

FESTOOL




VS 600



Joining system VS 600

Type of joint		Workpiece thickness from - to (recommended)	Workpiece width up to
Dovetail joints	SZ 14 (14 mm)	15 - 20 mm (18 mm)	600 mm
	SZ 20 (20 mm)	21 - 28 mm (24 mm)	
Slotted box joints	FZ 6 (6 mm)	6 - 10 mm	
	FZ 10 (10 mm)	10 - 20 mm	
Dowel holes DS 32	Ø 6 mm	12 - 14 mm	
	Ø 8 mm	15 - 22 mm	
	Ø 10 mm	23 - 28 mm	
Open dovetail tenons	SZO 14 Z SZO 14 S (14 mm)	10 - 14 mm	
	SZO 20 Z SZO 20 S (20 mm)	14 - 25 mm	

T1

				
SZ 14	HSS 490 991 HM 490 992	490 770 (Ø 17 mm)	459 110	
SZ 20	HSS 490 995 HM 490 996	490 771 (Ø 24 mm)	459 110	
FZ 6	HSS 490 944 HM 490 978	490 772 (Ø 8,5 mm)	451 752	
FZ 10	HSS 490 946 HM 490 980	484 176 (Ø 13,8 mm)	439 161	
DS 32	Ø 3 mm 491 065 Ø 5 mm 491 066 Ø 6 mm 491 067 Ø 8 mm 491 068 Ø 10 mm 491 069	484 176 (Ø 13,8 mm)	439 161	
SZO 14 Z	HM 490 978	490 772 (Ø 8,5 mm)	451 752	
SZO 14 S	HM 491 164	490 770 (Ø 17 mm)	459 110	
SZO 20 Z	HM 490 980	484 176 (Ø 13,8 mm)	439 161	
SZO 20 S	HM 491 165	490 771 (Ø 24 mm)	459 110	

T2

1 Technical data

The order numbers for cutters, drill bits, copying rings and centring mandrels can be found in Table T2.

We recommend that you use the maximum speed of your router for the specified cutters and drill bits.

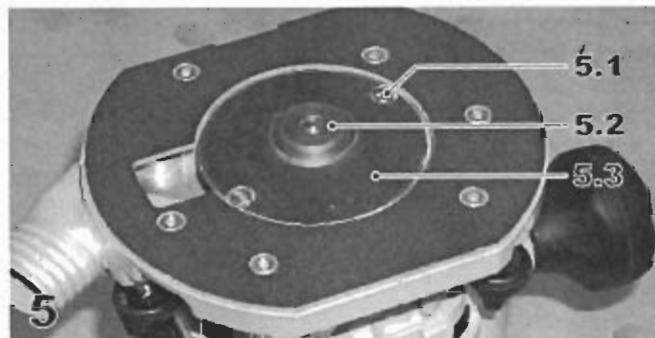
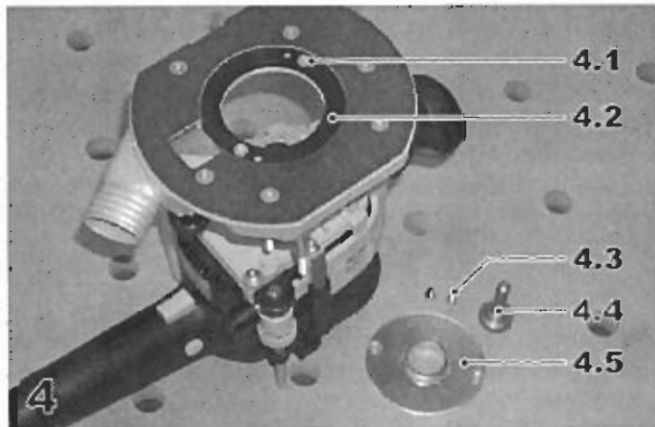
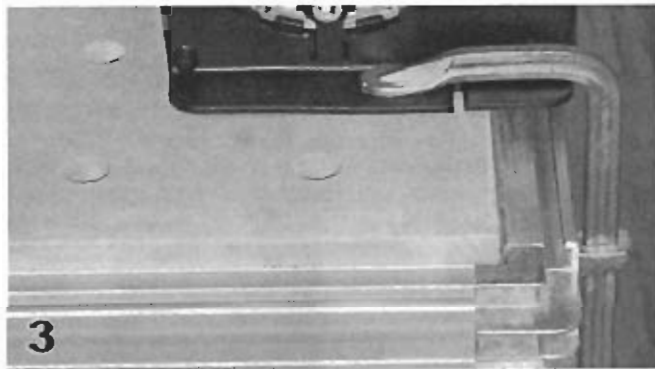
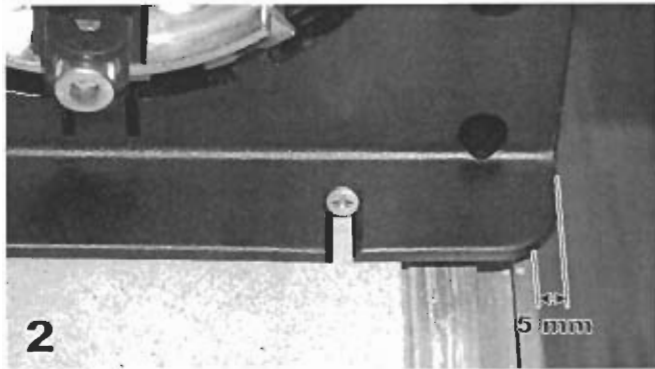
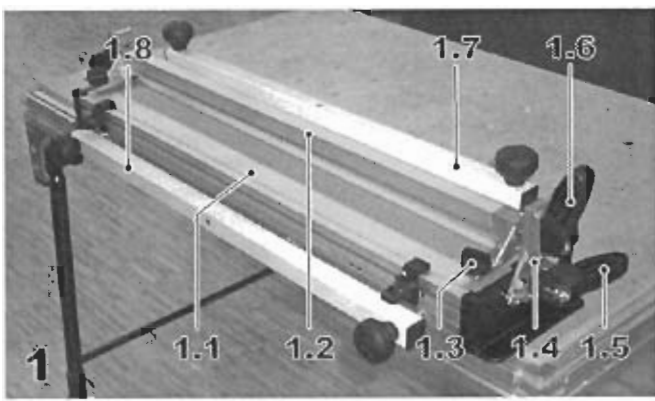
2 Correct use

The joining system VS 600 has been designed to rout dovetail joints, slotted box joints, dowel holes and open dovetail tenons in wood and wooden materials in combination with the corresponding templates, copying rings and cutters with FESTOOL routers from series OF 900, OF 1000 and OF 1010.

The user will be liable for damages and accidents due to incorrect use.

3 Safety instructions

- When working with the joining system VS 600 please pay attention to the safety instructions enclosed with your router too.
- Using only the cutters, copying rings and centring mandrels listed in Table T2.
- Only use original accessories and spare parts from FESTOOL.
- Make sure that the workpieces are securely clamped and that all clamping levers and rotary knobs on the joining system are closed before routing.



4 Construction

The joining system VS 600 consists of the following components (Figure 1):

- 1.1 Base frame
- 1.2 Mount for templates
- 1.3 Rotary knob to clamp the templates
- 1.4 Swivel segment for mount
- 1.5 Clamping lever for swivel segment
- 1.6 Clamping lever to adjust the height of the templates
- 1.7 Pressure beam for horizontal clamping of the workpieces
- 1.8 Pressure beam of vertical clamping of the workpieces

5 Preparation

5.1 Setting up the base frame

The base frame must be fastened to a non-slip firm base:

- Set the base frame up so that the front edge protrudes by approx. 5 mm.
- Fasten the base frame on both sides of the base with two screws (Figure 2) or two screw clamps (Figure 3).

5.2 Pressure beams

Both pressure beams can be adjusted with a rotary knob in the centre bore or a third rotary knob (accessory) can be fitted to clamp narrow workpieces (< 250 mm width) evenly.

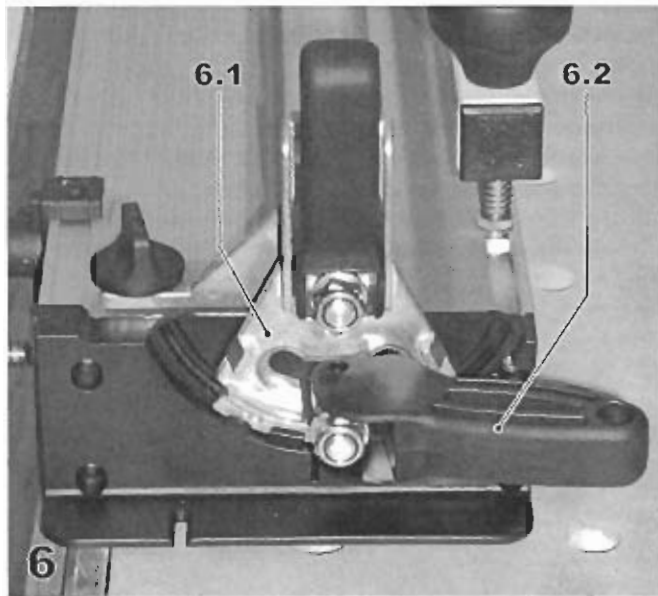
The tool already has an additional sliding block.

5.3 Router

Note: Handling of the router (adjusting the routing depth, changing tools, etc.) is described in its operating instructions.

Mount the required copying ring centrally in the routing plate of the router:

- Unplug the tool from the mains.
- Turn the router upside down.
- Open the two screws (4.1) and remove the ring (4.2).
- Place the copying ring (4.5, 5.3) into the router's routing plate with the collar uppermost.
- Press the routing plate down and clamp the centring mandrel (4.4, 5.2) tight in the cutter spindle.
- Slowly move the routing plate up until the centring ring is centred by the centring mandrel.
- Screw the copying ring tight with the two enclosed screws (4.3, 5.1).
- Remove the centring mandrel from the cutter spindle.



6 Use

The following type of joint can be made with the jointing system VS 600 and respective template:

- **Dovetail joint** (see Chapter 6.1),
- **Slotted box joint** (see Chapter 6.2),
- **Dowel holes** (see Chapter 6.3),
- **Open dovetail tenons** (see Chapter 6.4).

6.1 Dovetail joints

a) Inserting the template

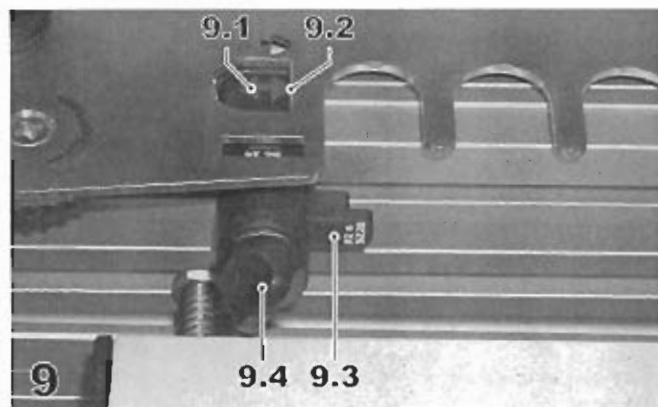
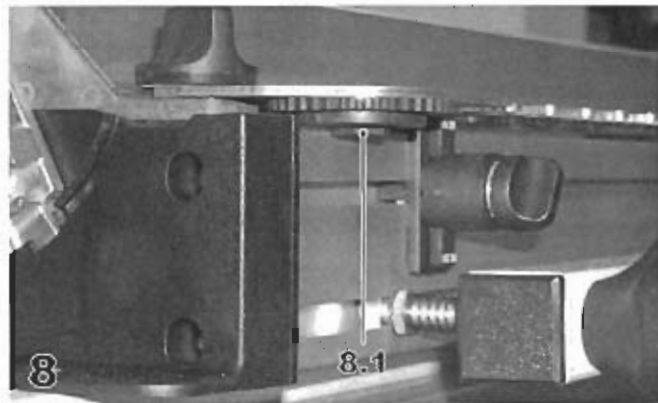
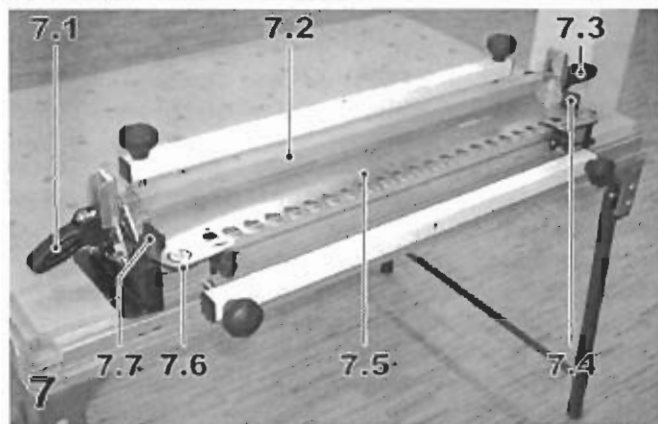
- Lock the tow swivel segments (6.1) in the central (vertical) position with the clamping lever (6.2).
- Open both clamping levers (7.1, 7.3) to adjust the height of the template and press the mount (7.2) for the templates right down.
- Open the rotary knobs (7.4, 7.7) to clamp the template and insert the template (7.5).

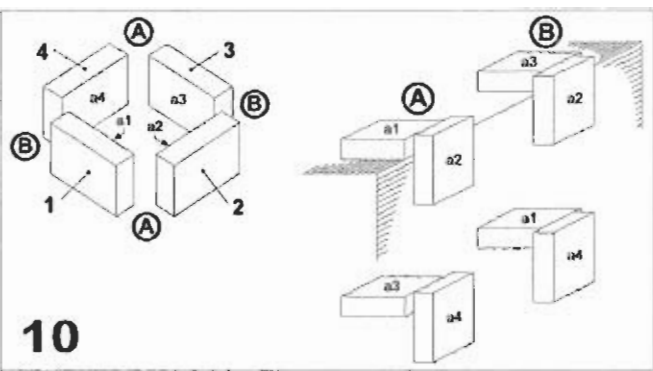
Caution: the two adjusting wheels (7.6) must point downwards.

- Close the two clamping levers to adjust the height of the template.
- Align the template so that the lower shoulders (8.1) of the two adjusting wheels rest against the base frame of the jointing system and clamp the template tight with the two rotary knobs (7.4, 7.7).
- Turn the two stops into the positions "SZ 14" and "SZ 20" (9.3).

Align the stops so that the arrows (9.1) lie against the inner straight side (9.2) of the notches in the template.

- Clamp the stops tight with the rotary knobs (9.4).
- Open the two clamping levers to adjust the height of the template and move the template upwards.
- Place a workpiece under both ends of the template. Press the template down until it rest flat on the workpiece and close the two clamping levers to adjust the height of the template.





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b) Clamping workpieces

Always clamp the two workpieces which are to be joined simultaneously.

Pay attention to the following during this work (see Figure 10):

- Clamp the workpieces so that the faces which are to be joined lie against one another.
- The sides of the workpieces must rest against the stop.
- The tops of the workpieces must be flush with one another.
- The outer sides in the clamped position (a1 - a4) form the inner sides of the finished joint.
- In the case of frames (carcasses) the workpieces for the corners "A" must be placed against the left stop and the corners "B" against the right stop. The workpieces "1" and "3" must always be clamped on top, the workpieces "2" and "4" always at the front of the jointing system.

c) Preparing the router (see 5.3)

Caution: Always unplug the tool from the mains before changing cutters!

- Clamp the cutter (see Table T2) in the router's clamping collet.
- Set the zero point (routing depth = 0 mm) on your router by placing the tool on the template and pushing down until the cutter touches the surface of the of the clamped workpiece.
- Set the following routing depth on your router (**Caution:** these dimensions only apply for the cutters named in Table T2):
SZ 14: 12 mm,
SZ 20: 15 mm.
- When routing joints use the extractor hood for the router's side stop or the extractor hood AH-OF 900 (accessory, order no. 484 453). Connect the extractor hood to a suitable dust extractor from dust class "M" (e.g. FESTOOL CTM dust extractor).

Note: set the gap between the extractor hood and vertical workpiece so that you still have enough travel to rout the dovetails.

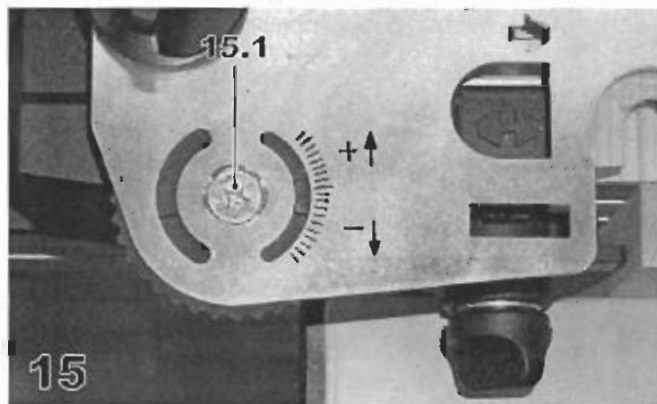
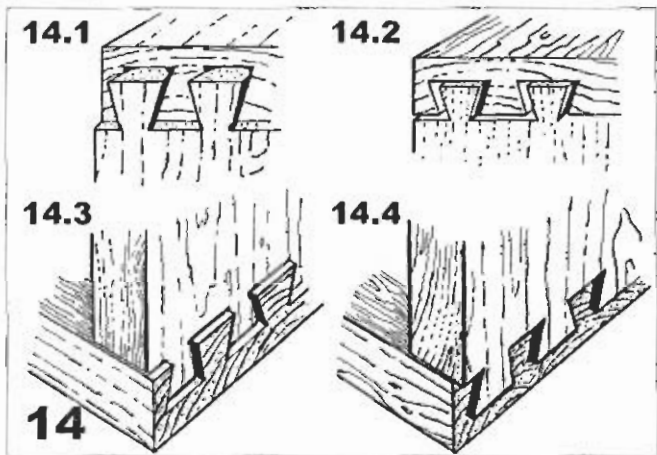
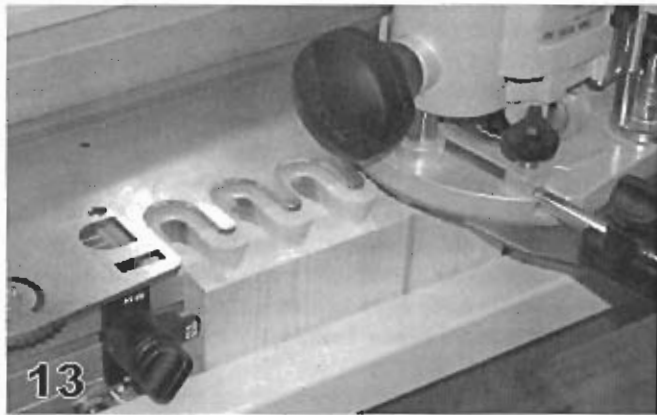
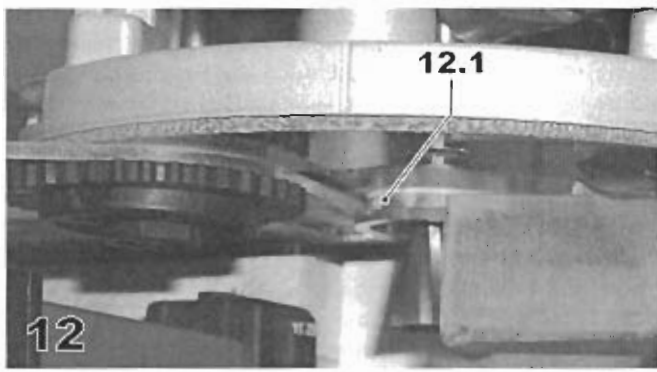
d) Processing

Scoring

In order to avoid splintering in vertically clamped workpieces their surface should be scored:

- Place a strip whose width is the width of the workpiece + 33 mm (11.1) on the template mount. This strip serves as a guide for the router.
- Place the router on the workpiece to the right of the template so that the guide surface (11.2) of the router's table rests against the strip.
- Press the tool down to the pre-set routing depth and lock the routing depth on the router.
- Switch the router on.
- Guide the router from right to left along the strip and thus synchronously score the workpiece.





Trial routing of the dovetails

Perform a trial routing to check whether all settings are correct.

- Place the router on the end of the template so that the collar (12.1) of the starting ring rests against the template.
- Press the tool down to the pre-set routing depth and lock the routing depth on the router.
- Switch the router on.
- Guide the router evenly along the template (Figure 13).

Caution: The collar of the starting ring must always rest against the.

Always hold the router by both handles parallel to the template and do not turn the tool during routing. The routing depth may not be changed during routing.

- Check that all dovetails are routed correctly – repeat work if necessary.
- Unclamp the workpieces and fit together.

If the dovetail joint does not fit exactly carry out the following corrections:

◦ Dovetail joint too stiff (14.1):

Slightly reduce the router's routing depth with the fine adjustment (approx. - 0.5 mm).

◦ Dovetail joint too loose (14.2):

Slightly increase the router's routing depth with the fine adjustment (approx. + 0.5 mm).

◦ Dovetail joint too deep (14.3):

Turn the adjusting wheels in the minus direction by the faulty dimension (1 scale graduation mark corresponds to - 0.1 mm dovetail depth), replace and realign template according to Chapter 6.1 a).

◦ Dovetail joint not deep enough (14.4):

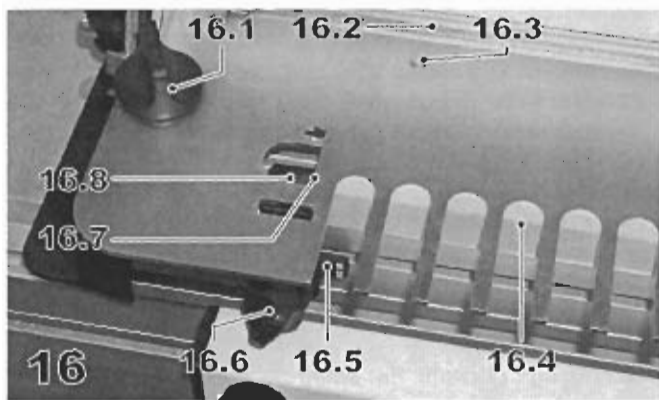
Turn the adjusting wheels in the plus direction by the faulty dimension (1 scale graduation mark corresponds to + 0.1 mm dovetail depth), replace and realign template according to Chapter 6.1 a).

Note: In order to adjust the adjusting wheels the screws (15.1) have to be opened and retightened after adjustment. This locks the pre-set position for later working.

- Repeat this procedure until the joint fits exactly.

Routing the dovetails

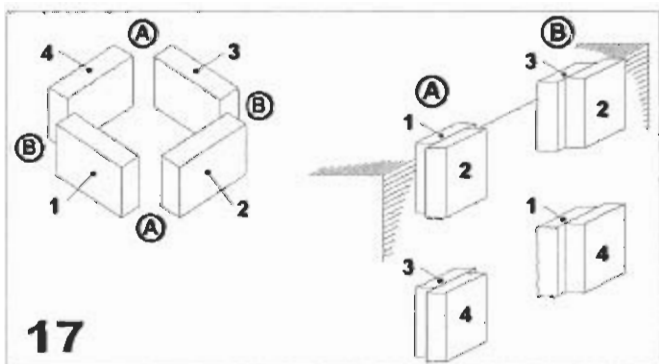
Rout all dovetails analogous to the trial routing.



6.2 Slotted box joint

a) Inserting the template and fitting a splinter-guard

- Lock the tow swivel segments in the central (vertical) position with the clamping lever (see Figure 6).
- Open both clamping levers to adjust the height of the template and press the mount for the templates right down.
- Open the rotary knobs (16.1) to clamp the template and insert the template.
 - Caution:** The bent rear edge (16.2) of the template must point upwards.
- Push the template back up to the stop and clamp tight with the two rotary knobs (16.1)
- Turn the two stops into the positions "FZ 6" and "FZ 10" (16.5). Align the stops so that the arrows (16.8) lie against the inner straight side (16.7) of the notches in the template. Clamp the stops tight with the rotary knobs (16.6).
- Move the template up and place a board of soft wood (16.4) below the template as a splinterguard.
 - Note:** The splinterguard prevents splintering on the rear side of the workpiece during routing.
 - Caution:** To avoid damage to the jointing system during routing and to ensure that the splinterguard functions properly it must be 5 mm thicker and at least as wide as the workpiece being processed.
- Push the template down until it lies flat on the splinterguard and close the two clamping levers to adjust the height of the template.
- Align the splinterguard so that it lies flush with the front edge of the base frame and clamp it tight with the upper pressure beam.
- Screw the splinterguard tight to the template with short wood screws (16.3).



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b) Clamping workpieces

Clamp and process both workpieces to be joined simultaneously with the front pressure.

Pay attention to the following (see Figure 17):

- Clamp the workpieces so that the faces which are to be joined lie against one another.
- The sides of the workpieces lie against the stop, offset by one slot width.
- The workpieces must be pressed against the template from below.
- In the case of frames (carcasses) the workpieces for the corners "A" must be placed against the left stop and the corners "B" against the right stop. The workpieces "1" and "3" must rest against the splinterguard at the rear, the workpieces "2" and "4" against the pressure beam at the front.

c) Preparing the router (see 5.3)

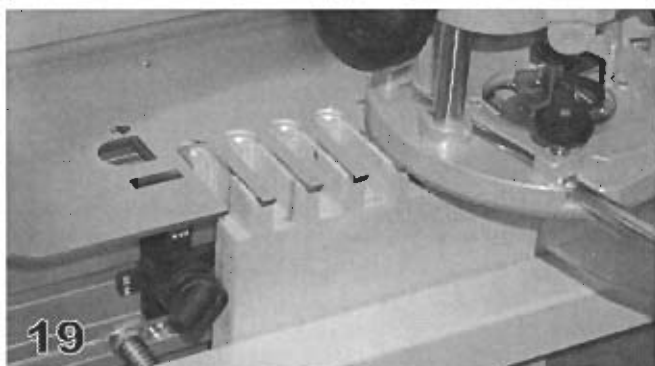
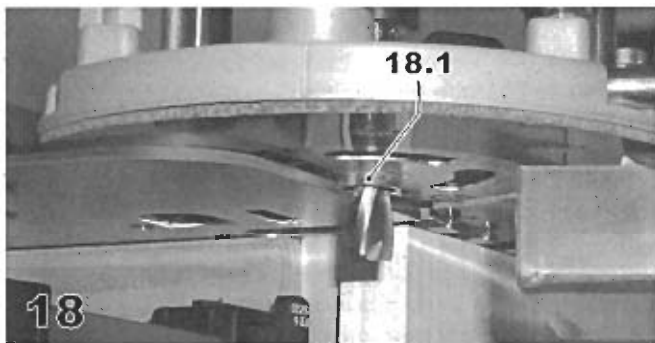
Caution: Always unplug the tool from the mains before changing cutters!

- Clamp the cutter (see Table 1) in the router's clamping collet.
- Set the zero point (routing depth = 0 mm) on your router by placing the tool on the template and pushing down until the cutter touches the surface of the of the clamped workpiece.
- Set the workpiece thickness as the routing depth on your router.

Caution: The routing depth should not be greater than the cutter diameter. Instead, divided the cutting depth up into two or more operating stages.

- When routing joints use the extractor hood for the router's side stop or the extractor hood AH-OF 900 (accessory, order no. 484 453). Connect the extractor hood to a suitable dust extractor from dust class "M" (e.g. FESTOOL CTM dust extractor).

Note: set the gap between the extractor hood and vertical workpiece so that you still have enough travel to rout the dovetails.

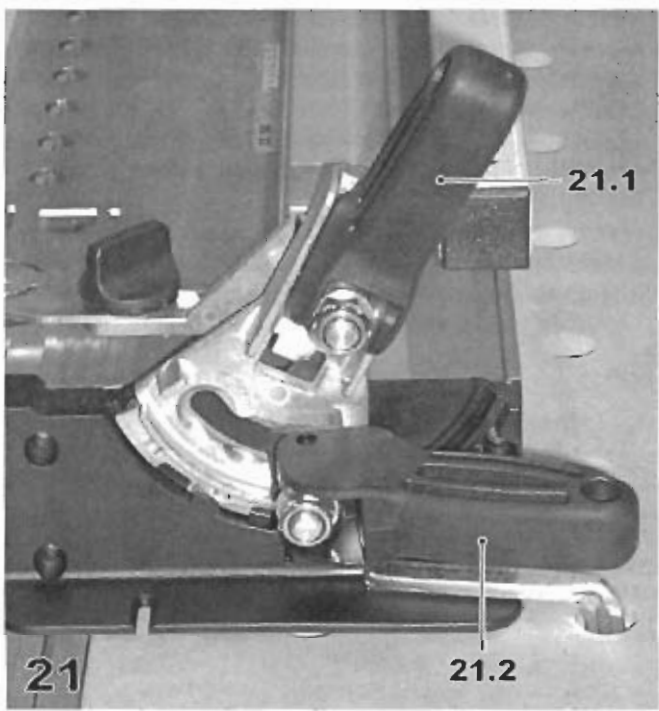
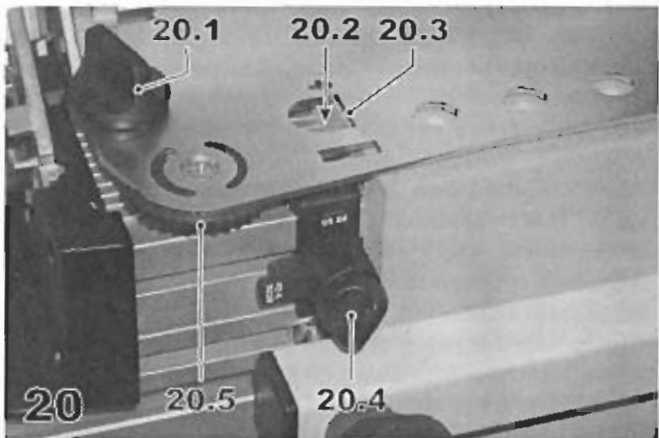


d) Processing

- Place the router on the end of the template so that the collar (18.1) of the starting ring rests against the template.
- Press the tool down to the pre-set routing depth and lock the routing depth on the router.
- Switch the router on.
- Guide the router evenly along the template (Figure 19).

Caution: The collar of the starting ring must always rest against the. Always hold the router by both handles parallel to the template and do not turn the tool during routing. The routing depth may not be changed during routing.

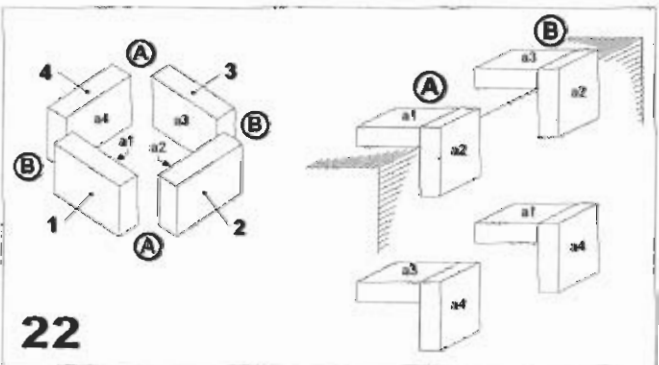
- Check the depth of the slots before unclamping the workpiece. If they are not correct, reduce or increase the routing depth at your router by the faulty dimension.



6.3 Dowel holes

a) Inserting the template

- Lock the tow swivel segments in the central (vertical) position with the clamping lever (see Figure 6).
- Open both clamping levers to adjust the height of the template and press the mount for the templates right down.
- Open the rotary knobs (20.1) to clamp the template and insert the template.
 - Caution:** the two adjusting wheels (20.5) must point downwards.
- Close the two clamping levers to adjust the height of the template.
- Align the template so that the lower shoulders of the two adjusting wheels rest against the base frame of the jointing system (see Figure 8) and clamp the template tight with the two rotary knobs (20.1).
- Turn the two stops into the position shown in Figure 20. Align the stops so that the arrows (20.2) lie against the inner straight side (20.3) of the notches in the template. Clamp the stops tight with the rotary knobs (20.4).
- Open the two clamping levers (21.1) to adjust the height of the template and move the template upwards.
- Open the clamping lever (21.2) and swivel the swivel segments for the template mount to the rear position (Figure 21). Re-close the clamping levers.
- Place a workpiece under both ends of the template. Press the template down until it rest flat on the workpiece and close the two clamping levers to adjust the height of the template.



b) Clamping workpieces

Always clamp the two workpieces which are to be jointed simultaneously.

Pay attention to the following during this work (see Figure 22):

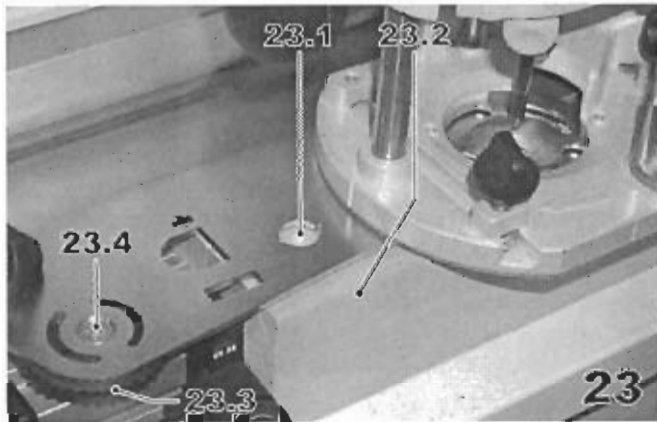
- Clamp the workpieces so that the faces which are to be joined lie against one another.
- The sides of the workpieces must rest against the stop.
- The tops of the workpieces must be flush with one another.
- The outer sides in the clamped position (a1 - a4) form the inner sides of the finished joint.
- In the case of frames (carcasses) the workpieces for the corners "A" must be placed against the left stop and the corners "B" against the right stop. The workpieces "1" and "3" must always be clamped on top, the workpieces "2 and "4" always at the front of the jointing system.

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c) Preparing the router (see 5.3)

Caution: Always unplug the tool from the mains before changing cutters!

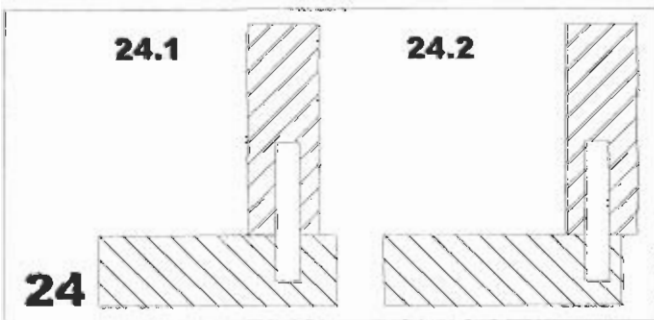
- Clamp the cutter (see Table 1) in the router's clamping collet.
- Set the zero point (routing depth = 0 mm) on your router by placing the tool on the template and pushing down until the cutter touches the surface of the of the clamped workpiece.
- Set the routing depth as follows:
The depth of the holes in the horizontal workpiece should be $\frac{2}{3}$ of the workpiece thickness. The depth of the holes in the vertical workpiece should be set so that the depth of both holes together is around 2 mm greater than the length of the dowel (cf. Figure 24).
- Connect the router to a suitable dust extractor from dust class "M" (e. g. FESTOOL CTM dust extractor).



d) Processing

First rout the holes in the horizontal workpiece (23.1). The swivel segment must be in the rear position (see Figure 21). Then swivel the swivel segment into the front position to rout the holes on the vertical workpiece (23.2). **Note:** Only open clamping lever (21.2), not clamping lever (21.1) to adjust the height of the template, when swivelling the swivel segments.

- Place the router on the template so that the collar of the starting ring engages in the bore holes of the template.
- Switch the router on and push the tool down to the pre-set routing depth. Rout all holes in sequence.
- Unclamp the workpieces and fit together. If the dowel joint does not fit exactly carry out the following corrections:
 - **The vertical workpiece is set back (24.1):**
Turn adjusting wheels (23.3) in the minus direction by the faulty (1 scale graduation mark corresponds to - 0.1 mm dovetail depth), replace and realign template according to Chapter 6.3 a).
 - **The vertical workpiece is set back (24.2):**
Turn adjusting wheels (23.3) in the plus direction by the faulty (1 scale graduation mark corresponds to + 0.1 mm dovetail depth), replace and realign template according to Chapter 6.3 a).



Note: In order to adjust the adjusting wheels the screws (23.4) have to be opened and retightened after adjustment. This locks the pre-set position for later working.

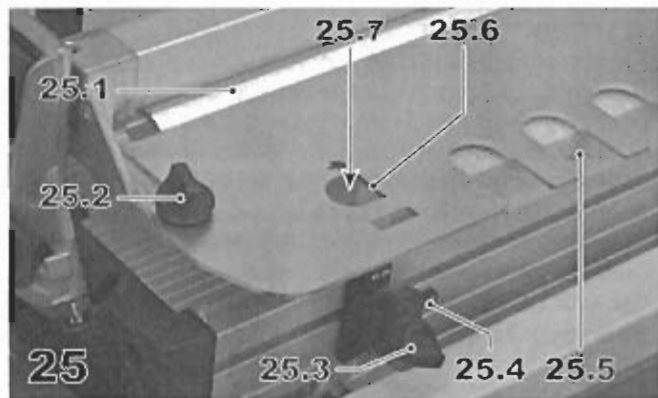
6.4 Open dovetail tenons

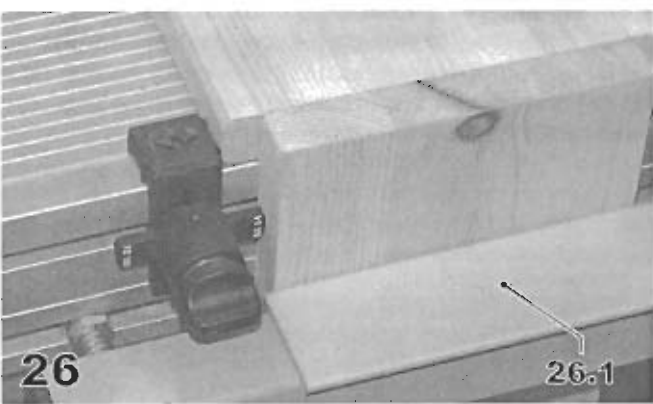
With open dovetail tenons, the dovetail must first be routed thoroughly using templates SZO 14 S or SZO 20 S, and the tenon must then be cut using templates SZO 14 Z or SZO 20 Z.

6.4.1 Dovetails

a) Inserting the template (SZO 14 S or SZO 20 S) and fitting a splinterguard

- Lock the tow swivel segments in the central (vertical) position with the clamping lever (see Figure 6).
- Open both clamping levers to adjust the height of the template and press the mount for the templates right down.
- Open the rotary knobs (25.2) to clamp the template and insert the template. **Caution:** The bent rear edge (25.1) of the template must point upwards.
- Push the template back up to the stop and clamp tight with the two rotary knobs (25.2)
- Turn the two stops into the positions "SZ 14" and "SZ 20" (25.4). Align the stops so that the arrows (25.7) lie against the inner straight side (25.6) of the notches in the template. Clamp the stops tight with the rotary knobs (25.3).
- Move the template up and place a board of soft wood (25.5) below the template as a splinterguard.
Note: The splinterguard prevents splintering on the rear side of the workpiece during routing.
Caution: To avoid damage to the jointing system during routing and to ensure that the splinterguard functions properly it must be approx. 5 mm thicker and at least as wide as the workpiece being processed.
- Push the template down until it lies flat on the splinterguard and close the two clamping levers to adjust the height of the template.
- Align the splinterguard so that it lies flush with the front edge of the base frame and clamp it tight with the upper pressure beam.





b) Clamping workpiece

Clamp a workpiece which is to be dovetailed.

When doing this, note the following (see fig. 26):

- The side of the workpiece must rest against the stop.
- The workpiece must be pushed against the template from beneath and connected flush at the top with the splinterguard.
- Clamp the plastic bracket (26.1) included with SZO 14 S as well.

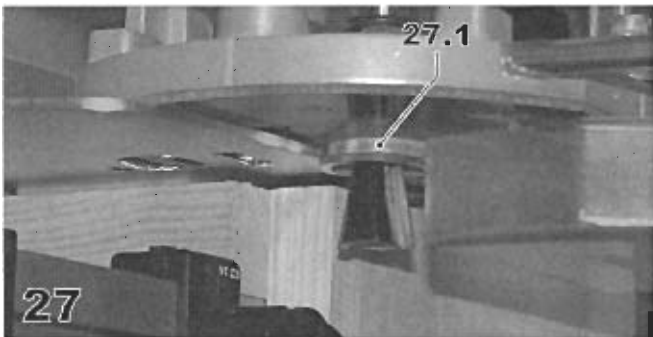
c) Preparing the router

(After the copying ring has been installed, see section 5.3)

Caution: The plug should always be removed from the power mains before changing tools.

- Clamp the cutter (see T2) in the router's clamping collet.
- Set the zero point (routing depth = 0 mm) on your router by placing the tool on the template and pushing down until the cutter touches the surface of the of the clamped workpiece.
- Set the workpiece thickness as the routing depth on your router.
- When routing joints use the extractor hood for the router's side stop or the extractor hood AH-OF 900 (accessory, order no. 484 453). Connect the extractor hood to a suitable dust extractor from dust class "M" (e.g. FESTOOL CTM dust extractor).

Note: set the gap between the extractor hood and vertical workpiece so that you still have enough travel to rout the dovetails.



d) Processing

- Place the router on the end of the template so that the collar (27.1) of the starting ring rests against the template.
- Press the tool down to the pre-set routing depth and lock the routing depth on the router.
- Switch the router on.
- Guide the router evenly along the template (Figure 28).

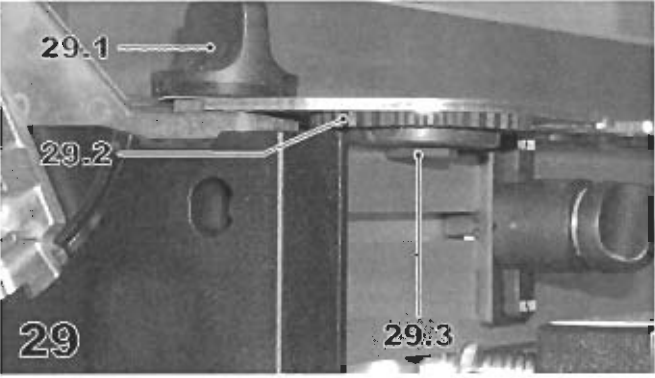
Caution: The collar of the starting ring must always rest against the template.

Always hold the router by both handles parallel to the template and do not turn the tool during routing.

The routing depth may not be changed during routing.

All workpieces with dovetails should be routed in this way.



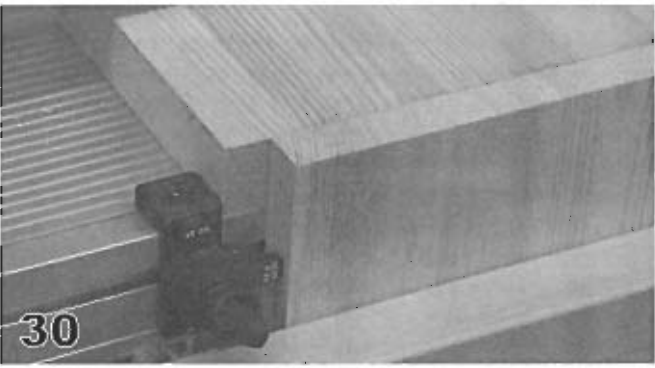


6.4.2 Tenons

a) Inserting the template (SZO 14 Z or SZO 20 Z) and fitting a splinterguard

When inserting the template and securing the splinterguard, follow the instructions given in 6.4.1 a), but with the following alteration:

- The two adjusting wheels (29.2) must point downwards.
- Align the template so that the lower shoulders (29.3) of the two adjusting wheels rest against the base frame of the jointing system and clamp the template tight with the two rotary knobs (29.1).



b) Clamping workpiece

Clamp a workpiece which is to have a tenon cut. When doing this, note the following (see fig. 30):

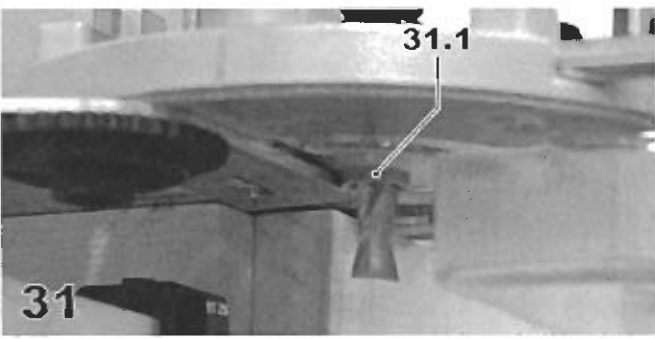
- The side of the workpiece must rest against the stop.
- The workpiece must be pushed against the template from beneath and connected flush at the top with the splinterguard.

c) Preparing the router

(After the copying ring has been installed, see section 5.3)

Caution: The plug should always be removed from the power mains before changing tools.

- For dovetail joints, use the groove cutter (see T2) instead of the cutter, and set the workpiece thickness as the routing depth on your router.



d) Processing

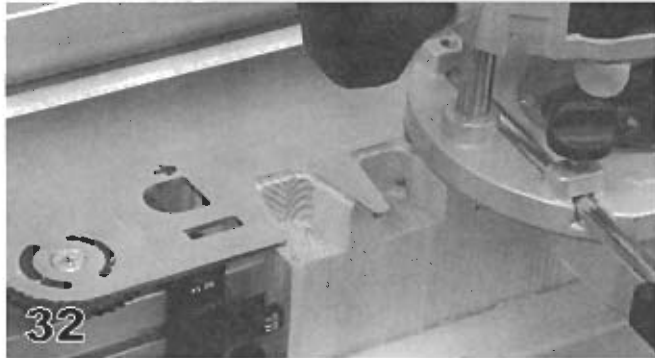
Trial routing of the dovetails

Perform a trial routing to check whether all settings are correct.

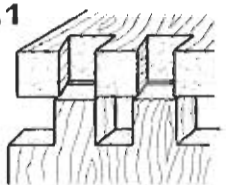
- Place the router on the end of the template so that the collar (31.1) of the starting ring rests against the template.
- Press the tool down to the pre-set routing depth and lock the routing depth on the router.
- Switch the router on.
- Guide the router evenly along the template (Figure 32).

Caution: The collar of the starting ring must always rest against the. Always hold the router by both handles parallel to the template and do not turn the tool during routing.

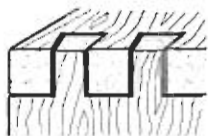
The routing depth may not be changed during routing.



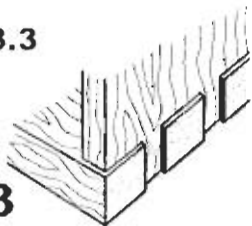
33.1



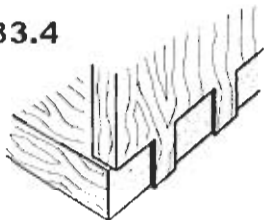
33.2



33.3



33.4



33

- Unclamp the workpiece and place it together with a workpiece with dovetails. If the joints do not fit exactly together, the following corrections should be made:

- **The joints are too tight (33.1):**

Turn the adjustment wheels towards plus.

- **The joints are too loose (33.2):**

Turn the adjustment wheels towards minus.

- **The joints are too deep (33.3):**

Slightly reduce the routing depth on the router using the router's precision adjustment feature.

- **The joints are not deep enough (33.4):**

Slightly increase the routing depth on the router using the router's precision adjustment feature.

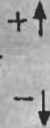
Note: In order to adjust the adjusting wheels the screws (34.1) have to be opened and retight-ened after adjustment. This locks the pre-set position for later working.

- Repeat this procedure until the joint fits exactly.

Routing the dovetails

Rout all dovetails analogous to the trial routing.

34.1



34

7 Application database

A detailed description of the possible uses of the jointing system can also be found in our application database on the Internet under "www.festool.com".

8 Accessories

The order numbers for cutters, templates and other accessories can be found in Table 1, your FESTOOL catalogue or on our Internet Homepage "www.festool.com".

9 Warranty

Our equipment is under warranty for at least 12 months with regard to material or production faults in accordance with national legislation.

In the EU countries, the warranty period is 24 months (an invoice or delivery note is required as proof of purchase).

Damage resulting from, in particular, normal wear and tear, overloading, improper handling, or caused by the user or other damage caused by not following the operating instructions, or any fault acknowledged at the time of purchase, is not covered by the warranty.

Complaints will only be acknowledged if the equipment has not been dismantled before being sent back to the suppliers or to an authorised FESTOOL customer support workshop.

Store the operating instructions, safety notes, spare parts list and proof of purchase in a safe place.

In addition, the manufacturer's current warranty conditions apply.

Note

We reserve the right to make changes to the technical data contained in this information as a result of ongoing research and development work.