

4. Tools for jointing

Tools for joints

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.



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Pictograms



solid dry softwood



solid dry hardwood



glued wood



mechanical feed



manual feed



longitudinal jointing



cross-jointing



carbide



high performance coating

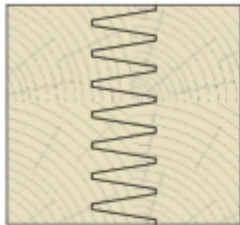


high-speed cutting steel

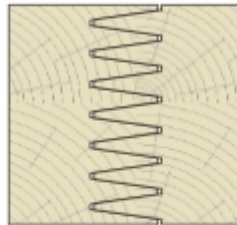
- available/stock product
- + possible production time 9-15 working days.

Joint fitting

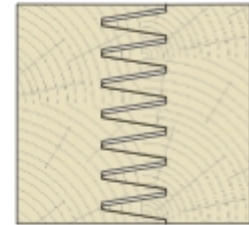
Proper fitting of two elements connected with micro joints made with tool FZK 11/17/20



Correct joint



Incorrect joint
(tight)

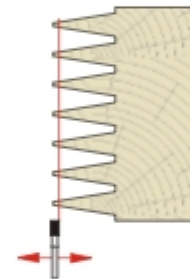


Incorrect joint
(loose)

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.

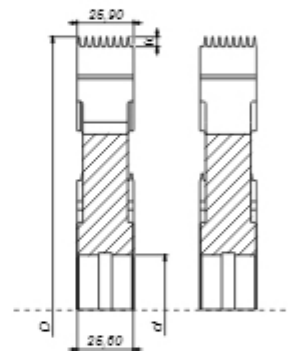
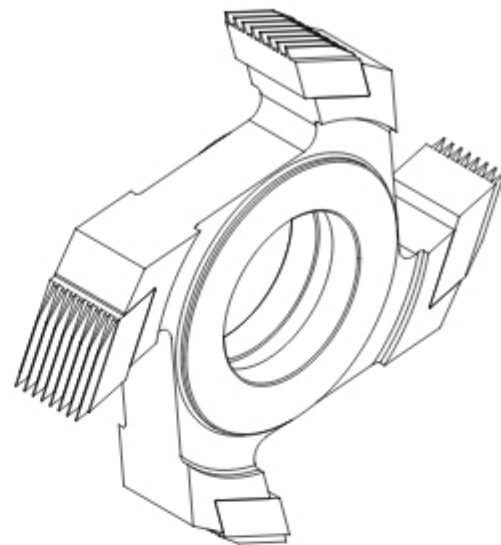
Material: solid dry softwood.



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 9000 40 2+2 25,9	160 9000 60 2+2 25,9	180 8000 60 3+3 25,9	200 7000 60 3+3 25,9	250 6000 70 4+4 25,9
FZK-14N k=4/4,5x1,6	+	+	+	+	+
FZK-15N k=4/4x1,6	+	+	+	+	+

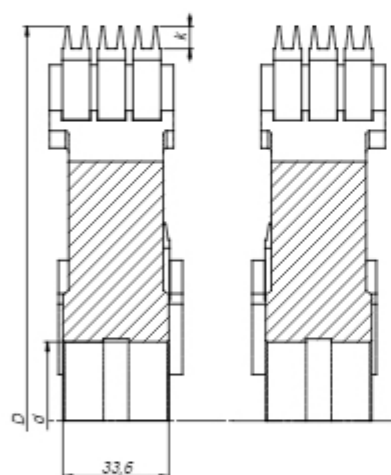
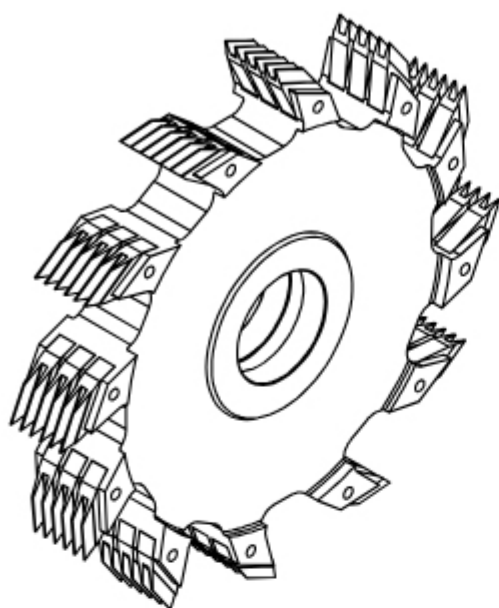
Catalogue number	Type	D mm	B mm	d mm	k mm	z	n _{max}	
FZK14NS160-001	HSS FZK-14N	160	25,9	50	4/4,5x1,6	2+2	9000	+
FZK14NS250-001	HSS FZK-14N	250	25,9	50	4/4,5x1,6	3+3	6000	+
FZK15NS160-002	HSS FZK-15N	160	25,9	50	4/4x1,6	2+2	9000	+
FZK15NS250-001	HSS FZK-15N	250	25,9	50	4/4x1,6	3+3	6000	+

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 brazed 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.

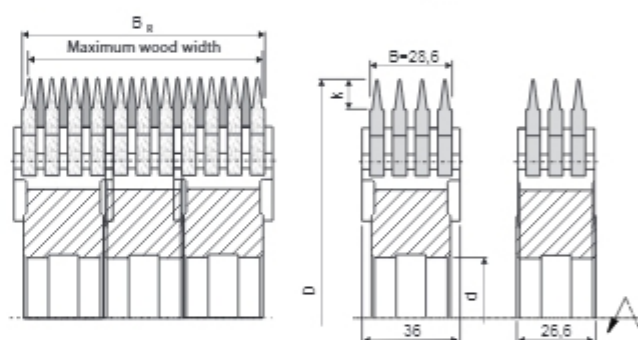
Material: solid wood.



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	+	+	+	+	+

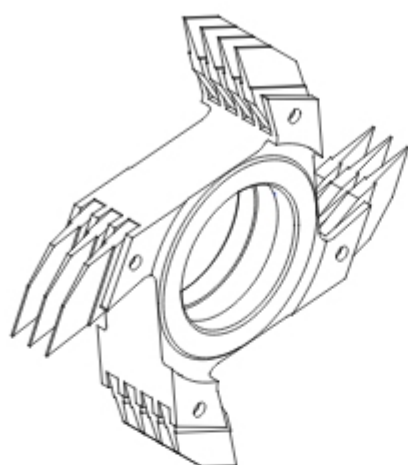
Catalogue number	Type	D mm	B mm	d mm	k mm	z	n _{max}
FZK11NS160-001	HSS FZK-11N	160	28,6	50	10/11x3,8	2+2	9000
FZK11NS250-001	HSS FZK-11N	250	28,6	50	10/11x3,8	3+3	6000
FZK12NS140-002	HSS FZK-12N	140	28,6	30	10/10x3,8	2+2	9000
FZK12NS140-001	HSS FZK-12N	140	28,6	40	10/10x3,8	2+2	9000
FZK12NS160-001	HSS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

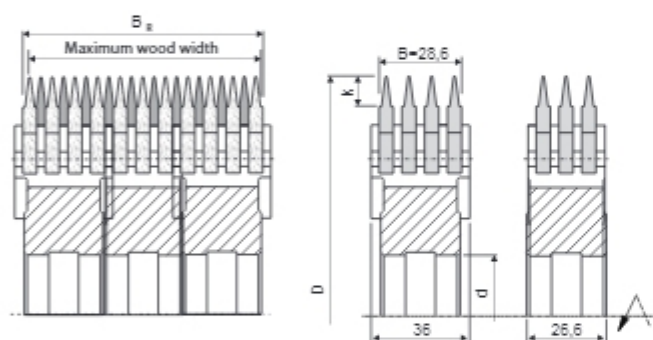
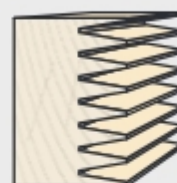
FZK-17N/18N



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



HSS

HP

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.

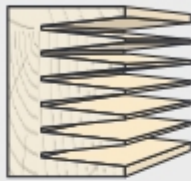
Optionally, the tools can be offered with HP coating.

More information on page 4.17.

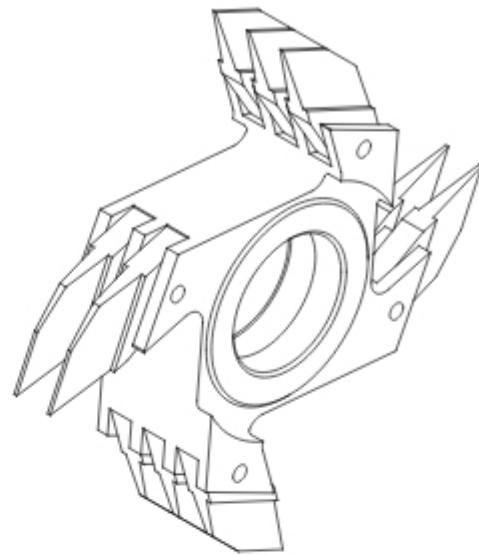
Finger joint brazed cutters for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. The cutter can be produced in two versions: with face cutting (formatting) (FZK-20N, joint 20/22) or without cutting (FZK-19N, joint 20/20).

Type of jointing: cross-joint.

Material: solid wood.

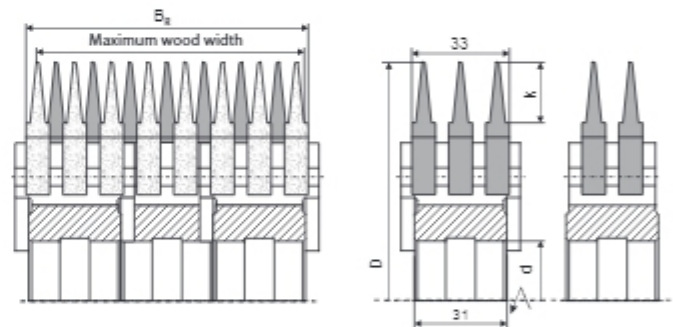


FZK-19N/20N



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	170 8000	180 7000	180 7000	200 6000	250 6000	260 6000
n _{mm}	40	50	60	60	60	70	80
z _{mm}	2+2	3+3	2+2	3+3	3+3	3+3	3+3
B	33	33	33	33	33	33	33
FZK-19N k=20/20x6,2	+	+	+	+	+	+	+
FZK-20N k=20/22x6,2	+	+	+	+	+	+	+

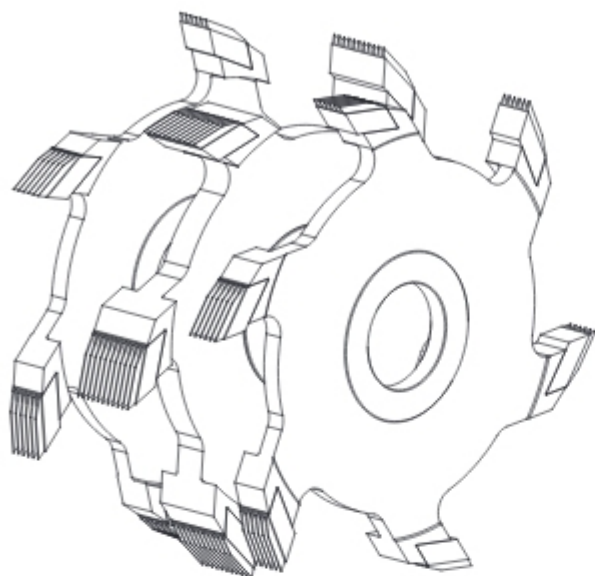
Catalogue number	Type	D mm	B mm	d mm	k mm	z	n _{mm}	
FZK19N180-002	HSS FZK-19N	180	33	50	20/20x6,2	2+2	6000	+
FZK20N180-001	HSS FZK-20N	180	33	50	20/22x6,2	2+2	6000	+
FZK20N260-001	HSS FZK-20N	260	33	50	20/22x6,2	3+3	6000	+

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.

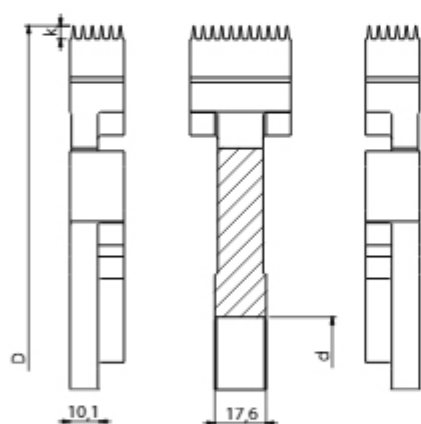
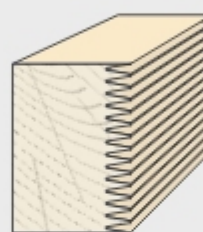
FZK-14A/14B



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	FZK-14A middle	250	34,6	50	4/4,5x1,6	6	6000	+
FZK14BS250-01L	FZK-14B left	250	18,6	50	4/4,5x1,6	6	6000	+
FZK14BS250-01P	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.

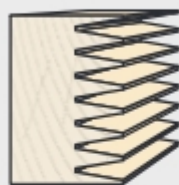
Optionally, the tools can be offered with HP coating.

More information on page 4.17.

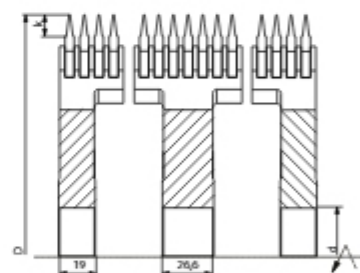
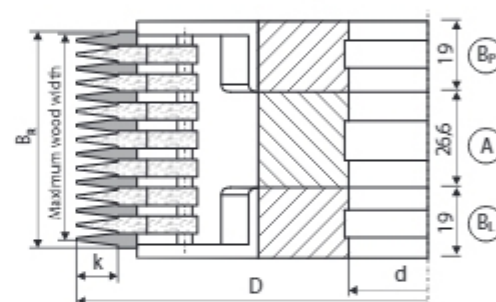
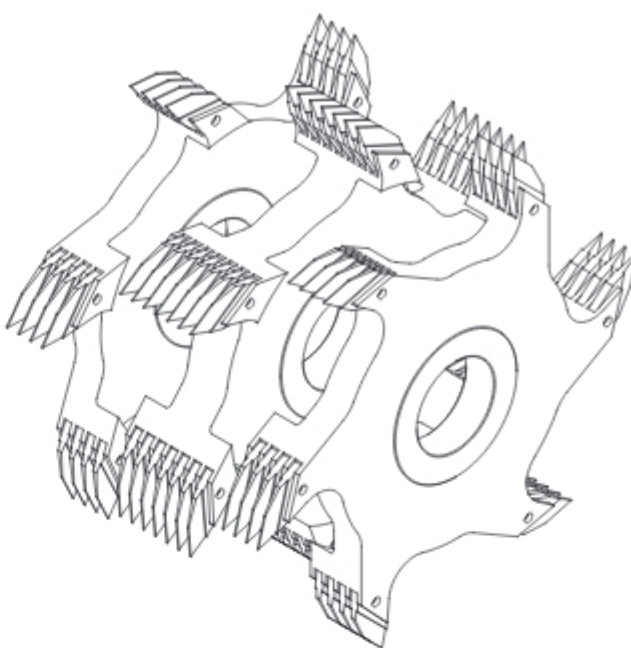
High-efficient finger joint brazed cutters, type **FZK-11A/11B** are characterized by increased life thanks to double quantity of working teeth (real $z=6$). A minimum set consists of one middle cutter type A and two side cutters type B. Obtaining bigger width of the machined material requires only adding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



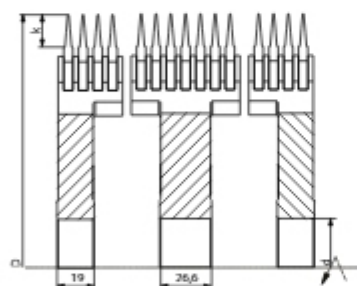
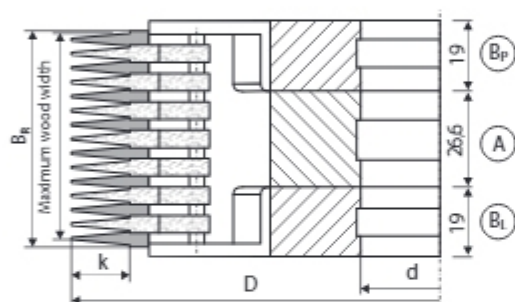
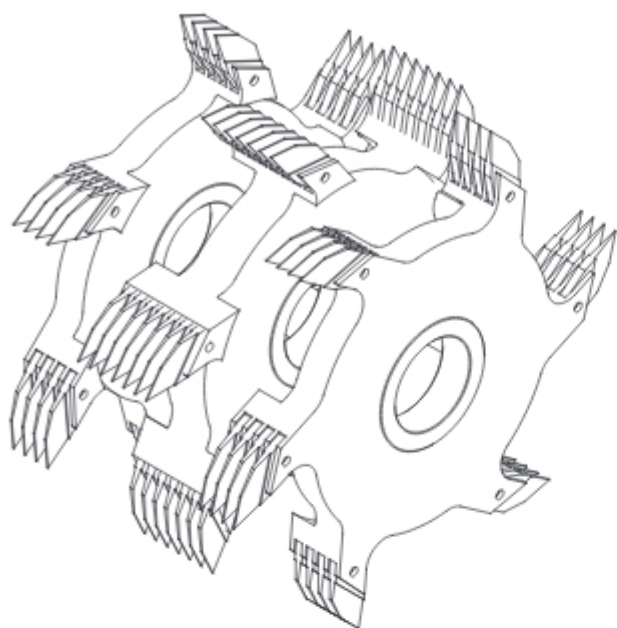
Catalogue number	Type	D mm	B mm	d mm	k mm	z	n_{min}
FZK11AS160-001	HSS FZK-11A middle	160	51,4	50	10/11x3,8	4	6000 +
FZK11BS160-01L	HSS FZK-11B left	160	28,6	50	10/11x3,8	4	6000 +
FZK11BS160-01P	HSS FZK-11B right	160	28,6	50	10/11x3,8	4	6000 +
FZK11AS250-001	HSS FZK-11A middle	250	51,4	50	10/11x3,8	6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

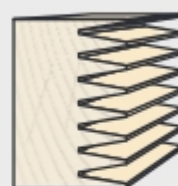
FZK-17A/17B



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	FZK-17A middle	170	51,4	50	15/16,5x3,8	4	8000	+
FZK17BS170-01L	FZK-17B left	170	36,6	50	15/16,5x3,8	4	8000	+
FZK17BS170-01P	FZK-17B right	170	36,6	50	15/16,5x3,8	4	8000	+
FZK17AS260-001	FZK-17A middle	260	51,4	50	15/16,5x3,8	6	6000	+
FZK17BS260-01L	FZK-17B left	260	36,6	50	15/16,5x3,8	6	6000	+
FZK17BS260-01P	FZK-17B right	260	36,6	50	15/16,5x3,8	6	6000	+
FZK17AS350-001	FZK-17A middle	350	51,4	80	15/16,5x3,8	8	4500	+
FZK17BS350-01L	FZK-17B left	350	36,6	80	15/16,5x3,8	8	4500	+
FZK17BS350-01P	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.

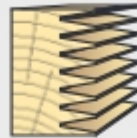
Optionally, the tools can be offered with HP coating.

More information on page 4.17.

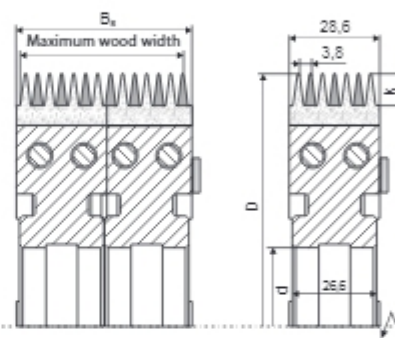
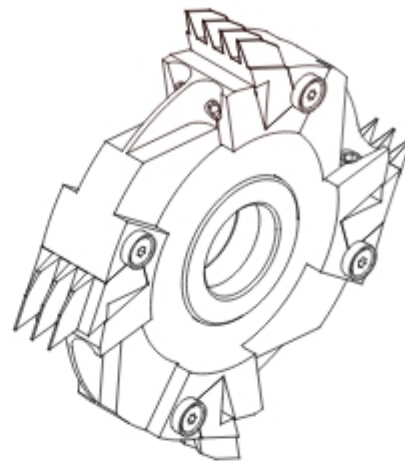
Finger joint cutter heads with exchangeable knives for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. Knives for the cutter head are available in the version with face cutting (formatting) (GZK-11, joint 10/11) or without cutting (GZK-12, joint 10/10).

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.

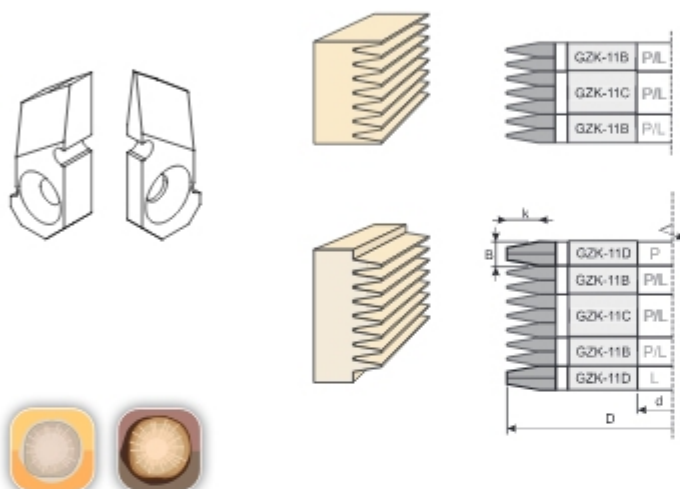
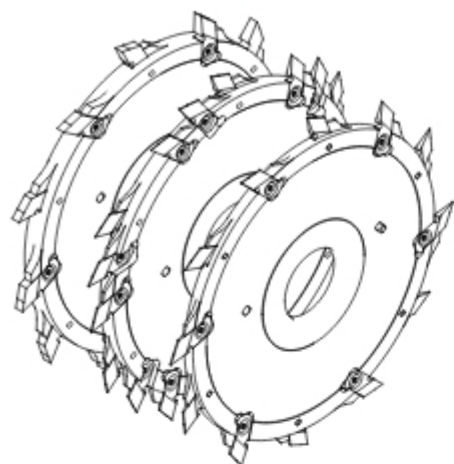
Cat. nr	Name	Dimensions	Quantity
WHAW00005	Clamp screw	M8 x 16	8/12 pcs.
WHAT00044	Locating sleeve	Ø12x3,6/6,5	4/6 pcs.
WHAS00006	Set screw	M6 x 10	4/6 pcs.

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.

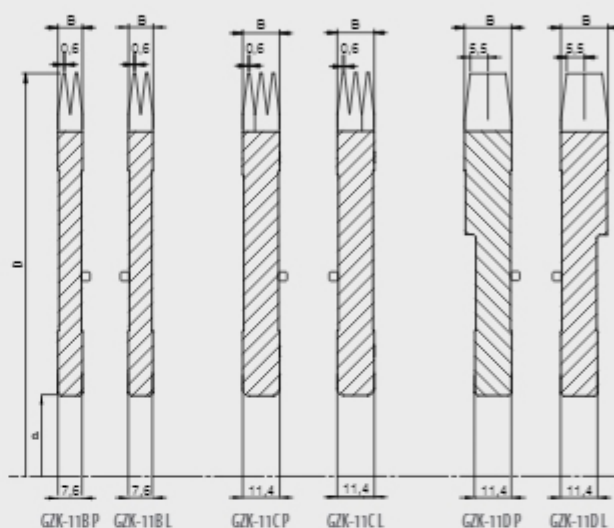
GZK-11 HM



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 mm	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 mm	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

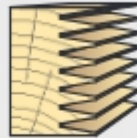
Cat. nr	Name	Dimensions
WHAS00008	Screw TOR 1064	M5x6,5
WHAS00015	Screw TOR 1065	M5x10

GZK-17/18

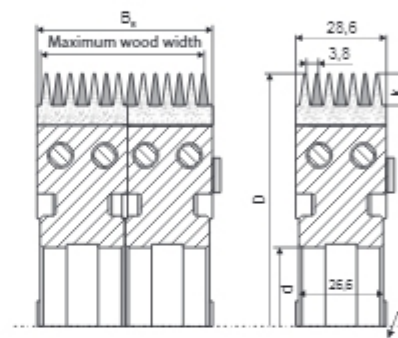
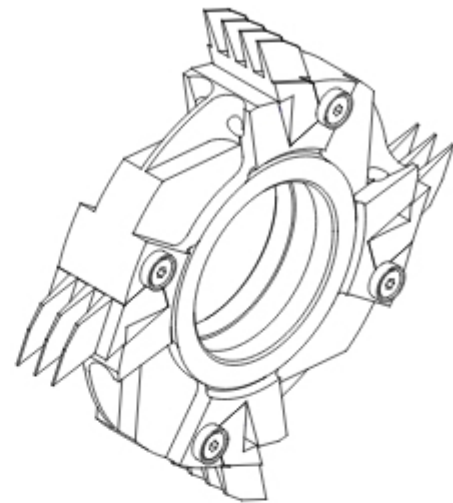
Finger joint cutter heads with exchangeable knives for jointing solid wood. Exceptional precision of the tool guarantees perfectly fitted joint. Knives for the cutter head are available in the version with face cutting (formatting) (GZK-17, joint 15/16,5) or without cutting (GZK-18, joint 15/15).

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



D mm	170 8000 60 2+2 28,6	260 6000 60 3+3 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. +

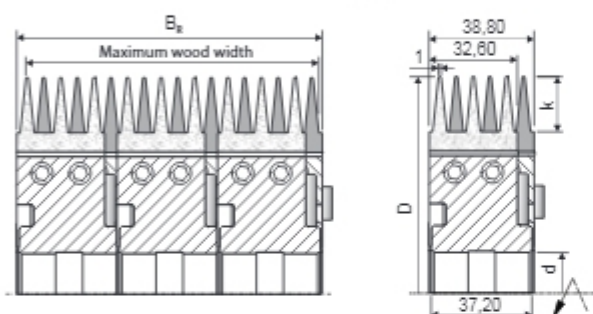
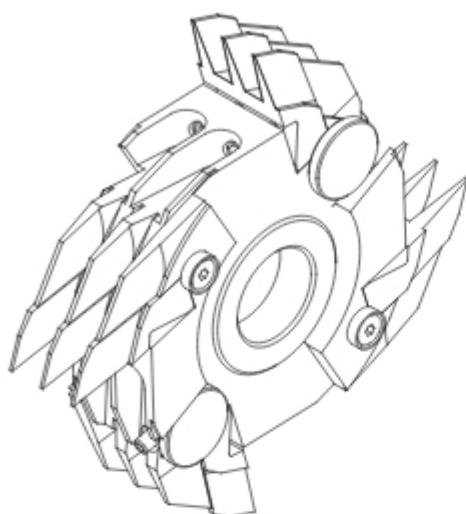
Cat. nr	Name	Dimensions	Quantity
WHAW00005	Clamp screw	M8 x 16	8/12 pcs. •
WHAT00044	Locating sleeve	Ø12x3,6/6,5	4/6 pcs. •
WHAS00006	Set screw	M6 x 10	4/6 pcs. •

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.

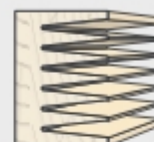
GZK-19/20



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	180	38,8	50	20/20 x6,2	2+2	8000
GZ20-6184-0	Cutter heads	180	38,8	50	20/22 x6,2	2+2	8000
GZ20-6266-0	Cutter heads	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		Ø12 x 3,6/6,5	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

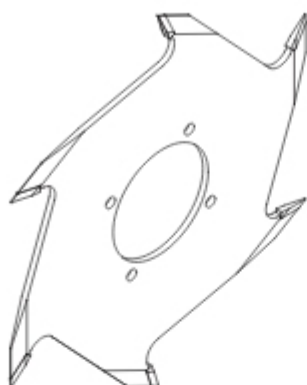
LONGLIFE FZK HP has been improved with special surface coating which significantly increases life of the tool, even several times, depending on the kind of the machined material.

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.

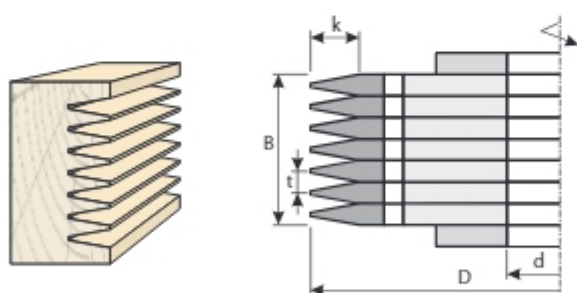
Material: solid softwood, glued wood.



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.

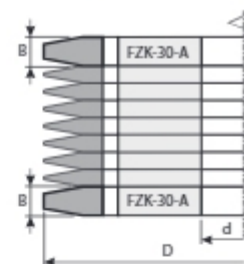
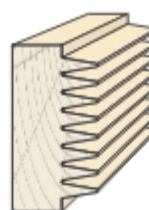
Side brazed cutters type **FZK-30-A** are complementary to the set of cutters type FZK-30 and FZK-30 Plus. Joint type "A" is made with a basic set, consisting of FZK-30 or FZK-30 Plus cutters and a set type "A" (basic set plus two side cutters FZK-30-A).

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	•

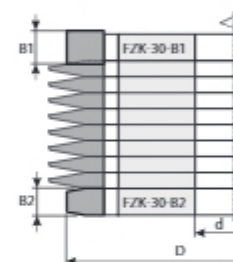
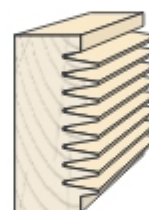
Side brazed cutters type **FZK-30-B1/B2** are complementary to the set of cutters type FZK-30 and FZK-30 Plus. Joint type "B" is made with one set (basic set plus two side cutters FZK-30-B1/B2) by reversing the profile (element).

Type of jointing: cross-joint.

Material: solid wood, glued wood.

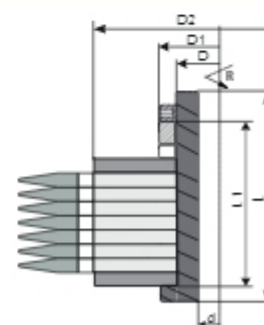


FZK-30-B1/B2



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



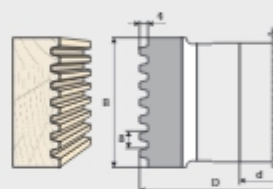
solid hardwood



FZK-02

Profile depth 4 mm.

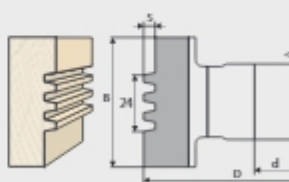
Pitch 8 mm.



D n d 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	HSS	HM	HSS
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.

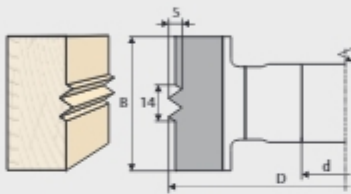
Material:

 solid softwood

 solid hardwood

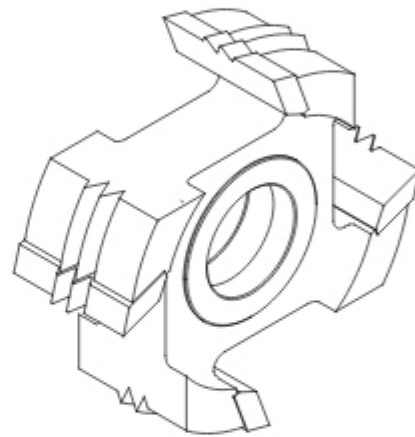


Profile depth 5 mm.



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

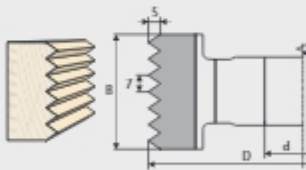
FZK-04



4

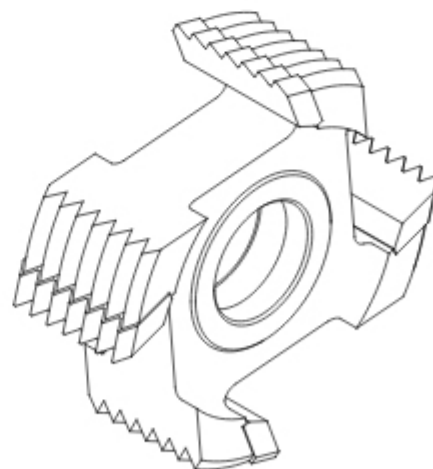
Profile depth 5 mm.

Pitch 7 mm.



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

FZK-05

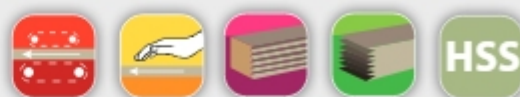


With orders for FZK type cutters, please give type of machined material, type of jointing (longitudinal, cross-joint) and clamping force (manual, mechanical).

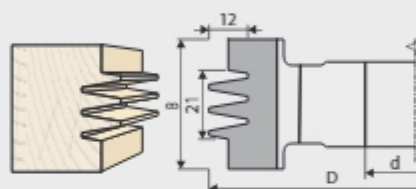
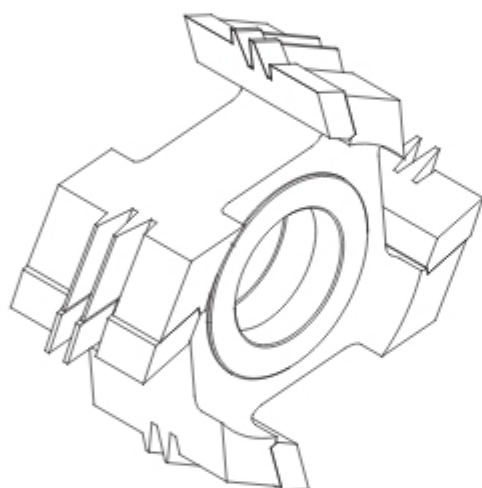
Mini-finger joint brazed cutters with big profile depth for stronger joint, designed for production of joint profile for gluing, for precise jointing of solid wood.

Type of jointing: longitudinal and cross-joint.

Material: solid softwood.

**FZK-06**

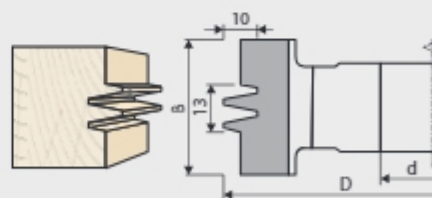
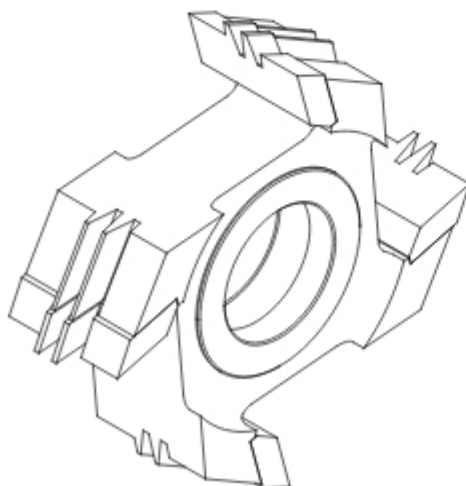
Profile depth 12 mm.



D n α _{max} z	120 9000 40 4	140 9000 40 4	160 9000 40 4
B mm	HSS	HSS	HSS
40	+	+	+
50	+	+	+
60	+	+	+

FZK-07

Profile depth 10 mm.



D n d z	120 9000 40 4	140 9000 40 4	160 9000 40 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

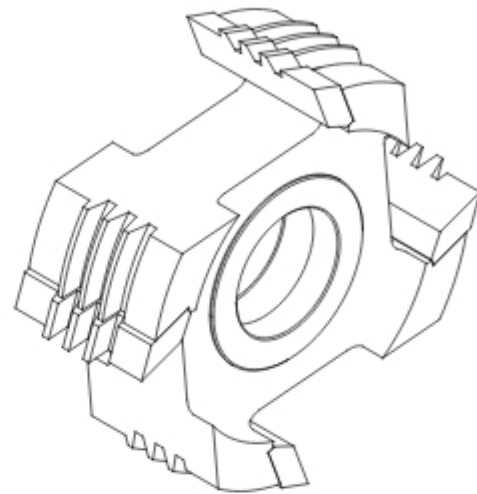
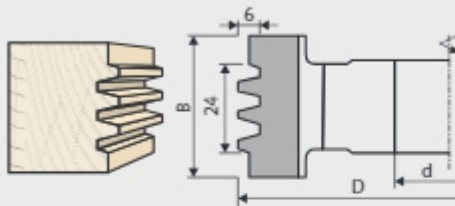
Mini-finger joint brazed cutters with small profile depth (6 mm), for reduction of scrap material, designed for production of joint profile for gluing, for precise jointing of solid wood.

Type of jointing: longitudinal and cross-joint.

Material:

 solid softwood

 solid hardwood



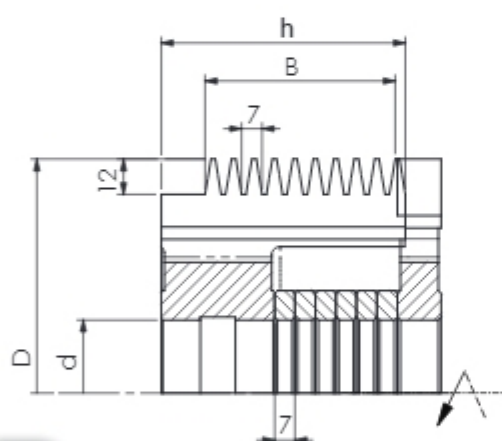
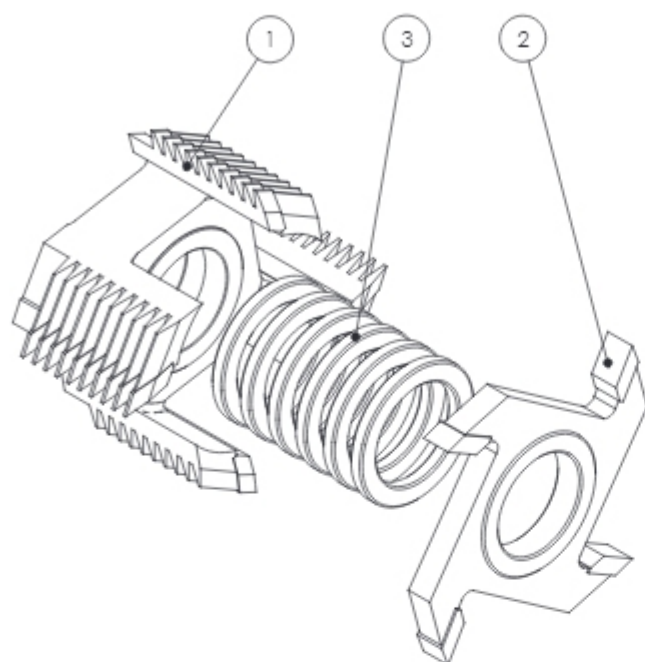
4



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

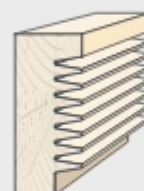


Set of finger joint brazed cutters for mini-finger joints type **ZZK-06** with regulated number of fingers and big profile depth (12 mm, pitch 7 mm) for stronger joint, designed for production of joint profile for gluing, for precise jointing of solid wood.

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  +

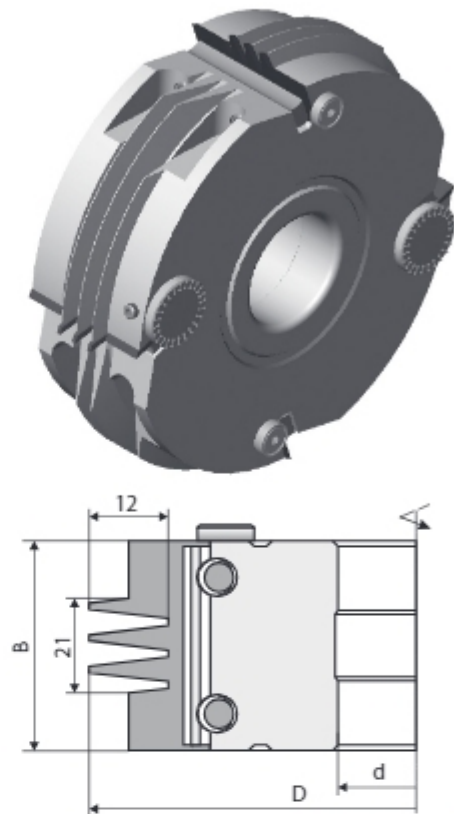
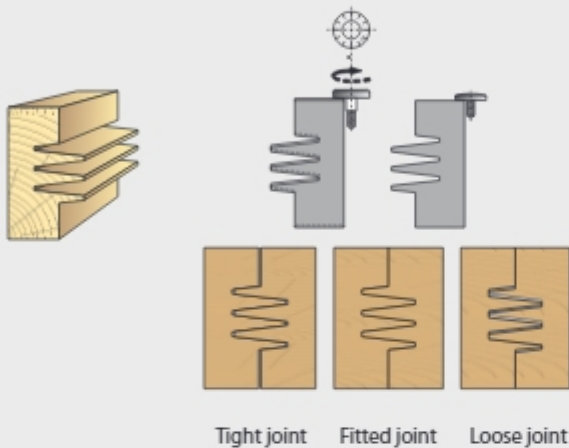
With orders for ZZK-06 type cutters, please give type of machined material.

GZK-06

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.



4

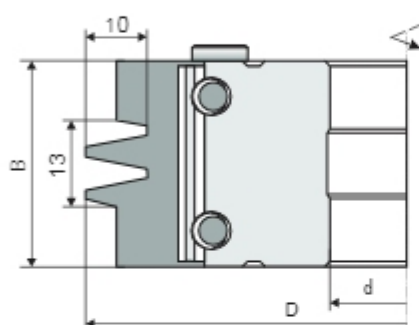
D mm	125 9000 40 2+2	140 9000 60 2+2	160 9000 60 2+2	160 9000 60 3+3	250 6000 60 3+3	250 6000 60 4+4
B mm						
20	+	+	+	+	+	+
25	+	+	+	+	+	+
30	+	+	+	+	+	+
35	+	+	+	+	+	+
40	+	+	+	+	+	+
50	+	+	+	+	+	+
60	+	+	+	+	+	+
70	+	+	+	+	+	+
80	+	+	+	+	+	+

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.

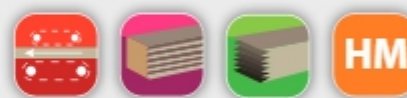
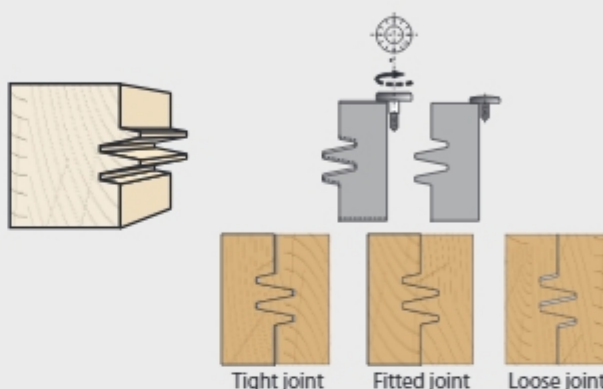
GZK-07



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.  •
WHA100114	Locating handwheel	Ø25 x 21	2/3/4 pcs.  •

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