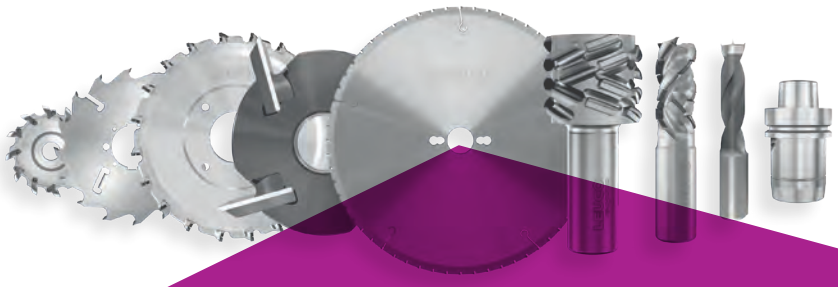
LEUCO
MAGENTIFY WOOD PROCESSING

TOOL RECOMMENDATION

Manufacturer
REHAU

Material
RAUVISIO CUBE



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TOOL RECOMMENDATION
REHAU RAUVISIO CUBE

REHAU Unlimited Polymer Solutions

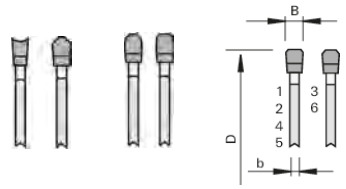
The following tool recommendations are based on a wide variety of test series by LEUCO Ledermann GmbH & Co. KG, with the best machining results in each case.

DEFINITION OF TERMS:

DP = DIA; **HW** = carbide; **HR** = hollow back; **L-S** = slow, fast; **L-S-L** = slow, fast, slow; **vc** = cutting speed; **fz** = tooth feed; **vf** = feed rate; **ü** = saw blade projection

1. TRIMMING / SIZING

Various factors are responsible for good cutting results:
Good side facing up, correct saw blade projection, feed rate, tooth configuration, tooth pitch, rpm and cutting speed. Depending on the volume to be cut, tungsten-carbide-tipped (HW) or diamond-tipped (DP) circular saw blades are used.
Recommended tooth configurations:



HR-TR TR-F-FA G6

1.2 SIZING SAW

In general, the panels can be processed with most of the HW and DP panel sizing saw blades available on the market. However, there are major differences in the cutting quality. For a very good cutting result, the "TR-F K" HW sizing saw blade with 10° hook angle is best suited.

Optimum application data: (for a Ø 300 mm circular saw blade)
Saw blade projection: ü = 15-20 mm
Speed: n = 5,500-6,000 rpm
Feed: vf = 4-6 m/min
Cutting speed: vc = 53 m/s

These circular saw blades should also be used for trimming cuts on CNC machines.

1.3 PANEL SIZING SAW

The panels can also be cut on panel sizing lines using various HW and DP saw blades. For an almost optimum cutting result, a U-Cut "TR-F" HW panel sizing saw blade should be used for trimming. For larger volumes, we recommend using a "G6" DP panel sizing saw blade for the trimming cut. Here, however, it is not possible to achieve finish-cut quality.

HW saws: U-Cut "TR-F K" HW panel sizing saw blades
DP saws: "G6" DP panel sizing saw blades

Optimum application data: (for a Ø 450 mm) circular saw blade
Saw blade projection: ü = 25 mm
Speed: n = 3,600 1/min
Feed: Vf = 25-40 m/min
Feed per tooth: fz = 0.09-0.15 mm

It is also important to ensure the correct saw blade projection, which has an impact on the cutting quality and depends on the diameter.

Circular saw blade diameter	Saw blade projection
D = 250 mm	approx. 15-20 mm
D = 300 mm	approx. 15-25 mm
D = 350 mm	approx. 18-28 mm
D = 400 mm	approx. 25-30 mm
D = 450 mm	approx. 25-30 mm

The recommended cutting speed is 60-80 m/sec. The upper value should be selected in the case of DP-tipped circular saw blades. A feed per tooth of 0.09-0.15 mm should be targeted.

Please refer to our YouTube channel for more information about the optimum saw blade projection. >>> Scan QR code and watch video on YouTube! Or go to **www.youtube.com/leucotooling** <<<

1.4 THROUGH-FEED MACHINES: HOGGERS

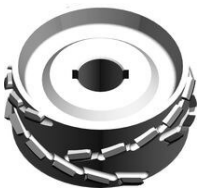
Industrial sizing on through-feed machines is done using diamond-tipped tools. When sizing with hogger tools, outstanding results are achieved in the double hogging process. For this purpose, we recommend hoggers with low cutting pressure, such as the LEUCO PowerTec airFace hogger. The number of hogger teeth should be matched to the respective machining feed.

The PowerTec hoggers have the most advantageous cutting geometry for Rauvisio Cube plates. Other hogger types (UniTec, CompactTec) also deliver good results. If, contrary to expectations, small breakouts should occur, these can be compensated for by additional jointing work.

PowerTec airFace

2. MILLING / EDGING

In general, tools with diamond-tipped cutting edges should be used for jointing work in the run-through process. When sizing with jointing cutters, the best quality results were achieved with tools that have large shear angles. This applies to the LEUCO p-System jointing cutters (70°) DIAREX airFace cutter (48°). The feed per tooth (fz) should ideally be between 0.7 and 0.8 mm.



p-System jointing cutter

DIAREX airFace

3. MACHINING ON STATIONARY CNC MACHINES

For dividing cuts and jointing cuts, HW turnover insert tools or, for higher volumes, DP-tipped shank-type cutters with alternating shear angles can be used. Application data and tool selection depend on the requirements in terms of cutting quality and machining in general. LEUCO p-System tools with their very large shear angles produce the best cutting results. The use of clamping systems with high concentric accuracy is generally recommended for any milling work (hydro-expansion chucks, TRIBOS or heat-shrinking chucks). **Dividing cut:** Lower value ranges; depending on the machining situation, the values must be further reduced if necessary. **Jointing cut:** Higher value ranges, especially with larger tool diameters. **Example:** Joining using a tool D=12 mm. The recommended feed per tooth (fz) is in the range of 0.2 to 0.25 mm.

Z=2	18.000 U/min	**Feed rate:**	~ 7-10 m/min
	24.000 U/min		~ 10-12 m/min
Z=3	18.000 U/min	**Feed rate:**	~ 10-14 m/min
	24.000 U/min		~ 14-18 m/min

4. DRILLING

Dowel hole drilling:
Conventional HW or also VHW dowel bits can be used.
Application data: Speed: 4,500 rpm Feed: 1.5-2 m/min
Drilling mode: S-S (fast-fast)

Through holes:
HW and VHW through-hole bits can be used.
Application data: Speed: 4.500 U/min Feed: 1,5-2 m/min
Drilling mode: S-S (fast-fast)

Drilling of hinges and concealed hinges:
We recommend using standard cylinder boring bits or the LEUCO "Light" cylinder boring bits.
Application data: Speed: 4.000 U/min Feed: 1,5-2m/min
Speeds of more than n=4,500 rpm are not recommended.

5. FORMULAS

5.1 CUTTING SPEED - VC

- Unit: m/s
- Data required: diameter = D [mm]; tool speed = n [rpm]
- Calculation: vc = (D * π * n)/(60 * 1000)

5.2 TOOTH FEED - FZ

- Unit: mm
- Data required: feed speed = vf [m/min]; tool speed = n [rpm]; number of teeth = z
- Calculation: fz = (vf * 1000)/(n*z)

5.3 FEED SPEED - VF

- Unit: m/min
- Data required: feed speed = vf [m/min]; tool speed = n [rpm]; number of teeth = z
- Calculation: vf = (fz * n * z)/1000

6. LEUCO TOOLS FOR MACHINING REHAU RAUVISIO CUBE PANELS

6.1 CIRCULAR SAW BLADES FOR SIZING SAWS

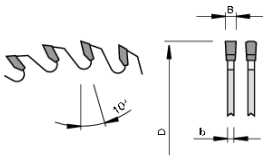
Dimension	Designation	Z	Tooth shape	Cutting material	Projection	Ident-No.
Ø 250 x 3,2 x Ø 30	HW "TR-F-FA" sizing saw blade	80	TR-F-FA	HL Board 04 plus	approx. 20 mm	192786
Ø 300 x 3,2 x Ø 30	HW "TR-F-FA" sizing saw blade	96	TR-F-FA	HL Board 04 plus	approx. 20 mm	192788

TR-F-FA

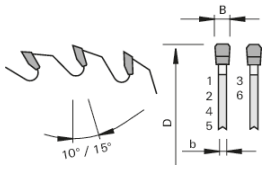
- Additional saws with different diameters, cutting widths, bores and numbers of teeth **available on request**.

6.2 CIRCULAR SAW BLADES FOR PANEL SIZING SAWS

Dimension	Designation	Z	Tooth shape	Cutting material	Projection	Ident-No.
Ø 300 x 4,4 x Ø 60	U-Cut „TR-F"	72	TR-F	HL Board 04 plus	15-25 mm	193299
Ø 350 x 4,4 x Ø 60	U-Cut „TR-F"	72	TR-F	HL Board 04 plus	18-28 mm	192909
Ø 450 x 4,8 x Ø 60	U-Cut „TR-F"	72	TR-F	HL Board 04 plus	25-30 mm	192931
Ø 350 x 4,4 x Ø 30	Panel sizing saw blade DP	72	G6	DP	18-28 mm	193006
Ø 450 x 4,8 x Ø 60	Panel sizing saw blade DP	72	G6	DP	25-30 mm	193034



TR-F



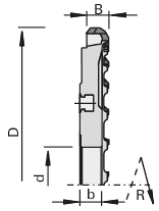
G6

- Additional saws with different diameters, cutting widths, bores, and number of teeth **available upon request.**
- Number of teeth and feed rate depend on cutting height and application for single panels or stack cuts.

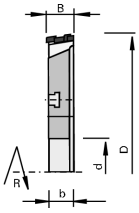
6.3 HOGGERS

Dimension	Designation	Z	Cutting material	Ident-No.(L)	Ident-No.(R)
Ø 250 x 10 x Ø 60	PowerTec 5 airFace	20+10	DP	80477094	80477093
Ø 250 x 10 x Ø 60	PowerTec 5 airFace S	20+20	DP	80477122	80477121
Ø 250 x 8,0 x Ø 60	UniTec Hoggers CM	24+12	DP	187771	187766
Ø 250 x 10/20 x Ø 60	CompactTec	30+5+5	DP	182536	182537

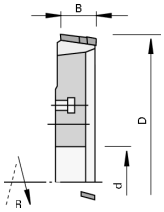
Additional hoggers with other dimensions **available on request.**



PowerTec airFace



UniTec

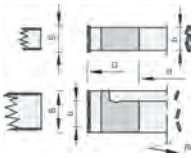


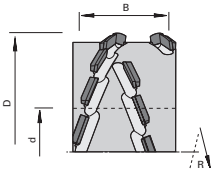
CompactTec

6.4 JOINTING CUTTERS

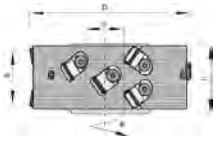
Dimension	Designation	Z	Cutting material	Machine	Shear <)	Ident-No. (L)	Ident-No. (R)
Ø 125 x 42,8 x Ø 30	DIAREX airFace	3+3	DP	Homag	48°	186323	186323
Ø 100 x 42,8 x Ø 30	DIAREX airFace	3+3	DP	SCM	48°	186362	186363
Ø 125 x 47,8 x Ø 30	p-System	3+3	DP	Homag	70°	184071	184071
Ø 125 x 62,5 x Ø 30	p-System	3+3	DP	IMA 08.379	70°	184989	184990
Ø 125 x 63 x Ø 30	SmartJointer airFace	3+3	DP	IMA 08.379	43°	186055	186056

Additional jointing cutters with other dimensions **available on request.**


DIAREX airFace



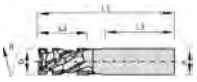
p-System
Jointing cutter

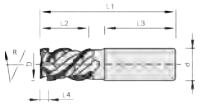

SmartJointer
airFace

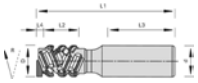
6.5 CNC SHANK-TYPE CUTTERS

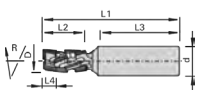
Dimension	Designation	Z	Cutting material	Ident-No.
Ø 20 x 28 x Ø 25	DIAREX high-performance shank-type cutter	2+2	DP	186151
Ø 25 x 28 x Ø 25	DP high-performance shank-type cutter	3+3	DP	186120
Ø 25 x 25,5 x Ø 25	p-System shank-type cutter	2+2+1	DP	184382
Ø 12 x 23 x Ø 16	DP Nesting shank-type cutter	3+3	DP	187281
Ø 12 x 20 x Ø 12	DP Nesting shank-type cutter DIA Curve	3	DP	187688

Additional shank-type cutters with other dimensions **available on request.**

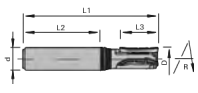

DIAREX high-performance shank-type cutter


DP high-performance shank-type cutter


p-System shank-type cutter



DP Nesting shank-type cutter



DP Nesting shank-type cutter DIA Curve

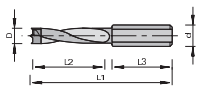
6.6 DOWEL DRILL BITS, THROUGH-HOLE DRILL BITS AND CYLINDER BORING BITS

Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 5 x L1=70 x Ø 10	HW dowel bit	HW	167203	167194
Ø 8 x L1=70 x Ø 10	HW dowel bit	HW	167205	167196
Ø 5 x L1=70 x Ø 10	topline dowel bit	VHW	185760	185759
Ø 8 x L1=70 x Ø 10	topline dowel bit	VHW	185764	185763

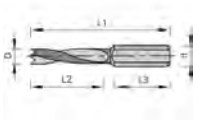
Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 5 x L1=70 x Ø 10	HW through-hole bit	HW	176255	176254
Ø 8 x L1=70 x Ø 10	HW through-hole bit	HW	176257	176256
Ø 5 x L1=70 x Ø 10	Mosquito through-hole bit	VHW	183153	183152
Ø 8 x L1=70 x Ø 10	Mosquito through-hole bit	VHW	183157	183156
Ø 5 x L1=70 x Ø 10	topline through-hole bit	VHW	185742	185741
Ø 8 x L1=70 x Ø 10	topline through-hole bit	VHW	185744	185743

Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 35 x L1=70 x Ø 10	HW cylinder boring bit - Z=2+2	HW	178982	172254
Ø 15 x L1=70 x Ø 10	HW cylinder boring bit „Light“	HW	184685	184684
Ø 35 x L1=70 x Ø 10	HW cylinder boring bit „Light“	HW	184689	184688
Ø 35 x L1=70 x Ø 10	Cylinder boring bit Z=2+4	DP	on request	186783

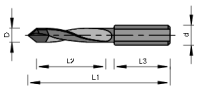
Additional drill bits with other dimensions, cutting lengths and shank dimensions **available on request.**



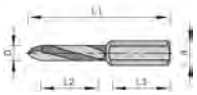
HW dowel bit



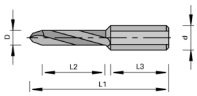
topline dowel bit



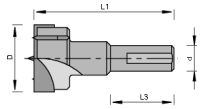
HW through-hole bit



topline through-hole bit



Mosquito through-hole bit



Cylinder boring bit

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TIP – LEUCO ONLINE CATALOG

You can find the LEUCO tool recommendations for machining REHAU Rauvisio Cube panels in the LEUCO online catalog.

Alternatively:
Scan the QR code and get information about the LEUCO stock program

EASY & QUICK

1. www.leuco.com/products
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→ Select saw blades, hoggers, cutters, drill bits

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