

No. 115

Tongue and groove joints using the bench-mounted circular saw



A

Description

Tongue and groove wooden joints are suitable for the manufacture of solid wood frames. This type of joint is extremely stable and resistant. If the frame is to obtain a filling this can be grooved in or inserted in a rebate. Both versions are described here.

In this description it can be assumed that the vertical head rails are continuous and therefore obtain the groove, the horizontal head rails then obtain the tenons.



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B

Tools/Accessories

Festool offers two trimming saws for creating this type of joint. The difference lies in the cutting depth:

CS 50 = 50 mm
CS 70 = 70 mm

Designation	Order No.
Trimming saw PRECISIO CS 50 EB Set	561199
Trimming saw PRECISIO CS 70 EB Set	561146
CT series mobile dust extractor	

C

Preparation/Set-up



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Creating a tongue and groove joint for a frame with an inner rebate. The PRECISIO CS 70 with a sliding table is used in the following description.

The work process is divided into three sections:

- Rebating
- Slotting
- Tapping
- Sawing head rails to outer dimensions of frames.
- Make marking on visible areas.
- Marking rebate.

A check should be carried out on test pieces of wood to check the settings.

IMPORTANT

The sawing work described in the following relates to "concealed" cuts. For these work processes the spacer wedge must be shortened (countersunk) and the chippings guard removed. The saw blade is then no longer concealed. A real risk of injury thus arises!!

- Exercise caution when working!
- Once this work is completed the spacer wedge is brought back into the upper position and the chippings guard fitted.

E

Procedure

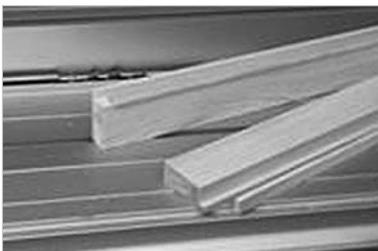
Creating the rebate

When rebating narrow rails the first cut must be effected in the narrow area.

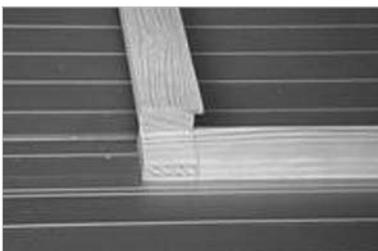
- Set the cutting depth with the help of the scribe mark or dimension.
- Adjust the parallel stop to the scribe mark or dimension.
- Connect the dust extractor to the PRECISIO.
- It is necessary to use the push stick when inserting the workpieces. The left hand presses the workpiece to the longitudinal stop.
- Check the cutting position and correct if necessary.
- Move the longitudinal stop and position the workpiece flat on the saw table.
- Set the cutting depth for the second cut.
- Set the longitudinal stop as per the scribe mark or dimension and perform the cut.
- The reject piece falls to the side without getting jammed (Fig. 115/06).
- Correct the setting. If the test cut is OK, process all frame parts.



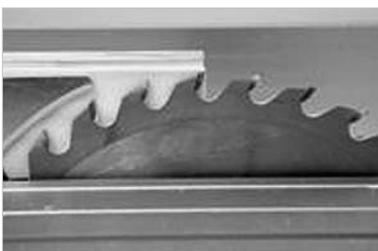
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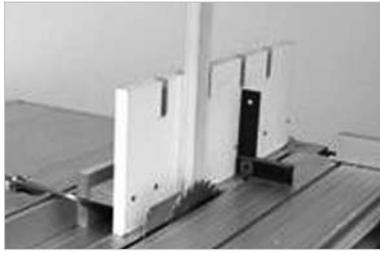


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Creating the grooves

The length of the groove is determined by the rebate.

- Position a horizontal head rail crossways onto a vertical one.
- Mark the length and width of the groove.
- Mark the area to be rejected (Fig. 115/08).
- Set the cutting depth. A head rail is used as a setting gauge. The cutting depth corresponds to the width of the wood to the rebate edge (Fig. 115/09).



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The workpiece must be positioned vertically on the saw table for tongue and groove joints. Here a fixture must be created which keeps the workpiece in this position securely and precisely (Fig. 115/10). Two wooden boards (approx. 600 x 200 mm and approx. 500 x 200 mm), as well as squared timber approx. 40 x 40 x 300 mm, are required for this.

A variant of the elevation of the longitudinal stop is shown in Fig. 115/11. The board must be at a right angle to the saw table, otherwise the grooves become inconsistent.



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The 500 x 200 mm board is required as an elevation at the sliding table. The dark board goes to the white board. It can be clamped to a Festool spring-steel clamp FSZ 120 at the stop ruler of the sliding table.



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The workpiece is positioned in the corners of the two stop elevations.



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The squared timber is glued on at the elevated sliding table stop. The workpiece thus obtains a secure side guide.

To determine the position precisely the squared timber is moved to the workpiece (this is removed in the image here).



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- Move the workpiece through the saw blade with the help of the sliding table.
- The left hand pushes the workpiece onto the saw blade. The two hands are out of the danger zone.
- Turn the workpiece and make the second cut.

Using this method rails can be grooved whose length is only restricted by the height of the workshop.



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The stops are reset for the complete cutting out of the entire groove.

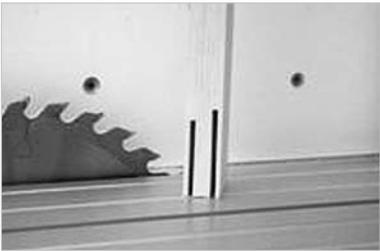


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Creating the tenons

- Move the stops to the right.
- A groove frame part is used as a setting gauge. The saw blade must now cut outside the groove so that the tenon remains (Fig. 115/16).

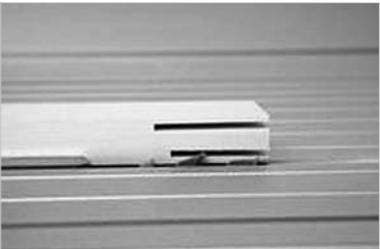
IMPORTANT: The tenon part obtains a shifted rail due to the rebate. For this reason only one cut can be performed at a time at the cutting height set. The workpiece must be positioned at the parallel side fence with the visible area!



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- Set the saw blade higher for the second cut. A head rail is used again as a setting gauge. This time the cutting depth equals the width of the wood.

In Fig. 115/17 the two different cutting depths are recognisable.



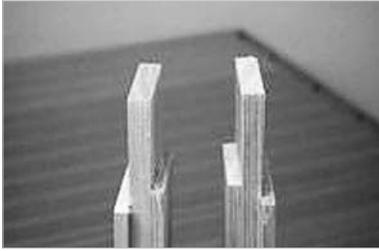
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Cross-cutting tenons:

- Remove the stop elevations/fixture
- Set the cutting depth with the help of the workpiece.
- Use the longitudinal stop for setting the cutting length. The stop rail is positioned at a height. The reject part cannot be clamped between the stop and the saw blade.



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- Please take note of different cutting lengths!
- The workpiece is moved forward with the sliding table.

Completed tenons. The different railing heights are visible here.

Using a soft-head hammer the frame parts can be joined.



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