



# 4. Tools for jointing

#### **General information**

## 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),



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# **Pictograms**



### longitudinal jointing cross-jointing carbide ΗМ high performance coating HP HSS

high-speed cutting steel

available/stock product

possible production time 9-15 working days.

**General information** 

### **Joint fitting**

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



**Correct 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 Vc**

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

**D** - tool diameter [mm] **n** - rotation speed [1/min] **p**<sub>z</sub> - feed per tooth [mm]

**z** - number of teeth

 $\pi$  = 3,14

4.4

### Feed p<sub>min</sub> / p<sub>z</sub>

 $\mathbf{p}_{\min}$  [m/min]  $\iff$   $\mathbf{p}_{z}$  [mm/tooth]

 $\mathbf{p}_{\min} = \frac{\mathbf{p}_z \times \mathbf{n} \times \mathbf{z}}{1\ 000}$ 

$$\mathbf{p}_{z} = \frac{\mathbf{p}_{\min} \times 1\,000}{\mathbf{n} \times \mathbf{z}}$$

#### Cutter for joints 4/10/15/20

FZK-11N/12N

Tools 4.1 for jointing

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 <sub>R</sub> 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





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D n <sub>max</sub> d <sub>max</sub> Z <sub>max</sub> B	1 90 2 2	40 000 40 +2 8,6	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 numb	Der	Туре	D mm	B mm	d mm	k mm	z	n <sub>max</sub>	
FZK11NS160-00	)1 HSS	FZK-11N	160	28,6	50	10/11x3,8	2+2	9000	٠
FZK11NS250-00	)1 HSS	FZK-11N	250	28,6	50	10/11x3,8	3+3	6000	•
FZK12NS140-00	2 HSS	FZK-12N	140	28,6	30	10/10x3,8	2+2	9000	•
FZK12NS140-00	)1 HSS	FZK-12N	140	28,6	40	10/10x3,8	2+2	9000	٠
FZK12NS160-00	)1 HSS	FZK-12N	160	28,6	40	10/10x3,8	2+2	9000	٠
FZK12NS160-00	2 HSS	FZK-12N	160	28,6	50	10/10x3,8	2+2	9000	٠

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 4.15.

### FZK-14N/15N



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. 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 <sub>R</sub> mm	Maximum wood width for pitch 3,8	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



D n <sub>max</sub> d <sub>max</sub> z <sub>max</sub> B		14 90( 4( 2+ 25	0 00 0 -2 ,9	16 900 60 2+ 25,	) 0 2 9		180 8000 60 3+3 25,9		200 700 60 3+: 25,	) 0 3 9	250 6000 70 4+4 25,9	
FZK-14N k=4/4,5x1,6		+	-	+			+		+		+	
FZK-15N k=4/4x1,6		+	-	+			+		+		+	
Catalogue nui	mber		Туре	D	ı	B mm	d mr	n	k mm	z	n <sub>max</sub>	
FZK14NS160-	-001	HSS	FZK-14N	16	)	25,9	50	)	4/4,5x1,6	2+2	9000	+
FZK14NS250-	-001	HSS	FZK-14N	25	)	25,9	50	)	4/4,5x1,6	3+3	6000	+
FZK15NS160-	-002	HSS	FZK-15N	16	)	25,9	50	)	4/4x1,6	2+2	9000	+
FZK15NS250-	-001	HSS	FZK-15N	25	)	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 4.15.





### Cutter for joints 4/10/15/20

FZK-17N/18N

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Tools 4.1 for jointing

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 <sub>R</sub> 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 n <sub>max</sub> d <sub>max</sub> z <sub>max</sub> B	140 9000 35 2+2 28,6	160 9000 50 2+2 28,6	170 8000 60 2+2 28,6	180 7000 60 3+3 28,6	200 6000 70 3+3 28,6	250 6000 70 3+3 28,6	260 6000 70 3+3 28,6	) D 5
FZK-17N k=15/16,5x3,8	+	+	+	+	+	+	+	
FZK-18N k=15/15x3,8	+	+	+	+	+	+	+	
Catalogue numbe	er Typ	e D mm	B mm	d mm	k mm	Z	n <sub>max</sub>	
FZK17NS170-002	HSS FZK-1	7N 170	28,6	50	15/16,5x3,8	2+2	8000	+
FZK17NS260-001	HSS FZK-1	7N 260	28,6	50	15/16,5x3,8	3+3	6000	+
FZK18NS170-001	HSS FZK-18	8N 170	28,6	50	15/15x3,8	2+2	8000	+
FZK18NS260-001	HSS FZK-18	8N 260	28,6	50	15/15x3,8	3+3	6000	+

Optionally, the tools can be offered with HP coating. More information on page 4.15.

### FZK-19N/20N



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.







B <sub>R</sub> 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	б
231,0	214	7
264,0	245	8





D n <sub>max</sub> d <sub>max</sub> Z <sub>max</sub> B	160 9000 50 2+2 33	170 8000 50 3+3 33	180 7000 60 3+3 33	200 6000 60 3+3 33	250 6000 70 4+4 33	260 6000 80 4+4 33
FZK-19N k=20/20x6,2	+	+	+	+	+	+
FZK-20N k=20/22x6,2	+	+	+	+	+	+

Catalogue number	Туре	D mm	B mm	d mm	k mm	z	n <sub>max</sub>	
FZK19NS180-002	HSS FZK-19N	180	33	50	20/20x6,2	2+2	6000	+
FZK20NS180-001	HSS FZK-20N	180	33	50	20/22x6,2	2+2	6000	+
FZK20NS260-001	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 4.15.

### Tools 4.1 for jointing

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 <sub>R</sub> 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



### FZK-11A/11B









Catalogue number	Туре	D mm	B mm	d mm	k mm	z	n <sub>max</sub>
FZK11AS160-001	FZK-11A n	niddle 160	50,4	50	10/11x3,8	4	6000 +
FZK11BS160-01L HSS	FZK-11B le	eft 160	27,6	50	10/11x3,8	4	6000 +
FZK11BS160-01P HSS	FZK-11B ri	ight 160	27,6	50	10/11x3,8	4	6000 +
FZK11AS250-001 HSS	FZK-11A n	niddle 250	50,4	50	10/11x3,8	6	6000 +
FZK11BS250-01L HSS	FZK-11B le	eft 250	27,6	50	10/11x3,8	6	6000 +
FZK11BS250-01P HSS	FZK-11B ri	ight 250	27,6	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 4.15.

### FZK-14A/14B



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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 <sub>R</sub> 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

HP



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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 4.15.

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### Tools 4.1 for jointing

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 <sub>R</sub> 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



### FZK-17A/17B









	Catalogue number		Туре		D mm	B mm	d mm	k mm	Z	n <sub>max</sub>	
	FZK17AS170-0001	HSS	FZK-17A	middle	170	50,4	50	15/16,5x3,8	4	8000	+
1	FZK17BS170-01L	HSS	FZK-17B	left	170	27,6	50	15/16,5x3,8	4	8000	+
	FZK17BS170-01P	HSS	FZK-17B	right	170	27,6	50	15/16,5x3,8	4	8000	+
	FZK17AS260-001	HSS	FZK-17A	middle	260	50,4	50	15/16,5x3,8	6	6000	+
1											
	FZK17BS260-01L	HSS	FZK-17B	left	260	27,6	50	15/16,5x3,8	6	6000	+
	FZK17BS260-01P	HSS	FZK-17B	right	260	27,6	50	15/16,5x3,8	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 4.13.

28,6

3,8

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### GZK-11/12



Maximum wood width

 $\cap$  $\cap$  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.



B <sub>R</sub> 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 n <sub>max</sub> d <sub>max</sub> z B	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		Туре	D mm	B mm	d mm	k mm	z	n <sub>max</sub>	
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	٠
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	٠

#### Spare parts for cutter heads GZK 11/12

Cat. nr		Name	Туре	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. 🍆 •

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

Cat. nr	Name	Dimensions	Quantity		
WHAW00005	Clamp screw	M8 x 16	8/12pcs.		٠
WHAT00044	Locating sleeve	Ø12x3,6/6,5	4/6 pcs.	Ø	•
WHAS00006	Set screw	M6 x 10	4/6 pcs.		•

Optionally, the knives can be offered with HP coating. More information on page 8.8.

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### Cutter heads for joints 10/15/20

### Tools 4.2 for jointing

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 <sub>R</sub> 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 n <sub>max</sub> d <sub>max</sub> z B	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		Туре	D mm	B mm	d mm	k mm	z	n <sub>max</sub>	
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	+

	S	pare parts i	for cutter	heads	GZK 17/18	
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Cat. nr	Name	Туре	Dimensions	Quantity	
N2060171	HSS Knife A	GZK-17	28,6 x 43,2 x 14	2/3 pcs.	+
N2060172	HSS Knife B	GZK-17	28,6 x 43,2 x 14	2/3 pcs.	+
N2060181	HSS Knife A	GZK-18	28,6 x 44,7 x 14	2/3 pcs.	+
N2060182	HSS Knife B	GZK-18	28,6 x 44,7 x 14	2/3 pcs.	+

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

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Optionally, the knives can be offered with HP coating. More information on page 8.8.





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

### 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 <sub>R</sub> 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



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D n <sub>max</sub> d <sub>max</sub> z B	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		Туре	D mm	B mm	d mm	k mm	z	n <sub>max</sub>	
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 GZ	.K 19/20					
Cat. nr	Name Type	Dimensions	Quantity	Cat. nr	Name	Dimensions	Quantity
N2060229 HSS	Knife GZK-19	32,6 x 48,3 x 14	4/6 pcs. 🎐 +	WHAS00006	Set screw	M6 x 10	4/6 pcs.
N2060201 HSS	Knife GZK-20	32,6 x 48,3 x 14	4/6 pcs. 🔄 +	WHAW00002	Clamp screw	M5 x 12	2 / 3 pcs.
WHAT00044	Locating sleeve	Ø12x3,6/6,5	4/6 pcs. 🖉 •	WHAI00114	Locating handwheel	Ø25 x 21	2/3 pcs. 🍗
WHAW00005	Clamp screw	M8 x 16	8/12pcs				

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

FABA

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.

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.

### 4.3 Tools for jointing

### **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.



Туре	D mm	B mm	d <sub>m</sub> mi	ax <b>M</b>	k mm	z		n <sub>max</sub>	
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	Туре	D mm	t mm	d mm	k	Z	pin holes	n <sub>max</sub>	
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	Туре	D mm	t mm	d mm	k	z	pin holes	n <sub>max</sub>	
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	٠

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



Cutter with HM tips - disc cutters

### Tools 4.3 for jointing

4

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.









Catalogue number	Туре	D mm	B mm	d <sub>max</sub> mm	Z	n <sub>max</sub>	
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	Туре	D mm	B mm	d <sub>max</sub> mm	Z	n <sub>max</sub>	
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	+

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



222

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: HSS solid softwood





Profile depth 4 mm. Pitch 8 mm.



D n <sub>max</sub> d <sub>max</sub> z	12 90 4	20 00 0 1	140 9000 40 4		
B mm	HSS	НМ	HSS	НМ	
45	+	+	+	+	
61	+	+	+	+	
77	+	+	+	+	
93	+	+	+	+	
109	+	+	+	+	

### FZK-03

taaac

FZK-02



Profile depth 5 mm.



D n <sub>max</sub> d <sub>max</sub> z	1. 90 4	25 100 10 4	140 9000 40 4		
B mm	HSS	НМ	HSS	НМ	
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)

4.18

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:

HSS solid softwood

HM solid hardwood



#### Profile depth 5 mm.



D n <sub>max</sub> d <sub>max</sub> z	125 9000 40 4		140 9000 40 4		
B mm	HSS	НМ	HSS	НМ	
30	+	+	+	+	
40	+	+	+	+	
50	+	+	+	+	

Profile depth 5 mm. Pitch 7 mm.



D n <sub>max</sub> d <sub>max</sub> z	1; 90 4	25 00 0 4	140 9000 40 4				
B mm	HSS	НМ	HSS	НМ			
35	+	+	+	+			
42	+	+	+	+			
49	+	+	+	+			
56	+	+	+	+			
63	+	+	+	+			

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





## FZK-05







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



Profile depth 12 mm.



FZK-06



D n <sub>max</sub> d <sub>max</sub> z	120 9000 40 4	140 9000 40 4
B mm	HSS	HSS
40	+	+
50	+	+
60	+	+

# FZK-07



Profile depth 10 mm.



D n <sub>max</sub> d <sub>max</sub> z	120 9000 40 4	140 9000 40 4
B mm	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).

4.20

Tools 4.4 for jointing

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:

HSS solid softwood

\max solid hardwood











D n <sub>max</sub> d <sub>max</sub> z	12 90( 4( 4	5 10 1	140 9000 40 4			
B mm	HSS	НМ	HSS	НМ		
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 <sub>max</sub> d <sub>max</sub> z n <sub>max</sub> B mm	140 9000 50 4 9000	160 9000 50 4 9000
16-51	+	+
23-65	+	+

E	Elements of set of cutters ZZK-06 D=140, B=16-51													
	Cat. nr	Name	Dimensions	Q	uantity			Cat. nr	Name	Dimensions		Quanti	ity	
1.	ZZK06s140A001	Cutter	140 x 69,5/40	4	1	+	2.	ZZK06s140B001	Cutter	140 x 15/40	4	1	ò	+
							3.	WHAP00109	Distance ring	60/40 x 7		5	0	+

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

#### Tools 4.6 for jointing

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





+

+

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D n d<sub>max</sub>

> B mm 20

> > 25

30

35

40

50

60

70

80

**GZK-06** 







+

+

+

+

#### 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. 🖉 •	WHAI00114	Locating handwhee	Ø25 x 21	2/3/4 pcs. 🍗 🔹
WHAW00005	Clamp screw	M8 x 16	8/12/16 pcs.				

+

+

Δ

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 <sub>max</sub> d <sub>max</sub> z <sub>max</sub>	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	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. 🖉 •	WHAI00114	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.