

FELDER®

SETUP MANUAL



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for **windows**
French doors and conservatories

NEW-IV 78 rebate
A perfect window
in 7 steps!

The FELDER WP-HW window set for the most distinct windows in the world!

Dear FELDER customer,

The FELDER setup manual is a technical document about the applications of the FELDER WP-HW window set.

Some of the illustrated work processes and options for the production of windows, French doors, and conservatories are supported in part by FELDER-tooling

not included in the standard delivery of the FELDER WP-HW window set (item no. 04.2.310)! Please refer to the tooling summary on page 16.

Our specialists are at your disposal for any questions that may arise.

Your FELDER Team

IMPORTANT: As this is a European style system the metric measurement is appropriate for accuracy and should be used.

The FELDER-WP-HW window tooling set

The FELDER WP-HW window tooling set enables production of windows, French doors, and conservatories according to construction design.

IV 78 with Euro-Rebate

With this the construction depth is 10 mm deeper than in commercial window sets. This allows for the production of „energy saving“ windows suitable even for „low-energy“ houses.

Construction characteristics of the FELDER-IV-78 window with Euro-rebate

- IV= double- glazed window
- 78 = 78 mm timber thickness for frames and window
- Euro- double rebate
- All-round weather strips, in sash and frame
- U value = 0,9 W/m² K (heat transfer coefficient) with appropriate double glazing
- Sound insulation rated at up to 41 dB when using double glazing.

All values, U-value (heat transfer coefficient), and sound reduction index are considered standard values achievable depending on the processing quality!

The FELDER-WP-HW window tooling set allows for production of windows, French doors, and conservatories according to European Quality Standards.

Working with the FELDER WP-HW Window Tooling Set

The FELDER WP-HW window tooling set is exceedingly user-friendly and precise. This set is especially designed for applications away from line production and allows you to custom build windows, doors and conservatories. The combination of the cutters enables production of standard windows in only 7 shaping steps.

Specifications:

All tooling features solid steel components, equipped with WP-HW (carbide reversing plate), low kickback rate, and manual infeed configuration. The WP-HW assembly guarantees a consistent circular tooling motion and extends the lifetime of the tool.

Tooling setup

The spindle height and the setting of the fence does not need to be changed during the standard production of windows, the spindle and fence remain in the same position.

Establishing layout

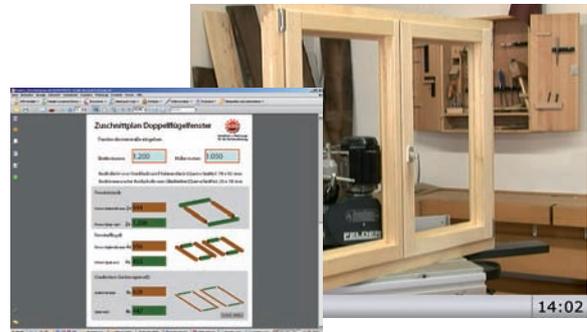
For hinged single and double sash casement windows we recommend using our planning software (a free copy is available for download from our website).

Use the drawings and formulas on page 6, 7 (not to 1:1 scale) to calculate the cutting measurements for the construction of your window.

Online video available at www.felder.at

The starting point is the outside measure of the frame respectively.

For other window constructions we suggest creating a cutting plan.



The proper way to start!

Always pay attention to the right choice of timber for your window, door, or conservatory project. Whichever the type of wood you decide on, make sure that the wood moisture is between 12 and 15 %. This, and the elimination of bad or morbid wood will guarantee a high quality end product of lasting reliability for decades to come.

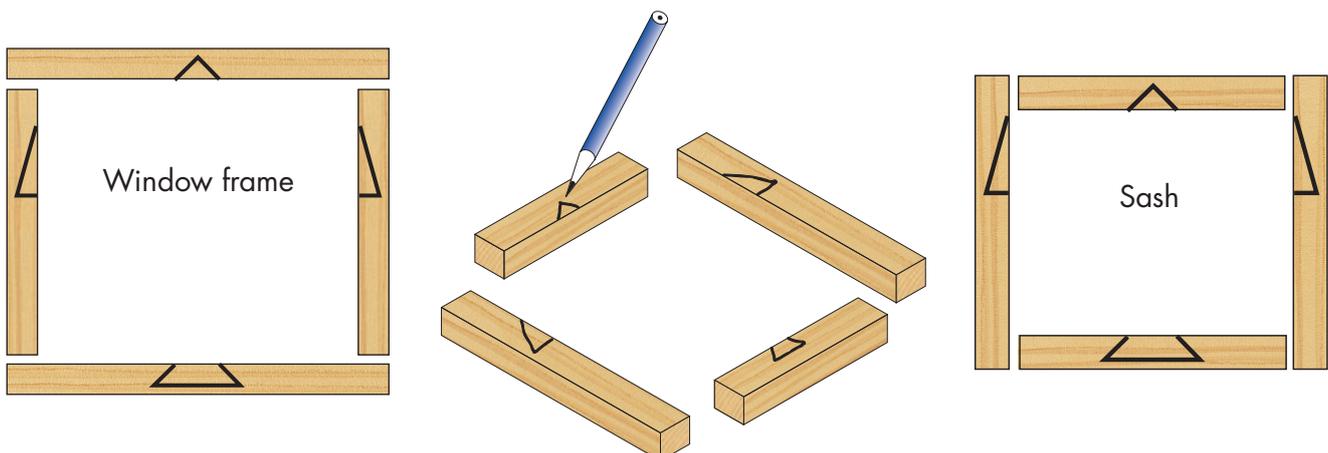
Shaping the frame and sash timber

The cross section of the frame and the sash timber is 78 x 82 mm. Depending on the finishing you might calculate a grinding allowance of 0,5 mm.

Lay out your window frames and sash.

In addition to the choice of timber you can also decide on the visual appearance of your windows wood grain by notch positioning. Take your time and lay out your window frames and sash as shown below.

IMPORTANT: The carpenter's triangle resides on the top face during all shaping processes.



Using the doweling jig

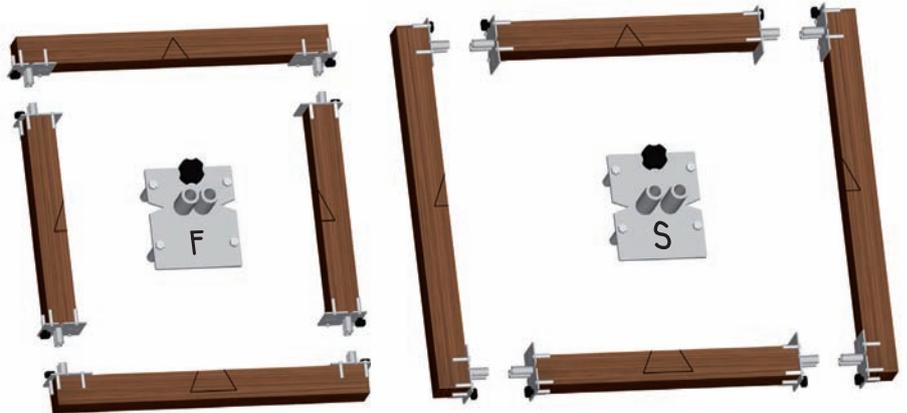
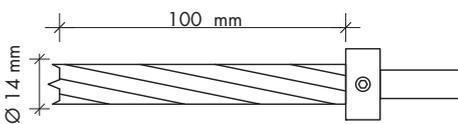
Doweling:

In addition to the counter profile the corner joints can be reinforced with dowels. The best way to do this is by using the special FELDER-doweling jigs (item no. 400-276).

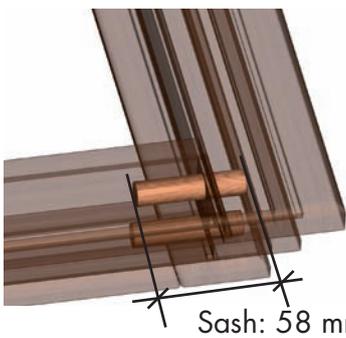
Simply clip them on for accurate drilling (refer to the online video at www.felder.at) The depth stops guarantee the exact boring depth.

Doweling jig positioning on frame (left) and on sash (right).

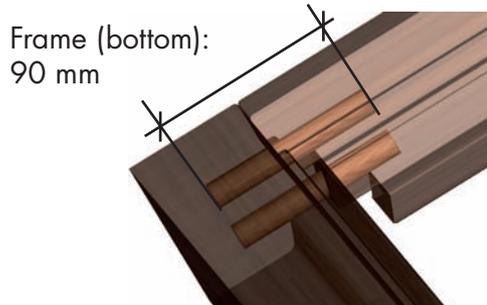
Assembly of depth stop ring according to drawing.



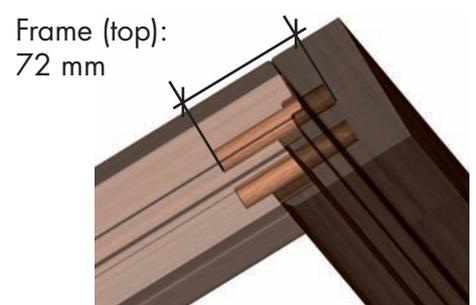
Depending on the counter profile the dowel length may vary:



Sash: 58 mm



Frame (bottom):
90 mm



Frame (top):
72 mm

Spindle moulder adjustment

The adjustments for the entire production process of one workpiece are done only once. The spindle height and cutting depth adjustments are done only one time.

Adjustment of the cutting depth

The moulder fence has to be 120 mm away from the moulder spindle arbor. (refer to drawing)

Adjustment of moulder spindle height:

The moulder spindle height is adjusted by making test cuts according to drawing.

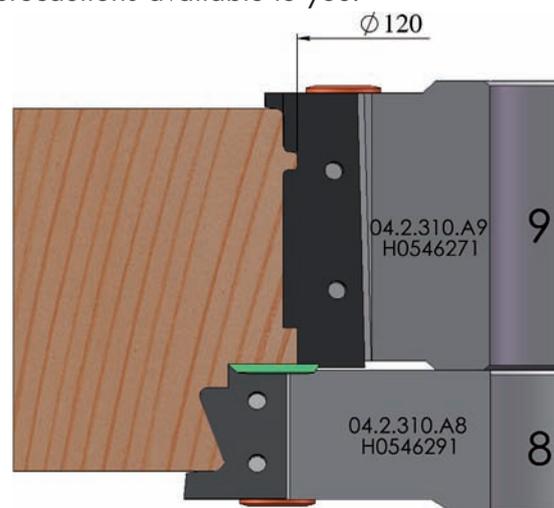
NOTE: Make sure top and bottom edge of tool is in correct position to the workpiece!

Speed:

Always ensure that the rotation speed on your moulder is adjusted according to indications on the cutterhead.

ATTENTION:

Always use all safety and accident prevention precautions available to you.



Glazing bead groove cut

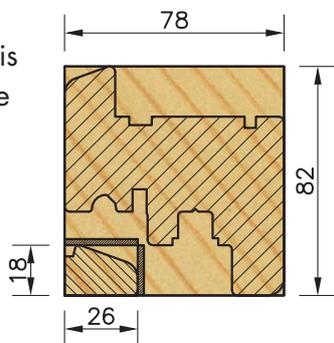
Glazing bead:

Glazing bead grooves have to measure 26 x 18 mm, either shape or use the FELDER narrow cut sawblade (item no. 03.01.30024) to rip the glazing beads

from the stiles and rails of the sash and frame according to illustration below.

Sash:

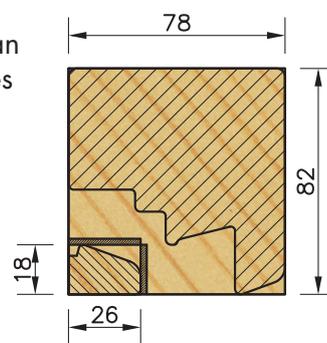
The glazing bead groove is ripped from all sides of the sash (stiles and rails).



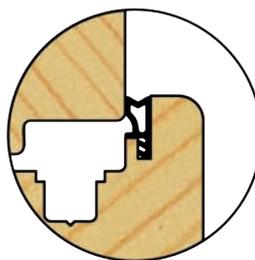
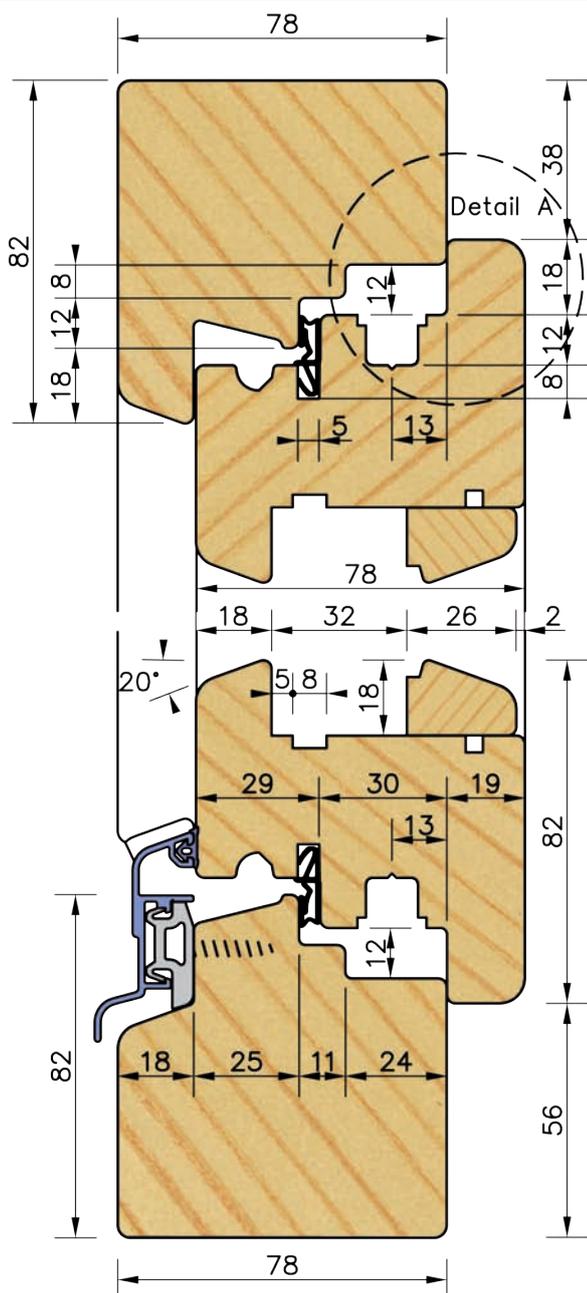
Frame:

The glazing bead groove can only be ripped from the stiles and the top rail!

ATTENTION! Do NOT rip glazing bead groove from bottom rail of frame!



Cross section FELDER-window, IV 78 mm, Euro-rebate

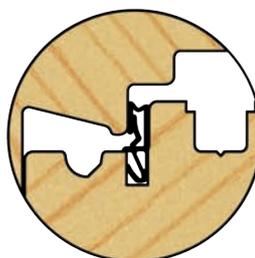


Detail A

Overlap seal:

Additional cutterhead for overlap seal groove. Item no. 04.2.311

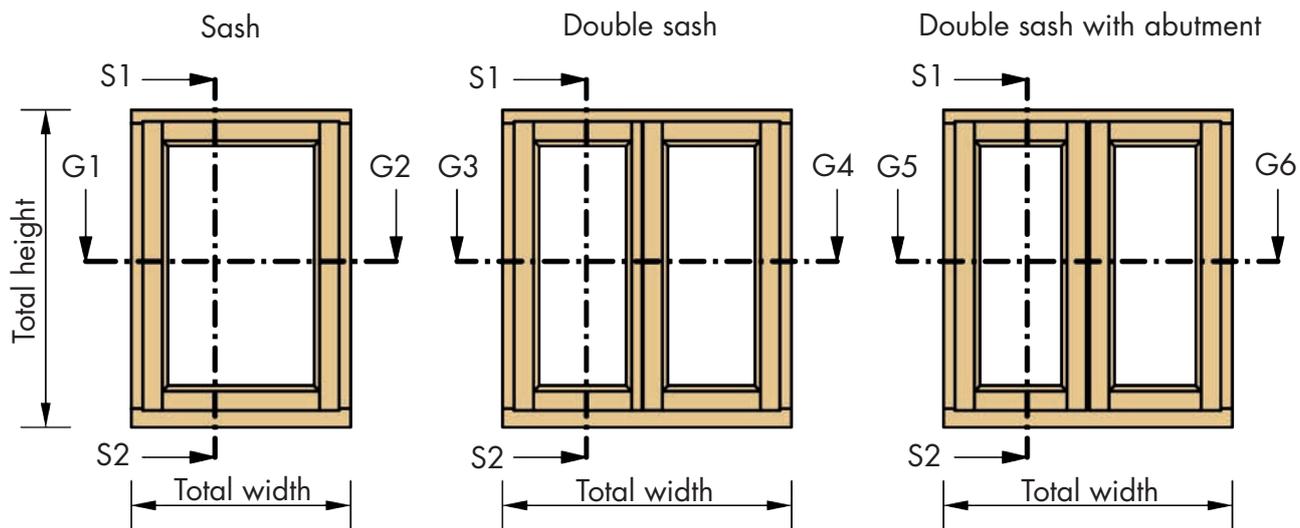
Overlap seal as shown; Deventer SP103a



Sash rebate seal as shown:
Deventer SV12

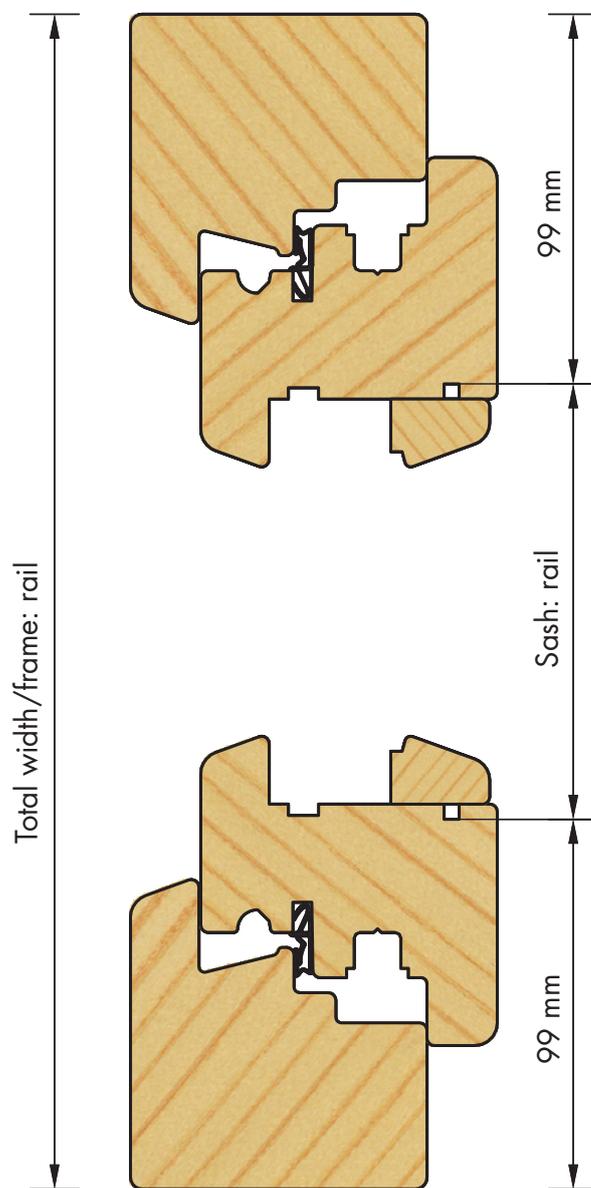
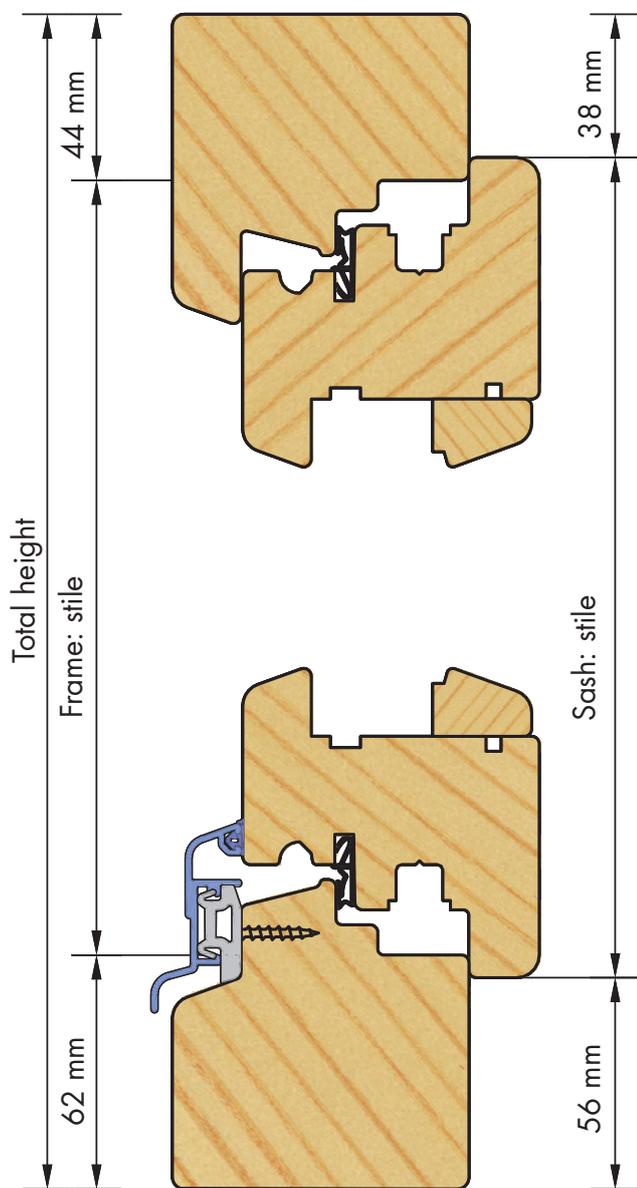
Rain protection rails:
STEMESDER FS 20-51
GUTMANN Spree 24 OF

Determining sash size



Cross section S1 – S2

Cross section G1 – G2

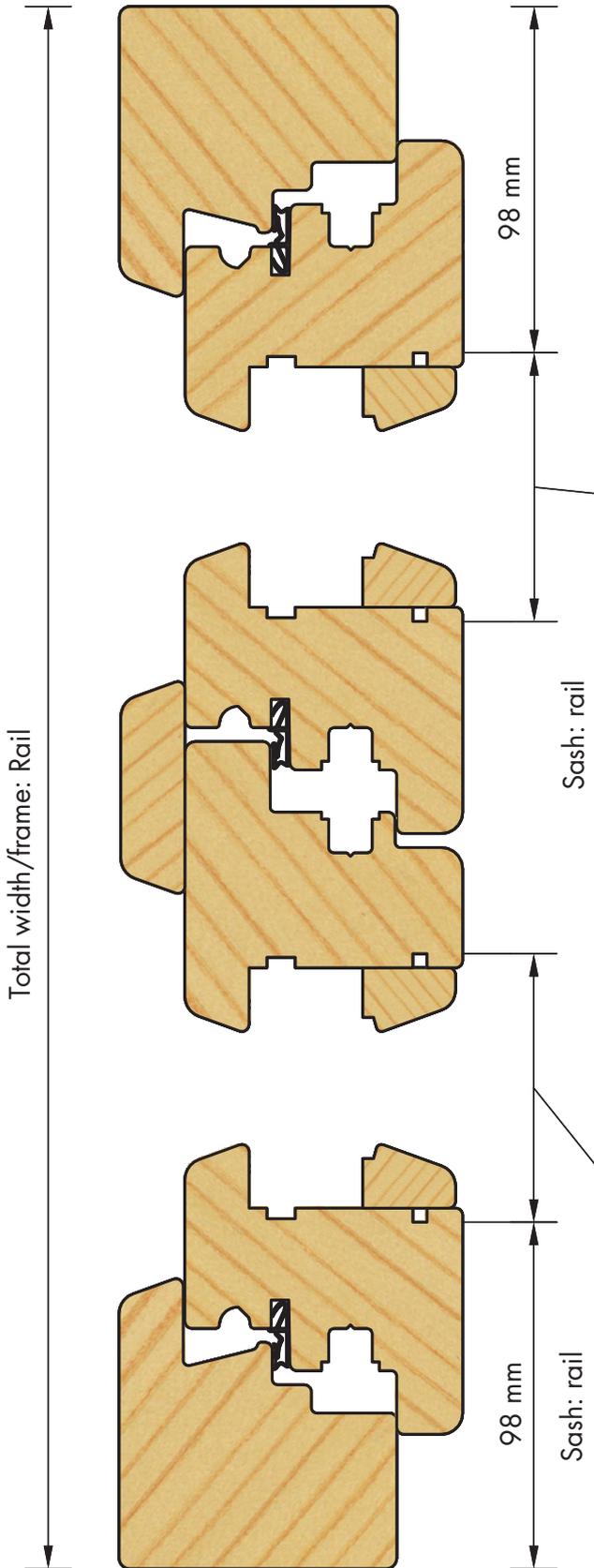


Frame stile = Total height-106 mm
 Sash stile = Total height-94 mm

Frame rail = Total width
 Sash rail = Total width-198 mm

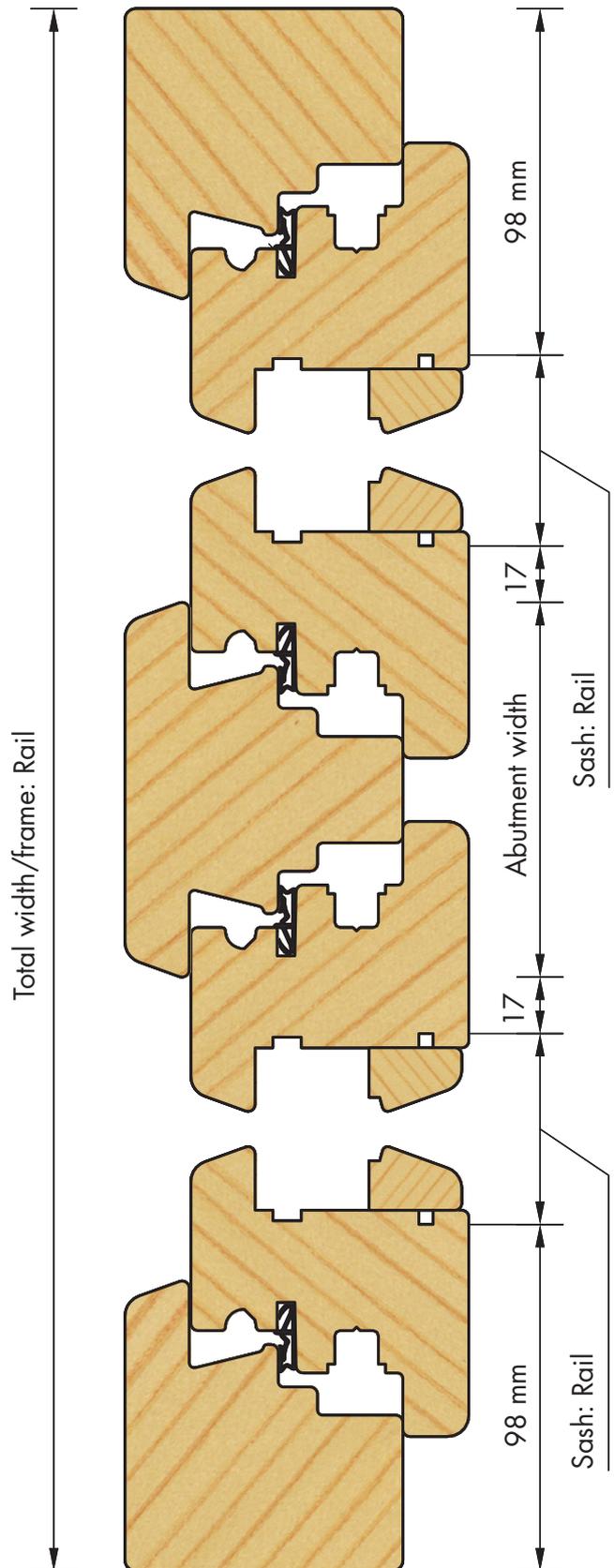
Determining sash size

Cross section G3 – G4



Frame rail = Total width
 Sash rail = Total width: 2-147 mm

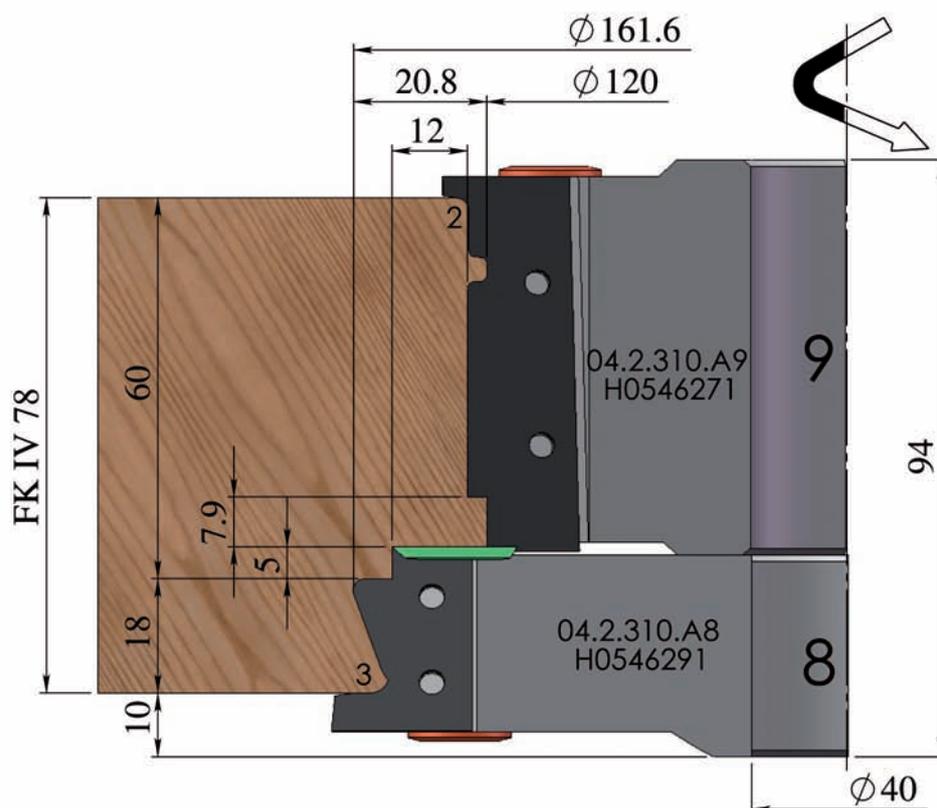
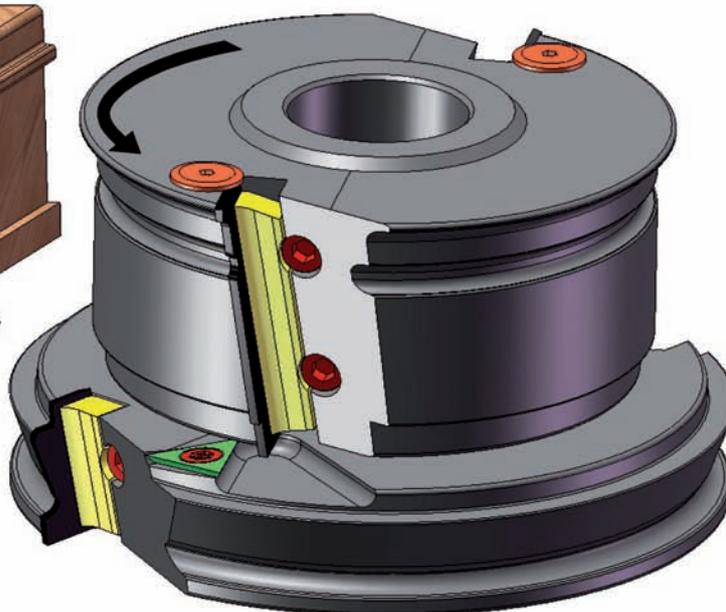
Cross section G5 – G6



Frame rail = Total width
 Sash rail = Total width -
 Abutment width: 2-116 mm

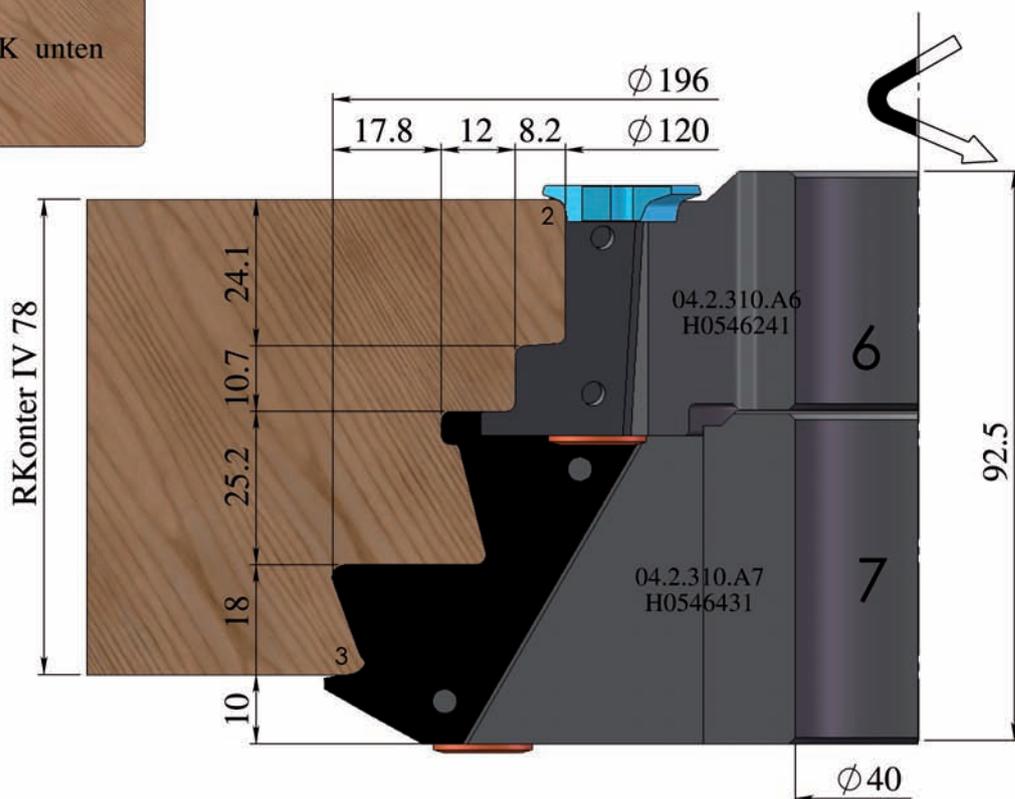
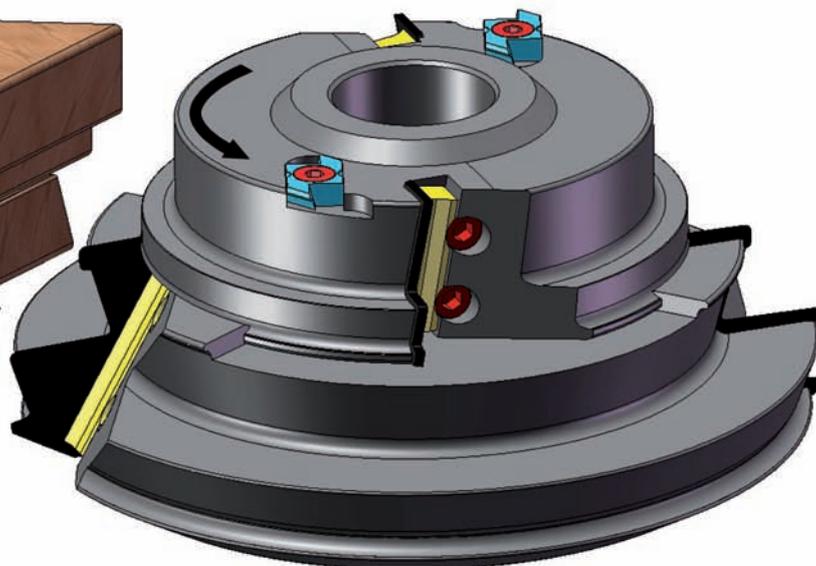
Step 1: Sash counter profile

- The moulder settings are adjusted in this process. (Page 4)
- Adjust the correct rotating speed on the moulder. Use sliding/tenoning table with eccentric clamp or FELDER-workpiece holder (item no. 01.0.019).



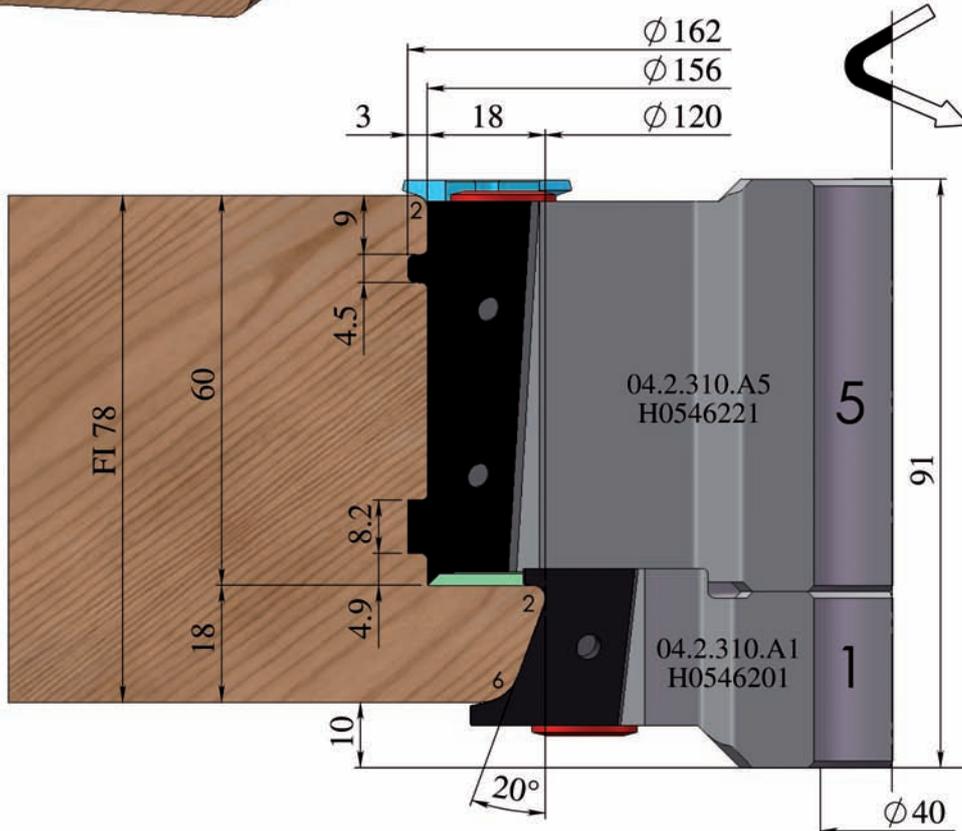
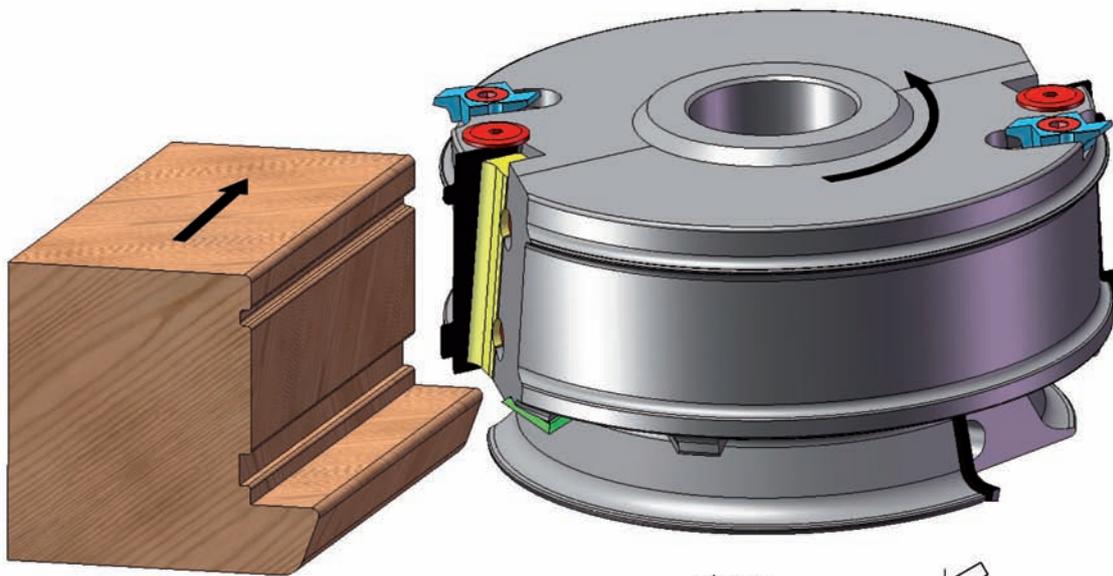
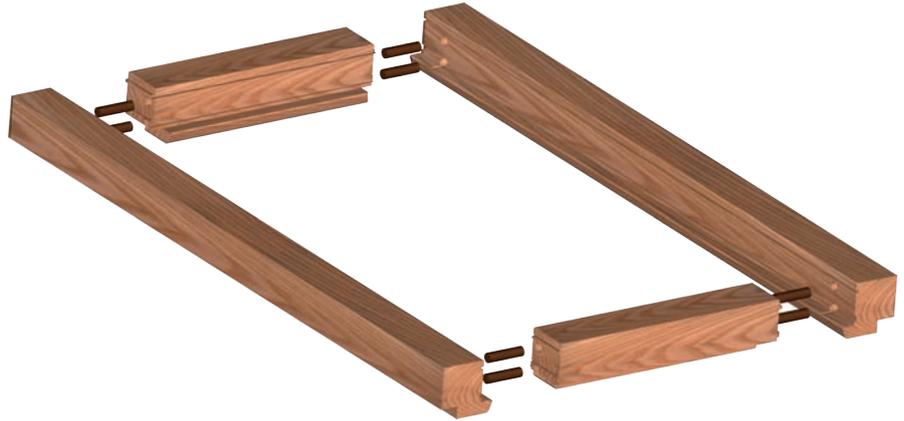
Step 2: Counterprofile on frame

- Use sliding/tenoning table with eccentric clamp or FELDER- workpiece holder (item no. 01.0.019).
- Set correct rotation speed.



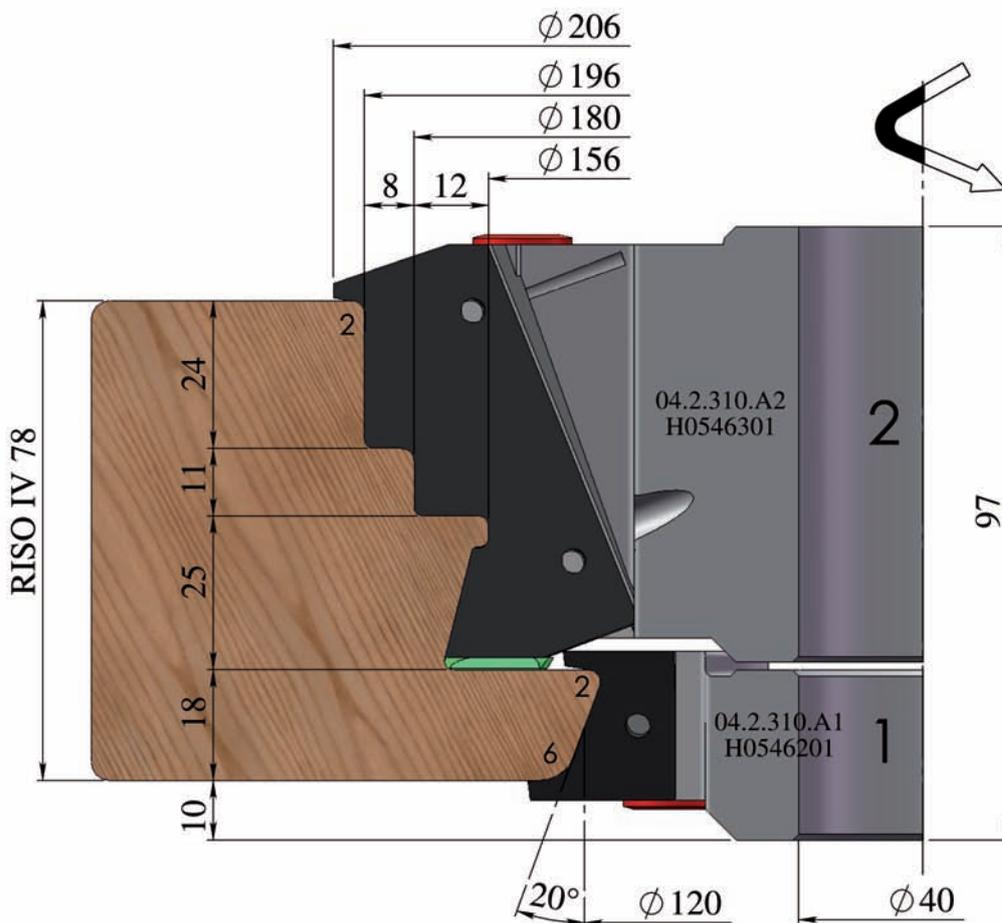
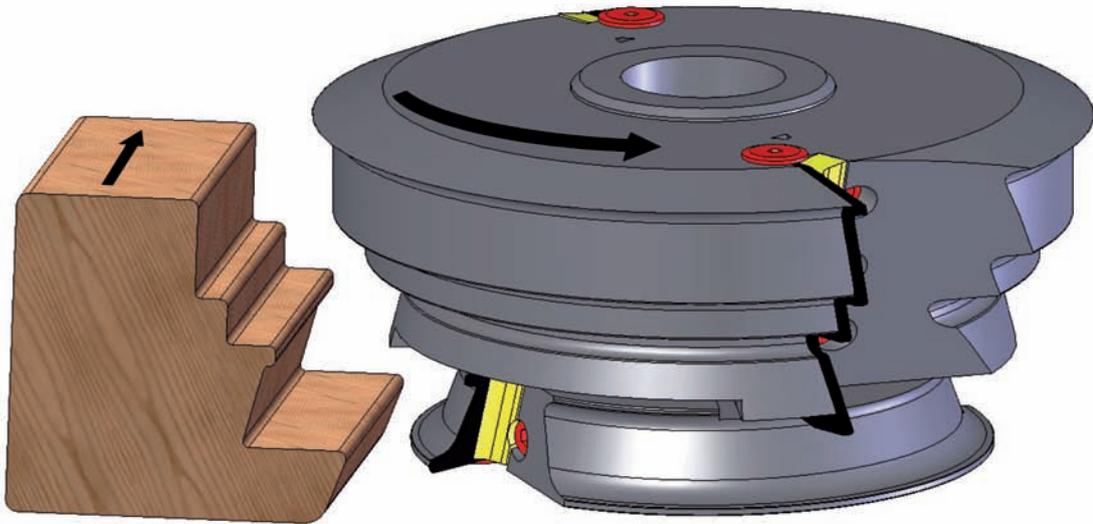
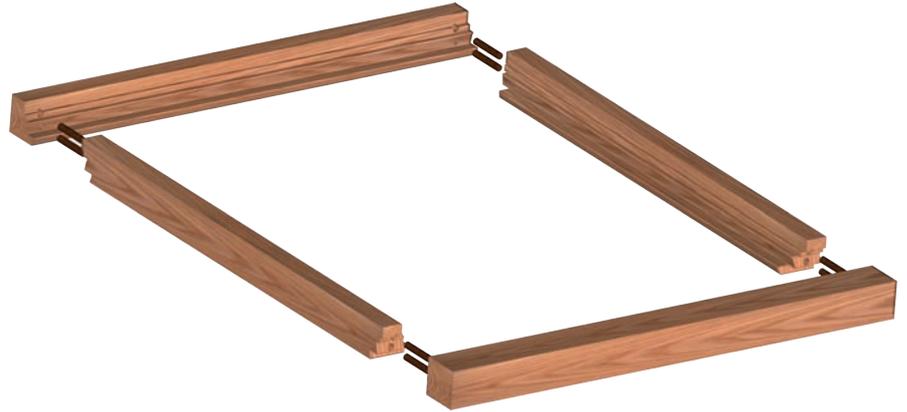
Step 3: Inner profile of shash

- Use power feeder.
- Set correct rotation speed.



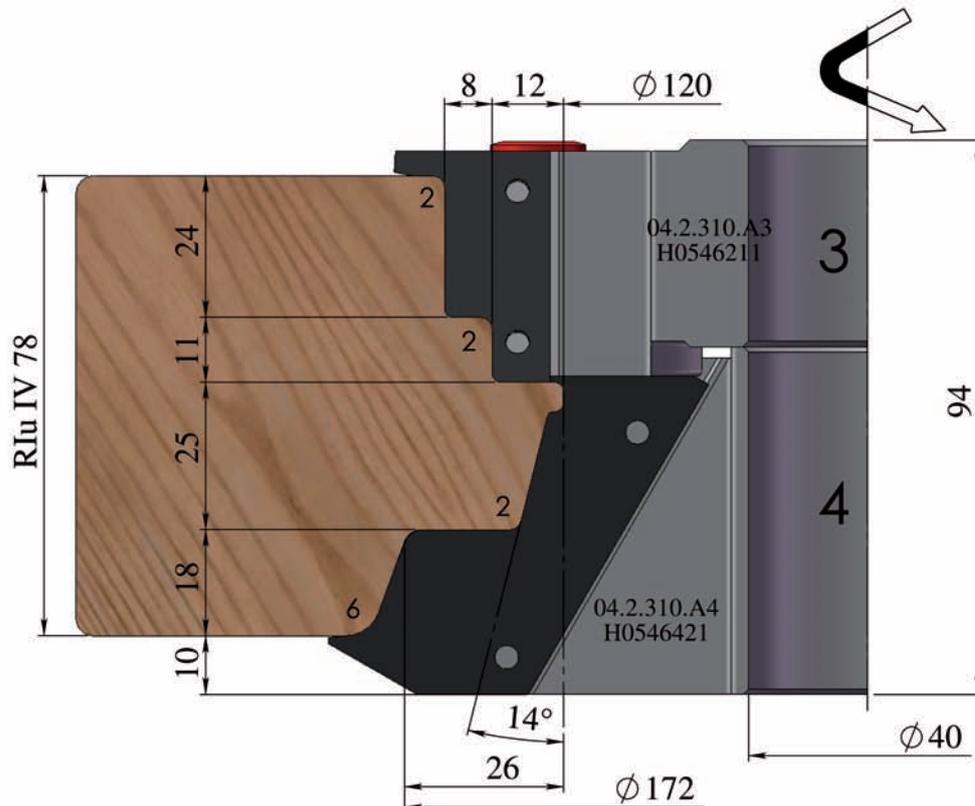
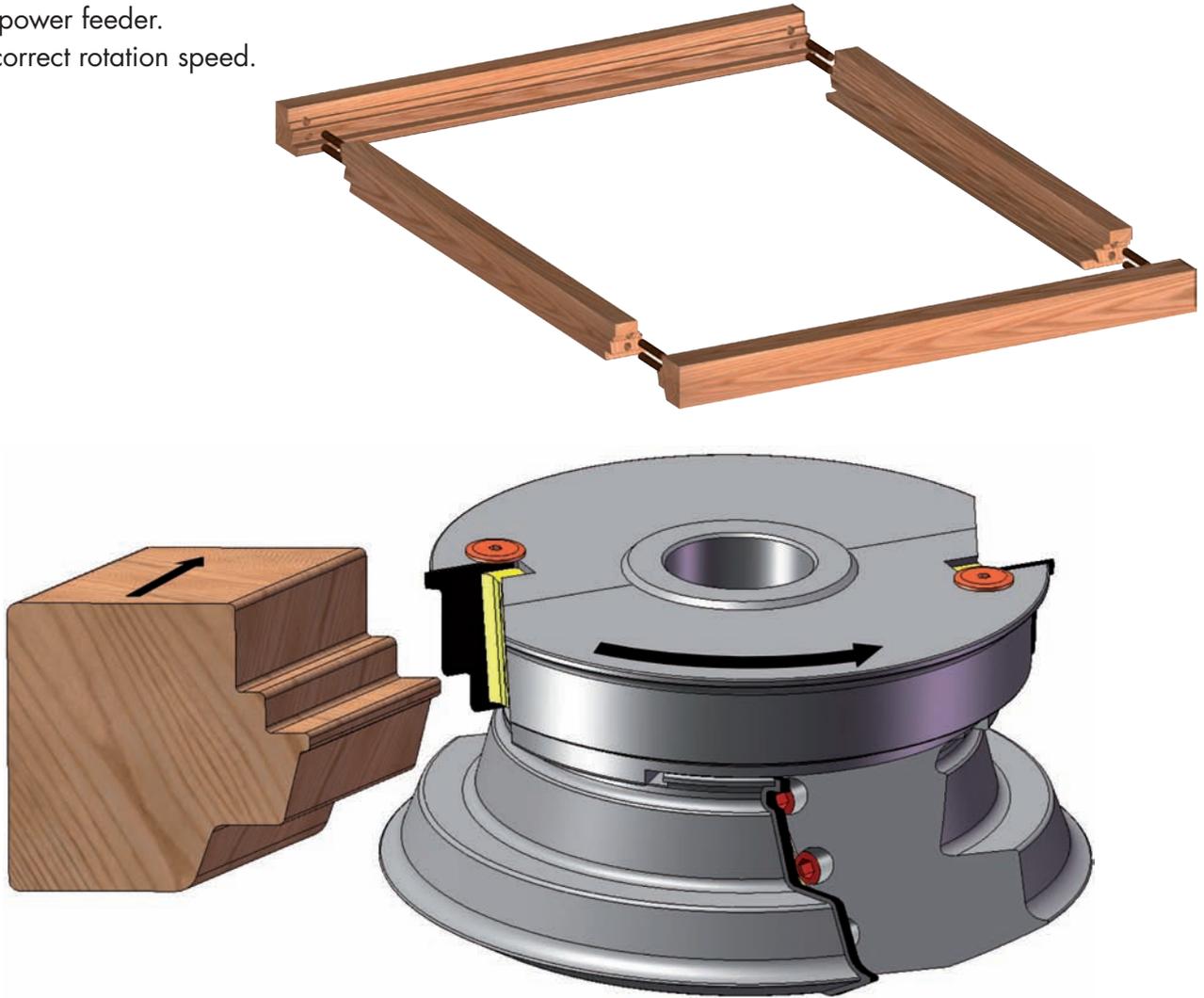
Step 4: Inner profile frame stiles and rail

- Use power feeder.
- Set correct rotation speed.



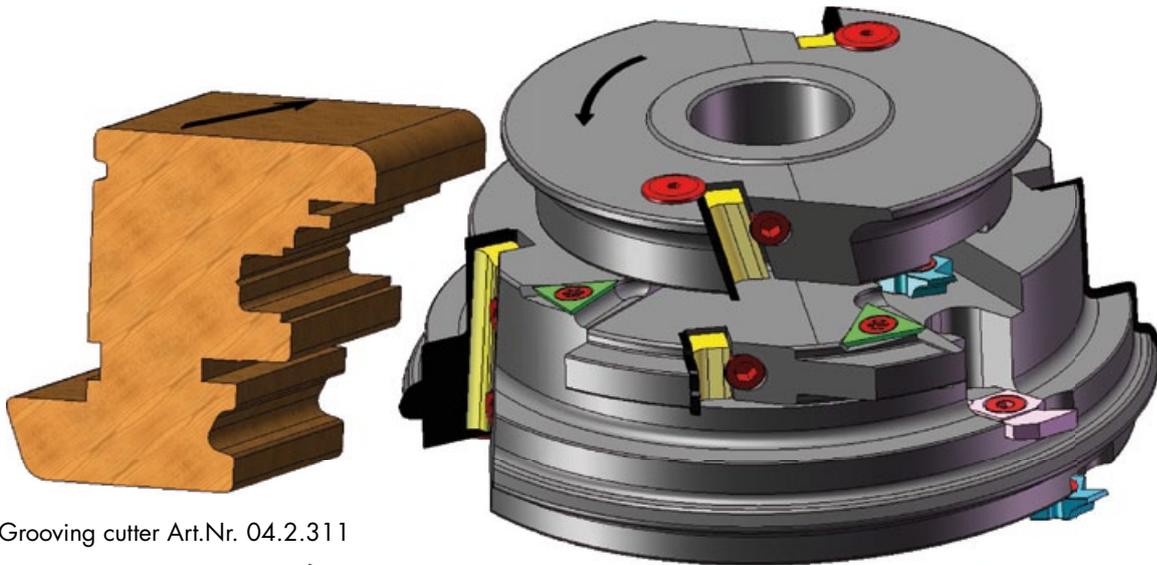
Step 5: Profile frame: bottom rail

- Use power feeder.
- Set correct rotation speed.



Step 6a: Outer profile: shash

- 13 mm gear slot arbor = 4 mm spacer ring on top of cutterhead no. 11
- Use power feeder.
- Set correct rotation speed.

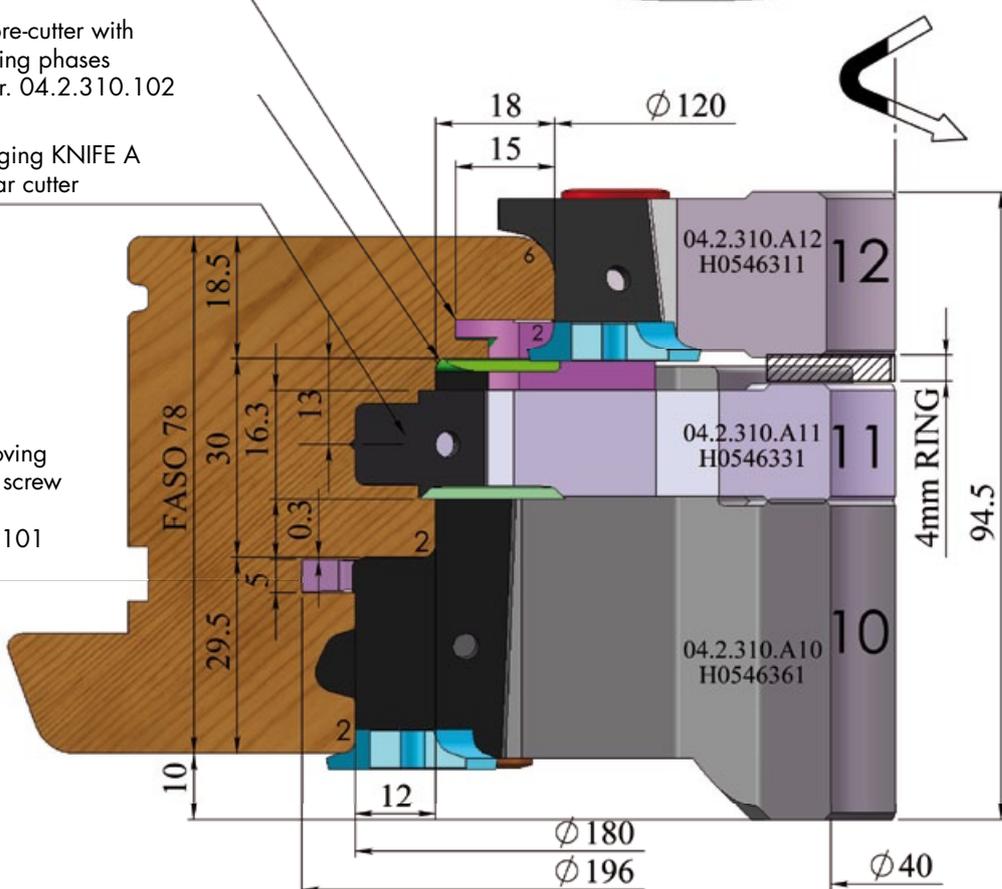


Grooving cutter Art.Nr. 04.2.311

Soft pre-cutter with
3 cutting phases
Art.Nr. 04.2.310.102

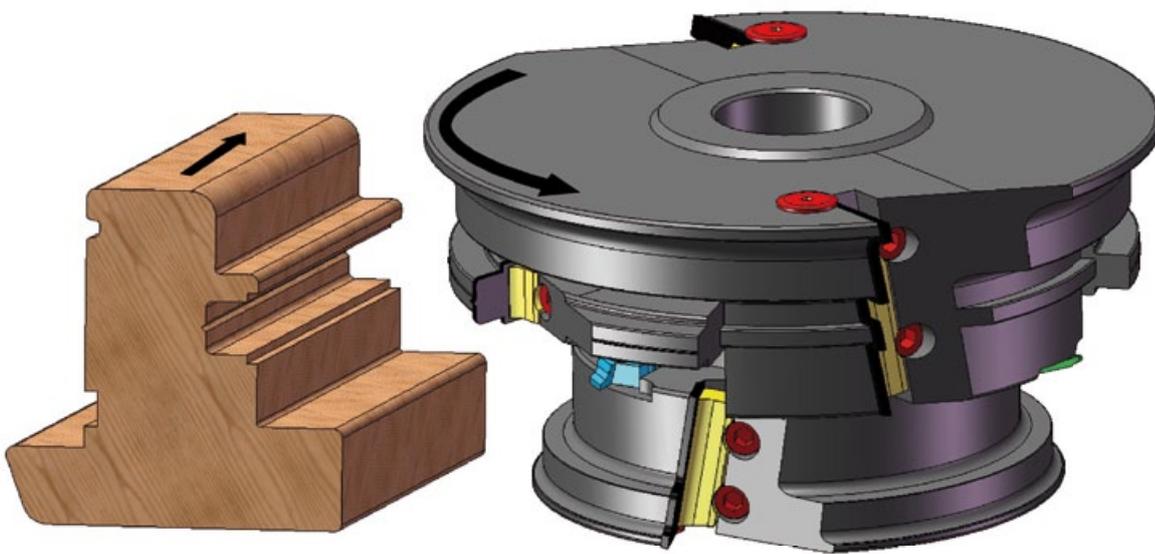
Changing KNIFE A
in gear cutter

5 mm grooving
cutter incl. screw
Art.Nr.
04.2.310.101

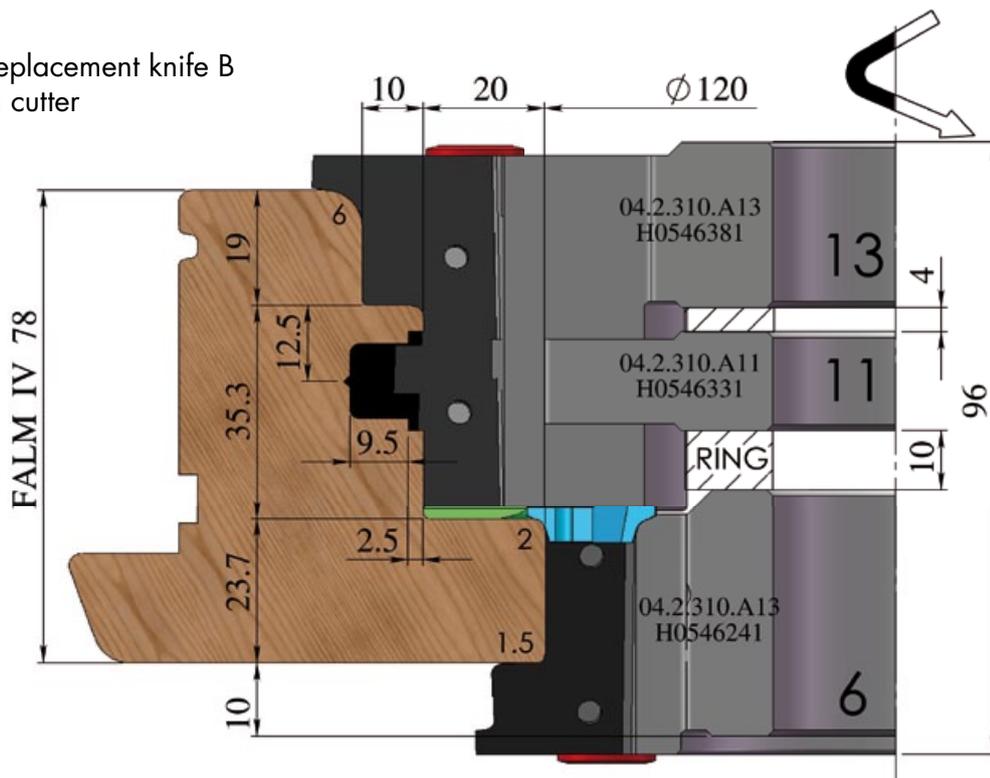


Step 6b: Central groove on left stile of sash

- 13 mm gear slot arbor = 10 mm spacer ring below cutterhead
ring below cutterhead
no. 11 and 4 mm spacer ring on top.
- Use power feeder.
- Set correct rotation speed.

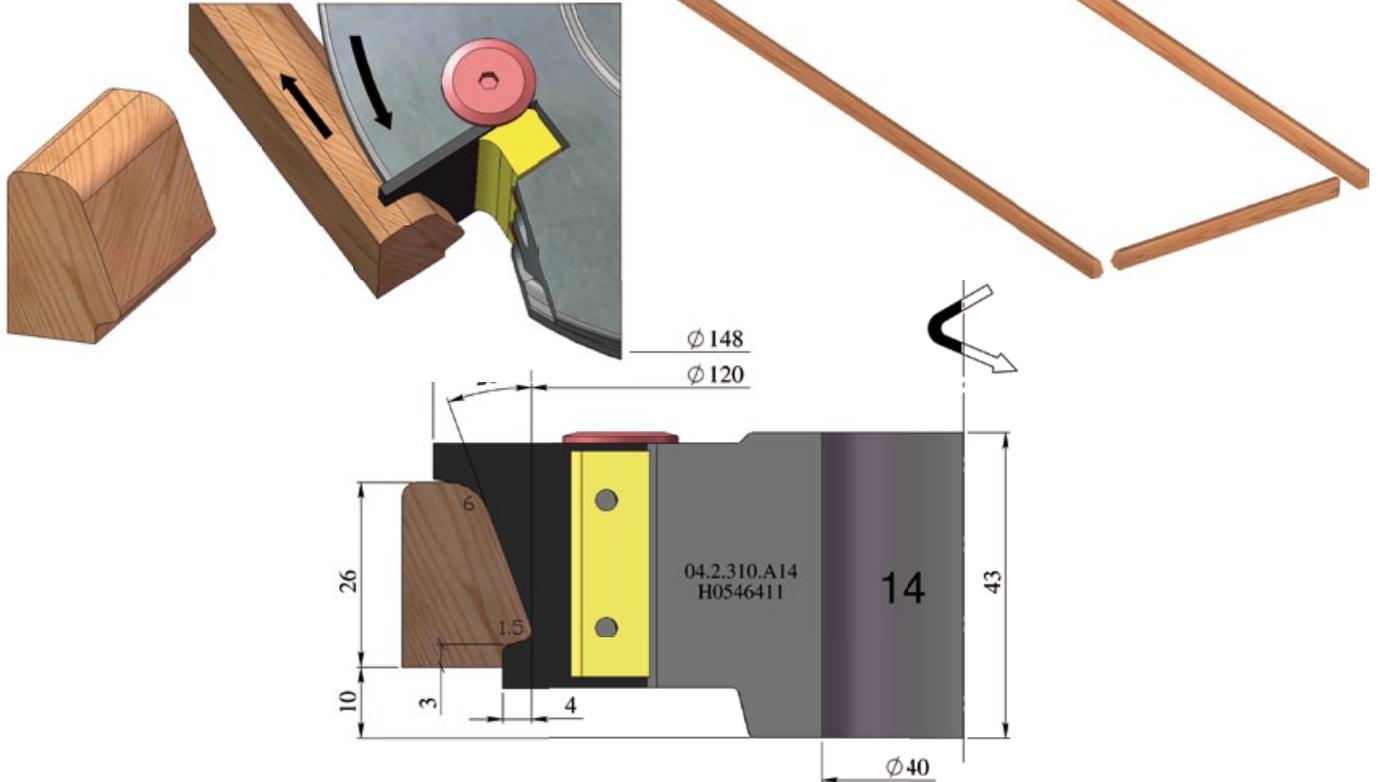


Replacement knife B
in cutter



Step 7: Glazing beads

- Glazing bead moulder item no. 04.2.312
- Adjustment of moulder NOT necessary.
- Use power feeder.
- Set correct rotation speed.



Replacement knives for FELDER HW-WP window tooling set item no. 04.4.310

Order no.	Quantity	Moulder no.
04.2.310.01	2	A1
04.2.310.02	2	A2
04.2.310.03	2	A3
04.2.310.04	2	A4
04.2.310.05	2	A5
04.2.310.06	2	A6
04.2.310.07	2	A7
04.2.310.08	2	A8
04.2.310.09	2	A9
04.2.310.10	2	A10
04.0.003	1	A8 + 11
04.2.311	2	A10
04.2.310.101	2	A10
04.2.310.102	10	A10
04.2.310.101	2	
04.2.310.111	2	A11
04.2.310.112	2	A11
04.2.310.12	2	A12
04.2.310.13	2	A13
04.2.310.14	2	A14

FELDER WP-HW window set and useful accessories.



15 piece FELDER HW-WP window tooling set

Order no.

04.2.310

Glazing bead cutter

Adjustment of moulder NOT necessary.



Order no.	Ø	B	ø	T	Z
04.2.312	148	26	40	43	2

Weather strips

HW-groove knife to rip weather strip grooves.
Refer to page 14 for work process.



Order no.

04.2.311

Work-piece holder ideal for counter-profile shaping

Use for cutting counter profiles without use of sliding table.

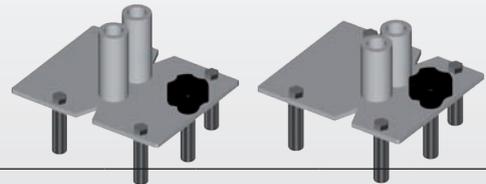


Order no.

01.0.019

Drilling jig

For easy and accurate doweling.



Order no.

400-276

Narrow Cut Saw Blade

Refer to page 4 for appropriate work process to rip glazing bead groove.



Order no.	TYP	Ø	B/d	ø
03.01.300 24	E	300	2,2/1,6	30

Jointing of workpieces, window sill groove

3 piece HW-WPL adjustable groover.



Order no.	Ø	B	ø	T	Z/V
04.2.189	180	4,0-15,4	30	32	8/4