



# FKP656-set

## Dowel jig for angular dowel joints

*Operationg instructions*



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FKP656 IGM Dowel Jig for Angular Dowel Joints Manual EN v3.9 A4ob



# Operating instructions EN

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## USE OF FKP400, 656 JIG

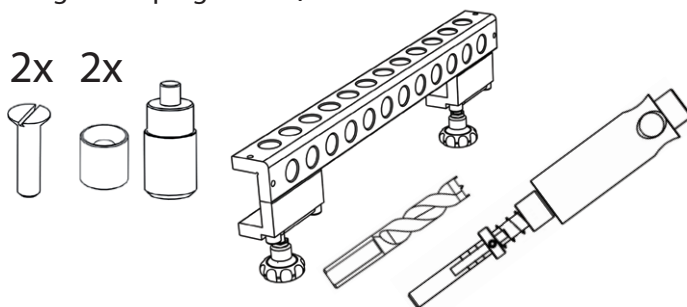
The FKP 400 & FKP 656 jig is designed to produce of furniture elements angular joints with dowels for board thickness 18-45 mm or with confirmate screws of 40-50-60 mm for board thickness of 18-30 mm together with boring bush FKP101 and FKP102 with any cordless or percussion drilling machine. The clever boring bush conception enables the use of one boring bush with a wide range of dowel bits with various boring diameters. The FKP400 and FKP656 jig increases the quality and precision of dowel or confirmate screw joints. The whole system is based on the use of boring jig made from eloxed duralumin and of boring bush in which a dowel bit with HM cutting edge is clamped. Thanks to the simple construction, maximal precision of the boring jig and boring bush you can produce a precise dowel or confirmate screw joint. The production of one angular joint takes about 10 - 20 minutes, depending on the joint size.

### Basic accessories

#### FKP400-set

##### - The boring jig FKP400

- 1 pc Boring jig made of eloxed duralumin with threading for stop tightening on both sides
- 2 pc Steel stops D10x10
- 2 pc Screws M4x16
- 1 pc Centering pin D8
- 2 pc Tightening flanges
- 4 pc Screws M8x45



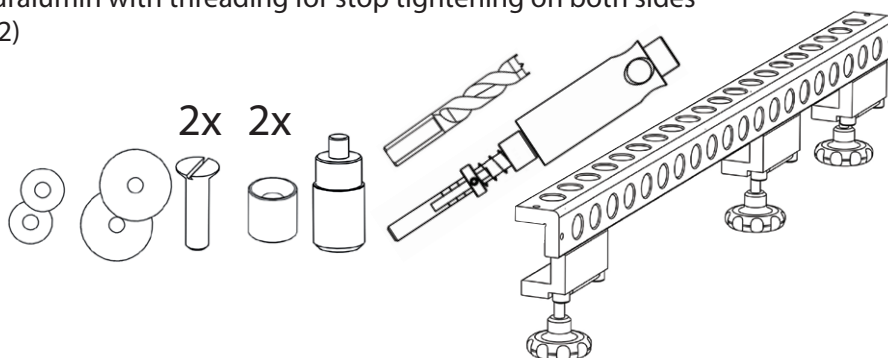
##### - Boring bush FKP101

##### - Dowel bit D8x30 mm C30608011

#### FKP656-set

##### - The boring jig FKP656

- 1 pc Boring jig made of eloxed duralumin with threading for stop tightening on both sides
- 2 pc Steel stops D10x10 (version 2)
- 2 pc Screws M4x16
- 1 pc Centering pin D8
- 3 pc Tightening flanges
- 6 pc Screws M8x45
- 2 pcs washers d6/30 (version 3)
- 2 pcs washers d6/18 (version 3)



##### - Boring bush FKP101

##### - Dowel bit D8x30 mm C30608011

### Accessories required for production of confirmate and dowel joints:

- CORDLESS OR PERCUSSION DRILL
- BORING BUSH FKP 101
- BORING BUSH FKP 102 (holes for confirmate screws with length 40-50-60 mm)
- BORING BITS AND TIGHTENING SHANK S=8 MM

D 8x30 mm dowel bit HM \_\_\_ **C30808011** \_\_\_ for **FKP101** (blind holes)

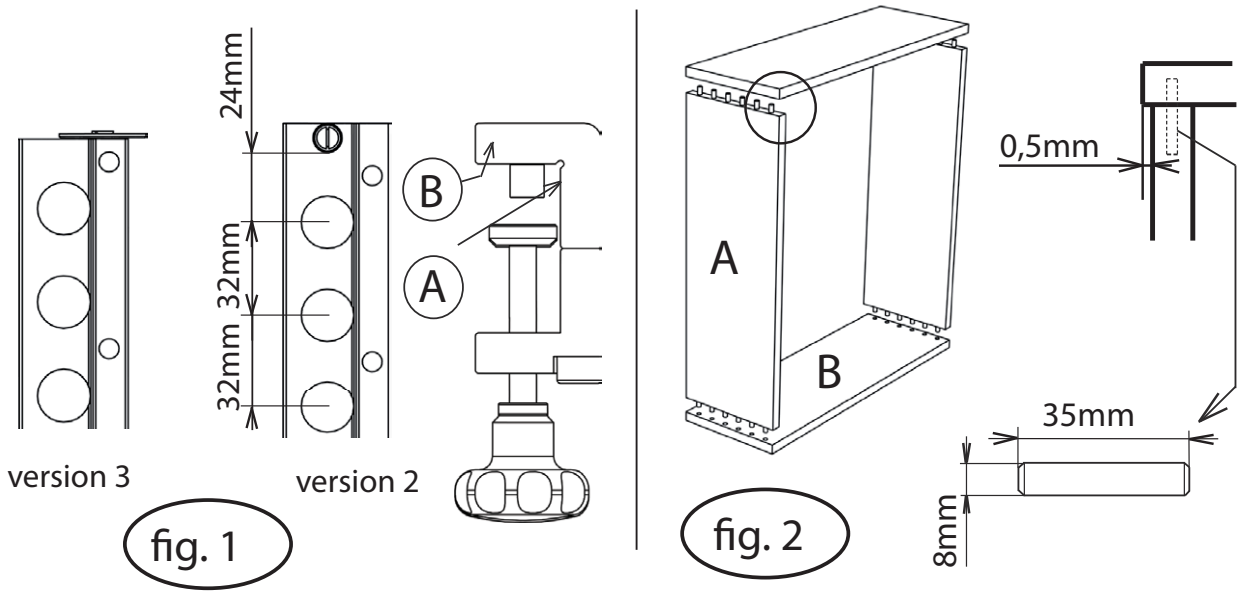
D 5x40 mm dowel bit HM \_\_\_ **C30905011** \_\_\_ for **FKP102** (blind holes)

D 7x30 mm dowel bit HM \_\_\_ **C36707011** \_\_\_ for **FKP101** (through holes for confirmate screws)

**Description of the jig FKP400, FKP656**

The whole jig is composed of a duralumin corps with precise 18 mm diameter and 32 mm spacings holes, of tightening flange with tightening screws and of stops fixed at the jig edges. According to requirements, the stops can be taken off. The stops are conceived so that the first dowel is placed 24 mm from the edge (**fig. 1**). The version 3 contains 2 types of washers, use the one that suits you better.

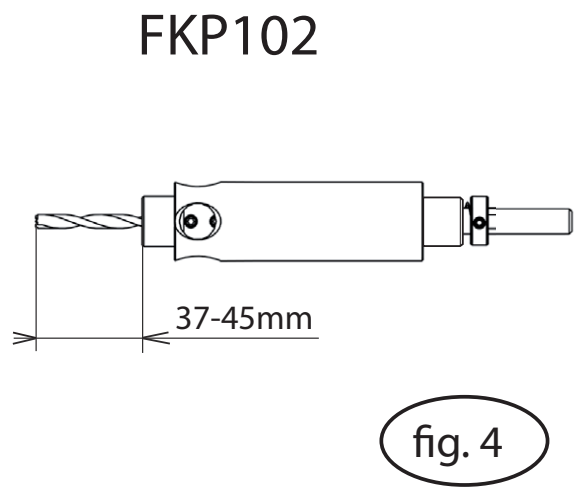
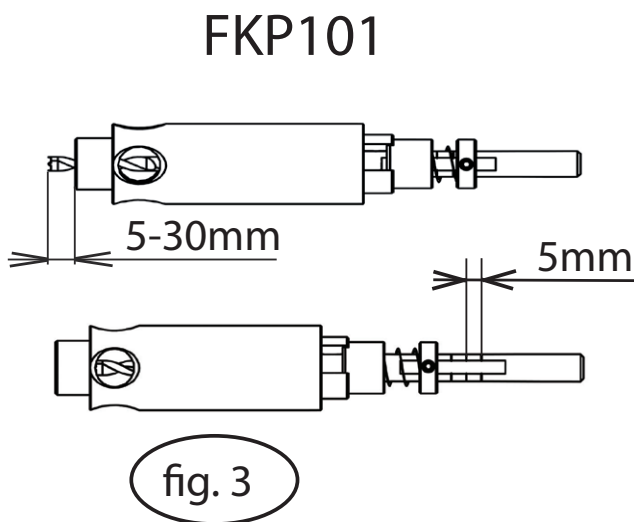
- A... JIG SURFACE - boring holes into the side
- B... JIG SURFACE - boring holes into the surface



The boring jig is composed of two planes equipped with a line of 18 mm diameter holes. The hole lines are shifted to each other to create a lap, so called facet of one workpiece of 0,5 mm (**fig. 2**). Before use, always ensure that the stops are well tightened, that both jig planes are abutting on the workpiece and the stops are touching the workpiece.

**DESCRIPTION OF BORING BUSH FKP101, FKP102**

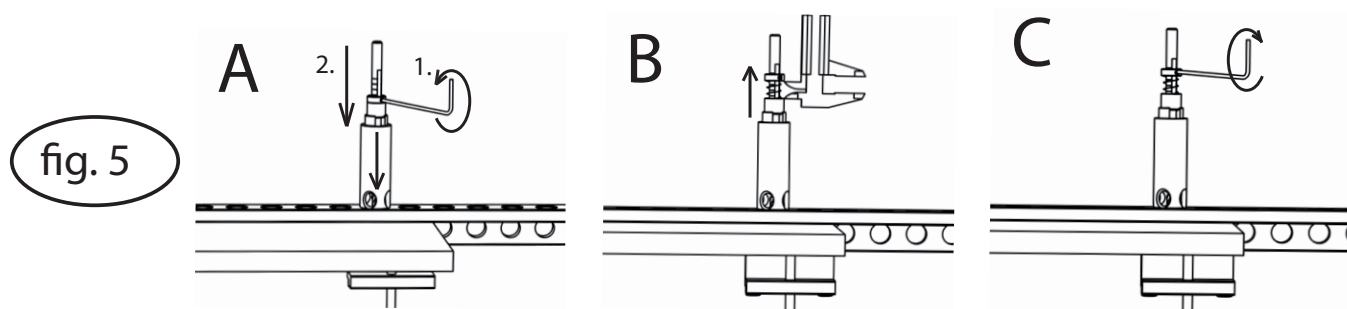
The boring bush is composed of a duralumin centering bush and a 9 mm diameter shaft with tightening part for dowel bits. The boring shank is seated in the centering bush bearing to provide maximal boring precision. The tightening part is secured with a spring and a stop ring fixed by a screw. The boring depth is set by the stop ring, for boring depth range see figure (**fig. 3 & 4**). The boring bush FKP101 is for simple boring depth setting equipped with a scale with lines à 5 mm (**fig. 3**).



## Setting of boring depth FKP101, 102

The setting procedure is represented in the figure (fig. 5). For simple boring dowels of 35 mm length, use the FKP101-8 ring (from 1.8.2010 included in the sets). Insert the FKP ring under the spring stop (fig. 3). Tighten the workpiece to the jig. The setting is made on the upper surface of the jig. Put the boring bush into the 18 mm diameter holes so that after pressing onto the shank, the point of the dowel bit touches the workpiece. Loosen the setting stop ring screw (imbus key 2 is included in FKP101-102 packing) and press the stop ring to the jig until the stop ring touches the spring stop (fig. 5A). The zero point for the boring depth setting is thus set. The boring depth for boring into surface, which is now 15 mm, is set between the stop ring and the spring stop.

The boring depth set, tighten carefully the screw of the stop ring considering the screw diameter (fig. 5 C). At the boring bush FKP101, this value can be read with the help of lines at the shank, distance of lines is 5 mm (fig. 3). The stop ring is designed so that the side boring depth is 2 mm longer than the total dowel length, which is 35 mm (reserve for the glue).



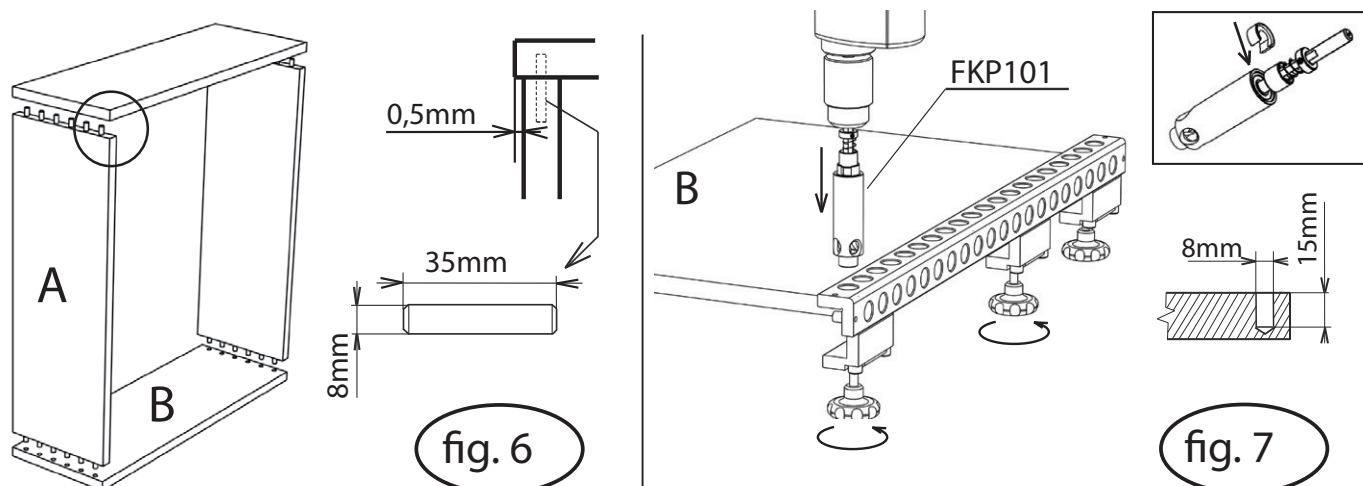
## ANGULAR JOINT PRODUCING

Dividing up of the cupboard elements is represented in the figure (fig. 6).

- Before boring always check whether the inner part of the jig is perfectly touching the workpiece.
- Always adjust the workpiece from the front side on and when boring hole into the side the tightening flanges must be oriented to the reverse of the workpiece, never contrariwise!! Thus you ensure a 0,5mm facet.**
- Check the boring depth before boring.
- If the bored hole isn't clean the dowel bit must be grinded.
- If the hole isn't deep enough, set longer boring depth on the boring bush FKP101.

## Boring holes into the surface

Tighten a metal stop into the hole at the jig edge. Place the FKP on the workpiece so that the edge stop is touching the front side of the workpiece and the surface A of the jig is oriented to the reverse of the workpiece (fig. 7).





**Boring holes into the side**

Tighten a metal stop into the hole at the jig edge. Place the FKP on the workpiece so that the edge stop is touching the front side of the workpiece and the tightening flanges are oriented to the reverse of the workpiece (fig.8).

Ensure that the stop is touching the front side of the board and the inner parts of the jig are abutting on the workpiece. Tighten the **FKP** by the tightening flanges. Tighten the screws by hand with optimal power - for sufficient tightening no excessive power is needed. Remove the stop ring FKP101-8 from the boring bush. Thus you will change the boring depth at 22 mm (fig. 8). Put the boring bush with respective dowel bit into the holes and bore dowel holes (fig. 8). Bore rather deep holes on multiple pass, so that the cuttings can be well evacuated. Keep the correct revolutions direction - dowel bits are delivered in right-handed construction.

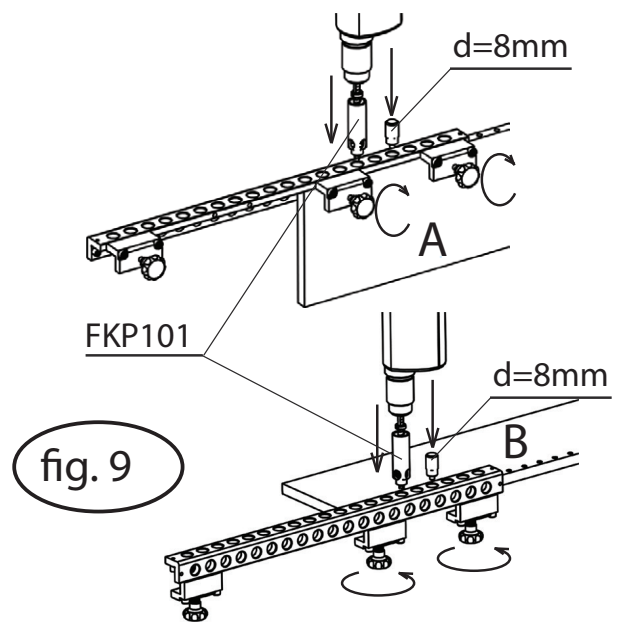
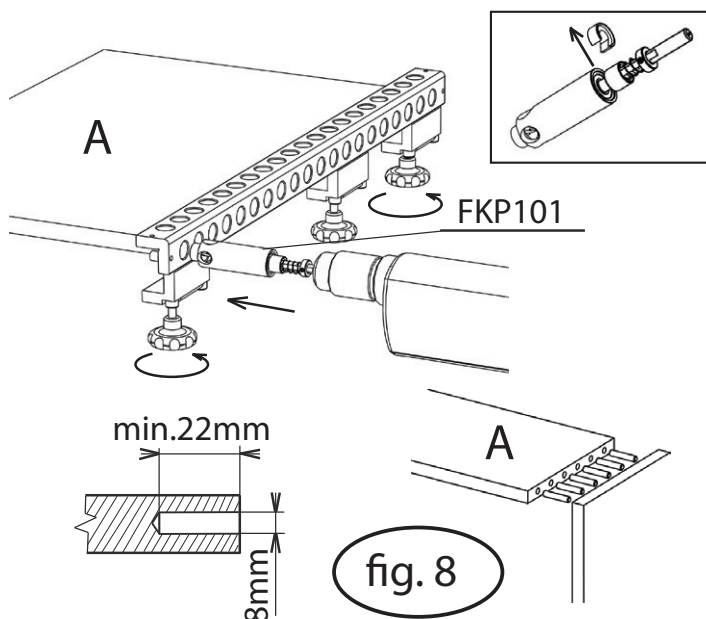
**Producing of longer joint than the jig**

The working procedure is represented in the figure (fig. 9).

The edge stop removed, the boring jig can be shifted along the workpiece side. To hold the last hole and keep the 32 mm spacing, use a **centering pin**. The boring jig is delivered with a centering pin for 8 mm dowel diameter. The procedure is the same as when boring with the edge stop, the jig position on the workpiece is ensured by the **centering pin**.

**Warning !!!**

While boring, press the boring bush to the jig to keep the perpendicularity. You can support the boring bush with the other hand. Always keep the drilling machine perpendicular so that the boring bush is touching **FK** with its entire surface. **It is better to bore holes on multiple pass. Always follow the safety instructions for work with the drilling machine!**



# Operating instructions EN

## CONFIRMATE JOINTS PRODUCING

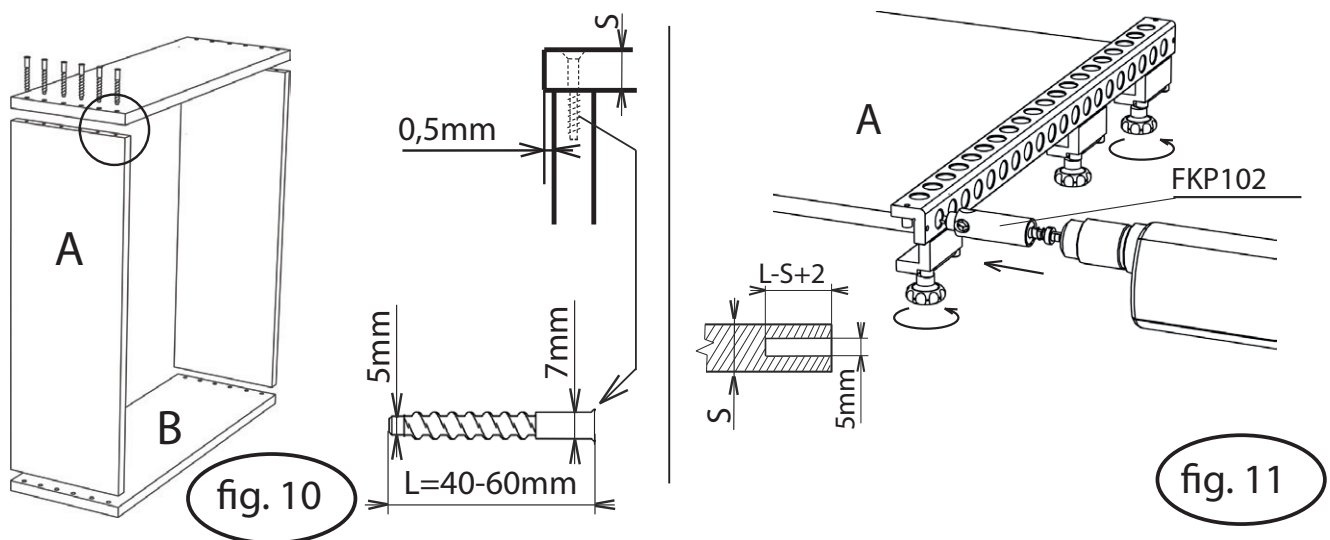
Dividing up of the cupboard elements is represented in the figure (fig. 10).

- Before boring always check whether the inner part of the jig is perfectly touching the workpiece.
- **Always adjust the workpiece from the front side on and when boring hole into the side the tightening flanges must be oriented to the reverse of the workpiece, never contrariwise!! Thus you ensure a 0,5mm facet.**
- Check the boring depth before boring.
- If the bored hole isn't clean the dowel bit must be grinded.
- If the hole isn't deep enough, set longer boring depth on the boring bush FKP101.

### Boring holes into the side

At first, calculate the hole depth you need to bore into the side. To calculate it, subtract the thickness of the material plus 2 mm reserve from the total confirmate screw length (eg.: confirmate screw 60 mm - 18 mm lamino - 2 mm reserve = boring depth 40 mm). Use the boring bush **FKP102** with a dowel bit for blind holes with 5 mm diameter and 40 mm cutting length. The boring depth range is 37 -45 mm, for boring depth setting see Dowel joint producing. Tighten a metal stop into the hole at the jig edge. Place the FKP on the workpiece so that the edge stop is touching the front side of the workpiece and the tightening flanges are oriented to the reverse of the workpiece. (fig. 11).

**Don't use the stop ring FKP101-8 to set the boring depth for confirmate screws!**



Ensure that the stop is touching the front side of the board and the inner parts of the jig are abutting on the workpiece. Tighten the **FKP** by the tightening flanges. Tighten the screws by hand with optimal power – for sufficient tightening no excessive power is needed. Set the boring depth of the boring bush. Put the boring bush with respective dowel bit into the holes and bore confirmate holes (fig. 11). Bore rather deep holes on multiple pass, so that the cuttings can be well evacuated. Keep the right revolutions direction - dowel bits are delivered in right-handed construction.

### Boring holes into the surface

**Use the boring bush FKP101 with a dowel bit for 7 mm diameter through holes!** Tighten a metal stop into the hole at the jig edge. Place the FKP on the workpiece so that the edge stop is touching the front side of the workpiece and the surface **A** of the jig is oriented to the reverse of the workpiece (fig. 12).

Ensure that the stop is touching the front side of the board and the inner parts of the jig are abutting on the workpiece. Tighten the **FKP** by the tightening flanges. Set the boring depth of the boring bush at maximum possible. Put the boring bush with respective dowel bit into the holes and bore confirmate holes (fig. 12). Bore rather deep holes on multiple pass so that the cuttings can be well evacuated. Keep the right revolutions direction - dowel bits are delivered in right-handed construction. The hole must go through the material.

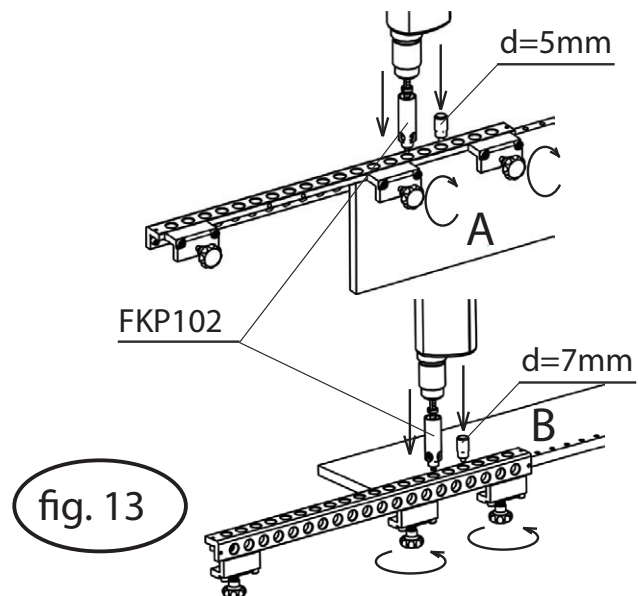
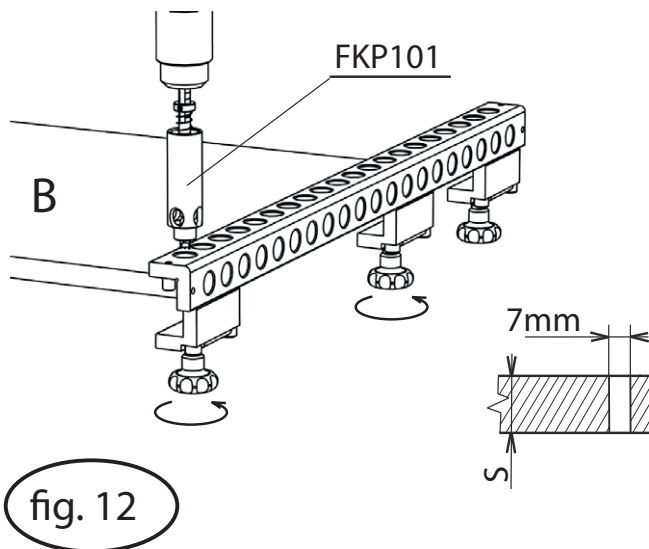
### Producing of longer joint than the jig

The working procedure is represented in the figure (fig. 13).

The edge stop removed, the boring jig can be shifted along the workpiece side. To hold the last hole and keep the 32 mm spacing, use centering pins delivered with the basis package of boring bush FKP102. To hold the position when boring into side, use the 5 mm diameter centering pin, when boring into surface, use the 7 mm diameter centering pin. The procedure is the same as when boring with the edge stop, the jig position on the workpiece is ensured by the centering pin.

### **The dowel and confirmate joints can be combined within one joint !!!**

While boring, press the boring bush to the jig to keep the perpendicularity. You can support the boring bush with the other hand. Always keep the drilling machine perpendicular so that the boring bush is touching **FK** with its entire surface. **It is better to bore holes one multiple pass. Always follow the safety instructions for work with the drilling machine!**

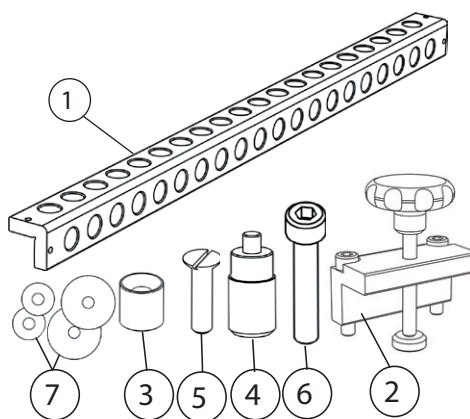


### **SAFETY AT WORK**

- Always unplug the drilling machine when exchanging the dowel bit or setting the drilling machine.
- Don't touch the rotating parts when boring.
- Use hearing protectors.
- Always use a dust mask or a respirator.
- Don't wear loose clothing. Ensure that you have tucked your sleeves and that you don't wear any tie.
- Before switching the power tool on, ensure that the dowel bit is well tightened and the stop ring is secured.
- Prevent unwanted switching of the drilling machine: ensure that the switch of the drilling machine isn't locked up in position "on" before plugging-in.
- Wait until the dowel bit is completely stopped before starting any setting of the drilling machine.

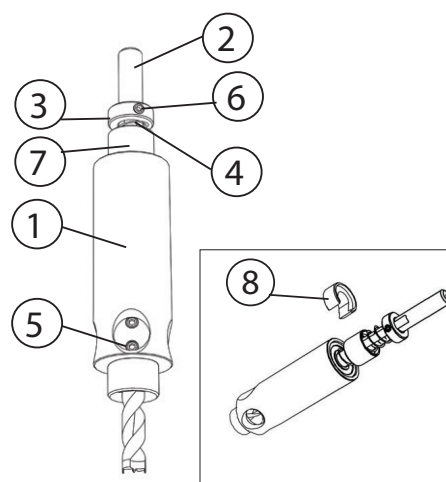
# FKP400-656

Spare parts list v.2 and 3			
Pos.#	Description	Pieces	Code
1	Corps of the boring jig FKP400	1	
	Corps of the boring jig FKP656	1	
2	Tightening flange complete	2-4	FKP200
3	Edge stop D10x10	2	FD3001-03
4	Centering pin D8	1	FKP9-18
5	Screw M4x16	2	FS200-154
6	Screw M8x45	4-6	FS200-155
7	Washer d6/18 and d6/30 FKP656	2; 2	



# FKP101

Spare parts list v.2			
Pos.#	Description	Pieces	Code
1	Corps of FKP101 with bearings	1	
2	Shaft of FKP101	1	
3	Stop ring	1	FKP101-3
4	Spring	1	FKP101-5
5	Setting screw M4x4 (grub screw)	2	FS200 153
6	Setting screw M4x5 (grub screw)	1	FS200 115
7	Spring stop FKP101	1	FKP101-7
8	Ring for FKP	1	FKP101-8
9	Imbus key 2 mm	1	FS800 002



# FKP102

Spare parts list v.2			
Pos.#	Description	Pieces	Code
1	Corps of FKP101 with bearings	1	
2	Shaft of FKP101	1	
3	Stop ring	1	FKP101-3
4	Spring	1	FKP101-5
5	Setting screw M4x4 (grub screw)	2	FS200 153
6	Setting screw M4x5 (grub screw)	1	FS200 115
7	Spring stop FKP101	1	FKP101-7
8	Centering pin d5 - black	1	AKP9-15
9	Centering pin d7 - black	1	AKP9-17
10	Imbus key 2 mm	1	FS800 002

