

PROCESSING INSTRUCTIONS

MANUFACTURER: HOMAPAL
MATERIAL: MELAMINE BOARDS WITHOUT
MAGNETIC EFFECT

Ledermann GmbH & Co. KG
Willi-Ledermann-Straße 1
72160 Horb am Neckar / Deutschland

T +49 (0)7451/930
F +49 (0)7451/93270

info@leuco.com
www.leuco.com



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PRODUCT DESCRIPTION HOMAPAL MELAMINE BOARDS WITHOUT MAGNETIC EFFECT

Depending on surface and decor, the HOMAPAL melamine boards combine a variety of functions. Some can be used as a projection screen, others can be written on with standard board markers and wiped clean without a trace using a dry cotton or micro-fibre cloth.

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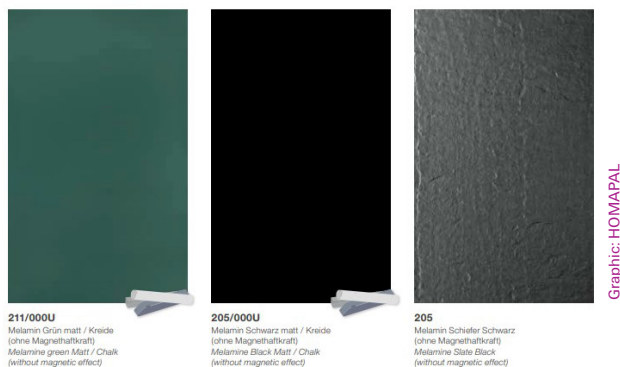
The following machining information is based on a wide range of test series with the best machining results in each case being produced by LEUCO Ledermann GmbH & Co. KG.

DEFINITION OF TERMS

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

1. GENERAL INFORMATION

The black and greenboard surfaces commonly used in schools can be written on with chalk. HOMAPAL melamine boards make the ideal choice wherever flexibility is needed for affixing items or written information and then removing them again without a trace: in shopfitting, decorating shop windows, for displays and information boards, on office furniture, in training and seminar rooms. (Source: HOMAPAL website)

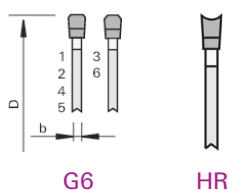


2. TRIMMING / SIZING

2.1 PANEL TRIMMING WITH CIRCULAR SAW BLADES

Various factors are responsible for good trimming results:

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





2.2 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. In order to achieve a good cutting result, the sizing saw blade HW - LowNoise "G6" is most suitable. Good cutting results are also possible with the "nn-System DP flex" sizing saw blades with "HR" tooth configuration.

Optimal application data: (for a Ø 300 mm circular saw blade)

Saw blade projection:	$\ddot{u} = 20-25 \text{ mm}$
Speed:	$n = 5,000 \text{ rpm}$
Feed:	$vf = 7 \text{ m/min}$
Cutting speed:	$vc = 75 \text{ m/s}$

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

2.3 PANEL SIZING SAW

On panel sizing saws, the panels can be cut with HW and DP circular saw blades. For almost optimum finish-cut quality, the trimming cut should be made with an HW panel sizing circular saw blade Q-Cut "G6".

For higher volumes, it is recommended to use a DP panel sizing circular saw blade "G6" for the trimming cut. Here, however, it is not possible to achieve finish-cut quality.

HW saws: Panel sizing saw blades HW - Q-Cut "G6"

DP saws: Panel sizing saw blades DP - "G6"



Optimal application data: (for a Ø 450 mm circular saw blade)

Saw blade projection:	$\ddot{u} = 10-20 \text{ mm}$
Speed:	$n = 3,600 \text{ rpm}$
Feed:	$vf = 20-35 \text{ m/min}$
Cutting speed:	$vc = 80 \text{ m/s}$

It is also important to ensure the correct saw blade projection which has an impact on the cutting quality and depends on the diameter. The recommended cutting speed is 60-90 m/sec. In the case of DP and HW-tipped saw blades, the upper value must be selected. Try to aim for a feed per tooth of 0.07-0.11 mm.

Circular saw blade diameter

D = 250 mm
D = 300 mm
D = 350 mm
D = 400 mm
D = 450 mm

Saw blade projection

approx. 15-20 mm
approx. 15-25 mm
approx. 18-28 mm
approx. 25-30 mm
approx. 25-30 mm

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 <<<





2.4 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 hogs with low cutting pressure, such as the LEUCO PowerTec hogger. The number of hogger teeth should be matched to the respective machining feed. The best results with regard to cutting quality are achieved with PowerTec hogs. If jointing work is required after cutting, UniTex and CompactTec hogs can also be used.



PowerTec airFace

3. MILLING / EDGING

In general, tools with DP blades should be used for jointing work in the run-through process. For formatting with jointing cutters, tools with a shear angle between 35° and 70° can be used. The best results in terms of quality are achieved with jointing cutters with a 48° shear angle. When using two double jointer units, jointing in two steps is recommended: use the first jointer unit for the main material removal (roughing) and the second jointer unit for finishing. In addition to the use of precise hydro and HSK clamping units, this procedure creates the optimal conditions for highest quality and high edge lives during jointing work. The optimum feed/tooth (fz) is 0.56-0.74 mm.



SmartJointer airFace



DIAREX airFace

4. MACHINING ON STATIONARY CNC MACHINES

Dividing cuts, pocket milling and jointing cuts etc. can be performed easily with all shank-type cutters that provide shear angle cutting edges. The application data and the selection of the tool depend on the requirements regarding the cutting quality and the processing in general. When high volumes need to be cut, high-performance diamond-tipped shank-type cutters Z=3+3 or Z=4+2+4 with large shear angles in the range between 35° and 48° are particularly suited. Good results can also be achieved with DP tools Z=2+2 that are suitable for moderate volumes and feed rates. For smaller production volumes, HW or VHW tools that provide shear angle cutting edges can be used.

For pocket milling or grooves of all types, LEUCO DP p-System grooving cutters can be used. Moreover, common HW/VHW and diamond-tipped shank-type cutters provided with the corresponding negative shear angles (more than 15°) are also possible. The optimum feed per tooth fz (mm) is 0.25 mm or, if tools with larger diameters are used, even higher.

For your orientation, see the following overview with examples:

DIAREX cutter Ø20, Z=2+2 No. 186151	LEUCO DP HL cutter Ø25, Z=3+3 No. 186120	p-System dividing cutter Ø25, Z=2+2 No. 184382	p-System jointing cutter Ø60, Z=4+4 No. 184084	LEUCO DP trimming cutter Ø48, Z=4+2+4 No. 186140	LEUCO DP Nesting cutter Ø12, Z=3+3 No. 185518
++	+++	++	++	+++	++

Legend: acceptable + good ++ very good +++



5. DRILLING

Wall plug holes:

Using the standard HW-tipped or the VHW topline dowel bits, the results are very good. The best results can be achieved with modified dowel bits with a so-called "Form A" tip. The alteration of HW or VHW dowel bits required for this is possible and can be carried out within several days in the LEUCO service center. The use of VHW pins is not recommended.

Recommended application parameters for this: (in drilling units)

Speed: 4,500 rpm Feed: 1.5 m/min Drilling mode: S-S

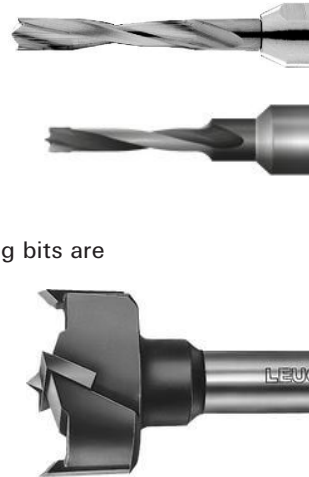
Speed: 6,000 rpm Feed: 2.5 m/min Drilling mode: S-S

Hinge holes:

The best results can be achieved with LEUCO cylinder boring bits "Light". Standard cylinder boring bits are also well suited.

Recommended application parameters for this: (in drilling units)

Speed: 4,500-5,000 rpm Feed: 1.5-2 m/min Drilling mode: S-S



Orientation matrix (drill bits) for Homapal melamine boards without magnetic effect:

Dowel bit standard HW	Dowel bit Mosquito HW	Dowel bit topline VHW	"Form A" dowel bit	Drill pins HW	Standard cylinder boring bit	"Light" cylinder boring bit
++	+++	++	+++	+++	++	+++

Legend: acceptable + good ++ very good +++

6. FORMULAS

6.1 CUTTING SPEED - VC

| Unit: m/s

| Data required: diameter = D [mm];

tool speed = n [rpm]

| | Calculation: $vc = (D \cdot \pi \cdot n) / (60 \cdot 1000)$

6.2 TOOTH FEED - FZ

| Unit: mm

| Data required: feed speed = vf [m/min];

tool speed = n [1/min]; No. of teeth = z

| | Calculation: $fz = (vf \cdot 1000) / (n \cdot z)$

6.3 FEED SPEED - VF

| Unit: m/min

| Data required: Tooth speed = fz [mm];

tool speed = n [1/min]; No. of teeth = z

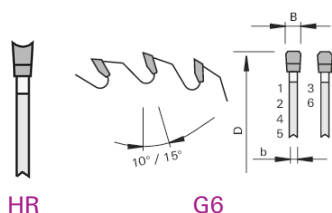
| | Calculation: $vf = (fz \cdot n \cdot z) / 1000$



7. LEUCO TOOLS FOR THE PROCESSING OF HOMAPAL MELAMINE BOARDS WITHOUT MAGNETIC EFFECT

7.1 CIRCULAR SAW BLADES FOR SIZING SAWS

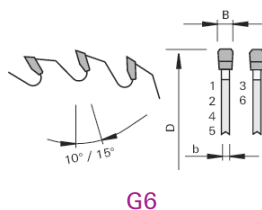
Dimension	Designation	Z	Tooth config.	Cutting material	Projection	Ident-No.
Ø 300 x 3,2 x Ø 30	Sizing saw blade HW LowNoise	96	G6	HL Board 04 plus	approx. 20-25 mm	192783
Ø 303 x 2,5 x Ø 30	DP sizing saw blade nn-System DP flex	60	HR	DP	approx. 20-25 mm	192444



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

7.2 CIRCULAR SAW BLADES FOR PANEL SIZING SAWS

Dimension	Designation	Z	Tooth config.	Cutting material	Projection	Ident-No.
Ø 300 x 4,4 x Ø 60	Q-Cut "G6"	72	G6	HL Board 04 plus	approx. 10-20 mm	193137
Ø 350 x 4,4 x Ø 30	Q-Cut "G6"	72	G6	HL Board 04 plus	approx. 10-20 mm	193146
Ø 350 x 4,4 x Ø 60	Q-Cut "G6"	72	G6	HL Board 04 plus	approx. 10-20 mm	193148
Ø 380 x 4,4 x Ø 30	Q-Cut "G6"	72	G6	HL Board 04 plus	approx. 10-20 mm	193156
Ø 380 x 4,4 x Ø 60	Q-Cut "G6"	72	G6	HL Board 04 plus	approx. 10-20 mm	193158
Ø 350 x 4,4 x Ø 60	Panel sizing saw blades DP "G6"	72	G6	DP	approx. 10-20 mm	193004
Ø 350 x 4,4 x Ø 30	Panel sizing saw blades DP "G6"	72	G6	DP	approx. 10-20 mm	193006

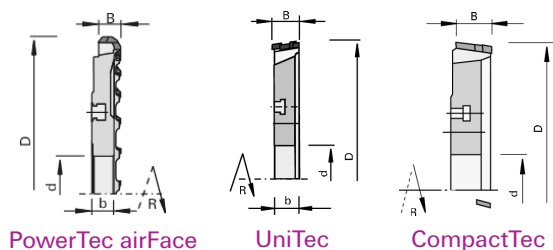


Additional saws with different diameters, cutting widths, bores and numbers of teeth **available upon request.**

Number of teeth and feed rate depend on cutting height and application for single panels or stack cuts.

7.3 HOGGERS

Dimension	Designation	Z	Cutting material	Ident-No.(L)	Ident-No.(R)
Ø 250 x 9,5 x Ø 60	PowerTec airFace	20+10	DP	186528	186527
Ø 250 x 9,5 x Ø 60	PowerTec airFace S	20+20	DP	186552	186551
Ø 250 x 8,0 x Ø 60	UniTec-Hoggers CM	36+18	DP	182031	182030
Ø 250 x 20 x Ø 60	CompactTec	36+6+6	DP	182539	182538



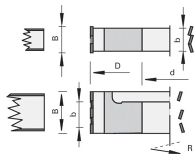
Additional hoppers with other dimensions **available on request.**



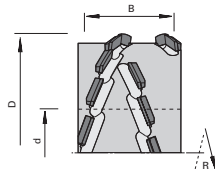
7.4 JOINTING CUTTERS

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 85 x 43,2 x Ø 30	DIAMAX airFace	3+3	DP	OTT	35°	186408	186409
Ø 125 x 43,2 x Ø 30	DIAMAX airFace	3+3	DP	Homag	35°	186399	186399
Ø 100 x 43 x Ø 30	SmartJointer airFace	3+3	DP	Brandt	35°	186065	186066
Ø 125 x 63 x Ø 30	SmartJointer airFace	3+3	DP	IMA 08.379	43°	186055	186056

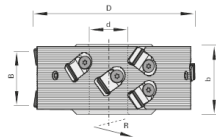
Additional jointing cutters with different diameters, cutting widths, bores, and numbers of teeth **available upon request**.



DIAREX/
DIAMAX airFace



p-System
jointing cutters

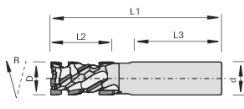


SmartJointer
airFace

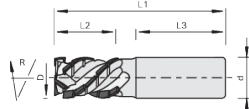
7.5 CNC SHANK-TYPE CUTTERS

Dimension	Designation	Z	Cutting material	Ident-No. (R)
Ø 20 x 28 x Ø 25	DIAREX high-performance shank-type cutter	2+2	DP	186151
Ø 25 x 28 x Ø 25	High-performance cutter, negative	3+3	DP	186120
Ø 25 x 26,5 x Ø 25	p-System shank-type dividing cutter	2+2	DP	184382
Ø 60 x 38 x Ø 25	p-System shank-type jointing cutter	4+4	DP	184084
Ø 48 x 22 x Ø 25	High-performance trimming cutter	4+2+4	DP	186140
Ø 12 x 23 x Ø 16	Nesting cutter, negative	3+3	DP	187281
Ø 12 x 10,2 x Ø 16	p-System shank-type groove cutter	1+1	DP	185505

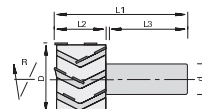
Additional shank-type cutters with other dimensions are **available upon request**.



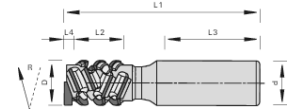
DIAREX DP high-
performance cutter



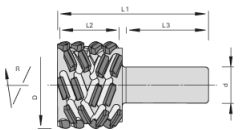
High-performance
cutter, negative



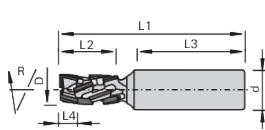
DP high-performance
trimming cutter



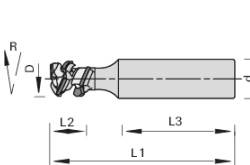
p-System shank-type
dividing cutter



p-System shank-type
jointing cutter



Nesting cutter, negative



p-System shank-type
groove cutter



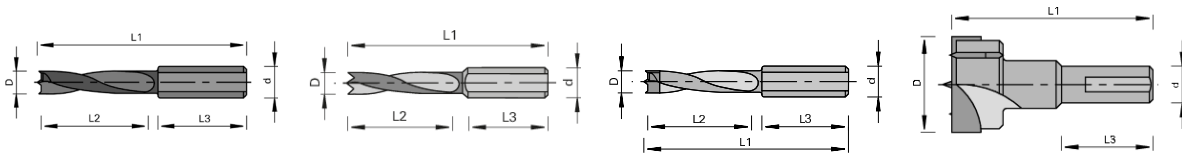
7.6 DOWEL AND HINGE HOLE BITS AND PINS

Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 5 x L1=70 x Ø 10	Standard dowel bit	HW	003231	003230
Ø 8 x L1=70 x Ø 10	Standard dowel bit	HW	003243	003242
Ø 5 x L1=70 x Ø 10	Mosquito dowel bit	VHW	182390	182391
Ø 8 x L1=70 x Ø 10	Mosquito dowel bit	VHW	183151	183150
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
n.n	Dowel bit with "Form A" tip	HW/VHW	on request	on request

Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 2,5 x L1=45 x Ø 2,5	Drill pins	VHW	180942	180942
Ø 3 x L1=45 x Ø 3	Drill pins	VHW	180943	180943
Ø 5 x L1=70 x Ø 10	Drill pins	VHW	180946	180946

Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 15 x L1=70 x Ø 10	Standard cylinder boring bit	HW	178978	172250
Ø 35 x L1=70 x Ø 10	Standard cylinder boring bit	HW	178982	172254
Ø 15 x L1=70 x Ø 10	"Light" cylinder boring bit	HW	184685	184684
Ø 35 x L1=70 x Ø 10	"Light" cylinder boring bit	HW	184689	184688

Additional drill bits with other diameters, cutting lengths and shank dimensions are **available upon request**.

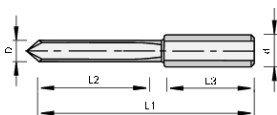


Mosquito dowel bit

topline dowel bit

Standard dowel bit

Cylinder boring bit



VHW drill pins

→ Couldn't find the tool type or tool dimensions you want?
Please contact LEUCO Sales.

T +49 (0)7451/93-0
F +49 (0)7451/93-270

info@leuco.com

TIP – LEUCO ONLINE CATALOG

LEUCO tool recommendations for processing HOMAPAL melamine boards without magnetic effect are listed in the LEUCO online catalog.



Alternatively:
Scan the QR-Code and
learn about the LEUCO
warehouse program.

**QUICK &
EASY**

- 1 www.leuco.com/products
 - 2 Click "tool" filter
 - 3 "special manufacturer materials"
 - 4 "HOMAPAL"
 - 5 Melamine boards without magnetic effect
- Select saw blades, hogsers, cutters, drill bits



Ledermann GmbH & Co. KG
Willi-Ledermann-Straße 1
72160 Horb am Neckar / Deutschland

T +49 (0)74 51/93 0
F +49 (0)74 51/93 270

info@leuco.com
www.leuco.com