FK650

Kitchen worktop jig

Operationg instructions

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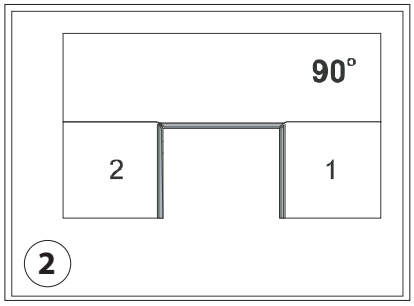
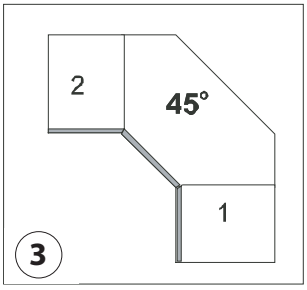
FK650 IGM Kitchen worktop jig Manual EN v5 A4ob

Operating instructions EN

Use of jig FK650 / FK651

The jig FK650 is designed for cutting perfect 90° joints (fig. 2) and 45° joints (fig. 3.) for kitchen postform worktops with the help of portable router.
It extends the possibilities of the router and increases the quality of the machined surface as well as the precision of the joint. The basis of the entire system is a jig made of resistant plastic and a stop set. Precise worktop joints, grooves for metal clamps and finishing of corners by radius or 45° can be manufactured by presetting of respective stops. The complete production of the joint takes approximately 15 – 20 minutes according to the operator's skill.





FK650 is designed for work with grooving router bits with D 12 cutting diameter
FK651 is designed for work with grooving router bit with D 12,7 (½") cutting diameter
Hereafter referred to as FK …

Basic accessories

1 pc Jig made of rigid laminated phenolic with letters indicating the positions of the stops
3 pc Metal stops
1 pc Plastic sliding stop
1 pc Nut with plastic rosette for sliding stop
1 pc Bolt for sliding stop
1 pc Washer
1 pc Operating instructions

Accessories required for the work with the jig:

PORTABLE ROUTER with superior performance (we recommend CMT portable router from our offer)

GUIDE BUSH with dia. 30 mm

If it is not possible to get the guide bush with dia. 30 mm for your router it is possible to buy:
FRB170___ reduction base for mounting of IGM guide bushes for shank S = 8 / 12 mm
FRB171___ reduction base for mounting of IGM guide bushes for shank S = 1/4" and 1/2"
FGB30001___guide bush IGM with dia. 30 mm for FRB170 and FRB171

FOR FK650 …..STRAIGHT BIT D = 12 mm
F047-12381__ D12 x 30(40) router bit S=8 mm
F041-12521__ D12 x 50 router bit S=12 mm

FOR FK651 …..STRAIGHT BIT D = ½" (12,7 mm)
F047-12371__ D12,7 x 30(40) router bit S=12,7 mm

METAL TIGHTENING CLAMPS for tightening of lamella glued desktop joints

Code **FK659** _____ metal screw clamps package of 10pcs

SLOT CUTTER WITH THICKNESS 4 mm

or a biscuit jointer can be used for lamella joints (call for our current offer of Biscuit jointers)

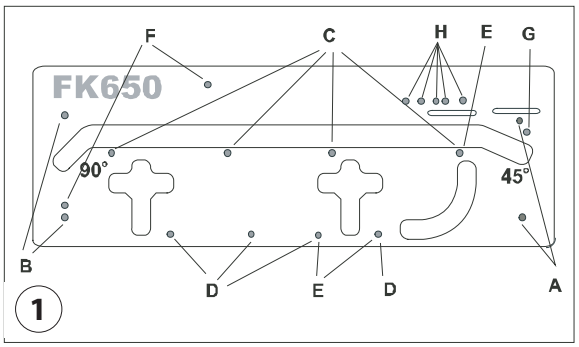
Tightening clamps

to fix the jig to the workpiece, we recommend the clamps series M980 from our offer.

Assembling of FK

The whole system of the FK jig is based on the use of three steel stops, which are inserted into various holes in order to attain the precise manufacture of the outer and inner part of the joint. The holes for the steel stops are indicated with letters (fig. 1).

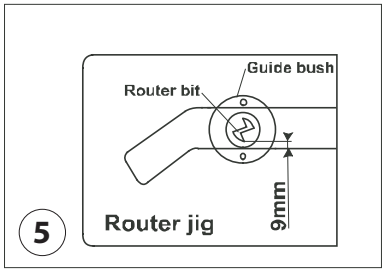
A… TWO HOLES – outer part of 45° joint
B… TWO HOLES – outer part of 90° joint
C… FOUR HOLES – inner part of 90° and 45° joint
D… FOUR HOLES – fixing holes for clumps
E… THREE HOLES – radius finishing of corners (R 70 mm)
F… TWO HOLES – 45° finishing of corners
G… ONE HOLE – inner part of 45° joint
H… ONE HOLE – inner part of 90° joint (worktop 600 mm)



The steel stops are furnished with rubber rings which prevent the stops from dropping out of the holes. Place the metal stop into the hole using the pin with the rubber ring, so that it is completely inserted. If the metal stops are difficult to insert, lubricate the rubber rings with oil. Before using always ensure that the stops are completely inserted into the holes. Before using check that the stops are not leaning against the work table.

Setting of cutting axis and copying edge

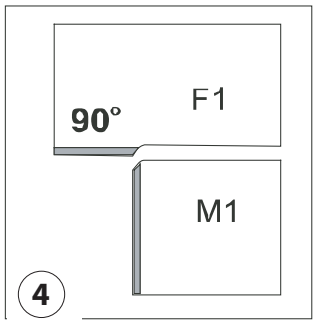
The cutting line is always shifted by 9 mm (FK650) resp.8,5 mm (FK651) from the copying edge of the jig upon use of a guide bush dia.30 mm and a router bit dia.12 mm (FK650) resp. 12,7 mm (FK651) (fig. 5). To obtain a precise joint don't use resharpened tool (diminution of cutting diameter).

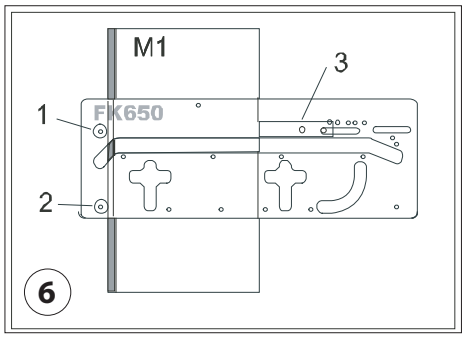


Cutting of 90° joints

The working procedure is demonstrated on a right-handed 90° joint (fig. 4)

- Always cut the joint so that the metal stops touch the postform edges of the kitchen worktop.
- Always shape in the direction towards the postform edge and out, never the opposite way. This procedure attains a perfect joint.
- Should remains of the paper base be left on the underside of the kitchen worktop after the routing, remove them with sandpaper.
- Don't remove the tool from the jig groove until the tool is completely stopped after routing, you prevent the tool damage.

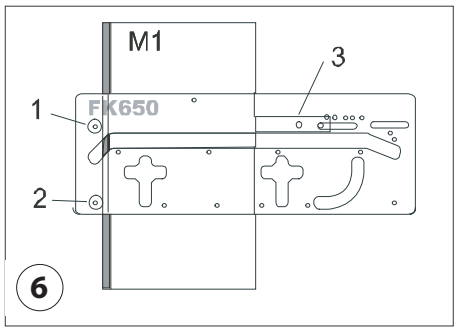


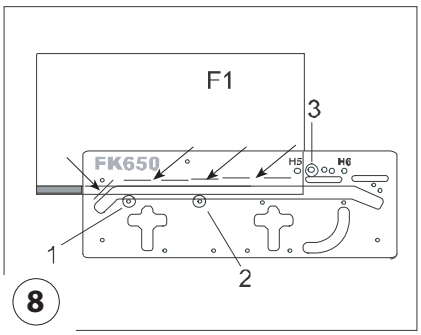


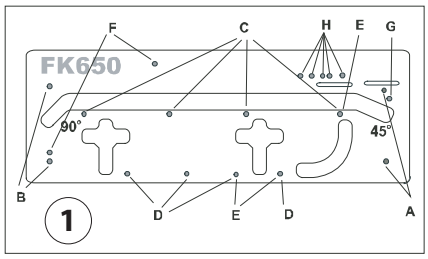
Cutting of inner part of joint, worktop width 500-550- 600-616 and 650 mm

Insert two metal stops into the C holes and according to your worktop width one into the respective H hole from the underside of the jig. The numbers at the letter H are for the worktop width. Place FK on the kitchen worktop F1 from the facing side (fig. 8).

Ensure that all stops 1, 2 and 3 are touching the edge of the worktop. Now tighten FK to the kitchen worktop and working table using the clamps and check that the clamps do not hinder the movement of the router in the jig groove and that they are well tightened. Set the cutting depth on the router. Insert the router by the guide bush into the groove of the jig and begin to cut the joint on multiple pass from left to right; copying the edge of the jig indicated by the arrows (fig. 8). If you don't cut all the worktop thickness at one cut, you can use for rough cutting the opposite edge the jig groove and so you will have ca. 1,5 – 7 mm of material left for the final cutting. Now use the right edge of the groove (fig. 8) and make the final clean cut. Keep the right direction of routing – the tool must cut the edge counter-rotational.







Cutting of inner part of joint using the sliding stop

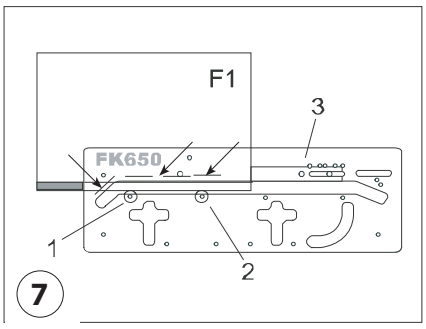
Adjusting of the sliding stop

Put two metal stops into the B holes from the underside of FK and place FK transversely on the kitchen worktop M1 (fig. 6). Set FK onto the stops in the B holes 1 and 2. Tighten the plastic length stop 3 using a nut and bolt from the underside of the jig (fig. 6) and set it so that stops are touching the kitchen worktop. The length of the joint is thus set. Remove the metal stops from the B holes.

Cutting of inner 90° joint

Insert two metal stops into the C holes from the underside of FK (leave plastic length stop 3 clamped). Place FK on the kitchen worktop F1 according to (fig. 7).

Ensure that all stops are touching the edge of the worktop. Now tighten FK to the kitchen worktop and working table using the clamps and check that the clamps do not hinder the movement of the router in the jig groove and that they are well tightened. Set the cutting depth on router. Insert the router and begin to cut the joint on multiple pass from left to right; copy the edge of the jig indicated by the arrows (fig. 7). If you don't cut all the worktop thickness at one cut, you can use for rough cutting the opposite edge the jig groove and so you will have ca. 1,5 – 7 mm of material left for the final cutting. Now use the right edge of the groove (fig. 8) and make the final clean cut. Keep the right direction of routing – the tool must cut the edge counter-rotational.

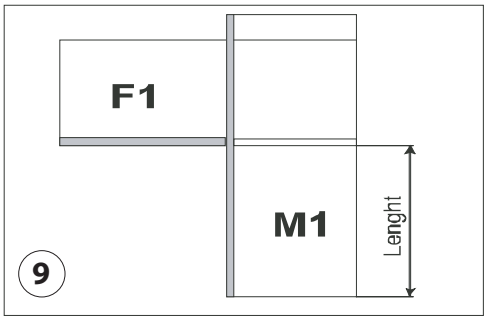


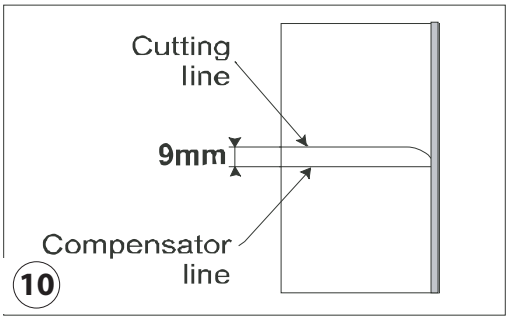
WARNING !!!

While cutting, press the router with the guide bush firmly against the jig and cut from left to right. Always keep the router perpendicular so that the base of the router is touching FK with its entire surface and the copying ring thus precisely copies the shape of the joint on the jig. **It is better to cut on multiple pass. Always follow the safety instructions for working with the portable router and router bits!**

Cutting of outer 90° joint

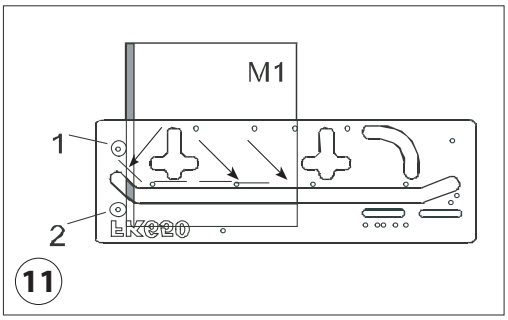
If you have the possibility, place worktop M1 on the base and across worktop F1 so as to enable plotting of the cutting line on the lower part of worktop M1 (fig. 9). After tracing the inner connection of worktop F1 on the lower part of worktop M1, rotate worktop M1 upwards by its underside and plot a compensatory cutting line in the direction away from the connection. This compensatory cutting line is shifted from the cutting line by 9 mm (FK650) resp. 8,5 mm (FK651) and is the difference between the cutting plane and the edge of jig FK (fig. 10).

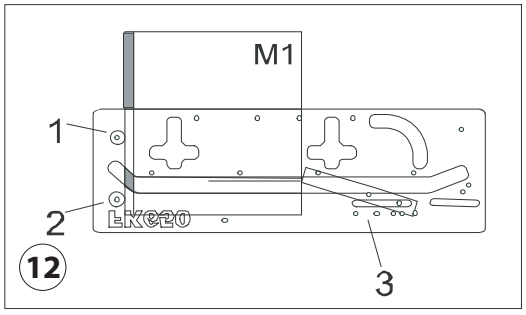


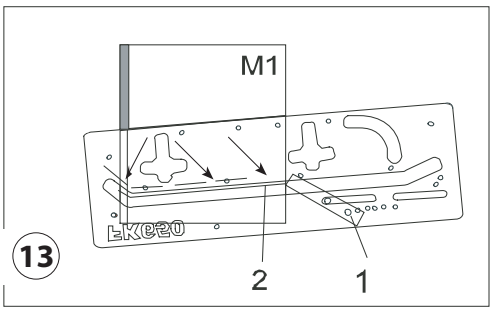


Remove the sliding length stop from the hole. Insert two metal stops into the B holes from the facing side of FK and place the FK onto worktop M1 (which is rotated upwards by its underside) by the facing side according to (fig. 11). Set the distant edge of the jig FK (see arrows) exactly according to the plotted compensatory cutting line.

Now tighten FK to the kitchen worktop and working table using the clamps and check that the clamps do not hinder the movement of the router in the jig groove and that they are well tightened. Set the cutting depth on the router. Insert the router and begin to cut the joint on multiple-pass from left to right. Copy the edge of jig which is closer to the remaining kitchen worktop (fig. 11). If you don't cut all the worktop thickness at one cut, you can use for rough cutting the opposite edge the jig groove and so you will have ca. 1,5 – 7 mm of material left for the final cutting. Now use the right edge of the groove (fig. 8) and make the final clean cut. Keep the right direction of routing – the tool must cut the edge counter-rotational.







Compensation of wall right angle of 90° joint

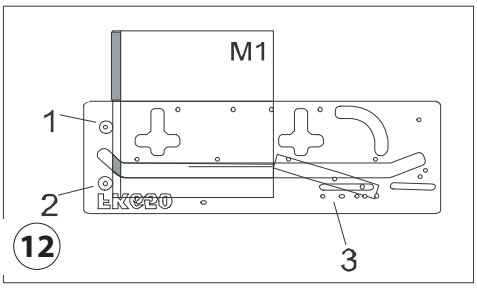
FK enables compensation of wall right angles of up to 3° by turning the outer connection on worktop M1. The connection which shall compensate the wall right angle shall however never be as precise as the joint to 90°.

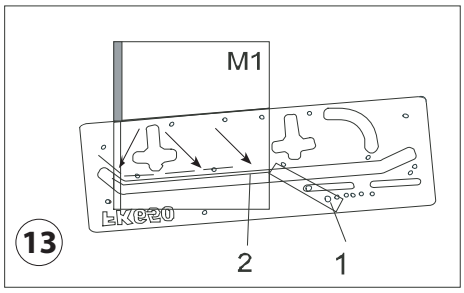
The sliding length stop is cut to a point, according to which turning of FK up to 3° is performed (fig. 12 and 13).

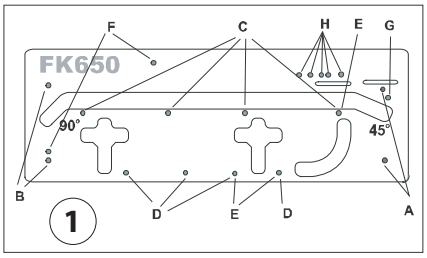
If you have the possibility, place worktop M1 on the base and across worktop F1 so as to enable plotting of the cutting line on the lower part of worktop M1. After tracing the inner connection of worktop F1 on the lower part of worktop M1, rotate worktop M1 upwards by its underside and plot a compensatory cutting line in the direction away from the connection. This compensatory cutting line is shifted from the cutting line by 9 mm (FK650) resp. 8,5 mm (FK651) and is the difference between the cutting plane and the edge of jig FK (fig. 10).

Insert two steel stops into the B holes from the facing side of FK. Tighten the sliding length stop to the facing side of the FK and place the jig onto worktop M1 (which is rotated upwards by its underside) by the facing side. Leave the length stop loose, do not tighten. Set the far edge of jig FK (see arrows) precisely according to the plotted compensation line on the edge of the worktop by the sliding stop. Set the sliding stop by the point obliquely onto the compensation line and tighten (fig. 12).

Remove the stops from the B holes. The edge of the sliding stop is a reference point of rotation for the compensation. Shift using the worktop around the point of the sliding stop so as to adjust the edge of the jig to the compensatory line according to (fig. 13).



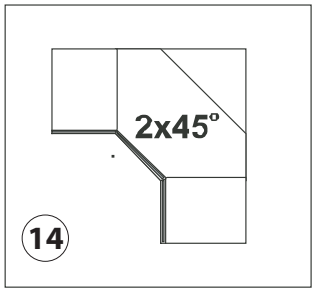


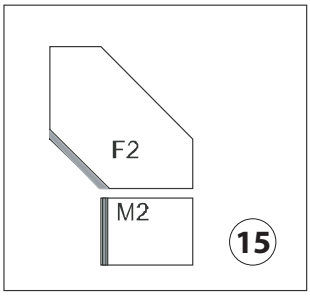


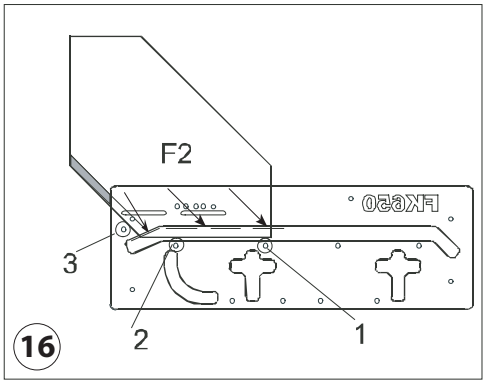
Tighten the jig to the kitchen worktop using the clamps and check that the clamps do not hinder the movement of the router and that the jig is well tightened to the kitchen worktop. Loosen and remove the sliding length stop to prevent its damage. Set the cutting depth on the router. Insert the router and begin to cut the joint on multiple-pass from left to right. Copy the far edge of jig FK (fig. 12).

Cutting of 45° joint

The process is shown on a left-handed joint 45° (pic. 14 and 15). Prepare the F2 board by cutting it to the desired length using a circular table saw, a hand-held circular saw or using a router and a fence. Make sure to cut and prepare the board accurately to ensure precision of the final joint. We also recommend drawing the desired shape onto the board and check the dimension before making a cut. For example, the most important dimensions are the length of the postformed edge (the size of the lower cabinet and the overlap of the worktop depends on the length), the angle of the postformed edge and the edge of the inner joint (always at 135°), length of the edge of the inner part of the joint (the length is the same as depth of the adjoining board, usually 600 mm). After cutting at an angle and measuring the depth of 600 mm on the adjoining board, its necessary to also cut the length of edge A under 90° in direction of the lower edge of the worktop. Follow the same procedure on the other side ofthe board to create the piece for insertion. The next process is almost similar to routing a joint to 90°.







Cutting of inner 45° joint

Insert two metal stops into the C holes and one into the G hole from the facing side of FK. Place FK on kitchen worktop F2 according to (fig. 16).

Ensure that all stops 1, 2 and 3 are touching the edge of the worktop. Now tighten FK to the kitchen worktop and working table using the clamps and check that the clamps do not hinder the movement of the router in the jig groove and that they are well tightened. Set the cutting depth on the router. Insert the router and

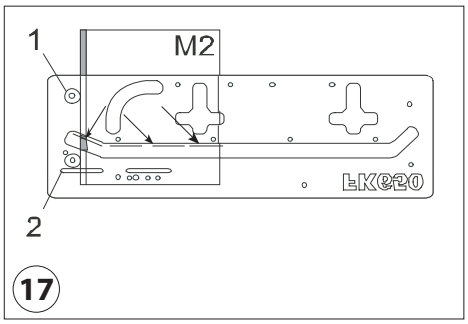
begin to cut the joint on multiple pass from left to right, copying the far edge of the jig; see arrows on (fig. 16).

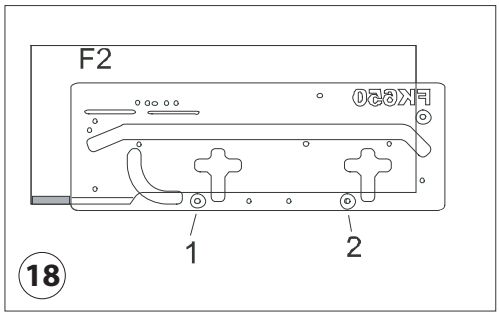
WARNING !!!
While shaping, press the router with the guide bush firmly against the jig and cut from left to right. Always keep the router perpendicular so that the base of the router is touching FK with its entire surface, and the guide bush thus precisely copies the shape of the joint on the jig. **It is better to cut on multiple pass. For the rough cutting you can use the opposite edge of the jig groove. Always follow the safety instructions for working with the portable router and router bits!**

Cutting of outer part of 45° joint

The procedure is completely identical as with shaping the outer 90° joint. Insert two metal stops into the A holes from the underside of FK and place FK onto worktop M2 (which is rotated upwards by its underside) by the underside according to (fig. 17). Set the far edge of jig FK (see arrows) precisely according to the plotted compensation line.

Now tighten FK to the kitchen worktop and working table using the clamps and check that the clamps do not hinder the movement of the router. Set the cutting depth on the router. Insert the router and begin to cut the joint on multiple pass from left to right. Copy the far edge of the jig FK (fig. 17). For the rough cutting you can use the opposite edge of the jig groove.





Cutting holes for clumps

Connect both worktops together with the inner and outer joint and check the precision of the joints. Use the same guide bush and router bit (fig.18 and 19).

We recommend cutting the holes at least 150 mm from the postform edge. Indicate by a pencil the axes of the holes on the underside of both worktops. Should you be using worktops with a width of less than 600 mm it is necessary to rearrange FK for each hole separately. For a worktop of 600-650 mm the spacing of the holes is given by the jig and you may mill out both holes in one clamping, should this spacing suit your purposes.

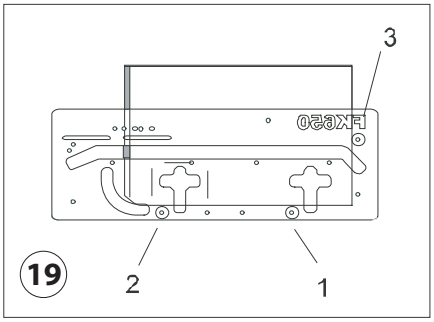
Insert two metal stops into the D holes and one into the B hole. Fix FK to the cut edge of the joint using the stops (fig. 18). Tighten using the clamps. Cut to a depth of approx. 20 mm. This depends from the worktop width as well. As soon as the holes on the inner joint are cut, repeat the procedure on the worktop of the outer joint (fig. 19).

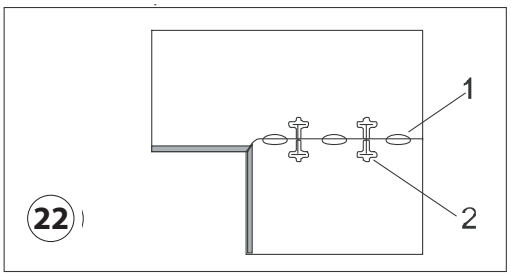
Producing lamella worktop joints

Unless the connection of the worktops is reinforced and centered with lamellas, the worktop may shift over time. For this reason we recommend a reinforcing of the joint with lamellas.

For lamella joint use a router with a slot cutter 4 mm or use a lamella biscuit jointer producing a lamella joints in both worktops. For a width of 600 mm use at least 4 pc of N° 20 lamella (fig. 22).

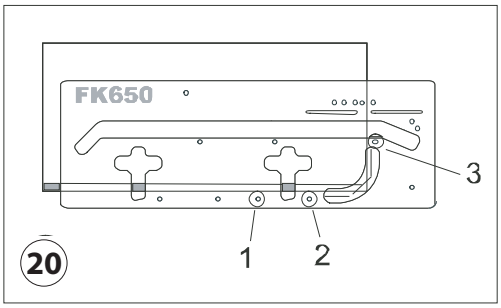
Before assembling the worktops, lightly sand the edge of the joint with sandpaper and apply glue to the lamella joints. We recommend to use a water-resistant glue or cement for the whole joint. To connect both kitchen worktops use steel clamps with length of 150 or 65 mm (the 65 mm clamps can be used since the 1.1.2011), which are used to tighten the complete joint.

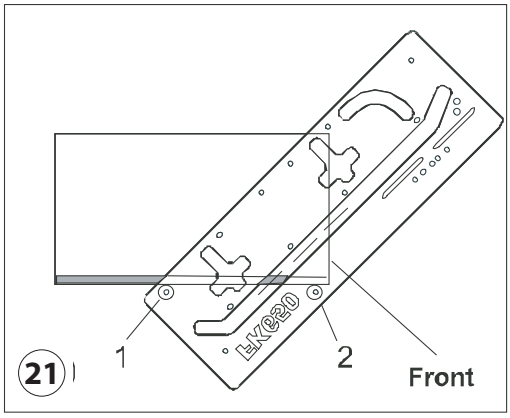




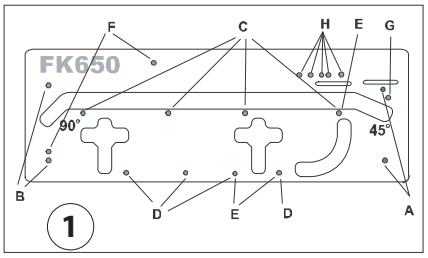
Radius and 45° finishing of worktop corners

For radius finishing of corners use the E holes (fig. 20).
For beveling of corners to 45° use the F holes (fig. 21).





Insert the metal stops into the holes. Fix the jig FK to the edge of the worktop using the stops. Tighten the jig to the kitchen worktop using the clamps and check that the clamps do not hinder the movement of the router. Set the cutting depth on the router. Insert the router and begin to cut the joint on multiple-pass from left to right. Copy according to the outer edge of the radius or groove.



SECURITY

- Always unplug the router when exchanging the router bit or setting the router.
- Use protection glasses when cutting.
- Use hearing protectors.
- Always use dust mask or respirator.
- Use dust exhausting plant.
- Don't wear loose clothing. Ensure that you have tucked your sleeves and that you don't wear any tie.
- Before switching the router on, remove all tools, nuts, keys and other free objects from the cutting area.
- Prevent unwanted switching of the router: ensure that the switch of the router is in position "off" before plugging-in.
- Wait until the cutting bit is completely stopped before starting any setting of the router.

FK650 – FK651 SPARE PARTS LIST			**v .4**
Pos. #	Description	Quantity	Code
2	Sliding stop 200x30x10 mm	1	FK650-02
3	Bolt-stop set 3 pcs D30/10x35 black	1	FK650-03
	Set of connecting material for sliding stop	1	FK650-05
4	O rings set 6 pcs	1	FS990001

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