

PROCESSING INSTRUCTIONS

MANUFACTURER: HOMAPAL
MATERIAL: SRM SCRATCH RESISTANT MATT
magnetic boards

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PROCESSING INSTRUCTIONS



SRM SCRATCH RESISTANT MATT magnetic boards

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PRODUCT DESCRIPTION HOMAPAL SRM SCRATCH RESISTANT MATT magnetic boards

Magnet bond boards – the perfect symbiosis of functionality and design. A very high level of adhesion combined with the possibility to write on the surface and a huge variety of colors opens up versatile options for use.

General product description HOMAPAL SRM SCRATCH RESISTANT MATT:

The difference is even obvious to the naked eye: "Scratch-Resistant Matt", SRM for short, is the name of HOMAPAL's new matte and scratch-proof surface with anti-fingerprint properties.

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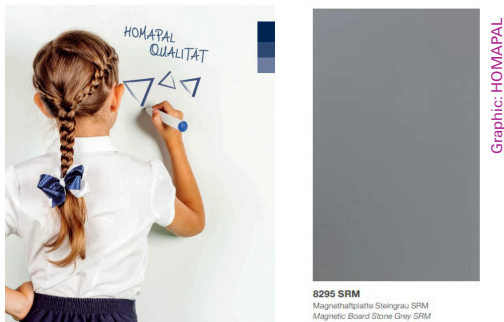
The following machining information is based on a wide range of test series with the best machining results in each case being produced by LEUCO Ledermann GmbH & Co. KG.

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

An iron foil embedded in the laminate provides the high level of adhesive force. This makes it possible to easily attach even large papers, such as plans or posters and other objects and to remove them without leaving traces. HOMAPAL® magnet bond boards are available in numerous basic and contemporary colors and, depending on the surface finish, can be written on using chalks or board markers. Some of the decors are additionally offered as projection surfaces with reduced light reflection. The possible applications are virtually unlimited and range from shop fitting to shop window designs, displays and information boards to children's and kitchen furniture, in fact anywhere where things have to be flexibly fixed and removed again.



General fields of application HOMAPAL SRM SCRATCH RESISTANT MATT:

It can be found on exclusive aluminum, copper and brass decors in various textures and colors, such as taupe, champagne or gold as well as on magnet bond boards in the plain colors macchiato, light gray, stone gray and white. The special process generates an ultra-matte look with anti-fingerprint function and unique depth effect. The inert process produces an extremely scratch-resistant surface with regular and therefore resistant textures in high-end quality. "Scratch-Resistant Matt" is suitable for horizontal use in line with duty class 3 according to EN 438, e.g. for counters in exhibition-stand construction and shop fitting or counters in bars and restaurants, for tables and work surfaces in the office or kitchen, but also in the public sector, such as in hotels. (Source: HOMAPAL website).



2. TRIMMING / SIZING

2.1 PANEL TRIMMING WITH CIRCULAR SAW BLADES

Various factors are responsible for a good cutting result: the decorative side must be on the inlet side. Correct saw blade projection, feed rate, tooth configuration, tooth pitch, rotations per minute and cutting speed. For miter cuts, the cutting edge should be razor-sharp. **Recommended tooth configurations:**



HR-FA

2.2 SIZING SAW

In general, the economical processing of the panels is only possible with DP saw blades. However, there are major differences in the cutting quality. The best cutting result can be achieved with circular saw blades with a hollow back geometry, the sizing saw blades DP "HR-FA".

Optimal application data: (for a Ø 303 mm circular saw blade)

Saw blade projection:	$\ddot{u} = 25 \text{ mm}$
Speed:	$n = 4,500 \text{ rpm}$
Feed = manual:	$vf = 4-8 \text{ m/min}$
Cutting speed:	$vc = 40-70 \text{ m/s}$

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

2.3 PANEL SIZING SAW

Even on panel sizing saws, an economical processing of the panels is only possible with DP saw blades. For almost optimum finish-cut quality, the trimming cut should be made with an DIAREX panel sizing circular saw blade DP "HR-FA".

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

Saw blade projection:	$\ddot{u} = 25 \text{ mm}$
Speed:	$n = 3,400-3,600 \text{ rpm}$
Feed:	$vf = 12-14 \text{ m/min}$
Cutting speed:	$vc = 80 \text{ m/s}$

It is also important to ensure the correct saw blade projection. This 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.





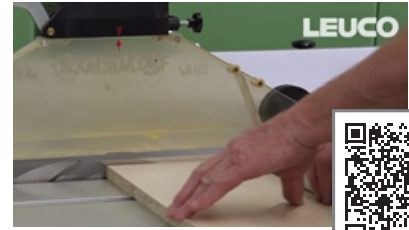
Circular saw blade diameter

D = 250 mm
D = 300 mm

Saw blade projection

approx. 15-20 mm
approx. 15-25 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 <<<



3. MILLING / EDGING

Processing is also possible with jointing cutterheads with turnover knives but the running meter performance is not very high. The feed/tooth (fz) to be achieved is 0.3 mm. If possible, the process should be performed in an oscillating manner. The oscillation length should be between 3 and 5 mm. If no oscillation is possible, an offset by approx. 0.5 mm should be made in the Z axis when the first burrs occur in order to ensure that another part of the cutting edge comes into contact with the material.

On the table shaper, the milling process must be performed against feed. On through-feed machines, milling with feed is possible to further optimize the edge life. The removal should not exceed 3 mm; optimal are 0.5-1 mm to keep the wear at a low level. It is not recommended to process magnet bond boards with embedded steel foil in a through-feed operation with conventional DP jointing cutters because the edge lives that can be achieved are hardly longer than those achieved with TOK tools and the DP cutting edges are badly damaged. **Attention: Moreover, a huge number of flying sparks may be generated when DP cutters are used.**

4. MACHINING ON STATIONARY CNC MACHINES

For the milling process, VHW spiral shank-type cutters should be used. Ideally, they are also provided with a wear-optimized coating. If possible, an oscillating milling process should be chosen. Oscillation between 2 and 6 mm according to the cutter type. If no oscillation is possible, it is recommended to offset the tool step by step after each milling process in Z direction by 0.5 to 1 mm.

Recommended application data:

Speed: $n = 14,000-16,000$ rpm

Feed: $vf = 6-8$ m/min

Application: cutting with feed, if possible, because this results in a lower wear than when cutting against feed. Diagonal plunge-cutting is the method to be preferred for pocket milling. The milling should be done in different depths in order to distribute the wear to different parts of the edge. The helical direction should always be oriented against the top layer (neg.).

The optimum feed per tooth fz is 0.25 mm or, if tools with larger diameters are used, even higher.



5. DRILLING

Wall plug holes:

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 department. The use of conventional HSS metal drill bits also achieves good results.

Recommended application parameters:

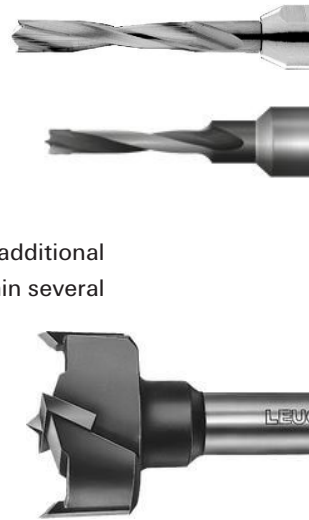
Speed: 1,200-1,600 rpm
Feed: 0.5-1 m/min
Drilling mode: L-S

Hinge holes:

Good results can be achieved with cylinder boring bits Z=3+3. The drill bits should be provided with additional chip breakers (LEUCO drawing AD-395356). The alteration required for this can be carried out within several days in the LEUCO service department.

Recommended application parameters: (in drilling units)

Speed: 4,500 rpm
Feed: 0.5-1 m/min
Drilling mode: L-S



Note: Due to the embedded metal foil, there is a risk of flying sparks and therefore the risk of dust explosion during processing (sawing, milling, drilling, etc.). A flying spark detection in the dust extraction is highly recommended.

6. FORMULAS

6.1 CUTTING SPEED - VC

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

6.2 TOOTH FEED - FZ

| Unit: mm
| Required data: feed rate = vf [m/min];
tool speed = n [rpm]; no. of teeth = z
| Calculation: $fz = (vf * 1000) / (n * z)$

6.3 FEED SPEED - VF

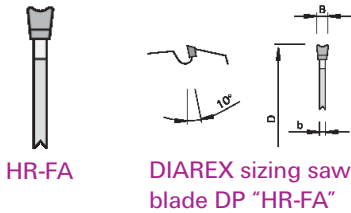
| Unit: m/min
| Required data: tooth feed = fz [mm];
tool speed = n [rpm]; number of teeth = z
| Calculation: $vf = (fz * n * z) / 1000$



7. LEUCO TOOLS FOR THE PROCESSING OF SRM SCRATCH RESISTANT MATT magnetic boards

7.1 CIRCULAR SAW BLADES FOR SIZING SAWS

Dimension	Designation	Z	Tooth config.	Cutting material	Projection	Ident-No.
Ø 250 x 3,2 x Ø 30	DIAREX sizing saw blade	50	HR-FA	DP	approx. 25 mm	192956
Ø 303 x 3,2 x Ø 30	DIAREX sizing saw blade	65	HR-FA	DP	approx. 25 mm	192958
Ø 350 x 3,2 x Ø 30	DIAREX sizing saw blade	65	HR-FA	DP	approx. 25 mm	192962



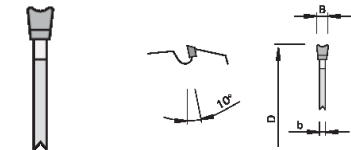
HR-FA

DIAREX sizing saw blade DP "HR-FA"

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 350 x 4,4 x Ø 30	DIAREX panel sizing saw blade	72	HR-FA	DP	approx. 25 mm	193222



HR-FA

DIAREX panel sizing saw blade DP "HR-FA"

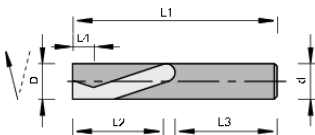
Additional saws with different diameters, cutting widths, bores and numbers of teeth **available upon request**.

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

7.3 CNC SHANK-TYPE CUTTERS

Dimension	Designation	Z	Cutting material	Ident-No. (R)
Ø 12 x 7/36 x Ø 12	Magnet bond board cutter	2+2	VHW	186242
Ø 18 x 7/36 x Ø 18	Magnet bond board cutter	2+2	VHW	186243
Alteration: coating				On request

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



VHW magnet bond board cutter

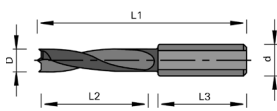


7.4 THROUGH-HOLE, DOWEL AND HINGE HOLE BITS

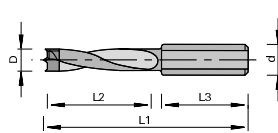
Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 5 x L1=70 x Ø 10	Standard dowel bit	HW	003231	003230
Ø 8 x L1=70 x Ø 10	Standard dowel bit	HW	003243	003242
Ø 5 x L1=70 x Ø 10	Mosquito dowel bit	VHW	182390	182391
Ø 8 x L1=70 x Ø 10	Mosquito dowel bit	VHW	183151	183150
	Alteration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

Dimension	Designation	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 35 x L1=70 x Ø 10	Cylinder boring bit	HW		003284
	Alteration: chip breaker grooves according to AD-395356	HW/VHW	on request	on request

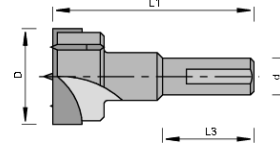
Additional drill bits with other diameters, cutting lengths and shank dimensions are **available upon request**.



Mosquito dowel bit



Standard dowel bit



Cylinder boring bit

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

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TIP – LEUCO ONLINE CATALOG

LEUCO tool recommendations for processing HOMAPAL SRM SCRATCH RESISTANT MATT magnetic boards 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 SRM SCRATCH RESISTANT MATT magnetic boards
- Select saw blades, hogsers, cutters, drill bits



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