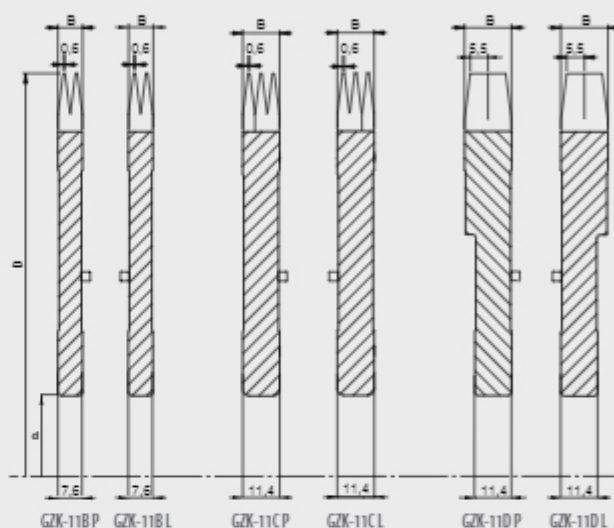
GZK-11 HM



Finger joint cutter heads with exchangeable knives for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. Knives for the cutter head are available in the version with face cutting (formatting) (GZK-11, joint 10/11) or without cutting (GZK-12, joint 10/10).

Type of jointing: cross-joint.

Material: solid wood.



| D
n
d | 160
9000
50 | 250
6000
70 |
|--------------------------|-------------------|-------------------|
| GZK-11B P/L
7,6/2x3,8 | +
z = 4P+4L | +
z = 6P+6L |
| GZK-11C P
11,4/3x3,8 | +
z = 8P+4L | +
z = 12P+6L |

| D
n
d | 160
9000
50 | 250
6000
70 |
|---------------------------|-------------------|-------------------|
| GZK-11D P/L
14,6/2x7,6 | +
z = 4P+4L | +
z = 6P+6L |
| GZK-11C L
11,4/3x3,8 | +
z = 4P+8L | +
z = 6P+12L |

| Catalogue number | | Type | D
mm | B
mm | d
mm | k
mm | z | n _{max} | |
|------------------|--------------|---------|---------|---------|---------|-----------|--------|------------------|---|
| GZ11B6256P | Cutter heads | GZK-11B | 250 | 7,6 | 50 | 10/11x3,8 | 6P+6L | 6000 | + |
| GZ11B6256L | Cutter heads | GZK-11B | 250 | 7,6 | 50 | 10/11x3,8 | 6P+6L | 6000 | + |
| GZ11C6256P | Cutter heads | GZK-11C | 250 | 11,4 | 50 | 10/11x3,8 | 12P+6L | 6000 | + |
| GZ11C6256L | Cutter heads | GZK-11C | 250 | 11,4 | 50 | 10/11x3,8 | 6P+12L | 6000 | + |
| GZ11D6256P | Cutter heads | GZK-11D | 250 | 14,6 | 50 | | 6P+6L | 6000 | + |
| GZ11D6256L | Cutter heads | GZK-11D | 250 | 14,6 | 50 | | 6P+6L | 6000 | + |

Spare parts for cutter heads GZK 11 HM

| Cat. nr | Type | Dimensions |
|-----------|------|-------------------------|
| N2060643W | R | GZK-11 HM 3,7 X 38 X 13 |
| N2060644W | L | GZK-11 HM 3,7 X 38 X 13 |
| N2060645W | R | GZK-11 HM 7,5 X 38 X 13 |
| N2060646W | L | GZK-11 HM 7,5 X 38 X 13 |

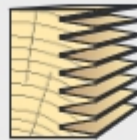
| Cat. nr | Name | Dimensions |
|-----------|----------------|------------|
| WHAS00008 | Screw TOR 1064 | M5x6,5 |
| WHAS00015 | Screw TOR 1065 | M5x10 |

GZK-17/18

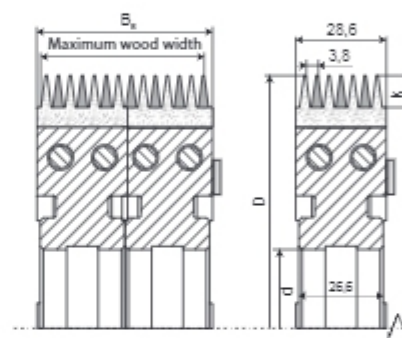
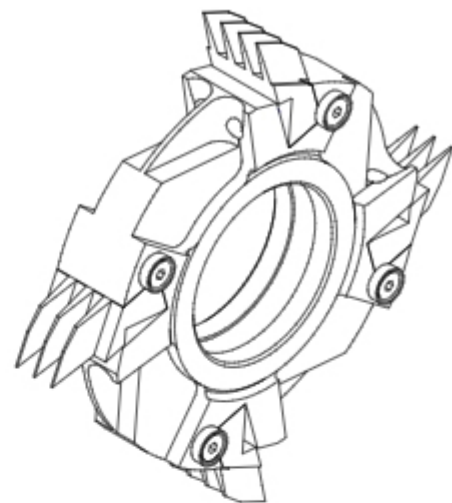
Finger joint cutter heads with exchangeable knives for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. Knives for the cutter head are available in the version with face cutting (formatting) (GZK-17, joint 15/16,5) or without cutting (GZK-18, joint 15/15).

Type of jointing: cross-joint.

Material: solid wood.



| B _n
mm | Maximum wood width
for pitch 3,8 | Number of
cutter heads |
|----------------------|-------------------------------------|---------------------------|
| 28,6 | 24 | 1 |
| 55,2 | 51 | 2 |
| 81,8 | 77 | 3 |
| 108,4 | 104 | 4 |
| 135,0 | 131 | 5 |
| 161,6 | 157 | 6 |
| 188,2 | 184 | 7 |
| 214,8 | 210 | 8 |



4

| D
mm | 170 | 260 |
|-------------------------|------|------|
| n _{mm} | 8000 | 6000 |
| d _{mm} | 60 | 60 |
| z | 2+2 | 3+3 |
| B | 28,6 | 28,6 |
| GZK-17
k=15/16,5x3,8 | + | + |
| GZK-18
k=15/15x3,8 | + | + |

| Catalogue number | | Type | D
mm | B
mm | d
mm | k
mm | z | n _{mm} | |
|------------------|--------------|--------|---------|---------|---------|-------------|-----|-----------------|---|
| GZ17-6174-0 | Cutter heads | GZK-17 | 170 | 28,6 | 50 | 15/16,5x3,8 | 2+2 | 8000 | + |
| GZ17-6266-0 | Cutter heads | GZK-17 | 260 | 28,6 | 50 | 15/16,5x3,8 | 3+3 | 6000 | + |
| GZ18-6174-0 | Cutter heads | GZK-18 | 170 | 28,6 | 50 | 15/15x3,8 | 2+2 | 8000 | + |

Spare parts for cutter heads GZK 17/18

| Cat. nr | Name | Type | Dimensions | Quantity |
|----------|---------|--------|--------------|-------------|
| N2060171 | Knife A | GZK-17 | 28,6x43,2x14 | 2/3 pcs. + |
| N2060172 | Knife B | GZK-17 | 28,6x43,2x14 | 2/3 pcs. + |
| N2060181 | Knife A | GZK-18 | 28,6x44,7x14 | 2/3 pcs. + |
| N2060182 | Knife B | GZK-18 | 28,6x44,7x14 | 2/3 pcs. + |

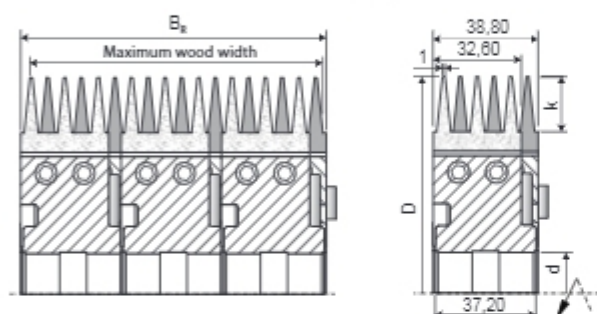
| Cat. nr | Name | Dimensions | Quantity |
|-----------|-----------------|-------------|--------------|
| WHAW00005 | Clamp screw | M8 x 16 | 8/12 pcs. • |
| WHAT00044 | Locating sleeve | Ø12x3,6/6,5 | 4/6 pcs. • |
| WHAS00006 | Set screw | M6 x 10 | 4/6 pcs. • |

With orders for GZK type cutters, please give type of machined material.

Optionally, the knives can be offered with HP coating.

More information on page 8.8.

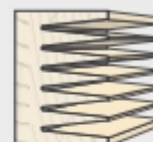
GZK-19/20



Finger joint cutter heads with exchangeable knives for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. Knives for the cutter head are available in the version without face cutting (formatting) (GZK-19, joint 20/20) or with face cutting (formatting) (GZK-20, joint 20/22).

Type of jointing: cross-joint.

Material: solid wood.



| B _k
mm | Maximum wood width
for pitch 6,2 | Number of
cutter heads |
|----------------------|-------------------------------------|---------------------------|
| 38,2 | 34,1 | 1 |
| 75,4 | 71,3 | 2 |
| 112,6 | 108,5 | 3 |
| 149,8 | 145,7 | 4 |
| 187,0 | 182,9 | 5 |
| 224,2 | 220,1 | 6 |
| 261,4 | 257,3 | 7 |
| 298,6 | 294,5 | 8 |



| D
mm | 160
9000
30
2+2
38,8 | 180
7000
50
2+2
38,8 | 260
6000
50
3+3
38,8 |
|-----------------------|----------------------------------|----------------------------------|----------------------------------|
| GZK-19
k=20/20x6,2 | + | + | + |
| GZK-20
k=20/22x6,2 | + | + | + |

| Catalogue number | | Type | D
mm | B
mm | d
mm | k
mm | z | n _{mm} | |
|------------------|--------------|--------|---------|---------|---------|------------|-----|-----------------|---|
| GZ19-6184-0 | Cutter heads | GZK-19 | 180 | 38,8 | 50 | 20/20 x6,2 | 2+2 | 8000 | + |
| GZ20-6184-0 | Cutter heads | GZK-20 | 180 | 38,8 | 50 | 20/22 x6,2 | 2+2 | 8000 | + |
| GZ20-6266-0 | Cutter heads | GZK-20 | 260 | 38,8 | 50 | 20/22 x6,2 | 3+3 | 6000 | + |

Spare parts for cutter heads GZK 19/20

| Cat. nr | Name | Type | Dimensions | Quantity |
|-----------|-----------------|--------|------------------|-----------|
| N2060229 | Knife | GZK-19 | 32,6 x 48,3 x 14 | 4/6 pcs. |
| N2060201 | Knife | GZK-20 | 32,6 x 48,3 x 14 | 4/6 pcs. |
| WHAT00044 | Locating sleeve | | Ø12x3,6/6,5 | 4/6 pcs. |
| WHAW00005 | Clamp screw | | M8 x 16 | 8/12 pcs. |

| Cat. nr | Name | Dimensions | Quantity |
|-----------|--------------------|------------|------------|
| WHAS00006 | Set screw | M6 x 10 | 4 / 6 pcs. |
| WHAW00002 | Clamp screw | M5 x 12 | 2 / 3 pcs. |
| WHAI00114 | Locating handwheel | Ø25 x 21 | 2 / 3 pcs. |

With orders for GZK type cutters, please give type of machined material.

Optionally, the knives can be offered with HP coating.

More information on page 8.8.

A PERFECT **FZK** CUTTER NOW EVEN MORE PERFECT AS **FZK HP**

PERFECT JOINTING QUALITY INCREASED TOOL LIFE

LONGLIFE FZK HP has been improved with special surface coating which significantly increases life of the tool, even several times, depending on the kind of the machined material.

4

Recently, a very effective method of increasing life of products has been used. The method involves coating the surface of blades with various chemical elements and their compounds. Although the coating is very thin, the coated surfaces are very hard and resistant to abrasion, which significantly increases life of the blade. Such coating improves the economy of production by eliminating frequent regrinding or changing the tools for new ones.



FZK-30



Finger joint brazed cutters with HM tips, type **FZK-30**, for jointing solid and glued wood. The construction of FZK-30 cutters allows for combining them in sets, which enables, in a simple way, to obtain requested width of the machined material. It is guaranteed by the tool width equal to the pitch ($t=3,8$ mm or $t=4,0$ mm).

Type of jointing: cross-joint.

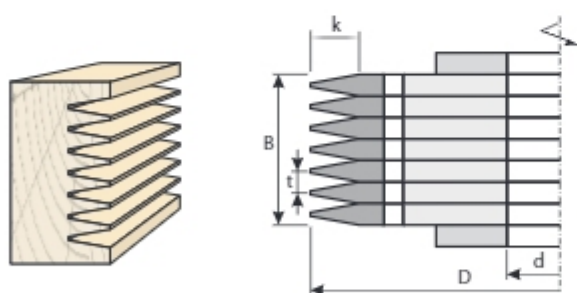
Material: solid softwood, glued wood.



| Type | D
mm | B
mm | d _{max}
mm | k
mm | z | n _{max} | |
|--------|---------|---------|------------------------|-----------|---|------------------|---|
| FZK-30 | 160 | 4,0 | 70 | 10/11x4,0 | 2 | 8000 | + |
| FZK-30 | 160 | 3,8 | 70 | 10/11x3,8 | 4 | 8000 | + |
| FZK-30 | 250 | 3,8 | 70 | 10/11x3,8 | 6 | 6000 | + |

| Catalogue number | Type | D
mm | t
mm | d
mm | k | z | Pin holes | n _{max} |
|------------------|--------|---------|---------|---------|-----------|---|-----------|------------------|
| FZK30W160-003 | FZK-30 | 160 | 3,8 | 70 | 10/11x3,8 | 4 | | 8000 • |
| FZK30W250-012 | FZK-30 | 250 | 3,8 | 70 | 10/11x3,8 | 6 | 4/7/85 | 6000 • |

FZK-30 Plus



Increased life finger joint brazed cutters with HM tips, type **FZK-30 Plus**, for jointing solid and glued wood. FZK-30 Plus thanks to construction and technological changes guarantees very precise joint, even after multiple regrinding in packets. The changes also significantly increase the life of the tool, up to 3 times longer work (jointing hard wood) compared to standard FZK-30.

Cutters FZK-30 Plus can not be combined in sets with standard cutters FZK-30.

Type of jointing: cross-joint.

Material: solid hardwood, glued wood.



| Catalogue number | Type | D
mm | t
mm | d
mm | k | z | Pin holes | n _{max} |
|------------------|-------------|---------|---------|---------|-----------|---|-----------|------------------|
| FZK30W160-045 | FZK-30 Plus | 160 | 3,8 | 70 | 10/11x3,8 | 4 | | 8000 • |
| FZK30W250-029 | FZK-30 Plus | 250 | 3,8 | 70 | 10/11x3,8 | 6 | 4/7/85 | 6000 • |

With orders for FZK type cutters, please give type of machined material.

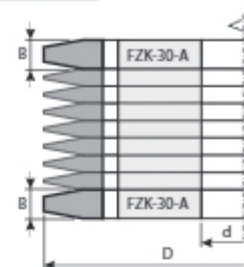
Side brazed cutters type **FZK-30-A** are complementary to the set of cutters type FZK-30 and FZK-30 Plus. Joint type "A" is made with a basic set, consisting of FZK-30 or FZK-30 Plus cutters and a set type "A" (basic set plus two side cutters FZK-30-A).

Type of jointing: cross-joint.

Material: solid wood, glued wood.



FZK-30-A

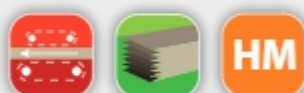


| Catalogue number | Type | D
mm | B
mm | d _{max}
mm | z | n _{max} | |
|------------------|----------|---------|---------|------------------------|---|------------------|---|
| FZK30W160-046 | FZK-30-A | 159,7 | 11,4 | 70 | 4 | 8000 | + |
| FZK30W250-032 | FZK-30-A | 249,7 | 11,4 | 70 | 6 | 6000 | • |

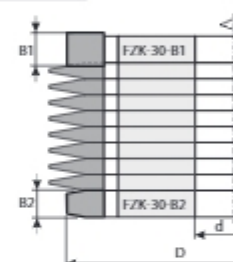
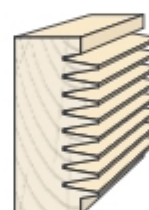
Side brazed cutters type **FZK-30-B1/B2** are complementary to the set of cutters type FZK-30 and FZK-30 Plus. Joint type "B" is made with one set (basic set plus two side cutters FZK-30-B1/B2) by reversing the profile (element).

Type of jointing: cross-joint.

Material: solid wood, glued wood.

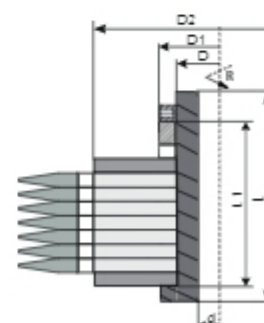


FZK-30-B1/B2



| Catalogue number | Type | D
mm | B
mm | d _{max}
mm | z | n _{max} | |
|------------------|-----------|---------|---------|------------------------|---|------------------|---|
| FZK30W149-025 | FZK-30-B1 | 149 | 14,4 | 70 | 4 | 8000 | + |
| FZK30W239-017 | FZK-30-B1 | 239 | 14,4 | 70 | 6 | 6000 | • |
| FZK30W149-026 | FZK-30-B2 | 149 | 11,4 | 70 | 4 | 8000 | + |
| FZK30W239-018 | FZK-30-B2 | 239 | 11,4 | 70 | 6 | 6000 | • |

Sleeve with a nut, designed for multiple assembly of sets of finger joint cutters, type **FZK-30**. Special construction prevents the nut from getting loose during work. For FZK-30 cutters with diameter D=250 mm mounted on a sleeve, we install flange plates D=175mm in the place of side cutters FZK-30-A or FZK-30-B. Additionally, the set includes spacer rings.



Accessories for FZK-30

| Cat. num. | Name | | D
mm | d
mm | L
mm | L1
mm | | Cat. num. | Name | D1/D2
mm | D
mm | B
mm | |
|------------|--------|---|---------|---------|---------|----------|---|-----------|--------------|-------------|---------|---------|---|
| WHAT01352Z | Sleeve | R | 70 | 50 | 115 | 88 | • | WHAP01694 | Spacer ring | 100 | 70 | 3,8 | • |
| WHAT01353Z | Sleeve | L | 70 | 50 | 115 | 88 | • | WHAP00651 | Spacer ring | 100 | 70 | 7,6 | • |
| WHAT03337Z | Sleeve | R | 70 | 50 | 180 | 152 | • | WHAP00653 | Spacer ring | 100 | 70 | 11,4 | • |
| WHAT03338Z | Sleeve | L | 70 | 50 | 180 | 152 | • | WHA101078 | Flange plate | 175 | 70 | 11,4 | • |

Sleeve with a nut.

Mini-finger joint brazed cutters with small profile depth for reduction of scrap material, designed for production of joint profile for gluing, for precise longitudinal jointing of solid wood.

Type of jointing: longitudinal.

Material:



solid softwood



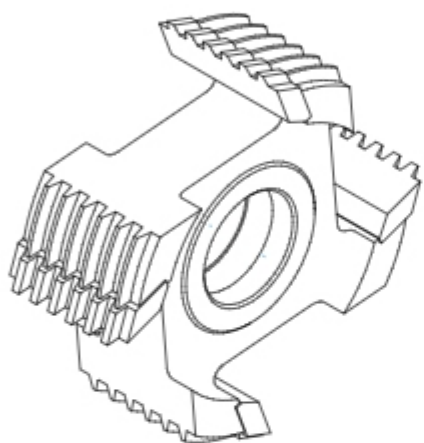
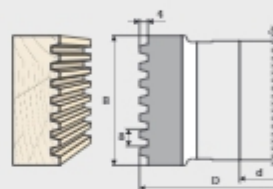
solid hardwood



FZK-02

Profile depth 4 mm.

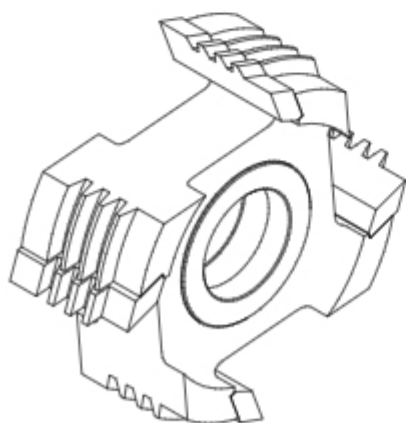
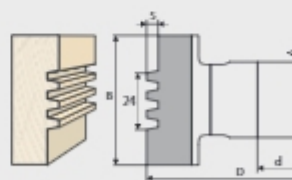
Pitch 8 mm.



| D
n
d _{max}
z | 120
9000
40
4 | | 140
9000
40
4 | |
|---------------------------------|------------------------|-----|------------------------|-----|
| | B mm | HSS | HM | HSS |
| 45 | + | + | + | + |
| 61 | + | + | + | + |
| 77 | + | + | + | + |
| 93 | + | + | + | + |
| 109 | + | + | + | + |

FZK-03

Profile depth 5 mm.




| D
n
d
z | 125
9000
40
4 | | 140
9000
40
4 | |
|------------------|------------------------|-------|------------------------|-------|
| | B mm | HSSHM | HSSHM | HSSHM |
| 40 | + | + | + | + |
| 50 | + | + | + | + |
| 55 | + | + | + | + |


With orders for FZK type cutters, please give type of machined material, type of jointing (longitudinal, cross-joint) and clamping force (manual, mechanical).

Mini-finger joint brazed cutters with small profile depth for reduction of scrap material, designed for production of joint profile for gluing, for precise longitudinal jointing of solid wood.

Type of jointing: longitudinal.

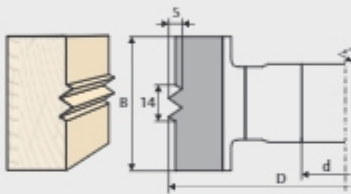
Material:

 solid softwood

 solid hardwood

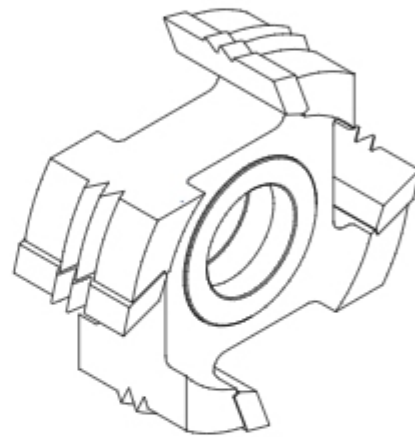


Profile depth 5 mm.



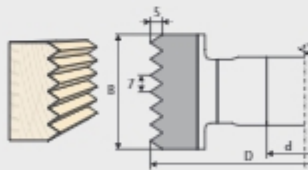
| D
n
d
z | 125
9000
40
4 | | 140
9000
40
4 | | |
|------------------|------------------------|-----|------------------------|-----|----|
| | B mm | HSS | HM | HSS | HM |
| 30 | | + | + | + | + |
| 40 | | + | + | + | + |
| 50 | | + | + | + | + |

FZK-04



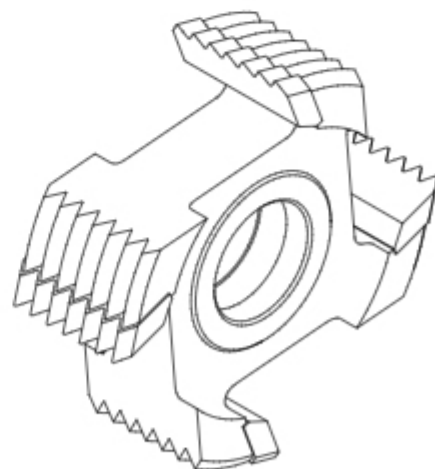
Profile depth 5 mm.

Pitch 7 mm.



| D
n
d _{max}
z | 125
9000
40
4 | | 140
9000
40
4 | | |
|---------------------------------|------------------------|-----|------------------------|-----|----|
| | B mm | HSS | HM | HSS | HM |
| 35 | | + | + | + | + |
| 42 | | + | + | + | + |
| 49 | | + | + | + | + |
| 56 | | + | + | + | + |
| 63 | | + | + | + | + |

FZK-05



With orders for FZK type cutters, please give type of machined material, type of jointing (longitudinal, cross-joint) and clamping force (manual, mechanical).

Mini-finger joint brazed cutters with big profile depth for stronger joint, designed for production of joint profile for gluing, for precise jointing of solid wood.

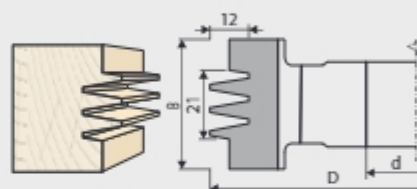
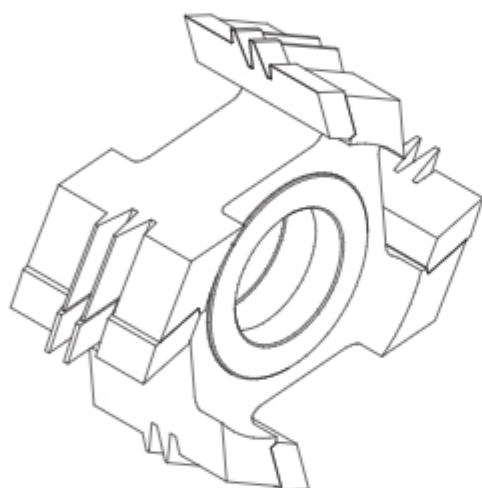
Type of jointing: longitudinal and cross-joint.

Material: solid softwood.



FZK-06

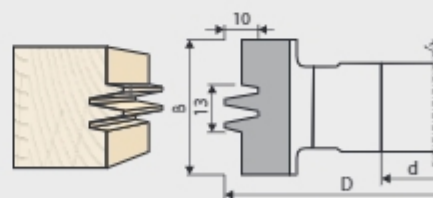
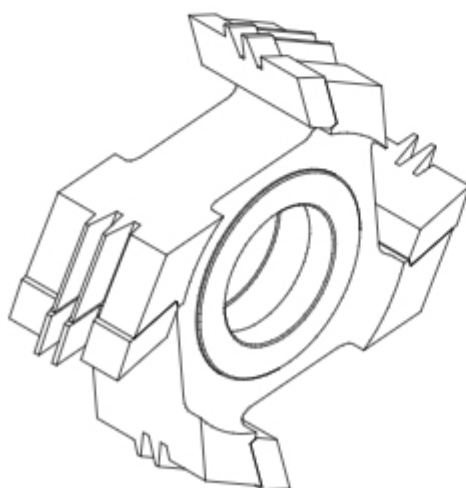
Profile depth 12 mm.



| D | 120 | 140 | 160 |
|------|------|------|------|
| n | 9000 | 9000 | 9000 |
| d | 40 | 40 | 40 |
| z | 4 | 4 | 4 |
| B mm | HSS | HSS | HSS |
| 40 | + | + | + |
| 50 | + | + | + |
| 60 | + | + | + |

FZK-07

Profile depth 10 mm.



| D | 120 | 140 | 160 |
|------|------|------|------|
| n | 9000 | 9000 | 9000 |
| d | 40 | 40 | 40 |
| z | 4 | 4 | 4 |
| B mm | HSS | HSS | HSS |
| 40 | + | + | + |
| 50 | + | + | + |
| 60 | + | + | + |


With orders for FZK type cutters, please give type of machined material, type of jointing (longitudinal, cross-joint) and clamping force (manual, mechanical).


FZK-08

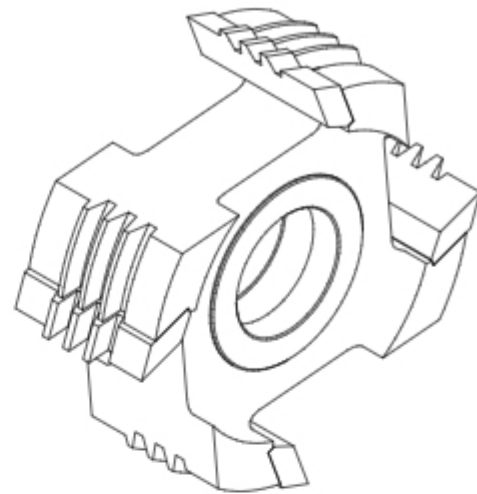
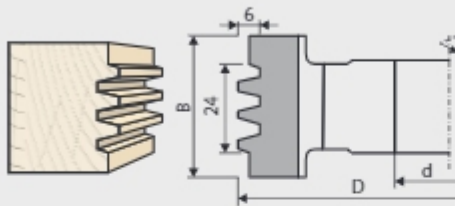
Mini-finger joint brazed cutters with small profile depth (6 mm), for reduction of scrap material, designed for production of joint profile for gluing, for precise jointing of solid wood.

Type of jointing: longitudinal and cross-joint.

Material:

 solid softwood

 solid hardwood



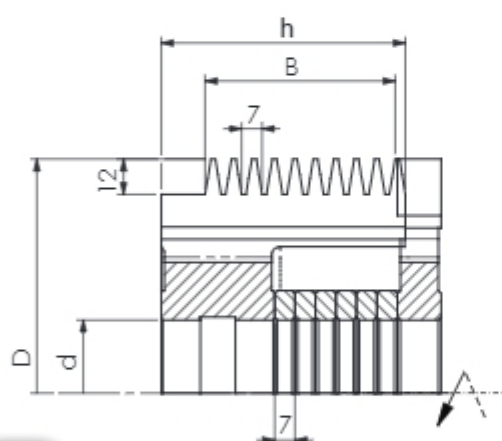
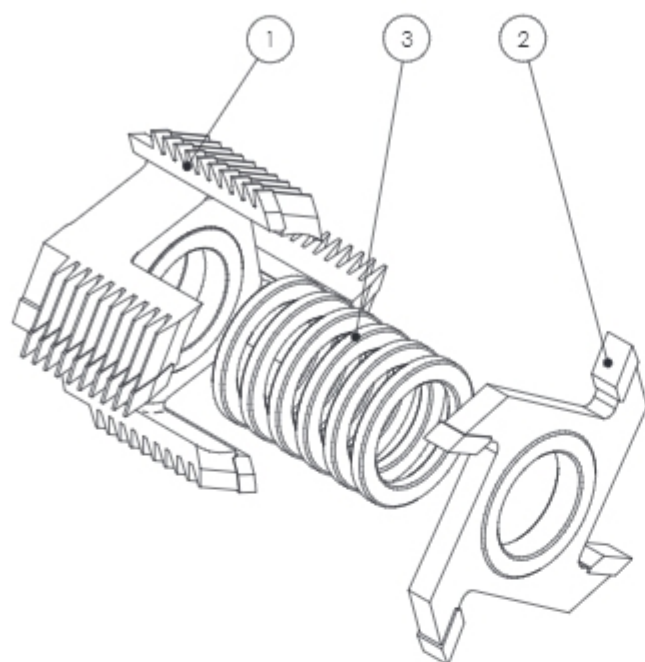
4



| D
n
d
z | 125
9000
40
4 | | 140
9000
40
4 | |
|------------------|------------------------|-------|------------------------|---|
| | B mm | HSSHM | HSSHM | |
| 40 | + | + | + | + |
| 50 | + | + | + | + |
| 55 | + | + | + | + |

With orders for FZK type cutters, please give type of machined material, type of jointing (longitudinal, cross-joint) and clamping type (manual, mechanical).

ZZK-06 P or L

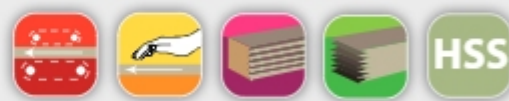
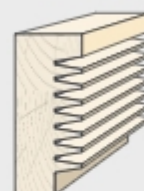


Set of finger joint brazed cutters for mini-finger joints type **ZZK-06** with regulated number of fingers and big profile depth (12 mm, pitch 7 mm) for stronger joint, designed for production of joint profile for gluing, for precise jointing of solid wood.

Number of fingers is regulated with distance rings within the range from 16 mm to 51 mm and from 23 mm to 65 mm, with pitch 7 mm.

Type of jointing: longitudinal and cross-joint.



Material: solid wood.



| D
n
d
z
n | 140
9000
50
4
9000 | 160
9000
50
4
9000 |
|-----------------------|--------------------------------|--------------------------------|
| B mm | | |
| 16-51 | + | + |
| 23-65 | + | + |

Elements of set of cutters ZZK-06 D=140, B=16-51

| Cat. nr | Name | Dimensions | Quantity |
|------------------|--------|---------------|---|
| 1. ZZK06s140A001 | Cutter | 140 x 69,5/40 | 4 1  + |

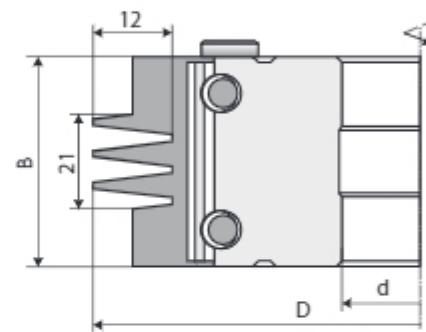
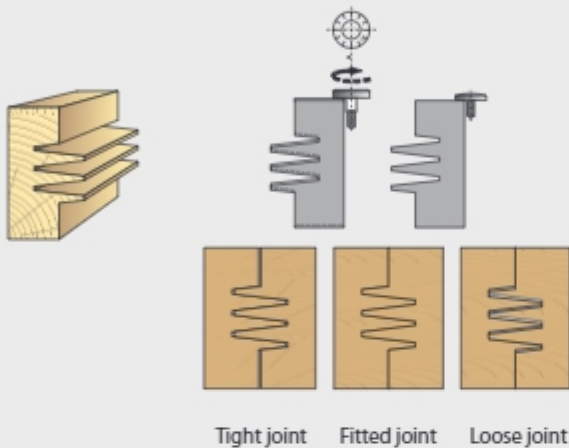
| Cat. nr | Name | Dimensions | Quantity |
|------------------|---------------|-------------|---|
| 2. ZZK06s140B001 | Cutter | 140 x 15/40 | 4 1  + |
| 3. WHAP00109 | Distance ring | 60/40 x 7 | 5  + |

With orders for ZZK-06 type cutters, please give type of machined material.

Finger joint cutter head, type **GZK-06** with adjustable mini-finger joints. Sliding base rotation allows for setting the size of joint clamping depending on the kind of machined material, technical condition of the machine and clamping force. The number of joints given in the drawing can be changed with the order. Please, agree the required number of joints for a chosen width of the tool with our representative.

Type of jointing: longitudinal and cross-joint.

Material: solid wood, glued wood.



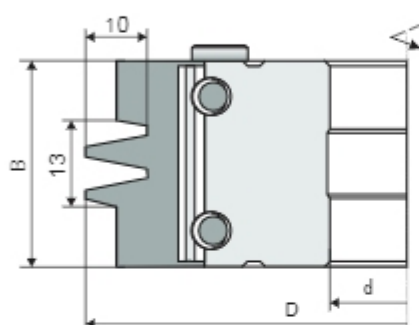
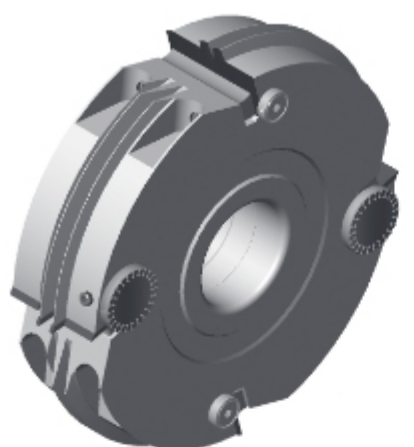
| D
mm | 125
9000
40
2+2 | 140
9000
60
2+2 | 160
9000
60
2+2 | 160
9000
60
3+3 | 250
6000
60
3+3 | 250
6000
60
4+4 |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| B mm | | | | | | |
| 20 | + | + | + | + | + | + |
| 25 | + | + | + | + | + | + |
| 30 | + | + | + | + | + | + |
| 35 | + | + | + | + | + | + |
| 40 | + | + | + | + | + | + |
| 50 | + | + | + | + | + | + |
| 60 | + | + | + | + | + | + |
| 70 | + | + | + | + | + | + |
| 80 | + | + | + | + | + | + |

Spare parts for cutter heads GZK-06

| Cat. nr | Name | Dimensions | Quantity | | Cat. nr | Name | Dimensions | Quantity | |
|-----------|-----------------|------------------|--------------|---|-----------|--------------------|------------|------------|---|
| | Knife | B x 25 x 2 | 4/6/8 pcs. | + | WHAS00006 | Set screw | M6 x 10 | 2/3/4 pcs. | • |
| | Clamp block | B-2 x 11,5 x 5,5 | 4/6/8 pcs. | + | WHAW00002 | Push screw | M5 x 12 | 2/3/4 pcs. | • |
| WHAT00044 | Locating sleeve | Ø12x3,6/6,5 | 2/3/4 pcs. | + | WHA100114 | Locating handwheel | Ø25 x 21 | 2/3/4 pcs. | • |
| WHAW00005 | Clamp screw | M8 x 16 | 8/12/16 pcs. | • | | | | | |

With orders for GZK type cutters, please give type of machined material.

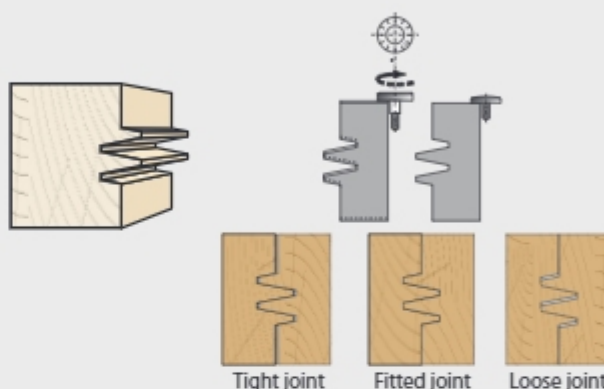
GZK-07



Finger joint cutter head, type **GZK-07** with adjustable mini-finger joints. Sliding base rotation allows for setting the size of joint clamping depending on the kind of machined material, technical condition of the machine and clamping force. The number of joints given in the drawing can be changed with the order. Please, agree the required number of joints for a chosen width of the tool with our representative.

Type of jointing: longitudinal and cross-joint.

Material: solid wood, glued wood.



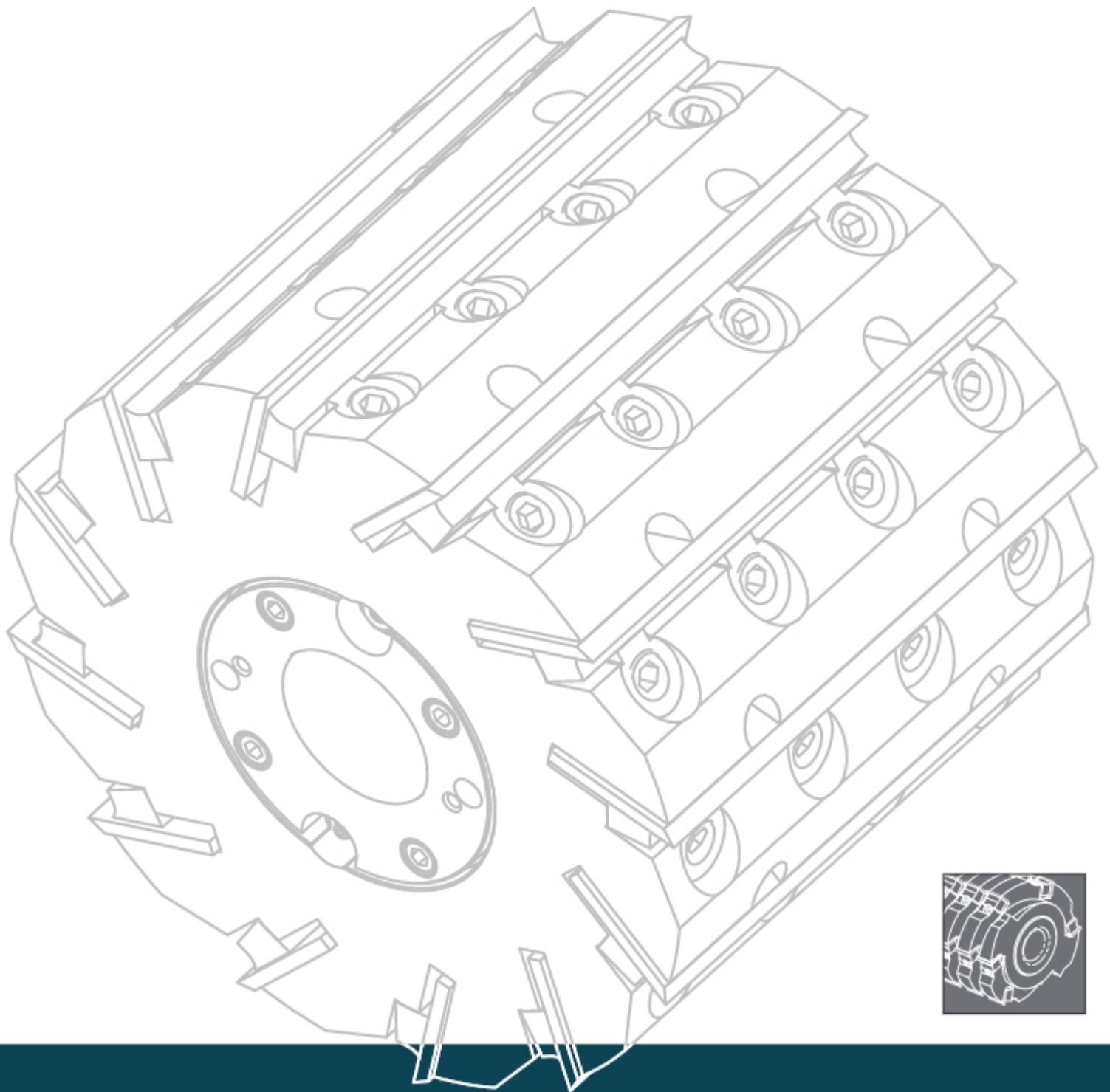
| D
n
d
z
mm | 125
9000
40
2+2 | 140
9000
60
2+2 | 160
6000
60
2+2 | 160
9000
60
3+3 | 250
6000
60
3+3 | 250
6000
60
4+4 |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| B mm | | | | | | |
| 20 | + | + | + | + | + | + |
| 25 | + | + | + | + | + | + |
| 30 | + | + | + | + | + | + |
| 35 | + | + | + | + | + | + |
| 40 | + | + | + | + | + | + |
| 50 | + | + | + | + | + | + |
| 60 | + | + | + | + | + | + |
| 70 | + | + | + | + | + | + |
| 80 | + | + | + | + | + | + |

Spare parts for cutter heads GZK-07

| Cat. nr | Name | Dimensions | Quantity |
|-----------|-----------------|------------------|----------------|
| | Knife | B x 25 x 2 | 4/6/8 pcs. + |
| | Clamp block | B-2 x 11,5 x 5,5 | 4/6/8 pcs. + |
| WHAT00044 | Locating sleeve | Ø12 x 3,6/6,5 | 2/3/4 pcs. + |
| WHAW00005 | Clamp screw | M8 x 16 | 8/12/16 pcs. • |

| Cat. nr | Name | Dimensions | Quantity |
|-----------|--------------------|------------|--------------|
| WHAS00006 | Set screw | M6 x 10 | 2/3/4 pcs. • |
| WHAW00002 | Push screw | M5 x 12 | 2/3/4 pcs. • |
| WHAI00114 | Locating handwheel | Ø25 x 21 | 2/3/4 pcs. • |

With orders for GZK type cutters, please give type of machined material.



5. Cutter heads

Cutter heads

Planer and pre-planer cutter heads with high speed steel knives (HSS) designed for professional machining of solid soft wood and with carbide (HM) knives designed for professional machining of solid soft and hard wood, glued wood and other wood-based materials. The other type of cutter heads for machining shape surfaces with profile knives (HSS) and carbide shape knives as exchangeable inserts. Knives for cutter heads are made from the highest quality high speed cutting steel in special heat treatment technology, in vacuum heater, which has been properly selected for the type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work of the tool, both in standard and extreme conditions.

The *Cutters heads* chapter includes only example types and models of cutter heads and sets of cutter heads with basic dimensions. Big part of our offer are cutter heads on client's special request, meeting buyer's specific demands. Before we start the designing and production process we take into consideration many issues connected with client's requirements such as expected machining quality, type and parameters of the machine, workpiece material and many others. We also offer special tools with sheer angle, optimized chip flow and hydro clamping, designed for professional, very precise machining of solid wood and other wood-based materials with feed speed up to 200 m/min. Our cutter heads are produced with various clamping types, however, we put special focus on hydro clamping or all types of clamping on HSK shank and HSK 85 clamping. The clamping construction guarantees run-out tolerance reduced to minimum. Thanks to hydro system and HSK 85 which allows for perfect balancing of the tool, we obtain very high surface quality and ability to work with high cutting and feed speed.

Time of design and production process of cutter heads and sets of cutter heads on client's special request usually doesn't exceed 10 working days after agreeing all the details. Standard cutter heads dimensions range withing $D_{max} = 400$ mm and $B_{max} = 350$ mm, except spiral cutter heads type G309 and G509, for which $B_{max} = 250$ mm. In case of machining wider elements, we design and produce sets of cutter heads consisting of several heads.

All types of cutter heads are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. Interoperational and final control verifies tools production and guarantees that every tool sent to the client is manufactured according to technical documentation and standards. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

Orders should include:

- outer diameter (D) or diameters range,
- bore diameter (d),
- number of teeth (z) or spindle rotation speed and feed speed,
- type of machined material,
- profile drawing with dimensions or profile sample,
- other information relevant for designing and production process.

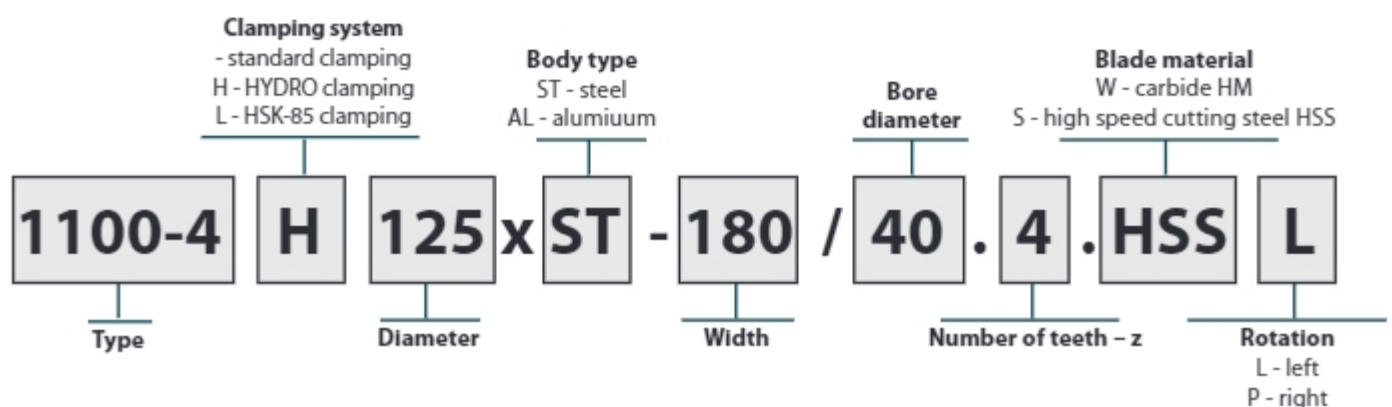


Contents

5. CUTTER HEADS

| | |
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| 5.1 Grooving cutter heads | 5.5 |
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| 5.5 Hydro cutter heads | 5.24 |
| 5.6 Cutter heads with HSK 85 clamping | 5.29 |
| 5.7 Profile cutter heads | 5.32 |

Cutter heads coding system



Pictograms



solid dry softwood



solid dry hardwood



chipboard



glued wood



MDF



plastics



carbide



high-speed cutting steel



hydro clamping



HSK 85 clamping



steel or aluminium body



flat surfaces



rebating



grooving



edge machining



profiling



chip breaking



mechanical feed



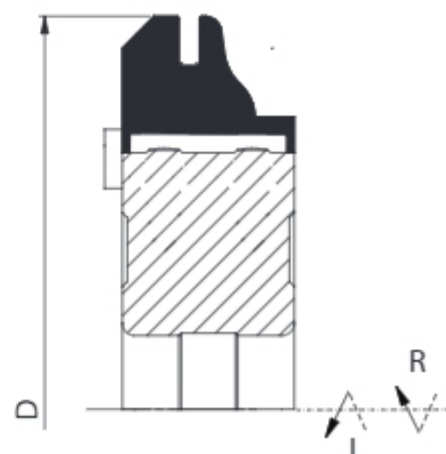
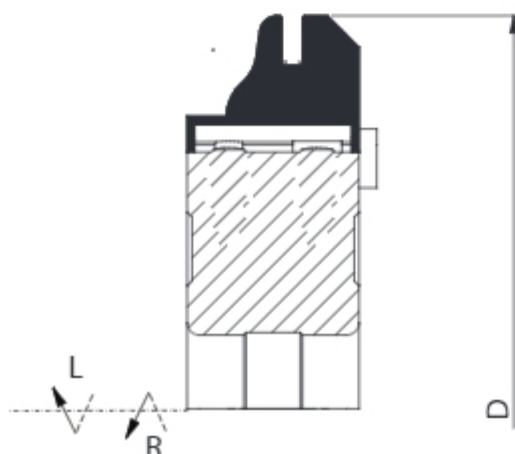
manual feed



quiet and steady work

- available / stock product
- + production time 9–15 working days.

Rotation direction

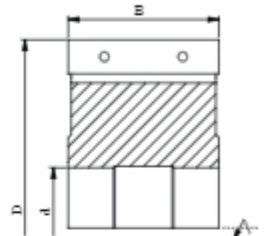
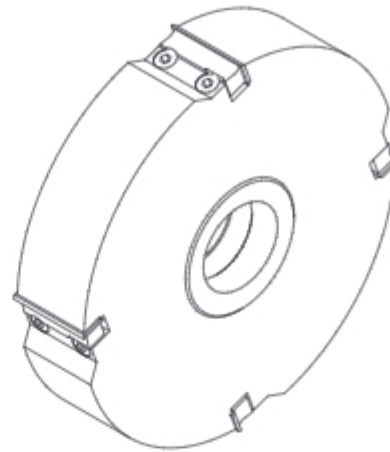


Carbide planer head, type **1100-1** with suitable number of cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter head is designed for pre-planing and planing. The body is made from steel or aluminum.

Type of work: pre-planing and planing.

Material: hard wood, glued wood, chipboard, MDF.

1100-1



$D_{max} = 400 \text{ mm}$, $B_{max} = 120 \text{ mm}$



5

| D
n
d
z | 80
12000
30
2-6 | | 100
9000
30
2-6 | | 125
9000
40
2-6 | | 140
6000
40
2-6 | | 160
6000
40
2-6 | | 180
6000
40
2-6 | |
|------------------|--------------------------|----|--------------------------|----|--------------------------|----|--------------------------|----|--------------------------|----|--------------------------|----|
| B mm | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL |
| 20 | + | + | + | + | + | + | + | + | + | + | + | + |
| 25 | + | + | + | + | + | + | + | + | + | + | + | + |
| 30 | + | + | + | + | + | + | + | + | + | + | + | + |
| 40 | + | + | + | + | + | + | + | + | + | + | + | + |
| 50 | + | + | + | + | + | + | + | + | + | + | + | + |
| 60 | + | + | + | + | + | + | + | + | + | + | + | + |
| 80 | + | + | + | + | + | + | + | + | + | + | + | + |
| 100 | + | + | + | + | + | + | + | + | + | + | + | + |

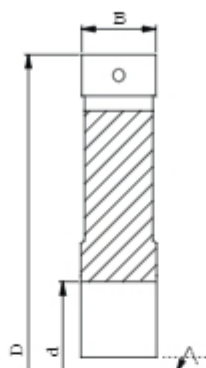
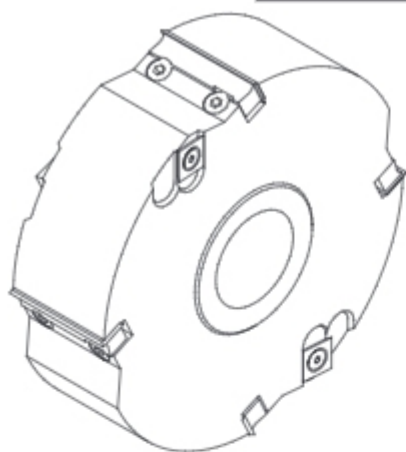
| Catalogue number | Type | Body | D mm | B mm | d mm | z | | |
|------------------|--------|------|------|------|------|---|----|---|
| G101-080-2504-0 | 1100-1 | ST | 80 | 50 | 30 | 4 | HM | • |
| G101-080-2604-0 | 1100-1 | ST | 80 | 60 | 30 | 4 | HM | + |
| G101-100-2304-2 | 1100-1 | ST | 100 | 30 | 30 | 4 | HM | + |
| G101-100-2504-2 | 1100-1 | ST | 100 | 50 | 30 | 4 | HM | + |
| G101-100A2504-2 | 1100-1 | AL | 100 | 50 | 30 | 4 | HM | + |
| G101-125-4504-2 | 1100-1 | ST | 125 | 50 | 40 | 4 | HM | + |
| G101-125-4506-2 | 1100-1 | ST | 125 | 50 | 40 | 6 | HM | + |
| G101-125-4604-3 | 1100-1 | ST | 125 | 60 | 40 | 4 | HM | + |
| G101-125A4604-4 | 1100-1 | AL | 125 | 60 | 40 | 4 | HM | + |
| G101-160-6406-2 | 1100-1 | ST | 160 | 40 | 50 | 6 | HM | + |

Spare parts for cutter heads 1100-1

| Cat. nr | Name | Dimensions | | |
|---------|----------------|----------------|--|---|
| | Knife | B x 12 x 1,5 | | + |
| | Clamping wedge | B-3 x 11,5 x 9 | | + |

| Cat. nr | Name | Dimensions | | |
|-----------|----------------|------------|--|---|
| WHAS00011 | Screw TOR 1011 | M7 x 20 | | • |

1100-3

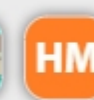
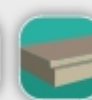


$D_{max} = 400 \text{ mm}$, $B_{max} = 120 \text{ mm}$

Grooving head, type **1100-3** with suitable number of cutting teeth and left and right spurs, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for precise grooving and rebating. The dimension of machined profiles is equal to cutter's width. The body is made from steel or aluminum.

Type of work: precise grooving and rebating.

Material: hard wood, glued wood, chipboard, MDF, plastics.



| D
mm
z | 125
9000
40 | | | | | | 140
6000
60 | | | | | | 160
6000
60 | | | | | | 180
6000
60 | | | | | |
|--------------|-------------------|----|--------|----|--------|----|-------------------|----|--------|----|--------|----|-------------------|----|--------|----|--------|----|-------------------|----|--------|----|--------|----|
| | 2 v2+2 | | 3 v3+3 | | 4 v2+2 | | 2 v2+2 | | 3 v3+3 | | 4 v2+2 | | 2 v2+2 | | 3 v3+3 | | 4 v2+2 | | 2 v2+2 | | 3 v3+3 | | 4 v2+2 | |
| Bmm | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL |
| 20 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 25 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 30 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 40 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 60 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 80 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 100 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

| Catalogue number | Type | Body | D
mm | B
mm | d
mm | z | | |
|------------------|--------|------|---------|---------|---------|--------|----|---|
| G103-125-2202-2 | 1100-3 | ST | 125 | 20 | 30 | 2 v2+2 | HM | + |
| G103-125A2204-2 | 1100-3 | AL | 125 | 20 | 30 | 4 v2+2 | HM | + |
| G103-125-2302-2 | 1100-3 | ST | 125 | 30 | 30 | 2 v2+2 | HM | + |
| G103-125-2404-4 | 1100-3 | ST | 125 | 40 | 30 | 4 v2+2 | HM | + |
| G103-125A2404-4 | 1100-3 | AL | 125 | 40 | 30 | 4 v2+2 | HM | + |
| G103-125-2504-4 | 1100-3 | ST | 125 | 50 | 30 | 4 v2+2 | HM | + |
| G103-125A2504-4 | 1100-3 | AL | 125 | 50 | 30 | 4 v2+2 | HM | + |
| G103-160-2404-0 | 1100-3 | ST | 160 | 40 | 30 | 4 v2+2 | HM | + |

Spare parts for cutter heads 1100-3

| Cat. nr | Name | Dimensions | | |
|----------|----------------|------------------|--|---|
| | Knife | B-0,4 x 12 x 1,5 | | + |
| N0000818 | Knife | 14 x 14 x 2 | | • |
| | Clamping wedge | B-2 x 11,5 x 9 | | + |

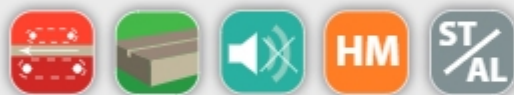
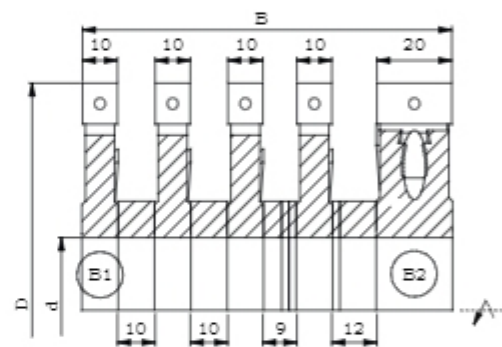
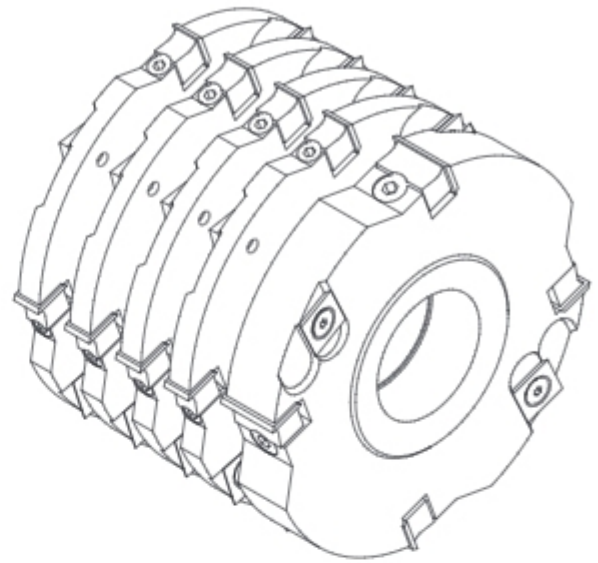
| Cat. nr | Name | Dimensions | | |
|-----------|----------------|------------|--|---|
| WHAS00011 | Screw TOR 1011 | M7 x 20 | | • |
| WHAS00008 | Screw TOR 1064 | M5 x 6,5 | | • |

Set of grooving heads type **1100-3**, with suitable number of cutting teeth and left and right spurs, designed for professional machining of solid wood. The set is used for machining guide grooves for precise transportation of short and curved elements on the machine bed. The body is made from steel or aluminum.

Type of work: machining guide grooves.

Material: solid wood, hard and soft.

1100-3 set



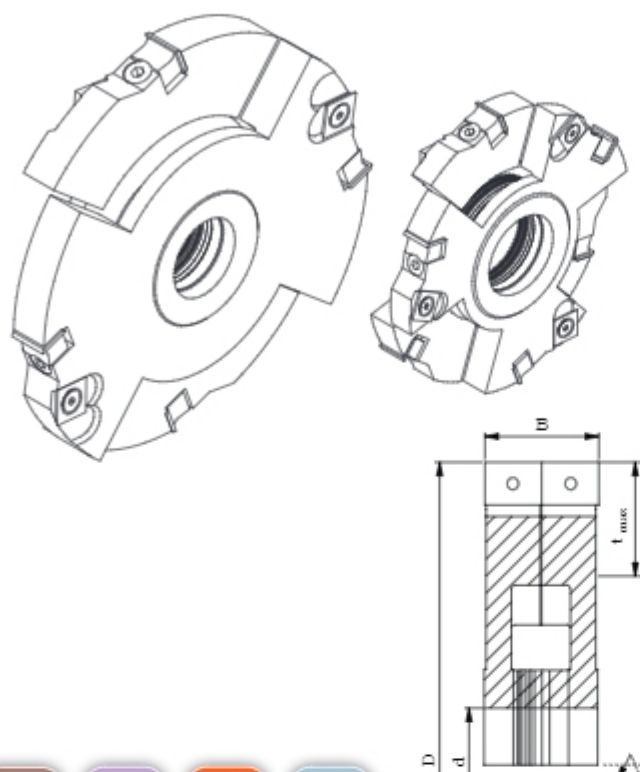
| D
mm
z | 125
9000
40 | | | | | | 140
9000
40 | | | | | |
|--------------|-------------------|----|--------|----|--------|----|-------------------|----|--------|----|--------|----|
| | 2 v2+2 | | 3 v3+3 | | 4 v2+2 | | 2 v2+2 | | 3 v3+3 | | 4 v2+2 | |
| Bmm | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL |
| 80 | + | + | + | + | + | + | + | + | + | + | + | + |
| 100 | + | + | + | + | + | + | + | + | + | + | + | + |
| 120 | + | + | + | + | + | + | + | + | + | + | + | + |
| 140 | + | + | + | + | + | + | + | + | + | + | + | + |
| 170 | + | + | + | + | + | + | + | + | + | + | + | + |

Spare parts for set of cutter heads

| Cat. nr | Name | Dimensions | | |
|-----------|----------------|-------------|--|---|
| N0000802 | Knife | 9,6x12x1,5 | | • |
| N0000594 | Knife | 20,6x12x1,5 | | + |
| N0000818 | Knife | 14x14x2 | | • |
| WHAKA0025 | Clamping wedge | 8x11,5x9 | | • |

| Cat. nr | Name | Dimensions | | |
|-----------|----------------|------------|--|---|
| WHAKA0010 | Support block | 18x11,5x9 | | • |
| WHAS00011 | Screw TOR 1011 | M7x20 | | • |
| WHAS00007 | Screw TOR 1262 | M5x23 | | • |
| WHAS00008 | Screw TOR 1064 | M5 x 6,5 | | • |

GR set of 2 heads



Set of adjustable grooving heads type **GR** with suitable number of cutting teeth and left and right spurs, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set of heads is used for grooving and rebating. Width is regulated with spacer rings (in increments of 0,1 mm) included in the set. The body is made from steel or aluminum.

Type of work: precise grooving and rebating.

Material: hard wood, glued wood, veneered wood, chipboard, MDF.



| D
n
d
z
t | 125
9000
40
2+2 v2+2
20 | | 140
6000
60
2+2 v2+2
25 | | 140
6000
60
3+3 v3+3
25 | | 160
6000
60
2+2 v2+2
30 | | 160
6000
60
3+3 v3+3
30 | | 180
6000
60
2+2 v2+2
35 | | 180
6000
60
4+4 v4+4
35 | | |
|-----------------------|-------------------------------------|----|-------------------------------------|----|-------------------------------------|----|-------------------------------------|----|-------------------------------------|----|-------------------------------------|----|-------------------------------------|----|----|
| | B mm | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL |
| 8÷15 | | + | | + | | + | | + | | + | | + | | + | |
| 10÷19 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 12÷22,50 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 12,50÷24 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 15,50÷30 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 20,50÷40 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 25÷49 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 30,50÷60 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 40,50÷80 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 50,50÷100 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 60,50÷120 | | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

Spate parts for set of cutter heads

| Cat. nr | Name | Dimensions | | |
|----------|----------------|------------------|--|---|
| | Knife | (B/2+0,5)x12x1,5 | | + |
| N0000818 | Spur | 14x14x2 | | • |
| | Clamping wedge | B-2/2,5x11,5x9 | | + |

| Cat. nr | Name | Dimensions | | |
|-----------|----------------|------------|--|---|
| WHAS00007 | Screw | M5x23 | | • |
| WHAS00011 | Screw TOR 1011 | M7x20 | | • |

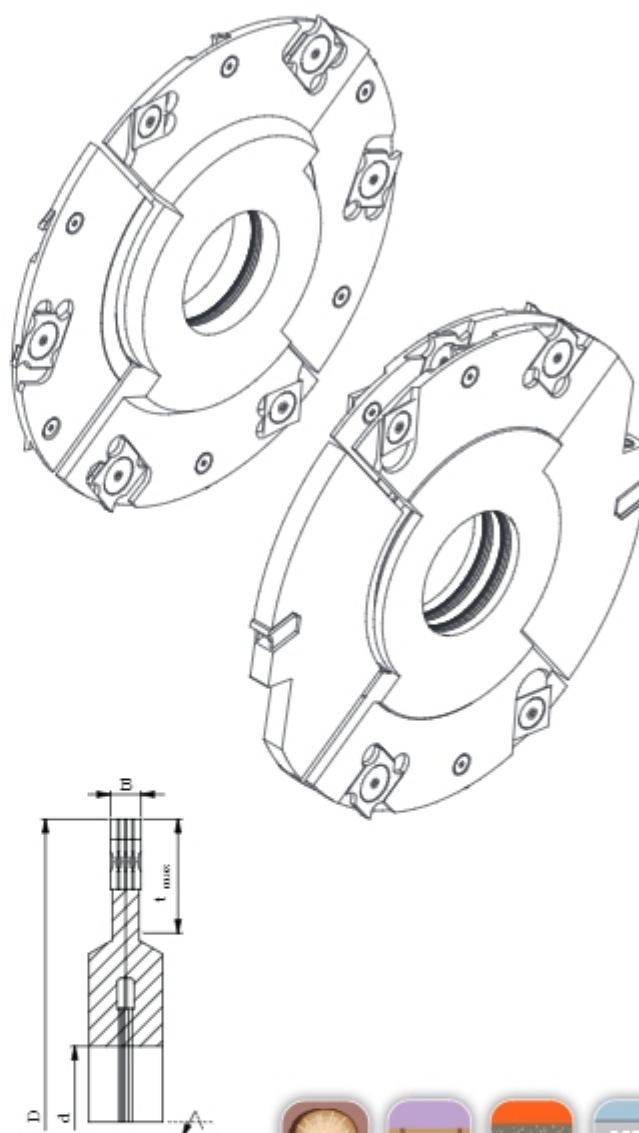
On special request, we offer the set consisting of 3 cutter heads.

Set of adjustable grooving heads, type **GR** with two cutting teeth and two left and two right spurs ($z=2\ v2+2$), designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set of heads is used for precise grooving and rebating. Width is regulated with spacer rings (in increments of 0,1 mm) included in the set. Width $B=4-7,5$ mm when working with 2-element set, $B=4-15$ mm when working with 3-element set.

Type of work: precise grooving and rebating.

Material: hard wood, glued wood, veneered wood, chipboard, MDF.

GR set B 4-15



5



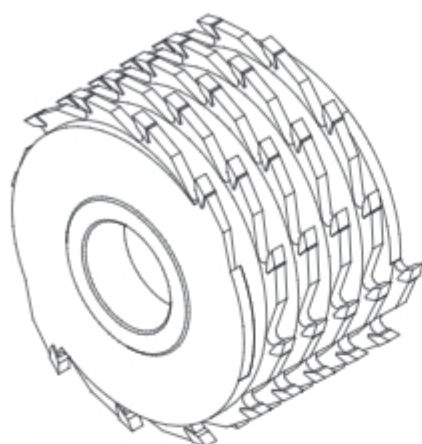
| D
n _{max}
d _{max}
z
t _{max} | 120
9000
35
2 v2+2
20 | 125
9000
40
2 v2+2
20 | 130
6000
40
2 v2+2
25 | 150
6000
50
2 v2+2
30 | 160
6000
60
2 v2+2
30 | 180
6000
60
2 v2+2
35 |
|--|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| B mm | | | | | | |
| 4-7,5 | + | + | + | + | + | + |
| 4-15 | + | + | + | + | + | + |

Spate parts for set of cutter heads

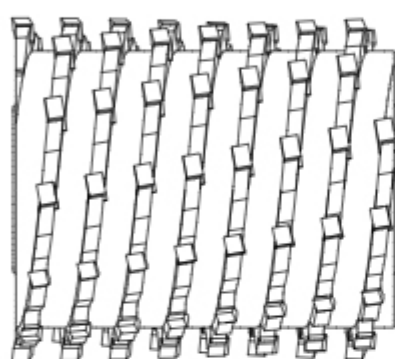
| Cat. nr | Name | Dimensions | |
|-----------|----------------|--------------|---|
| N0000801 | Knife | 7,5x12x1,5 | • |
| N0000706 | Knife | 18x18x1,95 | • |
| N0000817 | Spur | 14x14x1,2 | • |
| WHAKA0348 | Clamping wedge | 7,5x11,5x5,8 | • |

| Cat. nr | Name | Dimensions | |
|-----------|-----------------|------------|---|
| WHAS00054 | Screw 1402 | M4x0,5 | • |
| WHAS00056 | Nut with washer | M4x0,5 | • |
| WHAW00004 | Screw DIN915 | M6x16 | • |

FS-01/FS-06 P or L



FS-01

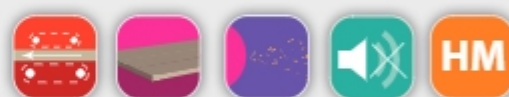
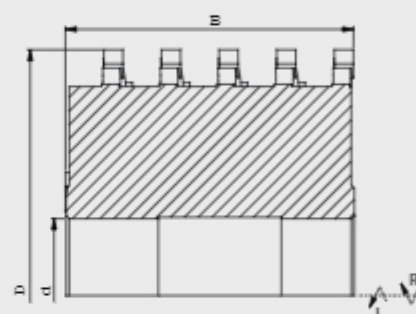


FS-06

Spiral brazed cutters, **FS-01** type with increased number of cutting teeth and **FS-06** type with increased life and axial angle, designed for professional finishing of wood or wood-based materials such as chipboard, MDF and others. The cutters are used for machining flat surfaces with big number of knags and multidirectional fibre system. The cutter is adapted to machining material with allowance up to 4 mm.

Type of work: planing flat material surfaces with numerous knags and multidirectional fibre system.

Material: solid hard wood, chipboard, MDF.



| D
mm | 100
9000
40
12 | 125
9000
50
12 | 140
6000
50
12 | 160
6000
60
12 | 180
6000
60
12 |
|---------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| B mm | | | | | |
| 40 | + | + | + | + | + |
| 60 | + | + | + | + | + |
| 80 | + | + | + | + | + |
| 100 | + | + | + | + | + |
| 120 | + | + | + | + | + |
| 160 | + | + | + | + | + |
| 180 | + | + | + | + | + |
| 200 | + | + | + | + | + |
| 240 | + | + | + | + | + |

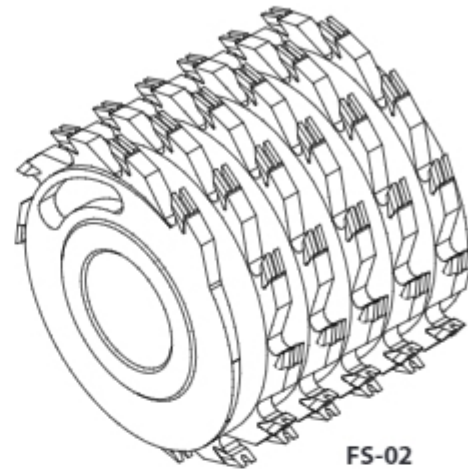
| Catalogue number right | Catalogue number left | Type | D mm | B mm | d mm | z | HM | |
|------------------------|-----------------------|-------|------|-------|------|---------|----|---|
| FS01W100P0002 | FS01W100L0002 | FS-01 | 100 | 56,25 | 30 | 12 (36) | HM | + |
| FS01W100P0031 | FS01W100L0031 | FS-01 | 100 | 160 | 35 | 12 (96) | HM | + |
| FS01W125P0006 | FS01W125L0006 | FS-01 | 125 | 100 | 40 | 12 (60) | HM | + |
| FS01W140P0018 | FS01W140L0018 | FS-01 | 140 | 80 | 35 | 12 (48) | HM | + |
| FS01W140P0020 | FS01W140L0020 | FS-01 | 140 | 120 | 35 | 12 (72) | HM | + |

Spiral brazed cutters with chip breaker, **FS-02** straight type and **FS-07** type with increased life and axial angle, designed for professional roughing of wood or wood-based materials such as chipboard, MDF and others. The cutters are used for machining flat surfaces with big number of knags and multidirectional fibre system. The cutter is adapted to machining material with allowance up to 4 mm.

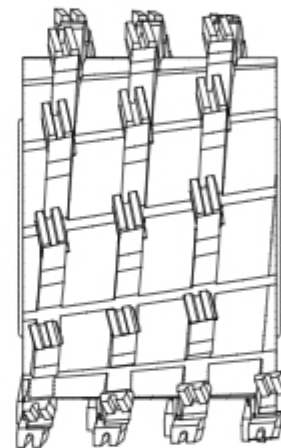
Type of work: pre-planing flat material surfaces with numerous knags and multidirectional fibre system.

Material: solid hard wood, chipboard, MDF.

FS-02/FS-07



FS-02

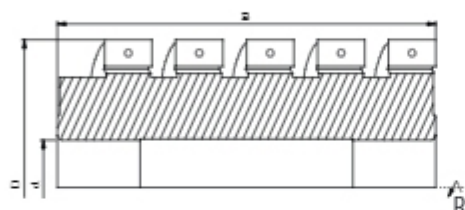
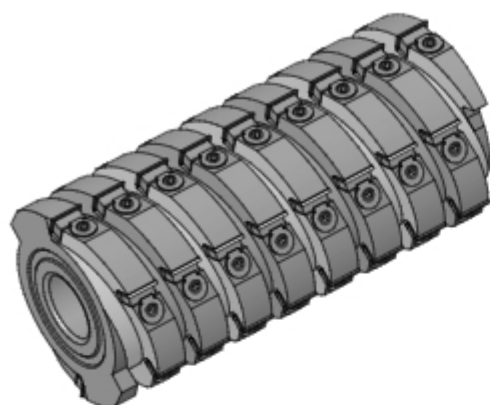


FS-07



| D
n
d
z
B mm | 100
9000
40
12 | 125
9000
50
12 | 140
6000
50
12 | 160
6000
60
12 | 180
6000
60
12 |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 40 | + | + | + | + | + |
| 60 | + | + | + | + | + |
| 80 | + | + | + | + | + |
| 100 | + | + | + | + | + |
| 120 | + | + | + | + | + |
| 160 | + | + | + | + | + |
| 180 | + | + | + | + | + |
| 200 | + | + | + | + | + |
| 240 | + | + | + | + | + |

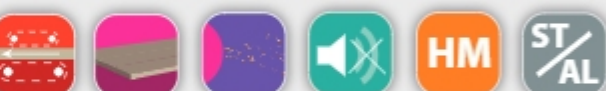
G1115



Spiral inserted cutter head, type **G1115** with six cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard and others. The cutter head is used for pre-cutting flat surfaces with multidirectional fibre system. The cutter head is adapted to machining materials with allowance up to 8 mm. The body is made from steel or aluminum.

Type of work: pre-cutting flat surfaces with multidirectional fibre system.

Material: hard wood, veneered board, chipboard, MDF.



| D
mm
z | B mm | Number of knives | 100
9000
30
2+2+2 | | 125
9000
40
2+2+2 | | 140
6000
40
2+2+2 | |
|--------------|------|------------------|----------------------------|----|----------------------------|----|----------------------------|----|
| | | | ST | AL | ST | AL | ST | AL |
| 40 | 6 | 6 | + | + | + | + | + | + |
| 60 | 10 | 10 | + | + | + | + | + | + |
| 80 | 14 | 14 | + | + | + | + | + | + |
| 100 | 18 | 18 | + | + | + | + | + | + |
| 120 | 22 | 22 | + | + | + | + | + | + |
| 160 | 30 | 30 | + | + | + | + | + | + |
| 180 | 34 | 34 | + | + | + | + | + | + |
| 200 | 38 | 38 | + | + | + | + | + | + |

| Catalogue number | Type | Body | D mm | B mm | d mm | z | | | |
|------------------|-------|------|------|------|------|-----------|----|---|---|
| G1115R100A2086-0 | G1115 | AL | 100 | 80 | 30 | 2+2+2(14) | HM | R | + |
| G1115R100-3106-0 | G1115 | ST | 100 | 100 | 35 | 2+2+2(18) | HM | R | + |
| G1115R125A4186-0 | G1115 | AL | 125 | 180 | 40 | 2+2+2(34) | HM | R | + |
| G1115R140A3106-0 | G1115 | AL | 140 | 100 | 35 | 2+2+2(18) | HM | R | + |

Spare parts for cutter heads G1115

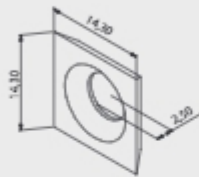
| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | | |
|------------|----------------|---------------|--|---|-----------|----------------|--------------|--|---|
| N0000805 | Knife | 20 x 12 x 1,5 | | • | WHAS00045 | Screw TOR 1011 | M8L/M8P x 22 | | + |
| WHAKA0543P | Clamping wedge | 17 x 11 x 7 | | + | WHA101346 | Nut TOR 24260 | M8L | | + |

G109

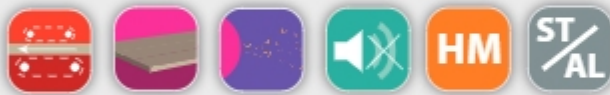
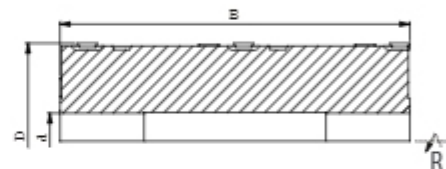
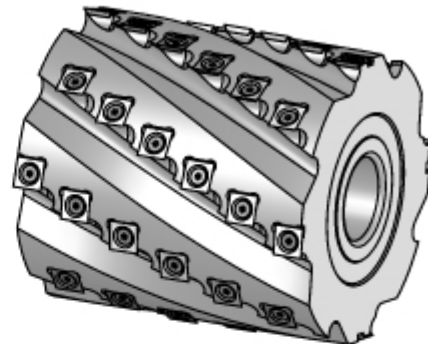
Spiral inserted planer head, type **G109** with four cutting teeth, designed for professional machining of solid wood. The cutter head is used for pre-planing. Spiral head design and big number of cutting teeth allow for higher feed speed and guarantee optimal workload of the machine spindle. The cutter head is adapted to machining materials with allowance up to 10 mm. The body is made from steel or aluminum.

Type of work: pre-planing.

Material: solid wood, hard and soft.



Cutting blade dimensions.



| D
n
d
z | B mm | Number of knives | 100
9000
40
4+4 | | 125
9000
50
4+4 | | 140
6000
60
4+4 | |
|------------------|------|------------------|--------------------------|----|--------------------------|----|--------------------------|----|
| | | | ST | AL | ST | AL | ST | AL |
| | 80 | 24 | + | + | + | + | + | + |
| | 100 | 32 | + | + | + | + | + | + |
| | 120 | 40 | + | + | + | + | + | + |
| | 150 | 48 | + | + | + | + | + | + |
| | 230 | 72 | + | + | + | + | + | + |

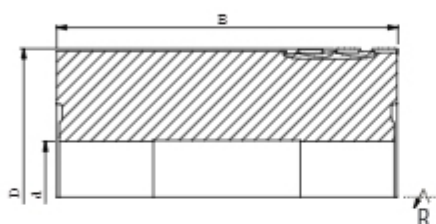
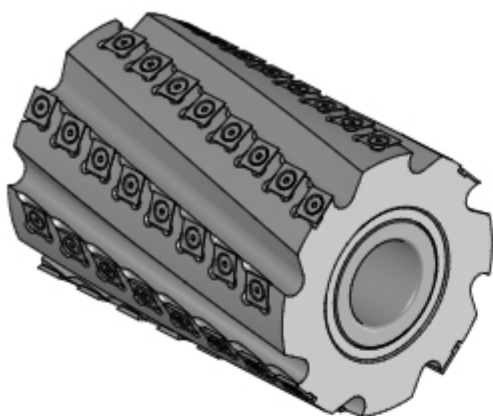
| Catalogue number | Type | Body | D mm | B mm | d mm | z | | | |
|------------------|------|------|------|------|------|----------|----|---|---|
| G109-100-2104P-0 | G109 | ST | 100 | 100 | 30 | 4+4 (32) | HM | R | + |
| G109-125-2124P-0 | G109 | ST | 125 | 120 | 30 | 4+4 (40) | HM | R | + |
| G109-125A2124P-0 | G109 | AL | 125 | 120 | 30 | 4+4 (40) | HM | R | + |
| G109-125-4234P-0 | G109 | ST | 125 | 230 | 40 | 4+4 (72) | HM | R | + |
| G109-140-4104P-0 | G109 | ST | 140 | 100 | 40 | 4+4 (32) | HM | R | + |

Spare parts for cutter heads G109

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|----------|-------|-------------------|---|-----------|----------------|------------|---|
| N0000839 | Knife | 14,3 x 14,3 x 2,5 |  | WHAS00015 | Screw TOR 1065 | M5x10 |  |

Above diameter D=140 mm, hydro clamping (d=50 mm) can be offered.

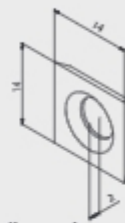
G209



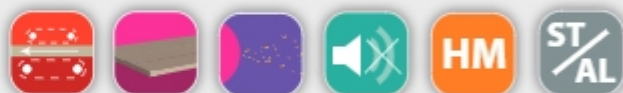
Spiral inserted planer head, type **G209** with four cutting teeth, designed for professional machining of solid wood. The cutter head is used for pre-planing. Spiral head design and big number of cutting teeth allow for higher feed speed and guarantee optimal workload of the machine spindle. The cutter head is adapted to machining materials with allowance up to 10 mm. The body is made from steel or aluminum.

Type of work: pre-planing.

Material: solid wood, hard and soft.



Cutting blade dimensions.



| D
mm
z | B mm | Number of knives | 100
9000
40
4+4 | | 125
9000
50
4+4 | | 140
6000
60
4+4 | |
|--------------|------|------------------|--------------------------|----|--------------------------|----|--------------------------|----|
| | | | ST | AL | ST | AL | ST | AL |
| 80 | 28 | | + | + | + | + | + | + |
| 100 | 36 | | + | + | + | + | + | + |
| 120 | 44 | | + | + | + | + | + | + |
| 150 | 52 | | + | + | + | + | + | + |
| 230 | 84 | | + | + | + | + | + | + |

| Catalogue number | Type | Body | D mm | B mm | d mm | z | | | |
|------------------|------|------|------|------|------|----------|----|---|---|
| G209-100-2084-0 | G209 | ST | 100 | 80 | 30 | 4+4 (28) | HM | R | + |
| G209-100A2084-2 | G209 | AL | 100 | 80 | 30 | 4+4 (24) | HM | R | + |
| G209-100-2104-0 | G209 | ST | 100 | 100 | 30 | 4+4 (36) | HM | R | + |
| G209-100A4104-0 | G209 | AL | 100 | 100 | 40 | 4+4 (36) | HM | R | + |
| G209-125-4124-0 | G209 | ST | 125 | 120 | 40 | 4+4 (44) | HM | R | + |
| G209-125A4124-0 | G209 | AL | 125 | 120 | 40 | 4+4 (44) | HM | R | + |
| G209-125-4234-0 | G209 | ST | 125 | 230 | 40 | 4+4 (84) | HM | R | + |
| G209-125A4234-0 | G209 | AL | 125 | 230 | 40 | 4+4 (84) | HM | R | + |
| G209-140-4104-0 | G209 | ST | 140 | 100 | 40 | 4+4 (36) | HM | R | + |
| G209-140A4104-0 | G209 | AL | 140 | 100 | 40 | 4+4 (36) | HM | R | + |

Spare parts for cutter heads G209

| Cat. nr | Name | Dimensions | |
|----------|-------|---------------|---|
| N0000818 | Knife | 14 x 14 x 2,0 | • |

| Cat. nr | Name | Dimensions | |
|-----------|----------------|------------|---|
| WHAS00015 | Screw TOR 1065 | M5x10 | • |

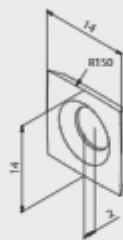
Above diameter D=140 mm, hydro clamping (d=50 mm) can be offered.

G309

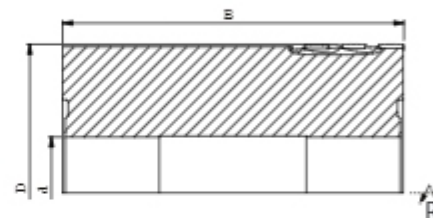
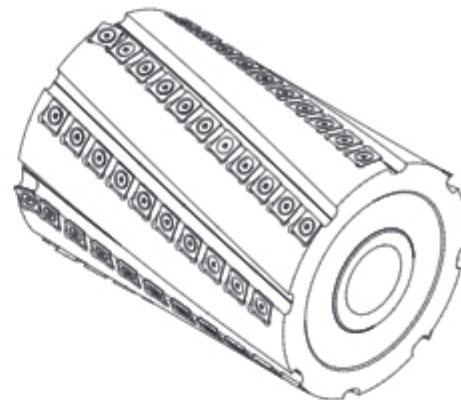
Spiral inserted planer head, type **G309** with four cutting teeth, designed for professional machining of solid wood. The cutter head is used for finishing flat surfaces. Spiral head design and big number of cutting teeth allow for higher feed speed and guarantee optimal workload of the machine spindle. Special profile inserts allow to obtain high quality of the machined surface. The cutter head is adapted to finishing materials with allowance up to 10mm. The body is made from steel or aluminum.

Type of work: planing flat surfaces.

Material: solid wood, hard and soft.



Cutting blade dimensions.



$$D_{\max} = 400 \text{ mm}, B_{\max} = 250 \text{ mm}$$




| D
mm
z | B mm | Number of knives | 100
9000
40
4+4 | | 125
9000
50
4+4 | | 140
6000
60
4+4 | |
|--------------|------|------------------|--------------------------|----|--------------------------|----|--------------------------|----|
| | | | ST | AL | ST | AL | ST | AL |
| 80 | 32 | | + | + | + | + | + | + |
| 100 | 40 | | + | + | + | + | + | + |
| 120 | 48 | | + | + | + | + | + | + |
| 150 | 60 | | + | + | + | + | + | + |
| 230 | 100 | | + | + | + | + | + | + |

| Catalogue number | Type | Body | D mm | B mm | d mm | z | | | |
|------------------|------|------|------|------|------|-----------|----|---|---|
| G309-100-4104-B | G309 | ST | 100 | 100 | 40 | 4+4 (40) | HM | R | + |
| G309-100A4104-B | G309 | AL | 100 | 100 | 40 | 4+4 (40) | HM | R | + |
| G309-125-4124-B | G309 | ST | 125 | 120 | 40 | 4+4 (48) | HM | R | + |
| G309-125A4124-B | G309 | AL | 125 | 120 | 40 | 4+4 (48) | HM | R | + |
| G309-125-4234-B | G309 | ST | 125 | 230 | 40 | 4+4 (100) | HM | R | + |
| G309-140-4104-B | G309 | ST | 140 | 100 | 40 | 4+4 (40) | HM | R | + |

Spare parts for cutter heads G309

| Cat. nr | Name | Dimensions | R | |
|-----------|-------|---------------|-----|---|
| N00000710 | Knife | 14 x 14 x 2,0 | 150 |  |

| Cat. nr | Name | Dimensions | |
|-----------|----------------|------------|---|
| WHAS00015 | Screw TOR 1065 | M5x10 |  |

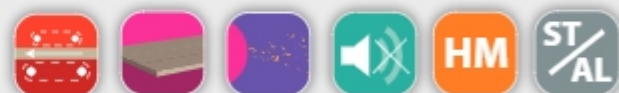
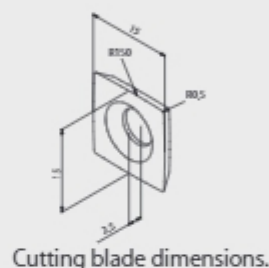
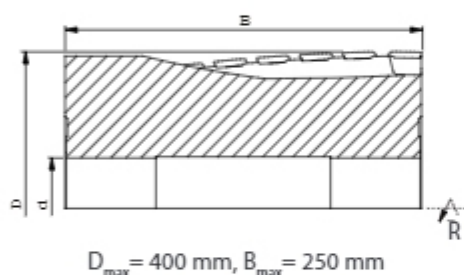
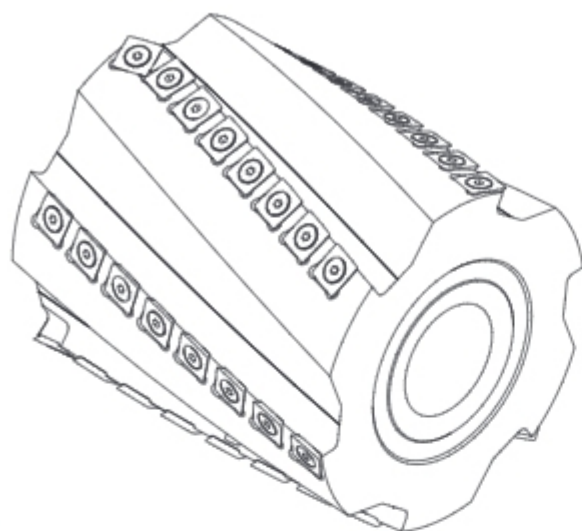
Above diameter D=140 mm, hydro clamping (d=50 mm) can be offered.

G509

Spiral inserted planer head, type **G509** with three cutting teeth, designed for professional machining of solid wood. The cutter head is used for finishing flat surfaces. Spiral head design and big number of cutting teeth allow for higher feed speed and guarantee optimal workload of the machine spindle. Special profile inserts allow to obtain high quality of the machined surface. The cutter head is adapted to machining materials with allowance up to 10 mm. The body is made from steel or aluminum.

Type of work: planing flat surfaces.

Material: solid wood, hard and soft.



| D
mm | B
mm | d
mm | z | 100
9000
40
3+3 | | 125
9000
50
3+3 | | 140
6000
60
3+3 | |
|---------|---------|---------|---|--------------------------|----|--------------------------|----|--------------------------|----|
| | | | | ST | AL | ST | AL | ST | AL |
| 100 | 27 | | | + | + | + | + | + | + |
| 130 | 36 | | | + | + | + | + | + | + |
| 160 | 48 | | | + | + | + | + | + | + |
| 240 | 72 | | | + | + | + | + | + | + |

| Catalogue number | Type | Body | D
mm | B
mm | d
mm | z | | | |
|------------------|------|------|---------|---------|---------|----------|----|---|---|
| G509-140-5163P-B | G509 | ST | 140 | 160 | 45 | 3+3 (48) | HM | R | + |

Spare parts for cutter heads G509

| Cat. nr | Name | Dimensions | R1/R2 | | | Cat. nr | Name | Dimensions | |
|----------|-------|---------------|---------|--|---|-----------|----------------|------------|---|
| N0000733 | Knife | 15 x 15 x 2,5 | 150/0,5 | | • | WHAS00015 | Screw TOR 1065 | M5x10 | • |

Above diameter D=140 mm, hydro clamping (d=50 mm) can be offered.

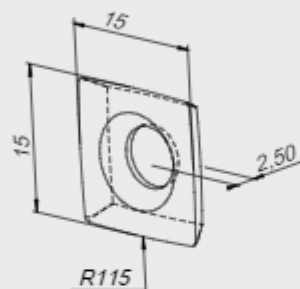
G709H

Spiral cutter head type **G709H** hydro for professional machining of solid wood. The cutter head is designed for pre-planing flat surfaces. Axial positioning of cutting teeth. Helical flutes guarantees efficient chip flow. Big number of cutting teeth allows for very high feed speed and optimal workload of the machine spindle. The cutter head is adapted to pre-planing with allowance up to 10 mm. The body is made of steel or aluminum.

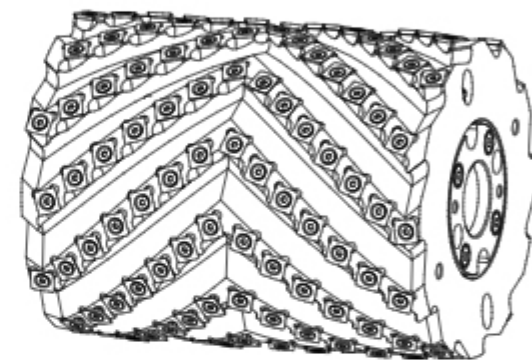
Screw used in cutter heads with ALU body.

Type of work: pre-planing.

Material: solid wood, hard and soft.



Cutting blade dimensions.



| D
mm
z | B mm | 160
6000
50
4+4 | | 180
6000
60
5+5 | | 200
6000
70
6+6 | |
|--------------|------|--------------------------|----|--------------------------|----|--------------------------|----|
| | | ST | AL | ST | AL | ST | AL |
| 100 | | + | + | + | + | + | + |
| 120 | | + | + | + | + | + | + |
| 160 | | + | + | + | + | + | + |
| 200 | | + | + | + | + | + | + |
| 235 | | + | + | + | + | + | + |

| Catalogue number | Type | Body | D mm | B mm | d mm | z | Filling system | |
|------------------|-------|------|------|------|------|-----------|----------------|---|
| G709-180S52205-B | G709H | ST | 180 | 200 | 45 | 5+5 (110) | C | + |
| G709-180G62356-C | G709H | ST | 180 | 235 | 50 | 6+6 (144) | C | + |
| G709-200SA2356-B | G709H | ST | 200 | 235 | 70 | 6+6 (144) | A | + |
| G709-200S52656-B | G709H | ST | 200 | 265 | 45 | 6+6 (168) | A | + |

Spare parts for cutter heads G709H

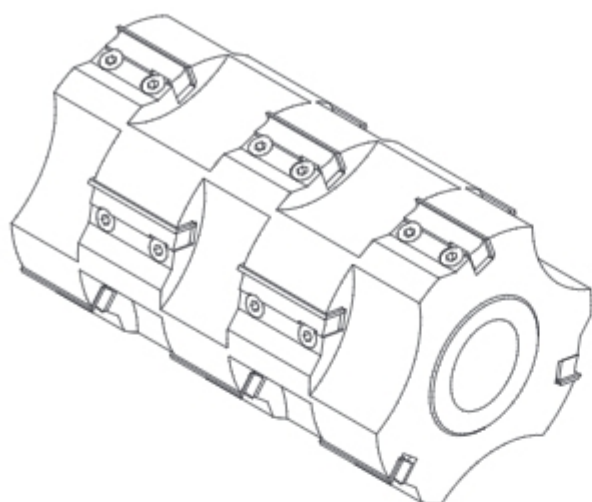
| Cat. nr | Name | Dimensions | R | |
|----------|-------|---------------|-----|---|
| N0000777 | Knife | 15 x 15 x 2,5 | 115 |  |

| Cat. nr | Name | Dimensions | |
|------------|----------------|------------|---|
| WHAS00209 | Screw TOR 1065 | M6x17 |  |
| WHAS00015* | Screw TOR 1065 | M5x10 |  |

Hydro cutter heads - page 5.24

* screw used in cutter heads with AL body.

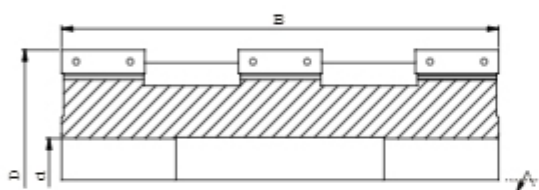
1100-14



Monolithic inserted planer head, type **1100-14** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for pre-planing. Regular insert size is 50x12x1,5 mm, but to increase cutter head size range it is possible to use inserts 40x12x1,5 mm and 60x12x1,5 mm. The body is made from steel or aluminum.

Type of work: pre-planing.

Material: solid hard wood.



| D
mm
z | 125
9000
50
2 | | 125
9000
50
3 | | 125
9000
50
4 | |
|--------------|------------------------|-------|------------------------|-------|------------------------|-------|
| | B mm | ST AL | ST AL | ST AL | ST AL | ST AL |
| 98 | | + + | + + | + + | + + | + + |
| 146 | | + + | + + | + + | + + | + + |
| 194 | | + + | + + | + + | + + | + + |
| 242 | | + + | + + | + + | + + | + + |

| Catalogue number | Type | Body | D
mm | B
mm | d
mm | z | | |
|------------------|---------|------|---------|---------|---------|---|----|---|
| G114-125-4128-0 | 1100-14 | ST | 125 | 120 | 40 | 4 | HM | + |
| G114-125-4014-0 | 1100-14 | ST | 125 | 146 | 40 | 2 | HM | + |
| G114-125-4216-0 | 1100-14 | ST | 125 | 210 | 40 | 3 | HM | + |

Spare parts for cutter heads 1100-14

| Cat. nr | Name | Dimensions | |
|----------|-------|------------|---|
| N0000810 | Knife | 50x12x1,5 |  • |

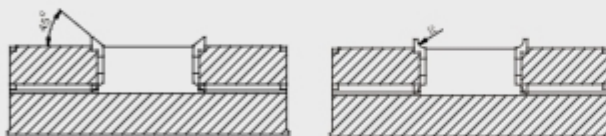
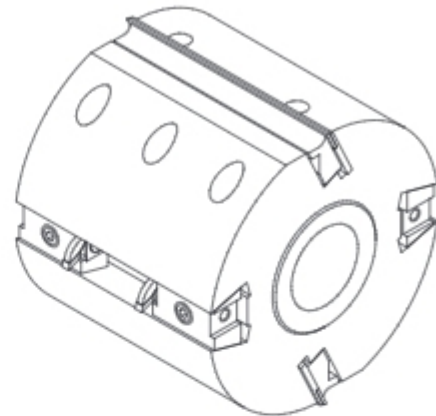
| Cat. nr | Name | Dimensions | |
|-----------|----------------|------------|---|
| WHAKA0043 | Clamping wedge | 47x11,5x9 |  + |
| WHAS00011 | Screw TOR 1011 | M7x20 |  • |

Planer head, type **1100-4** with suitable number of cutting teeth and additional grooving, rounding and beveling knives, designed for professional machining of solid wood. The cutter head is used for finishing flat surfaces and edge profiling of the machined material at the same time. The adjustment of knives height is made with springs. Optionally, the head can be equipped with knives FKB-45° and FKB-R. The body is made from steel or aluminum.

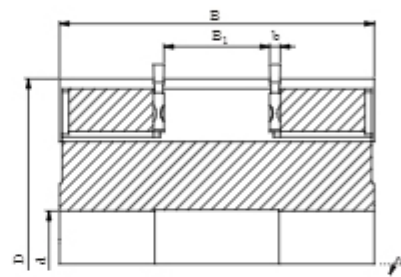
Type of work: pre-planing and planing with edge profiling.

Material: solid hard and soft wood.

1100-4 with profile knives



Optional solutions.



5

| D
mm
z | 125
9000
40
2 s2+2 | | 135
9000
40
2 s2+2 | | 140
6000
40
3 s3+3 | | 150
6000
50
3 s3+3 | | 160
6000
60
3 s3+3 | | |
|--------------|-----------------------------|----|-----------------------------|----|-----------------------------|----|-----------------------------|----|-----------------------------|----|----|
| | B mm | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL |
| 60 | | + | + | + | + | + | + | + | + | + | + |
| 80 | | + | + | + | + | + | + | + | + | + | + |
| 100 | | + | + | + | + | + | + | + | + | + | + |
| 130 | | + | + | + | + | + | + | + | + | + | + |
| 150 | | + | + | + | + | + | + | + | + | + | + |
| 180 | | + | + | + | + | + | + | + | + | + | + |
| 230 | | + | + | + | + | + | + | + | + | + | + |

| Catalogue number
(without knives) | Type | Body | D
mm | B
mm | B ₁
mm | d
mm | z | |
|--------------------------------------|--------|------|---------|---------|----------------------|---------|-----|---|
| G01-0735-3 | 1100-4 | ST | 140 | 130 | 10-130 | 40 | 2+2 | + |
| G01-0382-3 | 1100-4 | AL | 140 | 130 | 10-140 | 40 | 2+2 | + |

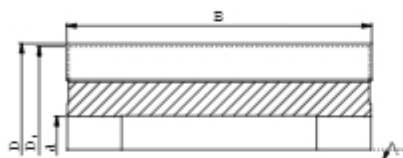
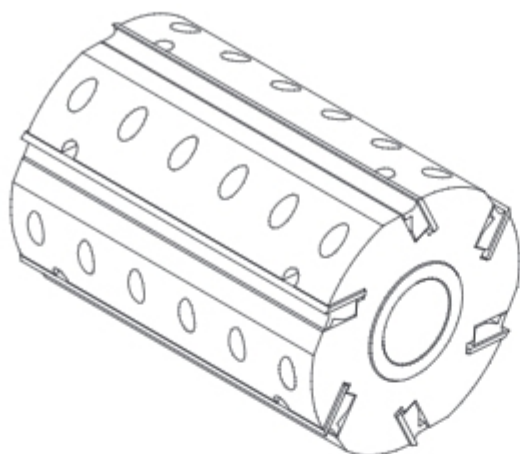
Spare parts for cutter heads 1100-4

| Cat. nr | Name | Dimensions | | |
|----------|----------------|---------------|--|---|
| | Knife | B x 30 x 3 | | + |
| | Hook knife | 24 x 13 x b | | + |
| N0000870 | Knife FKB-45° | 16 x 22 x 5 | | • |
| | Knife FKB-R | 16 x 22 x 5 | | + |
| | Clamping wedge | B-3 x 23 x 11 | | + |

| Cat. nr | Name | Dimensions | | |
|-----------|--------------------|--------------|--|---|
| WHAK00277 | Clamping wedge | 37 x 29 x 16 | | • |
| WHAK00358 | Clamping wedge FKB | 37 x 29 x 16 | | • |
| WHAW00007 | Nut DIN 915M | M10 x 20 | | • |
| WHAI00001 | Spring | 9,5 x 40 | | • |

Please give type of profile knives (page 8.11) and straight knives (page 8.6-8.7) with the order.


1100-4




Inserted planer head, type **1100-4** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for finishing flat surfaces. The adjustment of knives height is made with springs. The head 1100-4 is adapted to pre-planing materials with allowance up to 5 mm and planing materials with allowance up to 0,8 mm. The body is made from steel or aluminum.

Type of work: pre-planing and planing.

Material:

 solid soft wood

 solid hard wood



| D
D ₁
n _{max}
d _{max}
z
b (mm) | 125
122
9000
40
4
3 | | 140
137
6000
50
4
3 | | 160
157
6000
60
4
3 | | 160
157
6000
60
6
3 | | 180
177
6000
60
4
3 | | 180
177
6000
60
6
3 | | 180
177
6000
60
8
3 | | |
|--|------------------------------------|---|------------------------------------|---|------------------------------------|---|------------------------------------|---|------------------------------------|---|------------------------------------|---|------------------------------------|---|---|
| | B mm | | ST AL | | ST AL | | ST AL | | ST AL | | ST AL | | ST AL | | |
| | 60 | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 80 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| | 100 | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| 130 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| 150 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| 160 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| 180 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| 200 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| 230 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

| Catalogue number (without knives) | Type | Body | D mm | B mm | d mm | z |
|-----------------------------------|--------|------|------|------|------|---|
| A104-122-4064-0 | 1100-4 | ST | 125 | 60 | 40 | 4 |
| A104-122-4104-0 | 1100-4 | ST | 125 | 100 | 40 | 4 |
| A104-122-4134-0 | 1100-4 | ST | 125 | 130 | 40 | 4 |
| A104-122A4134-0 | 1100-4 | AL | 125 | 130 | 40 | 4 |
| A104-122-4154-0 | 1100-4 | ST | 125 | 150 | 40 | 4 |
| A104-122-4164-0 | 1100-4 | ST | 125 | 160 | 40 | 4 |
| A104-122A4164-0 | 1100-4 | AL | 125 | 160 | 40 | 4 |
| A104-122-4184-0 | 1100-4 | ST | 125 | 180 | 40 | 4 |
| A104-122-4234-0 | 1100-4 | ST | 125 | 230 | 40 | 4 |
| A104-122A4234-0 | 1100-4 | AL | 125 | 230 | 40 | 4 |

Spare parts for cutter heads 1100-4

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|---------|----------------|---------------|---|---------|-----------|----------------|---|
| | Knife | B x 30 x 3 |  | + | WHAW00007 | Clamping screw | M10 x 20 |
| | Clamping wedge | B-3 x 24 x 11 |  | + | | |  |


Please, give knives type with the order - catalogue page 8.6 - 8.7.


1100-5

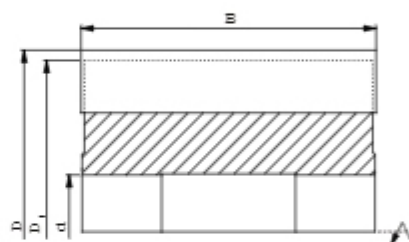
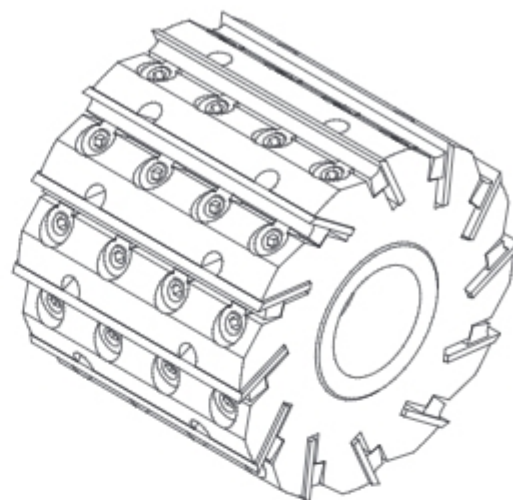
Multi-teeth planer head, type **1100-5** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for pre-planing and planing. The adjustment of knives height is made with springs. Increased number of cutting teeth allows for higher feed speed, within the range of 80-180 m/min. and guarantees optimal workload of the machine spindle. The head 1100-5 is adapted to pre-planing materials with allowance up to 5 mm and planing materials with allowance up to 0,8 mm. The body is made from steel or aluminum.

Type of work: pre-planing and planing.

Material:

 solid soft wood

 solid hard wood



5



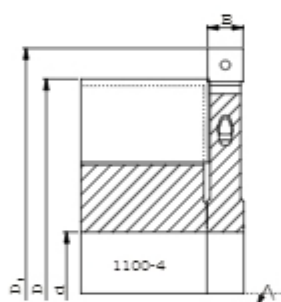
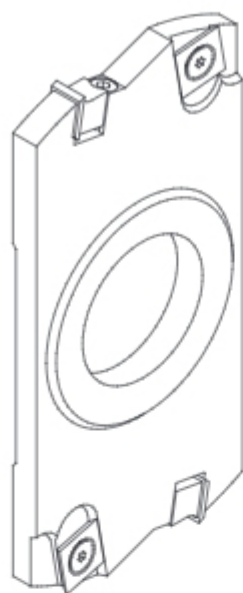
| D
D ₁
n
d _{max}
z
b (knife) | 160 | | 180 | | 200 | |
|--|------|----|------|----|------|----|
| | 157 | | 177 | | 197 | |
| | 6000 | | 6000 | | 6000 | |
| | 60 | | 60 | | 60 | |
| | 10 | | 12 | | 16 | |
| | 3 | | 3 | | 3 | |
| B mm | ST | AL | ST | AL | ST | AL |
| 100 | + | + | + | + | + | + |
| 160 | + | + | + | + | + | + |
| 230 | + | + | + | + | + | + |

Spare parts for cutter heads 1100-5

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|---------|----------------|---------------|---|-----------|-------|-----------------|---|
| | Knife | B x 30 x 3 |  + | WHAS00046 | Screw | M10 P/L x 22 |  • |
| | Clamping wedge | B-3 x 24 x 11 |  + | WHA101398 | Nut | Ø15 x 15,5 x 13 |  • |

Please, give knives type with the order - catalogue page 8.6 - 8.7.

G103

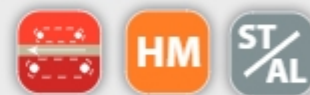


Inserted cutter head, type **G103** with two cutting teeth and two left or two right spurs ($z=2 \text{ v}2$), designed for professional machining of solid wood. The cutter head is used for edge formatting. Special body design enables the head to work together with planer heads type 1100-4. The body is made from steel or aluminum.

Type of work: edge formatting.

Material: solid hard wood, solid soft wood.

| D1
d
n
z | 145
40
9000
2 v2 | | 165
50
6000
2 v2 | |
|-------------------|---------------------------|------------|---------------------------|---|
| | B mm | ST AL | ST AL | |
| 12,2 | + | + | + | + |
| 15,2 | + | + | + | + |



| Catalogue number | Type | Body | D1 mm | D mm | B mm | d mm | z | |
|------------------|------|------|-------|------|------|------|------|------|
| G103-145-0003L-0 | G103 | ST | 145 | 125 | 12,2 | 40 | 2 v2 | HM • |
| G103-165-0003L-0 | G103 | ST | 165 | 140 | 12,2 | 40 | 2 v2 | HM + |
| G103-165-0004L-0 | G103 | ST | 165 | 140 | 15,2 | 40 | 2 v2 | HM + |

Spare parts for cutter heads G103



| Cat. nr | Name | Dimensions | | |
|----------|----------------|------------------|--|---|
| | Knife | B-0,4 x 12 x 1,5 | | + |
| N0000818 | Knife | 14 x 14 x 2 | | • |
| | Clamping wedge | B-2 x 11,5 x 9 | | + |

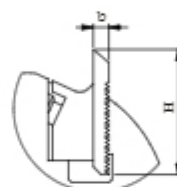
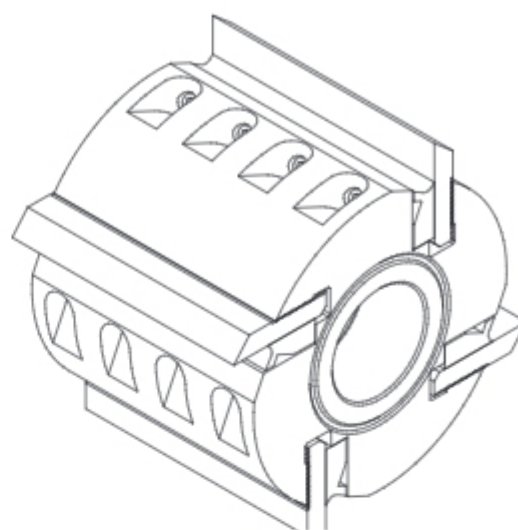
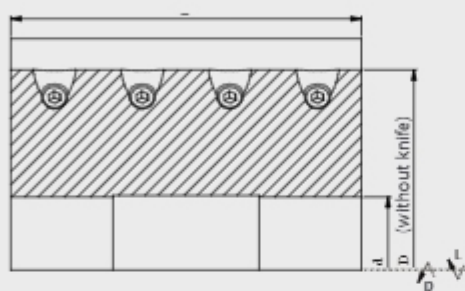
| Cat. nr | Name | Dimensions | | |
|-----------|----------------|------------|--|---|
| WHAS00007 | Screw TOR 1262 | M5x23 | | • |
| WHAS00008 | Screw TOR 1064 | M5x6,5 | | • |

Profile serrated head, type **GP-01** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for surface profiling. The adjustment of knives height is made with precise serration. The head GP-01 work with knives with thickness 4, 5, 8 or 10 mm. The body is made from steel or aluminum.

Type of work: profiling.

Material:

-  solid soft wood
 solid hard wood



5

| D
n
d
z | 122
9000
40
2 | | 122
9000
40
4 | | 122
9000
40
6 | | 137
6000
50
2 | | 137
6000
50
4 | |
|------------------|------------------------|----|------------------------|----|------------------------|----|------------------------|----|------------------------|---|
| | B mm | ST | AL | ST | AL | ST | AL | ST | AL | |
| 40 | | + | + | + | + | + | + | + | + | + |
| 50 | | + | + | + | + | + | + | + | + | + |
| 60 | | + | + | + | + | + | + | + | + | + |
| 80 | | + | + | + | + | + | + | + | + | + |
| 100 | | + | + | + | + | + | + | + | + | + |
| 120 | | + | + | + | + | + | + | + | + | + |
| 150 | | + | + | + | + | + | + | + | + | + |
| 160 | | + | + | + | + | + | + | + | + | + |
| 180 | | + | + | + | + | + | + | + | + | + |
| 200 | | + | + | + | + | + | + | + | + | + |

| Catalogue number
(without knives) | Type | Body | D
mm | B
mm | d
mm | z |
|--------------------------------------|-------|------|---------|---------|---------|---|
| GP01-122-4044-A | GP-01 | ST | 122 | 40 | 40 | 4 |
| GP01-122-4064-A | GP-01 | ST | 122 | 60 | 40 | 4 |
| GP01-122-4084-A | GP-01 | ST | 122 | 80 | 40 | 4 |
| GP01-122-4104-A | GP-01 | ST | 122 | 100 | 40 | 4 |
| GP01-122-4154-A | GP-01 | ST | 122 | 150 | 40 | 4 |

Spare parts for cutter heads GP-01

| Cat. nr | Name | Dimensions |
|---------|----------------|---------------|
| | Knife | B x 50 x b |
| | Clamping wedge | B x 25,5 x 13 |

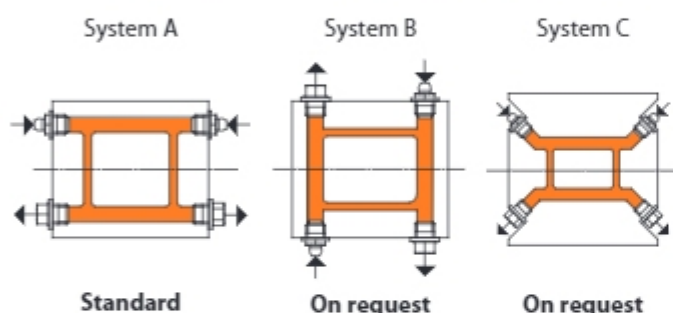
| Cat. nr | Name | Dimensions |
|-----------|---------------|------------|
| WHAW00007 | Screw DIN 915 | M10x20 |

Please, give type and thickness of cutting knives with the order. Knives can be found on page 8.4 (HSS knives) and 8.5 (knives with HM insert) of the catalogue.

Hydro cutter heads

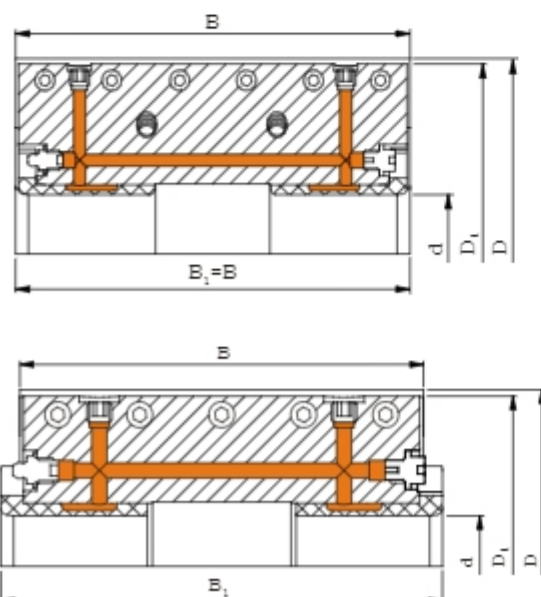


Hydro cutter heads pressure filling systems



Construction specification of hydro cutter heads

| for | | B_1 mm |
|--------------|--------------|----------|
| $D < 160$ | - | $B + 15$ |
| $D \geq 160$ | $B \leq 130$ | $B + 15$ |
| $D \geq 160$ | $B > 130$ | B |



Hydro cutter heads are cutter heads with hydraulic clamping system designed for professional, very precise machining of solid wood. The tools mounted on hydro sleeve have been used for precise cutting of flat surfaces as well as for profiling. The construction of tools with hydro clamping guarantees tolerance of radial run-out reduced to minimum as fitting tolerance after installing the system on the machine spindle (developing pressure 300 bar) equals to zero. This automatically results in very precise positioning of the tool on the machine spindle. The hydro system which also allows for perfect balancing of the tools, apart from very high machined surface quality, enables working with high cutting and feed speed. Even wear of all the blades guarantees significantly increased life of the tool.

Hydro cutter heads are used for finishing (allowance up to 0,8 mm) and pre-planing (allowance up to 5 mm).

As standard, hydro cutter heads are offered according to pressure filling system type A. On client's request, we offer hydro system according to pressure filling system type B and C.

Hydro cutter heads chapter includes only example positions of straight (1100-4H and 1100-5H) and profile (GP-01H) cutter heads. We offer also spiral cutter heads in hydro version. On request, we can suggest and manufacture a proper cutter head for the required type of work, material, parameters and conditions during machining.

Maximum dimensions of hydro cutter heads:

$$D_{\max} = 400 \text{ mm}, B_{\max} = 400 \text{ mm}$$


Advantages:


- precise mounting of the tool on the machine spindle,
- narrowed radial run-out tolerance,
- very high quality of machined material surface,
- increased life of the tool,
- perfect balancing of the tool,
- low vibration level,
- quiet and steady running of the tool,
- ability to work with high speed cutting and feed speed up to 200 m/min.

Hydro-planer head, type **1100-4H** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for very precise planing of flat surfaces. The adjusting of knives height is made with springs. The head 1100-4H is adapted to pre-planing materials with allowance up to 5 mm and finish planing materials with allowance up to 0,8 mm. Special geometry, hydro system and very precise balancing of the head allows for higher feed speed, up to 100 m/min and guarantees optimal workload of the machine spindle.

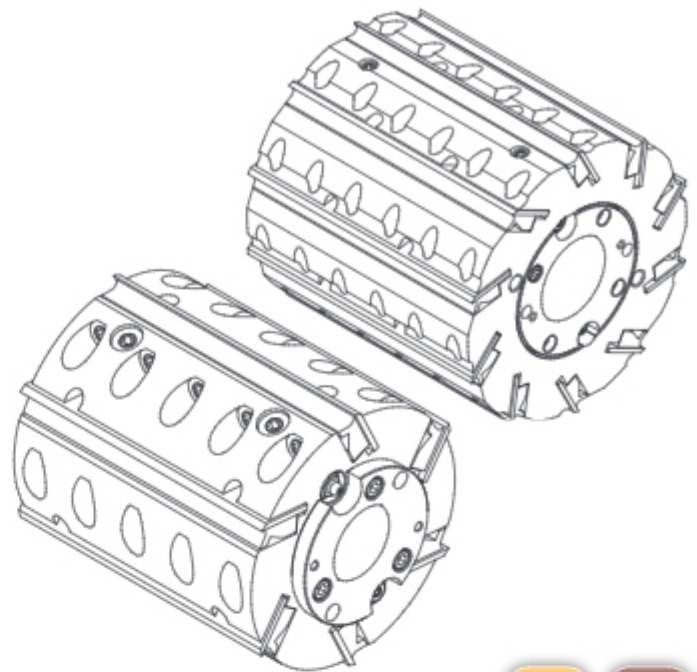
Type of work: pre-planing and precise planing.

Material:

 solid soft wood

 solid hard wood

1100-4 H






5

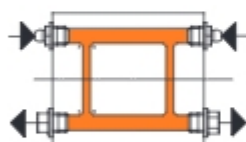
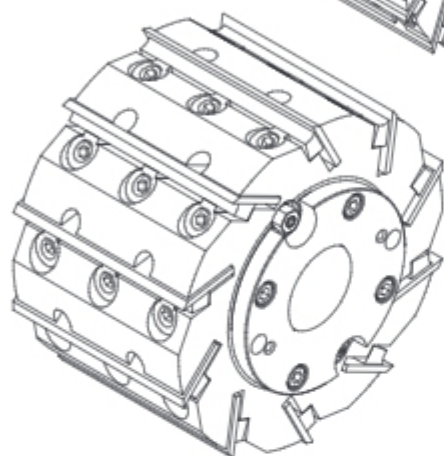
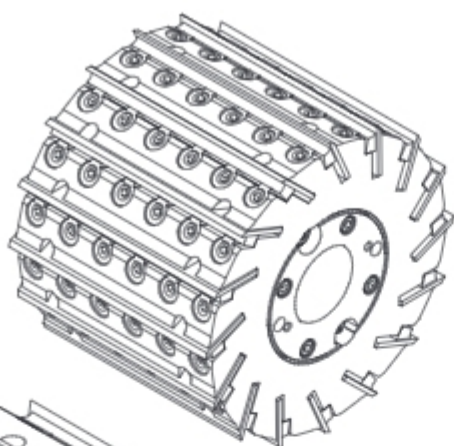
| D
D ₁
n
d _{max}
z
b (mm) | 140/143
135
9000
40
4
3 | 160/163
155
9000
50
4
3 | 160/163
155
6000
50
6
3 | 180/183
175
6000
50
4
3 | 180/183
175
6000
50
6
3 | 180/183
175
6000
50
8
3 | 200/203
195
6000
50
8
3 | 200/203
195
6000
50
10
3 | 200/203
195
6000
50
12
3 |
|---|--|--|--|--|--|--|--|---|---|
| B mm | ST | ST | ST | ST | ST | ST | ST | ST | ST |
| 60 | + | + | + | + | + | + | + | + | + |
| 80 | + | + | + | + | + | + | + | + | + |
| 100 | + | + | + | + | + | + | + | + | + |
| 130 | + | + | + | + | + | + | + | + | + |
| 150 | + | + | + | + | + | + | + | + | + |
| 160 | + | + | + | + | + | + | + | + | + |
| 180 | + | + | + | + | + | + | + | + | + |
| 200 | + | + | + | + | + | + | + | + | + |
| 230 | + | + | + | + | + | + | + | + | + |

| Catalogue number
(without knives) | Type | Body | D
mm | B
mm | d
mm | z | |
|--------------------------------------|----------|------|---------|---------|---------|---|---|
| A104-155G6136-0 | 1100-4 H | ST | 160 | 130 | 50 | 6 | • |
| A104-155G6156-0 | 1100-4 H | ST | 160 | 150 | 50 | 6 | • |
| A104-155G6166-0 | 1100-4 H | ST | 160 | 160 | 50 | 6 | • |
| A104-155G6168-0 | 1100-4 H | ST | 160 | 160 | 50 | 8 | • |
| A104-155G6236-0 | 1100-4 H | ST | 160 | 230 | 50 | 6 | • |

Spare parts for cutter heads 1100-4H

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|---------|----------------|---------------|---|---|-------|--------------|---|
| | Knife | B x 30 x 3 |  + | WHAW00012 | Screw | M10 x 1 x 20 |  • |
| | Clamping wedge | B-3 x 24 x 11 |  + | Please, give type of knives with the order - catalogue page 8.7.
Spindle lock protecting on page 9.25. | | | |

1100-5 H





1100-5H are offered with standard pressure filling system type A only.

Multi-teeth hydro-planer head, type **1100-5H** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for very precise planing of flat surfaces. The adjustment of knives height is made with springs. Increased number of cutting teeth, hydro system and very precise balancing of head allows for higher feed speed, within the range 80-200 m/min and guarantees optimal workload of the machine spindle. The head 1100-5H is adapted to pre-planing materials with allowance up to 5 mm and planing materials with allowance up to 0,8 mm.

Type of work: pre-planing and precise planing.

Material:

 solid soft wood



 solid hard wood



| D
D ₁
n
d _{max}
z
b (knives) | 160/163
155
6000
50
10
3 | 180/183
175
6000
50
12
3 | 200/203
195
6000
50
16
3 |
|---|---|---|---|
| B mm | ST | ST | ST |
| 100 | + | + | + |
| 160 | + | + | + |
| 230 | + | + | + |



| Catalogue number (without knives) | Type | Body | D mm | B mm | d mm | z | |
|-----------------------------------|----------|------|------|------|------|----|---|
| A105-155G4101-0 | 1100-5 H | ST | 160 | 100 | 40 | 10 | + |
| A105-155G6231-0 | 1100-5 H | ST | 160 | 230 | 50 | 10 | + |
| A105-195G6169-0 | 1100-5 H | ST | 200 | 160 | 50 | 16 | + |

Spare parts for cutter heads 1100-5H

| Cat. nr | Name | Dimensions | | |
|---------|----------------|---------------|---|---|
| | Knife | B x 30 x 3 |  | + |
| | Clamping wedge | B-3 x 24 x 11 |  | + |

| Cat. nr | Name | Dimensions | | |
|-----------|-------|-----------------|---|---|
| WHAS00046 | Screw | M10 P/L x 22 |  | • |
| WHA101398 | Nut | Ø15 x 15,5 x 13 |  | • |


Please, give type of knives with the order - catalogue page 8.7.


Spindle lock protecting on page 9.25.

Hydro-serrated head, type **GP-01H** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for very precise profiling of flat surfaces. The adjustment of knives height is made with precise serration. The head GP-01 works with the knives with thickness 4, 5, 8 or 10 mm. Special geometry, hydro system and very precise balancing of the head allow for higher feed speed and guarantee optimal workload of the machine spindle.

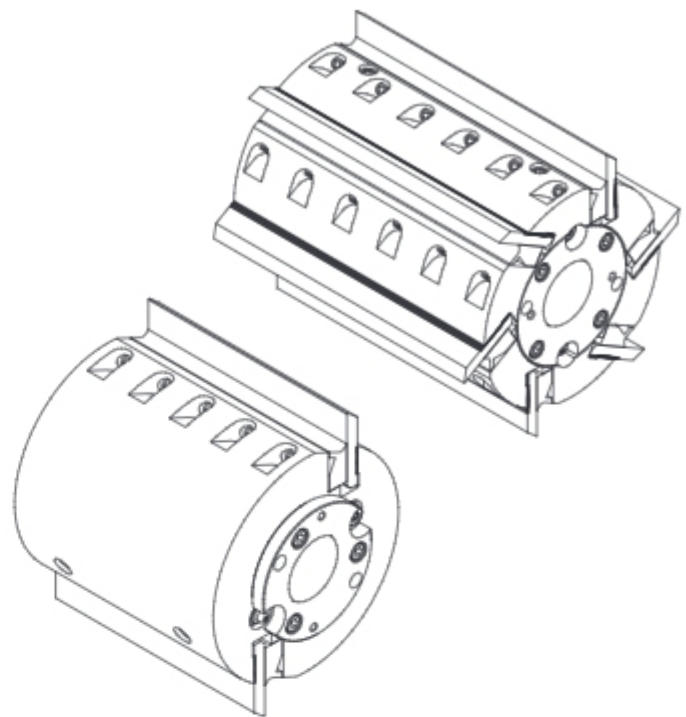
Type of work: profiling.

Material:

 solid soft wood

 solid hard wood



GP-01 H




| D
n
d
z | 150
6000
50
4 | 150
6000
50
6 | 150
6000
50
8 | 160
6000
50
4 | 160
6000
50
6 | 160
6000
50
8 | 180
6000
50
8 |
|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| B mm | ST | ST | ST | ST | ST | ST | ST |
| 60 | + | + | + | + | + | + | + |
| 80 | + | + | + | + | + | + | + |
| 100 | + | + | + | + | + | + | + |
| 150 | + | + | + | + | + | + | + |
| 160 | + | + | + | + | + | + | + |
| 200 | + | + | + | + | + | + | + |
| 230 | + | + | + | + | + | + | + |

| Catalogue number
(without knives) | Type | Body | D
mm | B
mm | d
mm | z | |
|--------------------------------------|---------|------|---------|---------|---------|---|---|
| GP01-160G6066-A | GP-01 H | ST | 160 | 60 | 50 | 6 | • |
| GP01-160G6088-A | GP-01 H | ST | 160 | 80 | 50 | 8 | • |
| GP01-160G6106-A | GP-01 H | ST | 160 | 100 | 50 | 6 | + |
| GP01-160G6158-A | GP-01 H | ST | 160 | 150 | 50 | 8 | + |

Spare parts for cutter heads GP-01 H

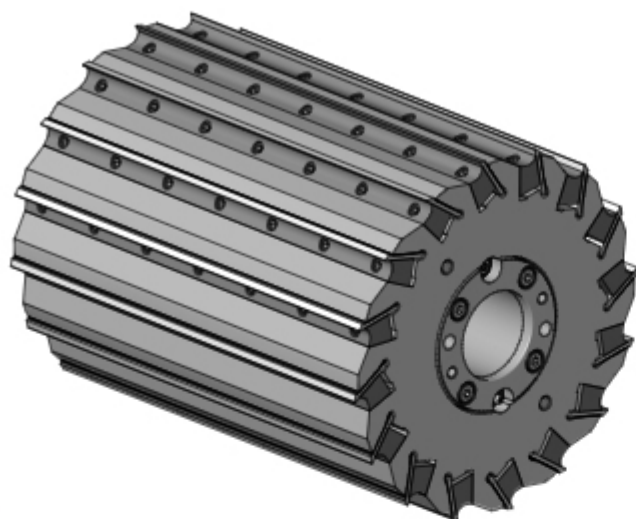
| Cat. nr | Name | Dimensions | | |
|---------|----------------|---------------|---|---|
| | Knife | B x 50 x 8 |  | + |
| | Clamping wedge | B x 25,5 x 13 |  | + |

| Cat. nr | Name | Dimensions | | |
|-----------|---------------|--------------|---|---|
| WHAW00012 | Screw DIN 915 | M10 x 1 x 20 |  | • |

Please, give type and thickness of cutting knives with the order. Knives can be found on page 8.4 (HSS knives) and 8.5 (knives with HM insret) of the catalogue.

Spindle lock protecting on page 9.25.



GP-03F H



Hydro-serrated head, type **GP-03H** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for very precise profiling of flat surfaces. The adjustment of knives height is made with precise serration. The head GP-01 works with the knives with thickness 4, 5, 8 or 10 mm. Special geometry, hydro system and very precise balancing of the head allow for higher feed speed and guarantee optimal workload of the machine spindle.

Type of work: pre-planing and precise planing.

Material:



-  solid soft wood
-  solid hard wood




| D
D ₁
n
d _{max}
z | 180/183 | 200/203 | 227/230 |
|---|-------------------------|-------------------------|-------------------------|
| | 175
6000
50
10 | 195
6000
50
12 | 222
6000
60
14 |
| B mm | ST | ST | ST |
| 60 | + | + | + |
| 80 | + | + | + |
| 100 | + | + | + |
| 150 | + | + | + |
| 160 | + | + | + |
| 200 | + | + | + |
| 235 | + | + | + |

| Catalogue number
(without knives) | Type | Body | D
mm | B
mm | d
mm | z | Hydro system | |
|--------------------------------------|---------|------|---------|---------|---------|----|--------------|---|
| GP03-175G62001-A | GP-03 H | ST | 180/183 | 200 | 50 | 10 | A | + |
| GP03-195G61505-A | GP-03 H | ST | 200/203 | 150 | 50 | 12 | A | + |
| GP03-242G83309-C | GP-03 H | ST | 247/250 | 330 | 60 | 16 | C | + |

Spare parts for cutter heads GP-03 H


| Cat. nr | Name | Dimensions | | |
|---------|----------------|---------------|---|---|
| | Knife | B x 35 x 4 |  | + |
| | Clamping wedge | B x 18,6 x 21 |  | + |


| Cat. nr | Name | Dimensions | | |
|-----------|------|------------|---|---|
| WHAW00007 | - | M10x20 |  | • |

Planer head with HSK-85WS clamping, type **1100-4 L** with suitable number of cutting teeth, used for professional machining of solid wood. The cutter head is designed for very precise planing of flat surfaces. The adjustment of knives height is made with springs. Precise HSK 85 WS clamping and very precise balancing of head allows for higher feed speed and higher rotation speed, up to 12 000 rpm.

Type of work: pre-planing and precise planing.

Material:

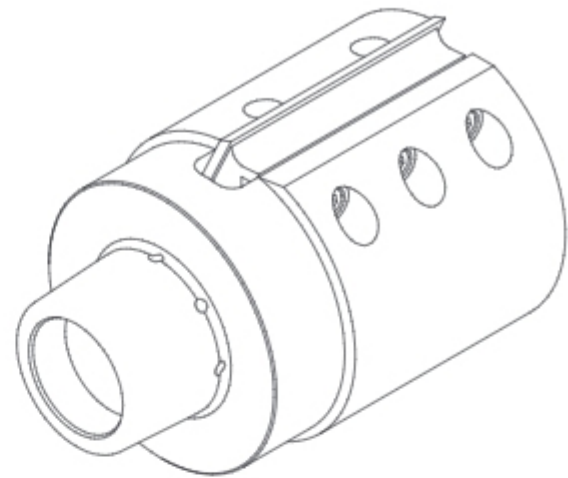
 solid soft wood

 solid hard wood

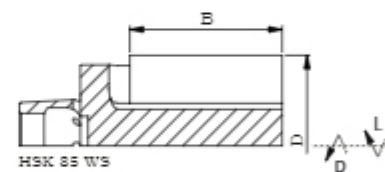
| D
z | 95
2 | 95
4 | 125
2 | 125
4 |
|--------|---------|---------|----------|----------|
| B mm | ST | ST | ST | ST |
| 60 | + | + | + | + |
| 80 | + | + | + | + |
| 100 | + | + | + | + |
| 130 | + | + | + | + |
| 150 | + | + | + | + |
| 180 | + | + | + | + |
| 200 | + | + | + | + |
| 230 | + | + | + | + |



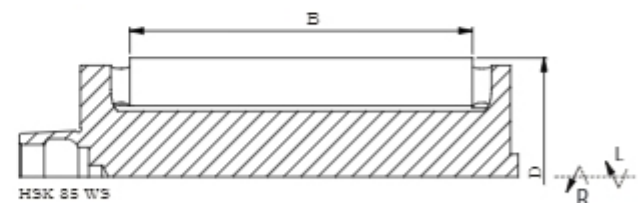
1100-4 L





B < 100 mm



B ≥ 100 mm



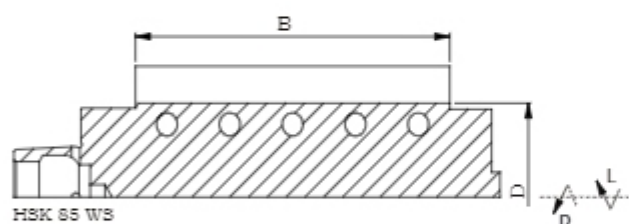
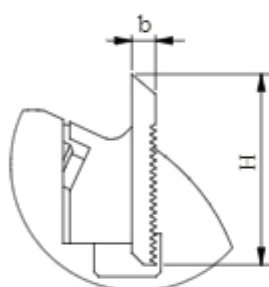
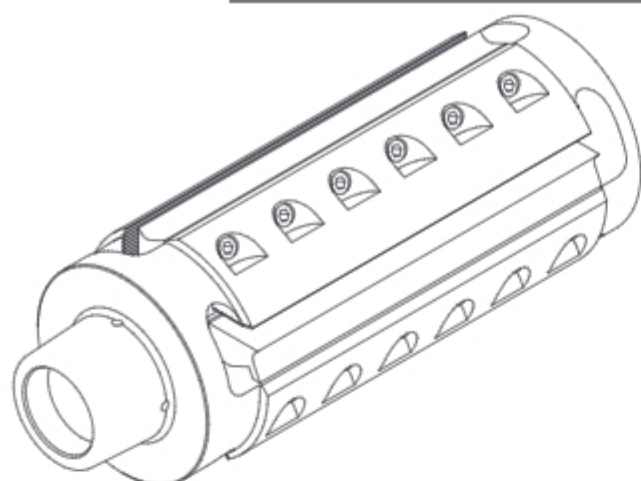
Spare parts for cutter heads 1100-4

| Cat. nr | Name | Dimensions | | |
|---------|----------------|---------------|---|---|
| | Knife | B x 30 x 3 |  | + |
| | Clamping wedge | B-3 x 24 x 11 |  | + |

| Cat. nr | Name | Dimensions | | |
|-----------|-------|--------------|---|---|
| WHAW00012 | Screw | M10 x 1 x 20 |  | • |

Please, give type of knives with the order - catalogue page 8.7.



GPL-01



Serrated head with HSK 85 WS clamping, type **GPL-01** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for very precise profiling. The adjustment of knives height is made with precise serration. The head GP-01 works with knives with thickness 8 or 10 mm. Precise HSK 85 WS clamping increased accuracy of rotation movement and very precise balancing of the head allows for higher feed speed and higher rotation speed, up to 12 000 rpm.

Type of work: precise profiling.

Material:



-  solid soft wood
-  solid hard wood


| D
z | 90
2 | 90
4 |
|--------|---------|---------|
| B mm | ST | ST |
| 60 | + | + |
| 80 | + | + |
| 100 | + | + |
| 130 | + | + |
| 150 | + | + |
| 180 | + | + |
| 200 | + | + |
| 230 | + | + |



| Catalogue number (without knives) | | Typ | D
mm | B
mm | | z | |
|-----------------------------------|------------------|--------|---------|---------|--------|---|---|
| right | left | | | | | | |
| GPL01-090-064P-B | GPL01-090-064L-B | GPL-01 | 90 | 60 | HSK 85 | 4 | + |
| GPL01-090-084P-B | GPL01-090-084L-B | GPL-01 | 90 | 80 | HSK 85 | 4 | + |
| GPL01-090-104P-B | GPL01-090-104L-B | GPL-01 | 90 | 100 | HSK 85 | 4 | + |
| GPL01-090-134P-B | GPL01-090-134L-B | GPL-01 | 90 | 130 | HSK 85 | 4 | + |
| GPL01-090-154P-B | GPL01-090-154L-B | GPL-01 | 90 | 150 | HSK 85 | 4 | + |
| GPL01-090-184P-B | GPL01-090-184L-B | GPL-01 | 90 | 180 | HSK 85 | 4 | + |
| GPL01-090-234P-B | GPL01-090-234L-B | GPL-01 | 90 | 230 | HSK 85 | 4 | + |

Spare parts for cutter heads GPL-01

| Cat. nr | Name | Dimensions | | |
|---------|----------------|---------------|---|---|
| | Knife | B x 50 x 8 |  | + |
| | Clamping wedge | B x 25,5 x 13 |  | + |



| Cat. nr | Name | Dimensions | | |
|-----------|---------------|--------------|---|---|
| WHAW00012 | Screw DIN 915 | M10 x 1 x 20 |  | * |

Please, give type and thickness of cutting knives with the order. Knives can be found on page 8.4 (HSS knives) and 8.5 (knives with HM insret) of the catalogue.

Serrated head with HSK 85 WS clamping, type **GPL-03** with suitable number of cutting teeth, designed for professional machining of solid wood. The cutter head is used for very precise surface profiling. The adjustment of knives height is made with precise serration. The head GP-01 works with knives with thickness 5 mm. Precise HSK 85 WS clamping and very precise balancing of the head allows for higher feed speed and higher rotation speed, up to 12 000 rpm.

Type of work: precise profiling.

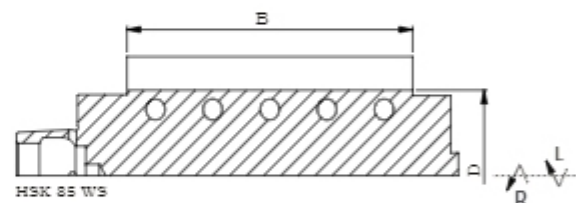
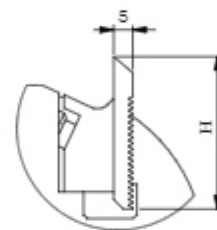
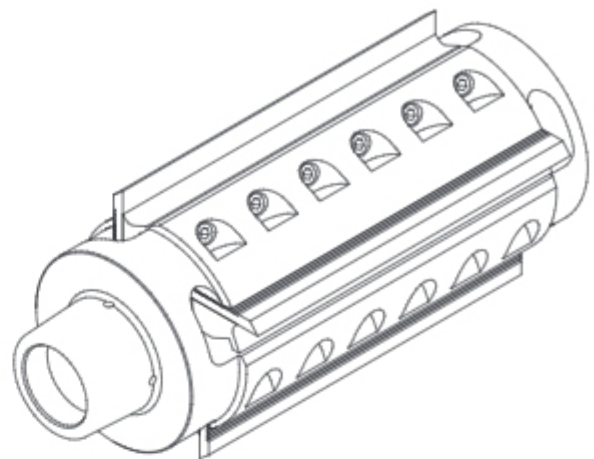
Material:

-  solid soft wood
 solid hard wood

| D
z | 90
2 | 90
4 |
|--------|---------|---------|
| B mm | | |
| 60 | + | + |
| 80 | + | + |
| 130 | + | + |
| 170 | + | + |
| 230 | + | + |
| 240 | + | + |



GPL-03



5



| Catalogue number (without knives) | | Type | D
mm | B
mm | | z | |
|-----------------------------------|------------------|--------|---------|---------|--------|---|---|
| right | left | | | | | | |
| GPL03-090-064P-A | GPL03-090-064L-A | GPL-03 | 90 | 60 | HSK 85 | 4 | + |
| GPL03-090-084P-B | GPL03-090-084L-B | GPL-03 | 90 | 80 | HSK 85 | 4 | + |
| GPL03-090-134P-B | GPL03-090-134L-B | GPL-03 | 90 | 130 | HSK 85 | 4 | + |
| GPL03-090-174P-B | GPL03-090-174L-B | GPL-03 | 90 | 170 | HSK 85 | 4 | + |
| GPL03-090-234P-B | GPL03-090-234L-B | GPL-03 | 90 | 230 | HSK 85 | 4 | + |
| GPL03-090-244P-B | GPL03-090-244L-B | GPL-03 | 90 | 240 | HSK 85 | 4 | + |

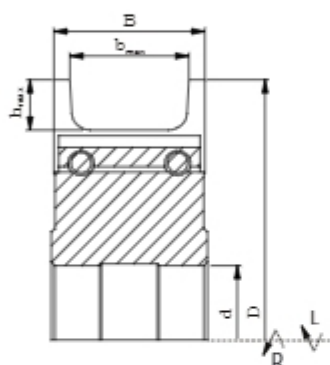
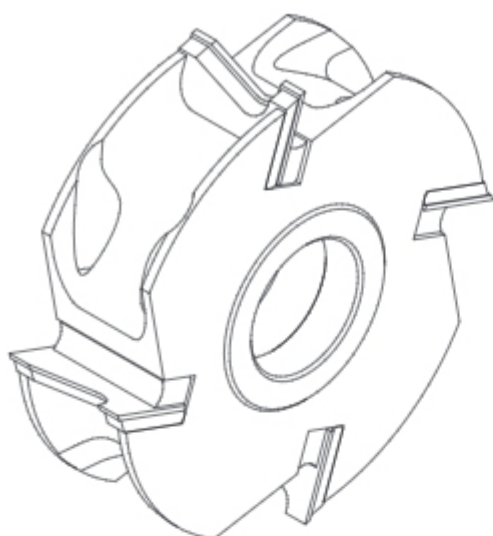
Spare parts for cutter heads GPL-03

| Cat. nr | Name | Dimensions | | |
|---------|----------------|---------------|---|---|
| | Knife | B x 40 x 5 |  | + |
| | Clamping wedge | B x 25,5 x 13 |  | + |

| Cat. nr | Name | Dimensions | | |
|-----------|-------|--------------|---|---|
| WHAW00012 | Screw | M10 x 1 x 20 |  | • |

Please, give type and thickness of cutting knives with the order. Knives can be found on page 8.4 (HSS knives) and 8.5 (knives with HM insert) of the catalogue.

GPU-01

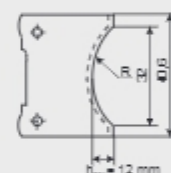
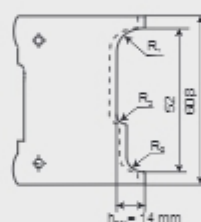


Universal profile inserted head, type **GPU-01** with suitable number of cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for profiling. The profiles are manufactured according to individual customer request and their dimensions have to be adapted to the sizes of insert, which are shown on the drawing below. Design of universal head, except profile knives, contains also support-inserts with shape adapted to the profile knives. The body is made from steel or aluminum.

Type of work: profiling.

Material: solid hard wood, chipboard, MDF.

Maximum dimensions of blades profile for width 60 mm and 40 mm.



| D
n
d
b
z | 125
9000
40
32-52
2-6 | | 150
9000
60
32-52
2-6 | | 180
6000
60
32-52
4 | | 200
6000
60
32-52
4 | | |
|-----------------------|-----------------------------------|----|-----------------------------------|----|---------------------------------|----|---------------------------------|----|----|
| | B mm | ST | AL | ST | AL | ST | AL | ST | AL |
| 40 | | + | + | + | + | + | + | + | + |
| 60 | | + | + | + | + | + | + | + | + |

| Catalogue number (without Inserts) | Type | Body | D mm | B mm | b mm | d mm | z | | |
|------------------------------------|--------|------|------|------|------|------|---|----|---|
| GU01-125-4404P-0 | GPU-01 | ST | 125 | 40 | 32 | 40 | 4 | HM | + |
| GU01-125-4604P-0 | GPU-01 | ST | 125 | 60 | 52 | 40 | 4 | HM | + |
| GU01-140-4404P-0 | GPU-01 | ST | 140 | 40 | 32 | 40 | 4 | HM | + |
| GU01-180-4404P-0 | GPU-01 | ST | 180 | 40 | 32 | 40 | 4 | HM | + |
| GU01-180-4604P-0 | GPU-01 | ST | 180 | 60 | 52 | 40 | 4 | HM | + |

Spare parts for cutter heads GPU-01, B=60

| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | | |
|---------|----------------|--------------|--|---|-----------|----------------|---------------|--|---|
| | Knife | B x 30 x 1,5 | | + | | Support insert | 60,8 x 28 x 4 | | + |
| | Clamping wedge | B-2x12x8 | | + | WHAW00005 | Screw DIN 915 | M8x16 | | • |

GPU-02

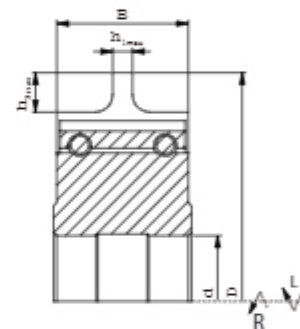
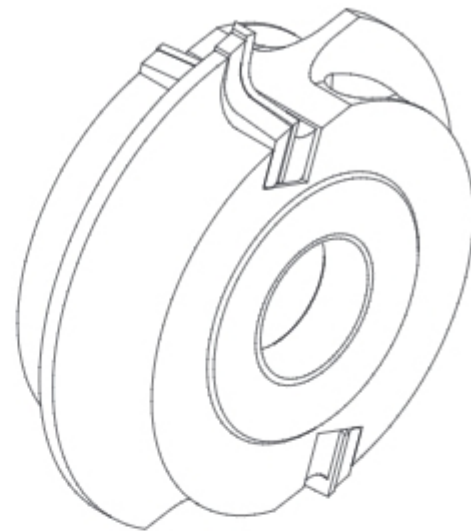
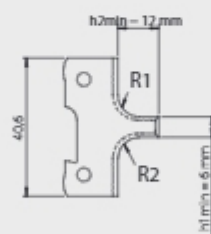
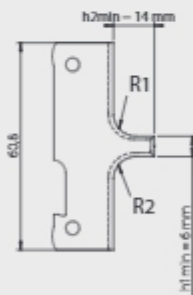
Universal profile inserted head, type **GPU-02** with two, three or four cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for profiling. The profiles are manufactured according to individual customer request and their dimensions have to be adapted to the sizes of insert, which are shown on the drawing below. Design of universal head, except profile knives, contains also support-inserts with shape adapted to the profile knives. The body is made from steel or aluminum.

Type of work: profiling.

Material: solid hard wood, glued wood, chipboard, MDF.

| D
mm | 125
9000
35
2 | | 150
9000
60
3 | | 180
6000
60
3 | | 200
6000
60
4 | |
|---------|------------------------|----|------------------------|----|------------------------|----|------------------------|----|
| B mm | ST | AL | ST | AL | ST | AL | ST | AL |
| 40 | + | + | + | + | + | + | + | + |
| 60 | + | + | + | + | + | + | + | + |

Maximum dimensions of blades profile for width 60 mm and 40 mm.



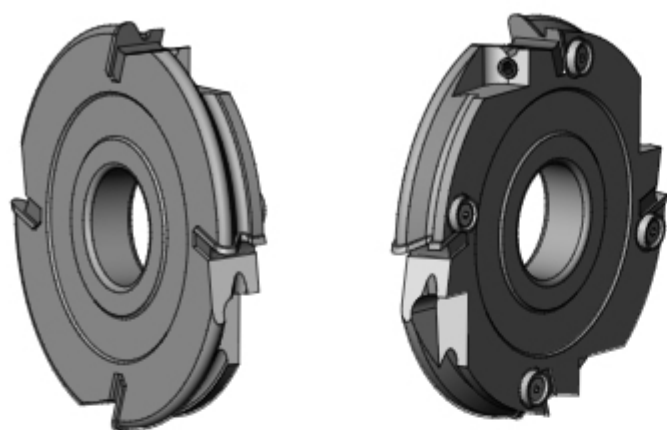
| Catalogue number
(without inserts) | Type | Body | D
mm | B
mm | d
mm | z | | |
|---------------------------------------|--------|------|---------|---------|---------|---|----|---|
| GU02-125-3402P-0 | GPU-02 | ST | 125 | 40 | 35 | 2 | HM | + |
| GU02-150-2403P-0 | GPU-02 | ST | 150 | 40 | 30 | 3 | HM | + |

Spare parts for cutter heads GPU-02

| Cat. nr | Name | Dimensions | | |
|---------|----------------|------------|--|---|
| | Knife | Bx27,5x1,5 | | + |
| | Clamping wedge | B-2x12x8 | | + |

| Cat. nr | Name | Dimensions | | |
|-----------|---------------|------------|--|---|
| WHAW00004 | Screw DIN 915 | M6x16 | | • |

GPF-01



Profile inserted head, type **GPF-01**, with three or four exchangeable HM knives. The cutter head is used for cutting solid wood and wood-based materials such as chipboard, MDF and others. The cutter head GPF-01 is designed with an axial angle of 5 degrees for precise profiling of kitchen front handle.

Body made from steel. Aluminum body available on request.

Type of work: profiling according to drawing.

Material: solid hard wood, chipboard, MDF.



| Catalogue number
(without Inserts) | Type | Body | D
mm | B
mm | d
mm | z | n _{mm} | | |
|---------------------------------------|------|------|---------|---------|---------|-----|-----------------|----|---|
| G56-0368P-0 | G-56 | ST | 125 | 19,5 | 30 | 3.1 | 9000 | HM | + |
| G56-0369P-0 | G-56 | ST | 125 | 19,5 | 30 | 4.1 | 9000 | HM | + |
| G56-0367P-0 | G-56 | ST | 140 | 19,5 | 40 | 3.1 | 6000 | HM | + |
| G56-0366P-0 | G-56 | ST | 140 | 19,5 | 40 | 4.1 | 6000 | HM | + |

Spare parts for cutter heads G-56

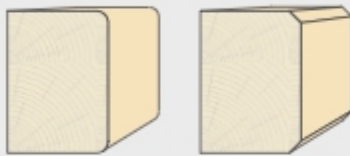
| Cat. nr | Name | Dimensions | Quantity | |
|-----------|----------------|-------------|----------|---|
| N0034075 | Knife | 20x20x2 | 3/4 pcs. | + |
| WHAKA0203 | Clamping wedge | 18x11,5x5,5 | 3/4 pcs. | + |
| WHAS00015 | Screw TOR 1065 | M5x10 | 3/4 pcs. | • |

| Cat. nr | Name | Dimensions | Quantity | |
|-----------|-----------------|-------------|----------|---|
| WHAW00005 | Clamp screw | M8 x 16 | 3/4 pcs. | • |
| WHAT00044 | Locating sleeve | Ø12x3,6/6,5 | 3/4 pcs. | • |

Set of adjustable inserted heads, type **GFP-06** with suitable number of cutting teeth, designed for professional machining of wood and wood-based materials such as chipboard, MDF and others. The set is used for edge rounding and beveling of the machined elements Increased regulation range. Width is regulated with spacer rings included in the set.

Type of work: edge profiling, rounding, beveling.

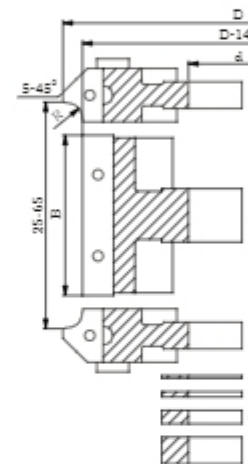
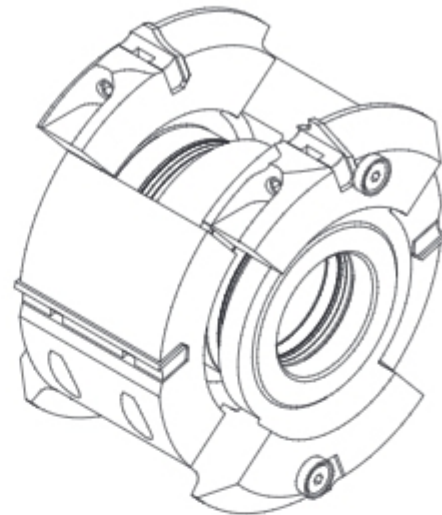
Material: solid wood, chipboard, MDF.



| Nr | D
mm | B
mm | d
mm | Rmm/° | n _{max} | ↕ | |
|----|---------|---------|---------|----------------------|------------------|---|---|
| 1. | 134 | 20 | 50 | 5/45° | 9000 | L | + |
| 2. | 120 | 60 | 50 | 5/45° | 9000 | | + |
| 3. | 134 | 20 | 50 | 5/45° | 9000 | R | + |
| 4. | 70 | 1 | 50 | Distance ring 1 pc. | | | + |
| 5. | 70 | 2 | 50 | Distance ring 2 pcs. | | | + |
| 6. | 70 | 5 | 50 | Distance ring 3 pcs. | | | + |
| 7. | 70 | 10 | 50 | Distance ring 2 pcs. | | | + |



GFP-06



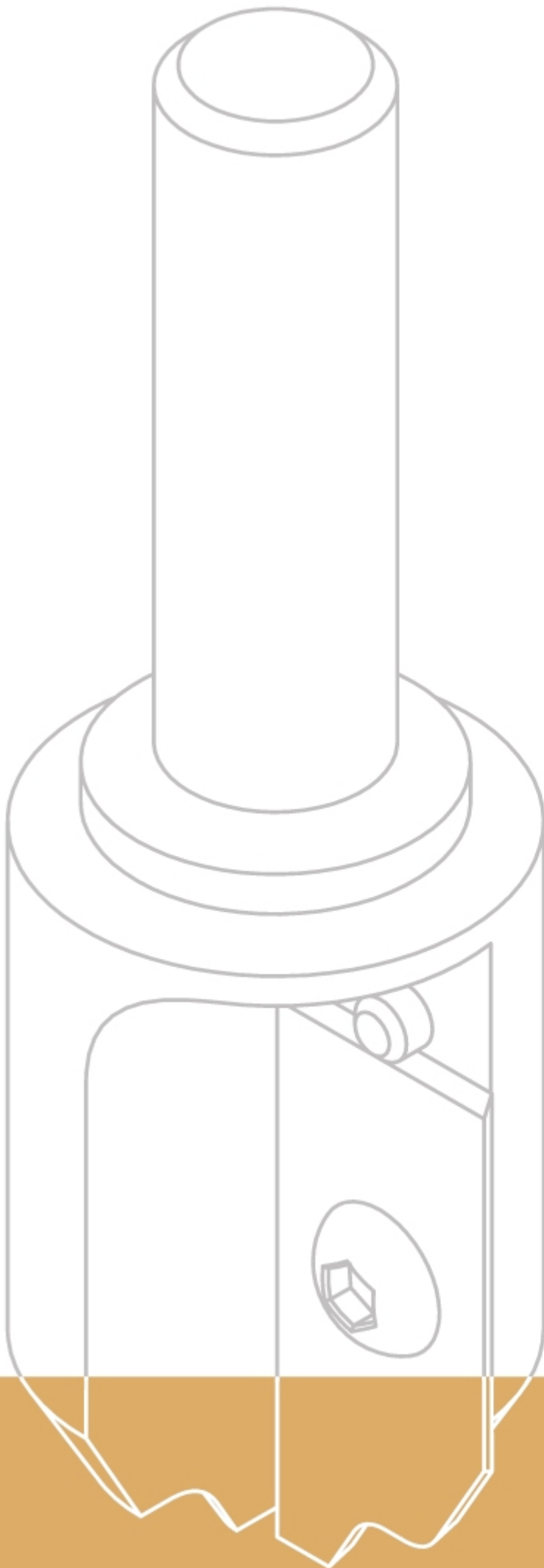
| D
mm | 114 | 125 | 134 | 134 | 140 | 160 | 160 | 180 | 180 |
|------------------|------|------|------|------|------|------|------|------|------|
| n _{max} | 9000 | 9000 | 9000 | 9000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| d
mm | 35 | 40 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| z | 2 | 2 | 2 | 3 | 4 | 3 | 4 | 4 | 6 |
| B mm | ST | AL | ST | AL | ST | AL | ST | AL | ST |
| 25-65 | + | + | + | + | + | + | + | + | + |

| Catalogue number | Type | Body | D
mm | d
mm | R mm/° | z | | |
|------------------|--------|------|---------|---------|--------|---|----|---|
| GF06-0263-00 | GFP-06 | ST | 114 | 35 | 5/45° | 2 | HM | + |
| GF06-0006-00 | GFP-06 | ST | 134 | 35 | 5/45° | 2 | HM | + |
| GF06-0003-00 | GFP-06 | ST | 134 | 40 | 5/45° | 2 | HM | + |

Spare parts for set of cutter heads GFP-06

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|-----------|-------------------|------------|---|-----------|----------------|------------|---|
| N0000811 | Stright knife | 60x12x1,5 |  | WHAS00006 | Screw TOR 1128 | M6x10 |  |
| N0000902 | Profile knife P/L | 20x20x2 |  | WHAS00011 | Screw TOR 1011 | M7x20 |  |
| N0000903 | | | | WHAW00004 | Push screw | M6x16 |  |
| WHAT00358 | Weating sleeve | 12x6,5x2,5 |  | | | | |





6. Shank tools

Shank tools

Shank tools offered as cutters with brazed HSS or HM tips, cutter heads with exchangeable inserts and spiral monolithic cutters. Shank cutters with tips from high speed steel (HSS) designed for professional machining of solid soft wood and with carbide (HM) tips designed for professional machining of solid soft and hard wood, glued wood and other wood-based materials. They are used for through and dowel drilling, grooving, rebating, edge profiling and nesting.

Shank cutters and cutter heads are made from the highest quality high speed cutting steel in special heat treatment technology, which has been properly selected for the type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work of the tool, both in standard and extreme conditions. Monolithic spiral cutters are made entirely from carbide in advanced profile sharpening technology.

The tools are designed and produced with or without shear angle and optimized chip flow as well as geometry guaranteeing chip flow up or down, depending on needs, in case of monolithic shank cutters. Very precise balancing of the tools allows for working with rotation speed up to 24 000 r.p.m. All shank tools are designed mostly for CNC machines.

All types of cutters and cutter heads are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

The *Shank tools* chapter includes only example types of cutters and cutter heads and sets of cutter heads with basic dimensions. On request, we can suggest, design and manufacture a proper tool for the required type of work, material, parameters and conditions during machining. The production time of catalogue cutters or sets indicated with "+" as well as special tools made on client's request, in most cases does not take more than 10-15 working days.

Orders should include:

- outer diameter (D) or diameters range,
- shank diameter (d),
- shank length (s),
- number of teeth (z) or spindle rotation speed and feed speed,
- type of machined material,
- profile drawing with dimensions or profile sample,
- other information relevant for designing and production process.



Contents

6. SHANK TOOLS

| | |
|--|------|
| Pictograms | 6.4 |
| Shank tools coding system | 6.5 |
| Rotation direction | 6.5 |
| Basic machining parameters | 6.5 |
| 6.1 Cutters with brazed tip | 6.6 |
| 6.2 Cutter heads with exchangeable inserts | 6.8 |
| 6.3 Sets of profile cutter heads | 6.19 |
| 6.4 Spiral monolithic cutters | 6.21 |

Pictograms



solid dry softwood



solid dry hardwood



chipboard



glued wood



MDF



plastics



grooving



edge machining



profiling



rebating



finishing



formatting



engraving



through drilling



dowel drilling



step drilling



counterboring



chip breaking



mechanical feed



manual feed



high-speed cutting steel



carbide



carbide monolith

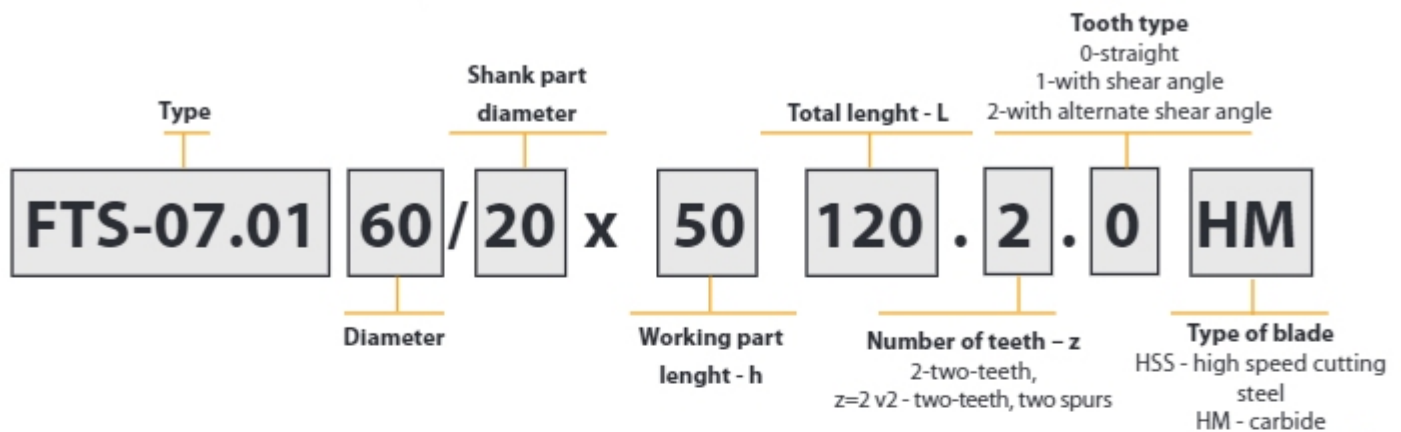


CNC

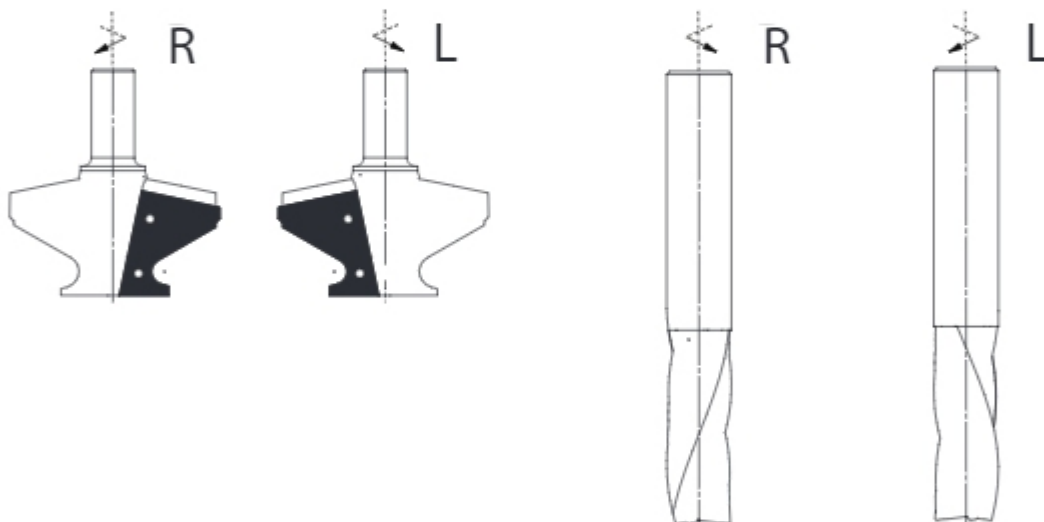
6

• available / stock product
 + production time 10-15 working days.
 Minimum order for shank cutters and cutter heads - 1 pc.
 Minimum order for THM - 3 pcs.

Shank tools coding system



Rotation direction



6

Basic cutting parameters

Cutting speed V_c

$$V_c = \frac{D \times n \times \pi}{60\,000} \text{ [m/s]}$$

D - tool diameter [mm]
n - rotation speed [1/min]
 p_z - feed per tooth [mm]
 p_{min} - feed per minute [m/min]
z - number of teeth
 $\pi = 3,14$

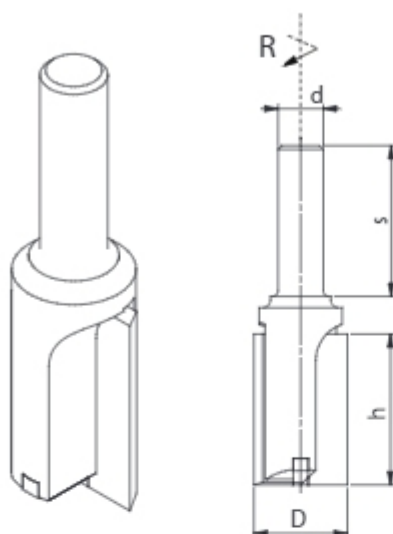
Feed p_{min} / p_z

$$p_{min} \text{ [m/min]} \longleftrightarrow p_z \text{ [mm/tooth]}$$

$$p_{min} = \frac{p_z \times n \times z}{1\,000}$$

$$p_z = \frac{p_{min} \times 1\,000}{n \times z}$$

TW-01-2



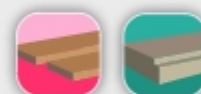
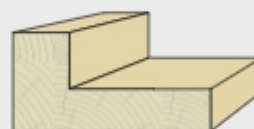
Straight shank cutter, type **TW-01-2** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for longitudinal cutting – formatting or rebating.

Type of work: formatting, rebating.

Material:

solid softwood

solid hardwood, glued wood, chipboard, MDF



| D
n
d
z | 12
24000
25
2 | 14
24000
25
2 | 16
24000
25
2 | 18
24000
25
2 | 20
24000
25
2 | 25
24000
25
2 | 30
24000
25
2 | 40
24000
25
2 |
|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| h mm | HSS | HM | HSS | HM | HSS | HM | HSS | HM |
| 10 | + | + | + | + | + | + | + | + |
| 15 | + | + | + | + | + | + | + | + |
| 20 | + | + | + | + | + | + | + | + |
| 25 | + | + | + | + | + | + | + | + |
| 30 | + | + | + | + | + | + | + | + |
| 40 | + | + | + | + | + | + | + | + |
| 50 | | | + | + | + | + | + | + |
| 60 | | | + | + | + | + | + | + |


| Catalogue number | Type | D
mm | dxs
mm | h
mm | L
mm | z | | |
|------------------|---------|---------|-----------|---------|---------|---|----|-----|
| TW.01-2.18/003 | TW-01-2 | 12 | 12x30 | 30 | 65 | 2 | HM | R + |
| TW.01-2.38/001 | TW-01-2 | 14 | 12x30 | 30 | 60 | 2 | HM | R + |
| TW.01-2.20/002 | TW-01-2 | 16 | 12x30 | 30 | 65 | 2 | HM | R + |
| TW.01-2.45/002 | TW-01-2 | 18 | 12x30 | 30 | 65 | 2 | HM | R + |
| TW.01-2.21/001 | TW-01-2 | 20 | 12x30 | 30 | 65 | 2 | HM | R • |
| TW.01-2.23/001 | TW-01-2 | 25 | 12x30 | 30 | 65 | 2 | HM | R + |
| TW.01-2.02/001 | TW-01-2 | 30 | 12x30 | 30 | 65 | 2 | HM | R + |


TW-07

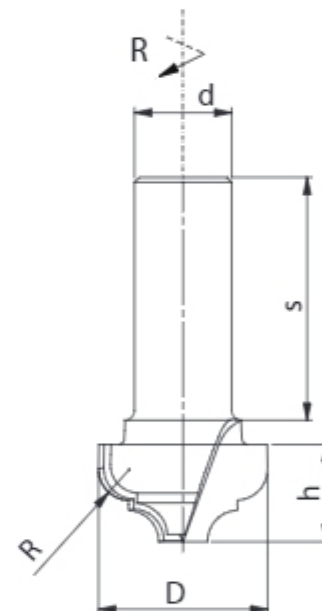
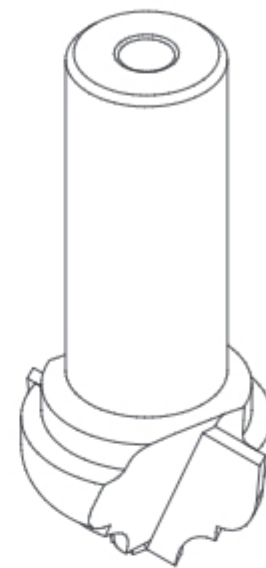
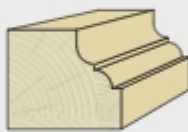
Profile shank cutter, type **TW-07** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for surface profiling. Special blade geometry allows for dowel drilling.

Type of work: profiling, dowel drilling.

Material:

 solid softwood

 hard wood, glued wood, chipboard, MDF



6

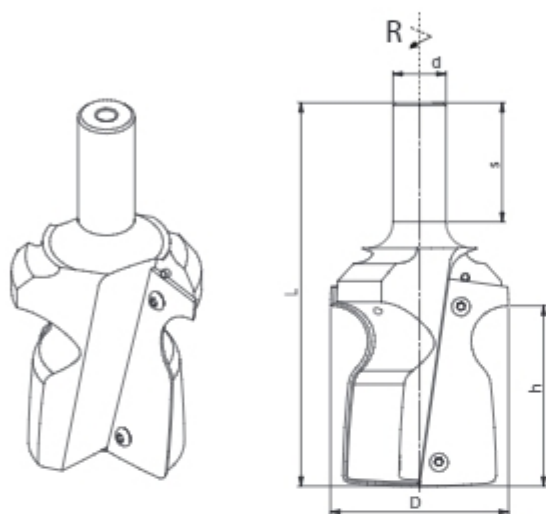
| D
n
d
z | 35
24000
25
2 | | 40
24000
25
2 | | 55
24000
25
2 | | 70
24000
25
2 | |
|------------------|------------------------|-------|------------------------|-------|------------------------|-------|------------------------|---|
| | B mm | HSSHM | HSSHM | HSSHM | HSSHM | HSSHM | | |
| 20 | + | + | + | + | + | + | + | + |
| 25 | + | + | + | + | + | + | + | + |
| 30 | + | + | + | + | + | + | + | + |
| 35 | | | + | + | + | + | + | + |
| 40 | | | | | + | + | + | + |

| Catalogue number | Type | D mm | d _{xs} mm | h mm | L mm | R mm | z | | | |
|------------------|-------|------|--------------------|------|------|-------|---|----|---|---|
| TW.07.01/001 | TW-07 | 35 | 10x30 | 20 | 55 | 2x6,5 | 2 | HM | R | + |
| TW.07.01/002 | TW-07 | 35 | 12x30 | 20 | 55 | 2x6,5 | 2 | HM | R | + |

FTS-01 / 10

Profile shank cutter head, type **FTS-01** or **FTS-10** with suitable number of cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head with body working with given blade profile (HM inserts). Cutter heads FTS-01 and FTS-10 are designed and produced only on client's individual request.

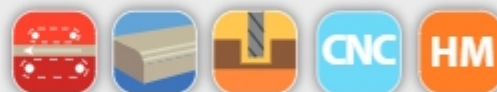
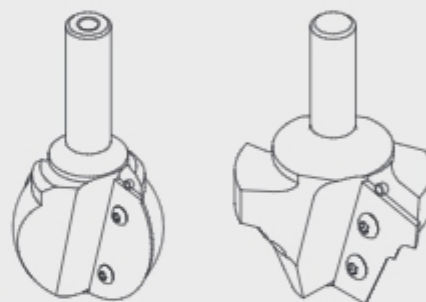
FTS-01 R or L



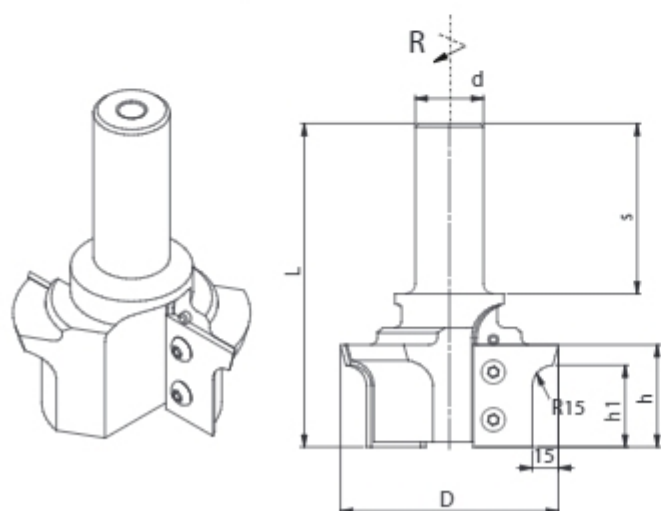
Cutter head **FTS-01** designed for surface profiling. Special blade geometry allows for dowel drilling.

Type of work: profiling, dowel drilling.

Material: solid hardwood, glued wood, chipboard, MDF and others.



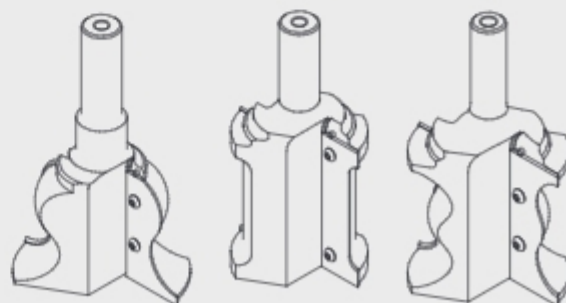
FTS-10 R or L



Cutter head **FTS-10** designed for surface profiling without dowel drilling ability.

Type of work: profiling without dowel drilling ability.

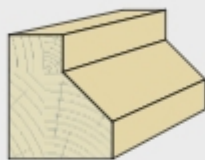
Material: solid hardwood, glued wood, chipboard, MDF and others.



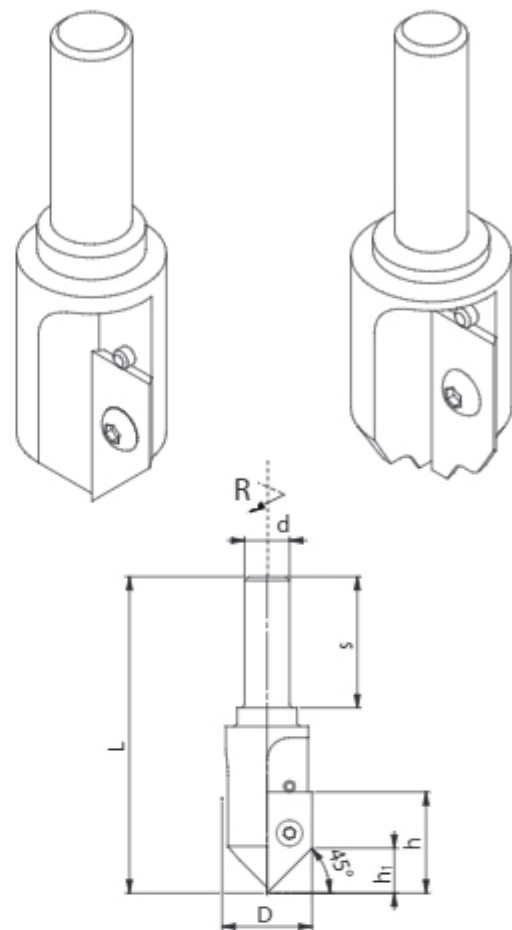
Profile shank cutter head, type **FTS-02** with one cutting tooth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head with body working with given blade profile (HM inserts) is used for surface profiling. Cutter heads FTS-02 are designed and produced only on client's individual request, within the range of $h_1=12$ mm.

Type of work: profiling, dowel drilling.

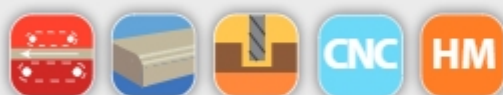
Material: solid hardwood, glued wood, chipboard, MDF and others.



FTS-02 R or L



6



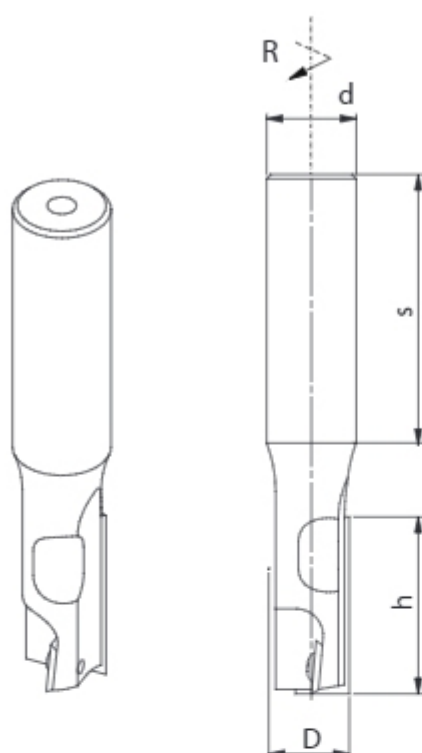
| D
mm | 20
24000
25
1 | 22
24000
25
1 | 24
24000
25
1 |
|---------|------------------------|------------------------|------------------------|
| h mm | | | |
| 27 | + | + | + |

| Catalogue number | Type | D mm | dxs mm | h mm | h ₁ mm | L mm | ∠ | z | | ↗ |
|------------------|--------|------|--------|------|-------------------|------|-----|---|----|-----|
| FTS.02.01/001 | FTS-02 | 24 | 12 | 27 | 12 | 83 | 45° | 1 | HM | R + |
| FTS.02.01/002 | FTS-02 | 24 | 25 | 27 | 12 | 113 | 45° | 1 | HM | R + |

Spare parts for cutter heads FTS-02

| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | | |
|----------------------|-------|--------------------------------|--|---|-----------|-----------------|------------|--|---|
| N0000910
N0000911 | Knife | 27x12x1,5 - P
27x12x1,5 - L | | + | WHAS00004 | Screw STAMPF 94 | M4x6 | | • |
| | Knife | 27x12x1,5 | | + | WHA100003 | Locating pin | 3x6 | | • |

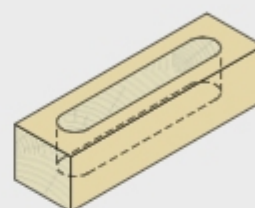
FTS-03 R or L



Straight shank cutter head, type **FTS-03** with one cutting tooth and one drilling blade designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for rebating and grooving with drilling ability.

Type of work: rebating, grooving, drilling, formatting.

Material: solid hardwood, glued wood, chipboard, MDF and others.



| D
n
d
z
h mm | 18
24000
25
1+1 | 20
24000
25
1+1 | 25
24000
25
1+1 | 30
24000
25
1+1 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 12 | + | + | + | + |
| 29,5 | + | + | + | + |
| 39,5 | + | + | + | + |
| 49,5 | + | + | + | + |

| Catalogue number | Type | D
mm | d x s
mm | h
mm | L
mm | z | | | |
|------------------|--------|---------|-------------|---------|---------|-----|----|---|---|
| FTS.03P1853.01 | FTS-03 | 18 | 25x60 | 29,5 | 106 | 1+1 | HM | R | + |
| FTS.03P2053.01 | FTS-03 | 20 | 25x60 | 29,5 | 106 | 1+1 | HM | R | + |
| FTS.03P2553.01 | FTS-03 | 25 | 25x55 | 29,5 | 100 | 1+1 | HM | R | + |
| FTS.03P3053.01 | FTS-03 | 30 | 25x56 | 29,5 | 100 | 1+1 | HM | R | + |

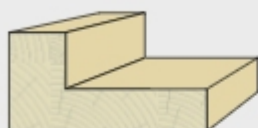
Spare parts for cutter heads FTS-03

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|----------|-------|-----------------------------|---|-----------|-----------------|----------------------------|---|
| N0000801 | Knife | 7,5 x 12 x 1,5 for D=18; 20 | • | N0000813 | Knife | 12 x 12 x 1,5 for D=25; 30 | • |
| N0000814 | Knife | 29,5 x 12 x 1,5 | • | WHAS00004 | Screw STAMPF 94 | M4x6 | • |

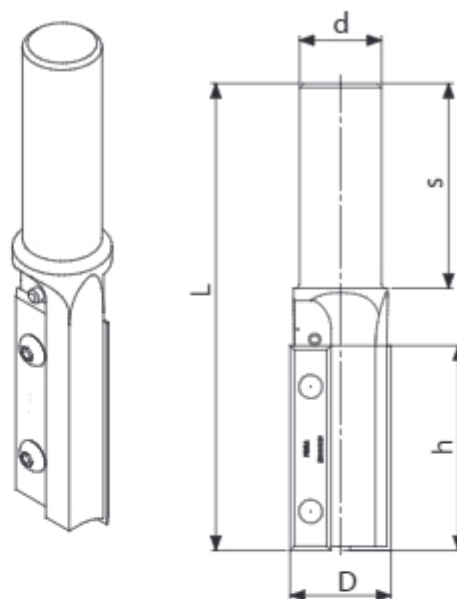
Straight shank cutter head, type **FTS-06** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for rebating and formatting.

Type of work: formatting, rebating.

Material: solid hardwood, glued wood, chipboard, MDF and others.



FTS-06 R or L






6

| D
mm | 18
24000
25
2 | 20
24000
25
2 | 25
24000
25
2 | 27
24000
25
2 |
|---------|------------------------|------------------------|------------------------|------------------------|
| h mm | | | | |
| 29,5 | + | + | + | + |
| 39,5 | + | + | + | + |
| 49,5 | + | + | + | + |

| Catalogue number | Type | D
mm | d _{xs}
mm | h
mm | L
mm | z | | | |
|------------------|--------|---------|-----------------------|---------|---------|---|----|---|---|
| FTS.06P1843.01 | FTS-06 | 18 | 20x45 | 29,5 | 95 | 2 | HM | R | + |
| FTS.06P1845.01 | FTS-06 | 18 | 20x45 | 49,5 | 110 | 2 | HM | R | + |
| FTS.06P2043.01 | FTS-06 | 20 | 20x60 | 29,5 | 95 | 2 | HM | R | + |
| FTS.06P2045.01 | FTS-06 | 20 | 20x60 | 49,5 | 125 | 2 | HM | R | • |
| FTS.06P2253.01 | FTS-06 | 22 | 25x60 | 29,5 | 105 | 2 | HM | R | + |
| FTS.06P2255.01 | FTS-06 | 22 | 25x60 | 49,5 | 125 | 2 | HM | R | + |
| FTS.06P2553.01 | FTS-06 | 25 | 25x55 | 29,5 | 105 | 2 | HM | R | + |
| FTS.06P2555.01 | FTS-06 | 25 | 25x60 | 49,5 | 125 | 2 | HM | R | + |
| FTS.06P2753.01 | FTS-06 | 27 | 25x60 | 29,5 | 105 | 2 | HM | R | + |
| FTS.06P2755.01 | FTS-06 | 27 | 25x60 | 49,5 | 125 | 2 | HM | R | + |

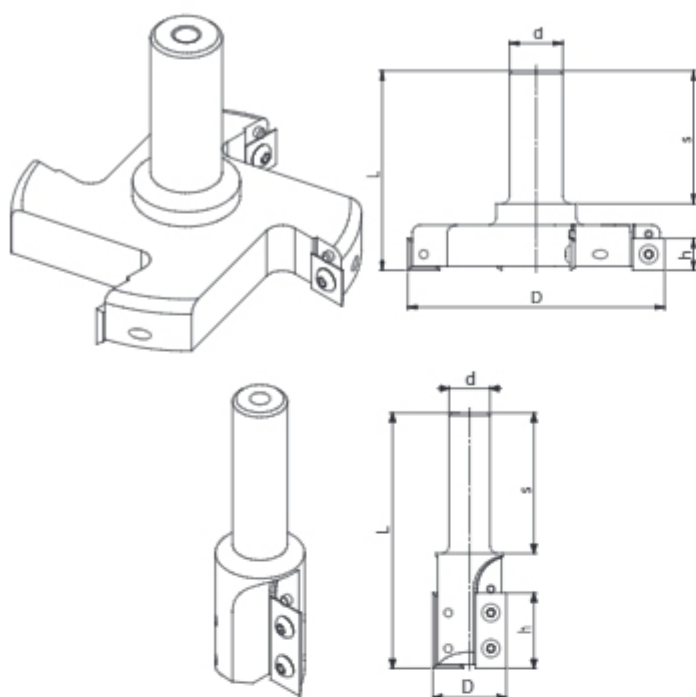
Spare parts for cutter heads FTS-06

| Cat. nr | Name | Dimensions | |
|----------|-------|-----------------|---|
| N0000814 | Knife | 29,5 x 12 x 1,5 |  |
| N0000816 | Knife | 49,5 x 12 x 1,5 |  |

| Cat. nr | Name | Dimensions | |
|-----------|-----------------|------------|---|
| WHAS00004 | Screw STAMPF 94 | M4x6 |  |

On request, we offer cutter head FTS-06 with drilling ability (brazed drilling tip).

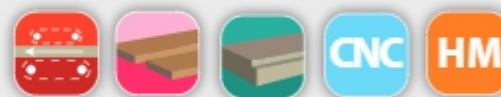
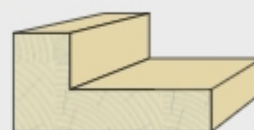
FTS-07.01 R or L



Straight shank cutter head, type **FTS-07.01** with suitable number of cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for rebating and formatting.

Type of work: formatting, rebating.

Material: solid hardwood, glued wood, chipboard, MDF and others.



| D
mm | 30
18000
25
2 | 35
18000
25
2 | 40
18000
25
2 | 45
18000
25
3 | 50
18000
25
3 | 60
18000
25
4 | 70
18000
25
4 | 80
18000
25
4 | 90
18000
25
4 |
|---------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| h mm | | | | | | | | | |
| 12 | + | + | + | + | + | + | + | + | + |
| 29,5 | + | + | + | + | + | + | + | + | + |
| 39,5 | + | + | + | + | + | + | + | + | + |
| 49,5 | + | + | + | + | + | + | + | + | + |
| 59,5 | + | + | + | + | + | + | + | + | + |

| Catalogue number right | Catalogue number left | Type | D mm | dx mm | h mm | L mm | z | HM | + |
|------------------------|-----------------------|-----------|------|-------|------|------|---|----|---|
| FTS.07P3011.01 | FTS.07L3011.01 | FTS.07.01 | 30 | 10x40 | 12 | 70 | 2 | HM | + |
| FTS.07P4053.01 | FTS.07L4053.01 | FTS.07.01 | 40 | 25x60 | 29,5 | 105 | 2 | HM | + |
| FTS.07P5045.01 | FTS.07L5045.01 | FTS.07.01 | 50 | 20x64 | 49,5 | 120 | 2 | HM | + |
| FTS.07P8051.01 | FTS.07L8051.01 | FTS.07.01 | 80 | 25x60 | 12 | 85 | 4 | HM | + |

Spare parts for cutter heads FTS-07.01

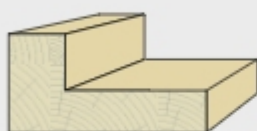
| Cat. nr | Name | Dimensions | |
|---------|-------|--------------|---|
| | Knife | B x 12 x 1,5 | + |

| Cat. nr | Name | Dimensions | |
|-----------|-----------------|------------|---|
| WHAS00004 | Screw STAMPF 94 | M4x6 | • |
| WHAI00003 | Locating pin | 3x6 | • |

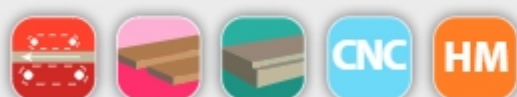
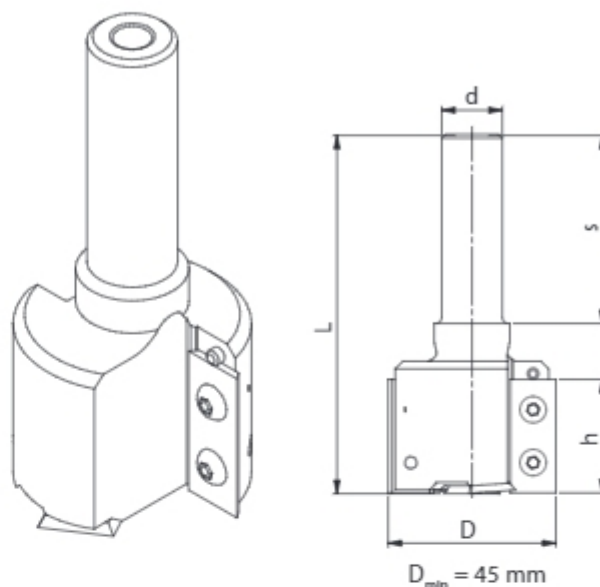
Straight shank cutter head, type **FTS-07.02** with two cutting teeth and two spurs, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for precise rebating and formatting.

Type of work: precise formatting, rebating.

Material: solid hardwood, glued wood, chipboard, MDF and others.








FTS-07.02 R or L



6

| Catalogue number right | Catalogue number left | Type | D mm | d _{xs} mm | h mm | L mm | z | | |
|------------------------|-----------------------|-----------|------|--------------------|------|------|------|----|---|
| FTS.07P4533.02 | FTS.07L4533.02 | FTS.07.02 | 45 | 16x60 | 30 | 95 | 2 v2 | HM | + |
| FTS.07P5041.01 | FTS.07L5041.01 | FTS.07.02 | 50 | 20x50 | 12 | 80 | 2 v2 | HM | + |
| FTS.07P6045.01 | FTS.07L6045.01 | FTS.07.02 | 60 | 20x60 | 50 | 120 | 2 v2 | HM | + |
| FTS.07P6046.02 | FTS.07L6046.02 | FTS.07.02 | 60 | 25x55 | 60 | 125 | 2 v2 | HM | + |

Spare parts for cutter heads FTS-07.02

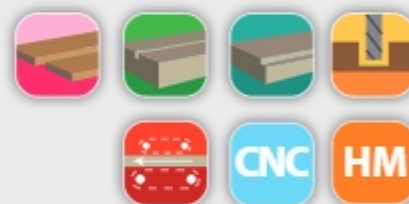
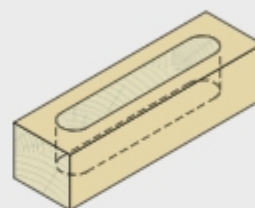
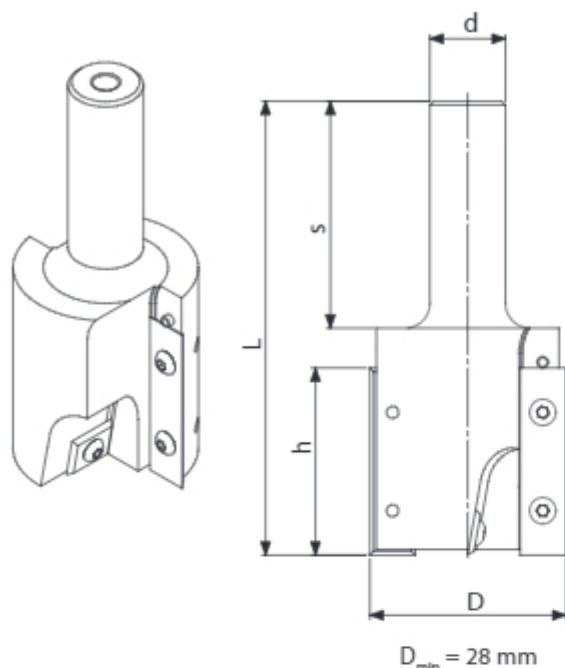
| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|----------|-------|---------------|---|-----------|-----------------|------------|---|
| | Knife | B x 12 x 1,5 |  + | WHAS00004 | Screw STAMPF 94 | M4x6 |  • |
| N0000818 | Knife | 14 x 14 x 1,5 |  • | WHAS00008 | Screw TOR 1064 | M5x6,5 |  • |
| | | | | WHA100003 | Locating pin | 3x6 |  • |

FTS-07.03 R or L

Straight shank cutter head, type **FTS-07.03** with two cutting teeth and one drilling blade, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for rebating and grooving with drilling ability.

Type of work: rebating, grooving, drilling, formatting.



Material: solid hardwood, glued wood, chipboard, MDF and others.





| D
mm | 28
18000
25
2+1 | 30
18000
25
2+1 | 35
18000
25
2+1 | 40
18000
25
2+1 | 50
18000
25
2+1 |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| h mm | | | | | |
| 12 | + | + | + | + | + |
| 29,5 | + | + | + | + | + |
| 39,5 | + | + | + | + | + |
| 49,5 | + | + | + | + | + |
| 59,5 | + | + | + | + | + |

| Catalogue number
right | Catalogue number
left | Type | D
mm | dxs
mm | h
mm | L
mm | z | | |
|---------------------------|--------------------------|-----------|---------|-----------|---------|---------|-----|----|---|
| FTS.07P2813.01 | FTS.07L2813.01 | FTS.07.03 | 28 | 12x49 | 29,5 | 85 | 2+1 | HM | + |
| FTS.07P3045.01 | FTS.07L3045.01 | FTS.07.03 | 30 | 20x62 | 49,5 | 118 | 2+1 | HM | + |
| FTS.07P3545.01 | FTS.07L3545.01 | FTS.07.03 | 35 | 20x62 | 49,5 | 118 | 2+1 | HM | + |
| FTS.07P4056.02 | FTS.07L4056.02 | FTS.07.03 | 40 | 25x55 | 59,5 | 120 | 2+1 | HM | + |
| FTS.07P4033.02 | FTS.07L4033.02 | FTS.07.03 | 40 | 16x55 | 29,5 | 90 | 2+1 | HM | + |

Spare parts for cutter heads FTS-07.03

| Cat. nr | Name | Dimensions | |
|----------|-------|--------------|---|
| N0000813 | Knife | 12x12x1,5 |  • |
| | Knife | B x 12 x 1,5 |  + |

| Cat. nr | Name | Dimensions | |
|-----------|-----------------|------------|---|
| WHAS00004 | Screw STAMPF 94 | M4x6 |  • |
| WHAI00003 | Locating pin | 3x6 |  • |

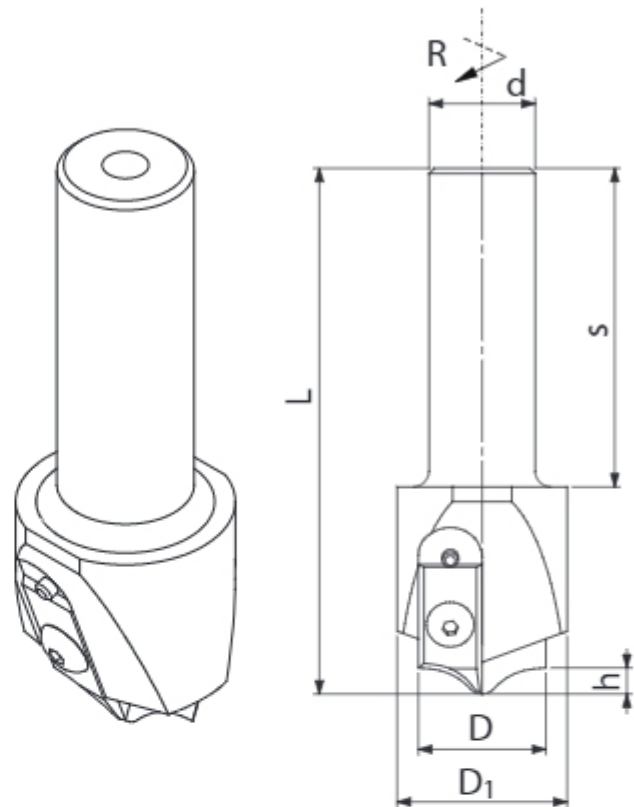
Universal profile cutter head, type **FTS-11** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head used for surface profiling. Insert profile, which shape must remain within dimensions shown in the drawing ($h_{\max} = 8$ mm), is made only according to individual order. The cutter head body is universal, special blade geometry allows for dowel drilling.

Type of work: profiling, dowel drilling.

Material: solid hardwood, glued wood, chipboard, MDF and others.



FTS-11



6



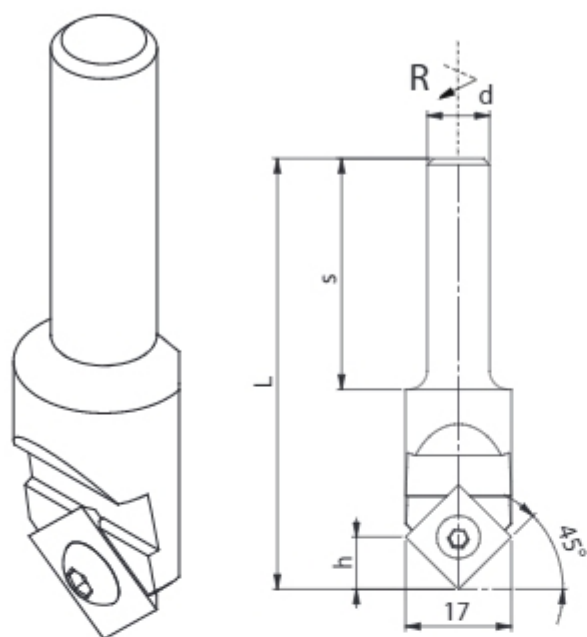
| Catalogue number
(without knives) | Type | D ₁
mm | D
mm | d x s
mm | h
mm | L
mm | z | | |
|--------------------------------------|--------|----------------------|---------|-------------|---------|---------|---|----|-----|
| FTS.11.01.K | FTS-11 | 32 | 24 | 25x40 | 8 | 89 | 2 | HM | R + |

Spare parts for cutter heads FTS-11

| Cat. nr | Name | Dimensions | |
|-----------|-----------------|--------------|--|
| | Knife | Bx12x1,5 P/L | |
| WHAS00004 | Screw STAMPF 94 | M4x6 | |

| Cat. nr | Name | Dimensions | |
|-----------|--------------|------------|--|
| WHA100003 | Locating pin | 3x6 | |

FTS-11-B



Universal profile cutter head, type **FTS-11-B** with one cutting tooth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for grooving and edge beveling of the machined elements.

Type of work: grooving, edge beveling, dowel drilling.

Material: solid hardwood, glued wood, chipboard, MDF and others.



| Catalogue number | Type | D
mm | dxs
mm | h
mm | L
mm | z | | | |
|------------------|----------|---------|-----------|---------|---------|---|----|---|---|
| FTS.11.10.00 | FTS-11-B | 17 | 10x20 | 8 | 48 | 1 | HM | R | + |
| FTS.11.08.00 | FTS-11-B | 17 | 10x37 | 8 | 70 | 1 | HM | R | + |
| FTS.11.11.00 | FTS-11-B | 17 | 12x47 | 8 | 80 | 1 | HM | R | + |
| FTS.11.09.00 | FTS-11-B | 17 | 16x47 | 8 | 80 | 1 | HM | R | + |
| FTS.11.12.00 | FTS-11-B | 17 | 25x52 | 8 | 80 | 1 | HM | R | + |
| FTS.11.07.00 | FTS-11-B | 17 | 12x100 | 8 | 133 | 1 | HM | R | + |

Spare parts for cutter heads FTS-11-B

| Cat. nr | Name | Dimensions | |
|----------|-------|---------------|---|
| N0000854 | Knife | 12 x 12 x 1,5 | • |

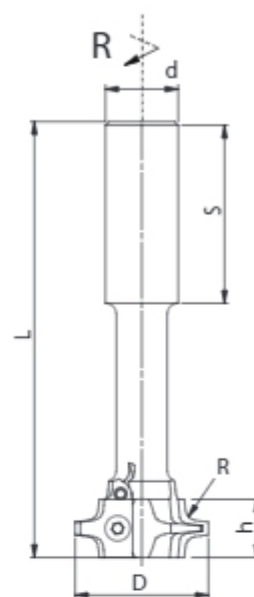
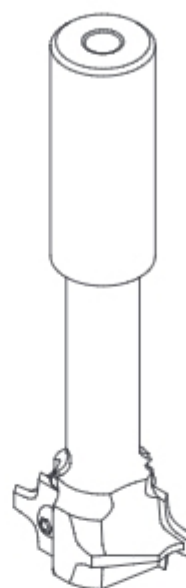
| Cat. nr | Name | Dimensions | |
|-----------|-----------------|------------|---|
| WHAS00004 | Screw STAMPF 94 | M4x6 | • |

Universal profile cutter head, type **FTS-13** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. Cutter head with universal body, used for edge rounding with radius from R2 to R5. Parallel cutting blades. Cutter head working with high rotation speed.

Type of work: edge rounding with radius R.

Material: solid hardwood, glued wood, chipboard, MDF and others.

FTS-13 R or L



| Catalogue number | Type | D
mm | dxs
mm | h
mm | L
mm | R
mm | z | | | |
|------------------|--------|---------|-----------|---------|---------|---------|---|----|---|---|
| FTS.13.18.00 | FTS-13 | 38 | 16x40 | 16 | 90 | 2 | 2 | HM | R | + |
| FTS.13.22.00 | FTS-13 | 38 | 20x50 | 16 | 100 | 3 | 2 | HM | R | + |
| FTS.13.14.00 | FTS-13 | 38 | 25x50 | 16 | 100 | 5 | 2 | HM | R | + |

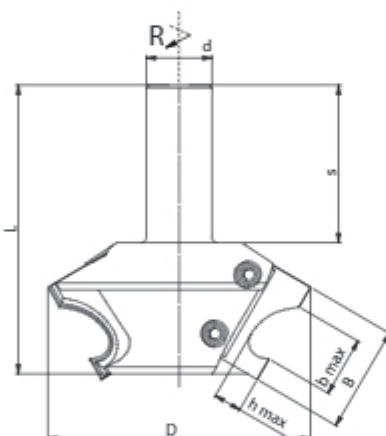
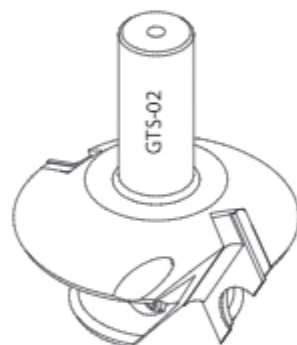
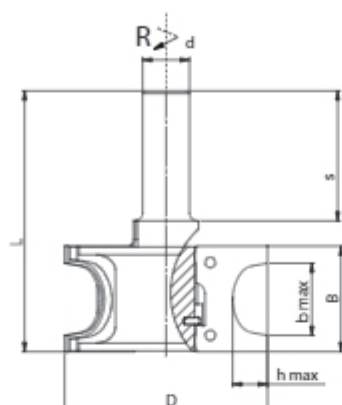
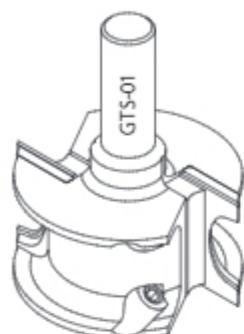
Spare parts for cutter heads FTS-13

| Cat. nr | Name | Dimensions | | |
|-----------|-----------------|-------------|--|---|
| | Profile knife | 16x17,5x2 R | | + |
| WHAS00004 | Screw STAMPF 94 | M4x6 | | • |

| Cat. nr | Name | Dimensions | | |
|-----------|--------------|------------|--|---|
| WHAI00003 | Locating pin | 3x6 | | • |

GTS-01 R or L

GTS-02 R or L



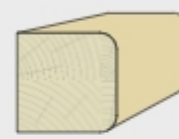
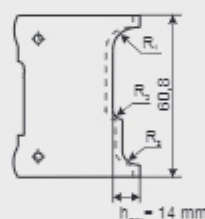
Universal profile cutter head, type **GTS-01** and **GTS-02** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for surface profiling. Profile, which shape should remain within dimensions shown in the drawing is made only according to individual order. Universal cutter head, apart from cutting knife, includes also clamping wedges with shape matching the profile insert.

Type of work: profiling

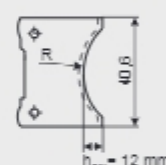
Material: solid hardwood, glued wood, chipboard, MDF and others.



Example of profile for shank cutter head GTS-01.02



Example of profile for shank cutter head GTS-01.01



Maximum depth of profile knives for width 60 mm and 40 mm.



| D
mm | 82
12000
25
2 | 86
12000
25
2 | 100
12000
25
2 |
|---------|------------------------|------------------------|-------------------------|
| B mm | GTS.01.01 | GTS.01.02 | GTS.02 |
| 40 | + | | + |
| 60 | | + | |

| Catalogue number
(without inserts) | Type | D
mm | d _{xs}
mm | b _{max}
mm | h _{max}
mm | z | |
|---------------------------------------|-----------|---------|-----------------------|------------------------|------------------------|---|--------|
| GTS.01.01.K | GTS-01.01 | 82 | 25x55 | 32 | 12 | 2 | HM R + |
| GTS.01.02.K | GTS-01.02 | 86 | 25x60 | 52 | 14 | 2 | HM R + |

Spare parts for cutter heads GTS-01 | GTS-02

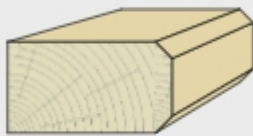
| Cat. nr | Name | Dimensions | |
|---------|----------------|--------------|---|
| | Knife | B x 30 x 1,5 | + |
| | Support insert | B x 28 x 1,5 | + |

| Cat. nr | Name | Dimensions | |
|-----------|----------------|--------------|---|
| | Clamping block | B-2 x 12 x 8 | • |
| WHAW00005 | Screw | M8x16 | • |

Set of cutter heads on shank, type **GTZ-01** with suitable number of cutting teeth designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The set is used for edge beveling of the machined elements. Width is regulated with spacer rings included in the set.

Type of work: edge profiling, rounding, beveling.

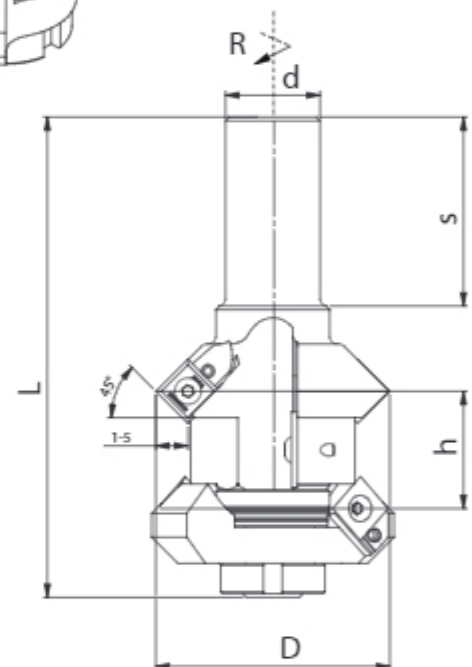
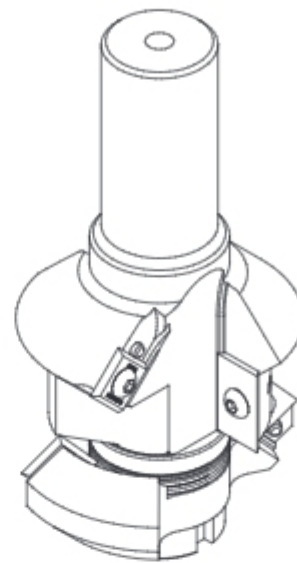
Material: solid hardwood, glued wood, chipboard, MDF and others.



| D
mm | 65
12000
25
2+2 |
|---------|--------------------------|
| h mm | |
| 10-22 | + |
| 20-32 | + |
| 30-42 | + |



GTZ-01 R or L



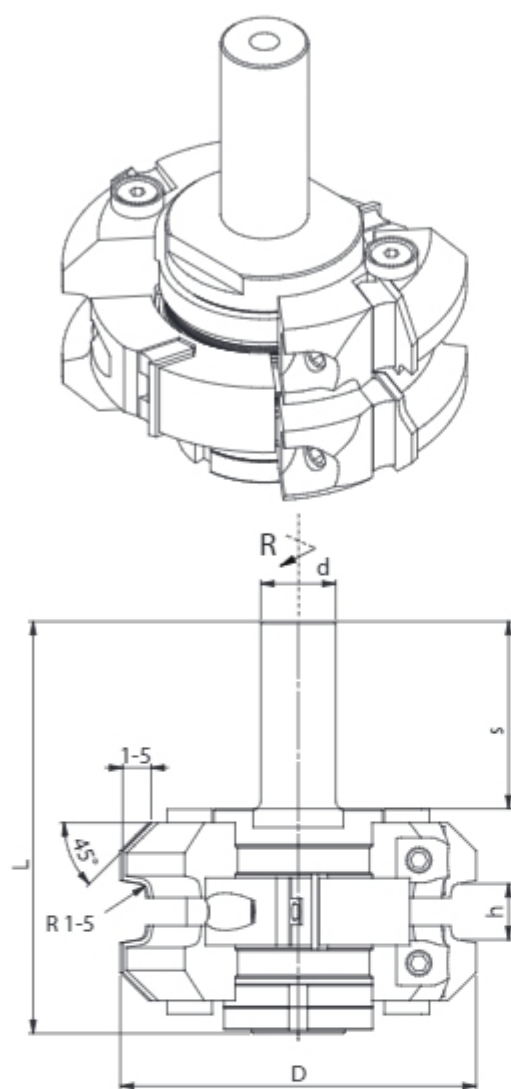
6

| Catalogue number | Type | D mm | dcs mm | h mm | L mm | z | | | |
|------------------|--------|------|--------|-------|------|---|----|---|---|
| GTZ.01.07 | GTZ-01 | 65 | 20x50 | 10-22 | 127 | 2 | HM | R | + |
| GTZ.01.01 | GTZ-01 | 65 | 25x50 | 10-22 | 127 | 2 | HM | R | + |
| GTZ.01.05 | GTZ-01 | 65 | 25x50 | 20-32 | 137 | 2 | HM | R | + |
| GTZ.01.03 | GTZ-01 | 65 | 25x50 | 30-42 | 150 | 2 | HM | R | + |

Spare parts for cutter heads GTZ-01

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|----------|-------|---------------|--|-----------|-----------------|---------------|--|
| N0000805 | Knife | 20 x 12 x 1,5 | | N0000809 | Knife | 40 x 12 x 1,5 | |
| N0000813 | Knife | 12 x 12 x 1,5 | | WHAS00004 | Screw STAMPF 94 | M4x6 | |
| N0000808 | Knife | 30 x 12 x 1,5 | | WHA100003 | Locating pin | 3x6 | |

GTZ-06 R or L



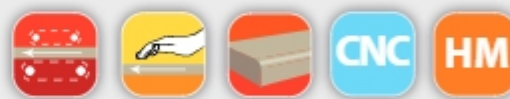
Set of cutter heads on shank, type **GTZ-06** with suitable number of cutting teeth designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The set is used for rounding and edge beveling of the machined elements. Increased regulation range. Width is regulated with spacer rings included in the set.

Type of work: edge profiling, rounding, beveling.

Material: solid hard wood, glued wood, chipboard, MDF and others.



| D
mm | 95
12000
25
2+2 |
|---------|--------------------------|
| h
mm | |
| 10-30 | + |
| 16-40 | + |
| 16-50 | + |
| 20-55 | + |



| Catalogue number | Type | D
mm | dcs
mm | h
mm | R
mm | L
mm | z | | | |
|------------------|--------|---------|-----------|---------|---------|---------|---|----|---|---|
| GTZ.06.15.00 | GTZ-06 | 95 | 25x50 | 10-30 | 5 | 120 | 2 | HM | R | + |
| GTZ.06.03.00 | GTZ-06 | 95 | 25x50 | 16-40 | 5 | 130 | 2 | HM | R | + |
| GTZ.06.01.00 | GTZ-06 | 95 | 25x50 | 16-50 | 3 | 140 | 2 | HM | R | + |

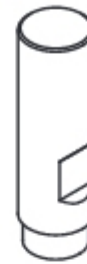
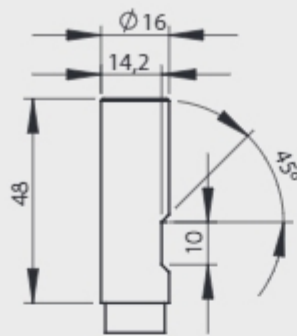
Spare parts for cutter heads GTZ-06

| Cat. nr | Name | Dimensions | | |
|----------|-------------------|---------------|--|---|
| | Profile knife P/L | 20x20x2 R | | + |
| N0000810 | Knife | 50 x 12 x 1,5 | | • |
| N0000808 | Knife | 30 x 12 x 1,5 | | • |
| N0000809 | Knife | 40 x 12 x 1,5 | | • |

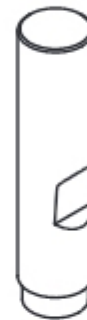
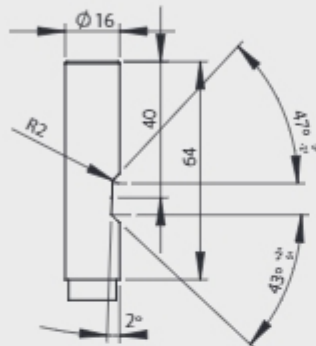
| Cat. nr | Name | Dimensions | | |
|-----------|-----------------|------------|--|---|
| WHAT00044 | Weating sleeve | 12x6,5x3,6 | | + |
| WHAS00004 | Screw STAMPF 94 | M4x6 | | • |
| WHAW00004 | Screw DIN 915 | M6x16 | | • |
| WHAW00005 | Screw DIN 915 | M8x16 | | • |
| WHAS00006 | Screw TOR 1128 | M6x10 | | • |

Radius R and edge beveling angle should be given with the order.

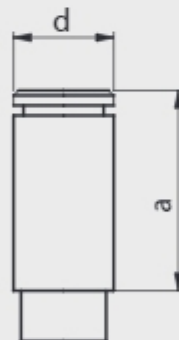
Weldon



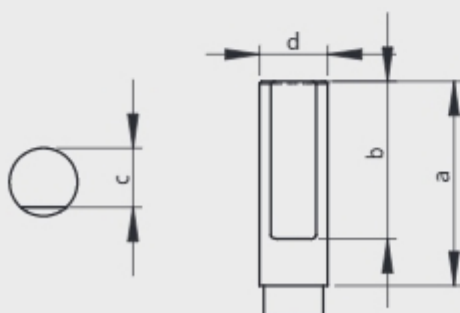
Homag / Weeke



Seeger

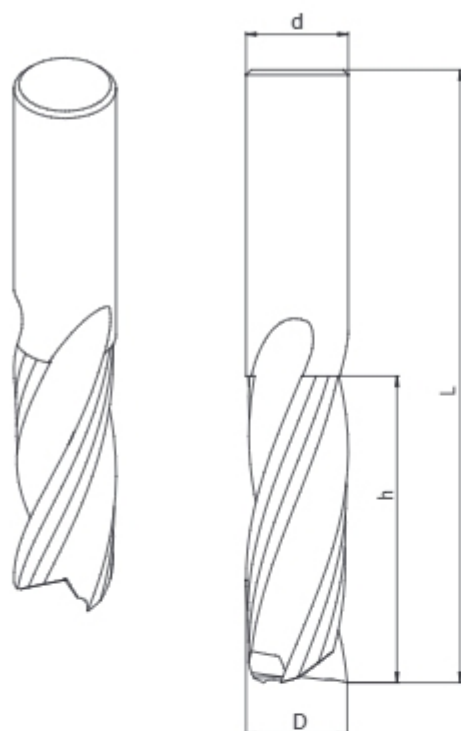


With flat part



When ordering shank tools with non-standard clamping, type of shank part and necessary dimensions should be given.

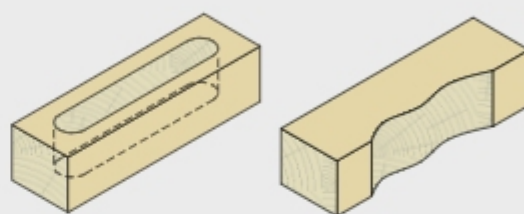
THM-01 R



Shank cutter, type **THM-01** with two or three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for groove finishing, formatting and nesting. Special geometry guarantees chip flow up.

Type of work: precise grooving, formatting.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



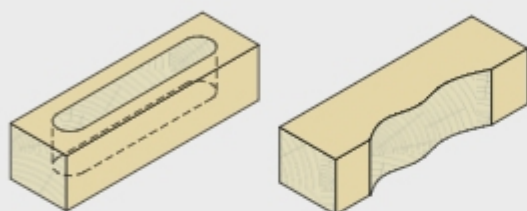
| Catalogue number | Type | D
mm | h
mm | L
mm | z | n _{max} | HM | |
|------------------|--------|---------|---------|---------|---|------------------|----|---|
| THM.01.09/022 | THM-01 | 6 | 25 | 60 | 2 | 24000 | HM | • |
| THM.01.09/023* | THM-01 | 6 | 25 | 70 | 2 | 24000 | HM | • |
| THM.01.09/006 | THM-01 | 6 | 25 | 70 | 3 | 24000 | HM | • |
| THM.01.09/024 | THM-01 | 6 | 30 | 70 | 2 | 24000 | HM | • |
| THM.01.07/017 | THM-01 | 8 | 25 | 70 | 2 | 24000 | HM | • |
| THM.01.07/013 | THM-01 | 8 | 32 | 80 | 3 | 24000 | HM | • |
| THM.01.06/025 | THM-01 | 10 | 32 | 70 | 2 | 24000 | HM | • |
| THM.01.06/001 | THM-01 | 10 | 32 | 70 | 3 | 24000 | HM | • |
| THM.01.06/026 | THM-01 | 10 | 45 | 100 | 2 | 24000 | HM | • |
| THM.01.01/001 | THM-01 | 12 | 32 | 80 | 3 | 24000 | HM | • |
| THM.01.01/003 | THM-01 | 12 | 52 | 100 | 3 | 24000 | HM | • |
| THM.01.02/001 | THM-01 | 14 | 32 | 80 | 3 | 24000 | HM | • |
| THM.01.02/005 | THM-01 | 14 | 55 | 110 | 3 | 24000 | HM | • |
| THM.01.03/001 | THM-01 | 16 | 35 | 90 | 3 | 24000 | HM | • |
| THM.01.03/026 | THM-01 | 16 | 60 | 110 | 3 | 24000 | HM | • |
| THM.01.04/001 | THM-01 | 18 | 52 | 100 | 3 | 24000 | HM | • |
| THM.01.05/001A | THM-01 | 20 | 55 | 110 | 3 | 24000 | HM | • |
| THM.01.05/002 | THM-01 | 20 | 70 | 120 | 3 | 24000 | HM | • |

* THM.01.09/023 - shank part d=8 mm

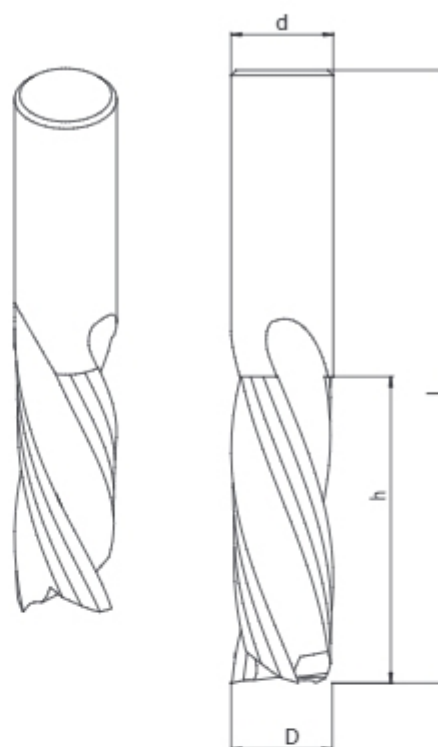
Shank cutter, type **THM-02 L** with two or three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for groove finishing, formatting and nesting. Special geometry guarantees chip flow up.

Type of work: precise grooving, formatting.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



THM-02 L



6



| Catalogue number | Type | D
mm | h
mm | L
mm | z | n _{max} | | |
|------------------|--------|---------|---------|---------|---|------------------|----|---|
| THM.02.07/002 | THM-02 | 8 | 25 | 70 | 2 | 24000 | HM | • |
| THM.02.06/002 | THM-02 | 10 | 32 | 70 | 2 | 24000 | HM | • |
| THM.02.01/001 | THM-02 | 12 | 32 | 80 | 3 | 24000 | HM | + |
| THM.02.02/001 | THM-02 | 14 | 32 | 80 | 3 | 24000 | HM | + |
| THM.02.03/001 | THM-02 | 16 | 35 | 90 | 3 | 24000 | HM | + |
| THM.02.04/001 | THM-02 | 18 | 52 | 100 | 3 | 24000 | HM | + |
| THM.02.05/001A | THM-02 | 20 | 55 | 110 | 3 | 24000 | HM | • |

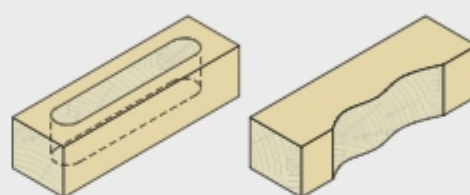
THM-03 / 04



Shank cutter, type **THM-03** or **THM-04** with two or three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for groove finishing, formatting and nesting. Special geometry guarantees chip flow down. Increased chip flow efficiency.

Type of work: precise grooving, formatting.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



THM-03 R

| Catalogue number | Type | D mm | h mm | L mm | z | n _{max} | | |
|------------------|--------|------|------|------|---|------------------|----|---|
| THM.03.09/001 | THM-03 | 6 | 22 | 60 | 2 | 24000 | HM | + |
| THM.03.07/006 | THM-03 | 8 | 25 | 70 | 2 | 24000 | HM | + |
| THM.03.06/001 | THM-03 | 10 | 32 | 70 | 3 | 24000 | HM | + |
| THM.03.01.013 | THM-03 | 12 | 32 | 80 | 3 | 24000 | HM | + |
| THM.03.02/001 | THM-03 | 14 | 32 | 80 | 3 | 24000 | HM | + |
| THM.03.03/003 | THM-03 | 16 | 35 | 90 | 3 | 24000 | HM | + |
| THM.03.05.002 | THM-03 | 20 | 55 | 110 | 3 | 24000 | HM | + |

THM-04 L

| Catalogue number | Type | D mm | h mm | L mm | z | n _{max} | | |
|------------------|--------|------|------|------|---|------------------|----|---|
| THM.04.07/002 | THM-04 | 8 | 25 | 70 | 2 | 24000 | HM | + |
| THM.04.06/001 | THM-04 | 10 | 32 | 70 | 3 | 24000 | HM | + |
| THM.04.01/001 | THM-04 | 12 | 32 | 80 | 3 | 24000 | HM | + |
| THM.04.02/001 | THM-04 | 14 | 32 | 80 | 3 | 24000 | HM | + |
| THM.04.03/001 | THM-04 | 16 | 35 | 90 | 3 | 24000 | HM | + |
| THM.04.05.001 | THM-04 | 20 | 55 | 110 | 3 | 24000 | HM | + |

THM-05

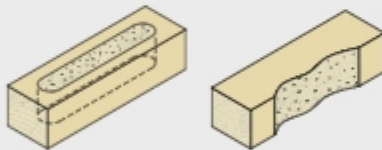
Shank cutter, type **THM-05** with two or three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for roughing. Special geometry guarantees chip flow up. The cutter working with increased machining parameters.

THM-35 Premium

Shank cutter with increased life, type **THM-35 Premium** with relieved flank (clearance) face and polished cutting surfaces, designed for professional cutting of solid wood and wood based materials. Cutter designed for very efficient roughing. Adapted to increased work parameters.

Type of work: pre-grooving, pre-formatting.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



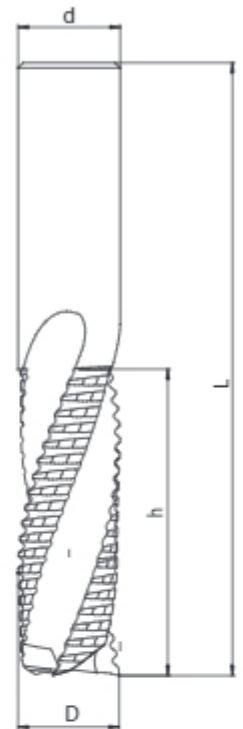
THM-05 / 35 R



THM-05

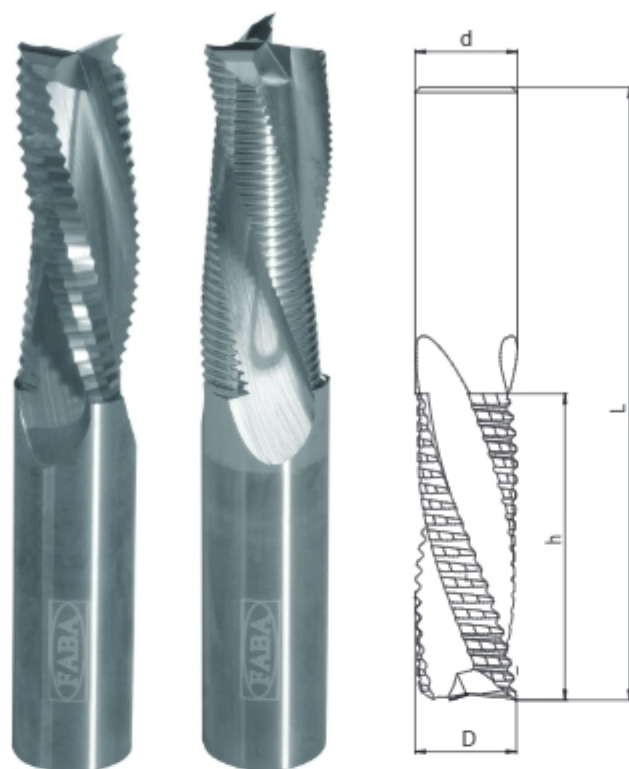


THM-35
Premium



| Catalogue number
THM-05 | Catalogue number
THM-35 | D
mm | h
mm | L
mm | z | n _{max} | |
|----------------------------|----------------------------|---------|---------|---------|---|------------------|----|
| THM.05.09/002 • | | 6 | 25 | 60 | 3 | 24000 | HM |
| THM.05.09/006 • | THM.35.09.006 • | 6 | 30 | 70 | 2 | 24000 | HM |
| THM.05.07/010 • | THM.35.07.010 • | 8 | 25 | 70 | 2 | 24000 | HM |
| THM.05.07/004 • | | 8 | 32 | 80 | 3 | 24000 | HM |
| THM.05.06/024 • | THM.35.06.024 • | 10 | 32 | 70 | 2 | 24000 | HM |
| THM.05.06/001 • | THM.35.06.001 • | 10 | 32 | 70 | 3 | 24000 | HM |
| THM.05.06/025 • | | 10 | 45 | 100 | 2 | 24000 | HM |
| THM.05.01/001 • | THM.35.01.001 • | 12 | 32 | 80 | 3 | 24000 | HM |
| THM.05.01/008 • | | 12 | 52 | 100 | 3 | 24000 | HM |
| THM.05.02/001 • | THM.35.02.001 • | 14 | 32 | 80 | 3 | 24000 | HM |
| THM.05.02/024 • | | 14 | 55 | 110 | 3 | 24000 | HM |
| THM.05.03/001 • | THM.35.03.001 • | 16 | 35 | 90 | 3 | 24000 | HM |
| THM.05.03/057 • | | 16 | 60 | 110 | 3 | 24000 | HM |
| THM.05.04/001 • | THM.35.04.001 + | 18 | 52 | 100 | 3 | 24000 | HM |
| THM.05.05/001A • | THM.35.05.001A • | 20 | 55 | 110 | 3 | 24000 | HM |
| THM.05.05/005 • | | 20 | 70 | 120 | 3 | 24000 | HM |

THM-06 / 36 L



THM-06 THM-36
Premium

THM-06

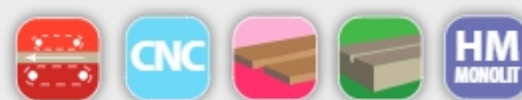
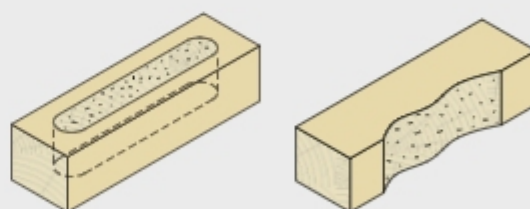
Shank cutter, type **THM-06** with two or three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for pre-grooving. Special geometry guarantees chip flow up. The cutter working with increased machining parameters.

THM-36 Premium

Shank cutter with increased life, type **THM-36 Premium** with relieved flank (clearance) face and polished cutting surfaces, designed for professional cutting of solid wood and wood based materials. Cutter designed for very efficient roughing. Adapted to increased work parameters.

Type of work: pre-grooving, pre-formatting.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.

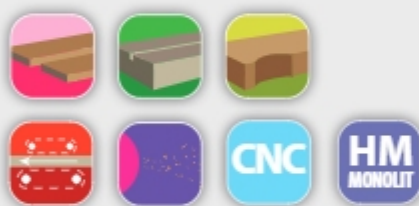
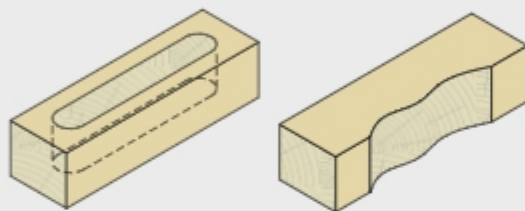


| Catalogue number
THM-06 | | Catalogue number
THM-36 | | D
mm | h
mm | L
mm | z | n _{min} | |
|----------------------------|---|----------------------------|---|---------|---------|---------|---|------------------|----|
| THM.06.07/002 | • | THM.36.07.002 | • | 8 | 25 | 70 | 2 | 24000 | HM |
| THM.06.06/003 | • | THM.36.06.003 | • | 10 | 32 | 70 | 2 | 24000 | HM |
| THM.06.01/001 | + | THM.36.01.001 | + | 12 | 32 | 80 | 3 | 24000 | HM |
| THM.06.02/001 | + | THM.36.02.001 | + | 14 | 32 | 80 | 3 | 24000 | HM |
| THM.06.03/001 | + | THM.36.03.001 | + | 16 | 35 | 90 | 3 | 24000 | HM |
| THM.06.04/001 | + | THM.36.04.001 | + | 18 | 52 | 100 | 3 | 24000 | HM |
| THM.06.05/001A | + | THM.36.05.001A | + | 20 | 55 | 110 | 3 | 24000 | HM |

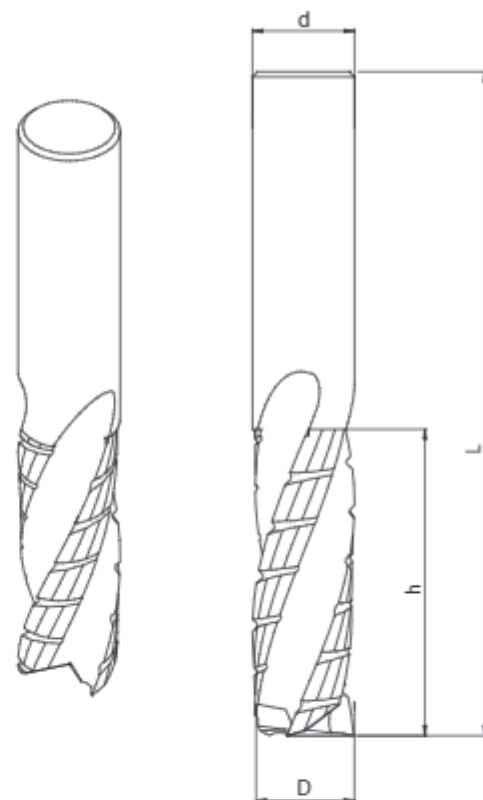
Shank cutter, type **THM-07** or **THM-08** with three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for pre-grooving, grooving, formatting and nesting. Special geometry guarantees chip flow up. Additional chip breakers allow for better chip fragmentation. Increased chip flow efficiency. The cutter working with increased machining parameters.

Type of work: grooving, pre-formatting and precise formatting.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



THM-07 / 08



6

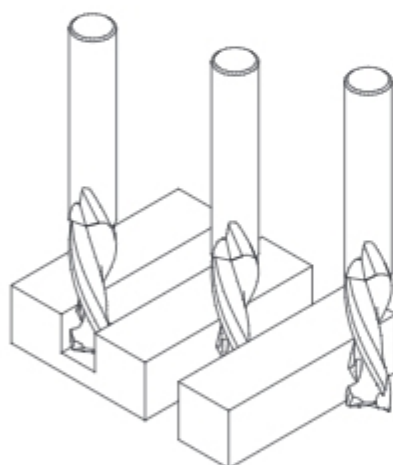
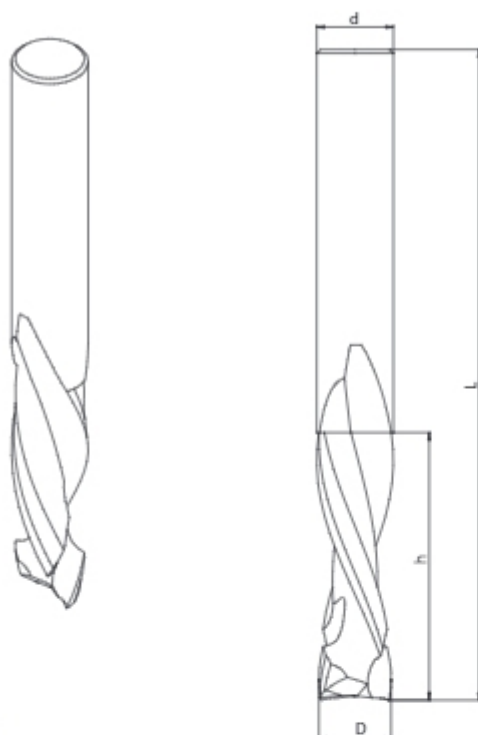
THM-07 R

| Catalogue number | Type | D
mm | h
mm | L
mm | z | n _{max} | | |
|------------------|--------|---------|---------|---------|---|------------------|----|---|
| THM.07.06/001 | THM-07 | 10 | 25 | 70 | 3 | 24000 | HM | + |
| THM.07.01/001 | THM-07 | 12 | 32 | 80 | 3 | 24000 | HM | + |
| THM.07.03/001 | THM-07 | 16 | 52 | 110 | 3 | 24000 | HM | + |
| THM.07.05/001A | THM-07 | 20 | 55 | 110 | 3 | 24000 | HM | + |

THM-08 L

| Catalogue number | Type | D
mm | h
mm | L
mm | z | n _{max} | | |
|------------------|--------|---------|---------|---------|---|------------------|----|---|
| THM.08.06/001 | THM-08 | 10 | 25 | 70 | 3 | 24000 | HM | + |
| THM.08.01/001 | THM-08 | 12 | 32 | 80 | 3 | 24000 | HM | + |
| THM.08.03/001 | THM-08 | 16 | 52 | 110 | 3 | 24000 | HM | + |
| THM.08.05/001A | THM-08 | 20 | 55 | 110 | 3 | 24000 | HM | + |

THM-09 R



Shank cutter, type **THM-09** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for precise formatting of two-sided veneered board. No veneer ripping thank to alternative direction of turbo-type spiral cutting line. The cutter working with increased machining parameters. Lower cutting resistance. Multiple sharpening possibility.

Type of work: finishing.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.

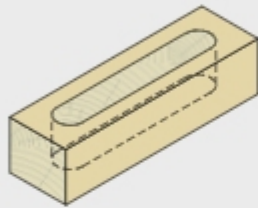


| Catalogue number | Type | D
mm | h
mm | L
mm | z | n _{max} | HM | + |
|------------------|--------|---------|---------|---------|-----|------------------|----|---|
| THM.09.07.002 | THM-09 | 8 | 32 | 80 | 2+2 | 24000 | HM | + |
| THM.09.07.010 | THM-09 | 8 | 32 | 80 | 3+3 | 24000 | HM | + |
| THM.09.06/001 | THM-09 | 10 | 32 | 80 | 2+2 | 24000 | HM | • |
| THM.09.06.012 | THM-09 | 10 | 32 | 80 | 3+3 | 24000 | HM | + |
| THM.09.01.024 | THM-09 | 12 | 32 | 80 | 3+3 | 24000 | HM | + |
| THM.09.01/001 | THM-09 | 12 | 42 | 90 | 2+2 | 24000 | HM | • |
| THM.09.02/001 | THM-09 | 14 | 52 | 110 | 2+2 | 24000 | HM | + |
| THM.09.03/001 | THM-09 | 16 | 52 | 110 | 2+2 | 24000 | HM | + |
| THM.09.03.015 | THM-09 | 16 | 52 | 110 | 3+3 | 24000 | HM | + |
| THM.09.05/001 | THM-09 | 20 | 52 | 110 | 2+2 | 24000 | HM | + |
| THM.09.05.005 | THM-09 | 20 | 52 | 110 | 3+3 | 24000 | HM | + |

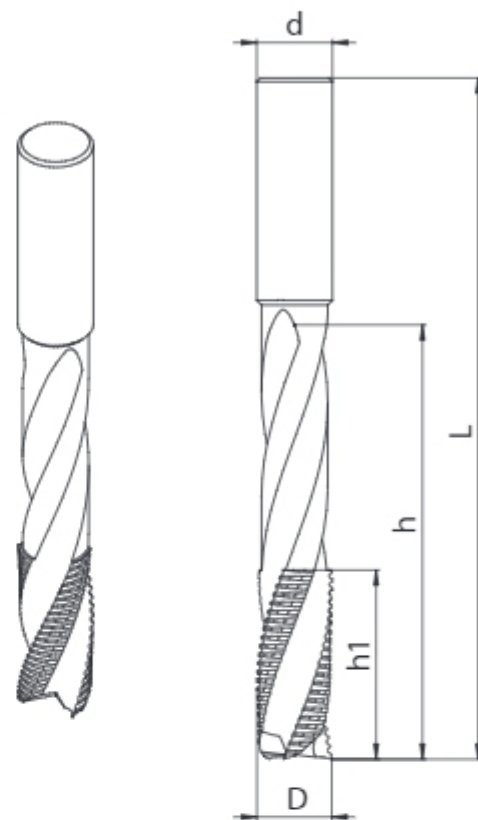
Shank cutter, type **THM-10** with three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for pre-cutting holes for door locks. Cutting depth up to 95 mm with chip flow. The cutter working with increased machining parameters.

Type of work: deep pre-cutting.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



THM-10 R

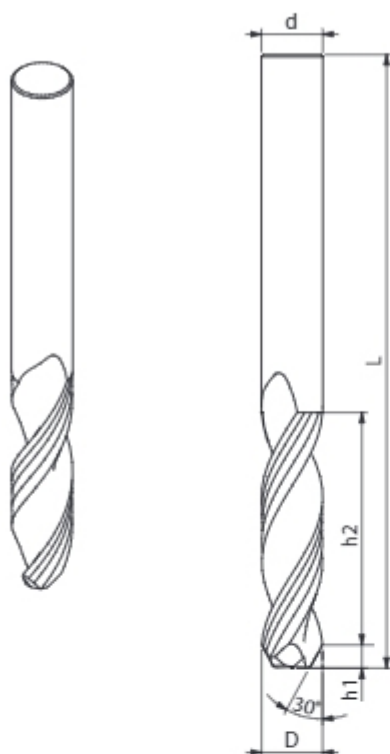


6



| Catalogue number | Type | D
mm | d
mm | h ₁
mm | h
mm | L
mm | z | n _{max} | | |
|------------------|--------|---------|---------|----------------------|---------|---------|---|------------------|----|---|
| THM.10.03/001 | THM-10 | 16 | 16 | 60 | 100 | 150 | 3 | 24000 | HM | • |
| THM.10.03.036 | THM-10 | 16 | 16 | 60 | 100 | 150 | 3 | 24000 | HM | + |
| THM.10.03/002 | THM-10 | 16,5 | 18 | 60 | 100 | 160 | 3 | 24000 | HM | + |
| THM.10.04/003 | THM-10 | 18 | 18 | 60 | 100 | 160 | 3 | 24000 | HM | + |

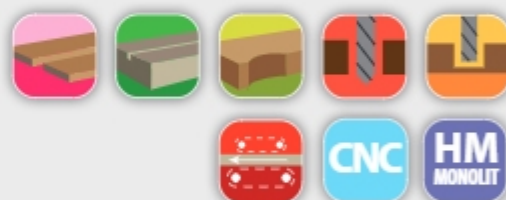
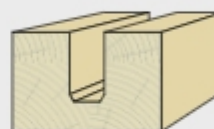
THM-11 / 12



Shank cutter, type **THM-11** or **THM-12** with three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for groove finishing, formatting, finishing, drilling as well as dowel and through drilling. Additional 30° bevel increases edge quality after cutting. Special geometry guarantees chip flow up.

Type of work: grooving, formatting, finishing, drilling.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



THM-11 R

| Catalogue number | Type | D
mm | h ₂
mm | h ₁
mm | L
mm | z | n _{max} | HM | + |
|------------------|--------|---------|----------------------|----------------------|---------|---|------------------|----|---|
| THM.11.01/001 | THM-11 | 12 | 45 | 9 | 110 | 3 | 24000 | HM | + |
| THM.11.02/001 | THM-11 | 14 | 40 | 9 | 100 | 3 | 24000 | HM | + |
| THM.11.03/001 | THM-11 | 16 | 50 | 9 | 120 | 3 | 24000 | HM | + |

THM-12 L

| Catalogue number | Type | D
mm | h ₂
mm | h ₁
mm | L
mm | z | n _{max} | HM | + |
|------------------|--------|---------|----------------------|----------------------|---------|---|------------------|----|---|
| THM.12.01/001 | THM-12 | 12 | 45 | 9 | 110 | 3 | 24000 | HM | + |
| THM.12.02/001 | THM-12 | 14 | 40 | 9 | 100 | 3 | 24000 | HM | + |
| THM.12.03/001 | THM-12 | 16 | 50 | 9 | 120 | 3 | 24000 | HM | + |

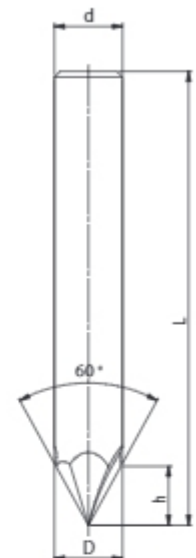
Monolith shank cutter, type **THM-13** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for engraving as well as beveling and counterboring.

Type of work: engraving, beveling, counterboring.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



THM-13 R

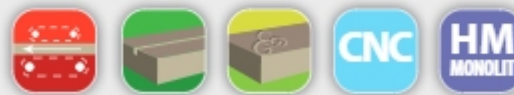


| Catalogue number | Type | D
mm | h
mm | L
mm | z | n _{max} | | |
|------------------|--------|---------|---------|---------|---|------------------|----|---|
| THM.13.07/001 | THM-13 | 8 | 7 | 70 | 2 | 24000 | HM | • |
| THM.13.01/001 | THM-13 | 12 | 9 | 80 | 2 | 24000 | HM | • |

Monolith shank cutter, type **THM-14** with two cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for engraving and shape grooving.

Type of work: engraving, shape-grooving.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.

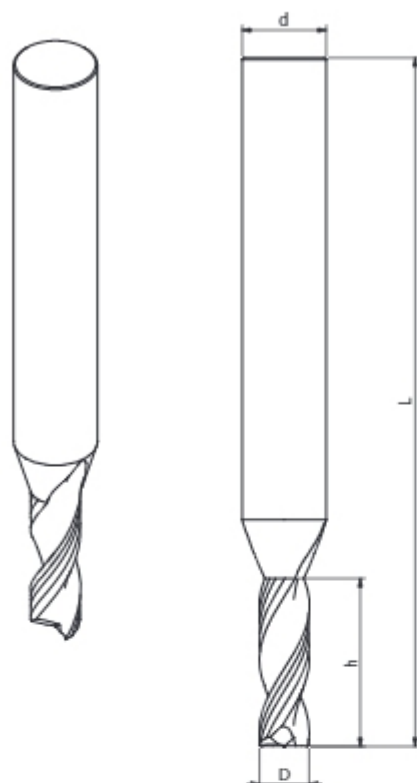


THM-14 R



| Catalogue number | Type | D
mm | h
mm | L
mm | R
mm | z | n _{max} | | |
|------------------|--------|---------|---------|---------|---------|---|------------------|----|---|
| THM.14.09/001 | THM-14 | 6 | 9 | 60 | 3 | 2 | 24000 | HM | • |
| THM.14.09.017 | THM-14 | 6 | 22 | 60 | 3 | 2 | 24000 | HM | + |
| THM.14.07.006 | THM-14 | 8 | 25 | 70 | 4 | 2 | 24000 | HM | + |
| THM.14.07/001 | THM-14 | 8 | 11 | 70 | 4 | 2 | 24000 | HM | • |
| THM.14.06/002 | THM-14 | 10 | 13 | 80 | 5 | 2 | 24000 | HM | • |
| THM.14.06.017 | THM-14 | 10 | 32 | 80 | 5 | 2 | 24000 | HM | + |
| THM.14.01.013 | THM-14 | 12 | 32 | 80 | 6 | 2 | 24000 | HM | + |
| THM.14.03.011 | THM-14 | 16 | 52 | 110 | 8 | 2 | 24000 | HM | + |

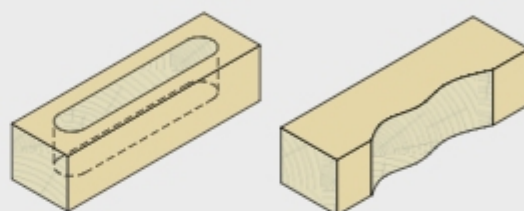
THM-15 / 16



Monolith shank cutter, type **THM-15** or **THM-16** with two or three cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for groove finishing, formatting and nesting. Special geometry guarantees chip flow up. Thicker shank part.

Type of work: grooving, finishing.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.



THM-15 R

| Catalogue number | Type | D
mm | d
mm | h
mm | L
mm | z | n _{max} | | |
|------------------|--------|---------|---------|---------|---------|---|------------------|----|---|
| THM.15.12/001 | THM-15 | 5 | 6 | 15 | 60 | 2 | 24000 | HM | + |
| THM.15.09/001 | THM-15 | 6 | 8 | 20 | 70 | 2 | 24000 | HM | + |
| THM.15.08/001 | THM-15 | 7 | 8 | 20 | 70 | 2 | 24000 | HM | + |
| THM.15.07/001 | THM-15 | 8 | 10 | 30 | 80 | 2 | 24000 | HM | + |
| THM.15.17/001 | THM-15 | 9 | 10 | 30 | 80 | 2 | 24000 | HM | + |
| THM.15.06/001 | THM-15 | 10 | 12 | 30 | 80 | 2 | 24000 | HM | + |

THM-16 L

| Catalogue number | Type | D
mm | d
mm | h
mm | L
mm | z | n _{max} | | |
|------------------|--------|---------|---------|---------|---------|---|------------------|----|---|
| THM.16.12/001 | THM-16 | 5 | 6 | 15 | 60 | 2 | 24000 | HM | + |
| THM.16.09/001 | THM-16 | 6 | 8 | 20 | 70 | 2 | 24000 | HM | + |
| THM.16.07/001 | THM-16 | 8 | 10 | 30 | 80 | 2 | 24000 | HM | + |

Step drills **THM-25** are produced only on client's individual request.

Step and profile shank cutters are offered with positive and negative helix line.

Optionally, the tool can be produced with a different profile.

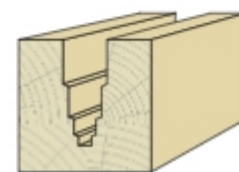
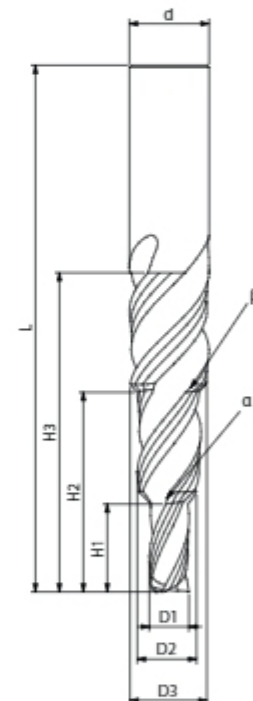
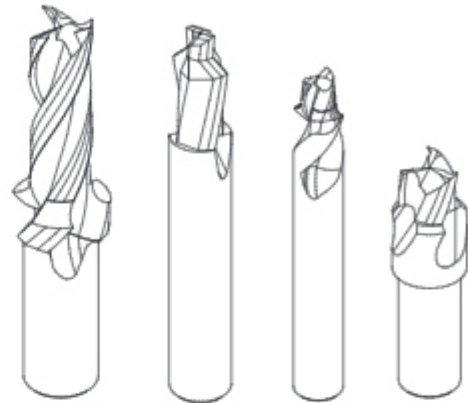
Advantages of using stepped and profile THM:

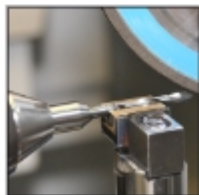
- possibility of performing a couple of operations with one tool,
- eliminating machining runout by using only one mounting of the tool,
- faster completion of the operation compared to working with a few tools,
- smaller quantity of holders on the machine,
- increased life and cutting quality,
- lower energy costs,
- lower costs of discrete manufacturing.

Material: solid softwood, solid hard wood, glued wood, chipboard, MDF, plastics.

Order should include all dimensions shown in the drawing.

THM-25 step







7. Drills

Drills

Drills with HM working part and holder made from steel permanently joint with carbide, brazed drills and monolithic drills made entirely from HM. Drills with HM tips, designed for professional machining of solid soft, hard and glued wood and other wood-based materials. They are used for through and dowel drilling, counterboring and drilling slots for hinge boxes.

Drills are manufactured from the highest quality carbide in a special shaping technology, properly selected for the machining process and material as well as type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work of the tool and chip flow from the machining zone both in standard and extreme conditions. Monolithic drills are made entirely from high quality small-grain carbide in the advanced profile sharpening technology.

The tools are designed and produced with special rake face and optimized chip flow. Very precise manufacturing allows for working with rotation speed up to 9000 r.p.m. All drills are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. Quality control takes place directly on the machine by using special

measurement systems as well as outside the machine on special measurement devices. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

The *Drills* chapter includes only example types of drills with their basic dimensions. On special request, we can suggest, design and produce a proper tool for the required type of machining, material and parameters and conditions of work. Production time of drills marked as "+" as well as special ones made on client's request usually doesn't exceed 9-15 working days.

Orders should include

- working part diameter (D),
- shank part diameter (d),
- shank length (s),
- working part length (h),
- type of machined material,
- profile drawing with dimensions or profile sample,
- other information relevant for designing and production process.



Contents

7. DRILLS

| | |
|--|------|
| Pictograms | 7.3 |
| 7.1 HM core dowel drills | 7.4 |
| 7.2 HM tipped dowel drills | 7.9 |
| 7.3 HM core through drills | 7.13 |
| 7.4 HM tipped through drills | 7.17 |
| 7.5 Step drills | 7.20 |
| 7.6 Cylinder boring bits | 7.21 |
| 7.7 Cutter heads with exchangeable inserts | 7.26 |
| 7.8 Drill holders | 7.27 |
| 7.9 Countersinks | 7.28 |

Pictograms



solid dry softwood



solid dry hardwood



chipboard



glued wood



MDF board



dowel drills



through drills



cylinder boring bits



mechanical feed



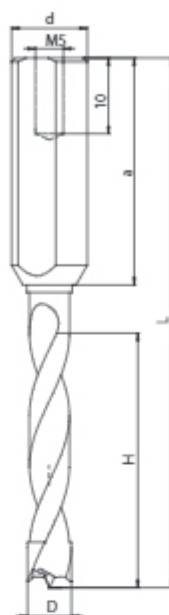
carbide



carbide monolith

• available/stock product
 + possible production time 9-15 working days.
 Minimum order: brazed drills - 10 pcs, monolithic drills - 8 pcs.

WN-31



Monolithic dowel drills with increased life, type **WN-31** designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

This is a group of drills with HM core, which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.

7



| Catalogue number | Type | D
mm | dxa
mm | L
mm | H
mm | ↗ | |
|------------------|-------|---------|-----------|---------|---------|---|---|
| K3500001 | WN-31 | 3 | 10 x 39 | 57,5 | 15 | R | • |
| K3500002 | WN-31 | 3 | 10 x 39 | 57,5 | 15 | L | • |
| K3500015 | WN-31 | 3,5 | 10 x 39 | 57,5 | 15 | R | + |
| K3500016 | WN-31 | 3,5 | 10 x 39 | 57,5 | 15 | L | + |
| K3500005 | WN-31 | 4 | 10 x 30 | 57,5 | 24 | R | • |
| K3500006 | WN-31 | 4 | 10 x 30 | 57,5 | 24 | L | • |
| K3500007 | WN-31 | 5 | 10 x 30 | 57,5 | 24 | R | • |
| K3500008 | WN-31 | 5 | 10 x 30 | 57,5 | 24 | L | • |
| K3500009 | WN-31 | 6 | 10 x 30 | 57,5 | 24 | R | • |
| K3500010 | WN-31 | 6 | 10 x 30 | 57,5 | 24 | L | • |
| K3500011 | WN-31 | 8 | 10 x 30 | 57,5 | 24 | R | • |
| K3500012 | WN-31 | 8 | 10 x 30 | 57,5 | 24 | L | • |
| K3500013 | WN-31 | 10 | 10 x 30 | 57,5 | 24 | R | + |
| K3500014 | WN-31 | 10 | 10 x 30 | 57,5 | 24 | L | + |

Drills D=10 mm made entirely from HM,
without regulating screw in the shank.

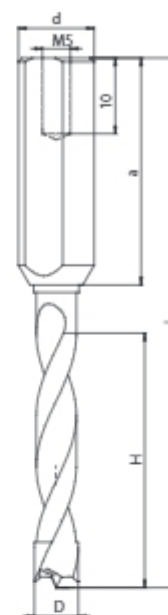
WN-32

Monolithic dowel drills with increased life, type **WN-32** designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

This is a group of drills with HM core which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.

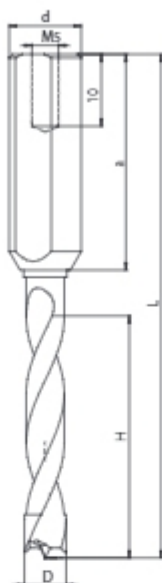


7

| Catalogue number | Type | D mm | d x a mm | L mm | H mm | ↗ | |
|------------------|-------|------|----------|------|------|---|---|
| K5100005 | WN-32 | 3 | 10 x 39 | 70 | 28 | R | • |
| K5100006 | WN-32 | 3 | 10 x 39 | 70 | 28 | L | • |
| K5100015 | WN-32 | 3,5 | 10 x 30 | 70 | 35 | R | • |
| K5100016 | WN-32 | 3,5 | 10 x 30 | 70 | 35 | L | • |
| K5100007 | WN-32 | 4 | 10 x 30 | 70 | 35 | R | • |
| K5100008 | WN-32 | 4 | 10 x 30 | 70 | 35 | L | • |
| K5100017 | WN-32 | 4,5 | 10 x 30 | 70 | 35 | R | • |
| K5100018 | WN-32 | 4,5 | 10 x 30 | 70 | 35 | L | • |
| K5100001 | WN-32 | 5 | 10 x 30 | 70 | 35 | R | • |
| K5100002 | WN-32 | 5 | 10 x 30 | 70 | 35 | L | • |
| K5100019 | WN-32 | 5,5 | 10 x 30 | 70 | 35 | R | • |
| K5100020 | WN-32 | 5,5 | 10 x 30 | 70 | 35 | L | • |
| K5100009 | WN-32 | 6 | 10 x 30 | 70 | 35 | R | • |
| K5100010 | WN-32 | 6 | 10 x 30 | 70 | 35 | L | • |
| K5100003 | WN-32 | 8 | 10 x 30 | 70 | 35 | R | • |
| K5100004 | WN-32 | 8 | 10 x 30 | 70 | 35 | L | • |
| K5100011 | WN-32 | 10 | 10 x 30 | 70 | 35 | R | + |
| K5100012 | WN-32 | 10 | 10 x 30 | 70 | 35 | L | + |

Drills D=10 mm made entirely from HM, without regulating screw in the shank.

WN-37



Monolithic dowel drills with increased life, type **WN-37** designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

This is a group of drills with HM core, which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

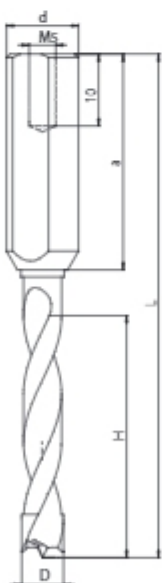
Type of work: dowel drilling

Material: wood and glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D mm | d x a mm | L mm | H mm | ↗ | |
|------------------|-------|------|----------|------|------|---|---|
| K5800007 | WN-37 | 5 | 10 x 30 | 77 | 45 | R | • |
| K5800008 | WN-37 | 5 | 10 x 30 | 77 | 45 | L | • |
| K5800005 | WN-37 | 5,5 | 10 x 30 | 77 | 45 | R | • |
| K5800006 | WN-37 | 5,5 | 10 x 30 | 77 | 45 | L | • |
| K5800003 | WN-37 | 6 | 10 x 30 | 77 | 45 | R | • |
| K5800004 | WN-37 | 6 | 10 x 30 | 77 | 45 | L | • |

WN-41



Monolithic dowel drills with increased life, type **WN-41** designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

This is a group of drills with HM core, which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Type of work: dowel drilling

Material: wood and glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D mm | d x a mm | L mm | H mm | ↗ | |
|------------------|-------|------|----------|------|------|---|---|
| K6800001 | WN-41 | 5 | 10 x 30 | 90 | 55 | R | • |
| K6800002 | WN-41 | 5 | 10 x 30 | 90 | 55 | L | • |
| K6800003 | WN-41 | 5,5 | 10 x 30 | 90 | 55 | R | + |
| K6800004 | WN-41 | 5,5 | 10 x 30 | 90 | 55 | L | + |

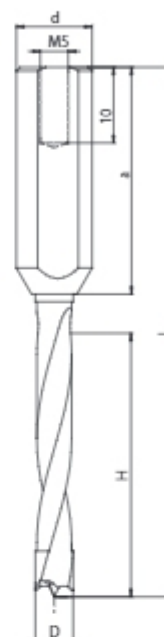
Monolithic dowel drills with increased life, type **WN-45** designed for making holes in solid wood. Special construction of the drill allows for better chip flow which guarantees high quality of solid wood machining.

This is a group of drills with HM core which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Type of work: dowel drilling

Material: solid wood

WN-45 for wood



| Catalogue number | Type | D
mm | d x a
mm | L
mm | H
mm | ↗ | |
|------------------|-------|---------|-------------|---------|---------|---|---|
| K8200001 | WN-45 | 5 | 10 x 30 | 77 | 45 | R | + |
| K8200002 | WN-45 | 5 | 10 x 30 | 77 | 45 | L | + |
| K8200003 | WN-45 | 6 | 10 x 30 | 77 | 45 | R | + |
| K8200004 | WN-45 | 6 | 10 x 30 | 77 | 45 | L | + |
| K8200005 | WN-45 | 8 | 10 x 30 | 77 | 45 | R | + |
| K8200006 | WN-45 | 8 | 10 x 30 | 77 | 45 | L | + |

WN-46



Monolithic dowel drills with increased life, type **WN-46**, characterized by equal diameter of the working part and shank, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.


This is a group of full HM drills with increased stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Drills made entirely from carbide, without the flat part and regulation screw in the shank.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | L
mm | H
mm |  | |
|------------------|-------|---------|---------|---------|---|---|
| K8400001 | WN-46 | 3 | 70 | 35 | R | + |
| K8400002 | WN-46 | 3 | 70 | 35 | L | + |
| K8400003 | WN-46 | 4 | 80 | 45 | R | + |
| K8400004 | WN-46 | 4 | 80 | 45 | L | + |
| K8400007 | WN-46 | 5 | 90 | 50 | R | + |
| K8400008 | WN-46 | 5 | 90 | 50 | L | + |

We offer the flat part on the shank
on customer's request.

Dowel drills with HM tip, type **WN-01**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.

WN-01



| Catalogue number | Type | D
mm | d x a
mm | L
mm | H
mm | ↗ | |
|------------------|-------|---------|-------------|---------|---------|---|---|
| K0100005 | WN-01 | 6 | 10 x 30 | 70 | 35 | R | • |
| K0100006 | WN-01 | 6 | 10 x 30 | 70 | 35 | L | • |
| K0100019 | WN-01 | 6,5 | 10 x 30 | 70 | 35 | R | + |
| K0100020 | WN-01 | 6,5 | 10 x 30 | 70 | 35 | L | + |
| K0100007 | WN-01 | 7 | 10 x 30 | 70 | 35 | R | • |
| K0100008 | WN-01 | 7 | 10 x 30 | 70 | 35 | L | • |
| K0100021 | WN-01 | 7,5 | 10 x 30 | 70 | 35 | R | • |
| K0100022 | WN-01 | 7,5 | 10 x 30 | 70 | 35 | L | • |
| K0100009 | WN-01 | 8 | 10 x 30 | 70 | 35 | R | • |
| K0100010 | WN-01 | 8 | 10 x 30 | 70 | 35 | L | • |
| K0100059 | WN-01 | 8,2 | 10 x 30 | 70 | 35 | R | • |
| K0100060 | WN-01 | 8,2 | 10 x 30 | 70 | 35 | L | • |
| K0100023 | WN-01 | 8,5 | 10 x 30 | 70 | 35 | R | • |
| K0100024 | WN-01 | 8,5 | 10 x 30 | 70 | 35 | L | • |
| K0100025 | WN-01 | 9 | 10 x 30 | 70 | 35 | R | • |
| K0100026 | WN-01 | 9 | 10 x 30 | 70 | 35 | L | • |
| K0100011 | WN-01 | 10 | 10 x 30 | 70 | 35 | R | • |
| K0100012 | WN-01 | 10 | 10 x 30 | 70 | 35 | L | • |
| K0100027 | WN-01 | 11 | 10 x 30 | 70 | 35 | R | + |
| K0100028 | WN-01 | 11 | 10 x 30 | 70 | 35 | L | + |
| K0100013 | WN-01 | 12 | 10 x 30 | 70 | 35 | R | • |
| K0100014 | WN-01 | 12 | 10 x 30 | 70 | 35 | L | • |
| K0100029 | WN-01 | 13 | 10 x 30 | 70 | 35 | R | • |
| K0100030 | WN-01 | 13 | 10 x 30 | 70 | 35 | L | • |
| K0100033 | WN-01 | 15 | 10 x 30 | 70 | 35 | R | • |
| K0100034 | WN-01 | 15 | 10 x 30 | 70 | 35 | L | • |

The drills can be used with PG-02 countersink installed on the shank.

More information on page 7.28 of our catalogue.

WN-02

Dowel drills with HM tip, type **WN-02**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | d x a
mm | L
mm | H
mm | ↺ | |
|------------------|-------|---------|-------------|---------|---------|---|---|
| K0200003 | WN-02 | 6 | 10 x 27 | 57,5 | 25 | R | + |
| K0200004 | WN-02 | 6 | 10 x 27 | 57,5 | 25 | L | + |
| K0200015 | WN-02 | 7 | 10 x 27 | 57,5 | 25 | R | • |
| K0200016 | WN-02 | 7 | 10 x 27 | 57,5 | 25 | L | • |
| K0200013 | WN-02 | 7,5 | 10 x 27 | 57,5 | 25 | R | + |
| K0200014 | WN-02 | 7,5 | 10 x 27 | 57,5 | 25 | L | + |
| K0200005 | WN-02 | 8 | 10 x 27 | 57,5 | 25 | R | • |
| K0200006 | WN-02 | 8 | 10 x 27 | 57,5 | 25 | L | • |
| K0200019 | WN-02 | 8,2 | 10 x 27 | 57,5 | 25 | R | + |
| K0200020 | WN-02 | 8,2 | 10 x 27 | 57,5 | 25 | L | + |
| K0200007 | WN-02 | 10 | 10 x 27 | 57,5 | 25 | R | • |
| K0200008 | WN-02 | 10 | 10 x 27 | 57,5 | 25 | L | • |
| K0200023 | WN-02 | 12 | 10 x 27 | 57,5 | 25 | R | + |
| K0200024 | WN-02 | 12 | 10 x 27 | 57,5 | 25 | L | + |
| K0200031 | WN-02 | 14 | 10 x 27 | 57,5 | 25 | R | + |
| K0200032 | WN-02 | 14 | 10 x 27 | 57,5 | 25 | L | + |
| K0200025 | WN-02 | 15 | 10 x 27 | 57,5 | 25 | R | + |
| K0200026 | WN-02 | 15 | 10 x 27 | 57,5 | 25 | L | + |

The drills can be used with PG-02 countersink installed on the shank.

More information on page 7.28 of our catalogue.

Dowel drills with HM tip, type **WN-04**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



WN-04



| Catalogue number | Type | D mm | d x a mm | L mm | H mm | ↙ | |
|------------------|-------|------|----------|------|------|---|---|
| K0400023 | WN-04 | 6,5 | 10 x 30 | 77 | 40 | R | + |
| K0400024 | WN-04 | 6,5 | 10 x 30 | 77 | 40 | L | + |
| K0400025 | WN-04 | 7 | 10 x 30 | 77 | 40 | R | + |
| K0400026 | WN-04 | 7 | 10 x 30 | 77 | 40 | L | + |
| K0400009 | WN-04 | 8 | 10 x 30 | 77 | 40 | R | • |
| K0400010 | WN-04 | 8 | 10 x 30 | 77 | 40 | L | • |

Dowel drills with HM tip and double helix line, type **WN-06**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



WN-06



| Catalogue number | Type | D mm | d x a mm | L mm | H mm | ↙ | |
|------------------|-------|------|----------|------|------|---|---|
| K0600015 | WN-06 | 7 | 10 x 27 | 90 | 55 | R | + |
| K0600016 | WN-06 | 7 | 10 x 27 | 90 | 55 | L | + |
| K0600001 | WN-06 | 7,5 | 10 x 27 | 90 | 55 | R | + |
| K0600002 | WN-06 | 7,5 | 10 x 27 | 90 | 55 | L | + |
| K0600013 | WN-06 | 8 | 10 x 27 | 90 | 55 | R | + |
| K0600014 | WN-06 | 8 | 10 x 27 | 90 | 55 | L | + |

The drills can be used with PG-01 countersink installed on the working part.

More information on page 7.28 of our catalogue.

WN-07



Dowel drills with HM tip and double helix line, type **WN-07**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

Type of work: dowel drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | d x a
mm | L
mm | H
mm | ↗ | |
|------------------|-------|---------|-------------|---------|---------|---|---|
| K0700005 | WN-07 | 7 | 10 x 27 | 85 | 45 | R | + |
| K0700006 | WN-07 | 7 | 10 x 27 | 85 | 45 | L | + |

The drills can be used with PG-01 countersink installed on the working part.

More information on page 7.28 of our catalogue.

WP-15

Monolithic through drills with increased life, type **WP-15** designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

This is a group of drills with HM core which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

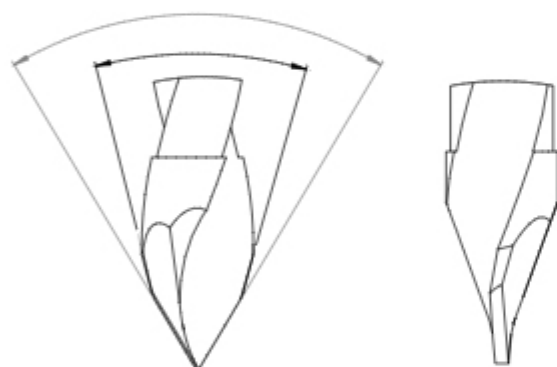
Type of work: through drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | d x a
mm | L
mm | H
mm | ↗ | |
|------------------|-------|---------|-------------|---------|---------|---|---|
| K4700009 | WP-15 | 3 | 10 x 39 | 70 | 28 | R | • |
| K4700010 | WP-15 | 3 | 10 x 39 | 70 | 28 | L | • |
| K4700011 | WP-15 | 4 | 10 x 30 | 70 | 35 | R | • |
| K4700012 | WP-15 | 4 | 10 x 30 | 70 | 35 | L | • |
| K4700013 | WP-15 | 4,5 | 10 x 30 | 70 | 35 | R | • |
| K4700014 | WP-15 | 4,5 | 10 x 30 | 70 | 35 | L | • |
| K4700003 | WP-15 | 5 | 10 x 30 | 70 | 35 | R | • |
| K4700004 | WP-15 | 5 | 10 x 30 | 70 | 35 | L | • |
| K4700015 | WP-15 | 5,5 | 10 x 30 | 70 | 35 | R | + |
| K4700016 | WP-15 | 5,5 | 10 x 30 | 70 | 35 | L | + |
| K4700005 | WP-15 | 6 | 10 x 30 | 70 | 35 | R | • |
| K4700006 | WP-15 | 6 | 10 x 30 | 70 | 35 | L | • |
| K4700001 | WP-15 | 8 | 10 x 30 | 70 | 35 | R | • |
| K4700002 | WP-15 | 8 | 10 x 30 | 70 | 35 | L | • |

WP-16



Monolithic through drills **WP-16** with increased life and double angle cutting edge designed for wood-based materials, especially laminated board and hard wood.

It is a group of drills with HM core which significantly increases working part rigidity, resulting in increased stability and life.

Type of work: through drilling.

Material: chipboard, plastics, laminates, hard wood

Special cutting edge geometry with two cutting lines guarantees increased efficiency and life of the tool.

Using double angle on the cutting edge limits the number of tear-outs in the material to minimum.



| Catalogue number
R | Catalogue number
L | Type | D
mm | d x a
mm | L
mm | H
mm | |
|-----------------------|-----------------------|-------|---------|-------------|---------|---------|---|
| K8700141 | K8700142 | WP-16 | 3 | 10×30 | 70 | 35 | + |
| K8700143 | K8700144 | WP-16 | 3 | 10×20 | 70 | 45 | + |
| K8700137 | K8700138 | WP-16 | 4 | 10×30 | 70 | 35 | • |
| K8700139 | K8700140 | WP-16 | 4 | 10×20 | 70 | 45 | + |
| K8700123 | K8700124 | WP-16 | 5 | 10×30 | 70 | 35 | • |
| K8700067 | K8700068 | WP-16 | 5 | 10×20 | 70 | 45 | • |
| K8700125 | K8700126 | WP-16 | 6 | 10×30 | 70 | 35 | • |
| K8700127 | K8700128 | WP-16 | 6 | 10×20 | 70 | 45 | + |
| K8700129 | K8700130 | WP-16 | 8 | 10×30 | 70 | 35 | + |
| K8700133 ▽ | K8700134 ▽ | WP-16 | 10 | 10×30 | 70 | 35 | + |
| K8700133C | K8700134C | WP-16 | 10 | 10×30 | 70 | 35 | + |

▽ - without regulation screw in the shank

Monolithic through drills with increased life, type **WP-26** designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

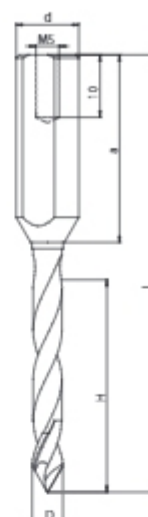
This is a group of drills with HM core which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Type of work: through drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



WP-26



| Catalogue number | Type | D mm | d x a mm | L mm | H mm | ↙ | |
|------------------|-------|------|----------|------|------|---|---|
| K7000001 | WP-26 | 5 | 10 x 30 | 77 | 45 | R | • |
| K7000002 | WP-26 | 5 | 10 x 30 | 77 | 45 | L | • |
| K7000003 | WP-26 | 5,5 | 10 x 30 | 77 | 45 | R | + |
| K7000004 | WP-26 | 5,5 | 10 x 30 | 77 | 45 | L | + |
| K7000005 | WP-26 | 6 | 10 x 30 | 77 | 45 | R | + |
| K7000006 | WP-26 | 6 | 10 x 30 | 77 | 45 | L | + |

Monolithic through drills with increased life, type **WP-35** designed for making holes in solid wood. Special construction of the drill allows for better chip flow which guarantees high quality of solid wood machining.

This is a group of drills with HM core which significantly increases working part stiffness, resulting in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Type of work: through drilling.

Material: solid wood.



WP-35 for wood



| Catalogue number | Type | D mm | d x a mm | L mm | H mm | ↙ | |
|------------------|-------|------|----------|------|------|---|---|
| K8100001 | WP-35 | 5 | 10 x 30 | 77 | 45 | R | + |
| K8100002 | WP-35 | 5 | 10 x 30 | 77 | 45 | L | + |
| K8100003 | WP-35 | 6 | 10 x 30 | 77 | 45 | R | + |
| K8100004 | WP-35 | 6 | 10 x 30 | 77 | 45 | L | + |
| K8100005 | WP-35 | 8 | 10 x 30 | 77 | 45 | R | + |
| K8100006 | WP-35 | 8 | 10 x 30 | 77 | 45 | L | + |

WP-36



Monolithic through drills with increased life, type **WP-36**, characterized by equal diameter of the working part and shank, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.


This is a group of full HM drills with increased stiffness, which results in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Drills made entirely from carbide, without the flat part and regulation screw in the shank.

Type of work: through drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | L
mm | H
mm |  | |
|------------------|-------|---------|---------|---------|---|---|
| K8300001 | WP-36 | 3 | 70 | 35 | R | + |
| K8300002 | WP-36 | 3 | 70 | 35 | L | + |
| K8300003 | WP-36 | 4 | 80 | 45 | R | + |
| K8300004 | WP-36 | 4 | 80 | 45 | L | + |
| K8300007 | WP-36 | 5 | 90 | 50 | R | + |
| K8300008 | WP-36 | 5 | 90 | 50 | L | + |

We offer the flat part on the shank
on customer's request.

WP-01

Through drills with HM tip, type **WP-01**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

Type of work: through drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.



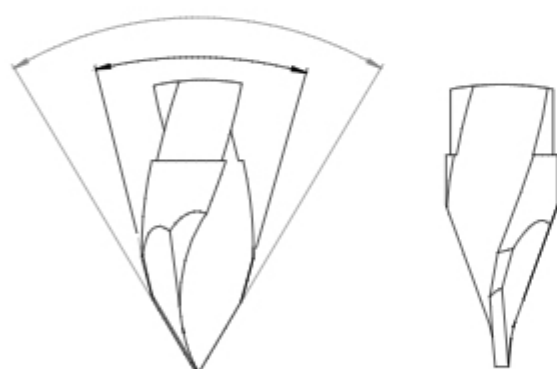
7

| Catalogue number | Type | D
mm | d x a
mm | L
mm | H
mm | ↗ | |
|------------------|-------|---------|-------------|---------|---------|---|---|
| K0500005 | WP-01 | 6 | 10 x 25 | 70 | 40 | R | • |
| K0500006 | WP-01 | 6 | 10 x 25 | 70 | 40 | L | • |
| K0500019 | WP-01 | 6,5 | 10 x 25 | 70 | 40 | R | + |
| K0500020 | WP-01 | 6,5 | 10 x 25 | 70 | 40 | L | + |
| K0500007 | WP-01 | 7 | 10 x 25 | 70 | 40 | R | • |
| K0500008 | WP-01 | 7 | 10 x 25 | 70 | 40 | L | • |
| K0500025 | WP-01 | 7,5 | 10 x 25 | 70 | 40 | R | + |
| K0500026 | WP-01 | 7,5 | 10 x 25 | 70 | 40 | L | + |
| K0500009 | WP-01 | 8 | 10 x 25 | 70 | 40 | R | • |
| K0500010 | WP-01 | 8 | 10 x 25 | 70 | 40 | L | • |
| K0500035 | WP-01 | 9 | 10 x 25 | 70 | 40 | R | + |
| K0500036 | WP-01 | 9 | 10 x 25 | 70 | 40 | L | + |
| K0500011 | WP-01 | 10 | 10 x 25 | 70 | 40 | R | • |
| K0500012 | WP-01 | 10 | 10 x 25 | 70 | 40 | L | • |
| K0500013 | WP-01 | 12 | 10 x 25 | 70 | 40 | R | • |
| K0500014 | WP-01 | 12 | 10 x 25 | 70 | 40 | L | • |

The drills can be used with PG-02 countersink installed on the shank.

More information on page 7.28 of our catalogue.

WP-03



Brazed through drills **WP-03** with increased life and double angle cutting edge designed for wood-based materials, especially laminated board and hard wood.

It is a group of HM tipped drills which, thanks to special edge geometry, increases cutting efficiency and increases tool life compared to standard solutions.

Type of work: through drilling.

Material: chipboard, plastics, laminates, hard wood

Special cutting edge geometry with two cutting lines guarantees increased efficiency and life of the tool.

Using double angle on the cutting edge limits the number of tear-outs in the material to minimum.



| Catalogue number
R | Catalogue number
L | Type | D
mm | d x a
mm | L
mm | H
mm | |
|-----------------------|-----------------------|-------|---------|-------------|---------|---------|---|
| K6400001 | K6400002 | WP-03 | 6 | 10x30 | 70 | 35 | • |
| K6400003 | K6400004 | WP-03 | 6 | 10x20 | 70 | 45 | + |
| K6400005 | K6400006 | WP-03 | 7 | 10x30 | 70 | 35 | + |
| K6400007 | K6400008 | WP-03 | 7 | 10x20 | 70 | 45 | + |
| K6400009 | K6400010 | WP-03 | 8 | 10x30 | 70 | 35 | • |
| K6400011 | K6400012 | WP-03 | 8 | 10x20 | 70 | 45 | + |
| K6400013 | K6400014 | WP-03 | 10 | 10x30 | 70 | 35 | + |
| K6400015 | K6400016 | WP-03 | 10 | 10x20 | 70 | 45 | + |

Through drills with HM tip, type **WP-06**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines.

Type of work: through drilling.

Material: wood and glued wood, chipboard, MDF and similar materials.

WP-06



| Catalogue number | Type | D
mm | d x a
mm | L
mm | H
mm | ↗ | |
|------------------|-------|---------|-------------|---------|---------|---|---|
| K2000001 | WP-06 | 7 | 10 x 25 | 77 | 45 | R | + |
| K2000002 | WP-06 | 7 | 10 x 25 | 77 | 45 | L | + |
| K2000009 | WP-06 | 8 | 10 x 25 | 77 | 45 | R | • |
| K2000010 | WP-06 | 8 | 10 x 25 | 77 | 45 | L | • |

The drills can be used with PG-02 countersink installed on the shank.

More information on page 7.28 of our catalogue.

WN-48, WP-42



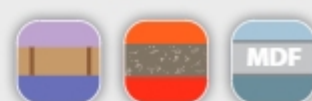
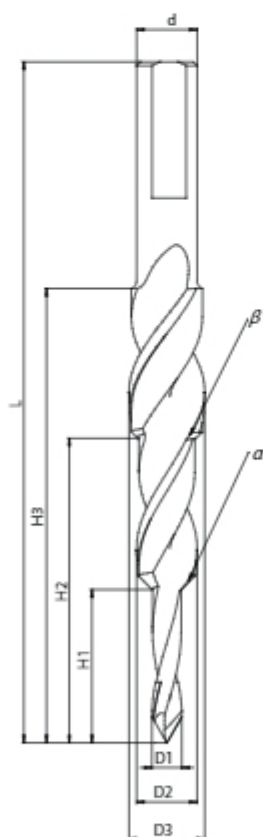
Monolithic step drills with increased life, dowel type **WN-48** and through type **WP-42**, designed for professional machining of wood and wood-based materials as chipboard, laminated board, MDF and others, for use on multi-spindle drilling machines. Special construction of the drill allows for making high quality combined holes without using the countersink.


This is a group of full HM drills with increased rigidity, which results in longer and stable work. Special blade geometry and manufacturing precision guarantee higher machining efficiency and blade's life.

Step drills are made entirely from carbide, without regulation screw in the shank, on individual customer's request.

We can manufacture step drills:

- dowel or through type,
- with various α and β angles,
- with or without the flat part in the shank.



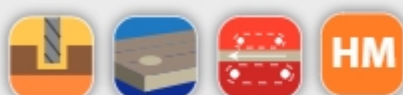
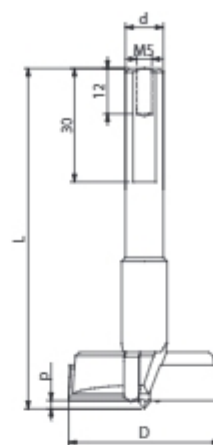
| Catalogue number | Type | D ₁
mm | D ₂
mm | d | L
mm | H ₁
mm | H ₂
mm |  | |
|------------------|-------|----------------------|----------------------|----|---------|----------------------|----------------------|---|---|
| K9200001 | WP-42 | 6 | 10 | 10 | 105 | 45 | 65 | R | + |
| K9200005 | WP-42 | 8 | 10 | 10 | 60 | 55 | 65 | R | + |

Cylinder boring bits with HM tip, type **TW-301** (right) designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others.

Type of work: dowel drilling.

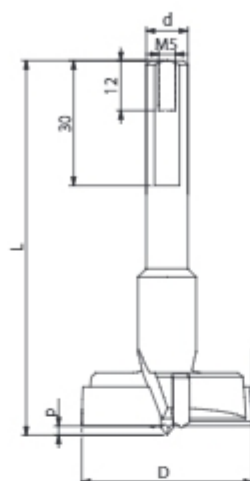
Material: wood and glued wood, chipboard, MDF and similar materials.

TW-301 right



| Catalogue number | Type | D
mm | L
mm | d
mm | p
mm | ↗ | n _{mm} | |
|------------------|--------|---------|---------|---------|---------|---|-----------------|---|
| W0100080 | TW-301 | 15 | 57 | 8 | 1,5 | R | 9000 | • |
| W0100001 | TW-301 | 15 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100067 | TW-301 | 15 | 70 | 10 | 1,5 | R | 9000 | • |
| W0100307 | TW-301 | 15 | 90 | 10 | 1,5 | R | 9000 | + |
| W0100002 | TW-301 | 16 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100003 | TW-301 | 17 | 57 | 10 | 1,5 | R | 9000 | + |
| W0100004 | TW-301 | 18 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100005 | TW-301 | 19 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100081 | TW-301 | 20 | 57 | 8 | 1,5 | R | 9000 | • |
| W0100006 | TW-301 | 20 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100082 | TW-301 | 20 | 70 | 10 | 1,5 | R | 9000 | • |
| W0100250 | TW-301 | 20 | 90 | 10 | 1,5 | R | 9000 | + |
| W0100007 | TW-301 | 22 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100008 | TW-301 | 24 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100058 | TW-301 | 25 | 57 | 8 | 1,5 | R | 9000 | + |
| W0100009 | TW-301 | 25 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100063 | TW-301 | 25 | 70 | 10 | 1,5 | R | 9000 | • |
| W0100064 | TW-301 | 25 | 90 | 10 | 1,5 | R | 9000 | + |
| W0100010 | TW-301 | 26 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100011 | TW-301 | 30 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100012 | TW-301 | 34 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100212 | TW-301 | 35 | 57 | 8 | 1,5 | R | 9000 | • |
| W0100013 | TW-301 | 35 | 57 | 10 | 1,5 | R | 9000 | • |
| W0100062 | TW-301 | 35 | 70 | 10 | 1,5 | R | 9000 | • |
| W0100233 | TW-301 | 35 | 90 | 10 | 1,5 | R | 9000 | + |
| W0100014 | TW-301 | 40 | 57 | 10 | 2,2 | R | 9000 | • |
| W0100015 | TW-301 | 45 | 57 | 10 | 2,2 | R | 9000 | • |
| W0100016 | TW-301 | 50 | 57 | 10 | 2,2 | R | 6000 | • |
| W0100047 | TW-301 | 50 | 70 | 10 | 2,2 | R | 6000 | • |
| W0100282 | TW-301 | 50 | 90 | 10 | 2,2 | R | 6000 | + |
| W0100018 | TW-301 | 55 | 57 | 10 | 2,2 | R | 6000 | • |
| W0100017 | TW-301 | 60 | 57 | 10 | 2,2 | R | 6000 | • |

TW-302 left



Cylinder boring bits with HM tip, type **TW-302** (left) designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others.

Type of work: dowel drilling.

Material: glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | L
mm | d
mm | P
mm |  | n _{max} | |
|------------------|--------|---------|---------|---------|---------|---|------------------|---|
| W0200001 | TW-302 | 15 | 57 | 10 | 1,5 | L | 9000 | • |
| W0200054 | TW-302 | 15 | 70 | 10 | 1,5 | L | 9000 | • |
| W0200002 | TW-302 | 16 | 57 | 10 | 1,5 | L | 9000 | + |
| W0200004 | TW-302 | 18 | 57 | 10 | 1,5 | L | 9000 | • |
| W0200006 | TW-302 | 20 | 57 | 10 | 1,5 | L | 9000 | • |
| W0200059 | TW-302 | 20 | 70 | 10 | 1,5 | L | 9000 | • |
| W0200009 | TW-302 | 25 | 57 | 10 | 1,5 | L | 9000 | + |
| W0200052 | TW-302 | 25 | 70 | 10 | 1,5 | L | 9000 | • |
| W0200053 | TW-302 | 25 | 90 | 10 | 1,5 | L | 9000 | + |
| W0200010 | TW-302 | 26 | 57 | 10 | 1,5 | L | 9000 | • |
| W0200011 | TW-302 | 30 | 57 | 10 | 1,5 | L | 9000 | + |
| W0200012 | TW-302 | 34 | 57 | 10 | 1,5 | L | 9000 | + |
| W0200013 | TW-302 | 35 | 57 | 10 | 1,5 | L | 9000 | • |
| W0200051 | TW-302 | 35 | 70 | 10 | 1,5 | L | 9000 | • |
| W0200086 | TW-302 | 40 | 90 | 10 | 1,5 | L | 9000 | + |

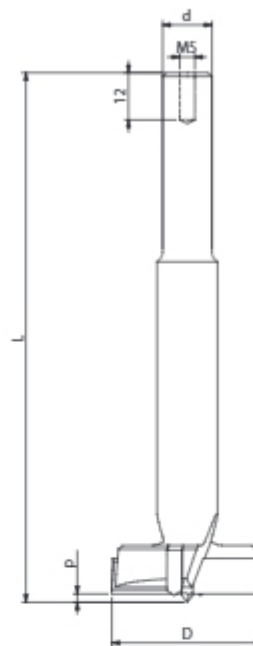
Cylinder boring bits with HM tip, type **TW-301** (right) designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others.

Boring bits with shank other than $d=10$ mm are made as standard without the flat part.

Type of work: dowel drilling.

Material: glued wood, chipboard, MDF and similar materials.

TW-301



| Catalogue number | Type | D
mm | L
mm | d
mm | p
mm | | n _{max} | |
|------------------|--------|---------|---------|---------|---------|---|------------------|---|
| W0100388 | TW-301 | 25 | 140 | 13 | 1,5 | R | 9000 | + |
| W0100147 | TW-301 | 50 | 140 | 16 | 2,2 | R | 6000 | + |

We offer the flat part on the shank on customer's request.

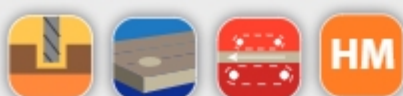
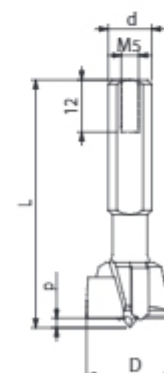
7

Cylinder boring bits with HM tip and decreased pilot (centering point) height, type **TW-301A** (right) designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others. Special boring bit construction – decreased pilot height eliminates the risk of ripping the material on the other side of the board, with small material thickness.

Type of work: dowel drilling.

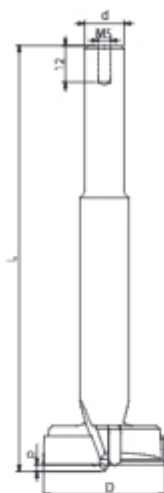
Material: glued wood, chipboard, MDF and similar materials.

TW-301A



| Catalogue number | Type | D
mm | L
mm | d
mm | p
mm | | n _{max} | |
|------------------|---------|---------|---------|---------|---------|---|------------------|---|
| W0100336 | TW-301A | 15 | 57 | 10 | 1 | R | 9000 | • |
| W0100098 | TW-301A | 15 | 70 | 10 | 1 | R | 9000 | • |

TW-302



Cylinder boring bits with HM tip, type **TW-302** (left) designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others.

Drills with shank other than $d=10$ mm are made as standard without the flat part.

Type of work: dowel drilling.

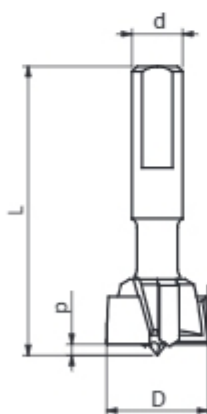
Material: glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | L
mm | d
mm | P
mm | | n _{max} |
|------------------|--------|---------|---------|---------|---------|---|------------------|
| W0200140 | TW-302 | 40 | 140 | 13 | 2,2 | L | 9000 + |

We offer the flat part on the shank on customer's request.

TW-302A



Cylinder boring bits with HM tip and decreased pilot (centering point) height, type **TW-302A** (left) designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others. Special boring bit construction – decreased pilot height eliminates the risk of ripping the material on the other side of the board, with small material thickness.

Type of work: dowel drilling.

Material: glued wood, chipboard, MDF and similar materials.



| Catalogue number | Type | D
mm | L
mm | d
mm | P
mm | | n _{max} |
|------------------|---------|---------|---------|---------|---------|---|------------------|
| W0200336 | TW-302A | 15 | 57 | 10 | 1 | L | 9000 • |
| W0200098 | TW-302A | 15 | 70 | 10 | 1 | L | 9000 • |

Cylinder boring bits with pilot drill, type **TW-301C** (right) and **TW-302C** (left) designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others. Special boring bit construction allows for making high quality combined holes in one operation.

Cylinder boring bits with pilot drill are produced only on individual customer's request. We can manufacture, as a component, a pilot drill:

- dowel or through type,
- monolith or with HM tip.

Drills with shank other than $d=10$ mm are made as standard without the flat part.

Type of work: dowel and through drilling (depending on the component).

Material: glued wood, chipboard, MDF and similar materials.

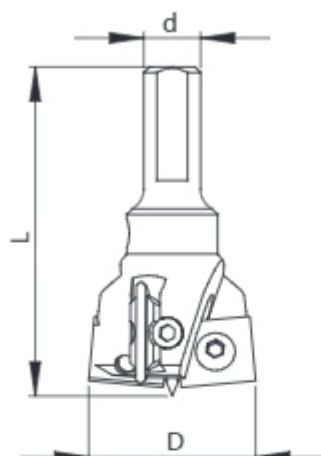
TW-301C TW-302C



| Catalogue number | Type | D
mm | D ₁
mm | L
mm | d
mm | H
mm | a | ↗ | |
|------------------|---------|---------|----------------------|---------|---------|---------|----|---|---|
| W0100426 | TW-301C | 25 | 10 | 57 | 10 | 45 | 25 | R | + |
| W0100267 | TW-301C | 30 | 7 | 70 | 10 | 30 | 30 | R | + |

We offer the flat part on the shank
on customer's request.

FTS-30



Cylinder boring cutter heads with exchangeable HM knives, type **FTS-30** designed for making holes for box hinges in wood and wood-based materials as chipboard, laminated board, MDF and others.

Type of work: dowel drilling.

Material: glued wood, chipboard, MDF and similar materials.



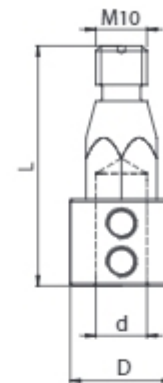
| Catalogue number | Type | D
mm | L
mm | d
mm | ↗ | |
|------------------|--------|---------|---------|---------|---|---|
| FTS.30P2501.01 | FTS-30 | 25 | 58 | 10 | R | + |
| FTS.30L2501.01 | FTS-30 | 25 | 58 | 10 | L | + |
| FTS.30P2501.02 | FTS-30 | 25 | 70 | 10 | R | + |
| FTS.30L2501.02 | FTS-30 | 25 | 70 | 10 | L | + |
| FTS.30P2601.01 | FTS-30 | 26 | 58 | 10 | R | + |
| FTS.30L2601.01 | FTS-30 | 26 | 58 | 10 | L | + |
| FTS.30P2601.02 | FTS-30 | 26 | 70 | 10 | R | + |
| FTS.30L2601.02 | FTS-30 | 26 | 70 | 10 | L | + |
| FTS.30P3001.01 | FTS-30 | 30 | 58 | 10 | R | + |
| FTS.30L3001.01 | FTS-30 | 30 | 58 | 10 | L | + |
| FTS.30P3001.02 | FTS-30 | 30 | 70 | 10 | R | + |
| FTS.30L3001.02 | FTS-30 | 30 | 70 | 10 | L | + |
| FTS.30P3501.01 | FTS-30 | 35 | 58 | 10 | R | + |
| FTS.30L3501.01 | FTS-30 | 35 | 58 | 10 | L | + |
| FTS.30P3501.02 | FTS-30 | 35 | 70 | 10 | R | + |
| FTS.30L3501.02 | FTS-30 | 35 | 70 | 10 | L | + |

Spare parts for cutter heads FTS-30

| Cat. nr | Name | Dimensions | Quantity | | | | |
|-----------|-------|------------|----------|--|---|-----------|----------------|
| | Knife | Bx13,2x2 | 2 | | + | WHAS00004 | Screw |
| N0000726 | Spurs | 18x6x3,5 | 2 | | + | WHAS00063 | Screw |
| WHA101602 | Pilot | Ø3x33,5 | 1 | | + | WHAW00008 | Push screw |
| | | | | | | WHAS00026 | Locating screw |

Conical drill holder.

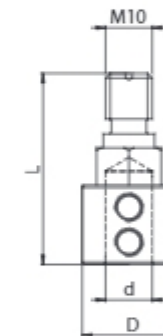
For conical drill holders we use push screws M6 x 6 according to DIN 914 standard.

OST-01

| Catalogue number | Type | D
mm | d
mm | L
mm |  | |
|------------------|--------|---------|---------|---------|---|---|
| U0001001 | OST-01 | 20 | 10 | 47 | R | • |
| U0001002 | OST-01 | 20 | 10 | 47 | L | • |

Cylindrical drill holder.

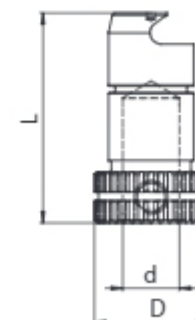
For cylindrical drill holders we use push screws M6 x 6 according to DIN 914 standard.

OWA-01

| Catalogue number | Type | D
mm | d
mm | L
mm |  | |
|------------------|--------|---------|---------|---------|---|---|
| U0001003 | OWA-01 | 20 | 10 | 41 | R | • |
| U0001004 | OWA-01 | 20 | 10 | 41 | L | • |

Quick-release drill holder.

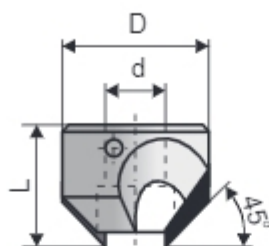
For quick-release drill holders we use push screws M6 x 6 according to DIN 553 standard.

OSZ-01

| Catalogue number | Type | D
mm | d
mm | L
mm | | |
|------------------|--------|---------|---------|---------|--|---|
| U0001005 | OSZ-01 | 20 | 10 | 37 | | • |



PG-01



Countersink for drills.

PG-01 countersink is used with drills with brazed HM tips:

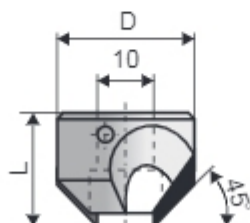
- WN-03,
- WN-06,
- WN-07.

The countersink can be mounted on the working part of a drill with double helix line.

| Catalogue number | Type | D
mm | d
mm | L
mm | ↗ | |
|------------------|-------|---------|---------|---------|---|---|
| K1000001 | PG-01 | 14 | 4 | 12 | R | + |
| K1000002 | PG-01 | 14 | 4 | 12 | L | + |
| K1000003 | PG-01 | 14 | 5 | 12 | R | + |
| K1000004 | PG-01 | 14 | 5 | 12 | L | + |
| K1000005 | PG-01 | 16 | 6 | 14 | R | + |
| K1000006 | PG-01 | 16 | 6 | 14 | L | + |
| K1000007 | PG-01 | 16 | 7 | 14 | R | + |
| K1000008 | PG-01 | 16 | 7 | 14 | L | + |
| K1000009 | PG-01 | 16 | 8 | 16 | R | + |
| K1000010 | PG-01 | 16 | 8 | 16 | L | + |
| K1000011 | PG-01 | 20 | 10 | 18 | R | + |
| K1000012 | PG-01 | 20 | 10 | 18 | L | + |
| K1000013 | PG-01 | 20 | 12 | 18 | R | + |
| K1000014 | PG-01 | 20 | 12 | 18 | L | + |



PG-02



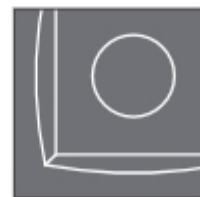
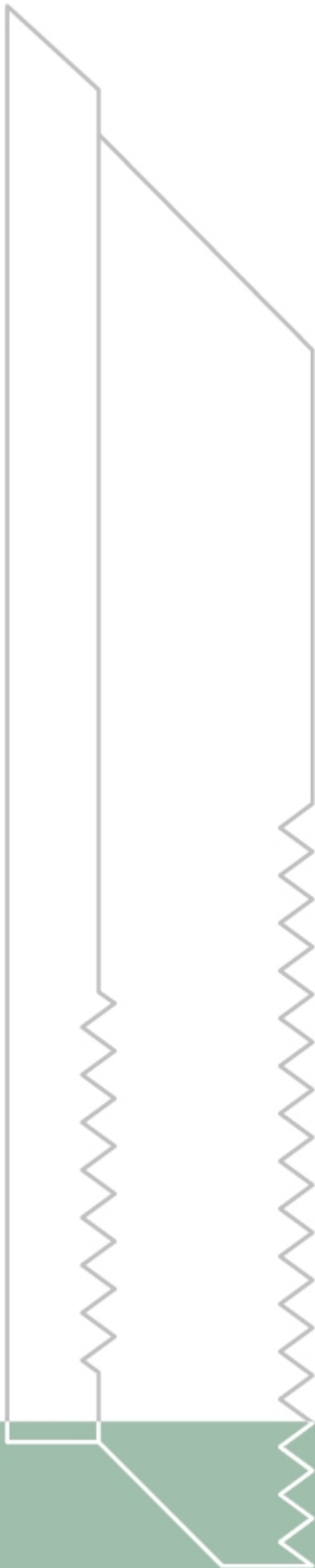
Countersink for drills.

PG-02 countersink is used with drills with brazed HM tips:

- WN-01,
- WN-02,
- WN-04,
- WP-01,
- WP-03,
- WP-06.

The countersink can be mounted on the shank of a drill. It is necessary to use a cylindrical shank with the flat part.

| Catalogue number | Type | D
mm | d
mm | L
mm | ↗ | |
|------------------|-------|---------|---------|---------|---|---|
| K4000001 | PG-02 | 20 | 4÷10 | 15 | R | + |
| K4000002 | PG-02 | 20 | 4÷10 | 15 | L | + |
| K4000003 | PG-02 | 22 | 11÷12 | 16 | R | + |
| K4000004 | PG-02 | 22 | 11÷12 | 16 | L | + |



8. Knives, spare parts

Knives, spare parts

Cutting knives from high speed steel (HSS) designed for professional machining of solid soft wood, cutting knives from carbide (HM) designed for professional machining of solid soft and hard wood, glued wood and other wood-based materials. Knives 1100-4H have been improved with high performance coating HP or HX. Properly selected coating, significantly increases (even several times) life of the tool. Knives with HP and HX coating are designed for cutting dry hardwood at temperature up to 200°C (HP) and for cutting wet softwood at temperature up to 300°C (HX). They are used for machining flat surfaces, grooves, rebates and specialist surface and edge profiling

Knives are made from the highest quality high speed cutting steel and carbide in special heat treatment and profiling technology, properly selected for the type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work in cooperation with other tools both in standard and extreme conditions. Knives are offered also in the version combining high speed cutting steel with carbide as in the case of knives 1100-4.

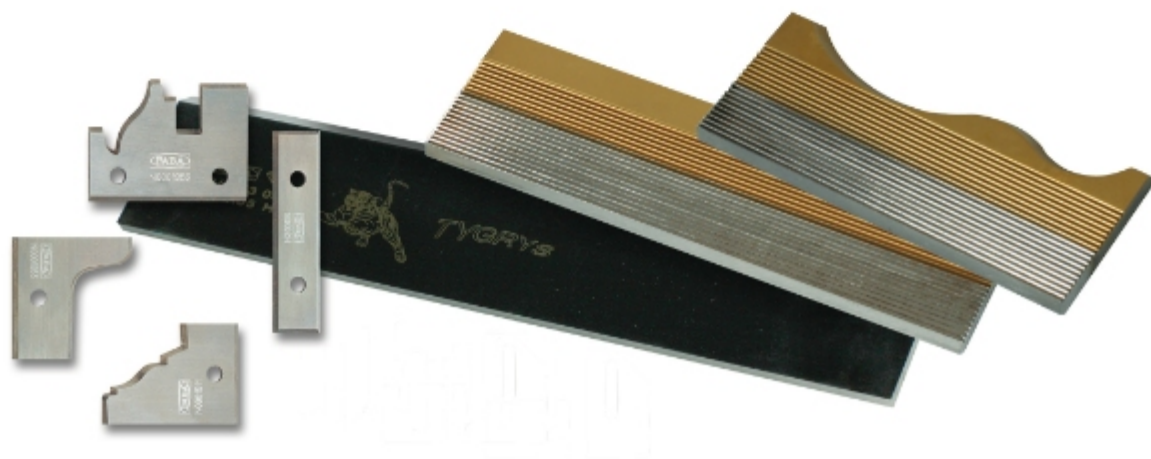
Knives are designed for cutter heads with or without shear angle and optimized chip flow. Very precise tool production and balancing allows for rotation speed up to 24 000 r.p.m.

All types of cutting knives are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

Knives and spare parts chapter includes only examples of knives with basic dimensions. On request, we can suggest and manufacture proper knife for the required type of tool, profile, work, material as well as parameters and conditions during machining. The production time of knives or catalogue components indicated with "+" as well as special ones made on client's request in most cases does not take more than 10-15 working days.

Orders should include:

- tool outer diameter (D) or diameters range,
- HM tip depth (h),
- knife length (B),
- knife height (L),
- knife thickness (b),
- profile depth (G_p),
- type of machined material,
- number of teeth (z) or spindle rotation speed and feed speed.



Contents

8. KNIVES, SPARE PARTS

| | |
|-----------------------------|------------|
| Pictograms | 8.3 |
| 8.1 Knives for cutter heads | 8.4 |
| 8.2 Exchangeable inserts | 8.9 |
| 8.3 Knives for treenails | 8.12 |
| 8.4 Knives for debarking | 8.14 |
| 8.5 Knives and inserts | 8.15 |
| 8.6 Clamping wedges, screws | 8.16 |
| 8.7 Reduction sleeves | 8.19 |
| 8.8 Spacer rings | 8.20 |

Pictograms



solid dry softwood



solid dry hardwood



solid wet softwood



solid wet hardwood



chipboard



glued wood



MDF



plastics



high-speed cutting steel



high-speed cutting steel 18% wolfram



carbide



HP coating



HX coating



flat surfaces



grooving



profiling



debarking




- available / stock product
 - + production time 9–15 working days.
- Minimum order for knives and inserts is agreed individually.

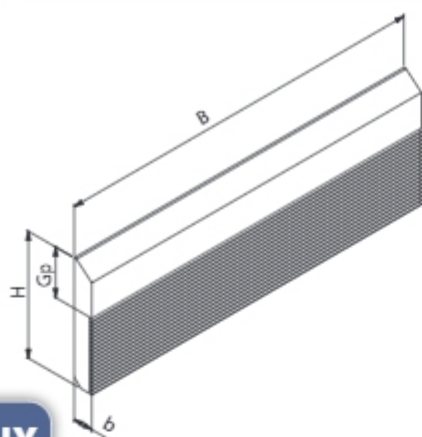
GP

Cutting knife, type **GP-01** or **GP-03** with one cutting edge, designed for professional machining of solid wood. The knife is used for cutting flat surfaces or profiling. Height is regulated by precise serration. The knife is offered also with HP or HX coating.


Type of work: cutting flat surfaces, profiling.

Material:

-  solid wood
-  solid, dry wood, plastics
-  solid, wet wood, plastics






GP-01

| D = mm
b = mm
H = mm
Gp _{max} = mm | 122
8
40
8 | 122
8
50
15 | 122
8
60
25 |
|--|--|--|--|
| B mm | Catalogue number  | Catalogue number  | Catalogue number  |
| 40 | | N2050012 • | N2050022 • |
| 50 | | N2050013 + | N2050023 + |
| 60 | N20500004 + | N2050014 • | N2050024 • |
| 80 | | N2050015 • | N2050025 • |
| 100 | | N2050016 • | N2050026 • |
| 120 | | N2050017 • | N2050027 + |
| 150 | | N2050018 • | N2050028 • |
| 180 | | N2050019 • | N2050029 + |
| 200 | | N2050020 + | N2050030 + |
| 320 | | N2050519 • | |

Profiles in knives GP-01 are made only on client's request according to individual pricing.

GP-03

| D = mm
b = mm
H = mm | 122
5
40 | 122
5
40 | 122
5
40 |
|----------------------------|--|--|--|
| B mm | Catalogue number  | Catalogue number  | Catalogue number  |
| 60 | N2050186 + | N2050186HP + | N2050186HX + |
| 80 | N2050187 + | N2050187HP + | N2050187HX + |
| 100 | N2050188 + | N2050188HP + | N2050188HX + |
| 130 | N2050189 + | N2050189HP + | N2050189HX + |
| 150 | N2050190 + | N2050190HP + | N2050190HX + |
| 200 | N2050191 + | N2050191HP + | N2050191HX + |

More informations about knives with HP or HX coating on page 8.8 of the catalogue.

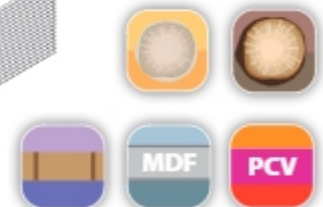
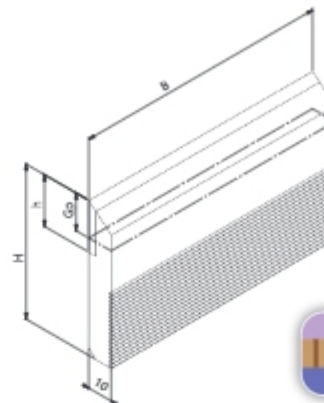
Cutting knife with **HM tip** designed for professional machining of solid wood. The knife is used for precise cutting of flat surfaces. Special geometry allows for working together with GP cutter heads. Height regulated with precise serration. Knives thickness 10 mm. Depending on size and depth of the profile mould, the proper height of the carbide tip should be chosen.

Type of work: cutting flat surfaces, profilings.

Material: solid soft and hard wood, glued wood, chipboard, MDF, PCV.



HM tipped knives



| H = mm
h = mm
Gp _{max} = mm | 50
20
15 | 60
20
15 | 60
25
19 |
|--|----------------|----------------|----------------|
| B mm | | | |
| 60 | + | + | + |
| 80 | + | + | + |
| 100 | + | + | + |
| 130 | + | + | + |

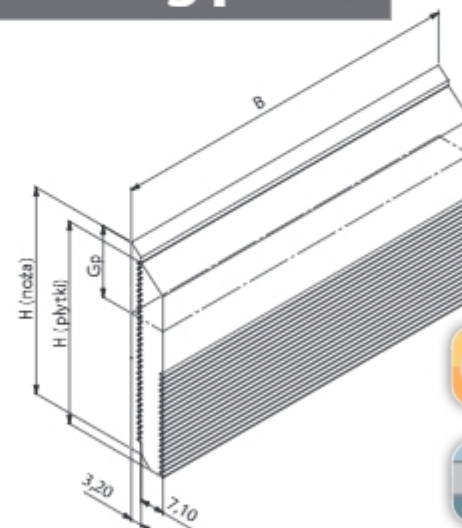
Cutting **knife HM with backing plate** designed for professional machining of solid wood. The knife is used for precise cutting of flat surfaces and profiling. Special geometry allows for working together with GP-01 and GPL-01 cutter heads. Height regulated with precise serration. Knives thickness 3,2 mm. The set includes backing plate which guarantees better support of the HM tip.

Type of work: cutting flat surfaces, profiling.

Material: solid soft and hard wood, glued wood, chipboard, MDF, PCV.

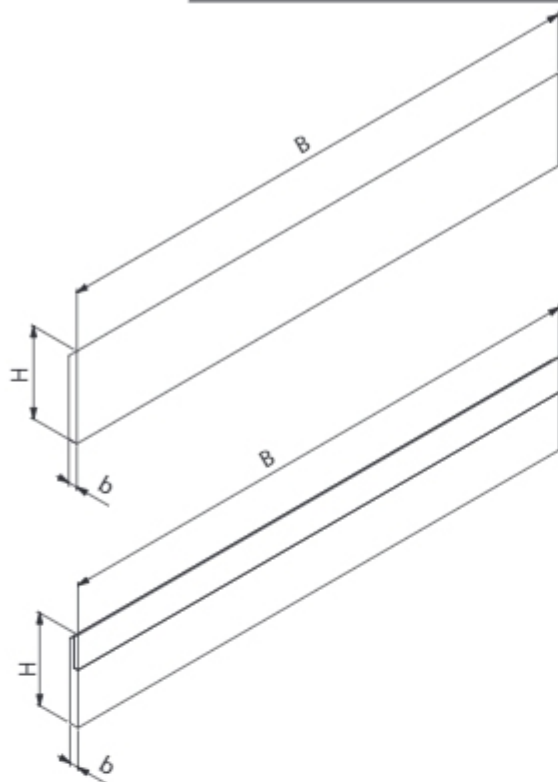


HM knives and backing plates



| B mm | Knife size
H x b (Gp _{max}) mm | | Support knife size
H x b mm | |
|------|---|---|--------------------------------|---|
| 60 | 50 x 3,2 (15) | + | 47 x 7,1 | + |
| 60 | 60 x 3,2 (20) | + | 57 x 7,1 | + |
| 100 | 50 x 3,2 (15) | + | 47 x 7,1 | + |
| 100 | 60 x 3,2 (20) | + | 57 x 7,1 | + |
| 150 | 50 x 3,2 (15) | + | 47 x 7,1 | + |
| 150 | 60 x 3,2 (20) | + | 57 x 7,1 | + |


1100-4




Precise cutting knife, type **1100-4** with one cutting edge, designed for professional machining of solid wood. The knife is used for cutting flat surfaces. Special geometry allows for working together with 1100-4 and 1100-5 cutter heads.




Type of work: cutting flat surfaces

Material:

 solid softwood

 solid hardwood







| b
H | 3
30 | | 3
35 | | 3
30 | |
|--------|--|---|--|---|--|---|
| B mm | Catalogue number  | | Catalogue number  | | Catalogue number  | |
| 60 | N2040101 | • | N2040201 | • | N2040101W | • |
| 80 | N2040102 | • | N2040202 | + | N2040102W | • |
| 100 | N2040103 | • | N2040203 | • | N2040103W | • |
| 130 | N2040104 | • | N2040204 | • | N2040104W | • |
| 150 | N2040105 | • | N2040205 | • | N2040105W | • |
| 160 | N2040106 | • | N2040206 | + | N2040106W | • |
| 180 | N2040107 | • | N2040207 | • | N2040107W | • |
| 200 | N2040141 | • | | | N2040141W | + |
| 230 | N2040108 | • | N2040208 | • | N2040108W | • |
| 270 | N2040109 | • | N2040209 | + | N2040109W | + |
| 300 | N2040110 | + | N2040210 | + | N2040110W | + |
| 310 | N2040137 | • | | | | |
| 350 | N2040111 | + | N2040211 | + | N2040111W | + |
| 410 | N2040112 | • | N2040212 | • | N2040112W | • |
| 510 | N2040114 | • | N2040214 | • | N2040114W | + |
| 610 | N2040116 | • | N2040216 | • | N2040116W | + |
| 640 | N2040118 | • | N2040218 | • | | |
| 710 | N2040119 | + | | | | |
| 810 | N2040120 | • | N2040220 | • | | |

Knives 1100-4 with length not given in the chart we offer on client's request according to individual pricing.

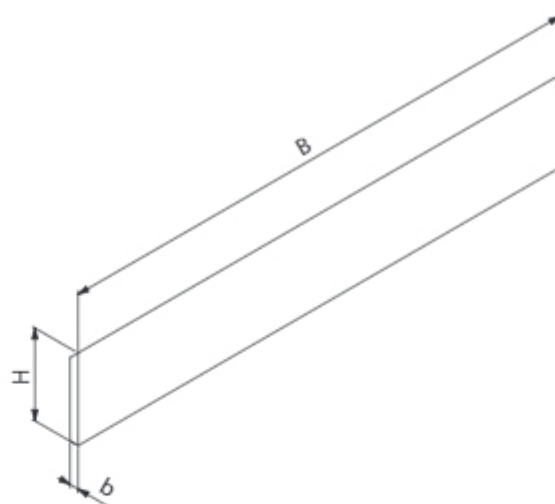
Precise cutting knife, type **1100-4H** and coated knife type TYGRYS with one cutting edge, designed for professional machining of solid wood. The knife is used for precise cutting of flat surfaces. Special geometry allows for working together with 1100-4H and 1100-5H cutter heads. The knife is offered as HSS steel or HSS 18% wolfram version, as well as with HP and HX coating increasing life of the knife several times.





Type of work: cutting flat surfaces.

Material:

-  solid softwood
-  solid, dry softwood and hardwood
-  solid, dry wood, plastics
-  solid, wet wood, plastics

1100-4 H



| b
H | 3
30 | | 3
30 | | 3
30 | | 3
30 | |
|--------|--|---|--|---|--|---|--|---|
| B mm | Catalogue number  | | Catalogue number  | | Catalogue number  | | Catalogue number  | |
| 60 | N2041101 | + | N2041101.18 | + | N2081101HP | • | N2081101HX | + |
| 80 | N2041102 | + | N2041102.18 | + | N2081102HP | + | N2081102HX | + |
| 100 | N2041103 | • | N2041103.18 | • | N2081103HP | • | N2081103HX | + |
| 130 | N2041104 | • | N2041104.18 | • | N2081104HP | • | N2081104HX | + |
| 150 | N2041105 | • | N2041105.18 | • | N2081105HP | • | N2081105HX | + |
| 160 | N2041106 | • | N2041106.18 | • | N2081106HP | + | N2081106HX | + |
| 180 | N2041107 | • | N2041107.18 | • | N2081107HP | • | N2081107HX | + |
| 200 | | | | | N2081141HP | + | N2081141HX | + |
| 230 | N2041108 | • | N2041108.18 | • | N2081108HP | • | N2081108HX | + |
| 270 | N2041109 | + | N2041109.18 | + | N2081109HP | + | N2081109HX | + |
| 300 | N2041110 | + | | | N2081110HP | + | N2081110HX | + |
| 310 | | | | | N2081137HP | + | N2081137HX | + |

Knives 1100-4 HSS with length not given in the chart (max 310 mm) we offer on client's request according to individual pricing.

More informations about knives with HP or HX coating on page 8.8 of the catalogue.

SUPER LONG LIFE knives 1100-4 H TYGRYS HP and HX

PERFECT SURFACE QUALITY
INCREASED LIFE OF THE KNIFE



1100-4H knives have been improved by adding special HP or HX coating. The coating, properly chosen for the kind of machined material significantly (even several times) increases life of the knife.

Planer knives **1100-4H** in special version with increased manufacturing precision with coating:

- **HP** are designed for dry and hard wood cutting. Maximum temperature of work in wood up to 200°C.
- **HX** are designed for wet and soft wood cutting. Maximum temperature of work in wood up to 300°C.

We produce knives 35 mm high or with dimensions not given in the catalogue (max. 310 mm) as well as HX coated knives on client's request within 20 working days according to individual pricing.



Cutting blades with two cutting edges designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The blades are used for cutting flat surfaces, grooving and profiling.

Type of work: cutting flat surfaces, grooving.

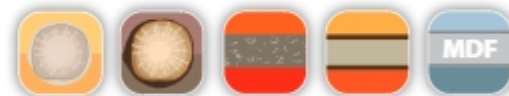
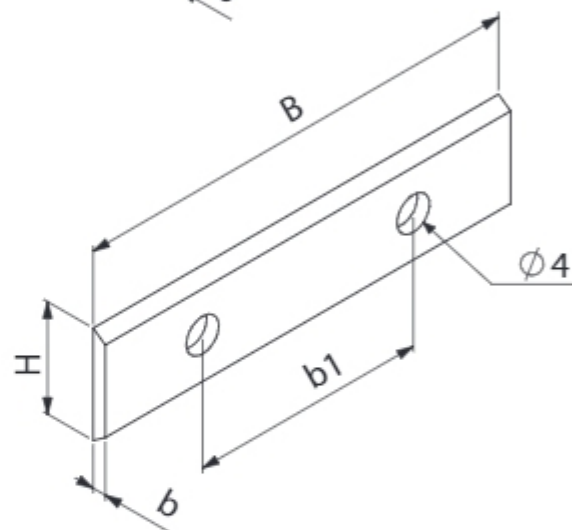
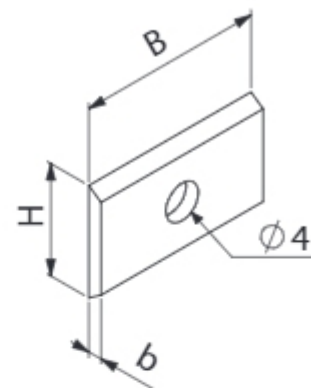
Material: solid wood, chipboard.

Two-edge S

Inserts made from super hard carbide which guarantees increased durability and abrasion resistance.

Material: chipboard, laminated board, MDF, HDF.

Two-edge inserts



| Catalogue number | Type | B x H x b mm | b1 mm | Number of holes |
|------------------|------|-------------------|-------|-----------------|
| N0000801 | | 7,5 x 12 x 1,5 | | 1 • |
| N0000802 | | 9,6 x 12 x 1,5 | | 1 • |
| N0000803 | | 11,6 x 12 x 1,5 | | 1 • |
| N0000804 | | 15,0 x 12 x 1,5 | | 1 • |
| N0000804S | S | 15,0 x 12 x 1,5 | | 1 • |
| N0000829 | | 15,7 x 12 x 1,5 | | 1 + |
| N0000826 | | 17,0 x 12 x 1,5 | | 1 + |
| N0000509 | | 19,6 x 12 x 1,5 | | 1 • |
| N0000805 | | 20,0 x 12 x 1,5 | | 1 • |
| N0000736 | S | 20,0 x 12 x 1,5 | | 1 • |
| N0000806 | | 24,7 x 12 x 1,5-1 | | 1 • |
| N0000807 | | 24,7 x 12 x 1,5-2 | 14 | 2 • |

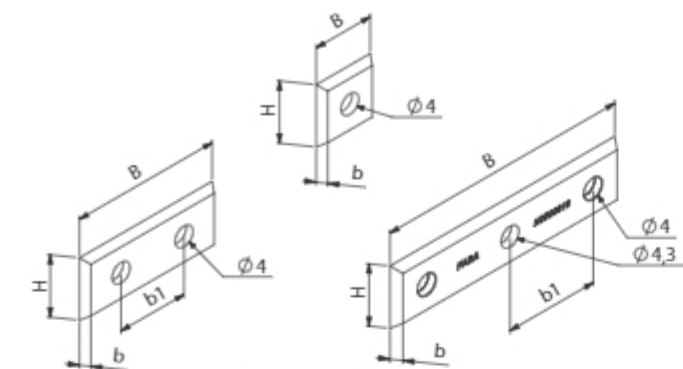
| Catalogue number | Type | B x H x b mm | b1 mm | Number of holes |
|------------------|------|------------------|-------|-----------------|
| N0000808 | | 30,0 x 12 x 1,5 | 14 | 2 • |
| N0000835 | S | 30,0 x 12 x 1,5 | 14 | 2 • |
| N0000809 | | 40,0 x 12 x 1,5 | 26 | 2 • |
| N0000823S | S | 40,0 x 12 x 1,5 | 26 | 2 • |
| N0000810 | | 50,0 x 12 x 1,5 | 26 | 2 • |
| N0000837 | S | 50,0 x 12 x 1,5 | 26 | 2 • |
| N0000516 | | 59,5 x 12 x 1,5 | 26 | 2 • |
| N0000811 | | 60,0 x 12 x 1,5 | 26 | 2 • |
| N0000838 | S | 60,0 x 12 x 1,5 | 26 | 2 • |
| N0000636 | | 79,6 x 13 x 2,2 | 60 | 2 + |
| N0000861 | | 80,0 x 13 x 2,2 | 60 | 2 • |
| N0000843 | | 100,0 x 13 x 2,2 | 60 | 2 + |

Four-edge inserts

Cutting blades with four cutting edges designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The blades are used for cutting flat surfaces and grooving.

Type of work: cutting flat surfaces, grooving.

Material: solid wood, chipboard.



| Catalogue number | Type | B x H x b mm | b1 mm | Number of holes |
|------------------|------|-----------------|-------|-----------------|
| N0000813 | | 12 x 12 x 1,5 | | 1 • |
| N00008545 | | 12 x 12 x 1,5 | | 1 • |
| N0000828 | | 17 x 17 x 2,0 | | 1 • |
| N0000814 | | 29,5 x 12 x 1,5 | 14 | 2 • |

| Catalogue number | Type | B x H x b mm | b1 mm | Number of holes |
|------------------|------|-----------------|-------|-----------------|
| N0000815 | | 39,5 x 12 x 1,5 | 26 | 2 + |
| N0000816 | | 49,5 x 12 x 1,5 | 26 | 2 • |
| N0000812 | | 50 x 12 x 1,7 | 18,5 | 3 • |

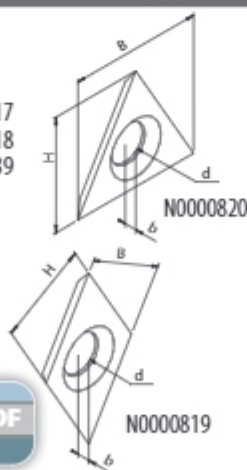
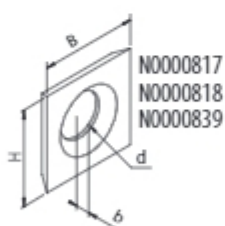
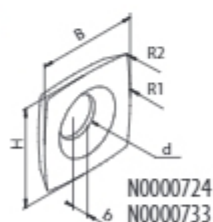
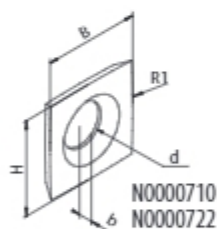
Four-edge R / Spur knives

Four-edge inserts R used in cutter heads type G309 and G509. The inserts are perfect for finishing. Special geometry guarantees excellent surface quality.

Spur knives used for tenoning cutter heads as well as traditional and spiral ones. Designed for machining solid hard and soft wood and glued wood.

Type of work: cutting flat surfaces, grooving.

Material: solid wood, chipboard, MDF.



| Catalogue number | B x H x b mm | R1/R2 mm | d mm | |
|------------------|---------------|----------|------|---|
| N0000710 | 14 x 14 x 2,0 | 150 | 6,5 | • |
| N0000722 | 15 x 15 x 2,5 | 50 | 6,2 | + |
| N0000724 | 15 x 15 x 2,5 | 50/0,6 | 6,2 | + |
| N0000733 | 15 x 15 x 2,5 | 150/0,5 | 6,2 | • |
| N0000777 | 15 x 15 x 2,5 | 115 | 6,2 | • |

| Catalogue number | B x H x b mm | d mm | |
|------------------|-------------------|------|---|
| N0000817 | 14 x 14 x 1,2 | 8,3 | • |
| N0000818 | 14 x 14 x 2,0 | 6,5 | • |
| N0000819 | 14 x 14 x 2,0 | 6,5 | • |
| N0000839 | 14,3 x 14,3 x 2,5 | 6,5 | • |
| N0000820 | 22 x 19 x 2,0 | 6,5 | • |

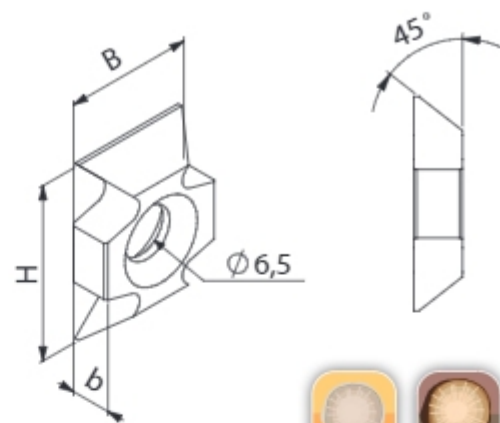
Knives type **FKB-45** are used in specialist cutter heads for edge beveling of the machined elements. Edge beveling is possible within the range of 1–3 mm x 45. The knife is made entirely from HM.

Material: solid wood, soft and hard, glued wood.

| Catalogue number | B x H x b
mm | | |
|------------------|-----------------|-----|---|
| N0000870 | 16 x 22 x 5 | 45° | • |



FKB-45°



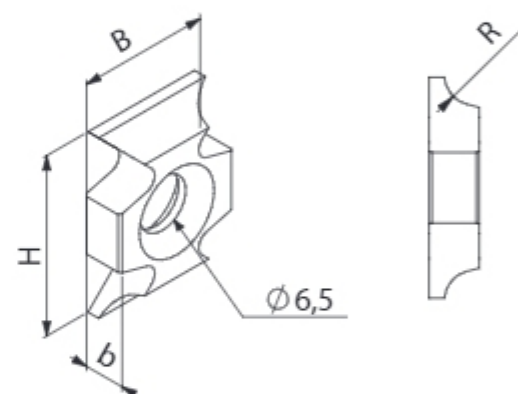
Knives type **FKB-R** are used in specialist cutter heads for edge rounding of the machined elements. Edge rounding is possible within the range of 1–3 mm. The knife is made entirely from HM.

Material: solid wood, soft and hard, glued wood.

| Catalogue number | B x H x b
mm | R
mm | |
|------------------|-----------------|---------|---|
| N0000871 | 16 x 22 x 5 | 1,0 | + |
| N0000872 | 16 x 22 x 5 | 1,5 | • |
| N0000873 | 16 x 22 x 5 | 2,0 | • |
| N0000874 | 16 x 22 x 5 | 2,5 | • |
| N0000875 | 16 x 22 x 5 | 3,0 | • |



FKB-R



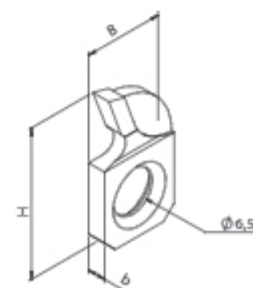
Grooving knives are used for making grooves e.g. for silicone. The range of available width 3–5 mm. Maximum groove depth 10 mm.

Material: solid wood, soft and hard, glued wood.

| Catalogue number | H x B x b
mm | b
mm | |
|------------------|-----------------|---------|---|
| N0000880 | 24,5 x 13 x 3,0 | 3 | + |
| N0000881 | 24,5 x 13 x 4,0 | 4 | • |
| N0000882 | 24,5 x 13 x 5,0 | 5 | + |



Grooving knife

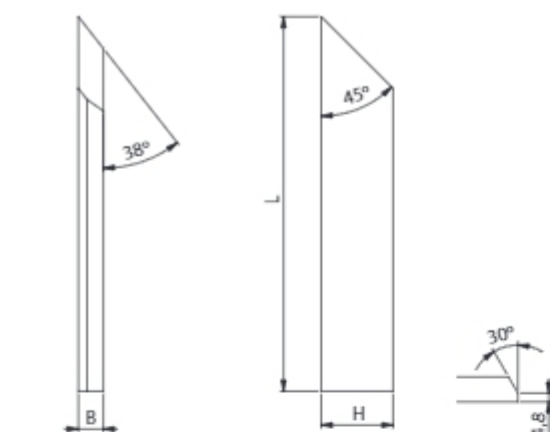


NOB-01A

Cutting knife, type **NOB-01A** designed for solid wood roughing. The knife is used for pre-cutting. Additional profile edge improves surface quality and lowers energy consumption.

Type of work: cutting flat surfaces.

Material: solid hardwood.



Drawing shows left knife.



HSS

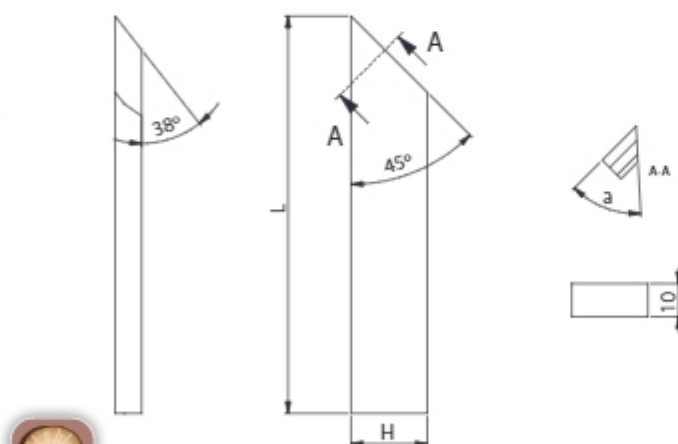
| Catalogue number | L
mm | H
mm | B
mm | | | |
|------------------|---------|---------|---------|-----|---|---|
| N2100593P | 140 | 20 | 10 | HSS | P | + |
| N2100593L | 140 | 20 | 10 | HSS | L | + |
| N2100416P | 140 | 33 | 10 | HSS | P | + |
| N2100416L | 140 | 33 | 10 | HSS | L | • |
| N2100536P | 200 | 20 | 10 | HSS | P | + |
| N2100536L | 200 | 20 | 10 | HSS | L | + |

NOB-01B

Cutting knife, type **NOB-01B** designed for solid wood roughing. The knife is used for pre-cutting. Special geometry increases performance and machining efficiency.

Type of work: cutting flat surfaces.


Material: solid hardwood.



Drawing shows left knife.



HSS

| Catalogue number | L
mm | H
mm | B
mm | α | |  |
|------------------|---------|---------|---------|----------|-----|---|
| N2100319P | 200 | 20 | 10 | 40° | HSS | P + |
| N2100319L | 200 | 20 | 10 | 40° | HSS | L • |
| N2100088P | 200 | 20 | 10 | 35° | HSS | P + |
| N2100088L | 200 | 20 | 10 | 35° | HSS | L + |

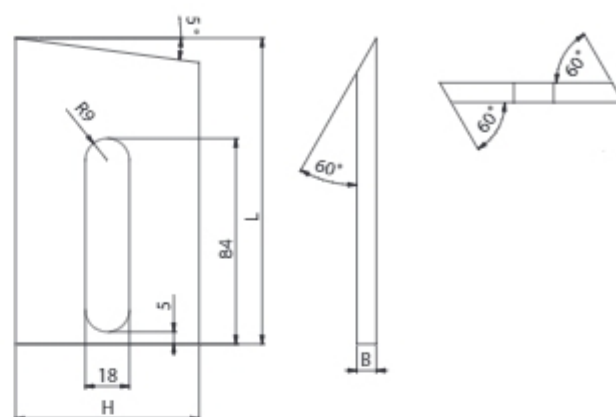
Cutting knife, type **NOB-02A** designed for solid wood roughing. The knife is used for pre-cutting. Special geometry increases performance and machining efficiency. The knife is equipped with a special slot enabling height regulation.

Type of work: cutting flat surfaces.

Material: solid hardwood.



NOB-02A



Drawing shows left knife.

| Catalogue number | L
mm | H
mm | B
mm | | | |
|------------------|---------|---------|---------|-----|---|---|
| N2100006P | 125 | 75 | 5 | HSS | P | + |
| N2100006L | 125 | 75 | 5 | HSS | L | • |
| N2100412P | 125 | 75 | 8 | HSS | P | + |
| N2100412L | 125 | 75 | 8 | HSS | L | + |

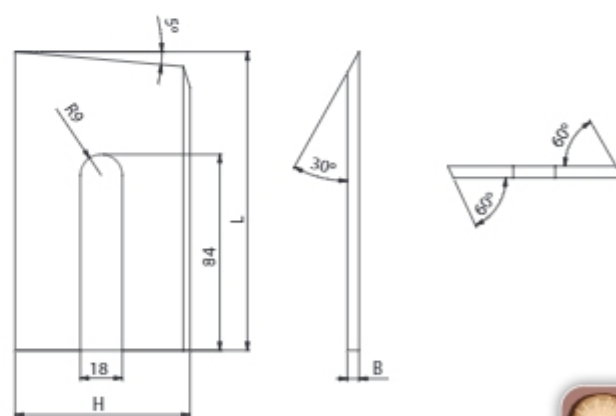
Cutting knife, type **NOB-02B** designed for pre-cutting. Special geometry increases performance and machining efficiency. The knife is equipped with a special slot enabling height regulation and easy installation.

Type of work: cutting flat surfaces.

Material: solid hardwood.



NOB-02B

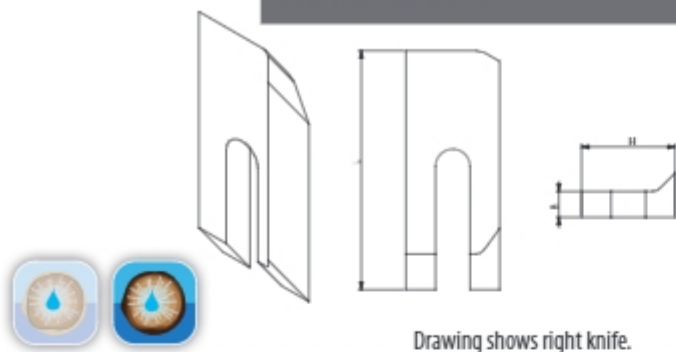


Drawing shows left knife.

| Catalogue number | L
mm | H
mm | B
mm | | | |
|------------------|---------|---------|---------|-----|---|---|
| N2100438P | 125 | 75 | 5 | HSS | P | + |
| N2100438L | 125 | 75 | 5 | HSS | L | • |
| N2100540P | 135 | 75 | 5 | HSS | P | + |
| N2100540L | 135 | 75 | 5 | HSS | L | + |

Knives NOB-02 with length not given in the chart we offer on client's request according to individual pricing.

NNK-01



Cutting knife, type **NNK-01** designed for pre-cutting during debarking. Additional profile edge improves surface quality and lowers energy consumption. The knife is equipped with a special slot enabling height regulation and easy installation.

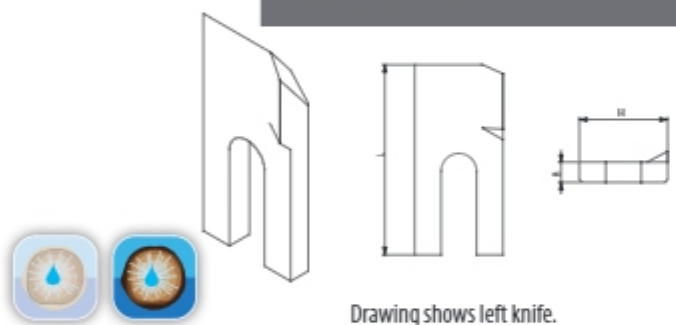
Type of work: debarking.

Material: solid wet wood



| Catalogue number | L
mm | H
mm | B
mm | | ↗ | |
|------------------|---------|---------|---------|-----|---|---|
| N2100834P | 97 | 38 | 18 | HSS | P | + |
| N2100834L | 97 | 38 | 18 | HSS | L | + |
| N2100190P | 98 | 38 | 17 | HSS | P | + |
| N2100190L | 98 | 38 | 17 | HSS | L | + |

NNK-02



Cutting knife, type **NNK-02** designed for pre-cutting during debarking. Additional profile edge improves surface quality and lowers energy consumption. The knife is equipped with a special slot enabling height regulation.

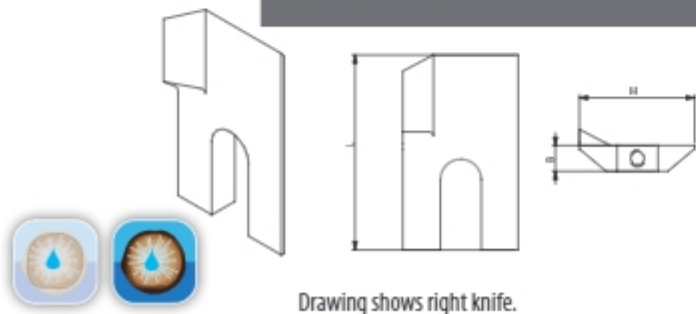
Type of work: debarking.

Material: solid wet wood



| Catalogue number | L
mm | H
mm | B
mm | | ↗ | |
|------------------|---------|---------|---------|-----|---|---|
| N2100750P | 75 | 35 | 12,5 | HSS | P | + |
| N2100750L | 75 | 35 | 12,5 | HSS | L | + |

NNK-03



Cutting knife, type **NNK-02** designed for pre-cutting during debarking. Additional profile edge improves surface quality and lowers energy consumption. The knife is equipped with a special slot enabling height regulation and additional positioning system.

Type of work: debarking

Material: solid wet wood



| Catalogue number | L
mm | H
mm | B
mm | | ↗ | |
|------------------|---------|---------|---------|-----|---|---|
| N2100232 | 71 | 42 | 15,3 | HSS | P | + |
| N2100233 | 71 | 42 | 15,3 | HSS | L | + |

Cutting HM and HSS knives with properly chosen number of cutting edges, designed for professional machining of solid wood and wood-based materials. The knives are used for precise cutting of flat surfaces and profiling. Special geometry allows for working with chosen cutter heads. Properly chosen for the type of material as well as parameters and conditions during work.



Knives and inserts made on client's individual request.

With the order the following information should be given:

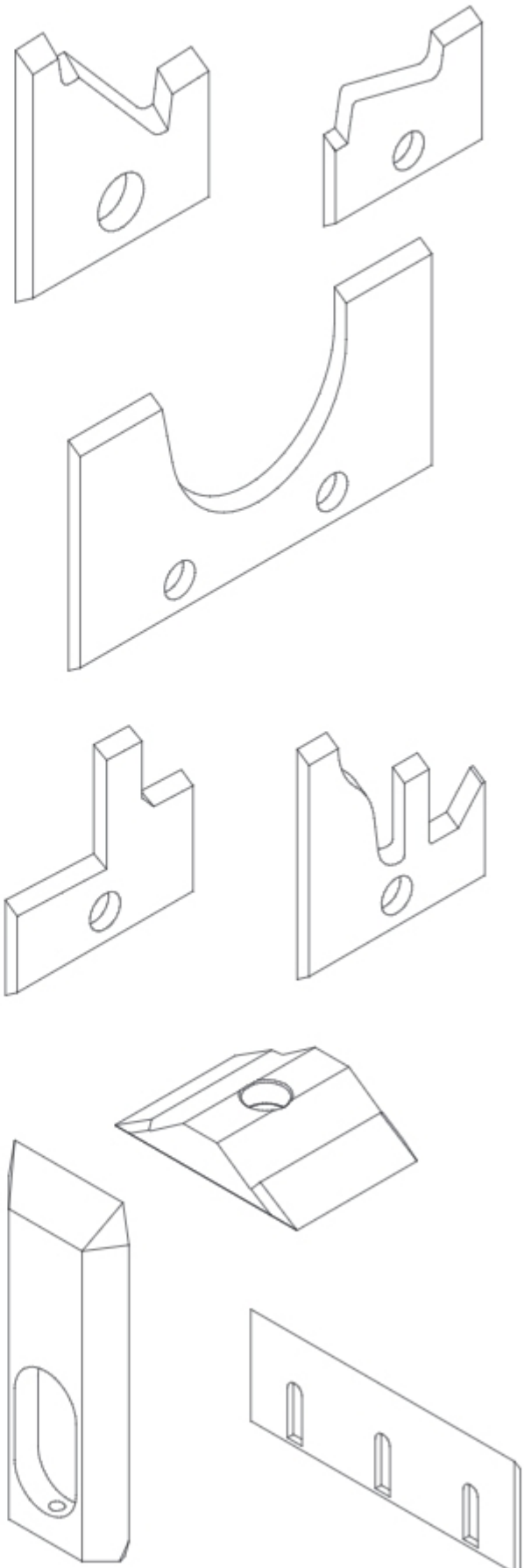
- tool outer diameter (D) or diameter range,
- HM tip depth (h),
- knife length (H),
- knife thickness (b),
- profile depth (Gp),
- type of machined material,
- number of teeth (z) or spindle rotation speed and feed speed.

Type of work: cutting flat surfaces, grooving, rebating, edge and surface profiling.

Material:

-  solid softwood
-  solid hardwood

Knives and inserts

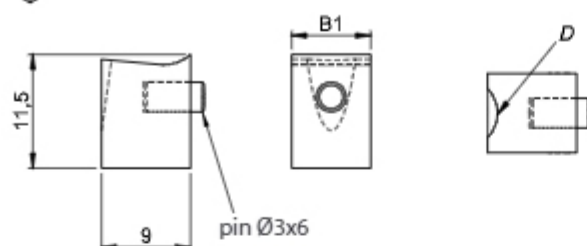




KST-01

Clamping wedge, type **KST-01** designed for mounting cutting knives in the cutter head body slot. Includes safety pin.

Type of work: straight and profile cutter heads.

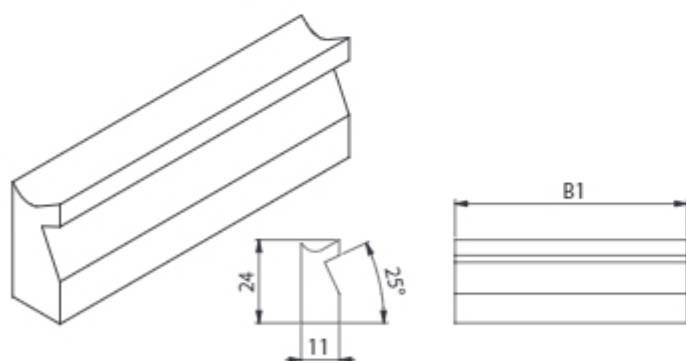


| Catalogue number | D
mm | B1
mm | B (knife)
mm | |
|------------------|---------|----------|-----------------|---|
| WHAKA0024 | 7 | 7 | 9,6 | + |
| WHAKA0025 | 7 | 8,0 | 9,6 | + |
| WHAKA0026 | 10 | 10 | 11,6 | + |
| WHAKA0082 | 10 | 12 | 15,7 | + |
| WHAKA0030 | 10 | 14 | 17 | + |
| WHAKA0034 | 10 | 17 | 20 | • |
| WHAKA0037 | 10 | 22 | 25 | + |
| WHAKA0040 | 10 | 27 | 30 | • |
| WHAKA0043 | 10 | 47 | 50 | • |
| WHAKA0044 | 10 | 57 | 60 | • |
| WHAKA0046 | 10 | 77 | 80 | • |

KST-02

Clamping wedge, type **KST-02** designed for mounting cutting knives in the cutter head body slot. Works with cutter heads type 1100-4 and 1100-4H.

Type of work: cutter heads 1100-4 and 1100-4H.



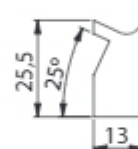
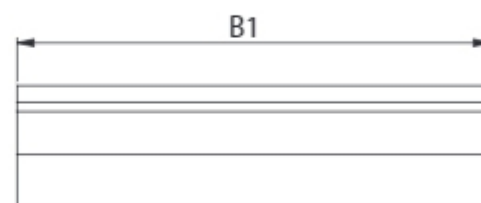
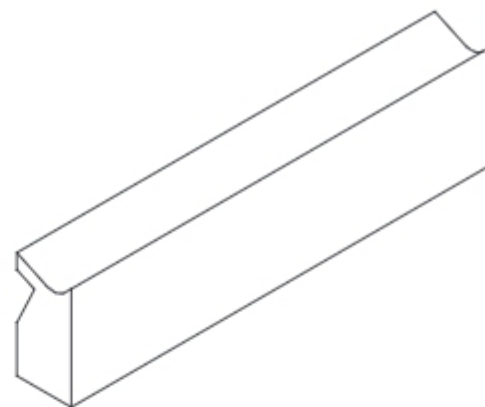
| Catalogue number | B1
mm | B (knife)
mm | |
|------------------|----------|-----------------|---|
| WHAK00002 | 57 | 60 | + |
| WHAK00003 | 77 | 80 | + |
| WHAK00004 | 97 | 100 | + |
| WHAK00095 | 117 | 120 | + |
| WHAK00096 | 127 | 130 | + |
| WHAK00085 | 147 | 150 | + |
| WHAK00016 | 177 | 180 | + |
| WHAK00098 | 227 | 230 | + |

Clamping wedge, type **KST-03** designed for mounting cutting knives in the cutter head body slot. Works with cutter heads type GP-01 and GP-01 H. The wedge is used for precise mounting of knives with thicknesses of 8 and 10 mm.

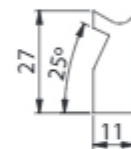
Type of work: cutter heads GP-01 and GP-01 H.

| Catalogue number | B1 mm | B (knife) mm | |
|------------------|-------|--------------|---|
| WHAK00101 | 40 | 8 | + |
| WHAK00122 | 40 | 10 | + |
| WHAK00102 | 50 | 8 | + |
| WHAK00123 | 50 | 10 | + |
| WHAK00103 | 60 | 8 | + |
| WHAK00124 | 60 | 10 | + |
| WHAK00105 | 80 | 8 | + |
| WHAK00125 | 80 | 10 | + |
| WHAK00107 | 100 | 8 | + |
| WHAK00126 | 100 | 10 | + |
| WHAK00109 | 120 | 8 | + |
| WHAK00112 | 150 | 8 | + |
| WHAK00128 | 150 | 10 | + |
| WHAK00115 | 180 | 8 | + |
| WHAK00117 | 200 | 8 | + |
| WHAK00130 | 200 | 10 | + |

KST-03



for knife B = 8 mm

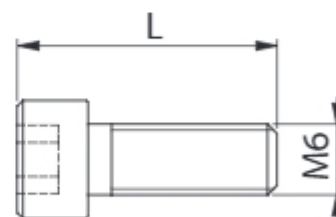


for knife B = 10 mm

Clamping screws, cylindrical type **SC-01** designed for mounting sets of cutter heads and cutters.

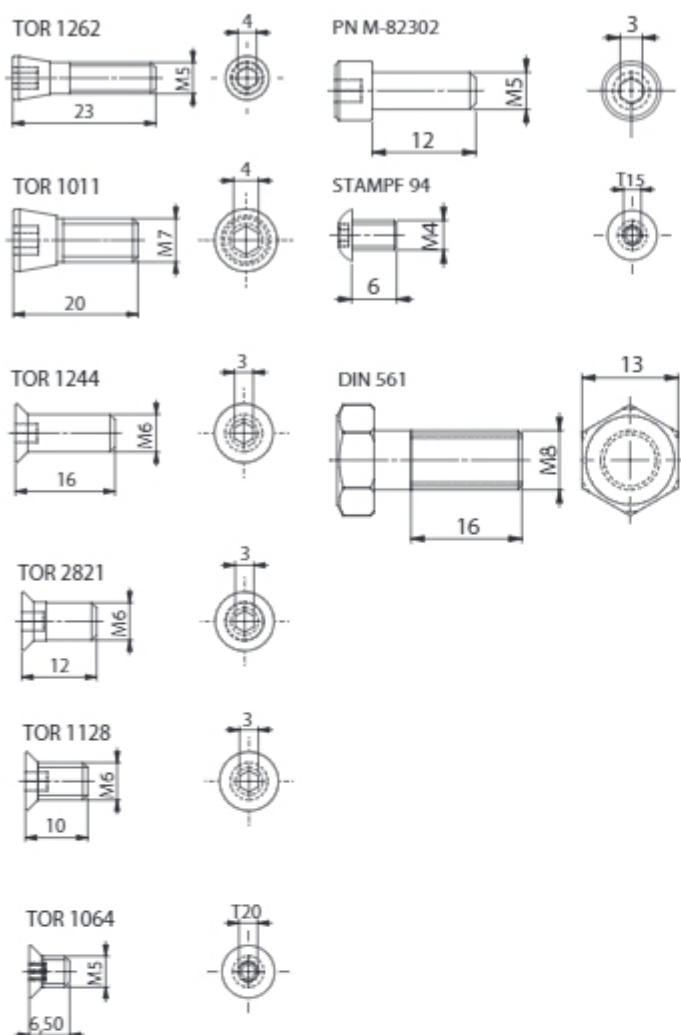
SC-01

| Catalogue number | Standard | M6xL mm | |
|------------------|----------|---------|---|
| WHAS00116 | PN 82302 | M6x17 | + |
| WHAS00102 | PN 82302 | M6x36 | + |
| WHAS00068 | PN 82302 | M6x46 | + |
| WHAS00069 | PN 82302 | M6x50 | + |
| WHAS00037 | PN 82302 | M6x58 | + |
| WHAS00100 | PN 82302 | M6x60 | + |
| WHAS00085 | PN 82302 | M6x25 | + |
| WHAS00053 | PN 82302 | M6x68 | + |
| WHAS00061 | PN 82302 | M6x73 | + |
| WHAS00093 | PN 82302 | M6x85 | + |
| WHAS00091 | PN 82302 | M6x88 | + |
| WHAS00092 | PN 82302 | M6x61 | + |
| WHAS00040 | PN 82302 | M6x98 | + |
| WHAS00030 | PN 82302 | M6x100 | + |
| WHAS00099 | PN 82302 | M6x108 | + |



SM-01

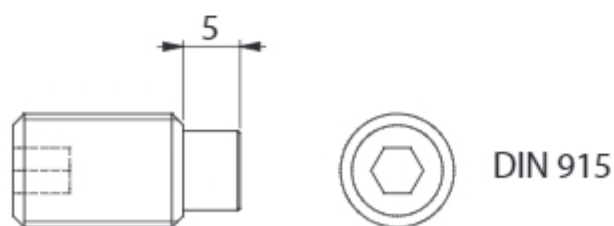
Clamping screws, type **SM-01** designed for precise mounting of cutting tools elements.



| Catalogue number | Standard | Dimensions |
|------------------|-----------|-------------|
| WHAS00004 | STAMPF 94 | M4 x 6 • |
| WHAS00024 | TOR 7020 | M4 x 6 + |
| WHAS00008 | TOR 1064 | M5 x 6,5 • |
| WHAS00009 | TOR1924 | M5 x 7 • |
| WHAS00015 | TOR 1065 | M5 x 10 • |
| WHAS00026 | DIN 551 | M5 x 10 + |
| WHAS00023 | PN82302 | M5 x 12 + |
| WHAS00007 | TOR 1262 | M5 x 23 • |
| WHAS00006 | TOR 1128 | M6 x 10 • |
| WHAS00012 | TOR 2821 | M6 x 11,8 • |
| WHAS00010 | TOR 1244 | M6 x 16 • |
| WHAS00002 | PN 82302 | M6 x 22 • |
| WHAS00011 | TOR 1011 | M7 x 20 • |
| WHAS00003 | TOR 5046 | M8 x 12 • |
| WHAS00001 | DIN 561 | M8 x 16 • |

WM-01

Clamping screws, type **WM-01** designed for precise mounting of cutting tools elements.

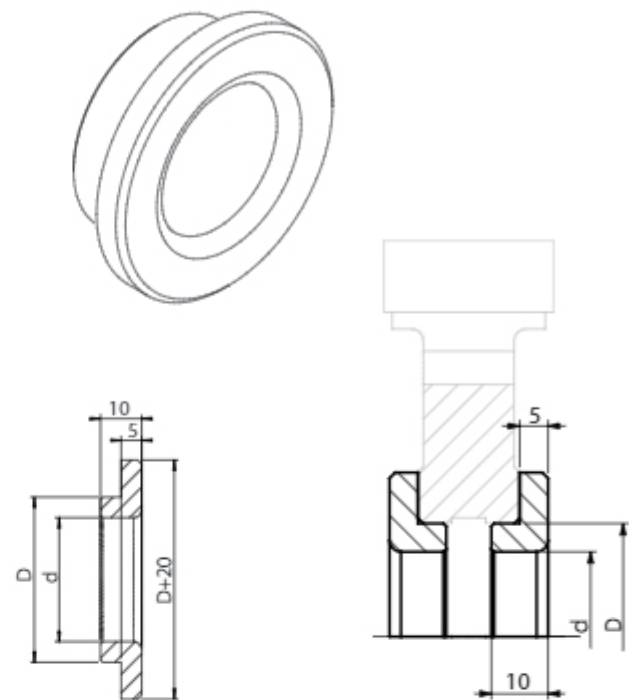


| Catalogue number | Standard | Dimensions |
|------------------|----------|----------------|
| WHAW00001 | DIN 915 | M4 x 6 • |
| WHAW00009 | DIN 914 | M5 x 5 • |
| WHAW00002 | DIN 915 | M5 x 12 • |
| WHAW00008 | DIN 914 | M6 x 6 • |
| WHAW00021 | DIN 915 | M6 x 8 • |
| WHAW00003 | DIN 915 | M6 x 10 • |
| WHAW00004 | DIN 915 | M6 x 16 • |
| WHAW00005 | DIN 915 | M8 x 16 • |
| WHAW00006 | DIN 915 | M10 x 16 + |
| WHAW00007 | DIN 915 | M10 x 20 • |
| WHAW00012 | DIN 915 | M10 x 1 x 20 + |

Reduction sleeve with flange, type **TRK**, designed for reducing bore diameter.

Type of work: cutter heads and cutters with bore.

TRK

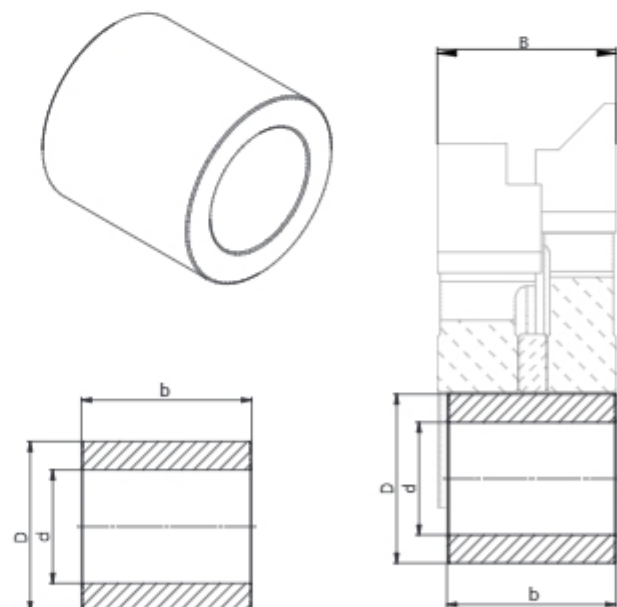


| Catalogue number | | |
|------------------|--------------|---|
| WHAT00045 | 40 / 35 x 10 | • |
| WHAT05247 | 40 / 32 x 10 | • |
| WHAT00003 | 40 / 30 x 10 | • |
| WHAT05248 | 40 / 25 x 10 | • |
| WHAT00002 | 35 / 30 x 10 | • |
| WHAT00001 | 30 / 25 x 10 | • |
| WHAT05253 | 30 / 22 x 10 | • |
| WHAT00375 | 30 / 20 x 10 | • |

Reduction sleeve, type **TR**, designed for reducing bore diameter of single tools and sets

Type of work: cutter heads and cutters with bore, sets of cutters and cutter heads.

TR



| b mm | 7 | 10 | 15 |
|---------|-------------|-------------|-------------|
| D/d mm | | | |
| 40 / 35 | WHAT05233 • | WHAT00295 • | WHAT00896 • |
| 40 / 32 | WHAT05234 • | WHAT00144 • | WHAT05236 • |
| 40 / 30 | WHAT01022 • | WHAT00148 • | WHAT00593 • |
| 40 / 25 | WHAT01787 • | WHAT00389 • | WHAT00611 • |
| 30 / 25 | WHAT05235 • | WHAT00100 • | WHAT00101 • |

| b mm | 20 | 25 | 30 | 35 | 40 | 50 | 65 | 75 |
|---------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D/d mm | | | | | | | | |
| 40 / 35 | WHAT00714 • | WHAT00205 • | WHAT00196 • | WHAT03025 • | WHAT00197 • | WHAT00198 • | WHAT00698 • | WHAT00705 • |
| 40 / 32 | WHAT00327 • | WHAT03346 • | WHAT05237 • | WHAT00989 • | WHAT05240 • | WHAT05241 • | WHAT05242 • | WHAT05245 • |
| 40 / 30 | WHAT00572 • | WHAT00150 • | WHAT00212 • | WHAT00323 • | WHAT00357 • | WHAT00832 • | WHAT01192 • | WHAT00518 • |
| 40 / 25 | WHAT00242 • | WHAT00298 • | WHAT00243 • | WHAT05238 • | WHAT04535 • | WHAT00422 • | WHAT05243 • | WHAT05244 • |
| 30 / 25 | WHAT00102 • | WHAT00334 • | WHAT00005 • | WHAT00681 • | WHAT00042 • | WHAT00545 • | WHAT03020 • | WHAT05246 • |

TB-01

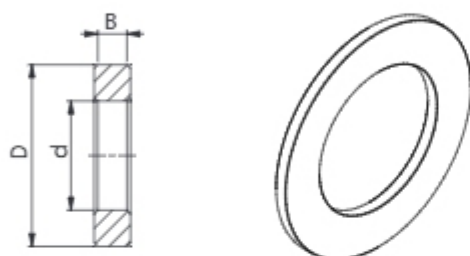


Positioning sleeves, type **TB-01** designed for profile cutter heads. Used for precise mounting of cutting blades.

Type of work: profile cutter heads.

| Catalogue number | Dimensions | |
|------------------|----------------|---|
| WHAT00044 | 12 x 6,5 x 3,6 | + |
| WHAT03285 | 12 x 6,5 x 2,8 | + |
| WHAT01605 | 12 x 6,5 x 2,3 | + |
| WHAT00456 | 12 x 6,5 x 1,7 | + |
| WHAT00358 | 12 x 6,5 x 2,5 | + |

PD-01



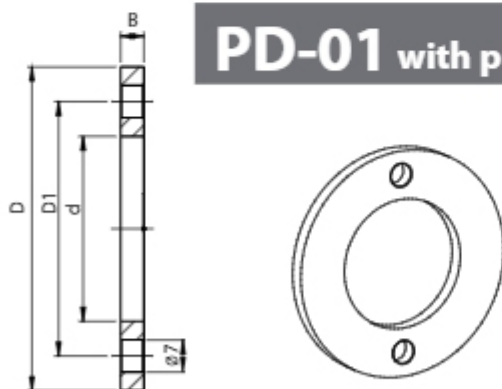
PD-01 Spacer ring made from hard steel, designed for tool positioning and regulating width of sets of tools. Width regulation involves adding or removing spacers of given thickness. Used for sets of cutters and cutter heads assembled without screws.

Designed for: sets of cutters or cutter heads - not screwed together.

| D mm
d mm | 50
30 | 60
40 | 70
50 | 80
60 |
|--------------|-------------|-------------|-------------|-------------|
| B mm | | | | |
| 0,1 | WHAP00214 • | WHAP00060 • | WHAP00027 • | WHAP00035 • |
| 0,2 | WHAP00215 • | WHAP00077 • | WHAP00028 • | WHAP00036 • |
| 0,5 | WHAP00142 • | WHAP00076 • | WHAP00029 • | WHAP00037 • |
| 1 | WHAP00006 • | WHAP00017 • | WHAP00030 • | WHAP00038 • |
| 2 | WHAP00007 • | WHAP00018 • | WHAP00031 • | WHAP00039 • |

| D mm
d mm | 50
30 | 60
40 | 70
50 | 80
60 |
|--------------|-------------|-------------|-------------|-------------|
| B mm | | | | |
| 2,5 | WHAP01210 • | WHAP01649 • | WHAP00437 • | WHAP01612 • |
| 3 | WHAP00141 • | WHAP08150 • | WHAP00032 • | WHAP00040 • |
| 4 | WHAP08149 • | WHAP02731 • | WHAP06546 • | WHAP03164 • |
| 5 | WHAP00008 • | WHAP00019 • | WHAP00033 • | WHAP00041 • |
| 10 | WHAP00009 • | WHAP00020 • | WHAP00034 • | WHAP00042 • |

PD-01 with pinholes



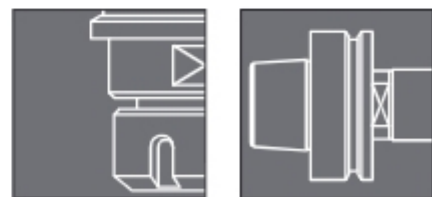
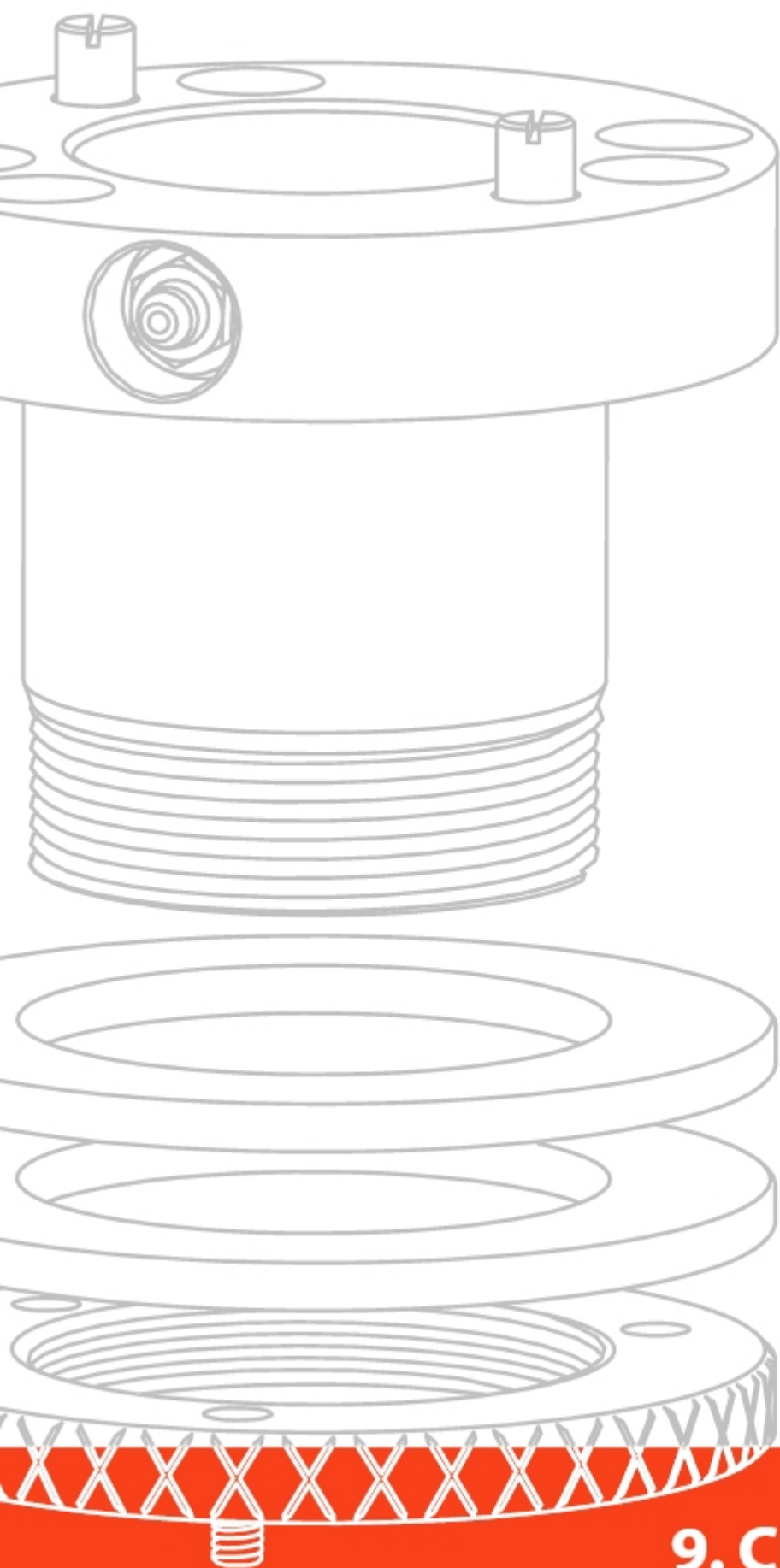
PD-01 Spacer ring made from hard steel, with pinholes, designed for tool positioning and regulating width of sets of tools. Used for sets of cutters and cutter heads assembled with screws. Width regulation involves adding or removing spacers of given thickness.

Designed for: sets of cutters or cutter heads - screwed together.

| D mm
d mm | 60
30
45 | 70
40
55 | 80
50
65 |
|--------------|----------------|----------------|----------------|
| B mm | | | |
| 0,1 | WHAP07722 • | WHAP06708 • | WHAP08134 • |
| 0,2 | WHAP05012 • | WHAP01900 • | WHAP08133 • |
| 0,5 | WHAP05013 • | WHAP05005 • | WHAP05000 • |
| 1 | WHAP05014 • | WHAP05006 • | WHAP05001 • |
| 2 | WHAP05015 • | WHAP05007 • | WHAP05002 • |

| D mm
d mm | 60
30
45 | 70
40
55 | 80
50
65 |
|--------------|----------------|----------------|----------------|
| B mm | | | |
| 2,5 | WHAP08156 • | WHAP08151 • | WHAP08153 • |
| 3 | WHAP08157 • | WHAP06921 • | WHAP08154 • |
| 4 | WHAP08158 • | WHAP08152 • | WHAP08155 • |
| 5 | WHAP05016 • | WHAP05008 • | WHAP05003 • |
| 10 | WHAP05017 • | WHAP05009 • | WHAP05004 • |

Spacer rings with pinholes for hydro sleeves on page 9.24.



9. Clamping systems

Clamping systems

Clamping system produced in the form of collet chucks, clamping arbors, hydro sleeves and special sleeves. Clamping elements are designed for precise locating of tools with cylindrical and axial bore.

Clampings elements are made from the highest quality steel in special heat treatment technology, properly selected for the type of tools working with a sleeve or shank as well as parameters and conditions prevailing during the machining, in order to guarantee stiffness of the system and proper work of tools, both in standard and extreme conditions.

All types of clamping elements are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for.

The *Clamping systems* chapter includes only example types of collet chucks, arbors and hydro sleeves with basic dimensions. On special request, we can suggest, design and produce also tools with ISO, HSK and hydro clamping as monolith, where clamping is an integral part of the cutter. The whole system can't be dismantled which allows for precise sharpening and balancing of the tool. Time of production of a chosen clamping system marked with "+" as well as systems on client's special request usually doesn't exceed 10-15 working days.



Contents

9. CLAMPING SYSTEMS

| | |
|--|------|
| Pictograms | 9.3 |
| 9.1 Collet chucks | 9.4 |
| 9.2 Hydro chucks | 9.6 |
| 9.3 Clamping arbors | 9.8 |
| 9.4 Precision collets | 9.11 |
| 9.5 Bolts for collet chucks and grips ISO,
Tornado and accesories | 9.12 |
| 9.6 Hydro sleeves | 9.13 |
| 9.7 Spare and extra parts to hydro sleeves | 9.23 |
| 9.8 Sleeves for GO windows | 9.26 |
| 9.9 Special sleeves | 9.27 |

Pictograms



hydro clamping



HSK 85 WS clamping



CNC centre

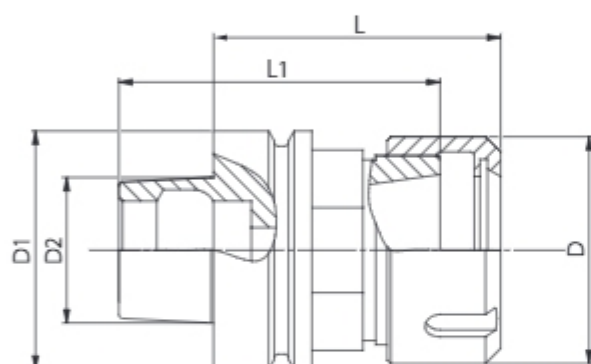
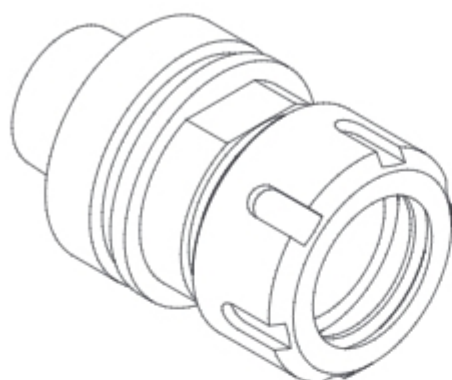


pressure generated with a pump



pressure generated with a key

HSK 50F HSK 63F



Collet chuck type **HSK 50F** and **HSK 63F** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69893. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut.

Type of work: CNC machines equipped with automatic tool magazine with feeder.



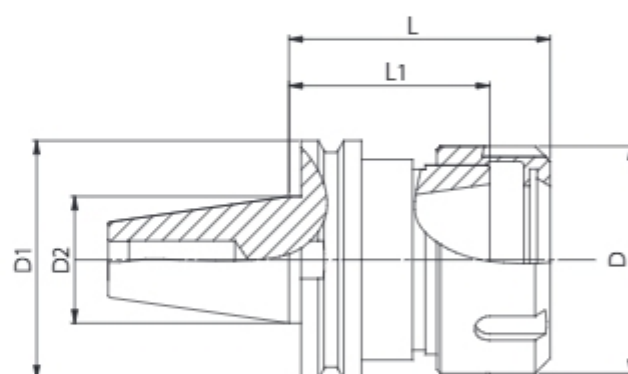
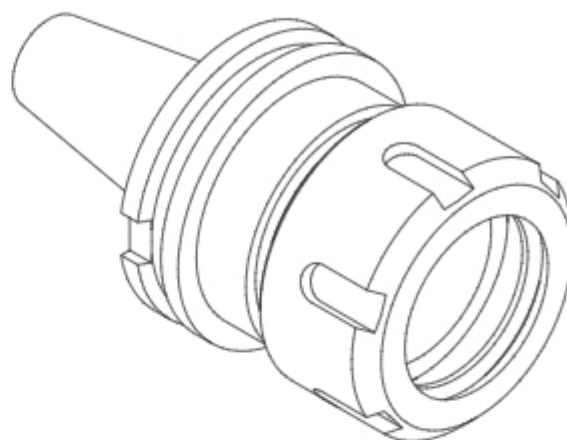
| Catalogue number | Type | Collet type | D | D1 | L | L1 | D2 | |
|------------------|--------|-------------|----|----|------|----|----|---|
| TCNC.1001P | HSK 50 | ER 32 | 50 | 50 | 72,5 | 50 | 30 | + |
| TCNC.1001L | HSK 50 | ER 32 | 50 | 50 | 72,5 | 50 | 30 | + |
| TCNC.1002P | HSK 50 | ER 40 | 63 | 50 | 76,5 | 62 | 30 | + |
| TCNC.1002L | HSK 50 | ER 40 | 63 | 50 | 76,5 | 62 | 30 | + |
| TCNC.1003P | HSK 63 | ER 32 | 50 | 63 | 72,5 | 50 | 38 | + |
| TCNC.1003L | HSK 63 | ER 32 | 50 | 63 | 72,5 | 50 | 38 | + |
| TCNC.1004P | HSK 63 | ER 40 | 63 | 63 | 76,5 | 62 | 38 | + |
| TCNC.1004L | HSK 63 | ER 40 | 63 | 63 | 76,5 | 62 | 38 | + |

List of precision collets on page 9.11.

ISO 30

Collet chuck type **ISO 30** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69871. without necks and cuts. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut. Reduced vibration level during work.

Type of work: CNC machines.



CNC

9

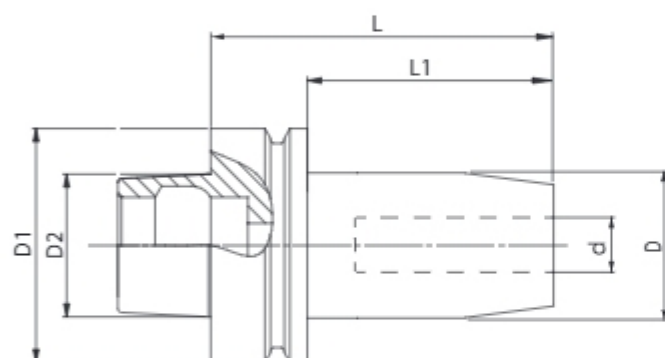
| Catalogue number | Type | Collet type | D | D1 | L | L1 | D2 | |
|------------------|--------|-------------|----|----|------|----|-------|---|
| TCNC.1005P | ISO 30 | ER 32 | 50 | 50 | 48,5 | 36 | 31,75 | • |
| TCNC.1005L | ISO 30 | ER 32 | 50 | 50 | 48,5 | 36 | 31,75 | + |
| TCNC.1006P | ISO 30 | ER 40 | 63 | 50 | 58,5 | 42 | 31,75 | • |
| TCNC.1006L | ISO 30 | ER 40 | 63 | 50 | 58,5 | 42 | 31,75 | + |

Collet chucks are offered without mounting bolts.

List of mounting bolts on page 9.12.

List of precision collets on page 9.11.

HSK 63F HYDRO



Collet chuck type **HSK 50F** and **HSK 63F** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69893. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut.

Type of work: CNC machines equipped with automatic tool magazine with feeder.

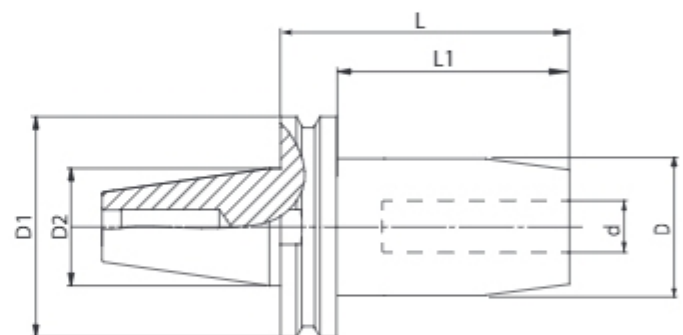


| Catalogue number | Type | d | D | L | L1 | D1 | D2 | |
|------------------|---------------|----|----|-----|----|----|----|---|
| TCNH.1001 | HSK 63F Hydro | 10 | 30 | 90 | 65 | 63 | 38 | + |
| TCNH.1002 | HSK 63F Hydro | 12 | 32 | 85 | 65 | 63 | 38 | + |
| TCNH.1003 | HSK 63F Hydro | 16 | 38 | 95 | 69 | 63 | 38 | + |
| TCNH.1004 | HSK 63F Hydro | 20 | 42 | 95 | 69 | 63 | 38 | + |
| TCNH.1005 | HSK 63F Hydro | 25 | 52 | 120 | 94 | 63 | 38 | + |

Collet chuck type **ISO 30** designed for mounting shank tools with cylindrical grip. The collet chuck is equipped with precise conical hollow grip according to DIN 69871. without necks and cuts. The diameters range of shank tools is from 6 to 25 mm regulated with precision collets. Automatic loosening and tightening by turning the nut. Increased concentricity and tightening force thanks to special nut. Reduced vibration level during work.

Type of work: CNC machines.

ISO 30 HYDRO

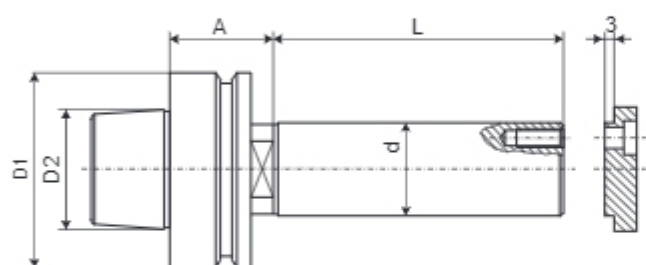
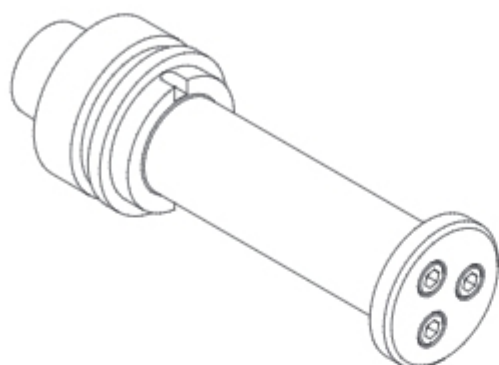


| Catalogue number | Type | d | D | L | L1 | D1 | D2 | |
|------------------|--------------|----|----|-----|------|----|-------|---|
| TCNH.1006 | ISO 30 Hydro | 10 | 30 | 95 | 75,9 | 50 | 31,75 | + |
| TCNH.1007 | ISO 30 Hydro | 12 | 32 | 95 | 75,9 | 50 | 31,75 | + |
| TCNH.1008 | ISO 30 Hydro | 16 | 42 | 100 | 80,9 | 50 | 31,75 | + |
| TCNH.1009 | ISO 30 Hydro | 20 | 42 | 100 | 80,9 | 50 | 31,75 | + |
| TCNH.1010 | ISO 30 Hydro | 25 | 52 | 110 | 90,9 | 50 | 31,75 | + |

Collet chucks are offered without mounting bolts.

List of mounting bolts on page 9.12.

HSK 50F HSK 63F



Clamping arbor, type **HSK 50F** and **HSK 63F** designed for mounting tools and sets of tools with axial hole. The arbor is equipped with precise conical hollow grip according to DIN 69893 and protection against rotation of the tools on the pilot part. Reduced vibration level thanks to precise balancing.

Type of work: CNC machines equipped with automatic tool magazine with feeder.



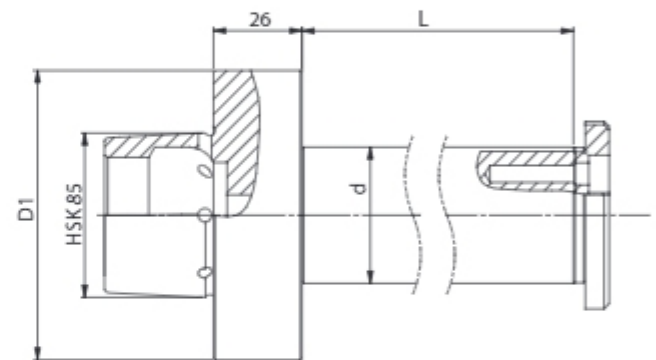
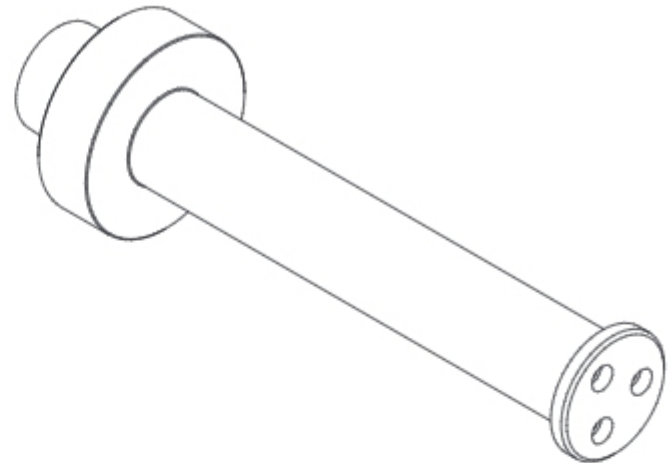
| Catalogue number | Type | d
mm | D1
mm | L | A | D2 | |
|------------------|--------|---------|----------|-----|----|----|---|
| TCNC.1007 | HSK 50 | 30 | 50 | 93 | 33 | 30 | + |
| TCNC.1008 | HSK 50 | 30 | 50 | 103 | 33 | 30 | + |
| TCNC.1009 | HSK 50 | 40 | 50 | 93 | 33 | 30 | + |
| TCNC.1010 | HSK 50 | 40 | 50 | 103 | 33 | 30 | + |
| TCNC.1011 | HSK 63 | 30 | 63 | 70 | 33 | 38 | • |
| TCNC.1012 | HSK 63 | 30 | 63 | 93 | 33 | 38 | • |
| TCNC.1013 | HSK 63 | 30 | 63 | 93 | 42 | 38 | + |
| TCNC.1014 | HSK 63 | 30 | 63 | 103 | 33 | 38 | • |
| TCNC.1015 | HSK 63 | 30 | 63 | 103 | 42 | 38 | • |
| TCNC.1016 | HSK 63 | 40 | 63 | 93 | 33 | 38 | • |
| TCNC.1017 | HSK 63 | 40 | 63 | 93 | 42 | 38 | + |
| TCNC.1018 | HSK 63 | 40 | 63 | 103 | 33 | 38 | + |
| TCNC.1019 | HSK 63 | 40 | 63 | 103 | 42 | 38 | + |
| TCNC.1020 | HSK 63 | 40 | 63 | 123 | 33 | 38 | + |
| TCNC.1021 | HSK 63 | 40 | 63 | 123 | 42 | 38 | + |

Tools should be selected according to dimension recommendation (tool diameter) and weight recommendation according to producer's suggestions.

Clamping arbor, type **HSK 85** designed for mounting tools with axial hole. The arbor is equipped with precise conical grip HSK 85. Reduced vibration level thanks to precise balancing. Equipped with protection against rotation of the tools on the pilot part. Works together with saw blades, cutter heads cutters and sets of cutter heads and cutters.

Type of work: CNC machines with HSK 85 clamping.

HSK 85



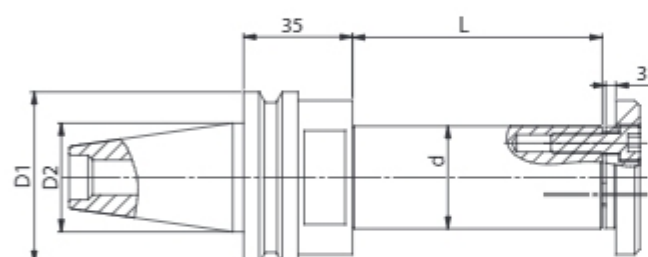
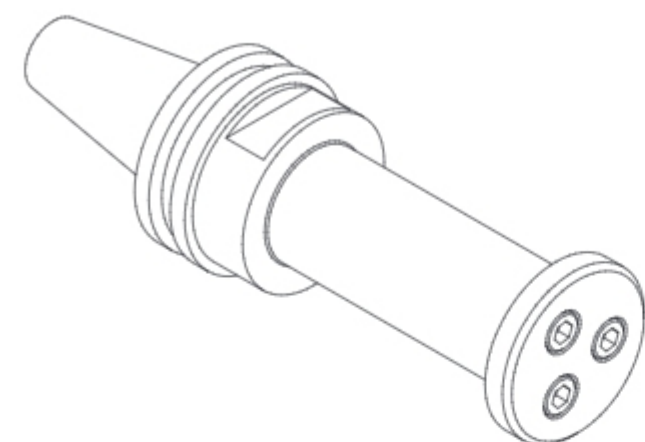
| Catalogue number | Type | d
mm | D1
mm | L | |
|------------------|--------|---------|----------|-----|---|
| TCNC.1109 | HSK 85 | 30 | 85 | 60 | + |
| TCNC.1110 | HSK 85 | 30 | 85 | 90 | + |
| TCNC.1112 | HSK 85 | 30 | 85 | 130 | + |
| TCNC.1079 | HSK 85 | 40 | 85 | 60 | • |
| TCNC.1078 | HSK 85 | 40 | 85 | 90 | • |
| TCNC.1107 | HSK 85 | 40 | 85 | 100 | + |
| TCNC.1050 | HSK 85 | 40 | 85 | 130 | • |
| TCNC.1108 | HSK 85 | 40 | 85 | 150 | + |
| TCNC.1086 | HSK 85 | 40 | 85 | 180 | + |
| TCNC.1120 | HSK 85 | 50 | 85 | 60 | + |
| TCNC.1119 | HSK 85 | 50 | 85 | 90 | + |
| TCNC.1121 | HSK 85 | 50 | 85 | 100 | + |
| TCNC.1122 | HSK 85 | 50 | 85 | 130 | + |
| TCNC.1123 | HSK 85 | 50 | 85 | 150 | + |
| TCNC.1124 | HSK 85 | 50 | 85 | 180 | + |

Tools should be selected according to dimension recommendation (tool diameter) and weight recommendation according to producer's suggestions.

ISO 30

Clamping arbor, type **ISO 30** designed for mounting tools and sets of tools with axial hole. The arbor is equipped with precise conical grip according to DIN 69871 without necks and cuts. Works together with saw blades, cutter heads cutters and sets of cutter heads and cutters.

Type of work: CNC machines.



| Catalogue number | Type | d
mm | D1
mm | L | D2
mm | |
|------------------|--------|---------|----------|-----|----------|---|
| TCNC.1022 | ISO 30 | 30 | 50 | 73 | 30 | + |
| TCNC.1023 | ISO 30 | 30 | 50 | 93 | 30 | + |
| TCNC.1024 | ISO 30 | 30 | 50 | 103 | 30 | + |
| TCNC.1025 | ISO 30 | 30 | 50 | 123 | 30 | + |
| TCNC.1026 | ISO 30 | 40 | 50 | 73 | 38 | + |
| TCNC.1027 | ISO 30 | 40 | 50 | 93 | 38 | + |
| TCNC.1028 | ISO 30 | 40 | 50 | 103 | 38 | + |

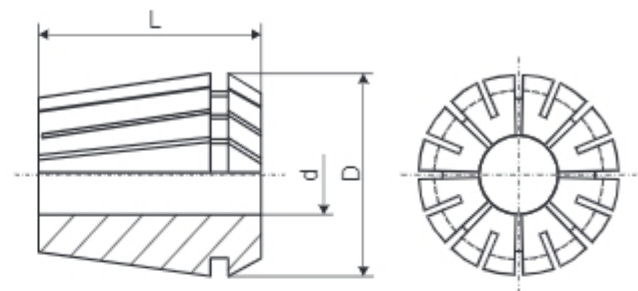
Tools should be selected according to dimension recommendation (tool diameter) and weight recommendation according to producer's suggestions.

Collet chucks are offered without mounting bolts.
List of mounting bolts on page 9.12.

Precision collet with increased manufacturing accuracy (0,008 mm), type ER designed for clamping systems. Produced according to DIN ISO 15488-B (DIN 6499-B). Equipped with double-slot clamping system increasing mounting concentricity. Automatically tightened and loosened.

Type of work: collet chucks type HSK 50F, HSK 63F and ISO 30 with a nut.

Precision collet

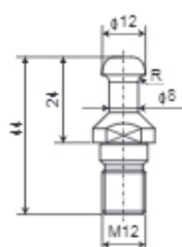


| Catalogue number | Type | D | L | d | |
|------------------|-------|----|----|----|---|
| U0010001 | ER 32 | 33 | 40 | 4 | + |
| U0010002 | | | | 5 | + |
| U0010003 | | | | 6 | + |
| U0010004 | | | | 8 | + |
| U0010005 | | | | 10 | + |
| U0010006 | | | | 12 | + |
| U0010007 | | | | 14 | + |
| U0010008 | | | | 16 | + |
| U0010009 | | | | 18 | + |
| U0010010 | | | | 20 | + |
| U0010012 | ER 40 | 41 | 46 | 4 | + |
| U0010013 | | | | 5 | + |
| U0010014 | | | | 6 | + |
| U0010015 | | | | 8 | + |
| U0010016 | | | | 10 | + |
| U0010017 | | | | 12 | + |
| U0010018 | | | | 14 | + |
| U0010019 | | | | 16 | + |
| U0010020 | | | | 18 | + |
| U0010021 | | | | 20 | + |
| U0010022 | | | | 25 | + |

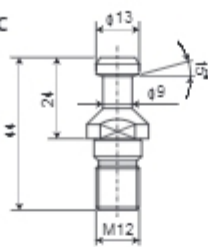
Precision collet pressure range = $d - 1\text{mm}$.

Bolts for collet chucks and grips ISO

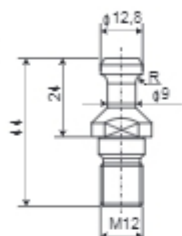
Type A



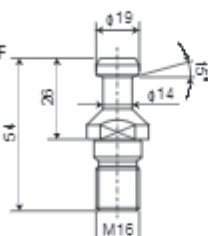
Type C



Type D



Type F



Type A - TCNC.1043 - **Machine:**

Biesse ab Bj. 09/1992, Masterwood (HSD)

Type C - TCNC.1045 - **Machine:**

IMA, Maka, Reichenbacher, Weeke, Busellato

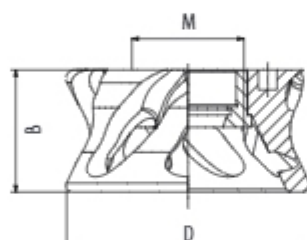
Type D - TCNC.1046 - **Machine:**

CMS

Type F - TCNC.1051 - **Machine:**

IMA, Maka, Reichenbacher, Stegherr

Tornado



Tornado is a spiral chip flow system. It works with HSK 50F, HSK 63F and ISO 30 collet chucks and guarantees effective chip flow, excellent working precision and noise reduction of the whole system.

The body is made from light and strong materials.

Replaces a standard nut.

Recommended for milling and nesting.

| Catalogue number | Type | Sleeve type | D mm | B mm | M | | |
|------------------|---------|-------------|------|------|--------|---|---|
| U0020001 | Tornado | ER 32 | 98 | 44 | 40x1,5 | P | • |
| U0020002 | Tornado | ER 40 | 98 | 47 | 50x1,5 | P | • |
| U0020004 | Tornado | ER 32 | 98 | 44 | 40x1,5 | L | + |
| U0020005 | Tornado | ER 40 | 98 | 47 | 50x1,5 | L | + |

Accessories



Stand for assembling and disassembling tools in holders - guarantees safe, easy and stable nut loosening and tightening.

Hook knife - for nut tightening.

Torque wrench - allows for fixing proper torque during tool installation in order to avoid destroying elements and prevent loose assembly.

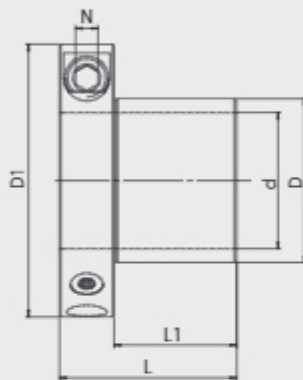
| Catalogue number | Type | Socket type | Sleeve type | D mm (sleeve nuts) | |
|------------------|---|----------------|-------------|--------------------|---|
| WHAIO2728 | Stand for assembling and disassembling tools in holders | ISO 30, HSK 50 | - | - | + |
| WHAIO2729 | Stand for assembling and disassembling tools in holders | ISO 40, HSK 63 | - | - | + |
| WHAIO2730 | Stand for assembling and disassembling tools in holders | HSK 85 | - | - | + |
| WHAIO2731 | Fixing wrench | | ER 32 | 50 | + |
| WHAIO2732 | Fixing wrench | | ER 40 | 63 | + |
| WHAIO2733 | Torque wrench head, 1/2 inch groove | | ER 32 | 50 | + |
| WHAIO2734 | Torque wrench head, 1/2 inch groove | | ER 40 | 63 | + |
| WHAIO2802 | Torque wrench (60 Nm - 300 Nm) | | - | - | + |

Hydro sleeve, type **TK** (key regulated) is designed for multiple mounting of tools with a bore. Clamping the sleeve on the spindle takes place instantly, by turning the hexagonal key a few times.

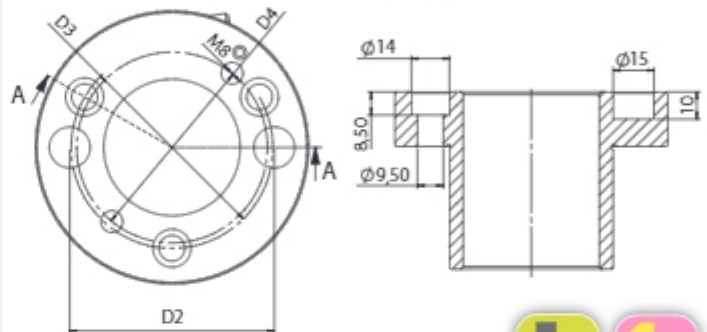
TK hydro sleeve guarantees easy change of a tool mounted on the sleeve, fixed to the sleeve's flange with 3 bolts. Serial positioning of tools. Hydro sleeves, type TK is a closed hydro system, permanently tightened, filled and ready to use. Pressure generated with regulation screw and key.

$L_{\max} = 160 \text{ mm}$

$L1_{\max} = 135 \text{ mm}$



Hydro sleeve type TK



| Catalogue number | Type | D mm | d mm | L mm | L1 mm | D1 mm | D2 mm | D3 mm | D4 mm | N mm | |
|------------------|------|------|------|------|-------|-------|-------|-------|-------|------|---|
| TK-50/40-75 | TK | 50 | 40 | 75 | 55 | 100 | 65 | 64 | 70 | 8 | + |
| TK-60/40-55 | TK | 60 | 40 | 55 | 35 | 100 | 75 | 74 | 70 | 8 | • |
| TK-60/40-75 | TK | 60 | 40 | 75 | 55 | 100 | 75 | 74 | 70 | 8 | • |
| TK-60/40-95 | TK | 60 | 40 | 95 | 75 | 106 | 75 | 74 | 70 | 8 | • |
| TK-60/40-115 | TK | 60 | 40 | 115 | 95 | 106 | 75 | 74 | 70 | 8 | • |
| TK-60/40-140 | TK | 60 | 40 | 140 | 115 | 112 | 75 | 74 | 68 | 10 | + |
| TK-60/50-55 | TK | 60 | 50 | 55 | 35 | 100 | 75 | 74 | 70 | 8 | • |
| TK-60/50-75 | TK | 60 | 50 | 75 | 55 | 100 | 75 | 74 | 70 | 8 | • |
| TK-60/50-95 | TK | 60 | 50 | 95 | 75 | 106 | 75 | 74 | 70 | 8 | • |
| TK-60/50-115 | TK | 60 | 50 | 115 | 95 | 106 | 75 | 74 | 70 | 8 | • |
| TK-60/50-140 | TK | 60 | 50 | 140 | 115 | 112 | 75 | 74 | 68 | 10 | + |

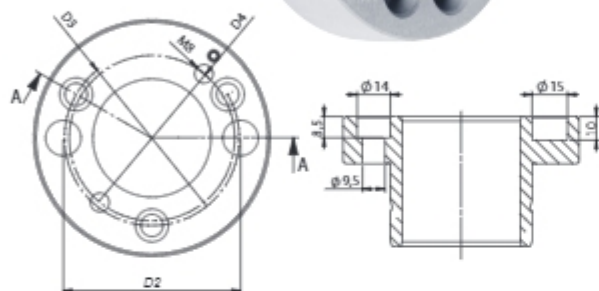
| Catalogue number | Type | D mm | d | L mm | L1 mm | D1 mm | D2 mm | D3 mm | D4 mm | N mm | |
|------------------|------|------|----------|------|-------|-------|-------|-------|-------|------|---|
| TK-50/1-1/2-95 | TK | 50 | 1 1/2" | 95 | 75 | 106 | 65 | 64 | 70 | 8 | + |
| TK-60/1-13/16-75 | TK | 60 | 1 13/16" | 75 | 55 | 100 | 75 | 74 | 70 | 8 | + |
| TK-65/2-1/8-95 | TK | 65 | 2 1/8" | 95 | 75 | 106 | 80 | 80 | 75 | 8 | + |

Hydro sleeve includes 3 fixing bolts M8x30 DIN 912.

Spare and extra parts, including locking collar and fixing bolts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type TKG



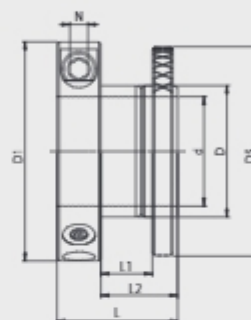
Hydro sleeve, type **TKG** (key regulated, with a thread) is designed for multiple mounting of tools with a bore. Clamping the sleeve on the spindle takes place instantly, by turning the hexagonal key a few times.

TKG hydro sleeve guarantees easy change of a tool mounted on the sleeve and protected with a ring nut with 3 protection screws.

Serial positioning of tools. Hydro sleeves, type TK is a closed hydro system, permanently tightened, filled and ready to use. Pressure generated with regulation screw and key.

$L_{max} = 160 \text{ mm}$

$L1_{max} = 135 \text{ mm}$



| Catalogue number | Type | D mm | d mm | L mm | L1 mm | L2 mm | D1 mm | D2 mm | D3 mm | D4 mm | D5 mm | N mm | |
|------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|---|
| TKG-50/40-75 | TKG | 50 | 40 | 75 | 40 | 55 | 100 | 65 | 64 | 70 | 85 | 8 | + |
| TKG-60/40-75 | TKG | 60 | 40 | 75 | 40 | 55 | 100 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/40-95 | TKG | 60 | 40 | 95 | 60 | 75 | 106 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/40-115 | TKG | 60 | 40 | 115 | 80 | 95 | 106 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/40-140 | TKG | 60 | 40 | 140 | 100 | 115 | 112 | 75 | 74 | 68 | 95 | 10 | + |
| TKG-60/50-75 | TKG | 60 | 50 | 75 | 40 | 55 | 100 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/50-95 | TKG | 60 | 50 | 95 | 60 | 75 | 106 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/50-115 | TKG | 60 | 50 | 115 | 80 | 95 | 106 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/50-140 | TKG | 60 | 50 | 140 | 100 | 115 | 112 | 75 | 74 | 68 | 95 | 10 | + |

| Catalogue number | Type | D mm | d | L mm | L1 mm | L2 mm | D1 mm | D2 mm | D3 mm | D4 mm | D5 mm | N mm | |
|--------------------|------|------|----------|------|-------|-------|-------|-------|-------|-------|-------|------|---|
| TKG-50/1-1/2-95 | TKG | 50 | 1 1/2" | 95 | 60 | 75 | 106 | 65 | 64 | 70 | 85 | 8 | + |
| TKG-50/1-1/2-140 | TKG | 50 | 1 1/2" | 140 | 105 | 120 | 106 | 65 | 64 | 70 | 85 | 8 | + |
| TKG-60/1-13/16-75 | TKG | 60 | 1 13/16" | 75 | 40 | 55 | 100 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/1-13/16-115 | TKG | 60 | 1 13/16" | 115 | 80 | 95 | 106 | 75 | 74 | 70 | 95 | 8 | + |
| TKG-60/1-13/16-140 | TKG | 60 | 1 13/16" | 140 | 105 | 115 | 112 | 75 | 74 | 68 | 95 | 10 | + |
| TKG-65/1-13/16-95 | TKG | 65 | 1 13/16" | 95 | 60 | 75 | 106 | 80 | 80 | 75 | 100 | 8 | + |
| TKG-65/2-1/8-95 | TKG | 65 | 2 1/8" | 95 | 60 | 75 | 106 | 80 | 80 | 75 | 100 | 8 | + |

Hydro sleeve includes ring nut and 3 protection screws M6x10.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

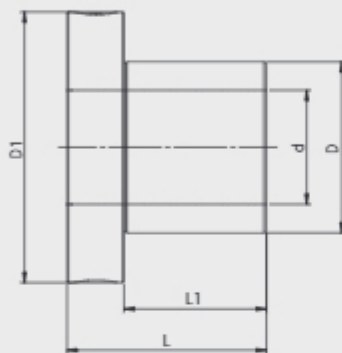
Hydro sleeve, type **TH** (pump regulated) is designed for multiple mounting of tools with a bore.

TH hydro sleeve guarantees easy change of a tool mounted on the sleeve, fixed to the sleeve's flange with 3 bolts.

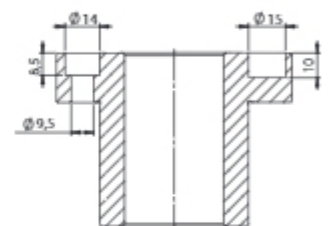
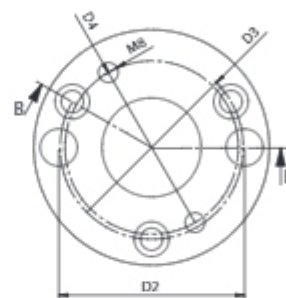
Serial positioning of tools. Pressure generated with high-pressure grease pump. Works also with longer pilot parts.

$L_{\max} = 260 \text{ mm}$

$L1_{\max} = 240 \text{ mm}$



Hydro sleeve type TH



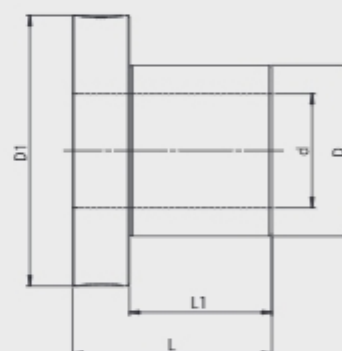
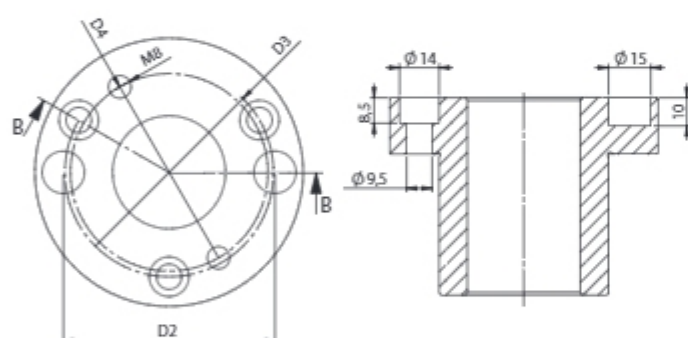
| Catalogue number | Type | D mm | d mm | L mm | L1 mm | D1 mm | D2 mm | D3 mm | D4 mm | |
|------------------|------|------|------|------|-------|-------|-------|-------|-------|---|
| TH-60/40-55 | TH | 60 | 40 | 55 | 35 | 95 | 75 | 74 | 70 | • |
| TH-60/40-75 | TH | 60 | 40 | 75 | 55 | 95 | 75 | 74 | 70 | • |
| TH-60/40-95 | TH | 60 | 40 | 95 | 75 | 95 | 75 | 74 | 70 | • |
| TH-60/40-115 | TH | 60 | 40 | 115 | 95 | 95 | 75 | 74 | 70 | + |
| TH-60/40-165 | TH | 60 | 40 | 165 | 145 | 95 | 75 | 74 | 70 | + |
| TH-60/45-55 | TH | 60 | 45 | 55 | 35 | 95 | 75 | 74 | 70 | • |
| TH-60/45-75 | TH | 60 | 45 | 75 | 55 | 95 | 75 | 74 | 70 | • |
| TH-60/45-95 | TH | 60 | 45 | 95 | 75 | 95 | 75 | 74 | 70 | + |
| TH-60/50-55 | TH | 60 | 50 | 55 | 35 | 95 | 75 | 74 | 70 | • |
| TH-60/50-75 | TH | 60 | 50 | 75 | 55 | 95 | 75 | 74 | 70 | • |
| TH-60/50-95 | TH | 60 | 50 | 95 | 75 | 95 | 75 | 74 | 70 | • |
| TH-60/50-115 | TH | 60 | 50 | 115 | 95 | 95 | 75 | 74 | 70 | • |
| TH-60/50-140 | TH | 60 | 50 | 140 | 120 | 95 | 75 | 74 | 70 | • |
| TH-60/50-190 | TH | 60 | 50 | 190 | 170 | 95 | 75 | 74 | 70 | • |
| TH-60/50-230 | TH | 60 | 50 | 230 | 210 | 95 | 75 | 74 | 70 | + |
| TH-70/60-55 | TH | 70 | 60 | 55 | 35 | 105 | 85 | 86 | 85 | + |
| TH-70/60-75 | TH | 70 | 60 | 75 | 55 | 105 | 85 | 86 | 85 | • |
| TH-70/60-230 | TH | 70 | 60 | 230 | 210 | 105 | 85 | 86 | 85 | + |

Hydro sleeve includes 3 fixing bolts M8x30 DIN 912.

Spare and extra parts, including safety collar and fixing bolts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type TH



| Catalogue number | Type | D
mm | d | L
mm | L1
mm | D1
mm | D2
mm | D3
mm | D4
mm | |
|-------------------|------|---------|----------|---------|----------|----------|----------|----------|----------|---|
| TH-50/1-1/2-95* | TH | 50 | 1 1/2" | 95 | 60 | 85 | 65 | 64 | - | + |
| TH-60/1-13/16-75 | TH | 60 | 1 13/16" | 75 | 55 | 95 | 75 | 74 | 70 | + |
| TH-65/1-13/16-95 | TH | 65 | 1 13/16" | 95 | 75 | 100 | 80 | 80 | 75 | + |
| TH-65/1-13/16-140 | TH | 65 | 1 13/16" | 140 | 120 | 100 | 80 | 80 | 75 | + |

Hydro sleeve includes 3 fixing bolts M8x30 DIN 912.

* No safety pins possible.

Spare and extra parts, including safety collar and fixing bolts on page 9.23.

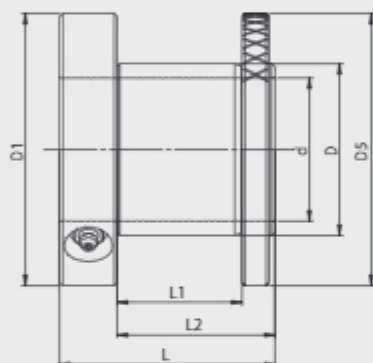
More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve, type **THG** (pump regulated, with a thread) is designed for multiple mounting of tools with a bore. THG hydro sleeve guarantees easy change of a tool mounted on the sleeve and protected with a ring nut with 3 protection screws.

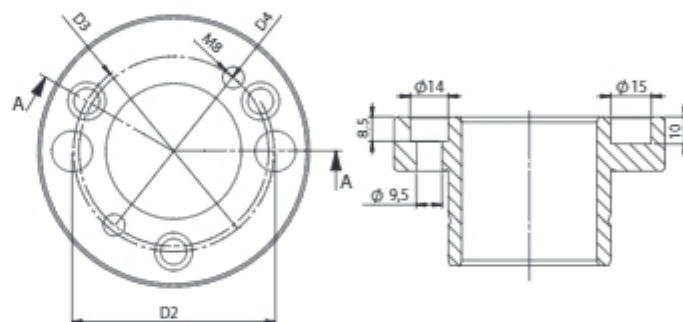
Serial positioning of tools. Pressure generated with high-pressure grease pump. Works also with longer pilot parts.

$L_{\max} = 260 \text{ mm}$

$L1_{\max} = 225 \text{ mm}$



Hydro sleeve typ THG



| Catalogue number | Type | D mm | d mm | L mm | L1 mm | L2 mm | D1 mm | D2 mm | D3 mm | D4 mm | D5 mm | |
|------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|---|
| THG-50/40-75* | THG | 50 | 40 | 75 | 40 | 55 | 85 | 65 | 64 | - | 85 | + |
| THG-50/40-115* | THG | 50 | 40 | 115 | 80 | 95 | 85 | 65 | 64 | - | 85 | + |
| THG-60/40-75 | THG | 60 | 40 | 75 | 40 | 55 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/40-95 | THG | 60 | 40 | 95 | 60 | 75 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/40-115 | THG | 60 | 40 | 115 | 80 | 95 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/40-140 | THG | 60 | 40 | 140 | 105 | 120 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/40-190 | THG | 60 | 40 | 190 | 155 | 170 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/40-220 | THG | 60 | 40 | 220 | 185 | 200 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/45-75 | THG | 60 | 45 | 75 | 40 | 55 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/45-95 | THG | 60 | 45 | 95 | 60 | 75 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/45-115 | THG | 60 | 45 | 115 | 80 | 95 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/45-140 | THG | 60 | 45 | 140 | 105 | 120 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/45-190 | THG | 60 | 45 | 190 | 155 | 170 | 95 | 75 | 74 | 70 | 95 | + |

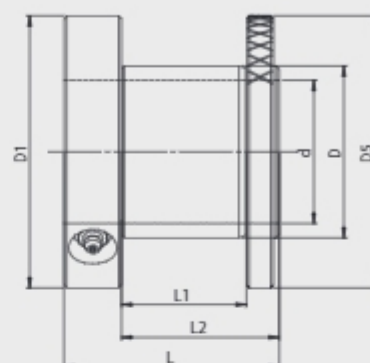
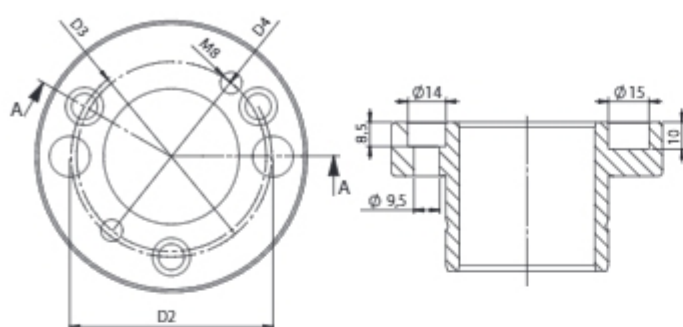
Hydro sleeve includes ring nut and 3 protection screws M6x10.

* No safety pins possible.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type THG



| Catalogue number | Type | D mm | d mm | L mm | L1 mm | L2 mm | D1 mm | D2 mm | D3 mm | D4 mm | D5 mm | |
|------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|---|
| THG-60/50-75 | THG | 60 | 50 | 75 | 40 | 55 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/50-95 | THG | 60 | 50 | 95 | 60 | 75 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/50-115 | THG | 60 | 50 | 115 | 80 | 95 | 95 | 75 | 74 | 70 | 95 | • |
| THG-60/50-140 | THG | 60 | 50 | 140 | 105 | 120 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/50-190 | THG | 60 | 50 | 190 | 155 | 170 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/50-240 | THG | 60 | 50 | 240 | 205 | 220 | 95 | 75 | 74 | 70 | 95 | + |
| THG-70/60-75 | THG | 70 | 60 | 75 | 40 | 55 | 105 | 85 | 86 | 85 | 105 | + |
| THG-70/60-140 | THG | 70 | 60 | 140 | 105 | 120 | 105 | 85 | 86 | 85 | 105 | + |
| THG-70/60-190 | THG | 70 | 60 | 190 | 155 | 170 | 105 | 85 | 86 | 85 | 105 | + |

| Catalogue number | Type | D mm | d | L mm | L1 mm | L2 mm | D1 mm | D2 mm | D3 mm | D4 mm | D5 mm | |
|--------------------|------|------|----------|------|-------|-------|-------|-------|-------|-------|-------|---|
| THG-50/1-1/2-95* | THG | 50 | 1 1/2" | 95 | 60 | 75 | 85 | 65 | 64 | - | 85 | + |
| THG-50/1-1/2-140* | THG | 50 | 1 1/2" | 140 | 105 | 120 | 85 | 65 | 64 | - | 85 | + |
| THG-50/1-1/2-190* | THG | 50 | 1 1/2" | 190 | 155 | 170 | 85 | 65 | 64 | - | 85 | + |
| THG-60/1-13/16-75 | THG | 60 | 1 13/16" | 75 | 40 | 55 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/1-13/16-115 | THG | 60 | 1 13/16" | 115 | 80 | 95 | 95 | 75 | 74 | 70 | 95 | + |
| THG-60/1-13/16-190 | THG | 60 | 1 13/16" | 190 | 155 | 170 | 95 | 75 | 74 | 70 | 95 | + |
| THG-65/1-13/16-95 | THG | 65 | 1 13/16" | 95 | 60 | 75 | 100 | 80 | 80 | 75 | 100 | + |
| THG-65/1-13/16-140 | THG | 65 | 1 13/16" | 140 | 105 | 120 | 100 | 80 | 80 | 75 | 100 | + |
| THG-65/1-13/16-190 | THG | 65 | 1 13/16" | 190 | 155 | 170 | 100 | 80 | 80 | 75 | 100 | + |
| THG-65/2-1/8-95 | THG | 65 | 2 1/8" | 95 | 60 | 75 | 100 | 80 | 80 | 75 | 100 | + |
| THG-65/2-1/8-140 | THG | 65 | 2 1/8" | 140 | 105 | 120 | 100 | 80 | 80 | 75 | 100 | + |
| THG-65/2-1/8-190 | THG | 65 | 2 1/8" | 190 | 155 | 170 | 100 | 80 | 80 | 75 | 100 | + |

Hydro sleeve includes ring nut and 3 protection screws M6x10.

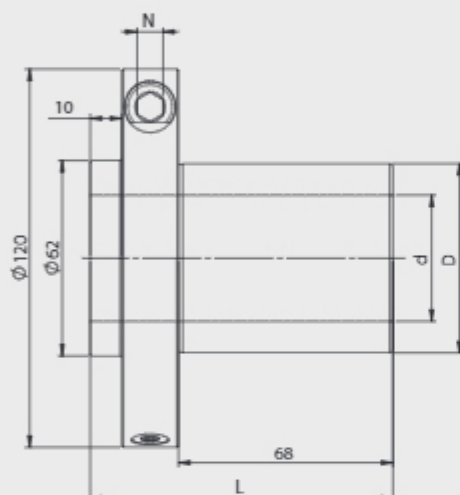
* No safety pins possible.

Spare and extra parts on page 9.23.

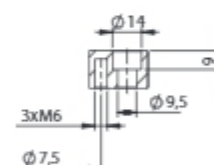
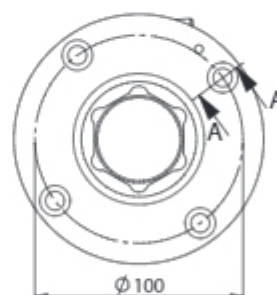
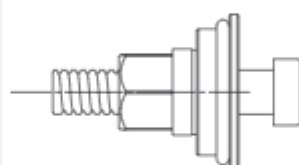
More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve, type **TI** designed for precise mounting of tools with a bore. Tools are placed on the precise pilot part. Serial positioning of tools. Pressure generated with regulation screw and a key. The sleeve works on hexagonal machine spindle. Pressure system with increased durability and efficiency.

$L_{\max} = 96 \text{ mm}$



Hydro sleeve type TI



9

| Catalogue number | Type | D | d | L | N |
|------------------|------|----|----|----|---|
| TI-60/40-96 | TI | 60 | 40 | 96 | 8 |

Spare parts for Hydro Sleeve type TI

| Cat. nr | Name | Dimensions | | | |
|-----------|--------------------|---------------|--|---|--|
| WHAI1111 | Spindle protection | 49,5 x 79 | | • | |
| WHAS00187 | Screw | M14 x 70 | | • | |
| WHAP05689 | Safety ring | 120/60 x 9,5 | | + | |
| WHAS00186 | Screw DIN 912 | M8 x 75 | | + | |
| Cat. nr | Name | Dimensions | | | |
| WHAP02768 | Spacer ring | 120/60 x 1,0 | | + | |
| WHAP05686 | Spacer ring | 120/60 x 2,0 | | + | |
| WHAP05688 | Spacer ring | 120/60 x 5,0 | | + | |
| WHAP02889 | Spacer ring | 120/60 x 10,0 | | + | |

Hydro sleeve includes 4 fixing bolts M8x30 DIN 912.

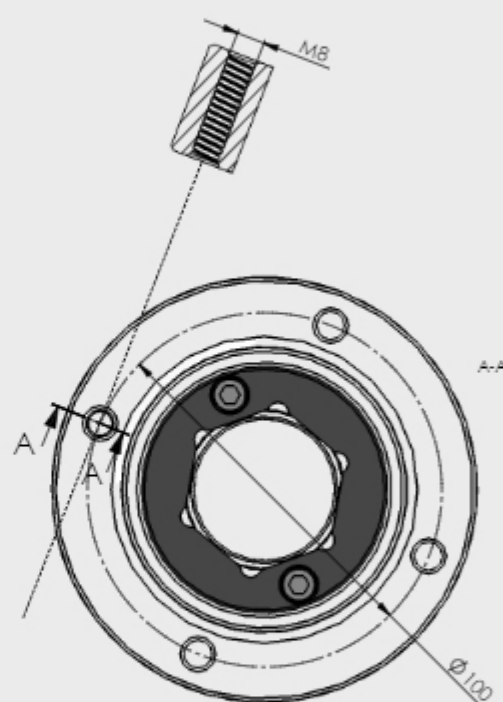
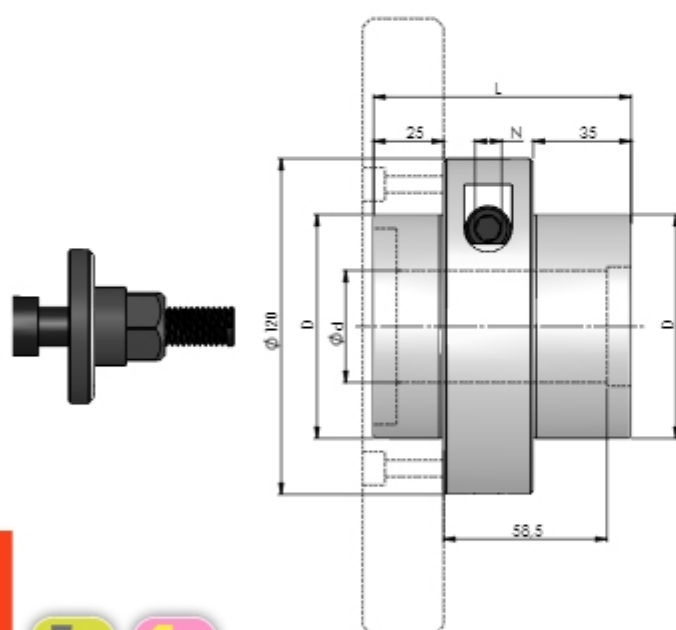
Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve type TI2

Hydro sleeve, type **TI2** designed for precise mounting of tools with a bore. Tools are placed on the precise pilot part. Serial positioning of tools. Pressure generated with regulation screw and a key. The sleeve works on hexagonal machine spindle. Pressure system with increased durability and efficiency.

$L_{\max} = 92 \text{ mm}$



9



| Catalogue number | Type | D | d | L | N | |
|------------------|------|----|----|----|---|---|
| TI2-80/40-92 | TI2 | 80 | 40 | 92 | 8 | • |

Spare parts for Hydro Sleeve type TI2

| Cat. nr | Name | Dimensions | | |
|-----------|--------------------|------------|--|---|
| WHA12341 | Spindle protection | 54,9 x 84 | | • |
| WHA11458A | Spacer ring | 70x8,5/42 | | + |
| WHAS00187 | Screw | M14 x 70 | | • |

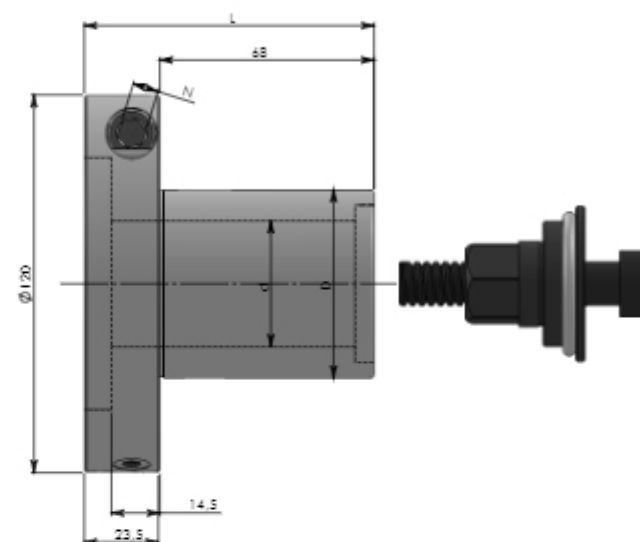
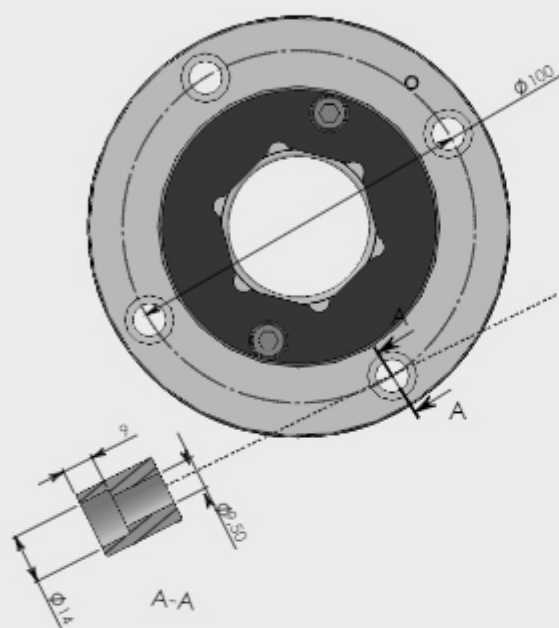
Hydro sleeve includes 4 fixing bolts M8x45 DIN 912.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeve, type **T13** designed for precise mounting of tools with a bore. Tools are placed on the precise pilot part. Serial positioning of tools. Pressure generated with regulation screw and a key. The sleeve works on hexagonal machine spindle. Pressure system with increased durability and efficiency.

$L_{\max} = 92 \text{ mm}$



9

| Catalogue number | Type | D | d | L | N | |
|------------------|------|----|----|----|---|---|
| T13 -60/40-92 | T13 | 60 | 40 | 92 | 8 | + |

Spare parts for Hydro Sleeve type T1

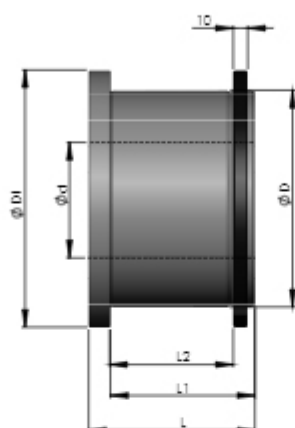
| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | | |
|-----------|--------------------|--------------|--|---|-----------|--------------|---------------|--|---|
| WHAI1111 | Spindle protection | 49,5 x 79 | | • | WHAP02768 | Spacer ring | 120/60 x 1,0 | | • |
| WHAS00187 | Screw | M14 x 70 | | • | WHAP05686 | Spacer ring | 120/60 x 2,0 | | • |
| WHAP05689 | Safety ring | 120/60 x 9,5 | | • | WHAP05688 | Spacer ring | 120/60 x 5,0 | | • |
| WHAS00186 | Screw DIN 912 | M8 x 75 | | + | WHAP02889 | Spacer ring | 120/60 x 10,0 | | • |
| | | | | | WHAI1458 | Spindle lock | 80/8,5 | | + |

Hydro sleeve includes 4 fixing bolts M8x30 DIN 912.

Spare and extra parts on page 9.23.

More information on hydro systems on pages 3.52 and 5.23.

Hydro sleeves type THL / THLG



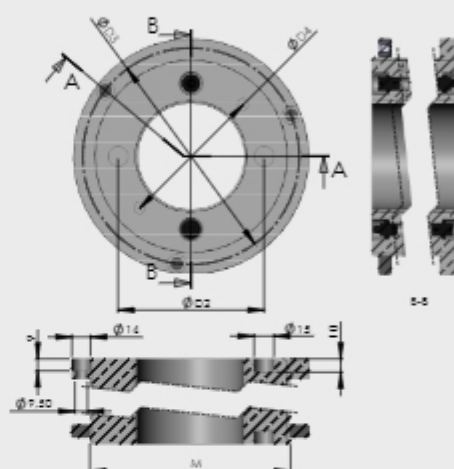
Hydro sleeves, type **THL** and **THLG** (pump operated) are designed for multiple mounting of tools with a bore.

THL hydro sleeve guarantees easy change of a tool mounted on the sleeve, which should be attached to the collar with 3 fixing screws.

THLG hydro sleeve guarantees easy change of a tool mounted on the sleeve, which is protected with a ring nut with 3 protection screws preventing it from spontaneous unlocking.

$L_{\max} = 260 \text{ mm}$ $L1_{\max} = 230 \text{ mm}$

- Serial positioning of tools
- Pressure generated with high-pressure grease pump.
- Works also with longer pilot parts

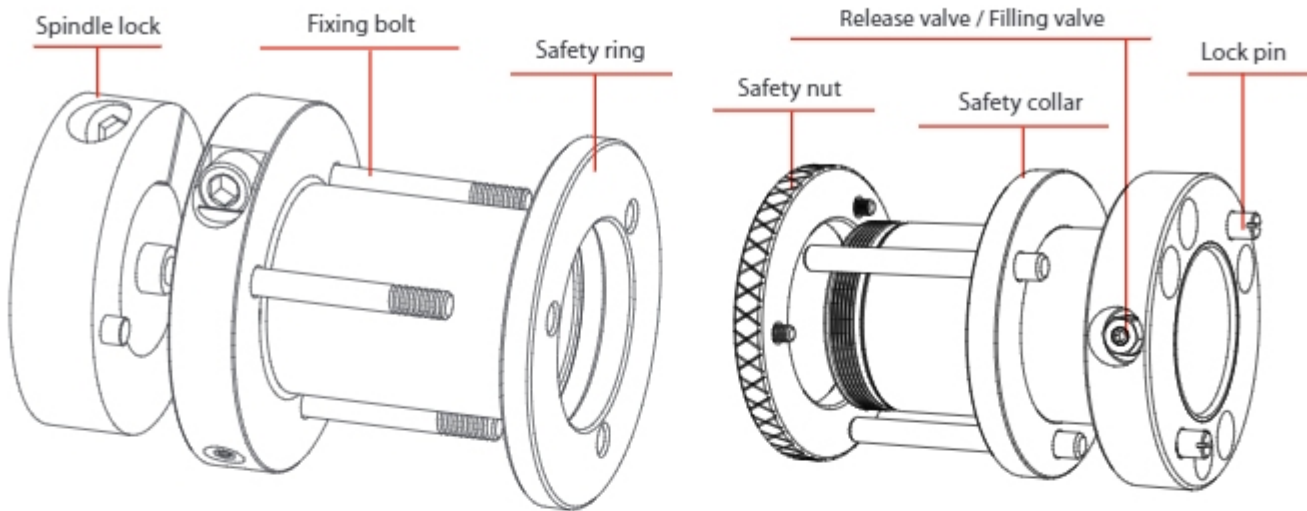


| Catalogue number | Type | D mm | d mm | L mm | L1 mm | L2 mm | D1 mm | D2 mm | D3 mm | D4 mm | |
|------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|---|
| THL-100/45-75 | THL | 100 | 45 | 75 | 60 | - | 128 | - | 113 | 70 | + |
| THL-100/45-95 | THL | 100 | 45 | 95 | 80 | - | 128 | - | 113 | 70 | + |
| THL-100/50-55 | THL | 100 | 50 | 55 | 40 | - | 128 | 75 | 113 | 70 | + |
| THL-100/50-75 | THL | 100 | 50 | 75 | 60 | - | 128 | 75 | 113 | 70 | + |
| THL-100/50-95 | THL | 100 | 50 | 95 | 80 | - | 128 | 75 | 113 | 70 | + |
| THL-100/50-115 | THL | 100 | 50 | 115 | 100 | - | 128 | 75 | 113 | 70 | + |
| THL-100/50-140 | THL | 100 | 50 | 140 | 125 | - | 128 | 75 | 113 | 70 | + |
| THL-110/60-115 | THL | 110 | 60 | 115 | 100 | - | 138 | 85 | 123 | 80 | + |
| THL-130/70-140 | THL | 130 | 70 | 140 | 125 | - | 158 | 100 | 143 | 100 | + |
| THL-130/80-115 | THL | 130 | 80 | 115 | 100 | - | 158 | 100 | 143 | 100 | + |
| THL-130/80-140 | THL | 130 | 80 | 140 | 125 | - | 158 | 100 | 143 | 100 | + |

| Catalogue number | Type | D mm | d mm | L mm | L1 mm | L2 mm | D1 mm | D2 mm | D3 mm | D4 mm | |
|------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|---|
| THLG-100/45-75 | THLG | 100 | 45 | 75 | 60 | 45 | 128 | - | 113 | 70 | + |
| THLG-100/50-75 | THLG | 100 | 50 | 75 | 60 | 45 | 128 | 75 | 113 | 70 | + |
| THLG-100/50-95 | THLG | 100 | 50 | 95 | 80 | 65 | 128 | 75 | 113 | 70 | + |
| THLG-100/50-115 | THLG | 100 | 50 | 115 | 100 | 85 | 128 | 75 | 113 | 70 | + |
| THLG-100/50-140 | THLG | 100 | 50 | 140 | 125 | 110 | 128 | 75 | 113 | 70 | + |
| THLG-130/80-115 | THLG | 130 | 80 | 115 | 100 | 85 | 158 | 100 | 143 | 100 | + |
| THLG-130/80-140 | THLG | 130 | 80 | 140 | 125 | 110 | 158 | 100 | 143 | 100 | + |

More information on hydro systems on pages 3.52 and 5.23.

TK, TKG, TH, THG, THL, THLG

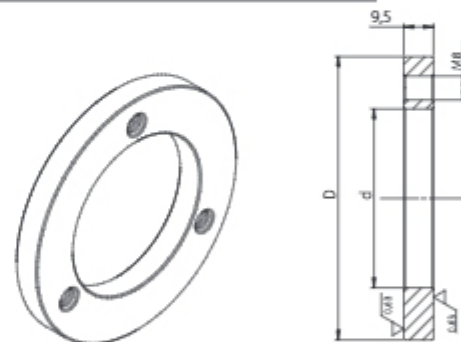


Safety ring used with fixing bolts, designer for hydro sleeves, type TK and TH.

Works with: TK, TH sleeves.

| Catalogue number | d mm | D mm | M | |
|------------------|------|------|---|---|
| WHAP05685 | 50 | 85 | 8 | • |
| WHAP05061 | 60 | 95 | 8 | • |
| WHAP05683 | 65 | 100 | 8 | • |
| WHAP05684 | 70 | 105 | 8 | • |

Safety ring



Fixing bolts designed for mounting tools on hydro sleeves type TK, TKG, TH, THG.

Works with: TK, TKG, TH, THG sleeves.

| Catalogue number | Dimensions | |
|------------------|------------|---|
| WHAS00188 | M8 x 30 | • |
| WHAS00189 | M8 x 45 | • |
| WHAS00190 | M8 x 65 | • |
| WHAS00186 | M8 x 75 | • |
| WHAS00191 | M8 x 85 | • |
| WHAS00192 | M8 x 105 | • |
| WHAS00193 | M8 x 130 | • |
| WHAS00194 | M8 x 155 | • |
| WHAS00016 | M8 x 180 | • |
| WHAS00077 | M8 x 220 | • |

Fixing bolt



Safety nut



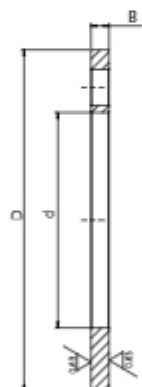
Safety nut in a set with 3 bolts M6x10 designed for hydro sleeves type TKG, THG. Designed for protecting the tools mounted on the sleeve from sliding apart.

Works with: TKG, THG sleeves.

| Catalogue number | Dimensions | D mm | |
|------------------|------------|------|---|
| WHA102175 | M50 x 1,5 | 85 | + |
| WHA102174 | M60 x 1,5 | 95 | • |
| WHA102176 | M65 x 1,5 | 100 | + |
| WHA102177 | M70 x 1,5 | 105 | + |

| Cat. number | Name | Dimensions | |
|-------------|--------------|------------|---|
| WHAW00003 | Safety screw | M6 x 10 | • |

Spacer ring



Spacer ring with improved manufacturing tolerance, designed for hydro sleeves type TK, TKG, TH, THG. Spacers set the tools on the sleeve and fill the empty space after mounting the tools.

Works with: TK, TKG, TH, THG sleeves.

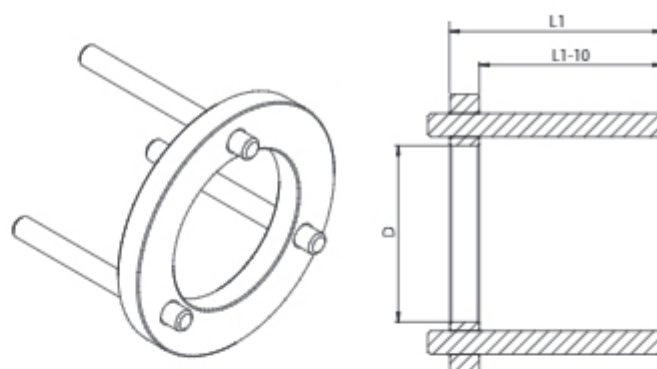
| Cat. number | d mm | D mm | B mm | |
|-------------|------|------|------|---|
| WHAP05695 | 50 | 85 | 1 | • |
| WHAP05678 | 50 | 85 | 2 | • |
| WHAP05696 | 50 | 85 | 5 | • |
| WHAP05697 | 50 | 85 | 10 | • |
| WHAP01839 | 60 | 95 | 1 | • |
| WHAP03779 | 60 | 95 | 2 | • |
| WHAP03780 | 60 | 95 | 5 | • |
| WHAP04023 | 60 | 95 | 10 | • |
| WHAP05679 | 65 | 100 | 1 | • |
| WHAP05680 | 65 | 100 | 2 | • |
| WHAP05681 | 65 | 100 | 5 | • |
| WHAP05682 | 65 | 100 | 10 | • |
| WHAP01858 | 70 | 105 | 1 | • |
| WHAP01857 | 70 | 105 | 2 | • |
| WHAP01856 | 70 | 105 | 5 | • |
| WHAP01855 | 70 | 105 | 10 | • |

Safety collar protecting the tools mounted on the sleeve from rotating, designed for hydro tools type TKG and THG, usually used with saw blades.

Safety collar produced on customer's request, for a specific outer sleeve diameter (D) and sleeve length (L1).

Works with: TKG, THG sleeves.

Safety collar



Spindle lock protecting the hydro sleeves from rotating on the machine spindle, designed for hydro sleeves type TK, TKG, TH, THG and hydro heads type 1100-04 H, 1100-05 H, GP-01 H. Produced for a specific machine spindle diameter (d).

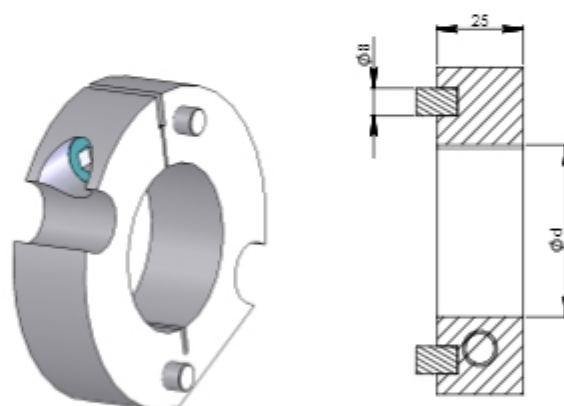
Works with: hydro cutter heads and sleeves.

| Cat. number | d mm | |
|-------------|------|---|
| ZAB-107 | 40 | • |
| ZAB-081* | 40 | + |
| ZAB-083 | 45 | + |
| ZAB-082 | 50 | • |
| ZAB-084 | 60 | + |

| Cat. number | d | |
|-------------|----------|---|
| ZAB-081A | 1 1/2" | + |
| ZAB-083A | 1 13/16" | + |
| ZAB-085 | 2 1/8" | + |


* For sleeve 50/40 only

Spindle lock

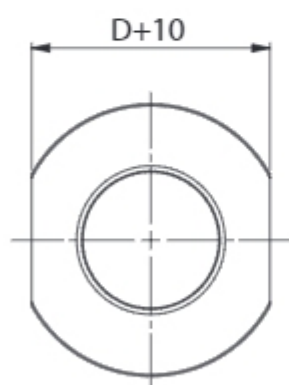
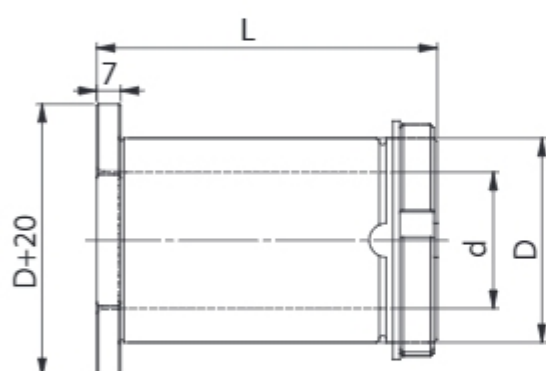
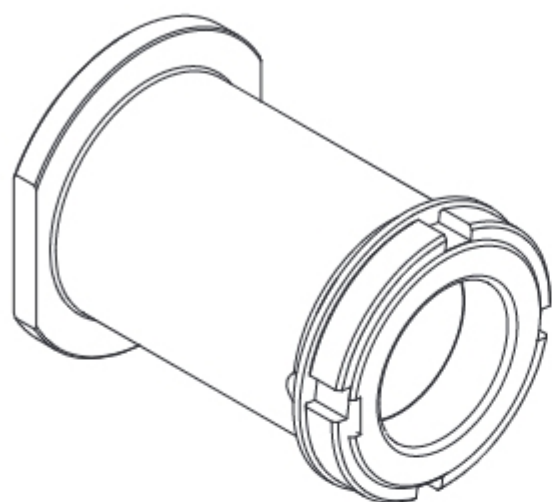


9

Accessories

| Cat. number | Name | | Cat. number | Name | |
|-------------|---------------|---|-------------|---------------------------|---|
| WHA11211 | Lock pin |  • | WHA100029 | High-pressure grease pump |  + |
| WHA100034 | Release valve |  • | WHA101210 | Grease pump connector |  • |
| WHA100033 | Filling valve |  • | WHA100377 | Grease |  • |


Sleeve for GO windows



Sleeve for windows, type **GO**, designed for mounting cutter heads and cutters for window profiles or other sets of cutters and cutter heads. The sleeve is equipped with precise pilot part. Special construction prevents the nut from loosening during work. The set includes a sleeve, nut and special spacer ring.

Type of work: CNC machines.

CNC

| Catalogue number | Type | D
mm | d
mm | L
mm |  | |
|------------------|------|---------|---------|---------|---|---|
| WHAT00006 | GO | 60 | 30 | 45 | R | + |
| WHAT00007 | GO | 60 | 30 | 100 | R | + |
| WHAT00008 | GO | 60 | 40 | 45 | R | + |
| WHAT00009 | GO | 60 | 40 | 100 | R | + |
| WHAT00010 | GO | 60 | 50 | 45 | R | + |
| WHAT00011 | GO | 60 | 50 | 100 | R | + |

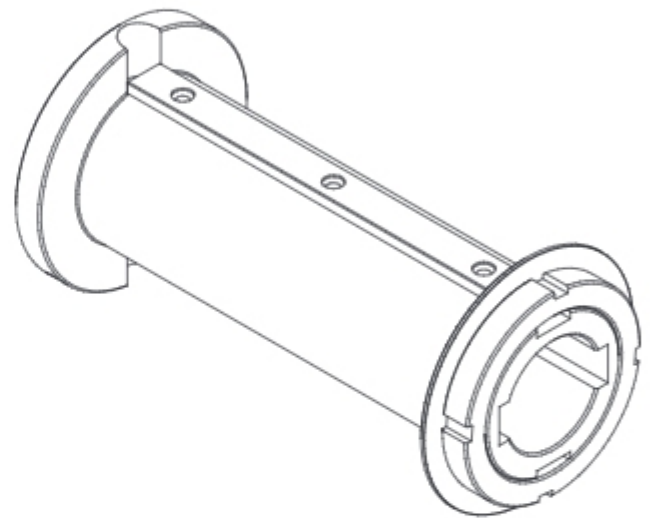
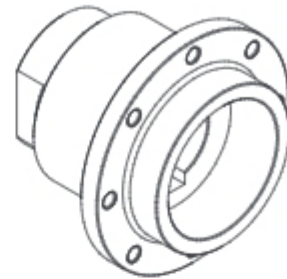
Special sleeves are designed for mounting cutter heads and brazed cutters. They are equipped with precise pilot part. The sleeves are offered on client's individual request.

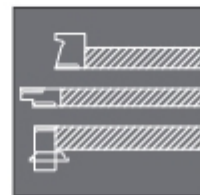
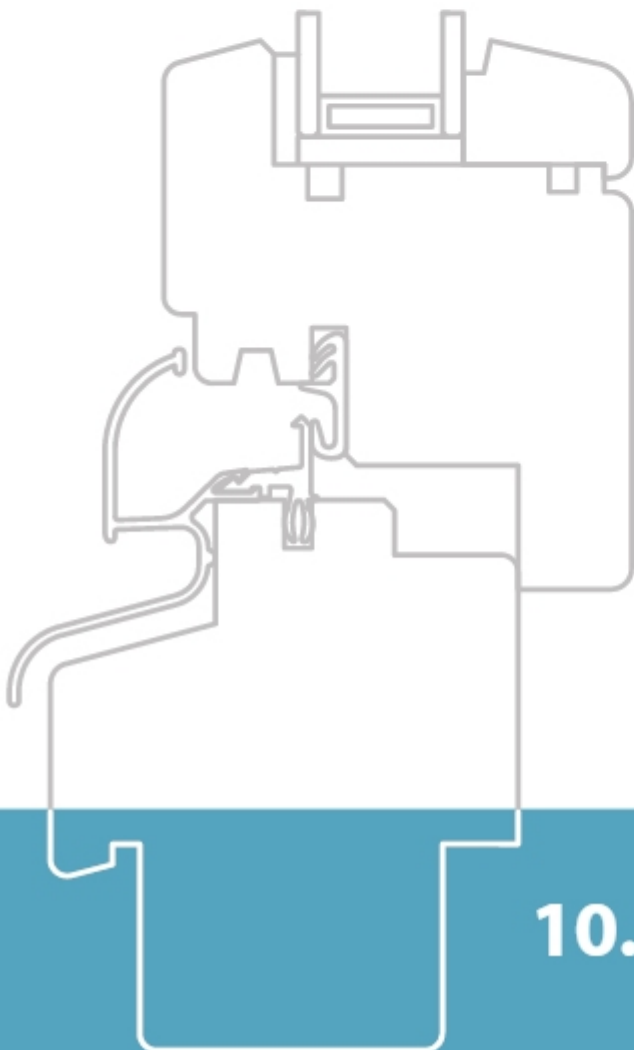
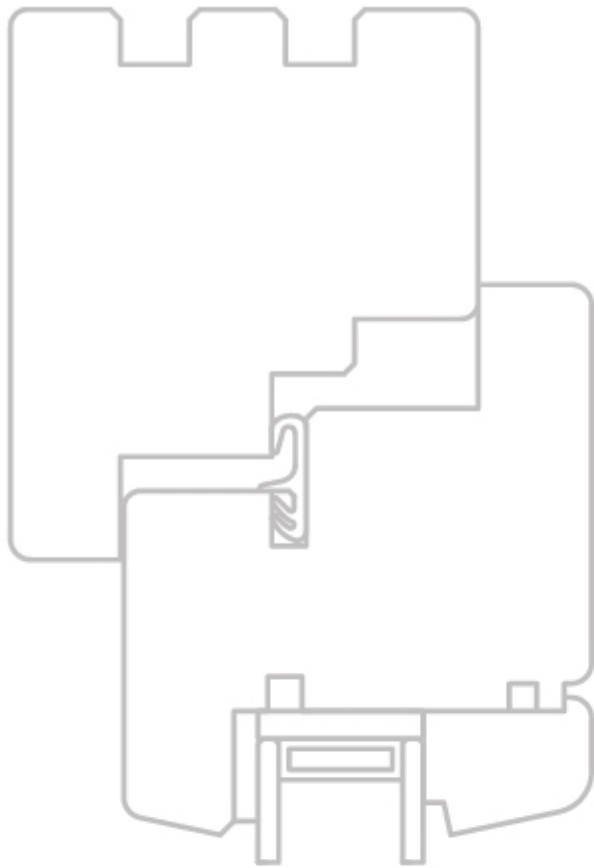
Order should include:

- positioning diameter (D) or diameters range,
- bore diameters (d),
- type of tool working with the sleeve,
- type of machined material,
- other information relevant for designing and production process.

Type of work: CNC machines

Special sleeves





10. Windows and doors

Windows and doors

Set of brazed cutters with high speed steel tips (HSS) designed for professional machining of solid soft wood. Sets of brazed cutters with carbide (HM) tips and cutter heads with exchangeable inserts (HM) designed for professional machining of solid soft and hard wood, glued wood and other wood-based materials and plastics. They are used for machining flat surfaces and edge profiling to obtain a given window and door profile. We offer mainly sets as cutter heads with exchangeable inserts.

Single tools and sets are made from the highest quality high speed cutting steel in special heat treatment technology, which has been properly selected for the type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work of the tool, both in standard and extreme conditions.

The tools are designed and manufactured with or without shear angle and optimized chip flow, mounted on sleeves or HSK shanks, designed for professional, very precise machining of solid wood and other wood-based materials. The HSK clamping construction guarantees reduced run-out tolerance. Thanks to using HSK system allowing also for production of arch windows, we obtain high precision and very high quality of the machined surface. The tools work in automatic production process on CNC machines.

All types of tools are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking.

The *Windows and doors* chapter includes only example types of brazed cutters, cutter heads and sets with basic dimensions. On special request, we can suggest, design and produce a proper tools for the required type of work, material, parameters and conditions during machining. Time of production of catalogue sets marked with "+" usually does not exceed 10-15 working days. Special windows, made on client's request are produced within 15-18 working days after agreeing all technical and sales details.

Orders should include:

- window type or window section drawing,
- drip cap type,
- machine or work scheme,
- diameters and base distances of tools for tenoning and profiling,
- base surfaces position,
- window sill groove position,
- gasket type,
- floating mullion type,
- machined material type,
- profile drawing with dimensions or profile sample – in case of single sets,
- other information relevant for designing and production process.

Drip cap and seal types can be found on pages 10.32-10.35 of the catalogue.



Contents

10. WINDOWS AND DOORS

| | |
|---|-------|
| Pictograms | 10.3 |
| 10.1 Sets for window batten | 10.4 |
| 10.2 Sets for double-glass windows | 10.6 |
| 10.3 Universal systems for windows 2U and 3U | 10.16 |
| 10.4 SCANDINAVIAN type window | 10.28 |
| 10.5 Sets for windows on HSK shanks | 10.31 |
| 10.6 Window components | 10.32 |
| 10.7 Cutters and cutter heads for panel raising | 10.36 |
| 10.8 Cutters and cutter heads for door tenons | 10.38 |

Pictograms



solid dry softwood



solid dry hardwood



chipboard



glued wood



MDF



carbide



high-speed cutting steel



steel or aluminium body



HSK 85 clamping



flat surfaces



rebating



grooving



profiling



mechanical feed



quiet and steady work

- available / stock product
- + production time 9–15 working days.

Window batten cut-off


Set of tools with suitable number of cutting teeth, designed for window batten cut-off with profiling and pre-cutting window frame. The set includes profiling tools (HSS or HM) offered as brazed cutters or cutter heads with exchangeable inserts and cutting saw blades (HM). The set is offered on individual request.


Orders should include:

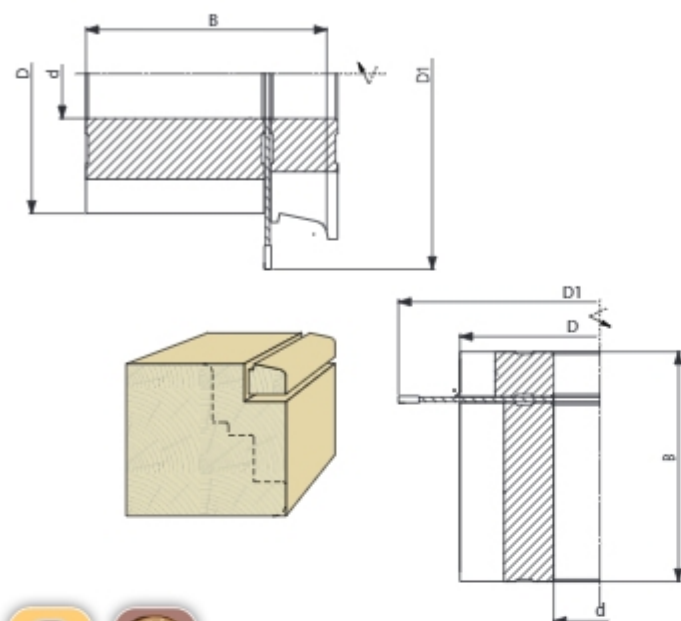
- D – base diameter,
- D1 – cutting saw blade diameter,
- D – bore diameter,
- B – semi-finished product width,
- window batten dimensions.

Type of work: window batten cut-off.

Material:

 solid softwood

 solid hardwood



Window batten recovery


Set of tools with suitable number of cutting teeth, designed for window batten cut-off with profiling. The set is used as additional – cutting off set, when longitudinal, inner profile of window frame is used in one operation with window batten profile. The set includes profiling tools (HSS or HM) offered as brazed cutter or cutter head with exchangeable inserts and cutting saw blades (HM). The set is offered on individual request.


Orders should include:

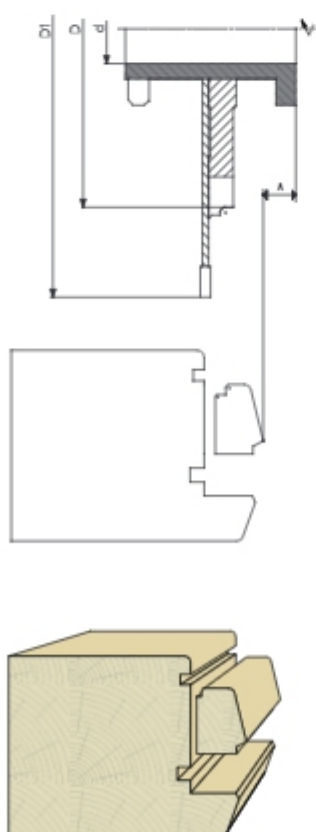
- D – base diameter,
- D1 – cutting saw blade diameter,
- D – bore diameter,
- B – semi-finished product width,
- A – base – set position,
- window batten dimensions.

Type of work: window batten cut-off.

Material:

 solid softwood

 solid hardwood



Direct cutting



Set of profile tools with suitable number of cutting teeth, designed for professional cutting of solid wood. The set is used for window batten finishing. The set includes profiling tools. The set is offered on individual request as brazed cutters or cutter heads. The set works on four-sided machines.

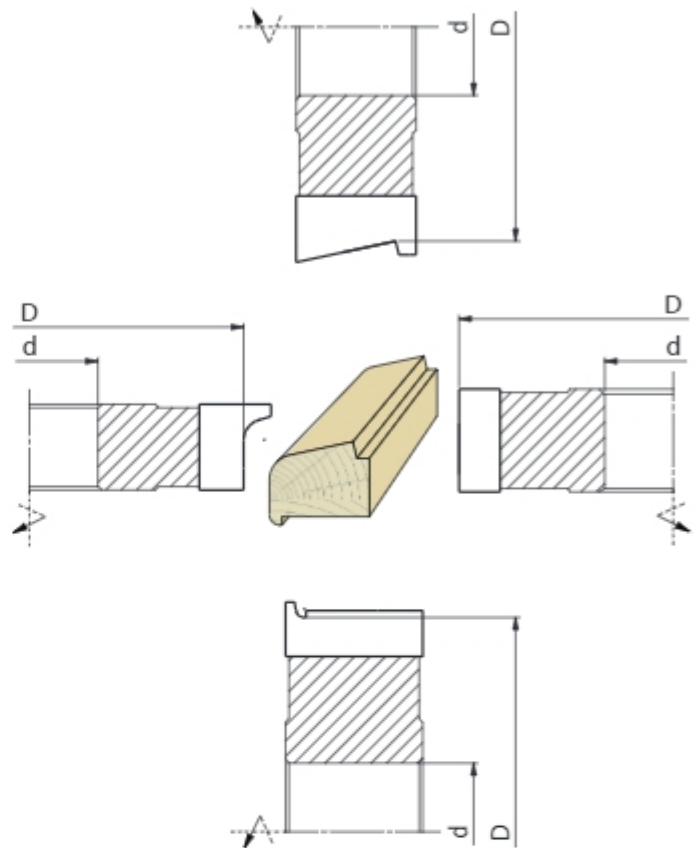
Orders should include:

- D – base diameter,
- D – bore diameter,
- window batten dimensions.

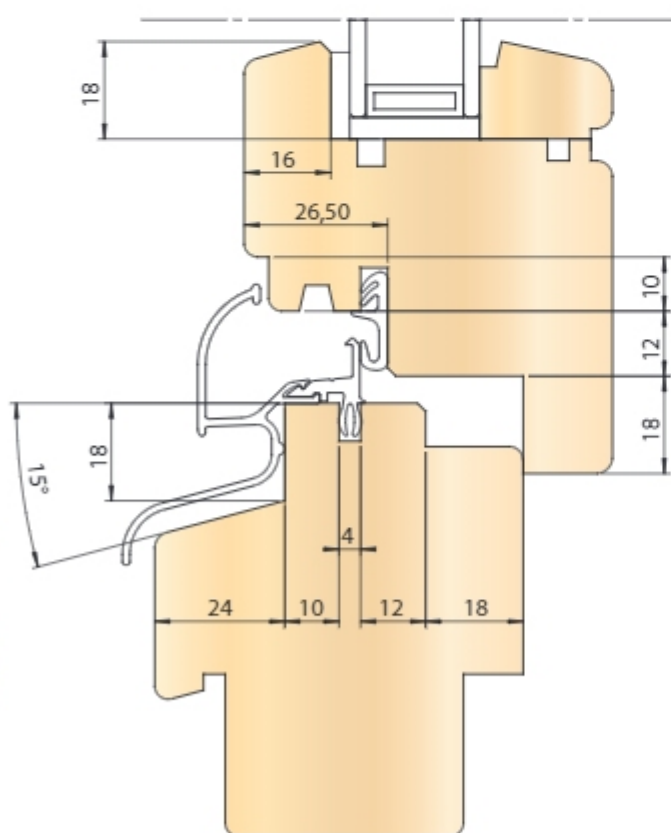
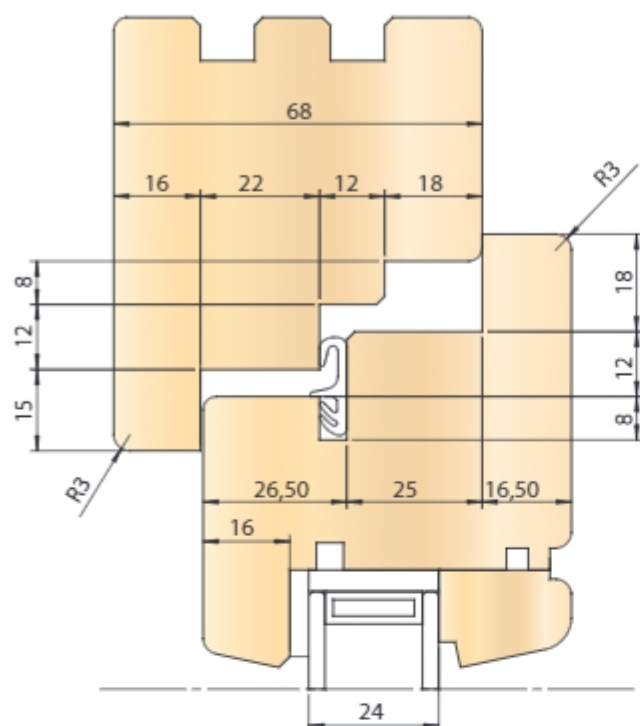
Type of work: window batten finishing.

Material:

-  solid softwood
-  solid hardwood



Set of brazed cutters, type **ZFO-02**, with four cutting teeth, designed for production of double-glass, single-sash windows 68 mm wide. The set includes 13 sets mounted on 100 mm long sleeves, without possibility to increase window sash and frame width.



Basic set:

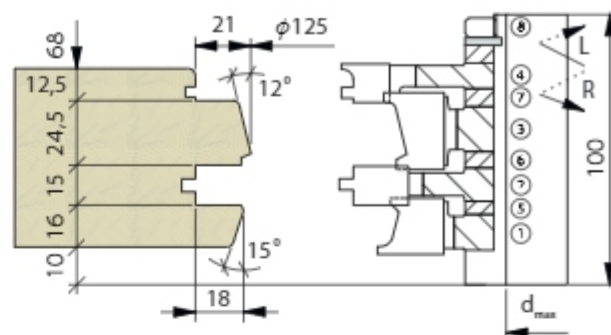
1. Internal longitudinal window sash profile made with window batten profile.
2. External longitudinal window sash profile.
3. Internal longitudinal side and top window frame profile.
4. Internal longitudinal bottom window frame profile.
5. Window batten cut-off.
6. Window sash tenon.
7. Window sash mortise.
8. Window frame bottom tenon.
9. Window frame top tenon.
10. Window frame mortise.
11. Drip cap profiling.
12. Window sill groove profile.
13. Floating mullion profile.

Standard sets can be extended with additional optional sets, depending on needs.

Internal longitudinal window sash profile made in one operation with window batten profile (on a sleeve).

ZFO-02.01.00-2

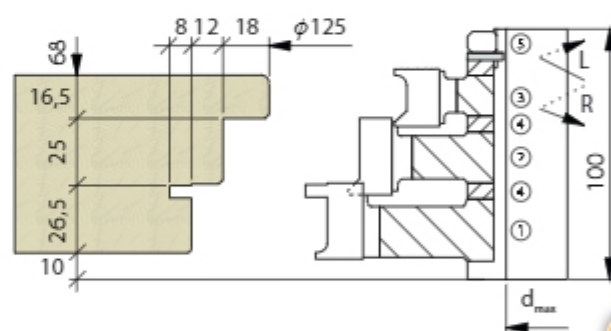
| Catalogue number | D
mm | B
mm | d _{max}
mm | z |
|-------------------|---------|---------|------------------------|-----|
| 1. ZFO-02.01.01-2 | 147 | 23 | | 4 + |
| 2. ZFO-02.01.02-2 | 177 | 15 | | 4 + |
| 3. ZFO-02.01.03-2 | 142,6 | 31,5 | | 4 + |
| 4. ZFO-02.01.04-2 | 177 | 17,5 | | 4 + |
| 5. Distance ring | 1 pc. | 3 | | + |
| 6. Distance ring | 1 pc. | 5 | | + |
| 7. Distance ring | 1 pc. | 6 | | + |
| 8. BOX sleeve | | | 50 | + |



External longitudinal window sash profile (on a sleeve).
The set consists of 3 HSS brazed cutters.

ZFO-02.02.00-2

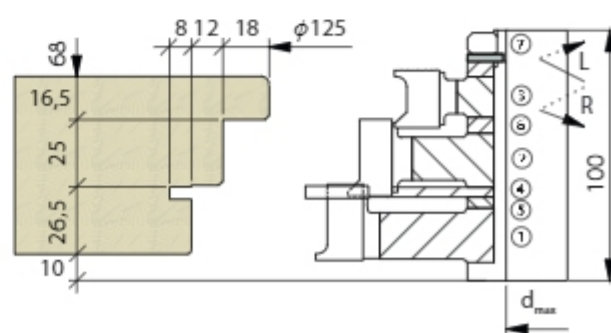
| Catalogue number | D
mm | B
mm | d _{max}
mm | z |
|-------------------|---------|---------|------------------------|-----|
| 1. ZFO-02.02.01-2 | 201 | 31,5 | | 4 + |
| 2. ZFO-02.02.02-2 | 167 | 28 | | 4 + |
| 3. ZFO-02.02.03-2 | 135 | 24,5 | | 4 + |
| 4. Distance ring | 2 pcs. | 9 | | + |
| 5. BOX sleeve | | | 50 | + |



External longitudinal window sash profile (on a sleeve).
The set consists of 3 HM brazed cutters.

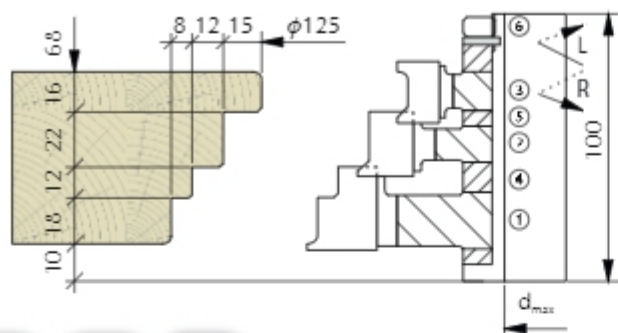
ZFO-02.02.00-2

| Catalogue number | D
mm | B
mm | d _{max}
mm | z |
|--------------------|---------|---------|------------------------|-----|
| 1. ZFO-020201Aw01L | 195 | 31,5 | | 4 + |
| 2. ZFO-020202w01L | 167 | 28 | | 4 + |
| 3. ZFO-020203w01P | 135 | 24,5 | | 4 + |
| 4. ZFO-020204w01P | 201 | 5 | | 4 + |
| 5. Distance ring | 1 pc. | 3,5 | | + |
| 6. Distance ring | 1 pc. | 9,1 | | + |
| 7. BOX sleeve | | | 50 | + |



ZFO-02.03.00-2

Internal longitudinal side and top window frame profile (on a sleeve).



| Catalogue number | | D
mm | B
mm | d _{max}
mm | z |
|------------------|----------------|---------|---------|------------------------|-----|
| 1. | ZFO-02.03.01-2 | 205 | 35 | | 4 + |
| 2. | ZFO-02.03.02-2 | 161 | 25 | | 4 + |
| 3. | ZFO-02.03.03-2 | 135 | 24 | | 4 + |
| 4. | Distance ring | 1 pc. | 7 | | + |
| 5. | Distance ring | 1 pc. | 4 | | + |
| 6. | BOX sleeve | | | 50 | + |

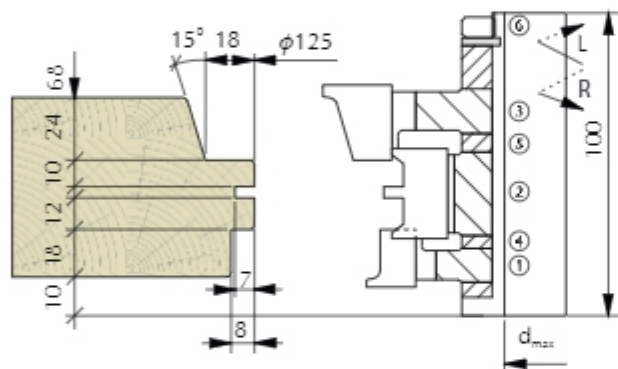


HSS



ZFO-02.04.00-2

Internal longitudinal bottom window frame profile (on a sleeve).

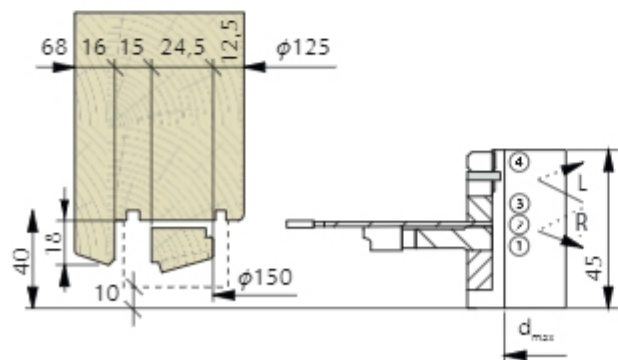


| Catalogue number | | D
mm | B
mm | d _{max}
mm | z |
|------------------|----------------|---------|---------|------------------------|-----|
| 1. | ZFO-02.04.01-2 | 151 | 23 | | 4 + |
| 2. | ZFO-02.04.02-2 | 139 | 32 | | 4 + |
| 3. | ZFO-02.04.03-2 | 183 | 29 | | 4 + |
| 4. | Distance ring | 1 pc. | 4 | | + |
| 5. | Distance ring | 1 pc. | 6 | | + |
| 6. | BOX sleeve | | | 50 | + |



ZFO-02.05.00-2

Window batten cut-off (on a sleeve).



| Catalogue number | | D
mm | B
mm | d _{max}
mm | z |
|------------------|----------------|---------|---------|------------------------|-----|
| 1. | ZFO-02.05.01-2 | 156 | 11,7 | | 4 + |
| 2. | PI-402 z=24 | 210 | 3 | | 4 + |
| 3. | Distance ring | 1 pc. | 10 | | + |
| 5. | BOX sleeve | | | 50 | + |



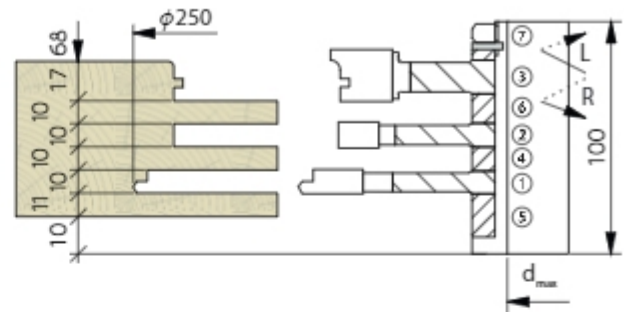
HM

ZFO-02.06.00-2

| Catalogue number | | D
mm | B
mm | d _{min}
mm | z |
|------------------|----------------|---------|---------|------------------------|-----|
| 1. | ZFO-02.06.01-2 | 250 | 10 | | 4 + |
| 2. | ZFO-02.06.02-2 | 214 | 10 | | 4 + |
| 3. | ZFO-02.06.03-3 | 224 | 22 | | 4 + |
| 4. | Distance ring | 1 pc. | 10 | | + |
| 5. | Distance ring | 1 pc. | 17 | | + |
| 6. | Distance ring | 1 pc. | 16 | | + |
| 7. | BOX sleeve | | | 50 | + |



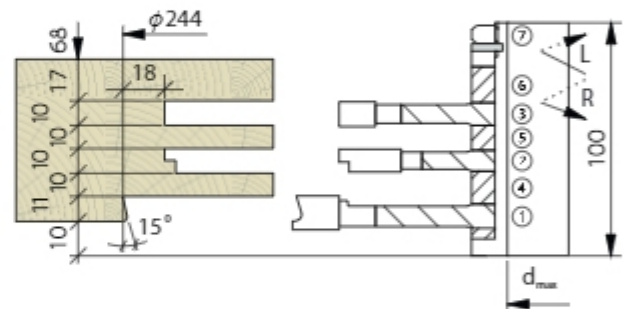
HSS



Window sash mortise (on a sleeve).

ZFO-02.07.00-2

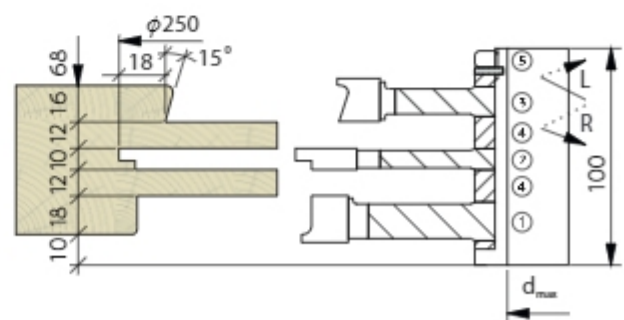
| Catalogue number | | D
mm | B
mm | d _{max}
mm | z |
|------------------|----------------|---------|---------|------------------------|-----|
| 1. | ZFO-02.07.01-2 | 254,4 | 16 | | 4 + |
| 2. | ZFO-02.07.02-2 | 214 | 10 | | 4 + |
| 3. | ZFO-02.07.03-2 | 214 | 10 | | 4 + |
| 4. | Distance ring | 1 pc. | 14 | | + |
| 5. | Distance ring | 1 pc. | 10 | | + |
| 6. | Distance ring | 1 pc. | 22 | | + |
| 7. | BOX sleeve | | | 50 | + |



Window frame bottom tenon (on a sleeve).

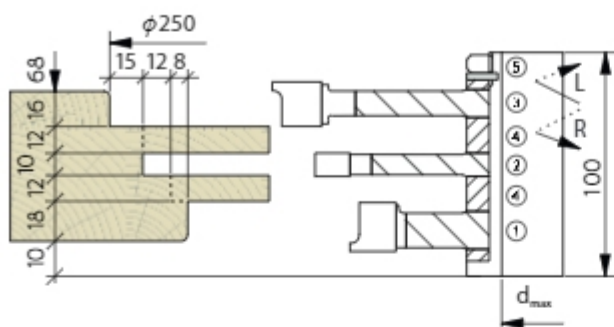
ZFO-02.08.00-2

| Catalogue number | | D
mm | B
mm | d _{max}
mm | z |
|------------------|----------------|---------|---------|------------------------|-----|
| 1. | ZFO-02.08.01-2 | 244 | 23 | | 4 + |
| 2. | ZFO-02.08.02-2 | 250 | 10 | | 4 + |
| 3. | ZFO-02.08.03-2 | 212 | 21 | | 4 + |
| 4. | Distance ring | 2 pcs. | 17 | | + |
| 5. | BOX sleeve | | | 50 | + |



ZFO-02.09.00-2

Window frame top tenon (on a sleeve).

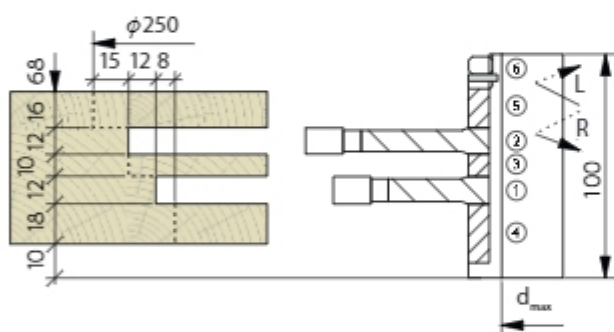


| Catalogue number | D
mm | B
mm | d _{max}
mm | z |
|-------------------|---------|---------|------------------------|-----|
| 1. ZFO-02.09.01-2 | 190 | 23 | | 4 + |
| 2. ZFO-02.09.02-2 | 220 | 10 | | 4 + |
| 3. ZFO-02.09.03-2 | 260 | 21 | | 4 + |
| 4. Distance ring | 2 pcs. | 17 | | + |
| 5. BOX sleeve | | | 50 | + |

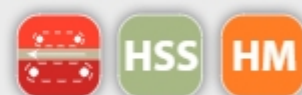


ZFO-02.10.00-2

Window frame mortise (on a sleeve).

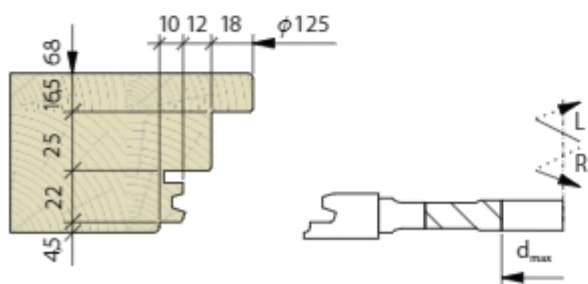


| Catalogue number | | D
mm | B
mm | d _{max}
mm | z |
|------------------|----------------|---------|---------|------------------------|-----|
| 1. | ZFO-02.10.01-2 | 196 | 12 | | 4 + |
| 2. | ZFO-02.10.02-2 | 220 | 12 | | 4 + |
| 3. | Distance ring | 1 pc. | 10 | | + |
| 4. | Distance ring | 1 pc. | 23 | | + |
| 5. | Distance ring | 1 pc. | 21 | | + |
| 6. | BOX sleeve | | | 50 | + |

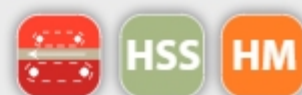


ZFO-02.11.00-2

Drip cap profile.



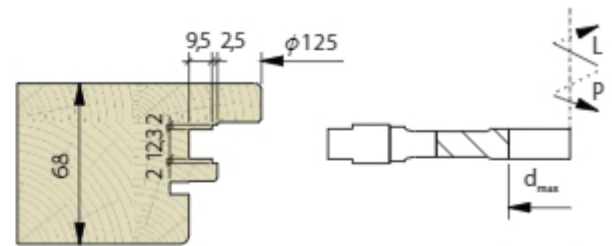
| Catalogue number | D
mm | B
mm | d _{max}
mm | z | |
|-------------------|---------|---------|------------------------|---|---|
| 1. ZFO-02.11.01-2 | 215 | 22,5 | 50 | 4 | + |



Window sill groove profile.

ZFO-02.12.00-2

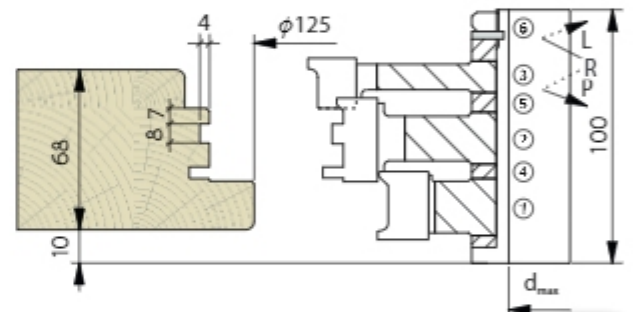
| Catalogue number | D
mm | B
mm | d _{max}
mm | z | |
|-------------------|---------|-----------|------------------------|---|---|
| 1. ZFO-02.12.01-2 | 185 | 16,3/12,3 | 50 | 4 | + |

**HSS****HM**

Internal longitudinal profile of floating mullion (on a sleeve). The set consists of 3 HSS brazed cutters.

ZFO-02.13.00-2

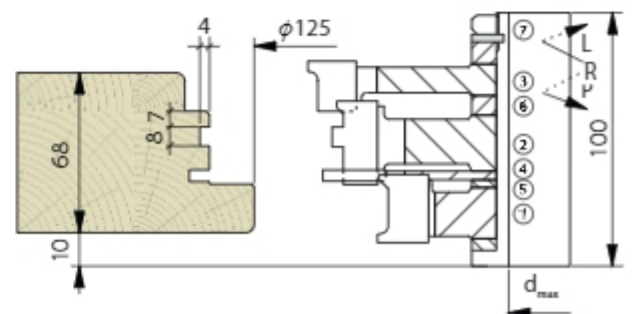
| Catalogue number | D
mm | B
mm | d _{max}
mm | z | |
|-------------------|---------|---------|------------------------|---|---|
| 1. ZFO-02.00.13-2 | 135 | 29 | | 4 | + |
| 2. ZFO-02.00.13-2 | 180 | 33,5 | | 4 | + |
| 3. ZFO-02.00.13-2 | 195 | 21,5 | | 4 | + |
| 4. Distance ring | 1 pc. | 6,4 | | | + |
| 5. Distance ring | 1 pc. | 9,1 | | | + |
| 6. BOX sleeve | | | 50 | | + |

**HSS**

Internal longitudinal profile of floating mullion (on a sleeve). The set consists of 3 HM brazed cutters.

ZFO-02.13.00-2

| Catalogue number | D
mm | B
mm | d _{max}
mm | z | |
|-------------------|---------|---------|------------------------|---|---|
| 1. ZFO-021301w01L | 135 | 29 | | 4 | + |
| 2. ZFO-021302w01P | 172 | 33,5 | | 4 | + |
| 3. ZFO-021303w01P | 195 | 21,5 | | 4 | + |
| 4. ZFO-021304w01L | 180 | 5 | | 4 | + |
| 5. Distance ring | 1 pc. | 3,5 | | | + |
| 6. Distance ring | 1 pc. | 9,1 | | | + |
| 7. BOX sleeve | | | 50 | | + |

**HM**

GO-01

Sets of cutter heads, type **GO-01**, with three cutting teeth for tenoning and two cutting teeth for profiling, designed for professional machining of solid wood. The sets are used for double-glass, single-sash windows 68 mm wide. The set includes 11 basic sets and 5 optional ones, mounted on 100 mm long sleeves.

Type of work: tenoning, internal and external window profiling.

Material: solid hardwood

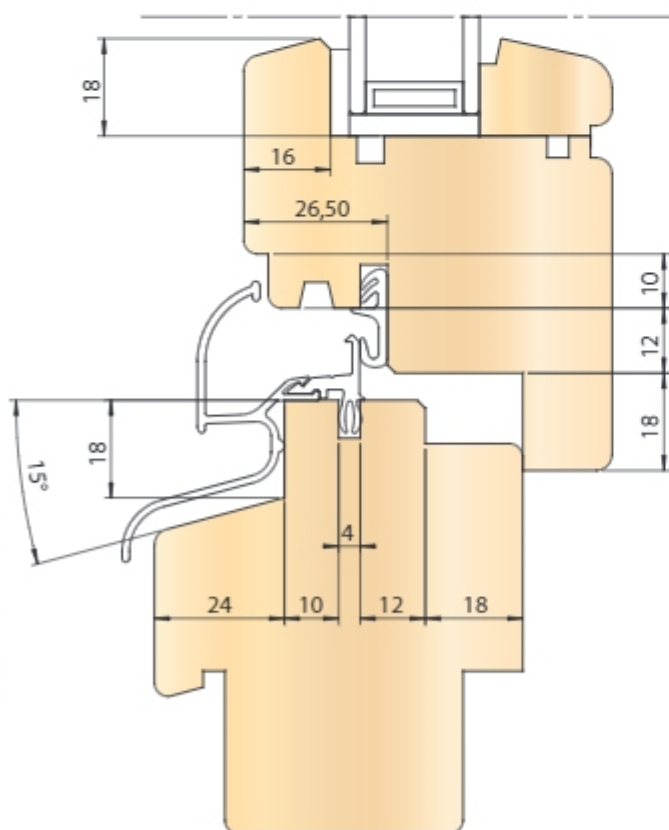
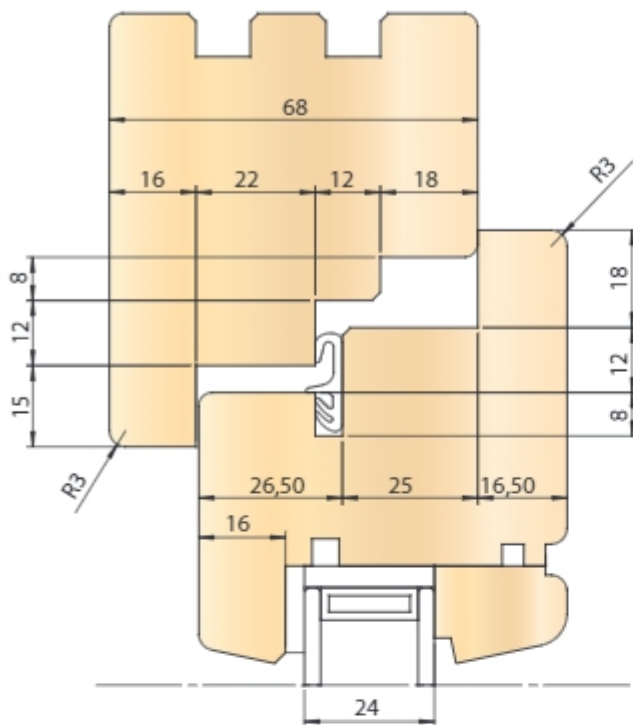
List of sets**Basic sets** (page 10.14):

1. Window frame mortise.
2. Window frame bottom tenon.
3. Window frame top tenon.
4. Window sash tenon.
5. Window sash mortise.
6. Internal longitudinal bottom window frame profile.
7. Internal longitudinal side and top window frame profile.
8. Internal longitudinal window sash profile.
9. External longitudinal window sash profile.
10. Drip cap profiling.
11. Window sill groove profiling.

Optional sets (page 10.15):

12. External longitudinal bottom window frame profile.
13. External longitudinal side and top window frame profile.
14. External longitudinal window sash profile with additional gasket.
15. Floating mullion profile.
16. Window batten profile.

Standard sets can be extended with additional optional sets, depending on needs.



HM

Sets of brazed cutters, type **ZFO-02 Softline**, with four cutting teeth and sets of cutter heads, type **GO-01 Softline**, with three cutting teeth for tenoning and two cutting teeth for profiling, designed for professional machining of solid wood. The sets are used for double-glass, single-sash windows 68 mm wide. The set includes 11 basic sets and 5 optional ones, mounted on 100 mm long sleeves.

Type of work: tenoning, internal and external window profiling.

Material: solid wood

List of sets

Basic sets (page 10.14):

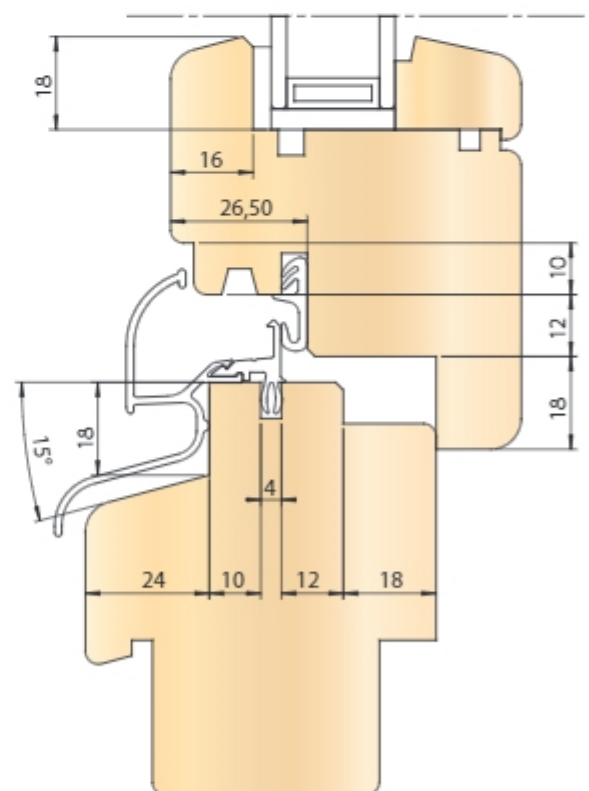
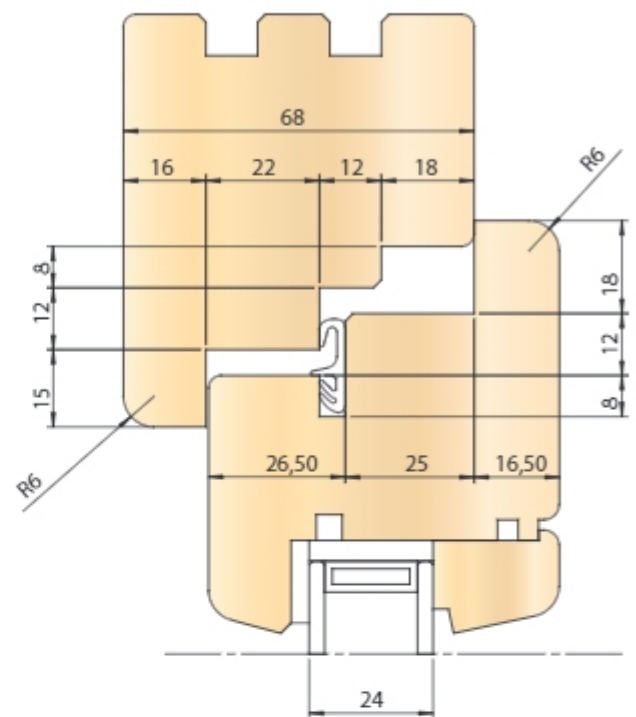
1. Window frame mortise.
2. Window frame bottom tenon.
3. Window frame top tenon.
4. Window sash tenon.
5. Window sash mortise.
6. Internal longitudinal bottom window frame profile.
7. Internal longitudinal side and top window frame profile.
8. Internal longitudinal window sash profile.
9. External longitudinal window sash profile.
10. Drip cap profiling.
11. Window sill groove profiling.

Optional sets (page 10.15):

12. External longitudinal bottom window frame profile.
13. External longitudinal side and top window frame profile.
14. External longitudinal window sash profile with additional gasket.
15. Floating mullion profile.
16. Window batten profile.

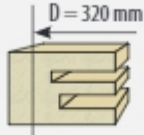

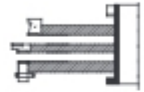
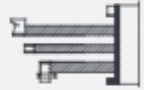







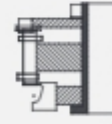

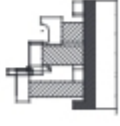




Standard sets can be extended with additional optional sets, depending on needs.

ZFO-02/GO-01 Softline



Basic set

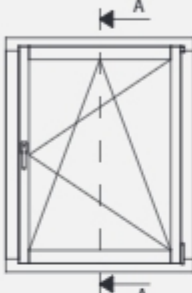



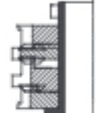

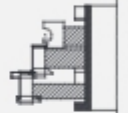
Basic set for production of double-glass, single-sash windows 68 mm wide for cutter heads GO-01 or GO-01 Softline with number of cutting teeth given in the chart and for brazed cutters ZFO-02 Softline with four cutting teeth ($z=4$).

| Profile number | Profile | Name | Tool | z |
|----------------|---|---|---|---|
| 1. |  | Window frame mortise |  | 3 |
| | | Window frame bottom tenon |  | 3 |
| | | Window frame top tenon |  | 3 |
| | | Window sash tenon |  | 3 |
| | | Window sash mortise |  | 3 |
| 6. |  | Internal longitudinal bottom window frame profile |  | 2 |
| 7. |  | Internal longitudinal side and top window frame profile |  | 2 |
| 8. |  | Internal longitudinal window sash profile |  | 2 |
| 9. |  | External longitudinal window sash profile |  | 2 |
| 10. |  | Drip cap profiling |  | 2 |
| 11. |  | Window sill groove profiling |  | 2 |

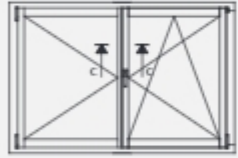

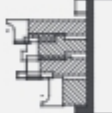
Optionally, it is possible to make window sill groove and drip cap in one operation with external longitudinal window sash profile, as window type GOD or GON.

Additional sets for cutter heads GO-01 or GO-01 Softline with number of cutting teeth given in the chart and for brazed cutters ZFO-02 Softline with four cutting teeth ($z=4$).

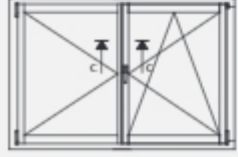

Additional sets

| | Profile number | Profile | Name | Tool | z |
|---|----------------|---|--|---|---|
|  | 12. | 
$D = 140 \text{ or } 125 \text{ mm}$ | External longitudinal bottom window frame profile |  | 2 |
| | 13. |  | External longitudinal side and top window frame profile |  | 2 |
| | 14. |  | External longitudinal window sash profile with additional gasket |  | 2 |

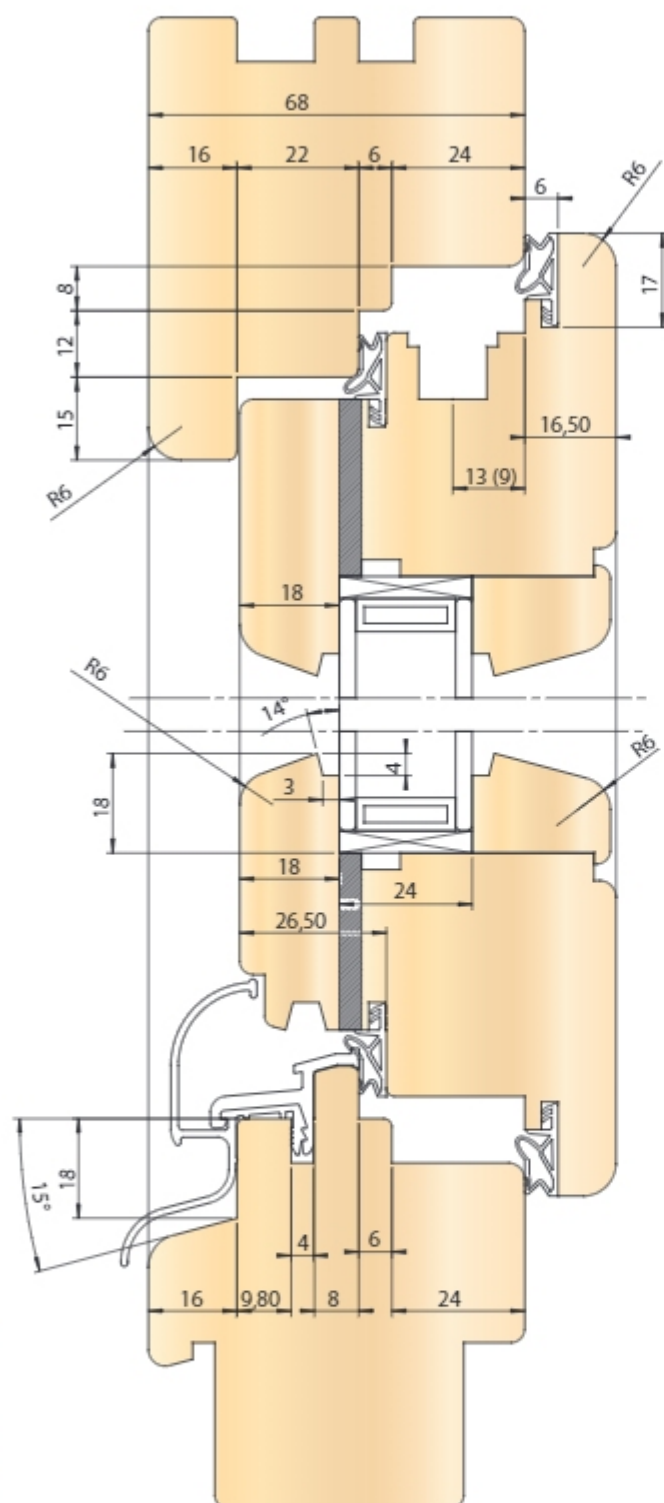
Floating mullion

| | Profile number | Profile | Name | Tool | z |
|---|----------------|---|--------------------------|---|---|
|  | 15. | 
$D = 140 \text{ or } 125 \text{ mm}$ | Floating mullion profile |  | 2 |

Window batten

| | Profile number | Profile | Name | Tool | z |
|---|----------------|---|-----------------------|---------------------------------|---|
|  | 16. |  | Window batten profile | Types of profiling on page 10.4 | |

GOD



Sets of cutter heads, type **GOD**, with three cutting teeth for tenoning and two cutting teeth for profiling, designed for professional machining of solid wood soft and hard. The basic set GOD 68 2U is used for production of windows 68 mm wide with two gaskets, including one optionally on internal window sash edge. The set GOD 68 2U can be easily and at little cost extended to width 78 mm (GOD 78 2U), 88 mm (GOD 88 2U) and 92 mm (GOD 92 2U). The abovementioned sets can be additionally extended to width 88 mm (GOD 88 3U), 92 mm (GOD 92 3U) and 98 mm (GOD 98 3U) with three gaskets including one optionally on internal window sash edge.

Sets of cutter heads or single cutter heads are mounted on sleeves of small height enabling for adjustment of the set together with the produced window width. The window profile corresponds with pressed aluminum drip cap. Window sill groove and drip cap profile are made in one operation together with external longitudinal window sash profile or optionally in separate operations. The set includes 9 basic sets and additionally 11 optional ones.

List of sets

Basic sets (page 10.17):

1. Window frame mortise.
2. Window frame bottom tenon.
3. Window frame top tenon.
4. Window sash tenon.
5. Window sash mortise.
6. Internal longitudinal bottom window frame profile.
7. Internal longitudinal side and top window frame profile.
8. Internal longitudinal window sash profile.
9. External longitudinal window sash profile.

Additional sets (page 10.18):

10. External bottom window frame profile.
11. External side and top window frame profile.
12. Floating mullion profile.
13. Fixed mullion longitudinal profile.
14. Top frame counterprofile.
15. Bottom frame counterprofile.
16. Window batten profile.
17. Internal tenoning sash counterprofile.
18. Muntin profile.
19. Internal tenoning sash counterprofile.
20. Internal profiling sash counterprofile.

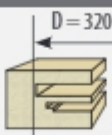
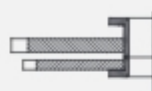
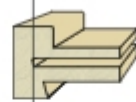
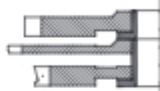
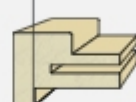

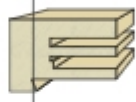
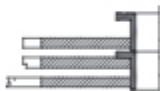





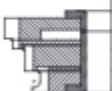

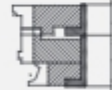
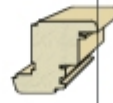


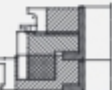


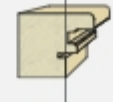



HM

Basic set of cutter head sets with given base diameter for universal GOD system for production of window 68 mm wide (GOD 68 2U).

With little additional cost and time, we easily expand the set to 78/88/92 (2U system) and 88/92/98 (3U system)

GOD basic set

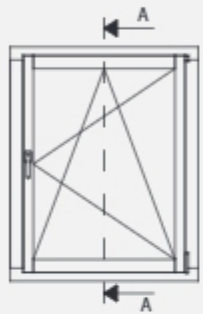
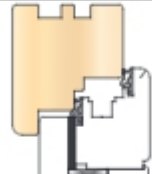
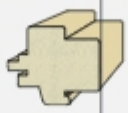
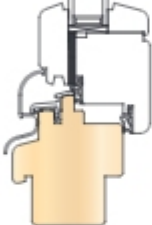

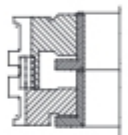
| Profile number | Profile | Name | Tool | z |
|----------------|---|--|---|---|
| 1. |  | Window frame mortise |  | 3 |
| 2. |  | Window frame bottom tenon |  | 3 |
| 3. |  | Window frame top tenon |  | 3 |
| 4. |  | Window sash tenon |  | 3 |
| 5. |  | Window sash mortise |  | 3 |
| 6. |  | Internal longitudinal bottom window frame profile |  | 2 |
| 7. |  | Internal longitudinal side and top window frame profile |  | 2 |
| 8. |  | Internal longitudinal window sash profile |  | 2 |
| 9. |  | External longitudinal window sash profile with drip cap and window sill groove |  | 2 |
| 9a-1. |  | External longitudinal window sash profile* |  | 2 |
| 9a-2. |  | Drip cap profiling* |  | 2 |
| 9a-3. |  | Window sill groove profiling* |  | 2 |

* Profiles made optionally in separate operations.

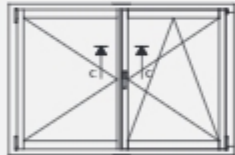
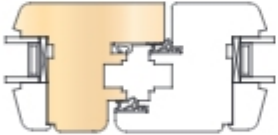

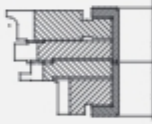
GOD additional sets

Additional sets with given base diameter for universal GOD system for production of supplemental profiles. Extending the window width to 78/88/92 (system 2U) and 88/92/98 (system 3U) requires retooling or buying additional tools.

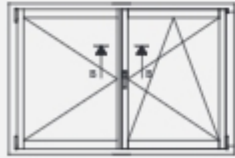
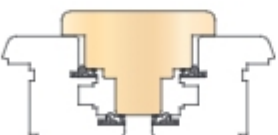

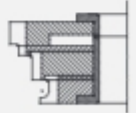

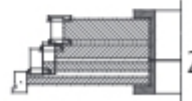

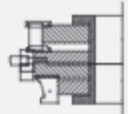
Window frame profiles

| | Profile number | Profile | Name | Tool | z |
|---|----------------|--|---|---|---|
|  | 10. |   | D = 140 or 125 mm
External bottom window frame profile |  | 2 |
| | 11. |   | External top and side window frame profile |  | 2 |

Floating mullion

| | Profile number | Profile | Name | Tool | z |
|---|----------------|---|--|---|---|
|  | 12. |   | D = 140 or 125 mm
Internal longitudinal profile of floating mullion |  | 2 |


Fixed mullion

| | Profile number | Profile | Name | Tool | z |
|---|----------------|---|---|---|---|
|  | 13. |   | D = 140 or 125 mm
Fixed mullion longitudinal profile |  | 2 |
| | 14. |  | D = 320 mm
Top frame counterprofile |  | 2 |
| | 15. |  | D = 140 or 125 mm
Bottom frame counterprofile |  | 2 |

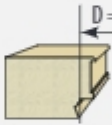
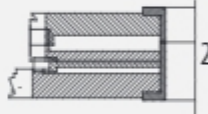




Additional sets with given base diameter for universal GOD system for production of supplemental profiles. Extending the window width to 78/88/92 (system 2U) and 88/92/98 (system 3U) requires retooling or buying additional tools.

GOD additional sets

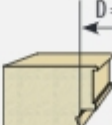
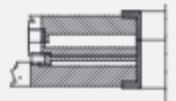
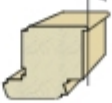
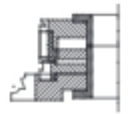
Window batten

| Profile number | Profile | Name | Tool | z |
|----------------|--|-----------------------|---------------------------------|---|
| 16. |  | Window batten profile | Types of profiling on page 10.4 | |

Muntin

| Profile number | Profile | Name | Tool | z |
|----------------|---|---|---|---|
| 17. |  | Internal tenoning sash counterprofile |  | 2 |
| 18a. |  | Internal longitudinal counterprofile of structural muntin |  | 4 |
| 18b. |  | Internal longitudinal profile of structural muntin |  | 4 |

Balcony

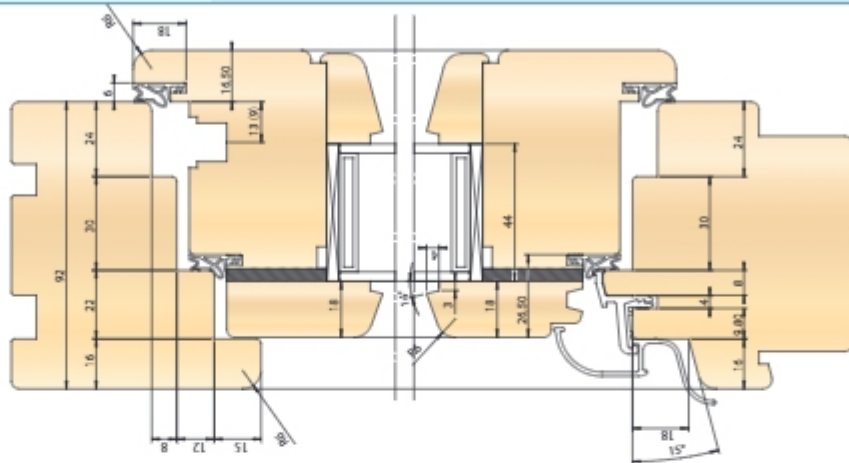
| Profile number | Profil | Nazwa | Tool | z |
|----------------|---|--|---|---|
| 19. |  | Internal tenoning sash counterprofile |  | 2 |
| 20. |  | Internal profiling sash counterprofile |  | 2 |

GOD
system 2U

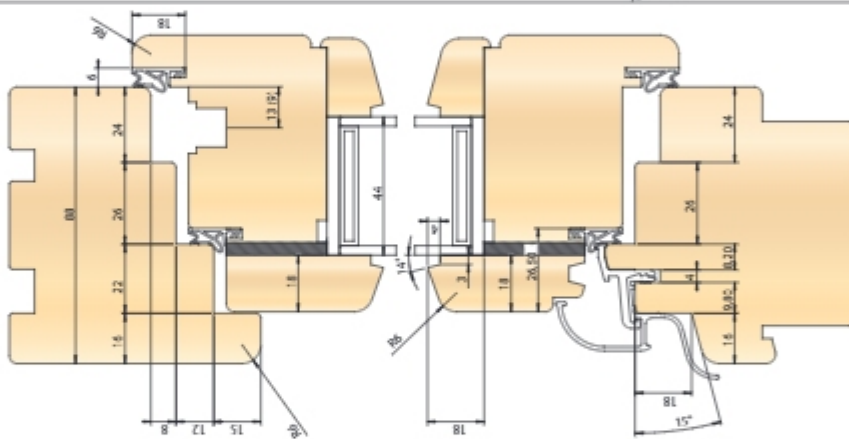
Universal system **GOD 2U** for production of windows 68/78/88/92 with two gaskets, including one optionally on internal window sash edge. The system is designed to enable production of windows of various width: 68 mm, 78 mm, 88 mm and 92 mm. This can be done easily and at little cost, by extending sets of cutter heads mounted on sleeves allowing for profiles width adjustment. In 2U system profiles double gasketing has been used which significantly increases windows' tightness.

GOD 2U – Universal system for production of window 68/78/88/92 extendable to various width easily and at little cost.

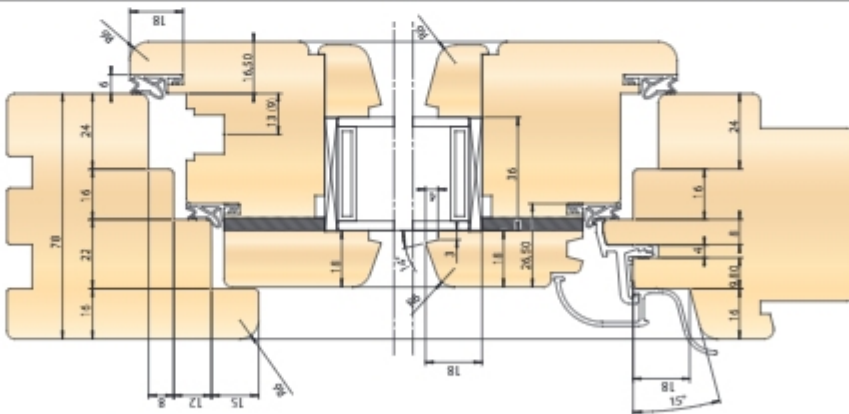
GOD 92 2U
width 92 mm



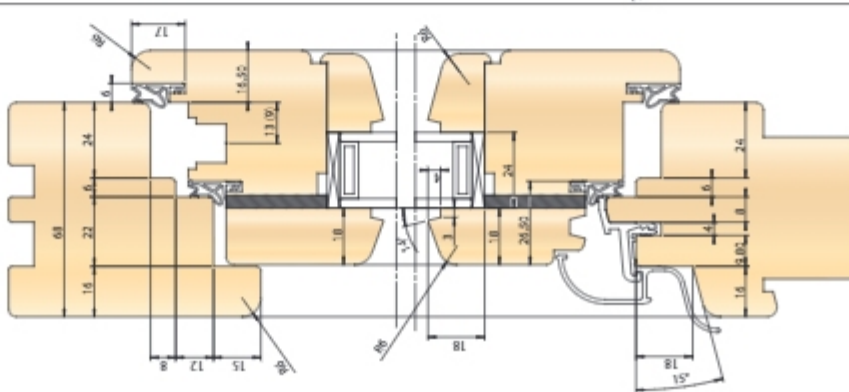
GOD 88 2U
width 88 mm



GOD 78 2U
width 78 mm

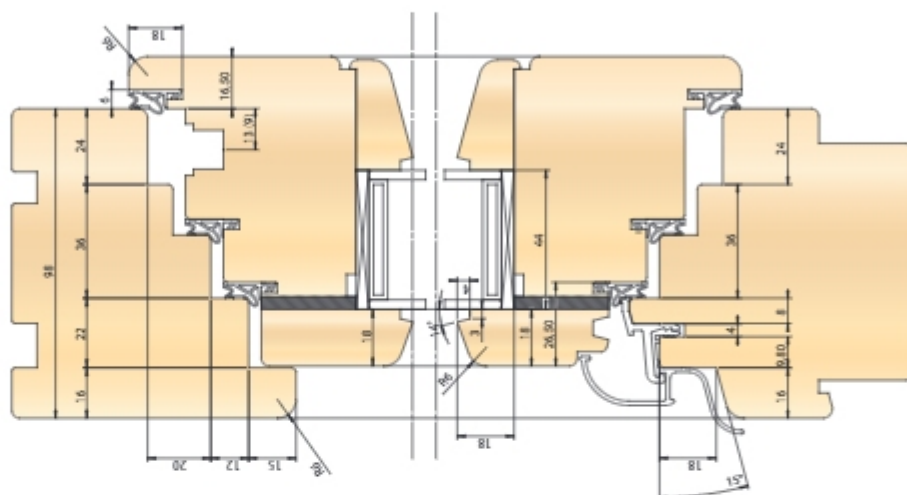


GOD 68 2U
width 68 mm

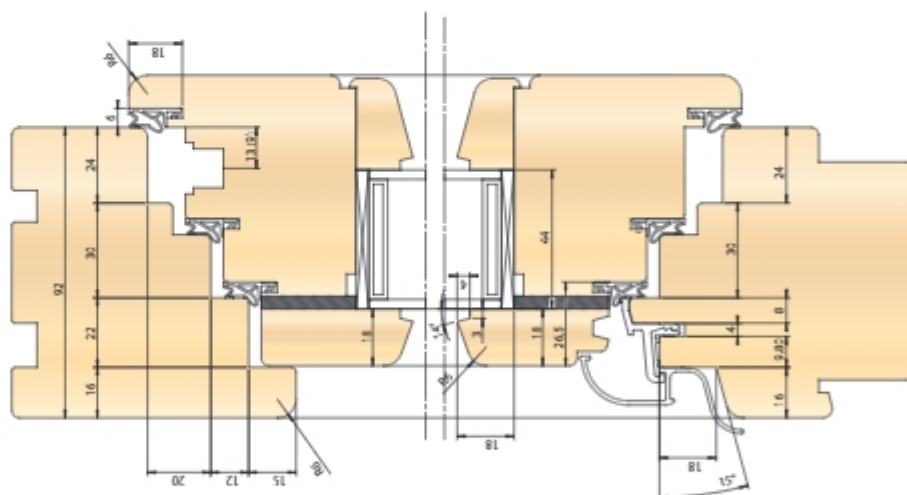


GOD
system 3U

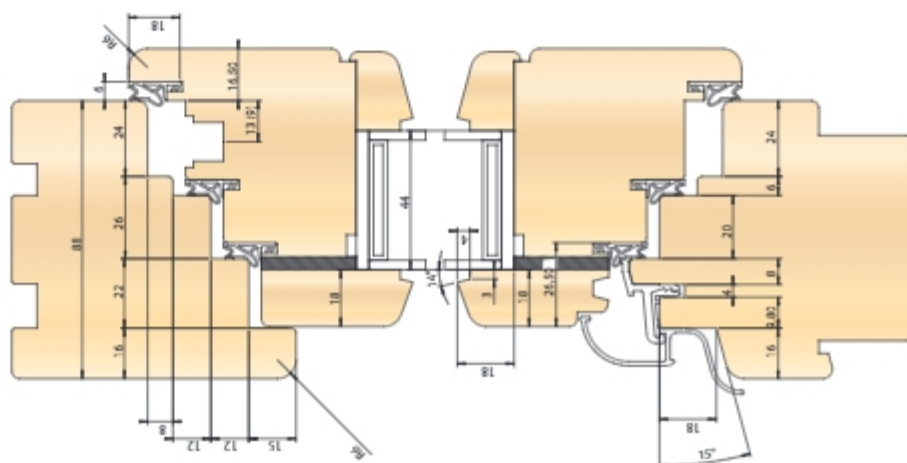
GOD 98 3U
width 98 mm



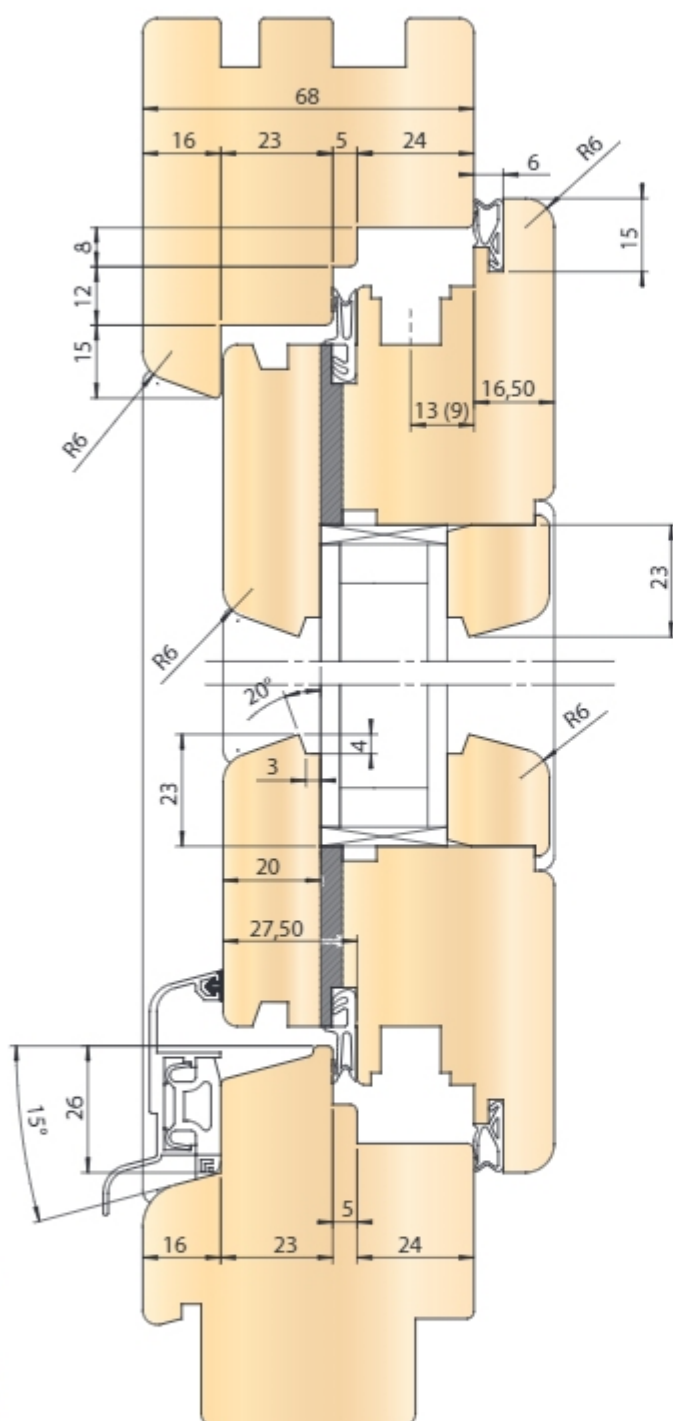
GOD 92 3U
width 92 mm



GOD 88 3U
width 88 mm



GON



Sets of cutter heads, type **GON**, with three cutting teeth for tenoning and two cutting teeth for profiling, designed for professional machining of solid wood soft and hard. The basic set GOD 68 2U is used for production of windows 68 mm wide with two gaskets, including one optionally on internal window sash edge. The set GON 68 2U can be easily and at little cost extended to width 78 mm (GON 78 2U), 88 mm (GON 88 2U). There is possibility to extend the abovementioned sets to width 88 mm (GON 88 3U) and 98 mm (GON 98 3U) with three gaskets including one optionally on internal window sash edge.

Sets of cutter heads or single cutter heads are mounted on sleeves of small height enabling for adjustment of the set with the produced window width. The window profile corresponds with bolt-on aluminum drip cap. Window sill groove and drip cap profile are made in one operation together with external longitudinal window sash profile or optionally in separate operations. The set includes 9 basic sets and additionally 11 optional ones.

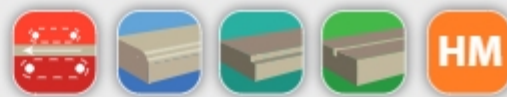
List of sets

Basic sets (page 10.23):

1. Window frame mortise.
2. Window frame bottom tenon.
3. Window frame top tenon.
4. Window sash tenon.
5. Window sash mortise.
6. Internal longitudinal bottom window frame profile.
7. Internal longitudinal side and top window frame profile.
8. Internal longitudinal window sash profile.
9. External longitudinal window sash profile.

Additional sets (page 10.24):

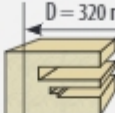

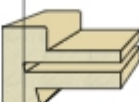

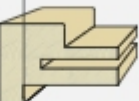

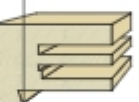

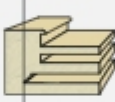








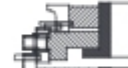


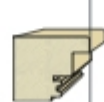



10. External bottom window frame profile.
11. External side and top window frame profile.
12. Floating mullion profile.
13. Fixed mullion longitudinal profile.
14. Top frame counterprofile.
15. Bottom frame counterprofile.
16. Window batten profile.
17. Internal tenoning sash counterprofile.
18. Muntin profile.
19. Internal tenoning sash counterprofile.
20. Internal profiling sash counterprofile.



Basic set of cutter head sets with given base diameter for universal **GON** system for production of window 68 mm wide (GON 68 2U).

With little additional cost and time, we easily expand the set to 78/88 (2U system) and 88/98 (3U system).

GON basic set

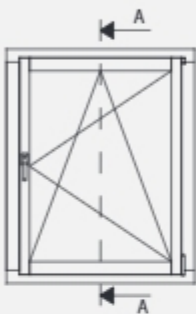

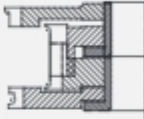
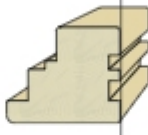
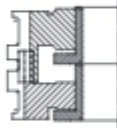
| Profile number | Profile | Name | Tool | z |
|----------------|---|--|---|---|
| 1. |  | Window frame mortise |  | 3 |
| 2. |  | Window frame bottom tenon |  | 3 |
| 3. |  | Window frame top tenon |  | 3 |
| 4. |  | Window sash tenon |  | 3 |
| 5. |  | Window sash mortise |  | 3 |
| 6. |  | Internal longitudinal bottom window frame profile |  | 2 |
| 7. |  | Internal longitudinal side and top window frame profile |  | 2 |
| 8. |  | Internal longitudinal window sash profile |  | 2 |
| 9. |  | External longitudinal window sash profile with drip cap and window sill groove |  | 2 |
| 9a-1. |  | External longitudinal window sash profile* |  | 2 |
| 9a-2. |  | Drip cap profiling* |  | 2 |
| 9a-3. |  | Window sill groove profiling* |  | 2 |

* Profiles made optionally in separate operations.

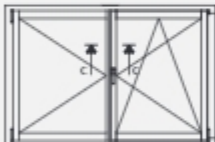
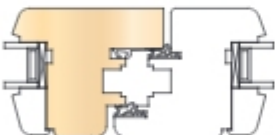
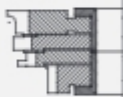
GON additional sets

Additional sets with given base diameter for universal **GON** system for production of supplemental profiles. Extending the window width to 78/88 (system 2U) and 88/98 (system 3U) requires retooling or buying additional tools.

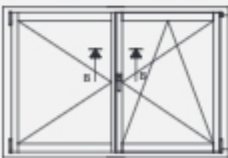

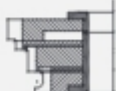

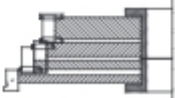

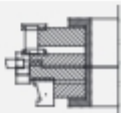
Window frame profiles

| | Profile number | Profil | Nazwa | Tool | z |
|---|----------------|---|--|--|---|
|  | 10. | 
D = 140 or 125 mm | External bottom window frame profile |  | 2 |
| | 11. | 
D = 140 or 125 mm | External top and side window frame profile |  | 2 |

Floating mullion

| | Profile number | Profile | Name | Tool | z |
|---|----------------|--|---|---|---|
|  | 12. | 
D = 140 or 125 mm | Internal longitudinal profile of floating mullion |  | 2 |


Fixed mullion

| | Profile number | Profile | Name | Tool | z |
|---|----------------|--|------------------------------------|---|---|
|  | 13. | 
D = 140 or 125 mm | Fixed mullion longitudinal profile |  | 2 |
| | 14. | 
D = 320 mm | Top frame counterprofile |  | 2 |
| | 15. | 
D = 140 or 125 mm | Bottom frame counterprofile |  | 2 |

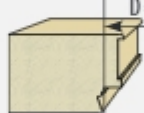
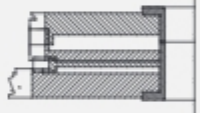




Each order is treated individually. Produce tools are adapted to client's needs, his technical requirements and machine park.

GON additional sets

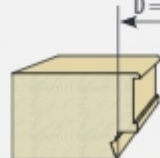
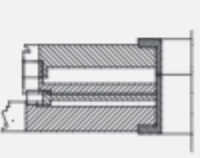
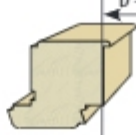
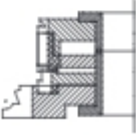
Window batten

| Profile number | Profile | Name | Tool | z |
|----------------|--|-----------------------|---------------------------------|---|
| 16. |  | Window batten profile | Types of profiling on page 10.4 | |

Muntin

| Profile number | Profile | Name | Tool | z |
|----------------|--|---|---|---|
| 17. |  | Internal tenoning sash counterprofile |  | 2 |
| 18a. |  | Internal longitudinal counterprofile of structural muntin |  | 4 |
| 18b. |  | Internal longitudinal profile of structural muntin |  | 4 |

Balcony

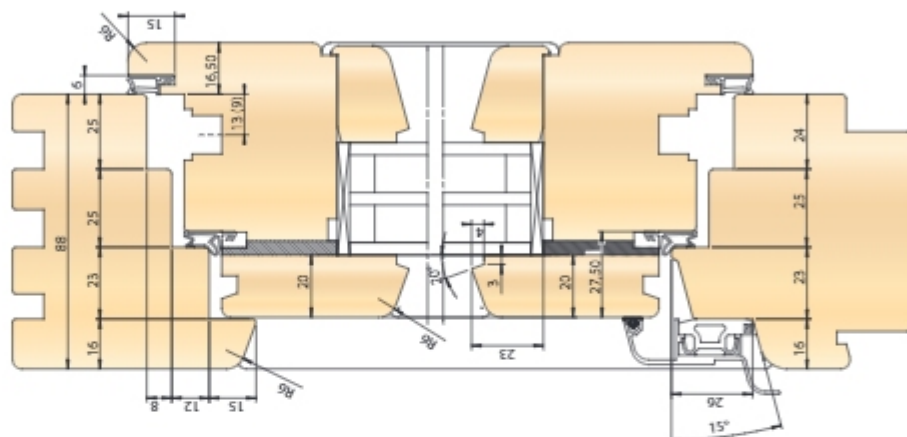
| Profile number | Profile | Name | Tool | z |
|----------------|--|--|---|---|
| 19. |  | Internal tenoning sash counterprofile |  | 2 |
| 20. |  | Internal profiling sash counterprofile |  | 2 |

GON system 2U

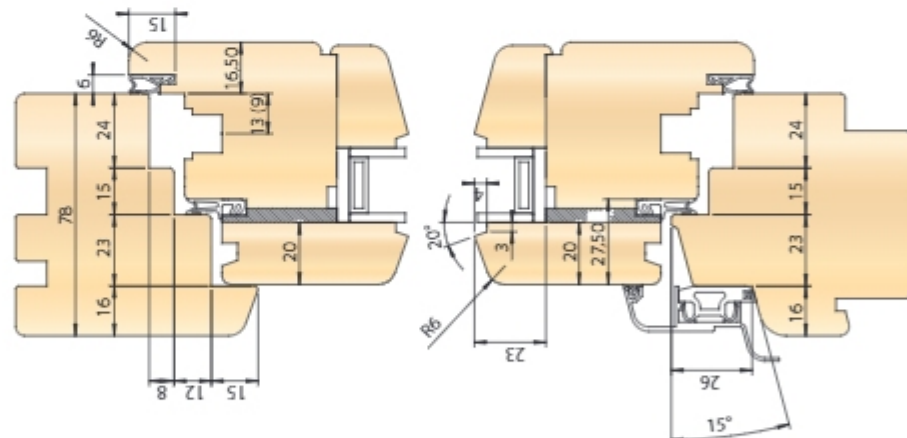
Universal **GON 2U** for production of windows 68/78/88 with two gaskets, including one optionally on internal window sash edge. The system is designed to enable production of windows of various width: 68 mm, 78 mm and 88 mm. This can be done easily and at little cost, by extending sets of cutter heads mounted on sleeves allowing for profiles width adjustment. In 2U system profiles double gasketing has been used which significantly increases windows' tightness.

GON 2U – Universal system for production of window 68/78/88
extendable to various width easily and at little cost.

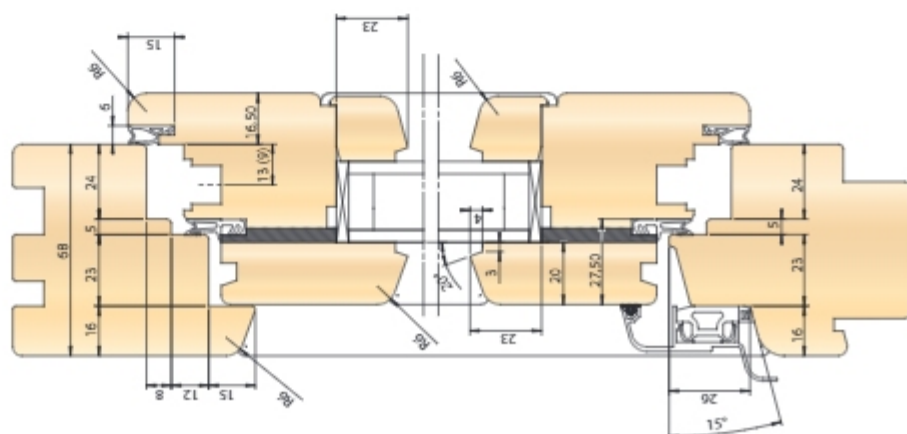
GON 88 2U
width 88 mm



GON 78 2U
width 78 mm

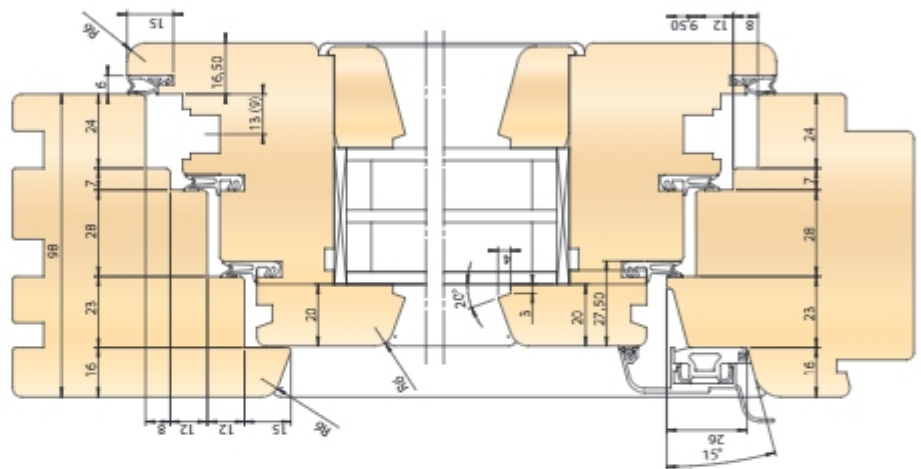


GON 68 2U
width 68 mm

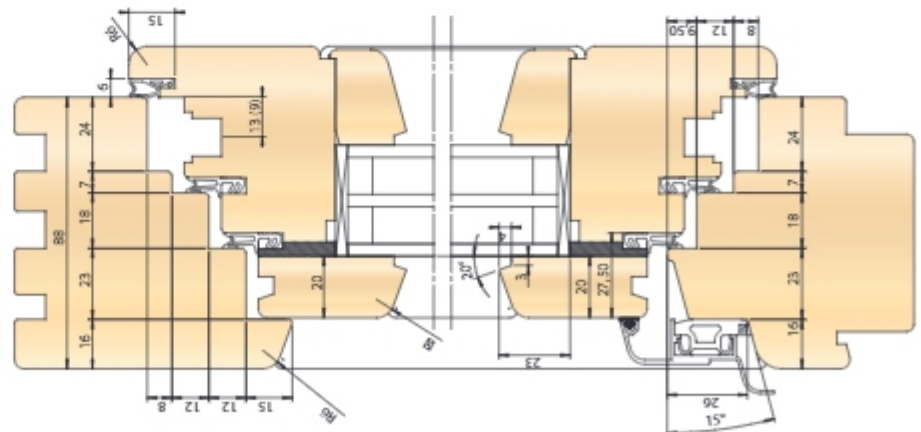


GON system 3U

**GON system 3U
width 98 mm**



**GON system 3U
width 88 mm**



GO-16

Sets of cutter heads, type **GO-16** with three cutting teeth for tenoning and two cutting teeth for profiling, designed for professional machining of solid wood. The sets are used for double-glass, single-sash windows 111 mm wide – SCANDINAVIAN type. The set includes 11 basic sets and 5 optional ones, mounted on sleeves L=140 mm for window frame and L=90 for window sash.

List of sets

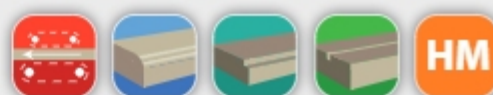
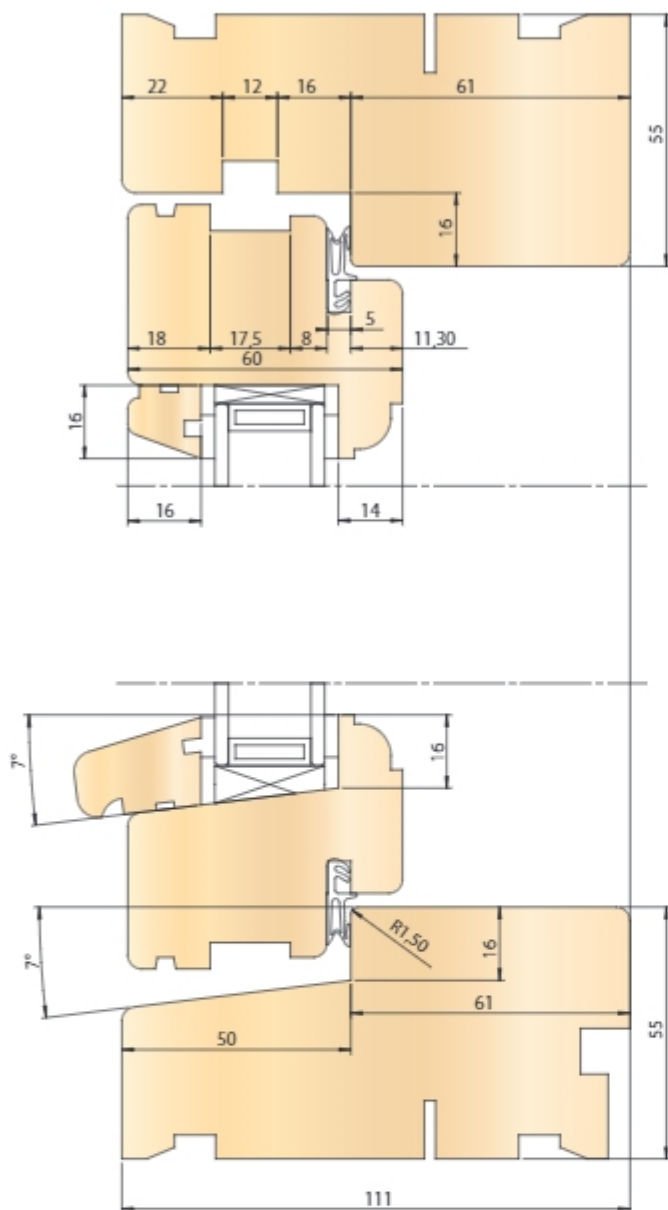
Basic sets (page 10.29):

1. Window frame mortise.
2. Window frame bottom tenon.
3. Window frame top tenon.
4. Window sash top mortise.
5. Window sash bottom mortise.
6. Window sash tenon.
7. Internal longitudinal bottom window frame profile.
8. Internal longitudinal top window frame profile.
9. Bottom internal longitudinal window sash profile.
10. Top and side internal longitudinal window sash profile.
11. External longitudinal window sash profile.

Optional sets (page 10.30):

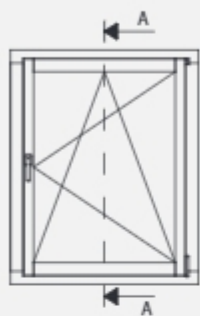
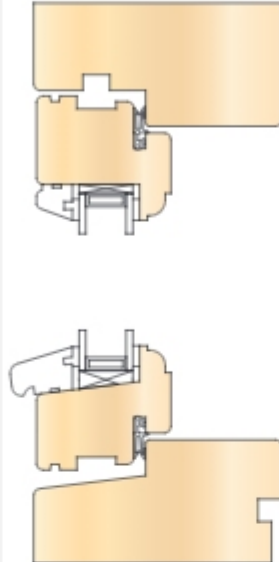

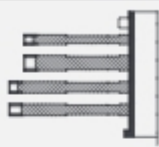
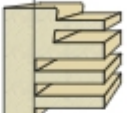


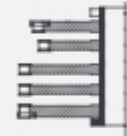
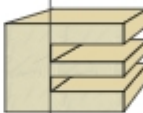
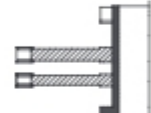
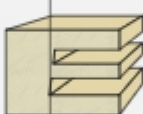
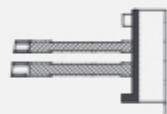
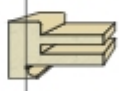
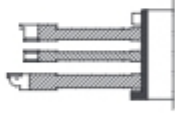


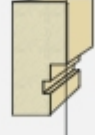
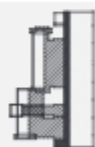

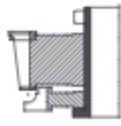

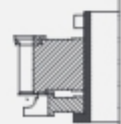

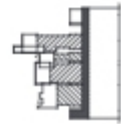
12. External longitudinal window frame profile.
13. Internal longitudinal side window frame profile.
14. Cutting for internal window sill.
15. Bottom window batten profile.
16. Top window batten profile.

Standard sets can be extended with additional optional sets, depending on needs.



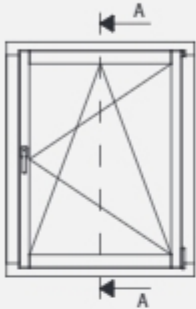
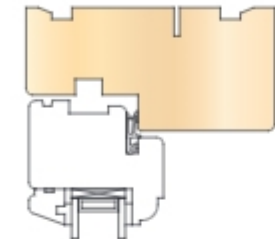
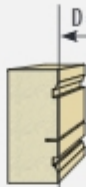

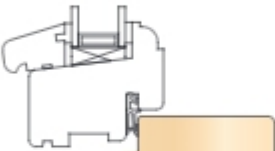
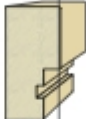
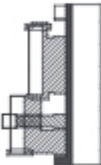
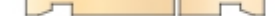
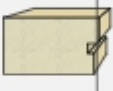
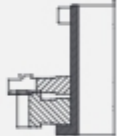
Basic set for production of double-glass, single-sash windows 111 mm wide for cutter heads GO-16 with number of cutting teeth given in the chart.

GO-16 basic set

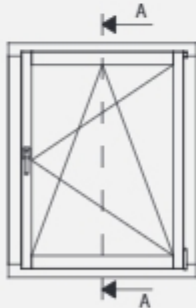




| | | Profile number | Profile | Name | Tool | z | |
|---|---|----------------|--|---|---|---|---|
|  |  | 1. |  | Window frame mortise |  | 3 | |
| | | 2. |  | Window frame bottom tenon |  | 3 | |
| | | 3. |  | Window frame top tenon |  | 3 | |
| | | 4. |  | Window sash top mortise |  | 3 | |
| | | 5. |  | Window sash bottom mortise |  | 3 | |
| | | 6. |  | Window sash tenon |  | 3 | |
| | <hr/> | | | | | | |
| | | | | D = 125 or 140 mm | | | |
| | | | 7. |  | Internal longitudinal bottom window frame profile |  | 2 |
| | | | 8. |  | Internal longitudinal top window frame profile |  | 2 |
| | | | 9. |  | Bottom internal longitudinal window sash profile |  | 2 |
| | | 10. |  | Top and side internal longitudinal window sash profile |  | 2 | |
| | | 11. |  | External longitudinal window sash profile |  | 2 | |

GO-16 additional sets

Additional sets for cutter heads GO-16 with number of cutting teeth given in the chart. Each order is treated individually. Produced tools are adapted to client's needs, his technical requirements and machine park.

| | Profile number | Profile | Name | Tool | z |
|---|----------------|--|---|--|---|
|  | 12. |   | External longitudinal window frame profile |  | 3 |
| | 13. |   | Internal longitudinal side window frame profile |  | 3 |
| | 14. |   | Cutting for internal window sill |  | 3 |

Window batten

| | Profile number | Profile | Name | Tool | z |
|---|----------------|---|------------------------------|------|---|
|  | 15. |   | Bottom window batten profile | | 4 |
| | 16. |   | Top window batten profile | | 4 |

HSK sets

Sets of profile cutter heads with two cutting teeth, designed for professional machining of solid wood. The sets are used for making internal and external window frame and window sash profiles. The sets are mounted on HSK shanks and work on CNC machines.

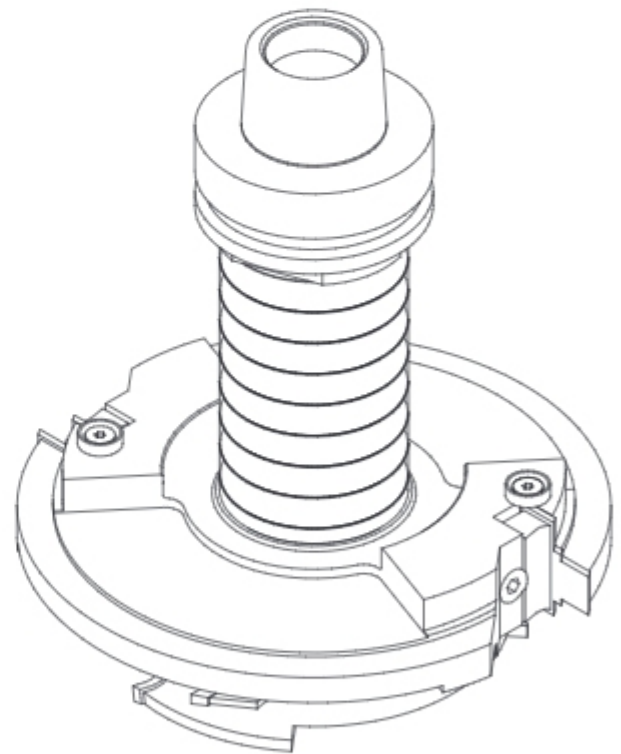
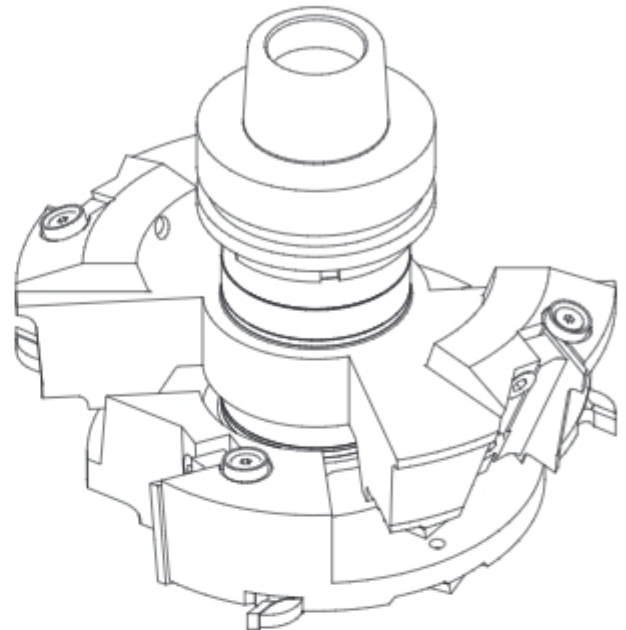
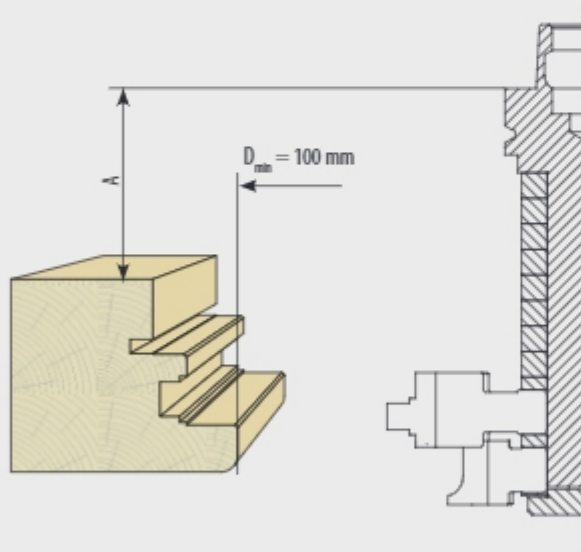
Minimum base diameter is $D_{min} = 100$ mm (in special cases it is possible to use $D_{min} = 80$ mm). The sets are offered on client's individual request.

Orders should include:

- machine or work scheme,
- maximum set weight installed on the spindle,
- base diameters of tools for profiling,
- A – base – set position,
- type of machined material,
- other information relevant for designing and production process.

Type of work: window profiles making.

Material: solid wood, hard and soft.



10

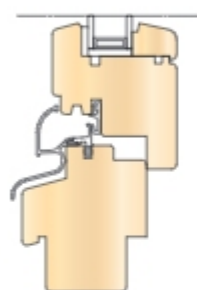


Drip caps GO-01/GOE

Aluminum pressed drip caps, type **GO**, installed in bottom window frame profile of ZFO-02, ZFO-02 Softline, GO-01, GO-01 Softline and **GOE** windows. Used with window frame with a cut in window sash.

Below are presented example drip cap types used with given window profile. When ordering set of cutters or cutter heads, please give drip cap type.

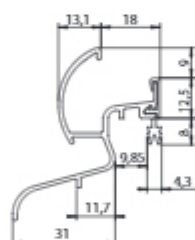
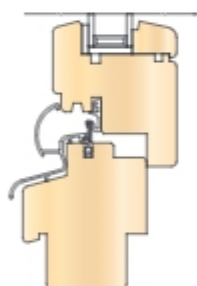
With cut in window sash



ALURON

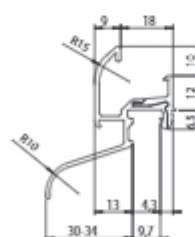
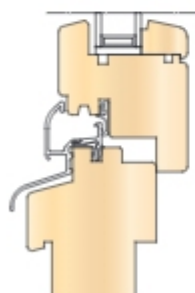
ATW 22 / 30

ATW 22 / 34



EFEKTOR

LPTOS 31 / 31 W



GUTMANN

Neckar 22 / 30 F-TXL

Neckar 22 / 34 F-TXL

Aluminum pressed drip caps, type **GOD**, installed in bottom window frame profile of GOD windows. Used with window frame with a cut in window sash. Used with two types of window frames with and without a cut in window sash. Below are presented example drip cap types used with given window profile. When ordering set of cutters or cutter heads, please give drip cap type.

Drip caps GOD

With cut in window sash

ALURON

ATW 22 / 21 / 18

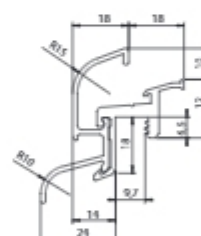
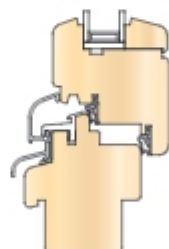
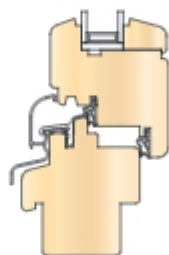
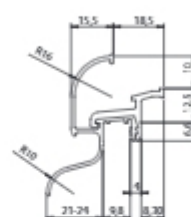
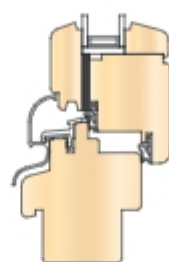
ATW 22 / 24 / 18

EFEKTOR

LPTOS 33 / 22 W

GUTMANN

Donau 22 / 24 F-TI



Without cut in window sash

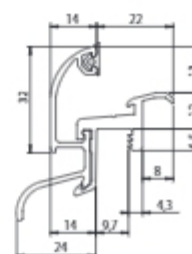
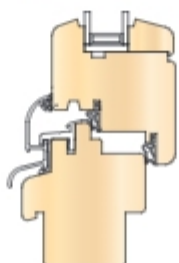
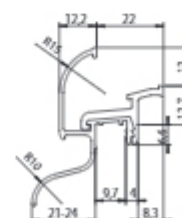
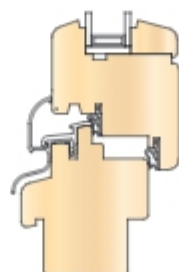
ALURON

ATW 22 / 21 / 22

ATW 22 / 24 / 22

GUTMANN

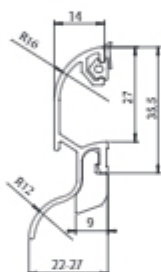
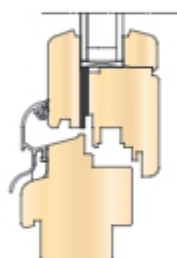
Main 22 / 24 F-TI



Drip caps GON

Aluminum bolt-on drip caps, type **GON**, installed in bottom window frame profile of GON windows. Used with window frame without a cut in window sash. Below are presented example drip cap types used with given window profile. When ordering set of cutters or cutter heads, please give drip cap type.

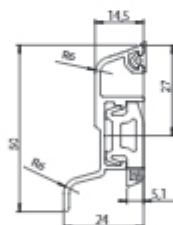
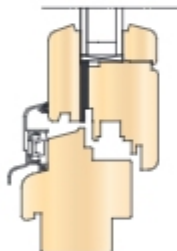
Without cut in window sash



ALURON

AWZ 14 / 22

AWZ 14 / 27

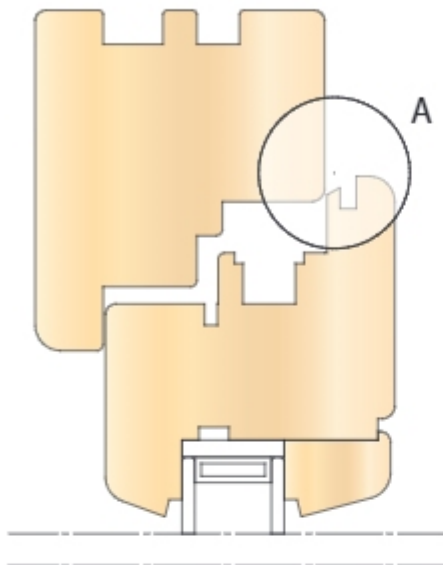


GUTMANN

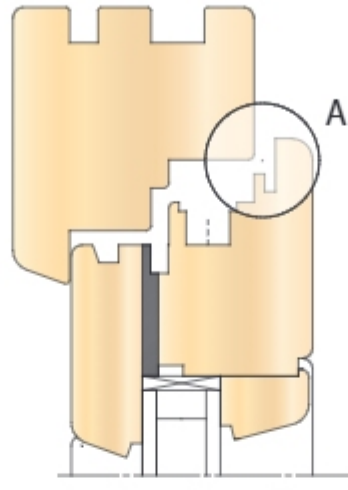
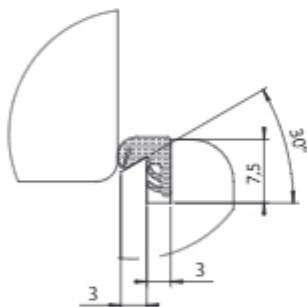
Spree 24 OF

Pressed gaskets, type **UK** designed for precise sealing of window profiles. When ordering sets for window production, please give type of gasket and profile type.

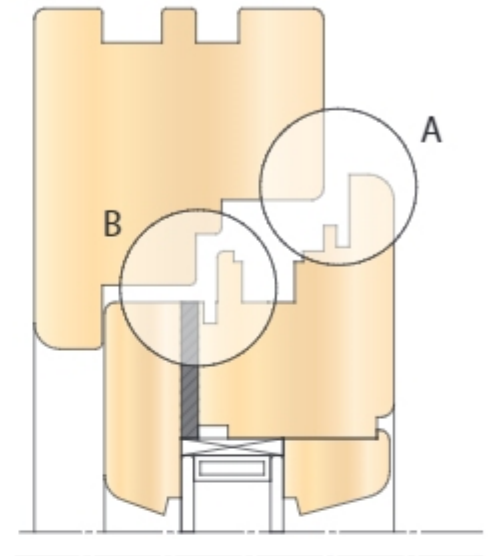
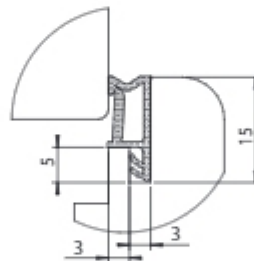
Gaskets



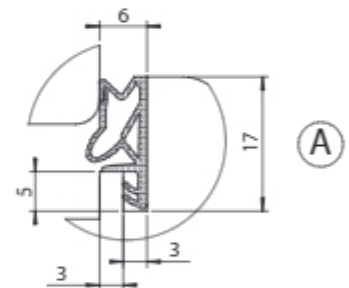
SP 33b



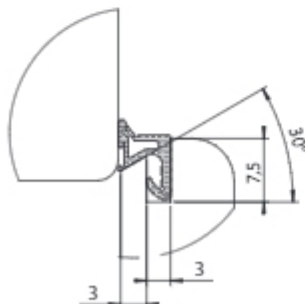
SP 103a



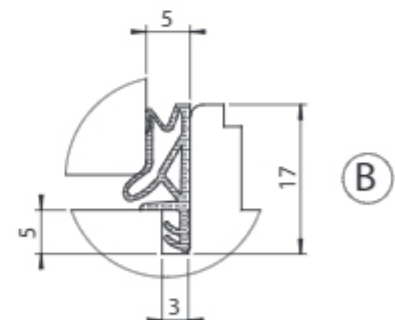
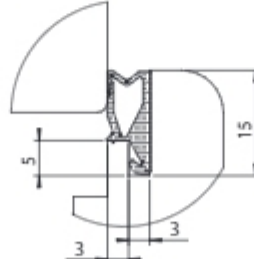
S 7503



SV 33



SV 103b

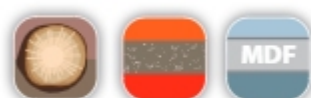
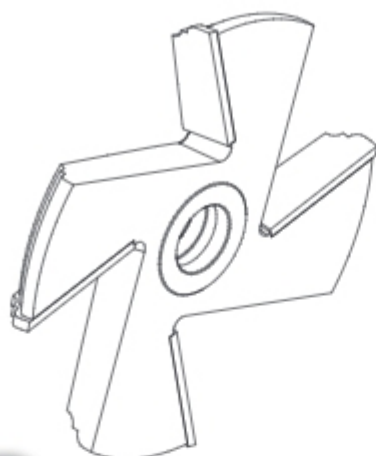


Universal, deformable gasket used for external and internal profiles of window frame. In case of optional gasket (element B) gasketing width is 5 mm.

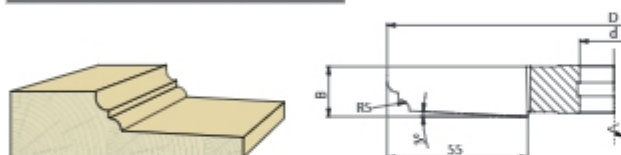
Brazed profile cutter with four cutting teeth and shear angle, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for panel raising.

Type of work: panel raising.

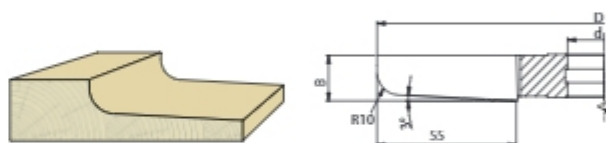
Material: solid wood, chipboard, MDF.



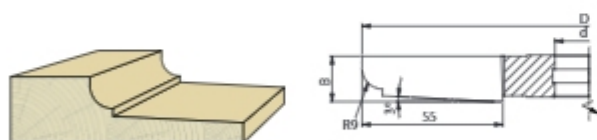
P-201 4.1 P or L



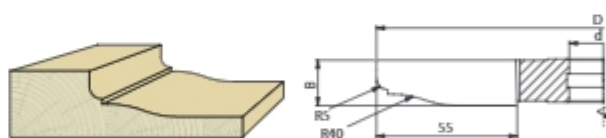
P-202 4.1 P or L



P-203 4.1 P or L



P-204 4.1 P or L



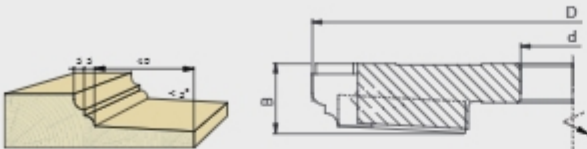
| | D
n
d
z | 140
9000
30
4 | 160
6000
30
4 | 180
6000
40
4 | 200
6000
50
4 |
|------------------|------------------|------------------------|------------------------|------------------------|------------------------|
| Profile | B mm | HSS | HM | HSS | HM |
| P201 | 22 | + | + | + | + |
| P202, P203, P204 | 20 | + | + | + | + |

| Catalogue number
right | | Catalogue number
left | | Type | D
mm | B
mm | d
mm | R
mm | z | | n _{max} |
|---------------------------|---|--------------------------|---|------|---------|---------|---------|---------|---|-----|------------------|
| P201S200P0001 | + | P201S200L0001 | + | P201 | 200 | 22 | 30 | 5 | 4 | HSS | 6000 |
| P201W200P0001 | + | P201W200L0001 | + | P201 | 200 | 22 | 30 | 5 | 4 | HM | 6000 |
| P202S200P0001 | • | P202S200L0001 | + | P202 | 200 | 20 | 30 | 10 | 4 | HSS | 6000 |
| P202W200P0006 | + | P202W200L0006 | + | P202 | 200 | 20 | 30 | 10 | 4 | HM | 6000 |
| P203S200P0001 | • | P203S200L0001 | + | P203 | 200 | 20 | 30 | 9 | 4 | HSS | 6000 |
| P203W200P0001 | + | P203W200L0001 | + | P203 | 200 | 20 | 30 | 9 | 4 | HM | 6000 |
| P204S200P0001 | • | P204S200L0001 | + | P204 | 200 | 20 | 30 | 5 | 4 | HSS | 6000 |
| P204W200P0002 | • | P204W200L0002 | + | P204 | 200 | 20 | 30 | 5 | 4 | HM | 6000 |

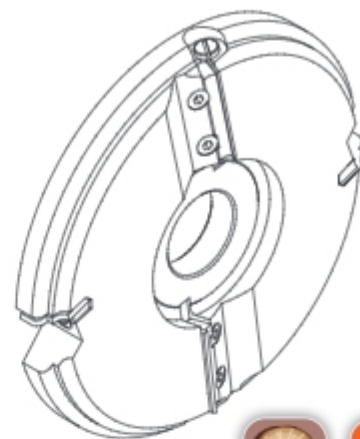
Profile cutter head type **GDP-01** with suitable number of cutting teeth and shear angle, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter head is used for panel raising.

Type of work: panel raising.

Material: solid wood, chipboard, MDF



GDP-01 P or L

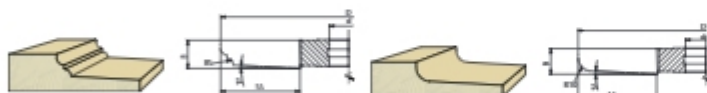


| Catalogue number | Type | Profile | D mm | B mm | d mm | z | n _{max} | |
|------------------|--------|---------|------|------|------|-----|------------------|--------|
| GDP-0001P-0 | GDP-01 | GDP-01 | 200 | 26,6 | 40 | 2+2 | HM | 6000 + |

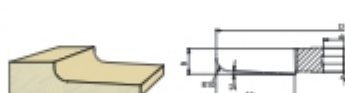
Spare parts for cutter head GDP-0001P-0

| Cat. nr | Name | Dimensions | | Cat. nr | Name | Dimensions | |
|----------------------|-------------------|-------------|--|-----------|----------------|------------|--|
| N0000816 | Straight knife | 49,5x12x1,5 | | WHAK00149 | Clamping wedge | 46x11,5x6 | |
| N0000939
N0000940 | Profile knife R/L | 20x24,5x2 | | WHAS00011 | Screw TOR 1011 | M7x20 | |
| WHAK00150 | Clamping wedge | 17x11,5x5,5 | | WHAS00009 | Screw TOR 1024 | M5x7 | |

Other types of cutter heads for panel raising



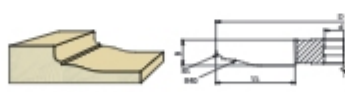
Profile P-201



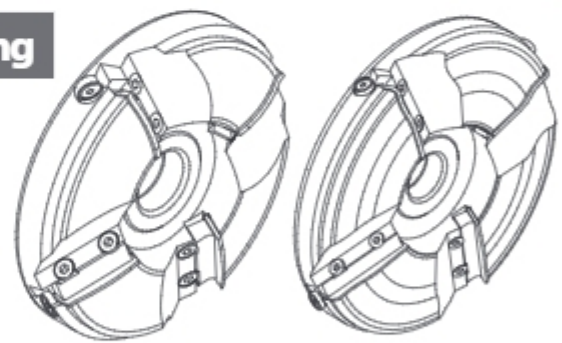
Profile P-202



Profile P-203



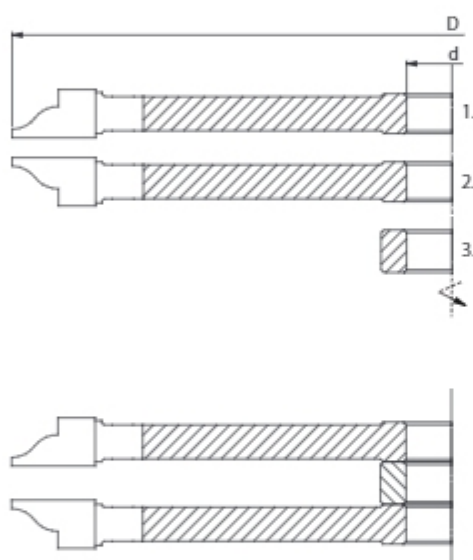
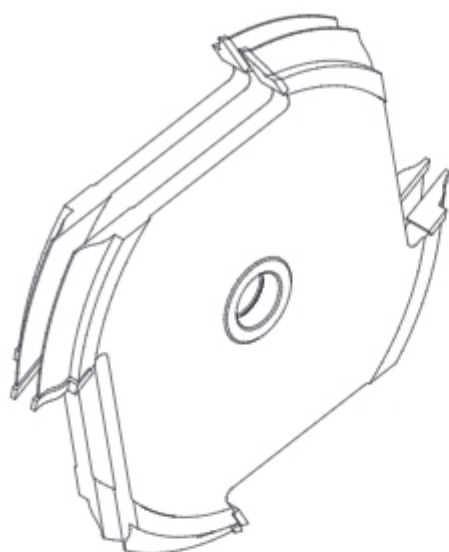
Profile P-204



| D
n
d _{max}
z | 140
9000
30
4 | | 160
6000
30
4 | | 180
6000
40
6 | | 215
6000
40
6 | | 250
4500
50
6 | |
|---------------------------------|------------------------|----|------------------------|----|------------------------|----|------------------------|----|------------------------|----|
| B mm | ST | AL | ST | AL | ST | AL | ST | AL | ST | AL |
| 26,6 | + | + | + | + | + | + | + | + | + | + |
| 35,8 | + | + | + | + | + | + | + | + | + | + |
| 36,5 | + | + | + | + | + | + | + | + | + | + |
| 37,5 | + | + | + | + | + | + | + | + | + | + |

| Catalogue number | Type | Profile | D mm | B mm | d mm | z | n _{max} | |
|------------------|--------|---------|------|------|------|---|------------------|--------|
| GDP-0065P-0 | GDP-01 | P-201 | 200 | 35 | 30 | 4 | HM | 6000 + |
| GDP-0034P-0 | GDP-01 | P-202 | 200 | 35,8 | 30 | 4 | HM | 6000 + |
| GDP-0011P-0 | GDP-01 | P-203 | 200 | 36,5 | 30 | 4 | HM | 6000 + |
| GDP-0005P-0 | GDP-01 | P-204 | 200 | 37,5 | 30 | 4 | HM | 6000 + |

IL-A.00

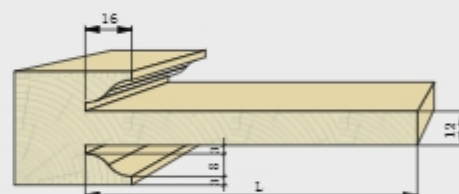


Set of profile brazed cutters type **IL-A.00** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon profiles with radius R10.

Type of work: door internal tenon profiling.

Material: solid wood, chipboard, MDF.

| Nr | D
mm | B
mm | d _{min}
mm | n _{max} | ↗ | |
|----|---------|---------|------------------------|---------------------|---|---|
| 1. | 310 | 17 | 40 | 4500 | L | + |
| 2. | 310 | 17 | 40 | 4500 | R | + |
| 3. | 60 | 15 | 40 | Distance ring 1 pc. | | + |



| D
n
d
z | 148
9000
40
4 | | 160
9000
40
4 | | 180
6000
40
4 | | 280
6000
50
4 | | 310
4500
60
4 | | 330
4500
60
4 | | |
|------------------|------------------------|-----|------------------------|-----|------------------------|-----|------------------------|-----|------------------------|-----|------------------------|-----|----|
| | Profile | HSS | HM | HSS | HM | HSS | HM | HSS | HM | HSS | HM | HSS | HM |
| IL-A | + | + | + | + | + | + | + | + | + | + | + | + | + |

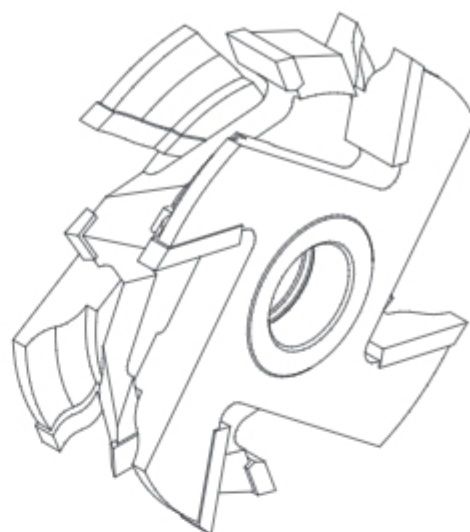
| Catalogue number | Type | D
mm | d
mm | L
mm | z | | |
|------------------|------|---------|---------|---------|---|-----|---|
| ILA00S200-001 | IL-A | 200 | 30 | 70 | 4 | HSS | + |
| ILA00W200-001 | IL-A | 200 | 30 | 70 | 4 | HM | + |
| ILA00S310-001 | IL-A | 310 | 30 | 117 | 4 | HSS | + |
| ILA00W310-001 | IL-A | 310 | 30 | 117 | 4 | HM | + |
| ILA00S310-002 | IL-A | 310 | 40 | 117 | 4 | HSS | + |
| ILA00W310-002 | IL-A | 310 | 40 | 117 | 4 | HM | + |

Set of profile brazed cutters type **IL-R.00** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon counterprofiles.

Type of work: door internal tenon counterprofiling.

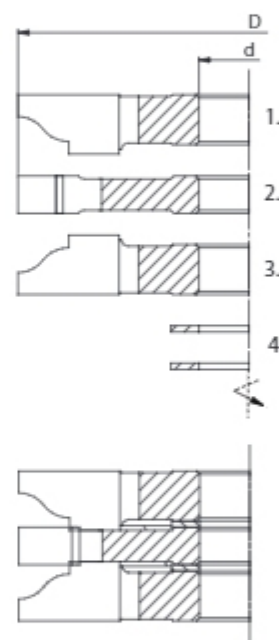
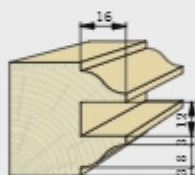
Material: solid wood, chipboard, MDF.

IL-R.00



| Nr | D
mm | B
mm | d _{max}
mm | n _{mm} | ↗ | |
|----|---------|---------|------------------------|----------------------|-------------|---|
| 1. | 108 | 19 | 30 | 9000 | R | + |
| 2. | 108 | 12 | 30 | 9000 | Symmetrical | + |
| 3. | 108 | 19 | 30 | 9000 | L | + |
| 4. | 60 | 2 | 30 | Distance ring 2 pcs. | | + |

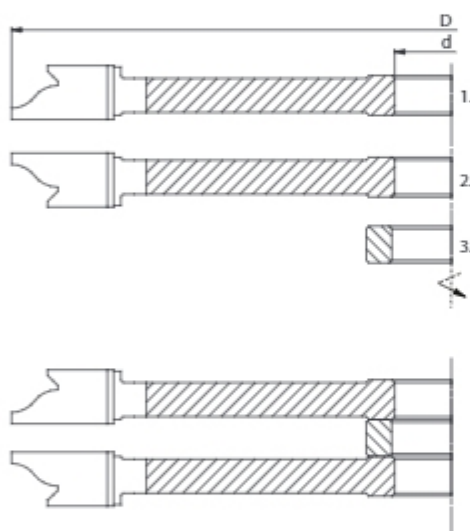
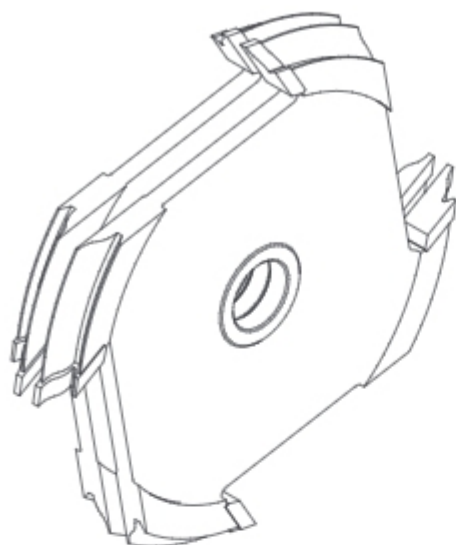
| | | | | | | |
|----|-----|----|----|----------------------|-------------|---|
| 1. | 148 | 19 | 50 | 9000 | R | + |
| 2. | 148 | 12 | 50 | 9000 | Symmetrical | + |
| 3. | 148 | 19 | 50 | 9000 | L | + |
| 4. | 60 | 2 | 50 | Distance ring 2 pcs. | | + |



| | | | | |
|------------------|------------------------|-------|------------------------|--|
| D
n
d
z | 108
9000
50
4 | | 148
9000
50
4 | |
| | | | | |
| | Profile | HSSHM | HSSHM | |
| | IL-R | + + | + + | |

| Catalogue number | Type | D
mm | d
mm | z | | |
|------------------|------|---------|---------|---|-----|---|
| ILR0100S108-002 | IL-R | 108 | 30 | 4 | HSS | + |
| ILR0100W108-002 | IL-R | 108 | 30 | 4 | HM | + |
| ILR0200S148-007 | IL-R | 148 | 30 | 4 | HSS | + |
| ILR0200W148-009 | IL-R | 148 | 30 | 4 | HM | + |
| ILR0200S148-008 | IL-R | 148 | 40 | 4 | HSS | + |
| ILR0200S148-009 | IL-R | 148 | 50 | 4 | HSS | + |

IL-M.00

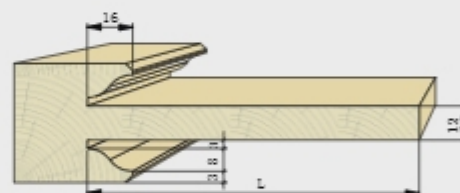


Set of profile brazed cutters type **IL-M.00** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon profiles.

Type of work: door internal tenon profiling.

Material: solid wood, chipboard, MDF.

| Nr | D mm | B mm | d mm | n | ↺ | |
|----|------|------|------|---------------------|---|---|
| 1. | 310 | 18 | 40 | 4500 | L | + |
| 2. | 310 | 18 | 40 | 4500 | R | + |
| 3. | 60 | 15 | 40 | Distance ring 1 pc. | | + |



| D
n
d
z | 180
6000
40
4 | 240
6000
40
4 | 290
4500
40
4 | 310
4500
50
4 |
|------------------|------------------------|------------------------|------------------------|------------------------|
| Profile | HSS | HM | HSS | HM |
| IL-M | + | + | + | + |

| Catalogue number | Type | D mm | d mm | L mm | z | |
|------------------|------|------|------|------|---|-------|
| ILM0400S180-01 | IL-M | 180 | 30 | 50 | 4 | HSS + |
| ILM0100W180-01 | IL-M | 180 | 40 | 50 | 4 | HM + |
| ILM0400S240-01 | IL-M | 240 | 30 | 80 | 4 | HSS + |
| ILM0100W240-01 | IL-M | 240 | 30 | 80 | 4 | HM + |
| ILM0400S310-01 | IL-M | 310 | 40 | 105 | 4 | HSS + |
| ILM0100W310-01 | IL-M | 310 | 40 | 105 | 4 | HM + |

Set of profile brazed cutters type **IL-N.00** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon counterprofiles.

Type of work: door internal tenon counterprofiling.

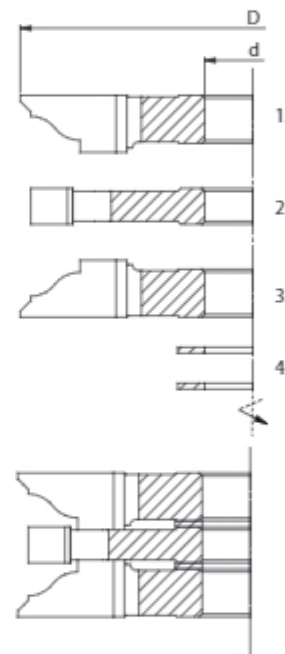
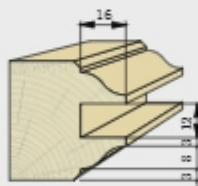
Material: solid wood, chipboard, MDF

IL-N.00



| Nr | D mm | B mm | d _{max} mm | n _{max} | ↗ | |
|----|------|------|---------------------|----------------------|-------------|---|
| 1. | 115 | 19 | 30 | 9000 | R | + |
| 2. | 108 | 12 | 30 | 9000 | Symmetrical | + |
| 3. | 115 | 19 | 30 | 9000 | L | + |
| 4. | 50 | 2 | 30 | Distance ring 2 pcs. | | + |

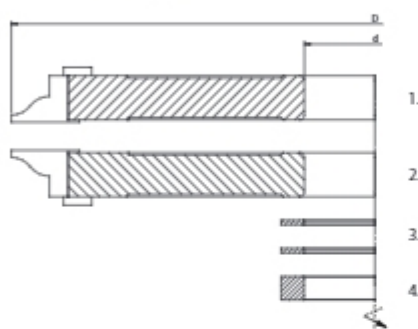
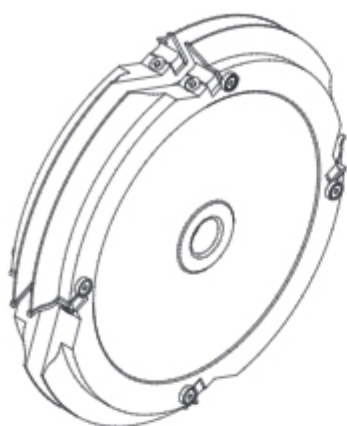
| Nr | D mm | B mm | d _{max} mm | n _{max} | ↗ | |
|----|------|------|---------------------|----------------------|-------------|---|
| 1. | 155 | 19 | 30 | 6000 | R | + |
| 2. | 148 | 12 | 30 | 6000 | Symmetrical | + |
| 3. | 155 | 19 | 30 | 6000 | L | + |
| 4. | 50 | 2 | 30 | Distance ring 2 pcs. | | + |



| D
n
d
z | 115
9000
30
4 | | 155
6000
40
4 | |
|------------------|------------------------|-------|------------------------|---|
| | | | | |
| | Profile | HSSHM | HSSHM | |
| | IL-N | + | + | + |

| Catalogue number | Type | D mm | d mm | z | | |
|------------------|------|------|------|---|-----|---|
| ILN0200S155-02 | IL-N | 155 | 30 | 4 | HSS | + |
| ILN0200W155-02 | IL-N | 155 | 30 | 4 | HM | + |
| ILN0200S155-03 | IL-N | 155 | 40 | 4 | HSS | + |
| ILN0200W155-01 | IL-N | 155 | 40 | 4 | HM | + |

GD-01

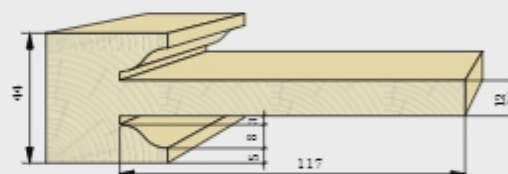


Set of profile cutter heads type **GD-01** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon profiles. Width regulated with spacers included in the set.

Type of work: door internal tenon profiling.

Material: solid wood, chipboard, MDF.

| Nr | D mm | B mm | d mm | n mm | ↺ | |
|----|------|------|------|----------------------|---|---|
| 1. | 310 | 19,8 | 50 | 4500 | L | + |
| 2. | 310 | 19,8 | 50 | 4500 | R | + |
| 3. | | 2 | | Distance ring 2 pcs. | | + |
| 4. | | 10 | | Distance ring 1 pc. | | + |



| D mm | 148 | 160 | 180 | 280 | 310 | 330 |
|---------|-------|-------|-------|-------|-------|-------|
| n mm | 9000 | 9000 | 6000 | 4500 | 4500 | 4500 |
| d mm | 50 | 40 | 40 | 50 | 60 | 60 |
| z | 4 | 4 | 4 | 4 | 4 | 4 |
| Profile | ST AL | ST AL | ST AL | ST AL | ST AL | ST AL |
| GD-01 | + | + | + | + | + | + |

| Catalogue number | Type | Body | D mm | d mm | z | n mm | |
|------------------|-------|------|------|------|---|------|--------|
| GD01-0001-00 | GD-01 | ST | 310 | 30 | 4 | HM | 4500 + |
| GD01-0002-00 | GD-01 | ST | 310 | 40 | 4 | HM | 4500 + |
| GD01-0003-00 | GD-01 | ST | 310 | 50 | 4 | HM | 4500 + |

Spare parts for cutter head GD-01

| Cat. nr | Name | Dimensions | | |
|----------------------|-------------------|------------|--|---|
| N0000901
N0000900 | Profile knife L/P | 19,8x32x2 | | + |
| WHAK00034 | Clamping wedge | 17x10,9x9 | | + |

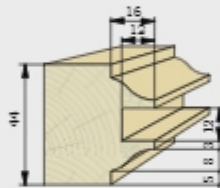
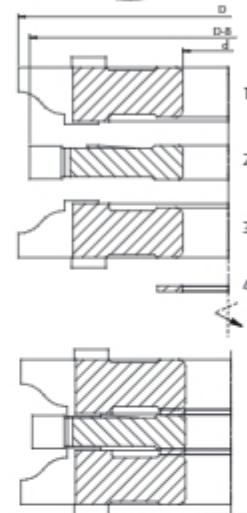
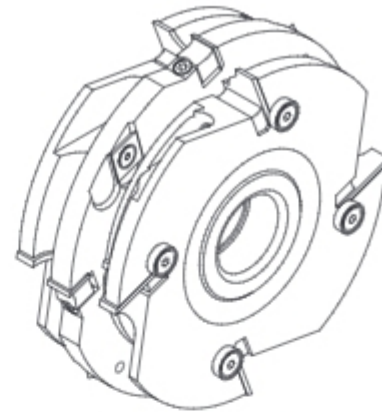
| Cat. nr | Name | Dimensions | | |
|-----------|-----------------|------------|--|---|
| WHAT00044 | Locating sleeve | 12x3,6x6,5 | | + |
| WHAS00011 | Screw TOR 1011 | M7x20 | | • |
| WHAS00006 | Screw TOR 1128 | M6x10 | | • |

Set of profile cutter heads type **GD-02** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon counterprofiles. Width regulated with spacers included in the set.

Type of work: door internal tenon counterprofiling.

Material: solid wood, chipboard, MDF.

GD-02



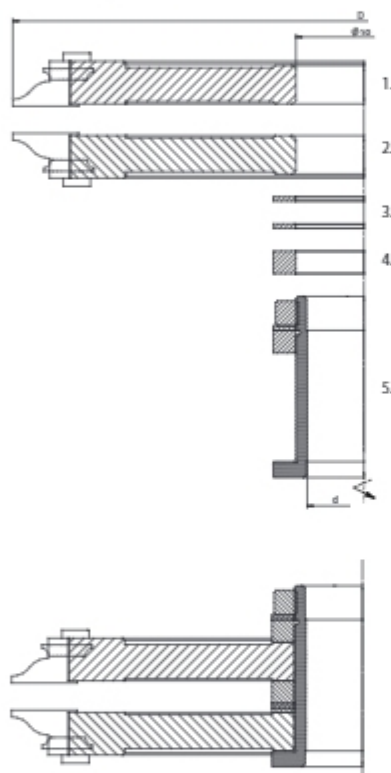
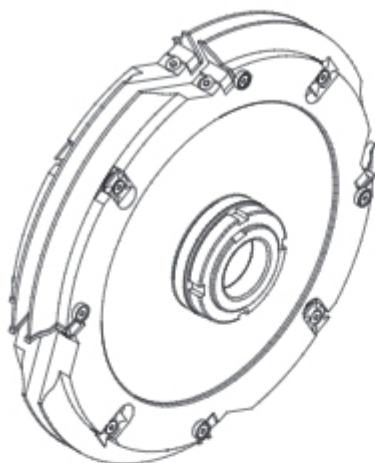
| D
n
d
z | 122
9000
40
4 | 125
9000
40
4 | 148
9000
60
4 | 164
6000
60
4 |
|------------------|------------------------|------------------------|------------------------|------------------------|
| Profile | ST | AL | ST | AL |
| GD-02 | + | + | + | + |

| Catalogue number | Type | Body | D
mm | d
mm | z | n _{max} |
|------------------|-------|------|---------|---------|---|------------------|
| GD02-0001-00 | GD-02 | ST | 148 | 30 | 4 | 9000 |
| GD02-0002-00 | GD-02 | ST | 148 | 40 | 4 | 9000 |
| GD02-0003-00 | GD-02 | ST | 148 | 50 | 4 | 9000 |
| GD02-0005-00 | GD-02 | ST | 148 | 60 | 4 | 9000 |

Spare parts for cutter head GD-02

| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | | |
|-----------|-------------------|-------------|--|---|-----------|-----------------|------------|--|---|
| N0000803 | Stright knife | 11,6x12x1,5 | | • | WHAT00044 | Locating sleeve | 12x3,6x6,5 | | + |
| N0000935 | Profile knife L/P | 20x30x2 | | + | WHAS00006 | Screw TOR 1128 | M6x10 | | • |
| N0000936 | | | | • | WHAS00008 | Screw TOR 1064 | M5x6,5 | | • |
| N0000818 | Spur | 14x14x2 | | • | WHAW00005 | Push screw | M8x16 | | • |
| WHAK00049 | Clamping wedge | 18x11,5x5,5 | | + | WHAS00007 | Screw TOR 1262 | M5x23 | | • |
| WHAK00026 | Clamping wedge | 10x10x9 | | + | | | | | |


GD-03

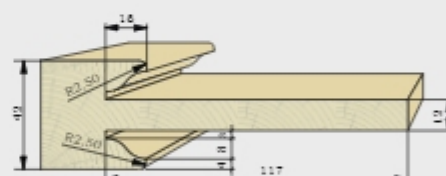


Set of profile cutter heads type **GD-03** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon profiles. Width regulated with spacers included in the set. The set mounted on a sleeve (for $d_{max} = 40$ mm).

Type of work: door internal tenon profiling.









Material: solid wood, chipboard, MDF.

| Nr | D
mm | B
mm | d _{mm} [*] | n _{mm} |  | |
|----|---------|---------|------------------------------|----------------------|---|---|
| 1. | 310 | 19,8 | 50 | 4500 | L | + |
| 2. | 310 | 19,8 | 50 | 4500 | R | + |
| 3. | 70 | 2 | 50 | Distance ring 2 pcs. | | + |
| 4. | 70 | 10 | 50 | Distance ring 1 pc. | | + |
| 5. | 50 | 80 | 40 | Sleeve 1 pc. | | + |



| Catalogue number | Type | Body | D
mm | d
mm | z | | n _{max} | |
|------------------|-------|------|---------|---------|---|----|------------------|---|
| GD03-0001P-00 | GD-03 | ST | 310 | 30 | 4 | HM | 4500 | + |
| GD03-0002P-00 | GD-03 | ST | 310 | 40 | 4 | HM | 4500 | + |

Spare parts for cutter head GD-03

| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | | |
|-----------|-----------------|------------|---|---|-----------|----------------|------------|---|---|
| N0000874 | Knife FKB-R | 22x16x5 |  | • | WHAS00011 | Screw TOR 1011 | M7x20 |  | • |
| N0000901 | Profile knife | 19,8x32x2 |  | + | WHAS00006 | Screw TOR 1128 | M6x10 |  | • |
| N0000900 | L/P | |  | | | Sleeve | 50/dx80 |  | + |
| WHAK00034 | Clamping wedge | 17x10,5x9 |  | + | | | | | |
| WHAT00044 | Locating sleeve | 12x3,6x6,5 |  | + | | | | | |

* $d_{\text{core}} = 50 \text{ mm}$ - for set without a sleeve. For set with a sleeve $d_{\text{core}} = 40 \text{ mm}$ (45 mm).

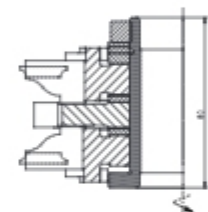
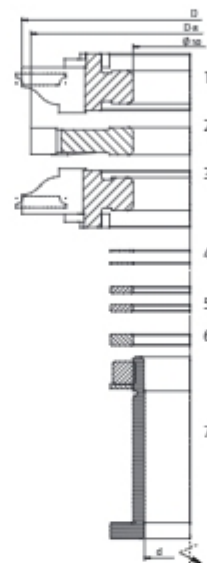
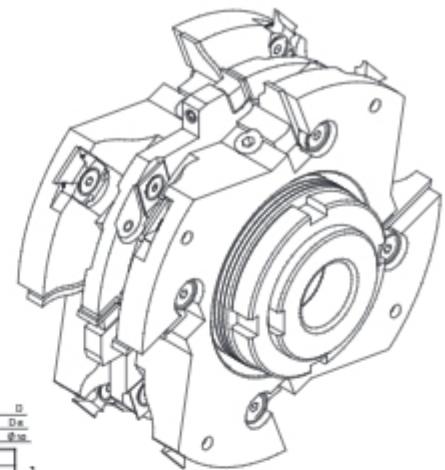
On request, we offer the set without a sleeve.

Set of profile cutter heads type **GD-04** with four cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for making door internal tenon counter-profiles. Width regulated with spacers included in the set. The set mounted on a sleeve (for $d_{max} = 40$ mm).

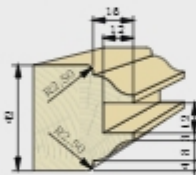
Type of work: door internal tenon counterprofiling.

Material: solid wood, chipboard, MDF.

GD-04



| Nr | D mm | B mm | d _{max} * | n _{max} | ↗ |
|----|------|------|--------------------|----------------------|---|
| 1. | 148 | 26 | 50 | 9000 | R |
| 2. | 140 | 12 | 50 | 9000 | |
| 3. | 148 | 26 | 50 | 9000 | L |
| 4. | 70 | 0,5 | 50 | Distance ring 2 pcs. | |
| 5. | 70 | 3 | 50 | Distance ring 3 pcs. | |
| 6. | 70 | 5 | 50 | Distance ring 1 pc. | |
| 7. | 50 | 80 | 40 | Sleeve 1 pc. | |



| D
n
d
z | 125
9000
30
4 | 132
9000
40
4 | 148
9000
50
4 | 150
9000
50
4 |
|------------------|------------------------|------------------------|------------------------|------------------------|
| Profile | ST AL | ST AL | ST AL | ST AL |
| GD-04 | + + | + + | + + | + + |

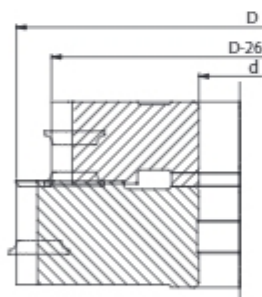
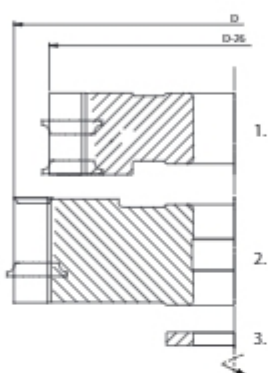
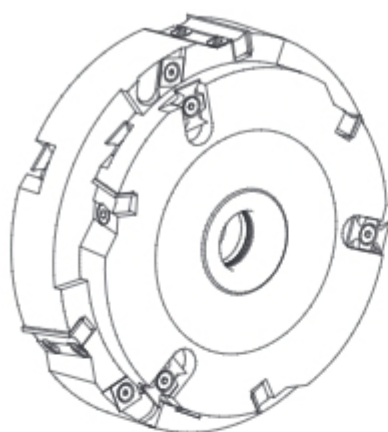
| Catalogue number | Type | Body | D mm | d mm | z | n _{max} |
|------------------|-------|------|------|------|---|------------------|
| GD04-0001P-00 | GD-04 | ST | 148 | 30 | 4 | 9000 |
| GD04-0002P-00 | GD-04 | ST | 148 | 40 | 4 | 9000 |

Spare parts for cutter head GD-04

| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | | |
|-----------|----------------|-------------|--|---|-----------|-----------------|------------|--|---|
| N0000803 | Straight knife | 11,6x12x1,5 | | • | WHAT00044 | Locating sleeve | 12x3,6x6,5 | | + |
| N0000935 | Profile knife | 20x30x2 | | + | WHAS00008 | Screw TOR 1064 | M5x6,5 | | • |
| N0000936 | L/P | | | • | WHAS00007 | Screw TOR 1262 | M5x23 | | • |
| N0000874 | Knife FKB-R | 16x22x5 | | • | WHAS00006 | Screw TOR 1128 | M6x10 | | • |
| N0000818 | Spur | 14x14x2 | | • | WHAS00011 | Screw TOR 1011 | M7x20 | | • |
| WHAK00010 | Clamping wedge | 18x10x9 | | + | | Sleeve | 50/dx80 | | + |
| WHAK00062 | Clamping wedge | 10x11,5x5,8 | | + | | | | | |

* $d_{max} = 50$ mm - for set without a sleeve. For set with a sleeve $d_{max} = 40$ mm (45mm).

GD-10

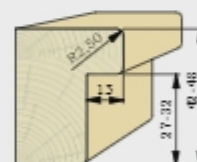


Set of profile cutter heads type **GD-10** with suitable number of cutting teeth, designed for professional machining of solid wood and wood-based materials such as chipboard, MDF and others. The cutter is used for rebating door internal profiles. Width regulated with spacers included in the set.

Type of work: door internal tenon profiling.





Material: solid wood, chipboard, MDF.

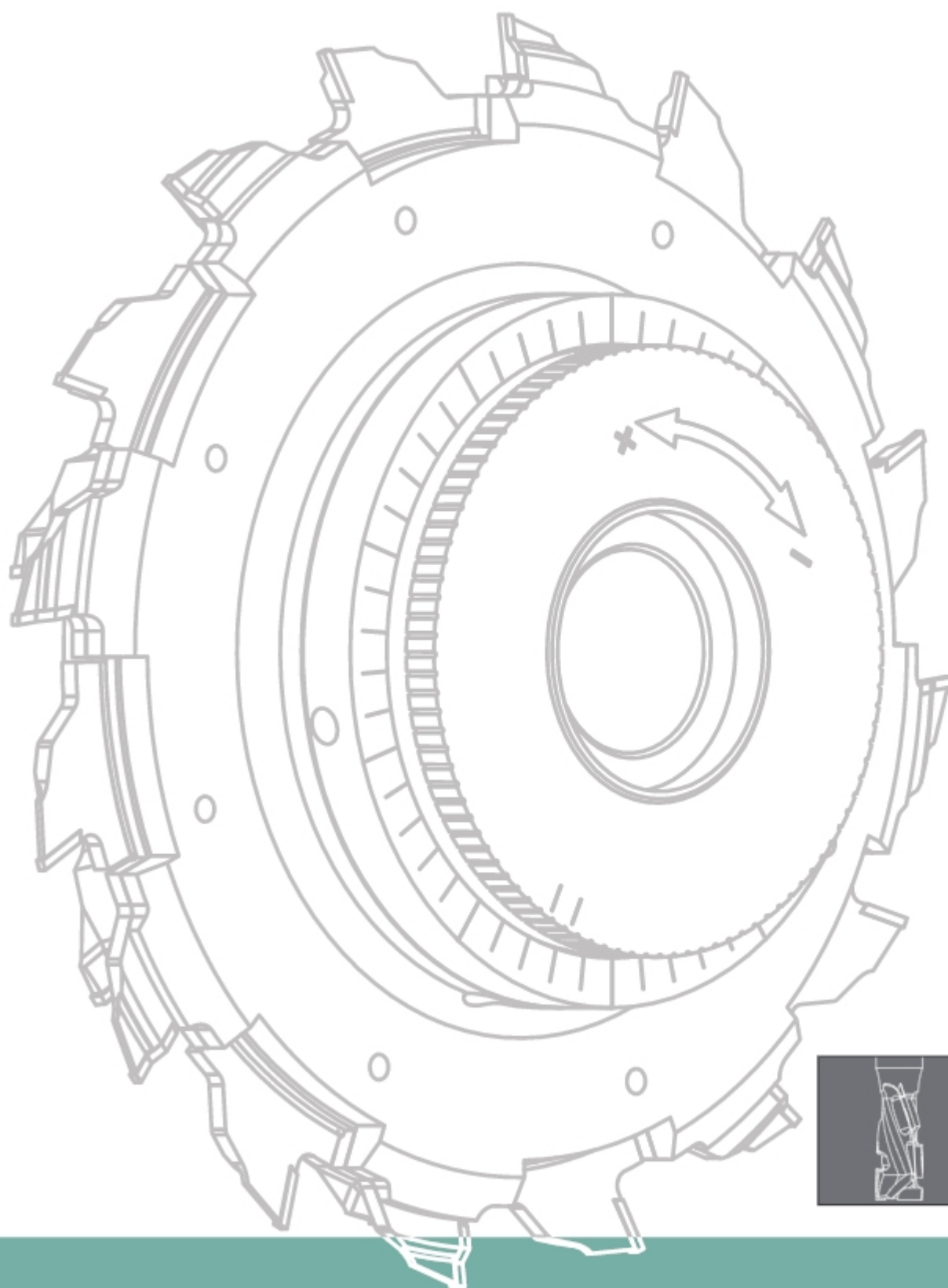
| Nr | D mm | B mm | d mm | n | ↗ | |
|----|------|------|------|---------------------|---|---|
| 1. | 200 | 40 | 60 | 6000 | R | + |
| 2. | 174 | 20 | 60 | 6000 | L | + |
| 3. | | 6 | | Distance ring 1 pc. | | + |



| Catalogue number | Type | Body | D mm | d mm | z | Material | n | |
|------------------|-------|------|------|------|---|----------|------|---|
| GD10-0001P-00 | GD-10 | ST | 200 | 30 | 3 | HM | 6000 | + |
| GD10-0002P-00 | GD-10 | ST | 200 | 40 | 3 | HM | 6000 | + |
| GD10-0003P-00 | GD-10 | ST | 200 | 50 | 3 | HM | 6000 | + |

Spare parts for cutter head GD-04

| Cat. nr | Name | Dimensions | | | Cat. nr | Name | Dimensions | |
|-----------|----------------|------------|---|---|-----------|----------------|------------|---|
| N0000809 | Straight knife | 40x12x1,5 |  | + | WHAK00034 | Clamping wedge | 17x10x9 |  + |
| N0000805 | Straight knife | 20x12x1,5 |  | + | WHAS00011 | Screw TOR 1011 | M7x20 |  • |
| N0000874 | Knife FKB-R | 16x22x5 |  | • | WHAS00006 | Screw TOR 1128 | M6x10 |  • |
| WHAK00009 | Clamping wedge | 37x10x9 |  | + | | | | |



11. DIA tools

DIA tools

Tools with DIA tips designed for professional machining of solid wood and other wood-based materials such as chipboard, laminates, MDF, HDF, PVC and CORIAN. Use and selection of a proper diamond significantly increases life of tools in comparison with traditional tools with carbide (HM) blades.

The *DIA tools* chapter includes only example types and models of tools with DIA blades. The main part of our offer are special tools designed and manufactured on client's special request, meeting buyer's specific demands. Before we start designing and production process we take into consideration many issues connected with client's requirements such as expected machining quality, type and parameters of the machine, workpiece material and many others. Every DIA special tool or set of tools is properly selected for the type of work, parameters and conditions prevailing during the machining, in order to guarantee proper work of the tool, both in standard and extreme conditions.

DIA tools are produced with various clamping types, however, we put special focus on hydro clamping or all types of clamping on conical HSK shanks. The clamping construction guarantee run-out tolerance reduced to minimum.

Thanks to hydro system, which allows for perfect balancing of the tool, we obtain very high surface quality and ability to work with high cutting and feed speed.

All types of cutter heads are manufactured on modern CNC machines of world-renowned producers, which guarantee high accuracy and precision of the produced tools. The construction and production remains in accordance with all points of safety standard EN/PN-847-1 concerning tools for mechanical woodworking. Time of design and production process of cutters or catalogue sets marked with "+" as well as special tools made on client's special request usually doesn't exceed 10-15 working days after agreeing all the details.

Orders should include:

- outer diameter (D) or diameters range,
- bore diameter (d),
- number of teeth (z) or spindle rotation speed and feed speed,
- type of machined material,
- profile drawing with dimensions or profile sample,
- other information relevant for designing and production process.



Contents

| | |
|-------------------------------------|-------|
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| Technical parameters | 11.5 |
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| 11.2 Turbo shank cutters | 11.14 |
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| 11.8 Scoring saw blades | 11.49 |
| 11.9 Saw blades | 11.54 |

Pictograms



solid dry hardwood



hard exotic wood



chipboard



plywood



laminated board



MDF



HDF



HPL



plastics



construction board



corian



single cut



multi-rip saw blade



cutting in stack



cylinder boring bits



scoring saw blade



aluminium body



cross and longitudinal cut



formatting



rebating



grooving



edge machining



profiling



mechanical feed



manual feed



CNC machine



DIA blade



carbide



non-resharpenable



2-3 times resharpenable



4-6 times resharpenable



5-6 times resharpenable

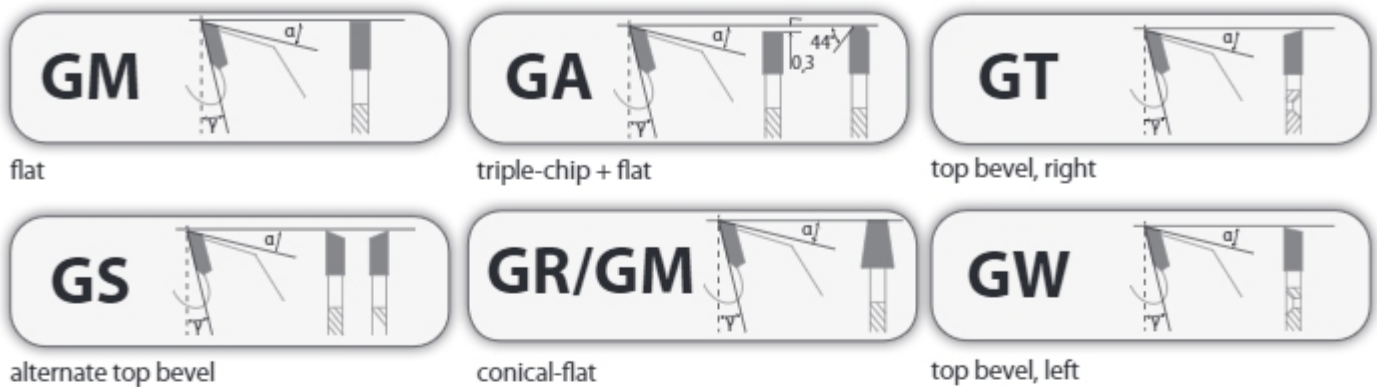


7-9 times resharpenable



multiple resharpening

Tooth configuration



Cutters with shear angle are designed for working on CNC centres: IMA, Reichenbahr, Homag, Bisse. They are used for rebating, grooving and forming. Drilling blade is made from HM.

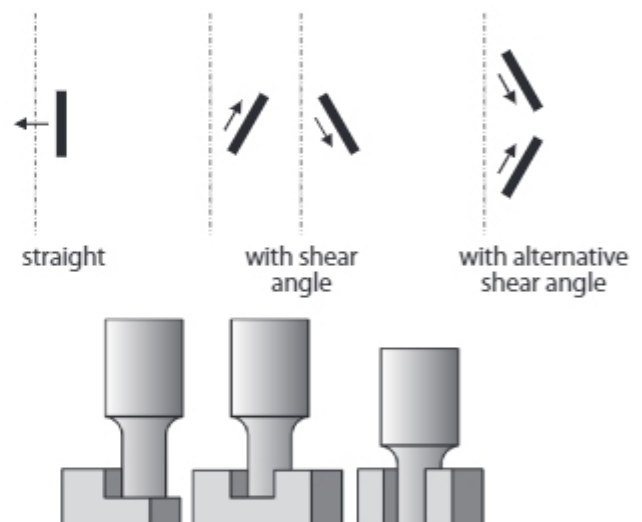
Cutters' construction guarantees:

- quiet and stable work,
- better surface quality,
- increased life.

Type of material:

- MDF, HDF,
- chipboard,
- laminated chipboard,
- CORIAN,
- laminates,
- hard exotic wood.

Teeth



Diagrams determining P (minute feed) in relation to height of the removed material a.

Type of work: formatting with drilling ability.

Rotation speed:

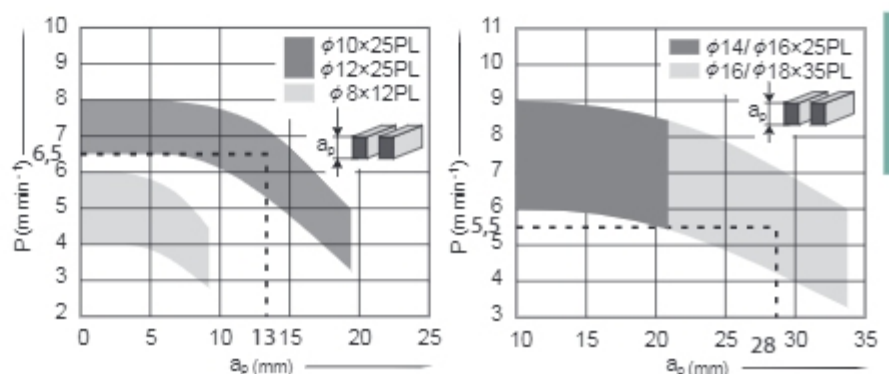
$D = 10 \div 12 \text{ mm}; n = 18\,000 \div 24\,000 \text{ obr/min}$
 $D = 14 \div 20 \text{ mm}; n = 16\,000 \div 24\,000 \text{ obr/min}$

Teeth number:

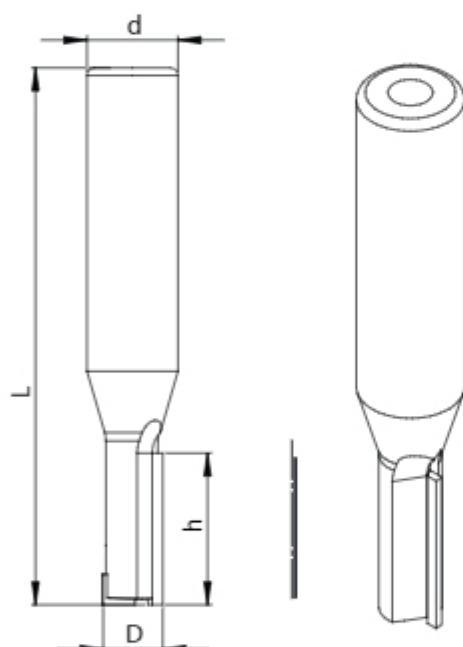
$z = 1$ and $z = 1+1$

Drilling blade HM, optionally DP.

Technical parameters TJD group



TJD-01



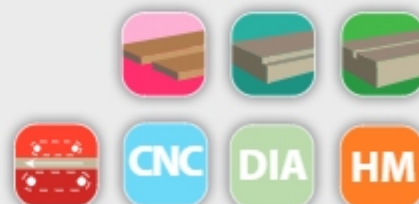
Straight shank cutters type **TJD-01**.

Type of work: formatting, splitting, rebating, grooving and copying on CNC machines. Used especially for making very small inner radiuses.

Material: solid hardwood, chipboard, plywood, MDF, HDF, construction board, plastics.

Specification:

- polished PCD surface,
- PCD drilling blade,
- optional body from HM or special alloy in order to increase stiffness and life of the tool,
- sharpening zone 0,5-1,5 mm,
- $P_{max} = 2-3 \text{ m/min.}$
- $n_{max} = 24\,000 \text{ r.p.m.}$



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↙ | |
|------------------|--------|---------|---------|---------|---------|---|---|---|
| TJD01.0102B | TJD-01 | 8 | 20 | 12 | 70 | 1 | R | • |
| TJD01.0102BL | TJD-01 | 8 | 20 | 12 | 70 | 1 | L | + |
| TJD001.8350HM | TJD-01 | 10 | 22 | 12 | 81 | 2 | R | • |
| TJD01.029G | TJD-01 | 10 | 25 | 12 | 71 | 1 | R | • |
| TJD01.028G | TJD-01 | 10 | 20 | 12 | 66 | 1 | R | + |
| TJD01.028GL | TJD-01 | 10 | 20 | 12 | 66 | 1 | L | + |
| TJD01.029GL | TJD-01 | 10 | 25 | 12 | 71 | 1 | L | + |

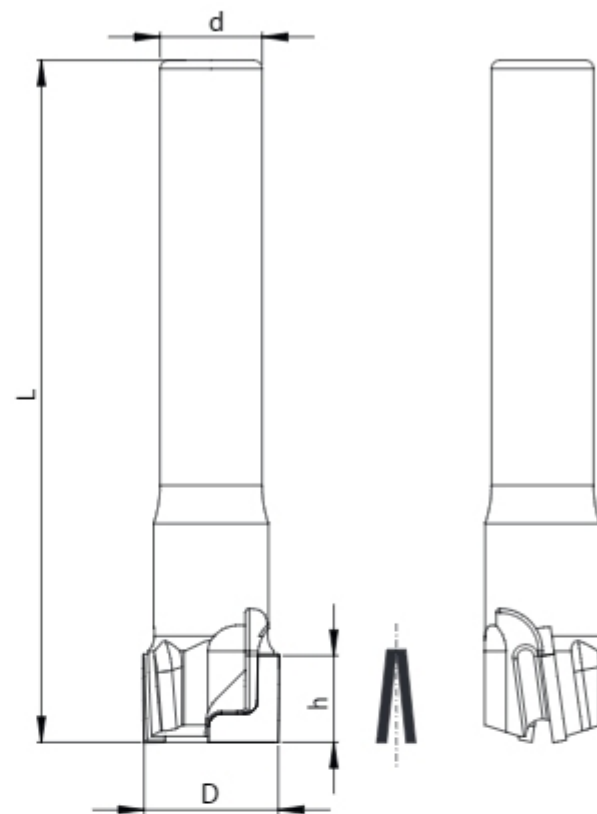
Straight shank cutters type **TJD-06**

Type of work: grooving, rebating, drilling on CNC machines.

Material: solid hardwood, laminated materials, chipboard, plywood, MDF, HDF.

Specification:

- high quality machining,
- drilling ability,
- negative hook angle,
- PCD Drilling blade,
- resharpenable 2-3 times,
- $P_{max} = 3-6 \text{ m/min.}$
- $n_{max} = 24\,000 \text{ r.p.m.}$

TJD-06

| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↙ | |
|------------------|--------|---------|---------|---------|---------|---|---|---|
| TJD006.6010 | TJD-06 | 6 | 6 | 12 | 60 | 1 | R | + |
| TJD006.3570HM | TJD-06 | 6 | 15 | 6 | 66 | 1 | R | • |
| TJD006.6020 | TJD-06 | 8 | 6 | 12 | 60 | 1 | R | + |
| TJD006.6030 | TJD-06 | 10 | 8 | 12 | 65 | 2 | R | + |
| TJD006.6040 | TJD-06 | 10 | 12 | 12 | 67 | 2 | R | + |
| TJD006.6050 | TJD-06 | 12 | 12 | 12 | 70 | 2 | R | + |
| TJD006.6060 | TJD-06 | 16 | 16 | 12 | 80 | 2 | R | + |
| TJD006.6070 | TJD-06 | 20 | 10 | 12 | 80 | 2 | R | + |
| TJD006.6080 | TJD-06 | 20 | 15 | 12 | 80 | 2 | R | + |
| TJD006.6090 | TJD-06 | 25 | 10 | 12 | 85 | 2 | R | + |
| TJD006.6100 | TJD-06 | 30 | 15 | 12 | 90 | 2 | R | + |

TJD-07

Straight shank cutters type **TJD-07** resharpenable 2-3 times.

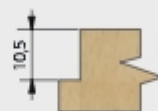
Type of work: formatting, splitting, rebating.

Material: solid hardwood, laminated materials, chipboard, plywood, MDF, HDF.

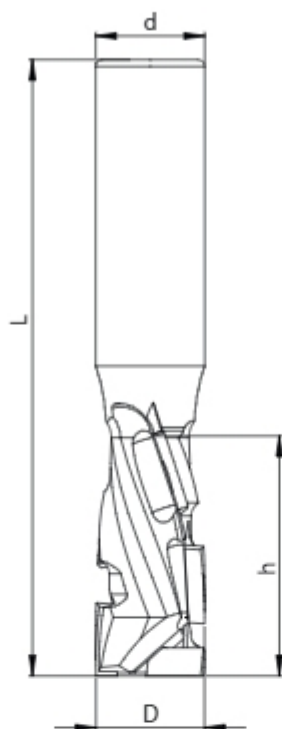
Specification:

- blades positions at big shear angle guarantee quiet and stable work,
- long life,
- HM drilling blade (PCD on request),
- spiral blades guarantee high cutting quality, lower cutting resistance and longer life of the blade,
- $P_{max} = 3-6 \text{ m/min}$,
- $N_{max} = 24000 \text{ r.p.m.}$

We offer all cutters also in "L" version.



Minimum rebate size
of laminated material.



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↺ | |
|------------------|--------|---------|---------|---------|---------|-----|---|---|
| TJD007.0460 | TJD-07 | 10 | 25 | 12 | 76 | 1+1 | R | • |
| TJD007.4910 | TJD-07 | 10 | 35 | 12 | 88 | 1+1 | R | • |
| TJD007.0040R | TJD-07 | 12 | 25 | 12 | 78 | 1+1 | R | • |
| TJD007.0050R | TJD-07 | 12 | 35 | 12 | 88 | 1+1 | R | + |
| TJD007.0181 | TJD-07 | 14 | 25 | 16 | 81 | 1+1 | R | + |
| TJD007.0092 | TJD-07 | 14 | 35 | 16 | 81 | 1+1 | R | + |
| TJD007.0021R | TJD-07 | 16 | 25 | 16 | 81 | 1+1 | R | • |
| TJD007.0020R | TJD-07 | 16 | 25 | 25 | 91 | 1+1 | R | • |
| TJD007.0030R | TJD-07 | 16 | 35 | 16 | 91 | 1+1 | R | + |
| TJD007.0030RL | TJD-07 | 16 | 35 | 16 | 91 | 1+1 | L | + |
| TJD007.0034R | TJD-07 | 16 | 35 | 25 | 96 | 1+1 | R | + |
| TJD007.0171R | TJD-07 | 16 | 43 | 16 | 100 | 1+1 | R | • |
| TJD007.0080R | TJD-07 | 18 | 35 | 25 | 96 | 1+1 | R | • |
| TJD007.0061R | TJD-07 | 18 | 43 | 20 | 109 | 1+1 | R | • |
| TJD007.0060R | TJD-07 | 18 | 43 | 25 | 109 | 1+1 | R | • |
| TJD007.0392 | TJD-07 | 18 | 52 | 25 | 112 | 1+1 | R | + |
| TJD007.0120R | TJD-07 | 20 | 25 | 20 | 86 | 1+1 | R | • |
| TJD007.0150R | TJD-07 | 20 | 35 | 20 | 96 | 1+1 | R | • |
| TJD007.0071R | TJD-07 | 20 | 43 | 20 | 109 | 1+1 | R | • |
| TJD007.0270R | TJD-07 | 20 | 52 | 20 | 112 | 1+1 | R | • |

Economical straight shank cutters type **TJD-073** resharpenable 3-4 times.

New design of the **TJD-073** cutter, including cutting tips position allows for better chip flow during work which results in increased life of the tool and better cutting quality.

Shank cutters are designed for top-spindle CNC routers.

Type of work: formatting, splitting, rebating.

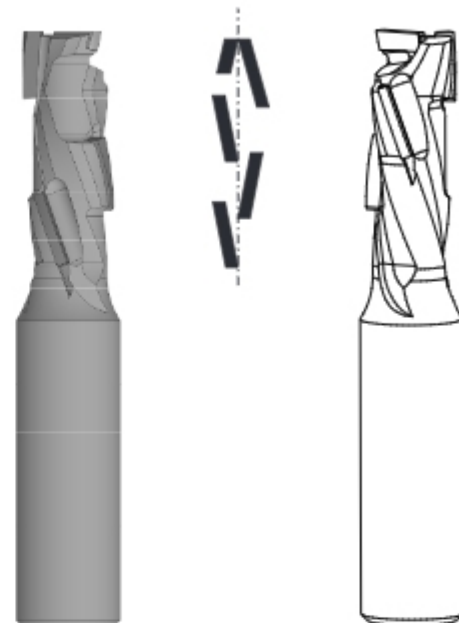
Material: laminated materials, chipboard, plywood, MDF, HDF.

Specification:

- blades positions at big shear angle guarantee quiet and stable work,
- long life,
- HM drilling blade (PKD on request),
- spiral blades guarantee high cutting quality, lower cutting resistance and longer life of the blade,
- $D=12 - P_{max} = 2-3 \text{ m/min}$,
- $D=16 - P_{max} = 4-6 \text{ m/min}$,
- $N_{max}=24000 \text{ r.p.m.}$

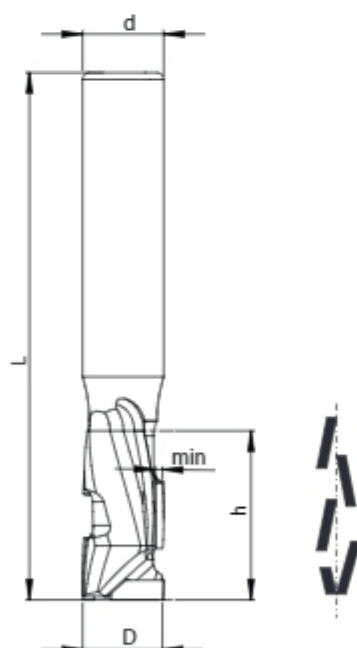
We offer all cutters also in "L" version.

TJD-073



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↺ | |
|------------------|---------|---------|---------|---------|---------|-----|---|---|
| TJD073.0050 | TJD-073 | 12 | 35 | 12 | 88 | 1+1 | R | • |
| TJD073.1260 | TJD-073 | 12 | 44 | 12 | 95 | 1+1 | R | • |
| TJD073.0030 | TJD-073 | 16 | 35 | 16 | 91 | 1+1 | R | • |
| TJD073.4790 | TJD-073 | 16 | 52 | 16 | 115 | 1+1 | R | • |

TJD-08



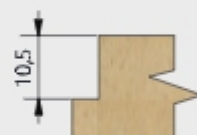
Straight shank cutters type **TJD-08** single use (non-resharpenable). Used PKD tip has been reduced to minimum, so that the cutters are not subject to resharpening and costly regeneration. Shank cutters type TJD-08 are convenient offer for companies processing wood-based materials and plastics on CNC routers.

Type of work: formatting, splitting, rebating

Material: chipboard, plywood, MDF, HDF, plastics

Specification:

- one positioning of the machine without corrections after resharpening,
- no problems with servicing (regeneration),
- very low price,
- long life and cutting quality,
- $P_{max} = 3-6 \text{ m/min.}$
- $N_{max} = 24\,000 \text{ r.p.m.}$



Minimum rebate size
of laminated material.



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↗ | |
|------------------|--------|---------|---------|---------|---------|-----|---|---|
| TJD008.1240 | TJD-08 | 12 | 24 | 12 | 78 | 1+1 | R | • |
| TJD008.0022 | TJD-08 | 16 | 25 | 16 | 81 | 1+1 | R | • |
| TJD008.0051 | TJD-08 | 12 | 35 | 12 | 88 | 1+1 | R | • |
| TJD008.0032 | TJD-08 | 16 | 35 | 16 | 91 | 1+1 | R | • |

Shank cutter with multiple resharpening possibility typ **TJD-10** designed for formatting on CNC machines. The tool can work with left or right rotation to avoid material chipping.

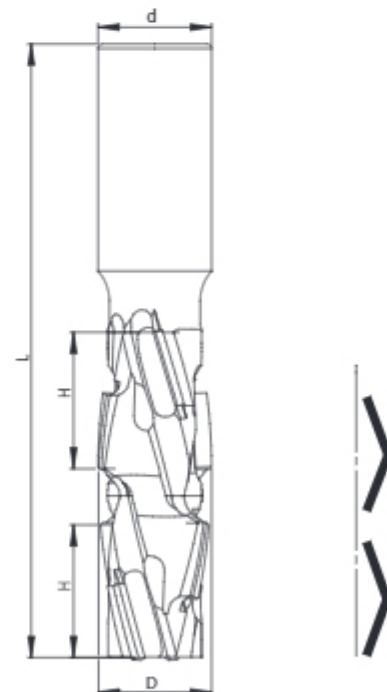
Type of work: formatting.

Material: chipboard, MDF.

Specification:

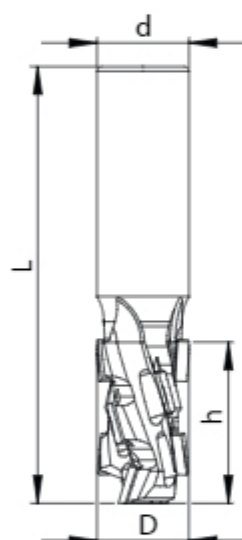
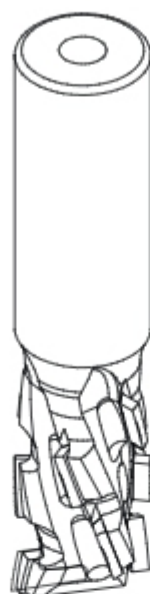
- highly efficient formatting of laminated materials with perfect edge quality,
- works with both rotation directions,
- $P_{max} = 14 \text{ m/min.}$
- $N_{max} = 24\,000 \text{ r.p.m.}$

TJD-10



| Catalogue number | Type | D
mm | H2
mm | d
mm | L
mm | z | |
|------------------|--------|---------|----------|---------|---------|-----|---|
| TJD010.0100 | TJD-10 | 25 | 30 | 25 | 135 | 1+1 | + |

TDT-08A



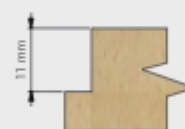
Economical turbo shank cutters type **TDT-08A** $z=2+2$ designed for CNC routers.

Type of work: formatting, curvilinear splitting, grooving rebating.

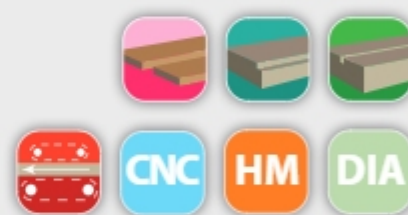
Material: chipboard, plywood, MDF, HDF, laminates.















Specification:

- tools construction guarantees highly efficient cutting with perfect edge quality thanks to blades with positive and negative shear angle,
- increased teeth number $z=2+2$ enables for feed speed up to 12-14 m/min,
- HM or PCD drilling blad,
- $P_{max} = 8-12$ m/min,
- $n_{max} = 24\,000$ rpm.



Minimum rebate size
of laminated material.



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z |  | |
|------------------|---------|---------|---------|---------|---------|---|---|---|
| TDT08A.0850 | TDT-08A | 12 | 23 | 12 | 80 | 2+2  | R | • |
| TDT08A.0440 | TDT-08A | 16 | 20 | 20 | 80 | 2+2  | R | + |
| TDT08A.0451 | TDT-08A | 16 | 27 | 16 | 90 | 2+2  | R | • |
| TDT08A.0450 | TDT-08A | 16 | 27 | 20 | 90 | 2+2  | R | • |
| TDT08A.0065 | TDT-08A | 16 | 35 | 16 | 95 | 2+2  | R | • |
| TDT08A.0595 | TDT-08A | 16 | 45 | 16 | 105 | 2+2  | R | • |
| TDT08A.0460 | TDT-08A | 18 | 27 | 20 | 90 | 2+2  | R | + |
| TDT08A.0470 | TDT-08A | 18 | 35 | 20 | 95 | 2+2  | R | • |
| TDT08A.0480 | TDT-08A | 18 | 45 | 20 | 105 | 2+2  | R | + |
| TDT08A.0490 | TDT-08A | 20 | 27 | 20 | 90 | 2+2  | R | + |
| TDT08A.0500 | TDT-08A | 20 | 35 | 20 | 95 | 2+2  | R | + |
| TDT08A.0510 | TDT-08A | 20 | 45 | 20 | 105 | 2+2  | R | + |
| TDT08A.0520 | TDT-08A | 20 | 54 | 20 | 115 | 2+2  | R | + |

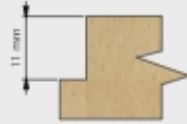
Straight shank cutters type **TD-04**, with multiple resharpening possibility.

Type of work: formatting, splitting, rebating.

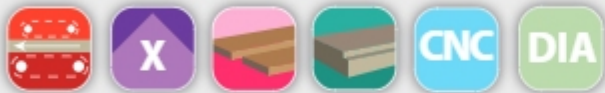
Material: solid hardwood, chipboard, plywood, MDF, HDF, laminates.

Specification:

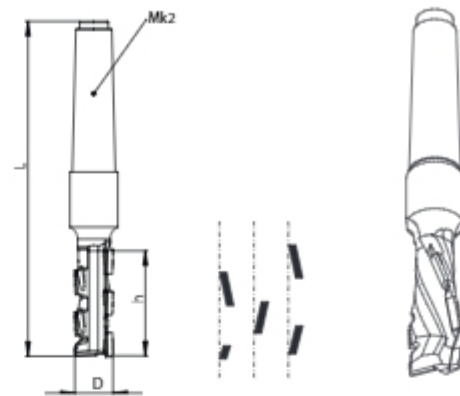
- $P_{max} = 3-6 \text{ m/min}$,
- $N_{max} = 24\,000 \text{ r.p.m.}$



Minimum rebate size
of laminated material.



TD-04



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↗ | |
|------------------|-------|---------|---------|---------|---------|-----|---|---|
| TD04.010 | TD-04 | 16 | 25 | Mk2 | 140 | 1+1 | R | + |
| TD04.010L | TD-04 | 16 | 25 | Mk2 | 140 | 1+1 | L | + |
| TD04.020 | TD-04 | 16 | 35 | Mk2 | 150 | 1+1 | R | + |
| TD04.020L | TD-04 | 16 | 35 | Mk2 | 150 | 1+1 | L | + |

Shank cutters type **TD-008** for box hinge. Special blade geometry guarantees high quality of the machined slot and long life of the tool.

Type of work: dowel drilling.

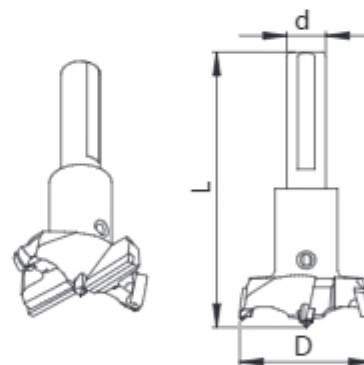
Material: glued wood, chipboard, plywood, MDF and others.

Specification:

- $P_{max} = 3-6 \text{ m/min}$,
- $N_{max} = 24\,000 \text{ r.p.m.}$



TD-008



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | n _{max} | ↗ | |
|------------------|-------|---------|---------|---------|---------|-----|------------------|---|---|
| TD008.8010 | TD008 | 15 | 7 | 10 | 57 | 2+2 | 24000 | R | + |
| TD008.8020 | TD008 | 20 | 7 | 10 | 57 | 2+2 | 24000 | R | + |
| TD008.8030 | TD008 | 25 | 7 | 10 | 57 | 2+2 | 24000 | R | + |
| TD008.8040 | TD008 | 30 | 7 | 10 | 57 | 2+2 | 24000 | R | + |
| TD008.8050 | TD008 | 35 | 7 | 10 | 57 | 2+2 | 24000 | R | + |
| TD008.8060 | TD008 | 40 | 7 | 10 | 57 | 2+2 | 18000 | R | + |
| TD008.8070 | TD008 | 50 | 7 | 10 | 57 | 2+2 | 18000 | R | + |
| TD008.8080 | TD008 | 60 | 7 | 10 | 57 | 2+2 | 18000 | R | + |
| TD008.8090 | TD008 | 65 | 7 | 10 | 57 | 2+2 | 18000 | R | + |

TDT-01



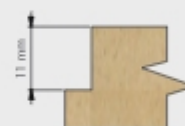
Turbo shank cutter type **TDT-01** for formatting and splitting on CNC routers.

Type of work: formatting, splitting.

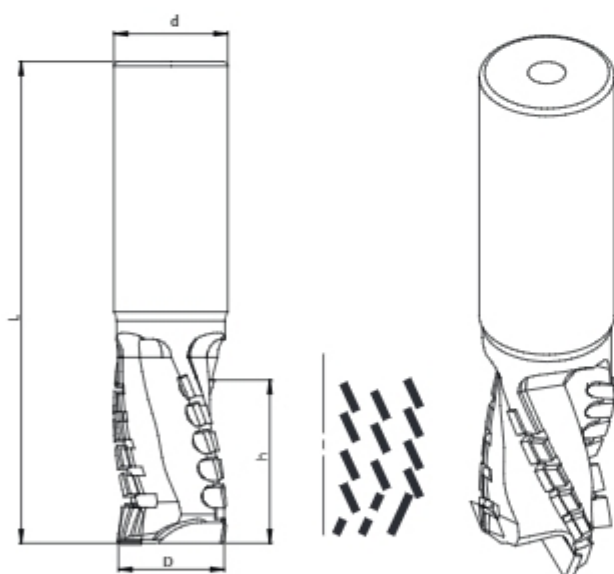
Material: chipboard, MDF, HPL, veneer, laminated materials.

Specification:

- high performance in roughing and finishing,
- very high cutting quality on bottom and top edge of the machined material thanks to alternative cutting angles,
- sharpening zone 3 mm,
- P_{max} in splitting = 15 m/min.
- P_{max} in formatting = 20 m/min.
- N_{max} = 24 000 r.p.m.



Minimum rebate size of laminated material.



| Catalogue number | Type | D mm | h mm | d mm | L mm | z | ↗ | |
|------------------|--------|------|------|------|------|-----|---|---|
| TDT01.018C | TDT-01 | 18 | 40 | 25 | 122 | 3+3 | R | + |
| TDT01.018CL | TDT-01 | 18 | 40 | 25 | 122 | 3+3 | L | + |
| TDT01.025 | TDT-01 | 25 | 40 | 25 | 122 | 3+3 | R | + |
| TDT01.025L | TDT-01 | 25 | 40 | 25 | 122 | 3+3 | L | + |
| TDT01.02025 | TDT-01 | 20 | 40 | 25 | 122 | 3+3 | R | + |
| TDT01.02025L | TDT-01 | 20 | 40 | 25 | 122 | 3+3 | L | + |

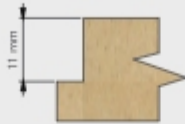
Turbo shank cutter type **TDT-04** designed for roughing and finishing.

Type of work: roughing and finishing.

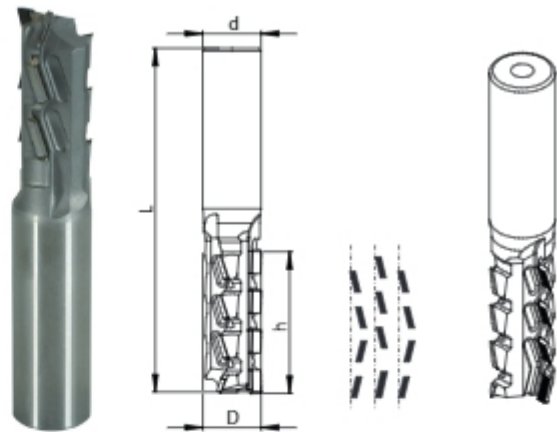
Material: solid hardwood, exotic hardwood, MDF, HPL, veneered board, plastics.

Specification:

- PCD drilling blade,
- on request we offer increased density of cutting lines $z=4+4$ with \varnothing more than 20 mm,
- $P_{max} = 12 - 16 \text{ m/min}$,
- $N_{max} = 24\,000 \text{ r.p.m.}$



Minimum rebate size of laminated material.



| Catalogue number | Type | D mm | h mm | d mm | L mm | z | ↗ | |
|------------------|--------|------|------|------|------|-----|---|---|
| TDT04.601 | TDT-04 | 18 | 40 | 20 | 103 | 3+3 | R | + |
| TDT04.601L | TDT-04 | 18 | 40 | 20 | 103 | 3+3 | L | + |
| TDT04.602 | TDT-04 | 20 | 40 | 20 | 103 | 3+3 | R | + |
| TDT04.602L | TDT-04 | 20 | 40 | 20 | 103 | 3+3 | L | + |
| TDT04.603 | TDT-04 | 20 | 50 | 20 | 113 | 3+3 | R | + |
| TDT04.603L | TDT-04 | 20 | 50 | 20 | 113 | 3+3 | L | + |
| TDT04.605 | TDT-04 | 25 | 50 | 25 | 103 | 3+3 | R | + |
| TDT04.605L | TDT-04 | 25 | 50 | 25 | 103 | 3+3 | L | + |
| TDT04.702 | TDT-04 | 25 | 50 | 25 | 113 | 3+3 | R | + |
| TDT04.702L | TDT-04 | 25 | 50 | 25 | 113 | 3+3 | L | + |

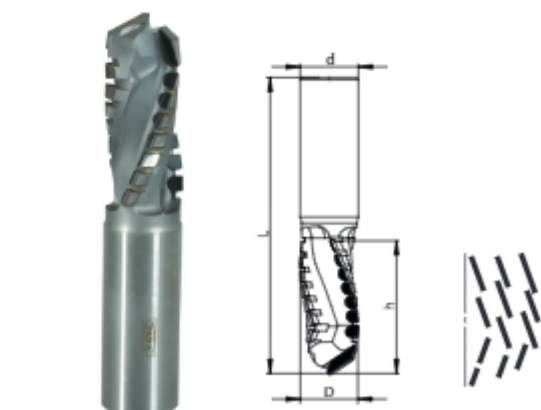
Turbo shank cutter type **TDT-06** designed for roughing and finishing.

Type of work: roughing and finishing.

Material: solid hardwood, exotic hardwood, MDF, HPL, veneered board, plastics.

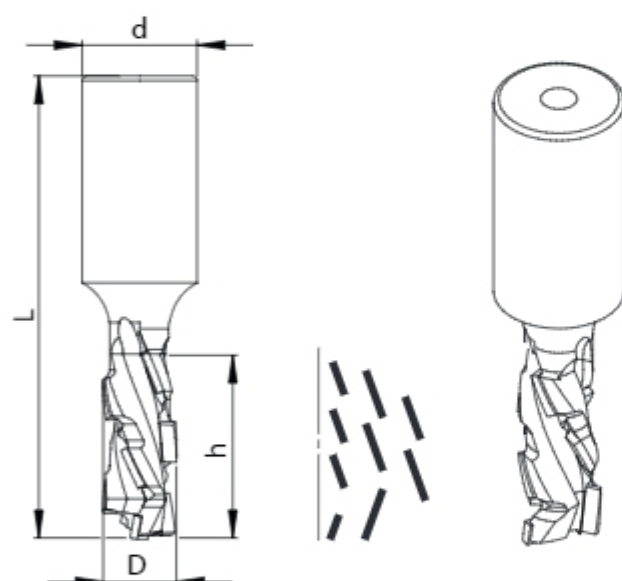
Specification:

- PCD drilling blade,
- On request we offer increased density of cutting lines $z=4+4$ with \varnothing more than 20 mm.



| Catalogue number | Type | D mm | h mm | d mm | L mm | z | ↗ | |
|------------------|--------|------|------|------|------|-----|---|---|
| TDT06.007 | TDT-06 | 25 | 57 | 25 | 120 | 3+3 | R | + |
| TDT06.007L | TDT-06 | 25 | 57 | 25 | 120 | 3+3 | L | + |

TDT-07



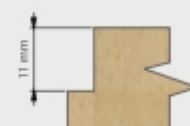
Highly efficient turbo shank cutter type **TDT-07** designed for formatting and splitting on CNC routers.

Type of work: formatting and splitting.

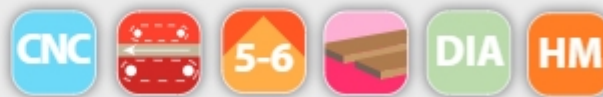
Material: chipboard, MDF, melamine and laminated boards.

Specification:

- optimal chip flow,
- HM drilling blade,
- $P_{max} = 12 \text{ m/min.}$
- $N_{max} = 24\,000 \text{ r.p.m.}$



Minimum rebate size of laminated material.



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↗ | |
|------------------|--------|---------|---------|---------|---------|-----|---|---|
| TDT07.008A | TDT-07 | 16 | 30 | 25 | 105 | 3+3 | R | + |
| TDT07.008AL | TDT-07 | 16 | 30 | 25 | 105 | 3+3 | L | + |
| TDT07.005 | TDT-07 | 18 | 30 | 25 | 105 | 3+3 | R | + |
| TDT07.005L | TDT-07 | 18 | 30 | 25 | 105 | 3+3 | L | + |
| TDT07.002 | TDT-07 | 18 | 40 | 25 | 110,5 | 3+3 | R | + |
| TDT07.002L | TDT-07 | 18 | 40 | 25 | 110,5 | 3+3 | L | + |
| TDT07.0031 | TDT-07 | 20 | 40 | 25 | 110,5 | 3+3 | R | + |
| TDT07.0031L | TDT-07 | 20 | 40 | 25 | 110,5 | 3+3 | L | + |
| TDT07.0070 | TDT-07 | 20 | 48 | 25 | 118,5 | 3+3 | R | + |
| TDT07.0070L | TDT-07 | 20 | 48 | 25 | 118,5 | 3+3 | L | + |

Highly efficient turbo shank cutter type **TDT-09** for formatting, splitting, grooving and copying on CNC routers.

Type of work: formatting, splitting, grooving, copying.

Material: chipboard, MDF, laminates.

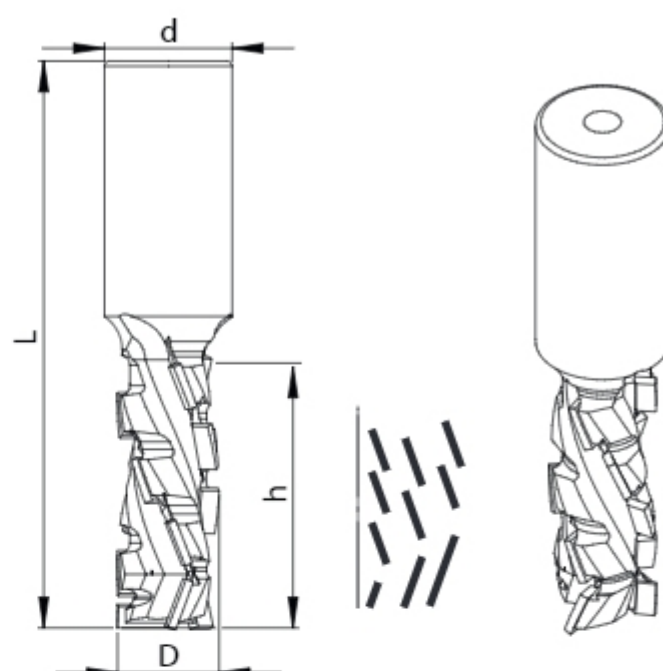
Specification:

- big helix line angle guaranteeing high cutting quality and life of the tool,
- gentle chip flow,
- PCD drilling blade,
- $P_{max} = 14 \text{ m/min}$,
- $N_{max} = 24\,000 \text{ r.p.m.}$



Minimum rebate size
of laminated material.

TDT-09



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↗ | |
|------------------|--------|---------|---------|---------|---------|-----|---|---|
| TDT09.0050 | TDT-09 | 18 | 25 | 20 | 84,5 | 3+3 | R | • |
| TDT09.0050L | TDT-09 | 18 | 25 | 20 | 84,5 | 3+3 | L | + |
| TDT09.0010 | TDT-09 | 18 | 30 | 20 | 93 | 3+3 | R | + |
| TDT09.0010L | TDT-09 | 18 | 30 | 20 | 93 | 3+3 | L | + |
| TDT09.0130 | TDT-09 | 18 | 35 | 20 | 98 | 3+3 | R | + |
| TDT09.0130L | TDT-09 | 18 | 35 | 20 | 98 | 3+3 | L | + |
| TDT09.0140 | TDT-09 | 18 | 43 | 20 | 101 | 3+3 | R | • |
| TDT09.0140L | TDT-09 | 18 | 43 | 20 | 101 | 3+3 | L | + |
| TDT09.0090 | TDT-09 | 18 | 52 | 20 | 115 | 3+3 | R | + |
| TDT09.0090L | TDT-09 | 18 | 52 | 20 | 115 | 3+3 | L | + |
| TDT09.0030 | TDT-09 | 20 | 25 | 20 | 84,5 | 3+3 | R | + |
| TDT09.0030L | TDT-09 | 20 | 25 | 20 | 84,5 | 3+3 | L | + |
| TDT09.0040 | TDT-09 | 20 | 30 | 20 | 93 | 3+3 | R | + |
| TDT09.0040L | TDT-09 | 20 | 30 | 20 | 93 | 3+3 | L | + |
| TDT09.0060 | TDT-09 | 20 | 35 | 20 | 98 | 3+3 | R | + |
| TDT09.0060L | TDT-09 | 20 | 35 | 20 | 98 | 3+3 | L | + |
| TDT09.0020 | TDT-09 | 20 | 43 | 20 | 101 | 3+3 | R | + |
| TDT09.0020L | TDT-09 | 20 | 43 | 20 | 101 | 3+3 | L | + |
| TDT09.0150 | TDT-09 | 20 | 52 | 20 | 115 | 3+3 | R | + |
| TDT09.0150L | TDT-09 | 20 | 52 | 20 | 115 | 3+3 | L | + |

TDT-15

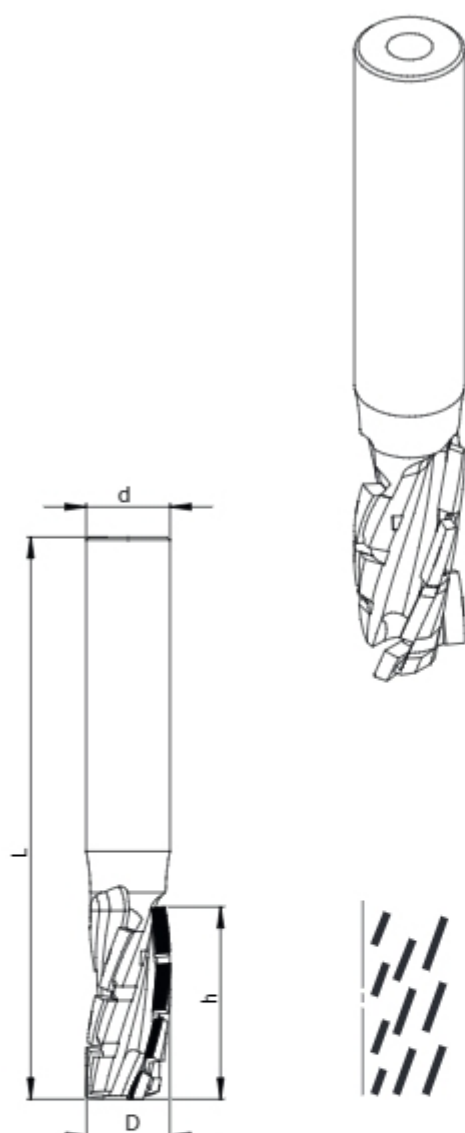
Turbo shank cutter type **TDT-15** designed for formatting and splitting on CNC routers with vacuum bed.

Type of work: formatting, splitting.

Material: chipboard, MDF, HDF.

Specification:

- used in highly efficient machining of raw material,
- chip flow up,
- D = 12, D = 16 resharable 2-3 times,
- D = 20 resharable 4-6 times,
- $P_{max} = 10-18 \text{ m/min}$,
- $n_{max} = 24\,000 \text{ r.p.m.}$



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z | ↗ | |
|------------------|--------|---------|---------|---------|---------|---|---|---|
| TDT015.0020 | TDT-15 | 12 | 25 | 12 | 75 | 3 | R | + |
| TDT015.0040 | TDT-15 | 16 | 25 | 16 | 75 | 3 | R | + |
| TDT015.0070 | TDT-15 | 20 | 40 | 25 | 106 | 3 | R | + |
| TDT015.0021 | TDT-15 | 12 | 25 | 25 | 106 | 3 | R | + |
| TDT015.0110 | TDT-15 | 12 | 35 | 12 | 88 | 3 | R | + |
| TDT015.0120 | TDT-15 | 16 | 25 | 16 | 106 | 3 | R | + |
| TDT015.0130 | TDT-15 | 16 | 35 | 16 | 106 | 3 | R | + |
| TDT015.0140 | TDT-15 | 16 | 43 | 16 | 106 | 3 | R | + |
| TDT015.0150 | TDT-15 | 20 | 25 | 25 | 106 | 3 | R | + |
| TDT015.0160 | TDT-15 | 20 | 35 | 25 | 106 | 3 | R | + |
| TDT015.0170 | TDT-15 | 20 | 43 | 20 | 106 | 3 | R | + |
| TDT015.0180 | TDT-15 | 20 | 60 | 25 | 106 | 3 | R | + |

Turbo shank cutter type **TDT-0151** designed for formatting and splitting on CNC routers with vacuum bed.

Type of work: formatting, splitting.

Material: chipboard, MDF, HDF.

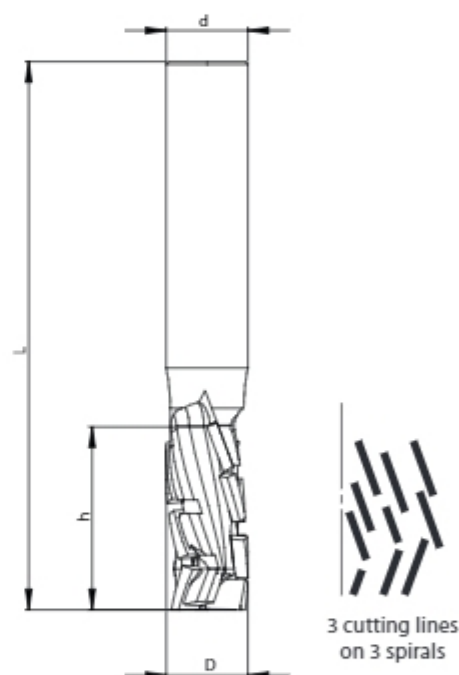
Specification:

- used in highly efficient machining of laminated material material: HDF, MDF, chipboard,
- very high cutting quality on bottom and top edge of the machined material thanks to alternative cutting angles,
- $D = 12$, $D = 16$ resharable 3-4 times,
- $D = 20$ resharable 4-6 times,
- $P_{max} = 10-15 \text{ m/min}$,
- $n_{max} = 24\,000 \text{ r.p.m.}$



Minimum rebate size of laminated material.

TDT-0151



| Catalogue number | Type | D mm | h mm | d mm | L mm | z | ↺ | |
|------------------|----------|------|------|------|------|---|---|---|
| TDT0151.S010 | TDT-0151 | 12 | 25 | 12 | 80 | 3 | R | • |
| TDT0151.S020 | TDT-0151 | 12 | 35 | 12 | 90 | 3 | R | + |
| TDT0151.S030 | TDT-0151 | 16 | 25 | 16 | 80 | 3 | R | + |
| TDT0151.S040 | TDT-0151 | 16 | 35 | 16 | 95 | 3 | R | • |
| TDT0151.S050 | TDT-0151 | 16 | 43 | 16 | 100 | 3 | R | + |
| TDT0151.S060 | TDT-0151 | 20 | 25 | 20 | 80 | 3 | R | + |
| TDT0151.S070 | TDT-0151 | 20 | 35 | 20 | 90 | 3 | R | + |
| TDT0151.S080 | TDT-0151 | 20 | 43 | 20 | 100 | 3 | R | + |

TDT-0153

3 full cutting lines
on 6 spirals

Turbo shank cutter type **TDT-0153** designed for formatting and splitting on CNC routers

PCD shank cutter from the TDT-TURBO group, resharpenable 3-4 times, with plunge tip and heavy duty body from special wolfram steel.

(W) wolfram steel body

TDT-0153 cutter strengthened body and design allows for a very quiet and stable work with feed speed up to 20 m/min with high cutting quality and increased life..

Type of work: formatting, splitting.


Material: chipboard, MDF, HDF, laminates.

Specification:

- used in highly efficient machining of laminated material: HDF, MDF, chipboard, laminates,
- very high cutting quality on bottom and top edge of the machined material thanks to alternative cutting angles,
- resharpenable 3-4 times,
- $P_{max} = 15-20$ m/min,
- $n_{max} = 24\,000$ r.p.m.

New dimension of Nesting



| Catalogue number | Type | D
mm | h
mm | d
mm | L
mm | z |  | |
|-------------------------|----------|---------|---------|---------|---------|-----|---|---|
| TDT0153.0013 (W) | TDT-0153 | 12 | 24 | 12 | 70 | 3+1 | R | + |
| TDT0153.0160 (W) | TDT-0153 | 16 | 35 | 16 | 95 | 3+1 | R | + |

Highly efficient turbo shank cutter z=4+4 type **TDT-10** designed for formatting, splitting, grooving and copying on CNC routers.

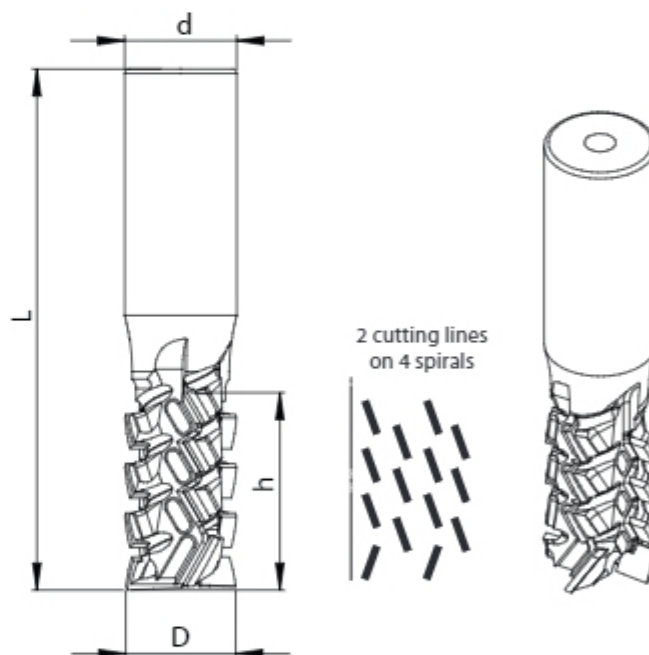
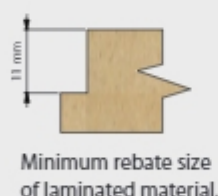
Type of work: formatting, splitting, grooving, copying.

Material: solid hardwood, exotic hardwood, chipboard, MDF, HDF, raw boards, melamine and paper, HPL, veneer, materials coated with finish foil.

Innovative construction of shank tools with increased density of cutting blades positioned spirally at a big angle. The cutters are designed for very efficient work with the highest quality of the machined material. Four simultaneously cutting blades are positioned at a very big shear angle. It guarantees very long life as well as quiet and stable work of the tool. Spirally arranged 4 cutting lines perfectly remove chip leaving the machined elements clean.

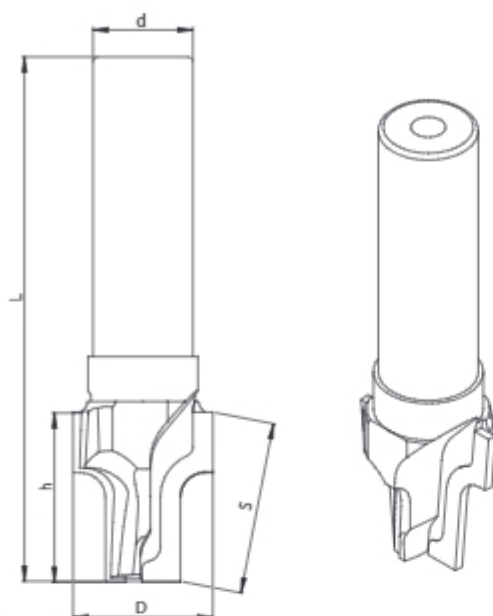
Specification:

- D = 20 resharable 5-6 times,
- D = 22, D = 25 resharable 7-9 times,
- two PCD drilling blades,
- $P_{max} = 20-25 \text{ m/min}$,
- $n_{max} = 24\,000 \text{ r.p.m.}$



| Catalogue number | Type | D mm | h mm | d mm | L mm | z | ↗ | |
|------------------|--------|------|------|------|------|-----|---|---|
| TDT010.0040 | TDT-10 | 20 | 25 | 20 | 87 | 4+4 | R | • |
| TDT010.0040L | TDT-10 | 20 | 25 | 20 | 87 | 4+4 | L | + |
| TDT010.0050 | TDT-10 | 20 | 35 | 20 | 97 | 4+4 | R | • |
| TDT010.0050L | TDT-10 | 20 | 35 | 20 | 97 | 4+4 | L | + |
| TDT010.0030 | TDT-10 | 22 | 43 | 16 | 105 | 4+4 | R | • |
| TDT010.0030L | TDT-10 | 22 | 43 | 16 | 105 | 4+4 | L | + |
| TDT010.0020 | TDT-10 | 25 | 43 | 25 | 116 | 4+4 | R | • |
| TDT010.0020L | TDT-10 | 25 | 43 | 25 | 116 | 4+4 | L | + |

TPD-05 R or L



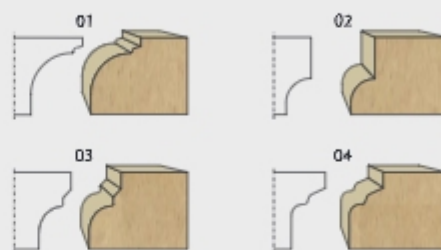
Profile shank cutter type **TPD-05** right or left designed for profiling on CNC machines.

Type of work: profiling.

Material: chipboard, plywood, MDF.

Specification:

- $P_{max} = 8-12$ m/min,
- $N_{max} = 18\,000$ r.p.m.

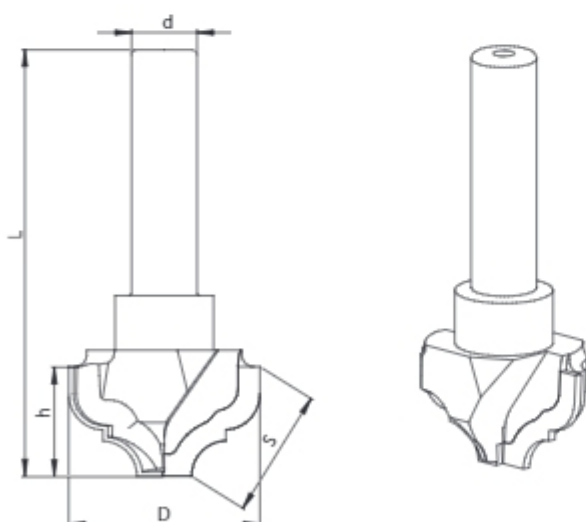


Example profiles.



| Type | D
mm | h
mm | d
mm | L
mm | s
mm | z | n_{max} | |
|--------|---------|---------|---------|---------|---------|---|-----------|---|
| TPD-05 | 26 | 28 | 20 | 68 | 29,2 | 2 | 18000 | + |

TPD-07 R or L



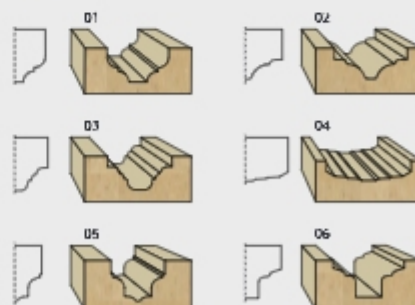
Profile shank cutter type **TPD-07** right or left designed for profiling on CNC machines.

Type of work: profiling.

Material: chipboard, plywood, MDF.

Specification:

- $P_{max} = 8-12$ m/min,
- $N_{max} = 18\,000$ r.p.m.



Example profiles.



| Type | D
mm | h
mm | d
mm | L
mm | s
mm | z | n_{max} | |
|--------|---------|---------|---------|---------|---------|---|-----------|---|
| TPD-07 | 34 | 24 | 12 | 55 | 25,8 | 2 | 18000 | + |

Profile shank cutter type **TPD-08** right or left designed for profiling on CNC machines.

Type of work: profiling.

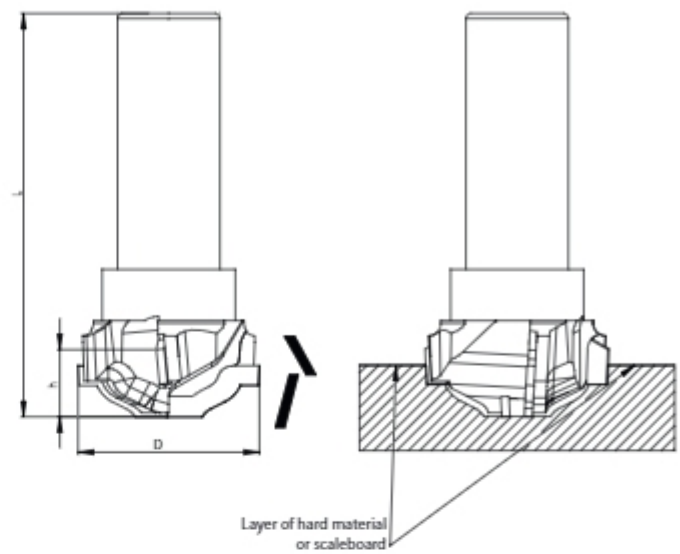
Material: chipboard, plywood, MDF.

Specification:

- profile shank cutters are designed for very precise machining,
- tools are equipped with additional blades directing chip down,
- $P_{max} = 8-12 \text{ m/min}$,
- $N_{max} = 24\,000 \text{ r.p.m.}$



TPD-08 R or L



| Type | D
mm | h
mm | d
mm | L
mm | z | n_{max} | |
|--------|---------|---------|---------|---------|-----|-----------|---|
| TPD-08 | 35,4 | 12 | 20 | 78 | 2+2 | 18000 | + |

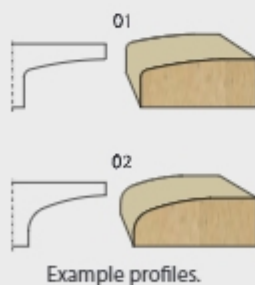
Profile shank cutter type **TPD-10** right or left designed for profiling on CNC machines.

Type of work: profiling.

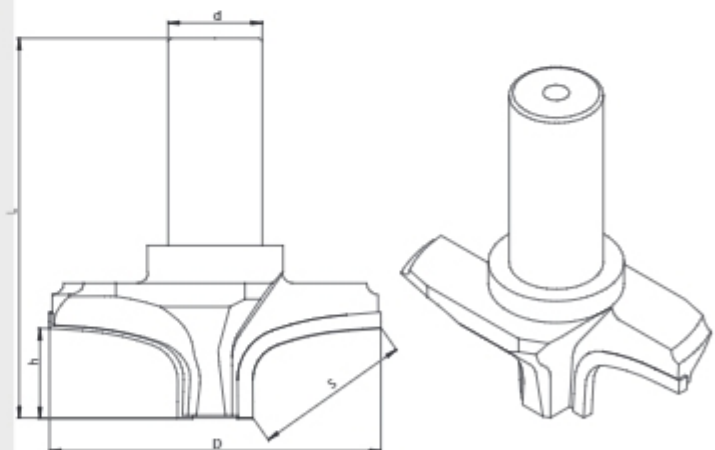
Material: chipboard, plywood, MDF.

Specification:

- $P_{max} = 8-12 \text{ m/min}$,
- $N_{max} = 18\,000 \text{ r.p.m.}$

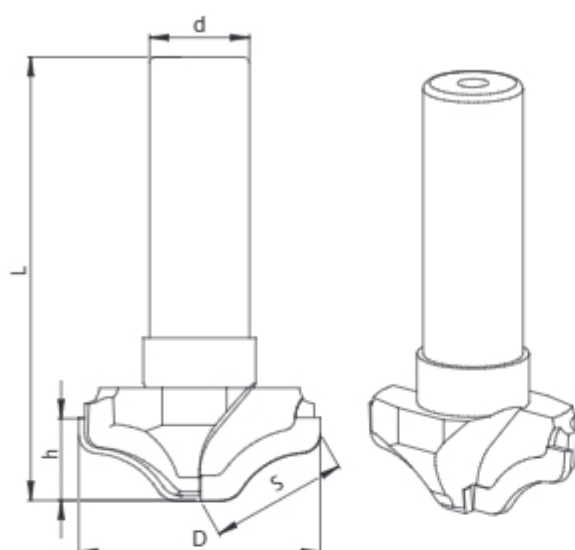


TPD-10 R or L



| Type | D
mm | h
mm | d
mm | L
mm | s
mm | z | n_{max} | |
|--------|---------|---------|---------|---------|---------|---|-----------|---|
| TPD-10 | 81 | 21 | 16 | 75 | 37 | 2 | 18000 | + |

TPD-13 R or L



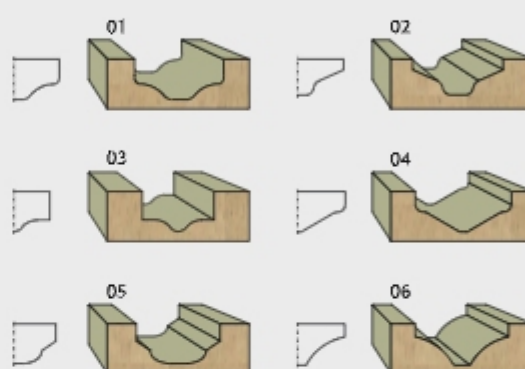
Profile shank cutter type **TPD-13** right or left designed for profiling on CNC machines.

Type of work: profiling.

Material: chipboard, plywood, MDF.

Specification:

- $P_{\max} = 8-12 \text{ m/min}$,
- $N_{\max} = 24\,000 \text{ r.p.m.}$



Example profiles.



| Type | D
mm | h
mm | d
mm | L
mm | s
mm | z | n _{max} | |
|--------|---------|---------|---------|---------|---------|---|------------------|---|
| TPD-13 | 36 | 12 | 25 | 53,6 | 21,6 | 2 | 18000 | + |

Profile shank cutter type **TPD-18** designed for T-grooving.

Type of work: profiling.

Material: chipboard, plywood, MDF.

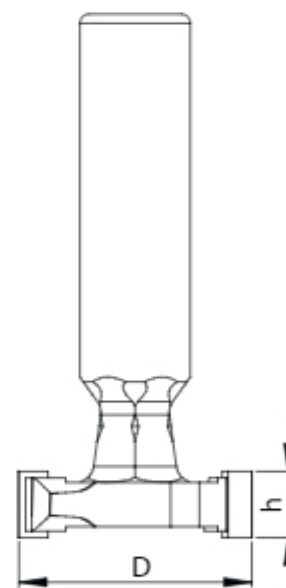
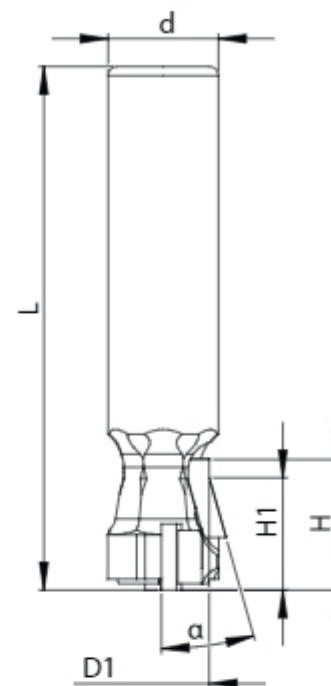
Specification:

- highly efficient machining quality thank to properly selected construction and PKD type,
- tools offered also in special versions (on request),
- sharpening zone 2 mm,
- $P_{max} = 3-5 \text{ m/min.}$
- $N_{max} = 24\,000 \text{ r.p.m.}$



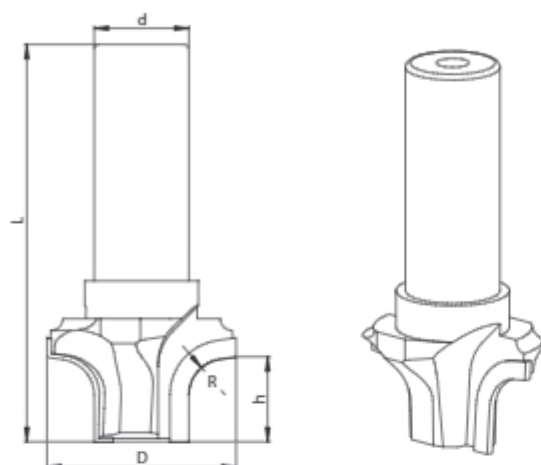
Example profiles.

TPD-18



| Catalogue number | Type | D
mm | h
mm | d
mm | D ₁
mm | L
mm | H
mm | H ₁
mm | α | z | ↗ | |
|------------------|--------|---------|---------|---------|----------------------|---------|---------|----------------------|-------|-----|---|---|
| TPD018.0170 | TPD-18 | 25,40 | 7,20 | 12 | 10,50 | 60 | 14,20 | 12,20 | 15,6° | 2+1 | R | + |
| TPD018.0110 | TPD-18 | 27,40 | 7,60 | 16 | 10,50 | 63 | 13,50 | 7,60 | 20° | 2+1 | R | + |
| TPD018.0070 | TPD-18 | 34,30 | 10,50 | 12 | 29,60 | 60 | 20,50 | | | 2+1 | R | + |
| TPD018.0050 | TPD-18 | 36,00 | 7,00 | 10 | 32,25 | 60 | 14,00 | 11,00 | 45° | 2+1 | R | + |
| TPD018.0010 | TPD-18 | 37,75 | 9,15 | 25 | 27,85 | 90 | 17,80 | 12,35 | 20° | 2+1 | R | + |

TPD-20 R or L



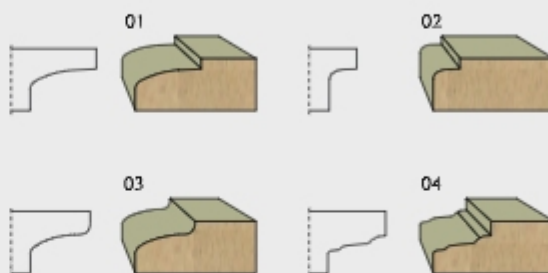
Profile shank cutter type **TPD-20** designed for profiling on CNC machines.

Type of work: profiling.

Material: chipboard, plywood, MDF.

Specification:

- $P_{max} = 8-12$ m/min,
- $N_{max} = 24\,000$ r.p.m.

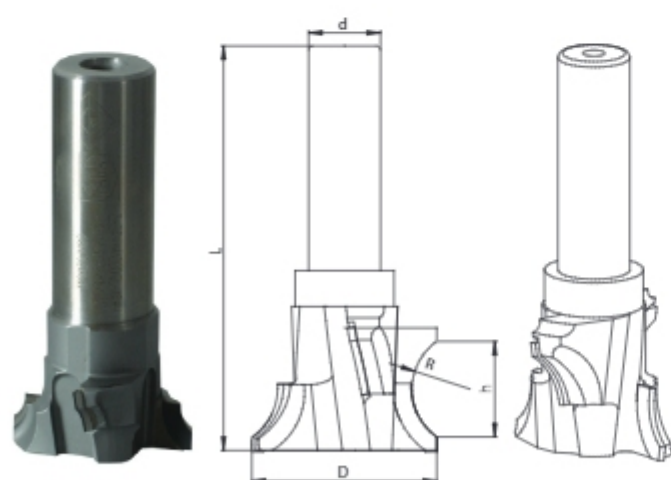


Example profiles.



| Type | D
mm | h
mm | d
mm | L
mm | R
mm | z | n_{max} |
|--------|---------|---------|---------|---------|---------|---|-----------|
| TPD-20 | 42 | 22 | 20 | 75 | 8 | 2 | 18000 + |

TPD-30 R or L



Profile shank cutter type **TPD-30** designed for profiling on CNC machines.

Type of work: profiling.

Material: chipboard, plywood, MDF.

Specification:

- $P_{max} = 8-12$ m/min,
- $N_{max} = 24\,000$ r.p.m.



| Type | D
mm | h
mm | d
mm | L
mm | R
mm | z | n_{max} |
|--------|---------|---------|---------|---------|---------|---|-----------|
| TPD-30 | 52 | 40 | 25 | 105 | 26 | 4 | 18000 + |

Straight brazed cutter type **FD-01**.

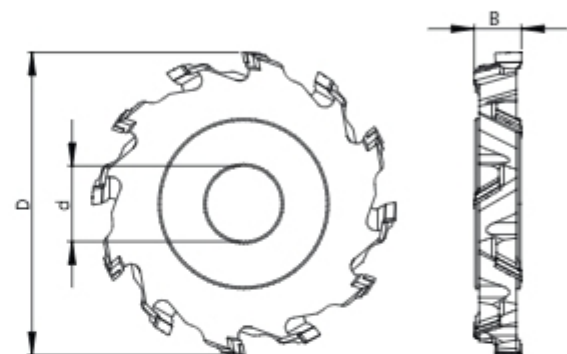
Type of work: formatting.

Material: chipboard, plywood, MDF, HDF.

Specification:

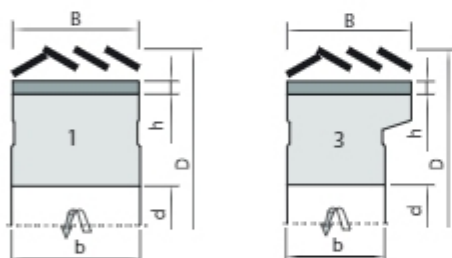
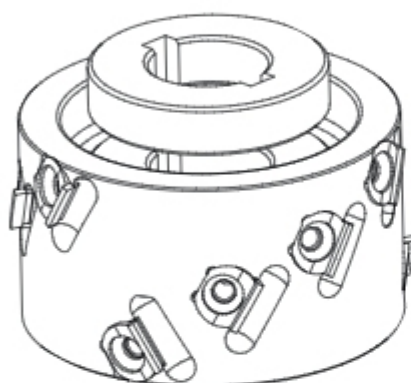
- $P_{max} = 20-30 \text{ m/min}$,
- $N_{max} = 9\,000 \text{ r.p.m.}$

FD-01



| Catalogue number | Type | D
mm | B
mm | d
mm | z | n_{max} | |
|------------------|-------|---------|---------|---------|-----|-----------|---|
| FD01.012 | FD-01 | 50 | 20 | 16 | 4+4 | 9000 | + |
| FD01.005 | FD-01 | 70 | 10 | 20 | 3+3 | 9000 | + |
| FD01.0020 | FD-01 | 100 | 22 | 25 | 3+3 | 9000 | + |
| FD01.030 | FD-01 | 125 | 8 | 40 | 4+4 | 9000 | + |
| FD01.009 | FD-01 | 125 | 12 | 30 | 6+6 | 9000 | + |
| FD01.022 | FD-01 | 125 | 15 | 30 | 4+4 | 9000 | + |
| FD001.0260 | FD-01 | 125 | 20 | 30 | 4+4 | 9000 | + |
| FD001.0270 | FD-01 | 125 | 25 | 30 | 4+4 | 9000 | + |
| FD01.011 | FD-01 | 125 | 28 | 30 | 4+4 | 9000 | + |
| FD01.014 | FD-01 | 125 | 30 | 30 | 4+4 | 9000 | + |
| FD01.018 | FD-01 | 125 | 45 | 30 | 4+4 | 9000 | + |
| FD01.002 | FD-01 | 160 | 15 | 30 | 4+4 | 9000 | + |
| FD01.0026 | FD-01 | 160 | 15 | 30 | 6+6 | 9000 | + |
| FD001.0230 | FD-01 | 160 | 17 | 40 | 8+8 | 9000 | + |
| FD001.0280 | FD-01 | 160 | 20 | 30 | 4+4 | 9000 | + |
| FD001.0290 | FD-01 | 160 | 25 | 30 | 4+4 | 9000 | + |
| FD001.0100 | FD-01 | 180 | 10,5 | 40 | 8+8 | 9000 | + |
| FD001.0130 | FD-01 | 180 | 16 | 30 | 4+4 | 9000 | + |
| FD01.008 | FD-01 | 200 | 25 | 30 | 6+6 | 9000 | + |

FDKA



Cutter head **FDKA** with aluminum body and exchangeable inserts. Multi-use aluminum body and exchangeable blades give significantly lower maintenance costs after a couple of life cycles.

Aluminum body results in tool weight lower by 60%. It significantly reduces spindle work load compared to steel body tools. Lower tool weight means also noise reduction and stable machine work.

Type of work: formatting.

Material: veneered chipboard covered with laminate, foil or paper.

Specification:

- $P_{max} = 20-25 \text{ m/min}$,
- $N_{max} = 16\,500 \text{ r.p.m.}$



| Cat. number | Type | D
mm | B
mm | b
mm | d
mm | z | Nr | n _{max} | ↗ |
|-------------|------|---------|---------|---------|---------|-----|----|------------------|-----|
| FDKA.0010 | FDKA | 100 | 44 | 40,6 | 30 | 3+3 | 3 | 16 500 | R • |
| FDKA.0010L | FDKA | 100 | 44 | 40,6 | 30 | 3+3 | 3 | 16 500 | L • |
| FDKA.0030 | FDKA | 125 | 64 | 40,6 | 30 | 3+3 | 3 | 12 500 | R • |
| FDKA.0030L | FDKA | 125 | 64 | 40,6 | 30 | 3+3 | 3 | 12 500 | L • |

Spare parts for cutter heads FDKA

| Cat. nr | Name | Dimensions | | |
|------------------------------|---------------------------|----------------------------------|--|---|
| PD.FDKA.0010
PD.FDKA.0030 | Spacer ring | 60 x 13 x 30,1
60 x 34 x 30,1 | | + |
| P.FDKA | Insert
(not sharpened) | 16 x 4 | | + |

| Cat. nr | Name | Dimensions | | |
|-----------|----------------|------------|--|---|
| WHAS00006 | Screw TOR 1128 | M6x10 | | • |

Additional ring makes cutter more universal.

Option Nr. 1 b=53,6mm with additional ring PD.FDKA.0010 or PD.FDKA.0030.

Straight brazed cutter type **FD-002**, designed for surface formatting on edge banders and formatting machines with mechanical feed. Helically arranged blades, positioned at a big angle guarantee very efficient and high quality machining.

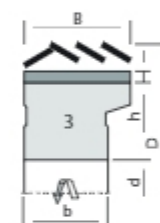
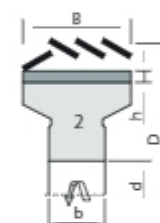
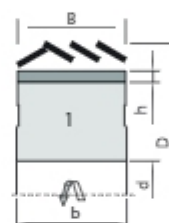
Type of work: formatting.

Material: veneered chipboard covered with laminate, foil or paper.

Specification:

- sharpening zone for DIA = 3 mm is 2 mm,
- sharpening zone for DIA = 5 mm is 4 mm,
- big shear angle guarantees high machining quality,
- $P_{max} = 20-26 \text{ m/min}$,
- $n_{max} = 15\,000 \text{ rpm}$.

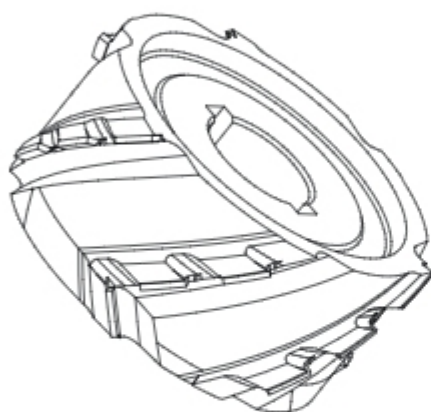
FD-002



| Machine | Type | D
mm | B
mm | b
mm | d
mm | z | Keyway
mm | Nr | DIA
h=3mm | DIA
h=5mm |
|------------|--------|---------|---------|---------|---------|-----|--------------|----|--------------|--------------|
| IMA/Brandt | FD-002 | 100 | 34 | 37,6 | 30 | 3+3 | 3x8 | 1 | + | + |
| IMA/Brandt | FD-002 | 100 | 43 | 40,6 | 30 | 3+3 | 3x8 | 3 | + | + |
| | FD-002 | 100 | 43 | 45 | 30 | 3+3 | 3x8 | 1 | + | + |
| IMA/Brandt | FD-002 | 100 | 48 | 40,6 | 30 | 3+3 | 3x8 | 3 | + | + |
| Holzner | FD-002 | 100 | 48 | 25 | 30 | 3+3 | 3x8 | 2 | + | + |
| | FD-002 | 100 | 48 | 50 | 30 | 3+3 | 3x8 | 1 | + | + |
| Holzner | FD-002 | 100 | 63 | 25 | 30 | 3+3 | 3x8 | 2 | + | + |
| Homag | FD-002 | 125 | 34 | 37,6 | 30 | 3+3 | 3x8 | 1 | + | + |
| Homag | FD-002 | 125 | 63 | 40,6 | 30 | 3+3 | 3x8 | 2 | + | + |
| IMA | FD-002 | 125 | 63 | 40,6 | 30 | 3+3 | 3x8 | 3 | + | + |

| Catalogue number | Type | Machine | D
mm | B
mm | b
mm | d
mm | z | Nr | DIA h
mm | ↗ |
|------------------|--------|------------|---------|---------|---------|---------|-----|----|-------------|-----|
| FD002.1560 | FD-002 | IMA/Brandt | 100 | 43,5 | 40,6 | 30 | 3+3 | 3 | 3 | R • |
| FD002.1560L | FD-002 | IMA/Brandt | 100 | 43,5 | 40,6 | 30 | 3+3 | 3 | 3 | L • |
| FD002.1561 | FD-002 | IMA/Brandt | 100 | 43,5 | 40,6 | 30 | 3+3 | 3 | 5 | R • |
| FD002.1561L | FD-002 | IMA/Brandt | 100 | 43,5 | 40,6 | 30 | 3+3 | 3 | 5 | L • |
| FD002.1600 | FD-002 | IMA/Brandt | 100 | 48 | 40,6 | 30 | 3+3 | 3 | 3 | R • |
| FD002.1600L | FD-002 | IMA/Brandt | 100 | 48 | 40,6 | 30 | 3+3 | 3 | 3 | L • |
| FD002.2100 | FD-002 | IMA/Brandt | 100 | 63 | 40,6 | 30 | 3+3 | 3 | 3 | R • |
| FD002.2100L | FD-002 | IMA/Brandt | 100 | 63 | 40,6 | 30 | 3+3 | 3 | 3 | L • |

FD-025



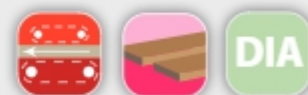
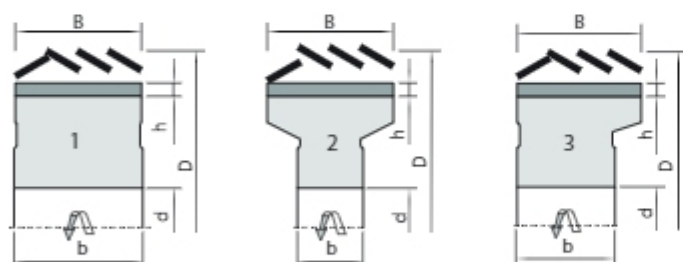
Straight brazed cutter type **FD-025**, designed for surface formatting on edge banders and formatting machines with mechanical feed. Helically arranged blades, positioned at a big angle guarantee very efficient and high quality machining of hard-machinable materials.

Type of work: formatting.

Material: veneered chipboard covered with laminate, foil or paper.

Specification:

- sharpening zone for DIA = 3 mm is 2 mm,
- sharpening zone for DIA = 5 mm is 4 mm,
- **very big shear angle** guarantees high machining quality,
- $P_{max} = 22-26 \text{ m/min}$
- $N_{max} = 15\,000 \text{ r.p.m.}$



| Machine | Type | D
mm | B
mm | b
mm | d
mm | z | Keyway
mm | Nr | DIA
h=3mm | DIA
h=5mm |
|------------|--------|---------|---------|---------|---------|-----|--------------|----|--------------|--------------|
| IMA/Brandt | FD-025 | 100 | 34 | 37,6 | 30 | 3+3 | 3x8 | 1 | + | + |
| IMA/Brandt | FD-025 | 100 | 43 | 40,6 | 30 | 3+3 | 3x8 | 3 | + | + |
| IMA/Brandt | FD-025 | 100 | 48 | 40,6 | 30 | 3+3 | 3x8 | 3 | + | + |
| Holzler | FD-025 | 100 | 48 | 25 | 30 | 3+3 | 3x8 | 2 | + | + |
| Holzler | FD-025 | 100 | 63 | 25 | 30 | 3+3 | 3x8 | 2 | + | + |
| Homag | FD-025 | 125 | 34 | 37,6 | 30 | 3+3 | 3x8 | 1 | + | + |
| Homag | FD-025 | 125 | 63 | 40,6 | 30 | 3+3 | 3x8 | 2 | + | + |
| IMA | FD-025 | 125 | 63 | 40,6 | 30 | 3+3 | 3x8 | 3 | + | + |

Straight brazed cutter type **FD-021**, designed for surface formatting on edge banders and formatting machines with mechanical feed.

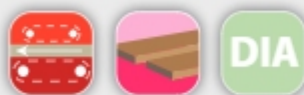
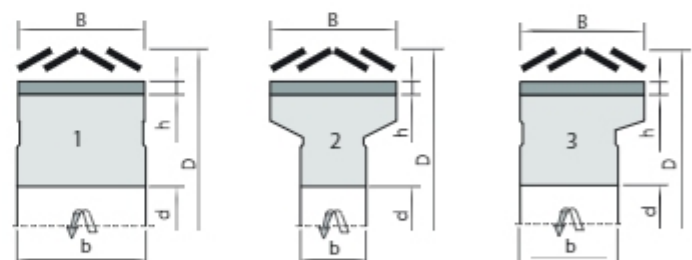
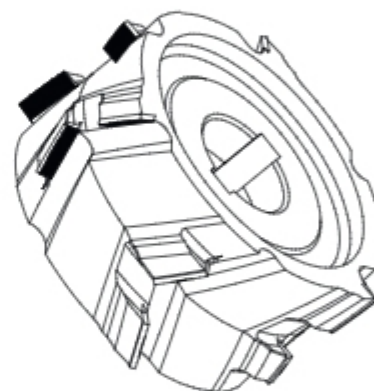
Type of work: formatting.

Material: chipboard, plywood, MDF, HDF.

Specification:

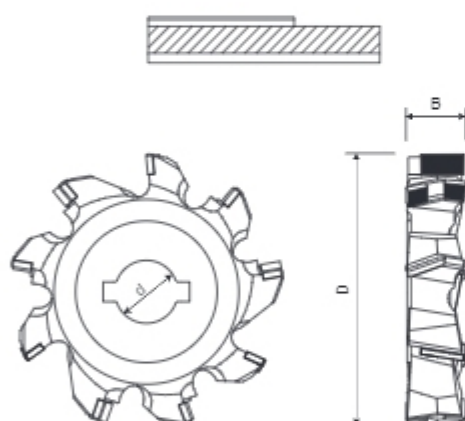
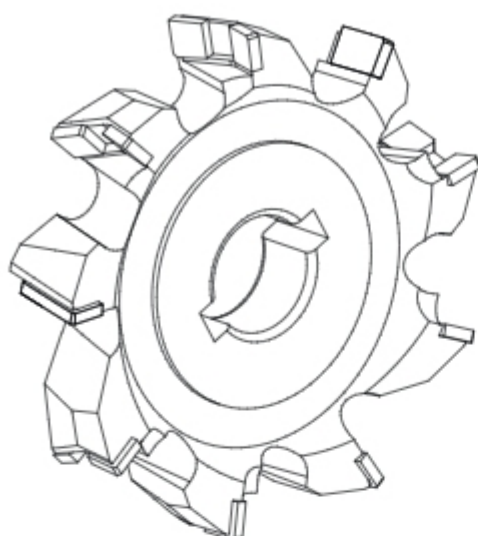
- symmetrically arranged blades,
- $P_{max} = 22-26 \text{ m/min}$,
- $n_{max} = 15\,000 \text{ rpm}$.

FD-021



| Machine | Catalogue number | Type | D
mm | B
mm | b
mm | d
mm | z | Keyway
mm | Nr | |
|------------|------------------|--------|---------|---------|---------|---------|-----|--------------|----|---|
| OTT | FD021.0010 | FD-021 | 85 | 45 | 45 | 30 | 3+3 | 8x3 | 1 | + |
| IMA/Brandt | FD021.0020 | FD-021 | 100 | 34 | 37,6 | 30 | 3+3 | 8x3 | 1 | • |
| Holzner | FD021.0030 | FD-021 | 100 | 48 | 25 | 30 | 3+3 | 8x3 | 2 | + |
| IMA/Brandt | FD021.0041 | FD-021 | 100 | 43,6 | 40,6 | 30 | 3+3 | 8x3 | 2 | + |
| Holzner | FD021.0051 | FD-021 | 100 | 52 | 25 | 30 | 3+3 | 8x3 | 2 | + |
| Homag | FD021.0060 | FD-021 | 100 | 34 | 37,6 | 30 | 3+3 | 8x3 | 1 | + |
| Homag | FD021.0180 | FD-021 | 125 | 43 | 40,6 | 30 | 3+3 | 8x3 | 1 | + |
| Homag | FD021.0170 | FD-021 | 125 | 63 | 40,6 | 30 | 3+3 | 8x3 | 2 | + |

FD-03



Straight brazed cutter type **FD-03**, designed for pre-cutting, before profiling veneered elements

FD-03 cutter is used when thick layer of the removed material does not allow for obtaining high quality edges on edge banders and production lines.

Type of work: pre-cutting.

Material: chipboard, MDF.

Specification:

- $P_{max} = 18 \text{ m/min}$,
- $N_{max} = 9\,000 \text{ r.p.m.}$



| Catalogue number | Type | D
mm | B
mm | d
mm | z | n_{max} | |
|------------------|-------|---------|---------|---------|-------|-----------|---|
| FD003.0010 | FD-03 | 70 | 15 | 16 | 9+3+3 | 9000 | + |
| FD003.0020 | FD-03 | 70 | 25 | 20 | 9+3+3 | 9000 | + |

Set of straight brazed cutters type **ZFD-01** designed for formatting machines.

Type of work: formatting.

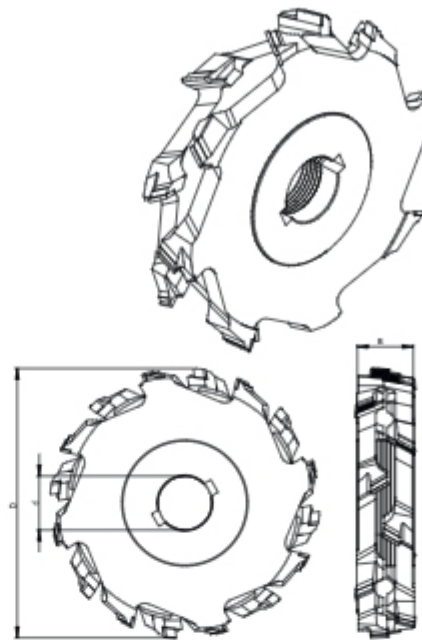
Material: chipboard, plywood, MDF, HDF.

Specification:

- variable sharpening zone,
- machining materials with various width,
- $P_{max} = 35 \text{ m/min}$,
- $N_{max} = 9\,000 \text{ r.p.m.}$



ZFD-01



| Catalogue number | Type | D
mm | B
mm | d
mm | z | n _{max} | |
|------------------|--------|---------|---------|---------|-----|------------------|---|
| ZFD001.0060 | ZFD-01 | 120 | 24÷36 | 30 | 6+6 | 9000 | + |
| ZFD01.001 | ZFD-01 | 125 | 24÷36 | 30 | 6+6 | 9000 | + |
| ZFD001.0040 | ZFD-01 | 125 | 24÷45 | 30 | 6+6 | 9000 | + |
| ZFD01.003 | ZFD-01 | 140 | 34÷60 | 30 | 6+6 | 9000 | + |
| ZFD001.0070 | ZFD-01 | 160 | 24÷36 | 30 | 6+6 | 9000 | + |

Set of straight brazed cutters type **ZFD-02** designed for formatting machines.

Type of work: formatting.

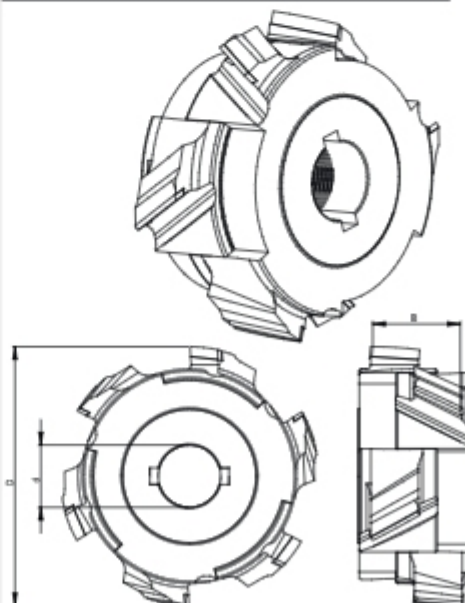
Material: chipboard, plywood, MDF, HDF.

Specification:

- variable sharpening zone,
- machining materials with various width,
- $P_{max} = 20\text{-}25 \text{ m/min}$,
- $N_{max} = 9\,000 \text{ r.p.m.}$



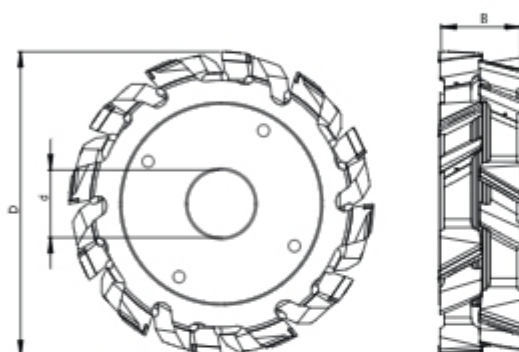
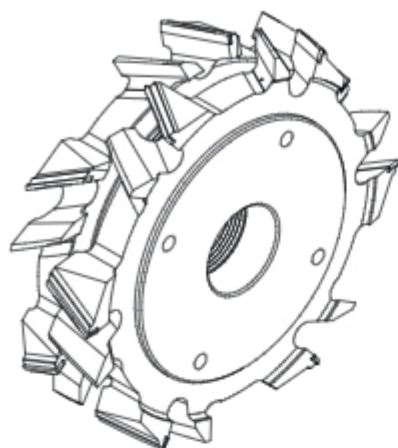
ZFD-02



11

| Catalogue number | Type | D
mm | B
mm | d
mm | z | n _{max} | |
|------------------|--------|---------|---------|---------|-----|------------------|---|
| ZFD02.020 | ZFD-02 | 120 | 24÷36 | 30 | 3+3 | 9000 | + |
| ZFD02.021 | ZFD-02 | 125 | 24÷36 | 30 | 3+3 | 9000 | + |
| ZFD02.022 | ZFD-02 | 125 | 24÷45 | 30 | 3+3 | 9000 | + |

ZFD-002



Set of straight brazed cutters type **ZFD-01** designed for formatting machines.

Type of work: formatting.

Material: chipboard, plywood, MDF, HDF.

Specification:

- optionally offered with anti-kickback system and blade protection against removed material,
- machining materials with various width possible thanks to axial regulation of working part width,
- very long life of tools thanks to variable cutting points zone,
- $P_{max} = 30 \text{ m/min.}$
- $N_{max} = 6\,000 \text{ r.p.m.}$



| Catalogue number | Type | D
mm | B
mm | d
mm | z | n_{max} | |
|------------------|---------|---------|---------|---------|-----|-----------|---|
| ZFD002.2010 | ZFD-002 | 180 | 22÷32 | 30 | 4+4 | 6000 | + |
| ZFD002.2020 | ZFD-002 | 180 | 24÷36 | 30 | 4+4 | 6000 | + |
| ZFD002.2030 | ZFD-002 | 180 | 34÷42 | 30 | 4+4 | 6000 | + |
| ZFD002.2040 | ZFD-002 | 180 | 22÷32 | 40 | 4+4 | 6000 | + |
| ZFD002.2050 | ZFD-002 | 180 | 24÷36 | 40 | 4+4 | 6000 | + |
| ZFD002.2060 | ZFD-002 | 180 | 34÷42 | 40 | 4+4 | 6000 | + |

Profile brazed cutters type **FPD-102** right or left designed for profiling machines.

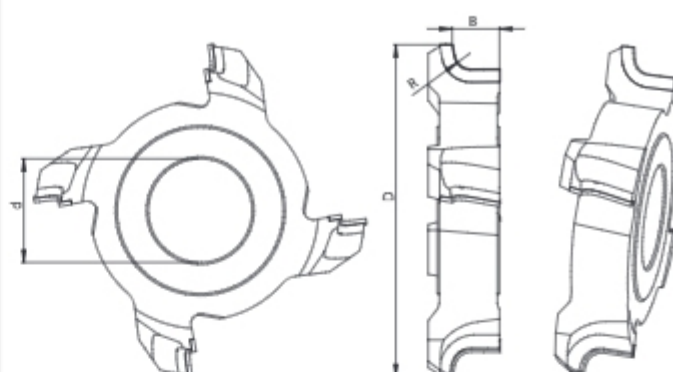
Type of work: profiling.

Material: chipboard, plywood, MDF.

Specification:

- $P_{max} = 25 \text{ m/min}$,
- $N_{max} = 9\,000 \text{ r.p.m.}$

FPD-102 R or L



| Catalogue number | Type | D
mm | B
mm | R
mm | d
mm | z | n_{max} | |
|------------------|---------|---------|---------|---------|---------|---|-----------|---|
| FPD102.0020L | FPD-102 | 160 | 30 | 10 | 35 | 4 | 9000 | + |
| FPD102.0030L | FPD-102 | 160 | 30 | 12 | 35 | 4 | 9000 | + |
| FPD102.0040L | FPD-102 | 160 | 30 | 14 | 35 | 4 | 9000 | + |
| FPD102.0050L | FPD-102 | 160 | 30 | 16 | 35 | 4 | 9000 | + |

Profile brazed cutters type **FPD-116** right or left designed for profiling machines.

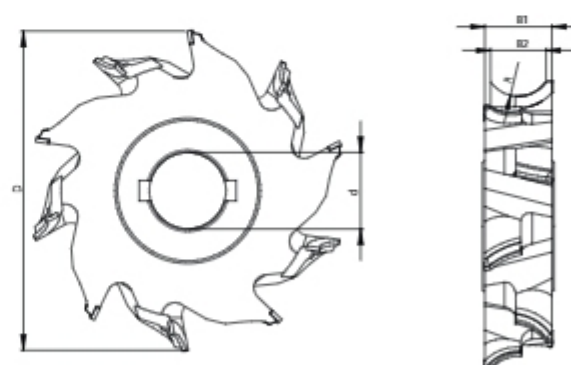
Type of work: profiling.

Material: chipboard, plywood, MDF.

Specification:

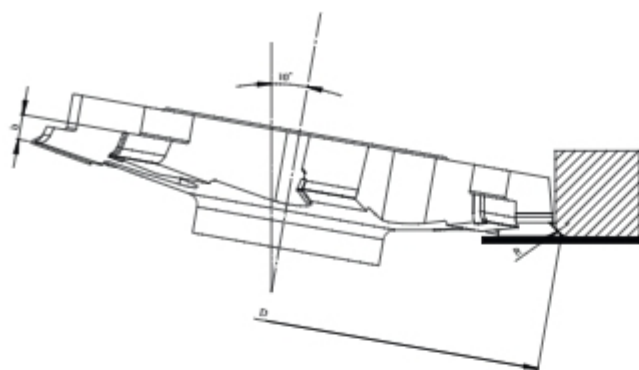
- $P_{max} = 18\text{--}25 \text{ m/min}$,
- $N_{max} = 9\,000 \text{ r.p.m.}$

FPD-116



| Catalogue number | Type | D
mm | B ₁
mm | B ₂
mm | R
mm | d
mm | z | n_{max} | |
|------------------|---------|---------|----------------------|----------------------|---------|---------|-----|-----------|---|
| FPD116.0020 | FPD-116 | 100 | 30 | 26 | 18 | 30 | 4+4 | 9000 | + |
| FPD116.0090 | FPD-116 | 125 | 56 | 40 | 20 | 30 | 3+3 | 9000 | + |
| FPD116.0010 | FPD-116 | 160 | 18 | 17 | 9 | 35 | 6+6 | 9000 | + |
| FPD116.0500 | FPD-116 | 180 | 30 | 24 | 16 | 35 | 4+4 | 9000 | + |
| FPD116.0510 | FPD-116 | 180 | 48 | 40 | 25 | 35 | 4+4 | 9000 | + |
| FPD116.0520 | FPD-116 | 180 | 64 | 56 | 35 | 35 | 4+4 | 9000 | + |

FPD-300



Profile brazed cutters **FPD-300** with PCD blades.

Type of work: postforming.

Material: chipboard, plywood, MDF.

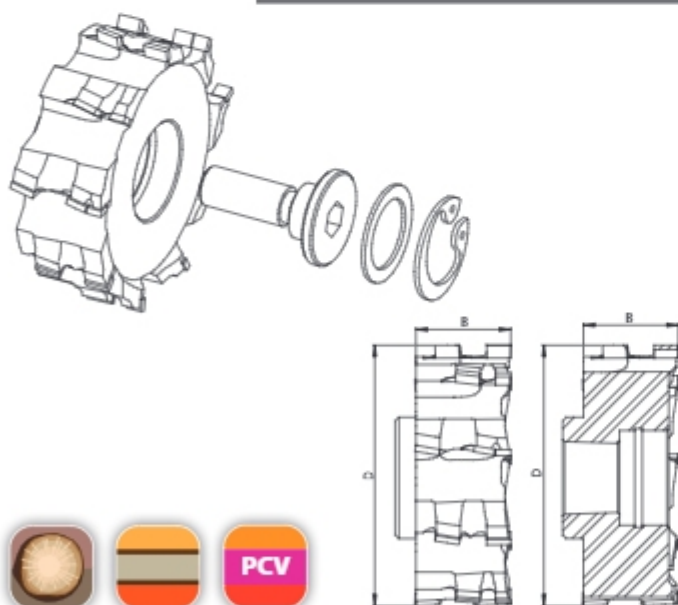
Specification:

- for Homag and IMA machines,
- $P_{max} = 25 \text{ m/min}$,
- $N_{max} = 9\,000 \text{ r.p.m.}$



| Catalogue number | Type | D
mm | R
mm | d
mm | z | |
|------------------|---------|---------|---------|---------|-----|---|
| FPD300.3010 | FPD-300 | 180 | 3 | 35 | 4+4 | + |
| FPD300.3020 | FPD-300 | 180 | 4 | 35 | 4+4 | + |
| FPD300.3030 | FPD-300 | 180 | 5 | 35 | 4+4 | + |
| FPD300.3040 | FPD-300 | 180 | | 35 | 4+4 | + |
| FPD300.3050 | FPD-300 | 200 | | 35 | 4+4 | + |

FD-500



Profile brazed cutters **FD-500** designed for edge beveling.

Type of work: edge machining.

Material: solid hardwood, veneered board, plastics.

Specification:

- for Homag and IMA machines,
- safety ring HSK25R guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality,
- blade with shear angle,
- $N_{max} = 18\,000 \text{ r.p.m.}$



| Catalogue number | Type | D
mm | B
mm | d
mm | z | n_{max} | |
|------------------|--------|---------|---------|---------|---------|-----------|---|
| FD500.0130 | FD-500 | 70 | 20 | HSK25 | 9+3+3 | 18000 | + |
| FD500.0101 | FD-500 | 70 | 50 | HSK25 | 9+3+3+3 | 18000 | + |
| FD500.0101L | FD-500 | 70 | 50 | HSK25 | 9+3+3+3 | 18000 | + |
| FD500.0110P | FD-500 | 75 | 22 | 20 | 12+4 | 18000 | + |
| FD500.0110 | FD-500 | 75 | 22 | 20 | 12+4 | 18000 | + |
| FD500.0140L | FD-500 | 75 | 25 | HSK25 | 12+4 | 18000 | + |

Profile brazed cutters **FPD-501** designed for edge milling

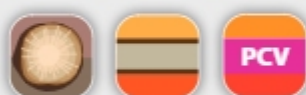
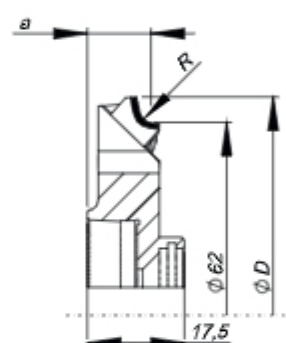
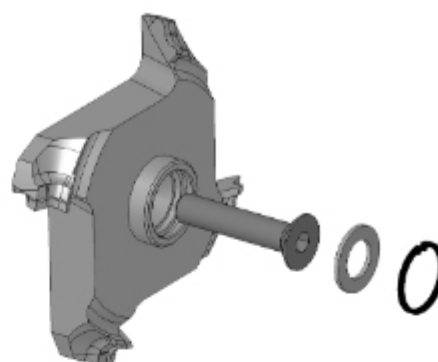
Type of work: edge rounding


Material: solid hardwood, veneered board, edging from plastics

Specification:

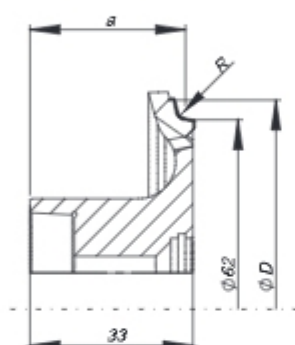
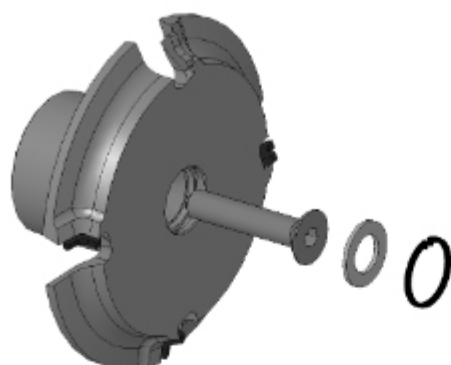
- for Homag machines
- safety ring HSK32 guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality
- blade with shear angle
- $N_{max} = 18\,000$ r.p.m.

FPD-501



| Catalogue number | D
mm | R
mm | a
mm | d
mm | z | n_{max} |  | |
|------------------|---------|---------|---------|---------|---|-----------|---|---|
| FPD501.0010.4 | 68,1 | 1,0 | 11,5 | HSK32 | 4 | 18000 | R | + |
| FPD501.0010.4L | 68,1 | 1,0 | 11,5 | HSK32 | 4 | 18000 | L | + |
| FPD501.0015.4 | 68,1 | 1,5 | 11,5 | HSK32 | 4 | 18000 | R | + |
| FPD501.0015.4L | 68,1 | 1,5 | 11,5 | HSK32 | 4 | 18000 | L | + |
| FPD501.0020.4 | 71,2 | 2,0 | 11,5 | HSK32 | 4 | 18000 | R | + |
| FPD501.0020.4L | 71,2 | 2,0 | 11,5 | HSK32 | 4 | 18000 | L | + |
| FPD501.0025.4 | 71,2 | 2,5 | 11,5 | HSK32 | 4 | 18000 | R | + |
| FPD501.0025.4L | 71,2 | 2,5 | 11,5 | HSK32 | 4 | 18000 | L | + |
| FPD501.0030.4 | 71,2 | 3,0 | 11,5 | HSK32 | 4 | 18000 | R | + |
| FPD501.0030.4L | 71,2 | 3,0 | 11,5 | HSK32 | 4 | 18000 | L | + |
| FPD501.0010.6 | 68,1 | 1,0 | 11,5 | HSK32 | 6 | 18000 | R | + |
| FPD501.0010.6L | 68,1 | 1,0 | 11,5 | HSK32 | 6 | 18000 | L | + |
| FPD501.0015.6 | 68,1 | 1,5 | 11,5 | HSK32 | 6 | 18000 | R | + |
| FPD501.0015.6L | 68,1 | 1,5 | 11,5 | HSK32 | 6 | 18000 | L | + |
| FPD501.0020.6 | 71,2 | 2,0 | 11,5 | HSK32 | 6 | 18000 | R | + |
| FPD501.0020.6L | 71,2 | 2,0 | 11,5 | HSK32 | 6 | 18000 | L | + |
| FPD501.0025.6 | 71,2 | 2,5 | 11,5 | HSK32 | 6 | 18000 | R | + |
| FPD501.0025.6L | 71,2 | 2,5 | 11,5 | HSK32 | 6 | 18000 | L | + |
| FPD501.0030.6 | 71,2 | 3,0 | 11,5 | HSK32 | 6 | 18000 | R | + |
| FPD501.0030.6L | 71,2 | 3,0 | 11,5 | HSK32 | 6 | 18000 | L | + |

FPD-502



Profile brazed cutters **FPD-502** designed for edge milling

Type of work: edge rounding

Material: solid hardwood, veneered board, edging from plastics

Specification:

- for Homag machines
- safety ring HSK32 guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality
- blade with shear angle
- optimal chip flow
- $N_{max} = 18\,000$ r.p.m.



| Catalogue number | D
mm | R
mm | a
mm | d
mm | z | n_{max} | | |
|------------------|---------|---------|---------|---------|---|-----------|---|---|
| FPD502.0010.4 | 74 | 1,0 | 31,5 | HSK32 | 4 | 18000 | R | + |
| FPD502.0010.4L | 74 | 1,0 | 31,5 | HSK32 | 4 | 18000 | L | + |
| FPD502.0015.4 | 74 | 1,5 | 31,5 | HSK32 | 4 | 18000 | R | + |
| FPD502.0015.4L | 74 | 1,5 | 31,5 | HSK32 | 4 | 18000 | L | + |
| FPD502.0020.4 | 74 | 2,0 | 31,5 | HSK32 | 4 | 18000 | R | + |
| FPD502.0020.4L | 74 | 2,0 | 31,5 | HSK32 | 4 | 18000 | L | + |
| FPD502.0025.4 | 74 | 2,5 | 31,5 | HSK32 | 4 | 18000 | R | + |
| FPD502.0025.4L | 74 | 2,5 | 31,5 | HSK32 | 4 | 18000 | L | + |
| FPD502.0030.4 | 74 | 3,0 | 31,5 | HSK32 | 4 | 18000 | R | + |
| FPD502.0030.4L | 74 | 3,0 | 31,5 | HSK32 | 4 | 18000 | L | + |
| FPD502.0010.6 | 74 | 1,0 | 31,5 | HSK32 | 6 | 18000 | R | + |
| FPD502.0010.6L | 74 | 1,0 | 31,5 | HSK32 | 6 | 18000 | L | + |
| FPD502.0015.6 | 74 | 1,5 | 31,5 | HSK32 | 6 | 18000 | R | + |
| FPD502.0015.6L | 74 | 1,5 | 31,5 | HSK32 | 6 | 18000 | L | + |
| FPD502.0020.6 | 74 | 2,0 | 31,5 | HSK32 | 6 | 18000 | R | + |
| FPD502.0020.6L | 74 | 2,0 | 31,5 | HSK32 | 6 | 18000 | L | + |
| FPD502.0025.6 | 74 | 2,5 | 31,5 | HSK32 | 6 | 18000 | R | + |
| FPD502.0025.6L | 74 | 2,5 | 31,5 | HSK32 | 6 | 18000 | L | + |
| FPD502.0030.6 | 74 | 3,0 | 31,5 | HSK32 | 6 | 18000 | R | + |
| FPD502.0030.6L | 74 | 3,0 | 31,5 | HSK32 | 6 | 18000 | L | + |

Profile brazed cutters **FPD-503** designed for edge milling

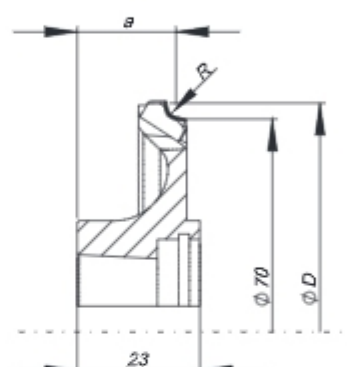
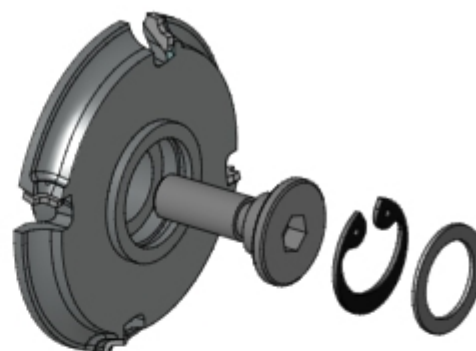
Type of work: edge rounding

Material: solid hardwood, veneered board, edging from plastics

Specification:

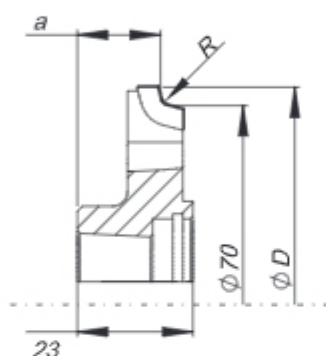
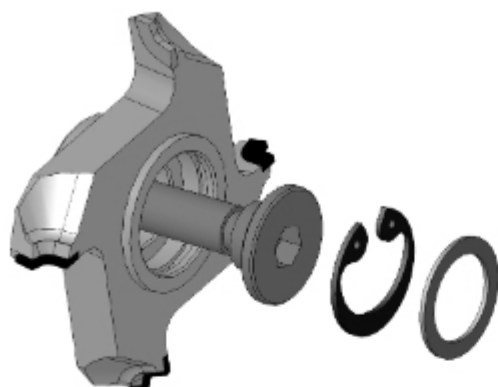
- for Homag, IMA machines
- safety ring HSK25 guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality
- blade with shear angle
- $N_{max} = 24\,000$ r.p.m.

FPD-503



| Catalogue number | D
mm | R
mm | a
mm | d
mm | z | n_{max} | ↕ | |
|------------------|---------|---------|---------|---------|---|-----------|---|---|
| FPD503.0010.4 | 74 | 1,0 | 17,5 | HSK25 | 4 | 24000 | R | + |
| FPD503.0010.4L | 74 | 1,0 | 17,5 | HSK25 | 4 | 24000 | L | + |
| FPD503.0015.4 | 76 | 1,5 | 18,0 | HSK25 | 4 | 24000 | R | + |
| FPD503.0015.4L | 76 | 1,5 | 18,0 | HSK25 | 4 | 24000 | L | + |
| FPD503.0020.4 | 76 | 2,0 | 18,5 | HSK25 | 4 | 24000 | R | + |
| FPD503.0020.4L | 76 | 2,0 | 18,5 | HSK25 | 4 | 24000 | L | + |
| FPD503.0025.4 | 78 | 2,5 | 19,0 | HSK25 | 4 | 24000 | R | + |
| FPD503.0025.4L | 78 | 2,5 | 19,0 | HSK25 | 4 | 24000 | L | + |
| FPD503.0030.4 | 78 | 3,0 | 19,5 | HSK25 | 4 | 24000 | R | + |
| FPD503.0030.4L | 78 | 3,0 | 19,5 | HSK25 | 4 | 24000 | L | + |
| FPD503.0010.6 | 74 | 1,0 | 17,5 | HSK25 | 6 | 24000 | R | + |
| FPD503.0010.6L | 74 | 1,0 | 17,5 | HSK25 | 6 | 24000 | L | + |
| FPD503.0015.6 | 76 | 1,5 | 18,0 | HSK25 | 6 | 24000 | R | + |
| FPD503.0015.6L | 76 | 1,5 | 18,0 | HSK25 | 6 | 24000 | L | + |
| FPD503.0020.6 | 76 | 2,0 | 18,5 | HSK25 | 6 | 24000 | R | + |
| FPD503.0020.6L | 76 | 2,0 | 18,5 | HSK25 | 6 | 24000 | L | + |
| FPD503.0025.6 | 78 | 2,5 | 19,0 | HSK25 | 6 | 24000 | R | + |
| FPD503.0025.6L | 78 | 2,5 | 19,0 | HSK25 | 6 | 24000 | L | + |
| FPD503.0030.6 | 78 | 3,0 | 19,5 | HSK25 | 6 | 24000 | R | + |
| FPD503.0030.6L | 78 | 3,0 | 19,5 | HSK25 | 6 | 24000 | L | + |

FPD-504



Profile brazed cutters **FPD-504** designed for edge milling

Type of work: edge rounding

Material: solid hardwood, veneered board, edging from plastics

Specification:

- for Homag, IMA machines
- safety ring HSK25 guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality
- blade with shear angle
- optimal chip flow
- $N_{max} = 24\,000$ r.p.m.



| Catalogue number | D mm | R mm | a mm | d mm | z | n_{max} | | |
|------------------|------|------|------|-------|---|-----------|---|---|
| FPD504.0010.4 | 75,1 | 1,0 | 16,5 | HSK25 | 4 | 24000 | R | + |
| FPD504.0010.4L | 75,1 | 1,0 | 16,5 | HSK25 | 4 | 24000 | L | + |
| FPD504.0015.4 | 76,1 | 1,5 | 16,5 | HSK25 | 4 | 24000 | R | + |
| FPD504.0015.4L | 76,1 | 1,5 | 16,5 | HSK25 | 4 | 24000 | L | + |
| FPD504.0020.4 | 77,5 | 2,0 | 16,5 | HSK25 | 4 | 24000 | R | + |
| FPD504.0020.4L | 77,5 | 2,0 | 16,5 | HSK25 | 4 | 24000 | L | + |
| FPD504.0025.4 | 78,1 | 2,5 | 16,5 | HSK25 | 4 | 24000 | R | + |
| FPD504.0025.4L | 78,1 | 2,5 | 16,5 | HSK25 | 4 | 24000 | L | + |
| FPD504.0030.4 | 78,8 | 3,0 | 16,5 | HSK25 | 4 | 24000 | R | + |
| FPD504.0030.4L | 78,8 | 3,0 | 16,5 | HSK25 | 4 | 24000 | L | + |
| FPD504.0010.6 | 75,1 | 1,0 | 16,5 | HSK25 | 6 | 24000 | R | + |
| FPD504.0010.6L | 75,1 | 1,0 | 16,5 | HSK25 | 6 | 24000 | L | + |
| FPD504.0015.6 | 76,1 | 1,5 | 16,5 | HSK25 | 6 | 24000 | R | + |
| FPD504.0015.6L | 76,1 | 1,5 | 16,5 | HSK25 | 6 | 24000 | L | + |
| FPD504.0020.6 | 77,5 | 2,0 | 16,5 | HSK25 | 6 | 24000 | R | + |
| FPD504.0020.6L | 77,5 | 2,0 | 16,5 | HSK25 | 6 | 24000 | L | + |
| FPD504.0025.6 | 78,1 | 2,5 | 16,5 | HSK25 | 6 | 24000 | R | + |
| FPD504.0025.6L | 78,1 | 2,5 | 16,5 | HSK25 | 6 | 24000 | L | + |
| FPD504.0030.6 | 78,8 | 3,0 | 16,5 | HSK25 | 6 | 24000 | R | + |
| FPD504.0030.6L | 78,8 | 3,0 | 16,5 | HSK25 | 6 | 24000 | L | + |

Profile brazed cutters **FD-505** designed for edge milling

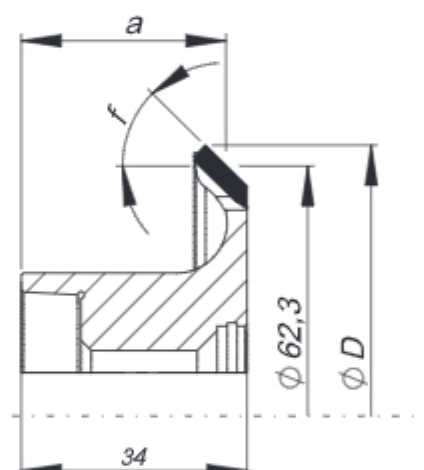
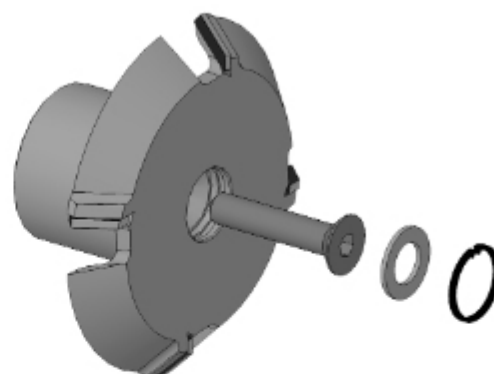
Type of work: edging


Material: solid hardwood, veneered board, edging from plastics

Specification:

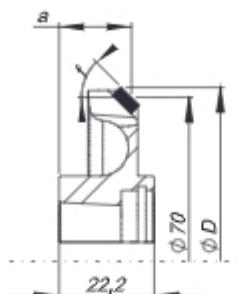
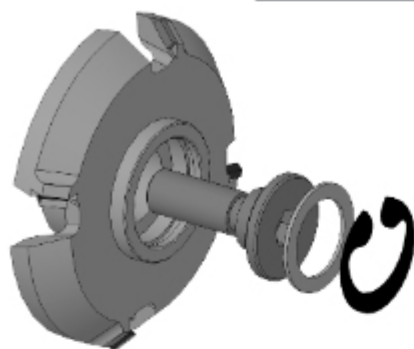
- for Homag machines
- safety ring HSK32 guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality
- blade with shear angle
- optimal chip flow
- $N_{max} = 18\,000$ r.p.m.

FD-505



| Catalogue number | D
mm | f (chamfer) | a
mm | d
mm | z | n_{max} |  | |
|------------------|---------|-------------|---------|---------|---|-----------|---|---|
| FD505.0200.4 | 65,1 | 20° | 31,5 | HSK32 | 4 | 18000 | R | + |
| FD505.0200.4L | 65,1 | 20° | 31,5 | HSK32 | 4 | 18000 | L | + |
| FD505.0450.4 | 70 | 45° | 31,5 | HSK32 | 4 | 18000 | R | + |
| FD505.0450.4L | 70 | 45° | 31,5 | HSK32 | 4 | 18000 | L | + |
| FD505.0200.6 | 65,1 | 20° | 31,5 | HSK32 | 6 | 18000 | R | + |
| FD505.0200.6L | 65,1 | 20° | 31,5 | HSK32 | 6 | 18000 | L | + |
| FD505.0450.6 | 70 | 45° | 31,5 | HSK32 | 6 | 18000 | R | + |
| FD505.0450.6L | 70 | 45° | 31,5 | HSK32 | 6 | 18000 | L | + |

FD-506



Profile brazed cutters **FD-506** designed for edge milling

Type of work: edging

Material: solid hardwood, veneered board, edging from plastics

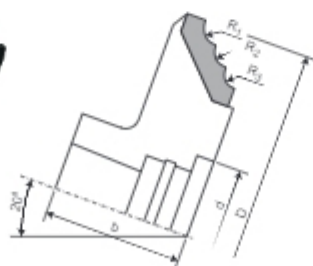
Specification:

- for Homag, IMA machines
- safety ring HSK25 guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality
- blade with shear angle
- optimal chip flow
- $N_{max} = 24\,000$ r.p.m.



| Catalogue number | D
mm | f (chamfer) | a
mm | d
mm | z | n _{max} | ↗ | |
|------------------|---------|-------------|---------|---------|---|------------------|---|---|
| FD506.0200.4 | 73 | 20° | 16,5 | HSK25 | 4 | 24000 | R | + |
| FD506.0200.4L | 73 | 20° | 16,5 | HSK25 | 4 | 24000 | L | + |
| FD506.0450.4 | 73 | 45° | 17,5 | HSK25 | 4 | 24000 | R | + |
| FD506.0450.4L | 73 | 45° | 17,5 | HSK25 | 4 | 24000 | L | + |
| FD506.0200.6 | 73 | 20° | 16,5 | HSK25 | 6 | 24000 | R | + |
| FD506.0200.6L | 73 | 20° | 16,5 | HSK25 | 6 | 24000 | L | + |
| FD506.0450.6 | 73 | 45° | 17,5 | HSK25 | 6 | 24000 | R | + |
| FD506.0450.6L | 73 | 45° | 17,5 | HSK25 | 6 | 24000 | L | + |

FPD-550 L



Profile brazed cutters **FPD-550 L** designed for edge beveling.

Type of work: edge machining.

Material: solid hardwood, veneered board, plastics.

Specification:

- for Homag and IMA machines,
- safety ring HSK25R guarantees minimum radial runout and precise balancing of the tools for optimal cutting quality,
- blade with shear angle,
- $N_{max} = 18\,000$ r.p.m.



| Catalogue number | Type | D
mm | R ₁
mm | R ₂
mm | R ₃
mm | z | |
|------------------|---------|---------|----------------------|----------------------|----------------------|-------|-----|
| FPD550.0010 | FPD-550 | 81,1 | 1,5 | 2,0 | 3,0 | HSK25 | 4 + |
| FPD550.0020 | FPD-550 | 81,1 | 1,5 | 2,0 | 3,0 | HSK25 | 6 + |
| FPD550.0110 | FPD-550 | 81,1 | 3,0 | 2,0 | | HSK25 | 4 + |
| FPD550.0120 | FPD-550 | 81,1 | 3,0 | 2,0 | | HSK25 | 6 + |

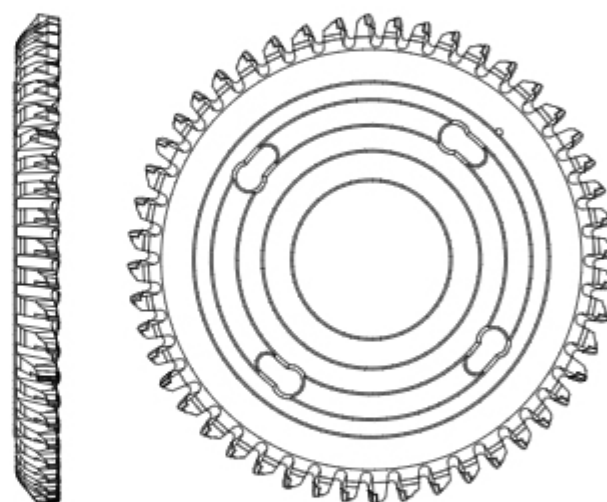
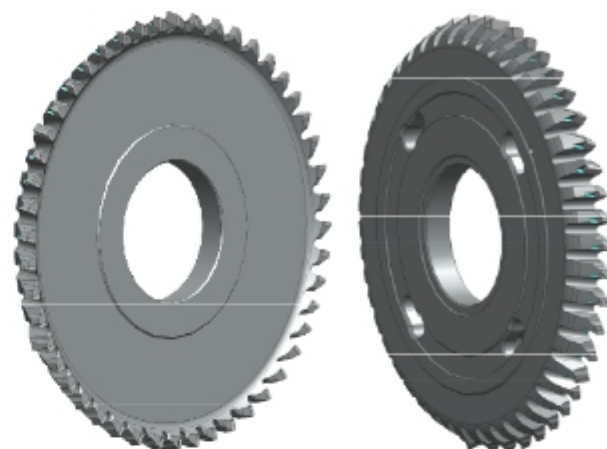
Inserted hogger type **GFD-011** with radial tooth shape, irregular pitch, new cutting geometry and negative hook angle guarantees highest edge quality.

Material: chipboard and MDF – raw or covered with laminate, foil and paper as well as low-density furniture board (not suitable for veneered board)

Specification:

- for Homag, IMA and IDM machines,
- high cutting quality thanks to precise positioning,
- increased life,
- concurrent working system cutter head / cutter head,
- tip height 6 mm,
- $N_{max} = 9\,000$ r.p.m.

GFD-011



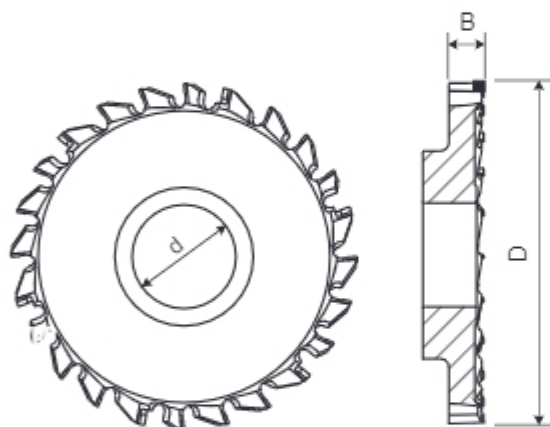
| Catalogue number | Type | D
mm | B
mm | b
mm | d
mm | z | DIA
mm | n _{max} | ↙ | |
|------------------|---------|---------|---------|---------|---------|-----------|-----------|------------------|---|---|
| GFD011.0040 | GFD-011 | 250 | 23 | 11 | 80 | 48 (42+6) | 6 | 9000 | P | • |
| GFD011.0040L | GFD-011 | 250 | 23 | 11 | 80 | 48 (42+6) | 6 | 9000 | L | • |
| GFD011.0041 | GFD-011 | 250 | 23 | 11 | 60 | 48 (42+6) | 6 | 9000 | P | • |
| GFD011.0041L | GFD-011 | 250 | 23 | 11 | 60 | 48 (42+6) | 6 | 9000 | L | • |
| GFD011.0030 | GFD-011 | 250 | 23 | 11 | 80 | 36 (30+6) | 6 | 9000 | P | • |
| GFD011.0030L | GFD-011 | 250 | 23 | 11 | 80 | 36 (30+6) | 6 | 9000 | L | • |
| GFD011.0031 | GFD-011 | 250 | 23 | 11 | 60 | 36 (30+6) | 6 | 9000 | P | • |
| GFD011.0031L | GFD-011 | 250 | 23 | 11 | 60 | 36 (30+6) | 6 | 9000 | L | • |

GFD-02

Inserted hogger type **GFD-02** designed for drawer band production.

Specification:

- shear angle increases tool life and reduces noise,
- sharpening zone 4,5 mm,
- $N_{max} = 9\,000$ r.p.m.



| Type | D
mm | B
mm | d
mm | z | n_{max} | |
|--------|---------|---------|---------|----------|-----------|---|
| GFD-02 | 200 | 20 | 60 | 24+6+6 | 9000 | + |
| GFD-02 | 200 | 22 | 80 | 24+6+6 | 9000 | + |
| GFD-02 | 250 | 20 | 60 | 32+8+8 | 9000 | + |
| GFD-02 | 250 | 22 | 80 | 32+6+6 | 9000 | + |
| GFD-02 | 260 | 20 | 60 | 36+9+9 | 9000 | + |
| GFD-02 | 280 | 20 | 60 | 40+10+10 | 9000 | + |

Inserted hogger FINISH-LINE type **GFD-05**.

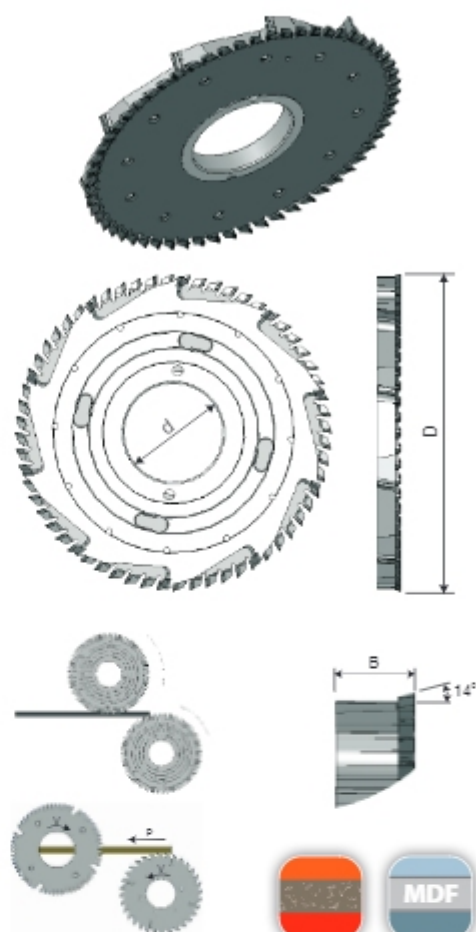
Type of work: formatting.

Material: chipboard, MDF, HDF.

Specification:

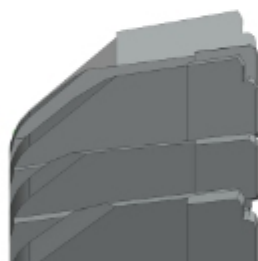
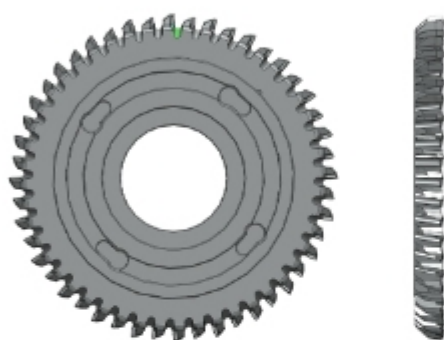
- for Homag, IMA and IDM machines,
- very aggressive blade geometry guarantees highest quality cutting,
- concurrent working system cutter head / cutter head,
- scorer / cutter head working system,
- sharpening zone 4,5 mm,
- shear angle guarantees quiet and stable work,
- $N_{max} = 6\ 000$ r.p.m.

GFD-05



| Catalogue number | Type | D
mm | B
mm | d
mm | z | ↗ | |
|------------------|--------|---------|---------|---------|--------|--------|---|
| GFD05.007 | GFD-05 | 200 | 22 | 35 | 24+4 | R | + |
| GFD05.007L | GFD-05 | 200 | 22 | 35 | 24+4 | L | + |
| GFD05.003P | GFD-05 | 250 | 18 | 80 | 56+6x4 | R | + |
| GFD05.009 | GFD-05 | 250 | 20 | 35 | 36+6 | R | + |
| GFD05.009L | GFD-05 | 250 | 20 | 35 | 36+6 | L | + |
| GFD05.003 | GFD-05 | 250 | 20 | 80 | 56+6x4 | R | + |
| GFD05.003L | GFD-05 | 250 | 20 | 80 | 56+6x4 | L | + |
| GFD05.011 | GFD-05 | 255 | 19 | 80 | 60+10 | R | + |
| GFD05.011L | GFD-05 | 255 | 19 | 80 | 60+10 | L | + |
| GFD05.015 | GFD-05 | 255 | 19 | 80 | 60+10 | R (GT) | + |
| GFD05.015L | GFD-05 | 255 | 19 | 80 | 60+10 | R (GW) | + |
| GFD05.006 | GFD-05 | 255 | 19 | 80 | 66+10 | R | + |
| GFD.006L | GFD-05 | 255 | 19 | 80 | 66+10 | L | + |
| GFD05.0070 | GFD-05 | 255 | 32,33 | 60 | 48+4 | R | + |
| GFD05.0070L | GFD-05 | 255 | 32,33 | 60 | 48+4 | L | + |
| | GFD-05 | 250 | 14,5 | 60 | 48 | | + |
| | GFD-05 | 250 | 14,5 | 80 | 48 | | + |
| | GFD-05 | 250 | 14,5 | 60 | 54 | | + |
| | GFD-05 | 250 | 14,5 | 80 | 54 | | + |
| | GFD-05 | 250 | 14,5 | 60 | 60 | | + |
| | GFD-05 | 250 | 14,5 | 80 | 60 | | + |

GFD-09



Inserted hogger type **GFD-09**


Type of work: formatting

Material: chipboard, MDF, HDF

Specification:

- for Homag, IMA and IDM machines
- long life thanks to special blade construction
- optimal tooth shape allows for soft formatting before final finishing
- high cutting quality thanks to precise positioning
- minimum machine retooling time thanks to increased life
- maximum thickness of the formatted element 60 mm
- concurrent working system cutter head / cutter head
- scorer / cutter head working system
- shear angle increases tool life
- sharpening zone 4,5 mm
- $N_{max} = 6\,000$ r.p.m.



| Catalogue number | Type | D
mm | B
mm | d
mm | z | z |  | |
|------------------|--------|---------|---------|---------|----|------|---|---|
| GFD009.0500 | GFD-09 | 250 | 10,5 | 60 | 36 | 6000 | R | + |
| GFD009.0500L | GFD-09 | 250 | 10,5 | 60 | 36 | 6000 | L | + |
| GFD009.0510 | GFD-09 | 250 | 10,5 | 60 | 48 | 6000 | R | + |
| GFD009.0510L | GFD-09 | 250 | 10,5 | 60 | 48 | 6000 | L | + |
| GFD009.0520 | GFD-09 | 250 | 10,5 | 60 | 60 | 6000 | R | + |
| GFD009.0520L | GFD-09 | 250 | 10,5 | 60 | 60 | 6000 | L | + |
| GFD009.0530 | GFD-09 | 250 | 10,5 | 80 | 36 | 6000 | R | + |
| GFD009.0530L | GFD-09 | 250 | 10,5 | 80 | 36 | 6000 | L | + |
| GFD009.0540 | GFD-09 | 250 | 10,5 | 80 | 48 | 6000 | R | + |
| GFD009.0540L | GFD-09 | 250 | 10,5 | 80 | 48 | 6000 | L | + |
| GFD009.0550 | GFD-09 | 250 | 10,5 | 80 | 60 | 6000 | R | + |
| GFD009.0550L | GFD-09 | 250 | 10,5 | 80 | 60 | 6000 | L | + |

Inserted hogger type **GFD-08** with trapezoidal tooth shape.

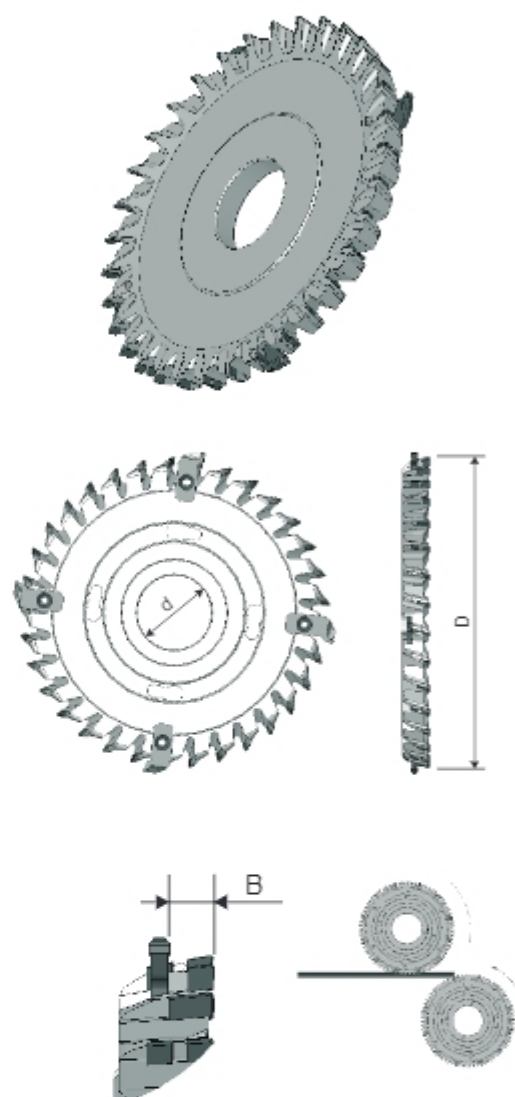
Type of work: formatting, cross and longitudinal cutting.

Material: chipboard, MDF, HDF.

Specification:

- for Homag, IMA and IDM machines,
- special construction allows for very soft formatting of long elements with high excess material,
- high cutting quality thanks to precise positioning,
- minimum machine retooling time thanks to increased life,
- maximum thickness of formatted element 50 mm,
- concurrent working system cutter head / cutter head,
- scorer / cutter head working system,
- shear angle increases tool life,
- sharpening zone 4,5 mm,
- $N_{max} = 6\,000$ r.p.m.

GFD-008

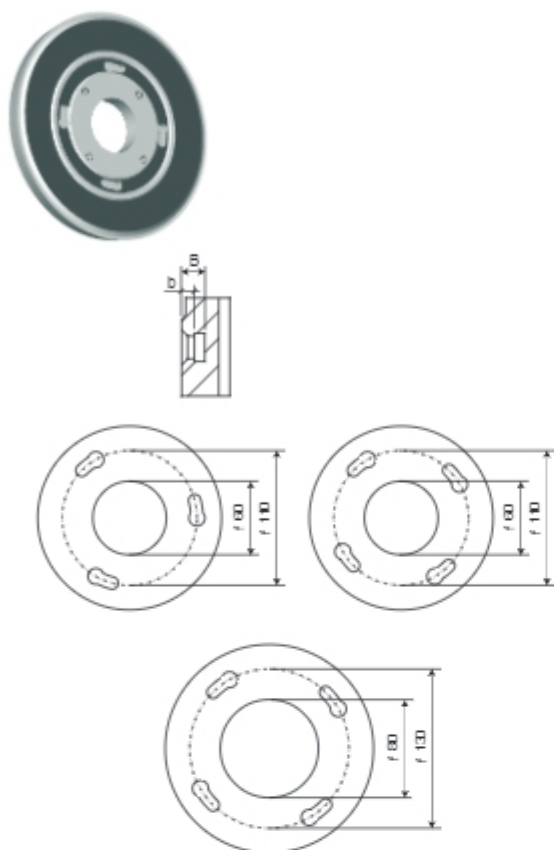


| Type | D
mm | B
mm | d
mm | z | |
|---------|---------|---------|---------|-------|---|
| GFD-008 | 250 | 10 | 60 | 33+11 | + |
| GFD-008 | 250 | 10 | 80 | 33+11 | + |
| GFD-008 | 250 | 10 | 60 | 48+12 | + |
| GFD-008 | 250 | 10 | 80 | 48+12 | + |
| GFD-008 | 250 | 10 | 60 | 36+6 | + |
| GFD-008 | 250 | 10 | 80 | 36+6 | + |

UGF-01

Fast mounting system type **UGF-01** designed for machines with hydraulic clamping.

Orders for cutter heads and brazed cutters equipped with this system should look as follows: GFD-03 + UGF-01.



| Type | D
mm | d
mm | N | |
|--------|---------|---------|---|---|
| UGF-01 | 110 | 60 | 3 | + |
| UGF-01 | 110 | 60 | 4 | + |
| UGF-01 | 130 | 80 | 4 | + |

Scoring saw blade with polycrystalline diamond (PCD) with straight teeth (GM) type **PD-403**, designed for cutting homogenous materials without impurities, used on automatic lines with pneumatic clamping systems.

Type of cut: cross and longitudinal.

Material: laminated chipboard, MDF, HDF.



PD-403



| Type | D
mm | B
mm | d
mm | z | | |
|--------|---------|---------|---------|----|----|---|
| PD-403 | 180 | 3,2 | 50 | 36 | GM | + |
| PD-403 | 180 | 3,2 | 50 | 48 | GM | + |
| PD-403 | 200 | 3,2 | 50 | 36 | GM | + |
| PD-403 | 200 | 3,2 | 50 | 48 | GM | + |
| PD-403 | 200 | 3,2 | 50 | 60 | GM | + |

Scoring and formatting saw blade with straight (GM) or top bevel (GW or GT) teeth type **PD-404**, with polycrystalline diamond (PCD) tips designed for cutting homogenous materials without impurities, used on automatic lines, mounted on sleeves.

Type of cut: cross and longitudinal.

Material: laminated chipboard, MDF, HDF.



PD-404



| Type | D
mm | B
mm | b
mm | d
mm | z | nx _d | D ₁ | |
|--------|---------|---------|---------|---------|----|-----------------|----------------|---|
| PD-404 | 180 | 3,2 | 2,2 | 65 | 32 | 6x6,5 | 90 | + |
| PD-404 | 180 | 3,2 | 2,2 | 65 | 48 | 6x6,5 | 90 | + |
| PD-404 | 180 | 4,0 | 2,2 | 65 | 32 | 6x6,5 | 90 | + |
| PD-404 | 180 | 4,0 | 2,2 | 65 | 48 | 6x6,5 | 90 | + |
| PD-404 | 200 | 3,2 | 2,2 | 80 | 32 | 4x6,5 | 140 | + |
| PD-404 | 200 | 3,2 | 2,2 | 80 | 48 | 4x6,5 | 140 | + |
| PD-404 | 200 | 4,0 | 3,0 | 80 | 32 | 4x6,5 | 140 | + |
| PD-404 | 200 | 4,0 | 3,0 | 80 | 48 | 4x6,5 | 140 | + |

PD-405



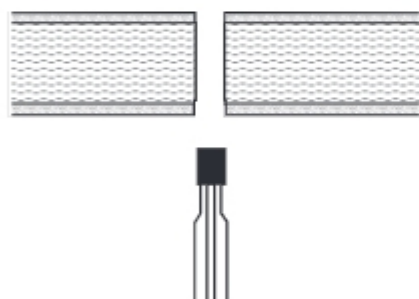
Set of scoring saw blades type **PD-405** with adjustable width, polycrystalline diamond (PCD) tips and straight teeth - GM.

Type of cut: scoring.

Material: laminated chipboard, laminates, MDF, HDF.

Width is regulated with the following spacers:

- 0,05 mm - 1 pc.
- 0,1 mm - 1 pc.
- 0,2 mm - 2 pcs.
- 0,3 mm - 1 pc.



GM



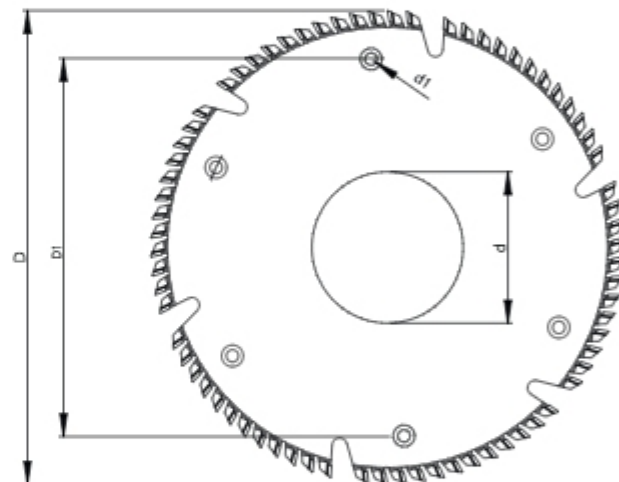
| Catalogue number | Type | D mm | B mm | d mm | z | | DIA mm | |
|------------------|--------|------|---------|------|------|----|--------|---|
| D4050008 | PD-405 | 100 | 2,8÷3,6 | 20 | 2x10 | GM | 4,9 | + |
| D4050009 | PD-405 | 100 | 2,8÷3,6 | 22 | 2x10 | GM | 4,9 | + |
| D4050010 | PD-405 | 120 | 2,8÷3,6 | 20 | 2x10 | GM | 4,9 | + |
| D4050019 | PD-405 | 120 | 2,8÷3,6 | 22 | 2x10 | GM | 4,9 | + |
| D4050004 | PD-405 | 125 | 2,8÷3,6 | 20 | 2x10 | GM | 4,9 | + |
| D4050021 | PD-405 | 125 | 2,8÷3,6 | 22 | 2x10 | GM | 4,9 | + |
| D4050013 | PD-405 | 125 | 2,8÷3,6 | 20 | 2x12 | GM | 4,9 | + |
| D4050013.4 | PD-405 | 125 | 2,8÷3,6 | 20 | 2x12 | GM | 4,0 | • |
| D4050012 | PD-405 | 125 | 2,8÷3,6 | 22 | 2x12 | GM | 4,9 | + |
| D4050012.4 | PD-405 | 125 | 2,8÷3,6 | 22 | 2x12 | GM | 4,0 | • |

Scoring saw blades width straight (GM) or top bevel (GW or GT) teeth, type **PD-406** with polycrystalline diamond (PCD) tips designed for formatting.

Type of cut: cross and longitudinal.

Material: laminated chipboard, laminates, MDF, HDF.

PD-406



GM



GW

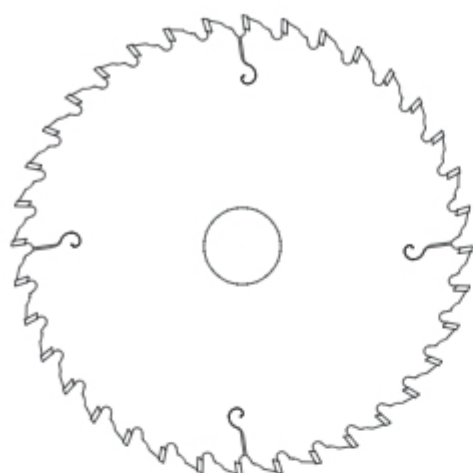


GT



| Type | D
mm | B
mm | b
mm | d
mm | z | nxd ₁ | D ₁ | |
|--------|---------|---------|---------|---------|----|------------------|----------------|---|
| PD-406 | 250 | 4,0 | 3,0 | 80 | 48 | 6x6,5 | 200 | + |
| PD-406 | 250 | 4,0 | 3,0 | 80 | 54 | 6x6,5 | 200 | + |
| PD-406 | 250 | 4,0 | 3,0 | 80 | 72 | 6x6,5 | 200 | + |
| PD-406 | 250 | 4,0 | 3,0 | 100 | 48 | 6x6,5 | 200 | + |
| PD-406 | 250 | 4,0 | 3,0 | 100 | 54 | 6x6,5 | 200 | + |
| PD-406 | 250 | 4,0 | 3,0 | 100 | 72 | 6x6,5 | 200 | + |

PD-408



Scoring saw blade type **PD-408** with conical-flat and conical-alternate bevel (GR/GM, GR/GS) teeth, with polycrystalline diamond (PCD) tips designed for scoring chipboard, laminated board, MDF, HDF and other homogenous materials, used on manual formatting machines and automatic lines.

Type of cut: scoring.

Material: laminated chipboard, MDF, HDF.



GR/GM



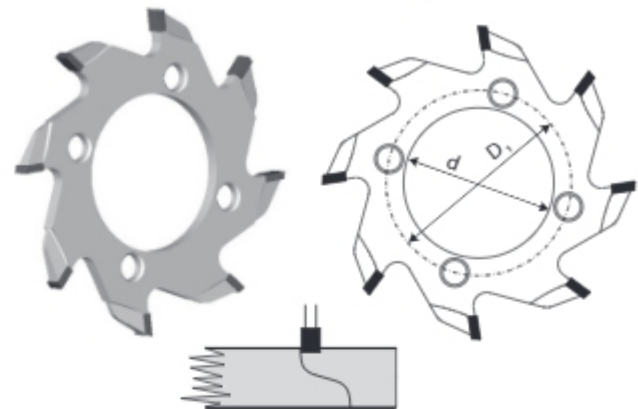
| Catalogue number | Type | D mm | B ₁ /B ₂ mm | b mm | d mm | z | DIA mm | |
|------------------|--------|------|-----------------------------------|------|------|----|--------|-------|
| D4080082 | PD-408 | 100 | 3,2/4,3 | 2,5 | 20 | 20 | GR/GM | 4,9 + |
| D4080082A | PD-408 | 100 | 3,2/4,3 | 2,5 | 22 | 20 | GR/GM | 4,9 + |
| D4080822 | PD-408 | 125 | 2,8/3,6 | 2,2 | 20 | 24 | GR/GM | 4,0 • |
| D4080088 | PD-408 | 125 | 2,8/3,6 | 2,2 | 20 | 24 | GR/GM | 4,9 + |
| D4080085 | PD-408 | 125 | 2,8/3,6 | 2,2 | 22 | 24 | GR/GM | 4,9 + |
| D4080697 | PD-408 | 125 | 3,1/4,2 | 2,5 | 20 | 24 | GR/GM | 4,0 • |
| D4080079 | PD-408 | 125 | 3,2/4,3 | 2,5 | 20 | 24 | GR/GM | 4,9 + |
| D4080023 | PD-408 | 125 | 3,2/4,3 | 2,5 | 22 | 24 | GR/GM | 4,9 + |
| D4080382 | PD-408 | 125 | 3,2/4,3 | 2,5 | 45 | 24 | GR/GM | 4,9 + |
| D4080304 | PD-408 | 150 | 4,4/5,4 | 3,0 | 30 | 24 | GR/GM | 4,9 + |
| D4080301 | PD-408 | 150 | 4,4/5,4 | 3,0 | 30 | 36 | GR/GM | 4,9 + |
| D4080383 | PD-408 | 160 | 4,4/5,4 | 3,0 | 45 | 36 | GR/GM | 4,9 + |
| D4080823 | PD-408 | 180 | 4,4/5,4 | 3,2 | 45 | 36 | GR/GM | 4,0 • |
| D4080083 | PD-408 | 180 | 4,4/5,6 | 3,4 | 45 | 36 | GR/GM | 4,9 • |
| D4080384 | PD-408 | 200 | 3,2/4,0 | 2,2 | 30 | 36 | GR/GM | 4,9 + |
| D4080385 | PD-408 | 200 | 3,2/4,3 | 2,2 | 30 | 36 | GR/GM | 4,9 + |
| D4080089 | PD-408 | 200 | 4,4/5,4 | 3,0 | 30 | 36 | GR/GM | 4,9 + |
| D4080053A | PD-408 | 200 | 4,4/5,4 | 3,0 | 45 | 36 | GR/GM | 4,9 + |

Scoring saw blade type **PD-409** with polycrystalline diamond (PCD) tips designed for scoring laminated materials before profiling. Used mainly on HOMAG machines.

Type of cut: laminate scoring.

Material: chipboard, MDF, HDF.

PD-409



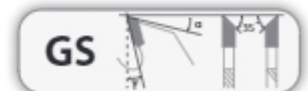
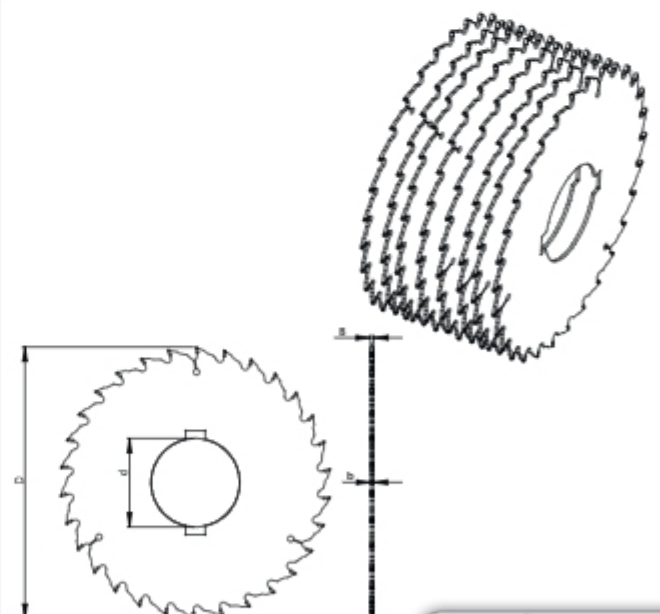
| Type | D
mm | B
mm | b
mm | d
mm | z | nxd ₁ | D ₁ | |
|--------|---------|---------|---------|---------|---|------------------|----------------|---|
| PD-409 | 70 | 4,0 | 3,0 | 34 | 8 | 4x5,5 | 42 | + |

Scoring saw blade type **PD-502** with polycrystalline diamond (PCD) tips designed for multi-rip machines.

Type of cut: multi-rip scoring.

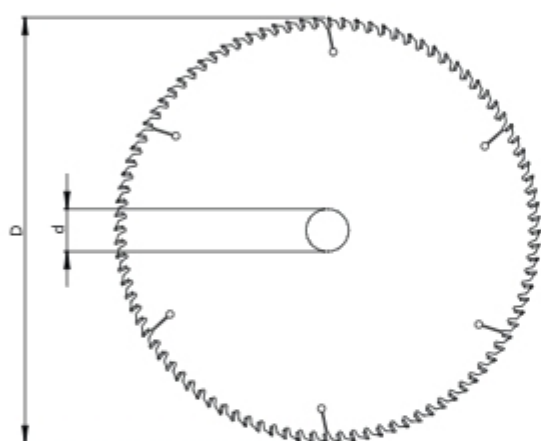
Material: chipboard, plywood, MDF, HDF.

PD-502



| Type | D
mm | B
mm | b
mm | d
mm | z | | |
|--------|---------|---------|---------|---------|----|-------|---|
| PD-502 | 210 | 2,4 | 1,8 | 75 | 30 | GR/GM | + |
| PD-502 | 230 | 2,8 | 2,2 | 75 | 30 | GR/GM | + |
| PD-502 | 250 | 3,2 | 2,2 | 75 | 24 | GR/GM | + |

PD-505



Universal saw blade with medium number of alternate top bevel teeth (GS), type **PD-505**, with polycrystalline diamond (PCD) tips designed for cross and longitudinal cutting of glued wood, plywood, chipboard, used on manual formatting machines and automatic lines.

Type of cut: single, cross and longitudinal.

Material: glued wood, plywood, MDF chipboard, laminated chipboard.



GS



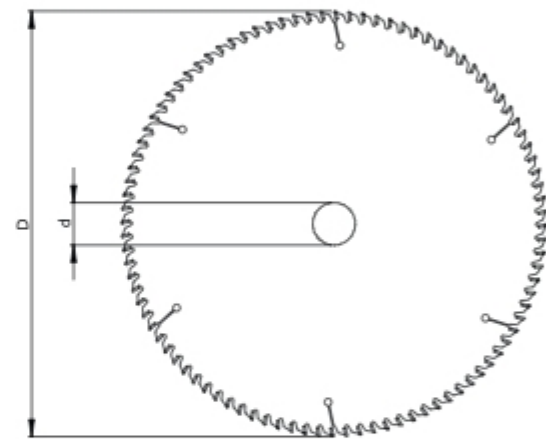
| Type | D
mm | B
mm | b
mm | d
mm | z | | |
|--------|---------|---------|---------|---------|----|----|---|
| PD-505 | 250 | 3,2 | 2,3 | 30 | 60 | GS | + |
| PD-505 | 250 | 3,2 | 2,3 | 30 | 80 | GS | + |
| PD-505 | 300 | 3,2 | 2,5 | 30 | 60 | GS | + |
| PD-505 | 300 | 3,2 | 2,5 | 30 | 72 | GS | + |
| PD-505 | 300 | 3,2 | 2,5 | 30 | 96 | GS | + |
| PD-505 | 350 | 3,5 | 2,5 | 30 | 60 | GS | + |
| PD-505 | 350 | 3,5 | 2,5 | 30 | 72 | GS | + |
| PD-505 | 350 | 3,5 | 2,5 | 30 | 96 | GS | + |
| PD-505 | 350 | 4,0 | 3,0 | 30 | 60 | GS | + |
| PD-505 | 350 | 4,0 | 3,0 | 30 | 72 | GS | + |
| PD-505 | 350 | 4,0 | 3,0 | 30 | 96 | GS | + |

Saw blade, type **PD-506** with polycrystalline diamond (PCD) tips designed for cutting chipboard, laminated board, MDF, HDF and other homogenous materials without impurities, used on manual formatting machines and automatic lines.

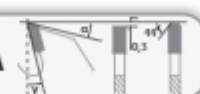
Type of cut: single, cross and longitudinal.

Material: laminated chipboard, MDF, HDF.

PD-506

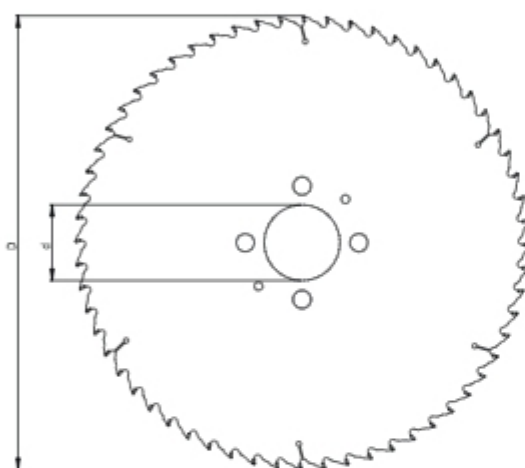


GA



| Type | D
mm | B
mm | b
mm | d
mm | z | | |
|--------|---------|---------|---------|---------|----|----|---|
| PD-506 | 250 | 3,2 | 2,3 | 30 | 60 | GA | + |
| PD-506 | 250 | 3,2 | 2,3 | 30 | 80 | GA | + |
| PD-506 | 300 | 3,2 | 2,4 | 30 | 60 | GA | + |
| PD-506 | 300 | 3,2 | 2,4 | 30 | 72 | GA | + |
| PD-506 | 300 | 3,2 | 2,4 | 30 | 96 | GA | + |
| PD-506 | 350 | 3,5 | 2,5 | 30 | 60 | GA | + |
| PD-506 | 350 | 3,5 | 2,5 | 30 | 72 | GA | + |
| PD-506 | 350 | 3,5 | 2,5 | 30 | 96 | GA | + |
| PD-506 | 350 | 4,0 | 3,0 | 30 | 60 | GA | + |
| PD-506 | 350 | 4,0 | 3,0 | 30 | 72 | GA | + |
| PD-506 | 350 | 4,0 | 3,0 | 30 | 96 | GA | + |

PD-521



Saw blade, type **PD-521** with polycrystalline diamond (PCD) tips and triple chip + flat teeth (GA) designed for cutting in stack chipboard, laminated board, MDF, HDF and other homogenous materials without impurities, used on manual formatting machines and automatic lines.

Type of cut: in stack, cross and longitudinal.

Material: chipboard, laminated chipboard, MDF, HDF.

| Type | D
mm | B
mm | b
mm | d
mm | z | | |
|--------|---------|---------|---------|-------------|----|----|---|
| PD-521 | 300 | 4,4 | 3,0 | 30/60/75/80 | 60 | GA | + |
| PD-521 | 300 | 4,4 | 3,0 | 30/60/75/80 | 72 | GA | + |
| PD-521 | 350 | 4,4 | 3,2 | 30/60/75/80 | 60 | GA | + |
| PD-521 | 350 | 4,4 | 3,2 | 30/60/75/80 | 72 | GA | + |
| PD-521 | 380 | 4,4 | 3,2 | 30/60/75/80 | 60 | GA | + |
| PD-521 | 380 | 4,4 | 3,2 | 30/60/75/80 | 72 | GA | + |
| PD-521 | 400 | 4,4 | 3,2 | 30/60/75/80 | 60 | GA | + |
| PD-521 | 400 | 4,4 | 3,2 | 30/60/75/80 | 72 | GA | + |
| PD-521 | 450 | 4,4 | 3,2 | 30/60/75/80 | 60 | GA | + |
| PD-521 | 450 | 4,4 | 3,2 | 30/60/75/80 | 72 | GA | + |
| PD-521 | 480 | 4,6 | 3,6 | 30/60/75/80 | 60 | GA | + |
| PD-521 | 480 | 4,6 | 3,6 | 30/60/75/80 | 72 | GA | + |
| PD-521 | 480 | 4,8 | 3,6 | 30/60/75/80 | 60 | GA | + |
| PD-521 | 480 | 4,8 | 3,6 | 30/60/75/80 | 72 | GA | + |