

PROCESSING INSTRUCTIONS

MANUFACTURER:

 **PFLEIDERER**

MATERIAL:

DUROPAL MAGNETIC COMPOSITE ELEMENT P2

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DUROPAL MAGNETIC COMPOSITE ELEMENT P2



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PRODUCT DESCRIPTION DUROPAL MAGNETIC COMPOSITE ELEMENT P2

Decorative, magnetic high-pressure laminate compound particle board, both sides magnetic thanks to a 1.2 mm Duropal HPL magnet.

PROCESSING INSTRUCTIONS DUROPAL MAGNETIC COMPOSITE ELEMENT P2

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

DEFINITION OF TERMS

DP = DIA; **HW** = carbide; **HR** = hollow back; **L-S** = slow, quick; **L-S-L** = slow, quick, slow; **vc** = cutting speed; **fz** = tooth feed; **vf** = feed speed

1. GENERAL INFORMATION

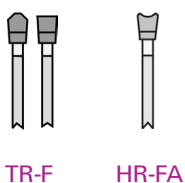
Fields of application: Furniture, partition walls and wall paneling with magnetic properties in shop fitting and exhibition stand construction, in offices, schools, nurseries, care facilities, public facilities, etc.

2. TRIMMING CUT

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 speed, tooth configuration, tooth pitch, rpm and trimming speed. Depending on the volume to be cut, carbide-tipped (HW) or diamond-tipped (DP) circular saw blades are used. **Recommended tooth configurations:**



Application parameters:

Recommended speed (n): 3,000 - 3,500 rpm

Feed (Vf): 4 - 5 m/min

2.2 SIZING SAW

For sizing saws, the HW circular saw blades with the tooth shape TR-F K and the special cutting material HL Steel 17 are particularly suitable. Outstanding cutting results with considerably higher edge life are possible using the DP circular saw blade "DIAREX" with the tooth geometry HR-FA.



2.3. PANEL SIZING SAW

Both on panel sizing saws and sizing saws, very good cutting results can be reached with the same tooth geometries. Here again, tooth engagement occurs on the good side of the panel. Good edges on both sides can only be achieved using a suitable scorer. Very good cutting results are achieved with a suitable saw blade projection. This 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

The recommended cutting speed is 60 - 90 m/sec. The upper value should be selected in the case of DP-tipped circular saw blades. Try to aim for a feed per tooth of 0.07 - 0.08 mm.

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



3. PROCESSING ON CNC STATIONARY MACHINES

Tool selection:

For the milling of magnet bond boards with iron mesh, tungsten carbide tools must be used. DP tools are not suitable! As the case may be, HW-tipped straight shank-type cutters or cutters with HW turnover knives are suitable for small production quantities. The use of VHW spiral shank-type cutters, ideally with alternate spirals for optimum cutting quality at the top and bottom side of the panel, are recommended. Edge life can be increased by an optimum tool design:

- | Use of VHW tools with additional coating (available upon request)
- | Use of VHW tools made of a carbide material adapted to the iron mesh
- | Oscillating milling (slightly undulating movement of the cutter)

Application parameters:

Mode of application:	Joining
Mode of application:	Milling with feed, ideally oscillating
Speed (n):	3,000 - 4,500 (max.) rpm
Feed per tooth (fz):	0.20 - 0.25 mm
Feed (Vf):	1 - 1.5 m/min (cutter Z=2)



4. DRILLING

Through holes

Use of VHW through-hole bits with VHW spiral section.

Dowel holes

Standard VHW drill bits with VHW spiral section are more suitable than standard HW drill bits due to their higher stiffness. The best results can be achieved with VHW drill bits with an adapted (modified) tip geometry.

Application data:

Speed (n): 6.000 rpm
Feed (Vf): 0.5 - 1 m/min

Hinge holes

In principle, the use of standard HW cylinder boring bits are possible. Very good results can be achieved using HW cylinder boring bits with optimized spurs and gullets, e.g. LEUCO "Light" cylinder boring bit.

Application data:

Speed (n): 7.000 rpm
Feed (Vf): 0.5 m/min

Alternatively, bores for concealed hinges can also be milled using VHW spiral shank-type cutters $Z=2+2$ (circular program helix).

Application data:

Speed (n): 3.500 rpm
Feed (Vf): 1 - 2 m/min

5. FORMULAS

5.1. CUTTING SPEED – VC

| Unit: m/s

| Necessary data: diameter = D [mm];

Tool speed = n [1/min]

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

5.2. TOOTH FEED – FZ

| Unit: mm

| Required data: feed speed = vf [m/min];

Tool speed = n [1/min]; no. of teeth = z

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

5.3. FEED SPEED – VF

| Unit: m/min

| Required data: tooth feed = fz [mm];

Tool speed = n [1/min]; no. of teeth = z

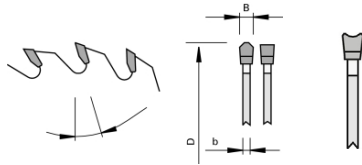
| Calculation: $vf = (fz * n * z) / 1000$



6. LEUCO TOOLS FOR PROCESSING DUROPAL MAGNETIC COMPOSITE ELEMENT P2

6.1. CIRCULAR SAW BLADES FOR SIZING SAWS

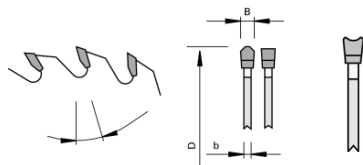
Dimension	Description	Z	Tooth Shape	Cutting Material	Projection	Ident-No.
Ø 350 x 3,2 x Ø 30	Sizing saw blade HW "TR-F"	72	TR-F	HL Steel 17	approx. 25 mm	192609
Ø 303 x 3,2 x Ø 30	DIAREX Sizing saw blade DP	65	HR-FA	DP	approx. 25 mm	192958



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

6.2. CIRCULAR SAW BLADES FOR PANEL SIZING SAWS

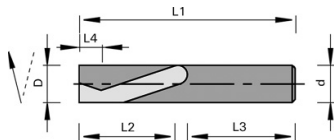
Dimension	Description	Z	Tooth Shape	Cutting Material	Projection	Ident-No.
Ø 350 x 4,4 x Ø 30	Sizing saw blade HW "TR-F"	72	TR-F	HL Steel 17	approx. 25 mm	192610
Ø 350 x 3,2 x Ø 30	DIAREX Sizing saw blade DP	65	HR-FA	DP	approx. 25 mm	192962



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

6.3. CNC SHANK-TYPE CUTTERS

Dimension	Description	Z	Cutting Material	L/R	Ident-No.
Ø 12 x 90 x Ø 12	VHW spiral shank-type cutter pos/neg	2+2	VHW	R	186242
Ø 12 x 90 x Ø 18	VHW spiral shank-type cutter pos/neg	2+2	VHW	R	186243



Additional VHW spiral shank-type cutters in standard VHW types with different diameters and cutting lengths **are available**.

6.4. THROUGH HOLE, DOWEL- AND BLIND HOLE BITS

Dimension	Description	Cutting Material	Ident-No. (L)	Ident-No. (R)
Ø 5 x L1=70 x Ø 10	Mosquito through-hole drill bit	VHW	183153	183152
Ø 8 x L1=70 x Ø 10	Mosquito through-hole drill bit	VHW	183157	183156
Ø 5 x L1=70 x Ø 10	Mosquito dowel drill bits	VHW	182390	182391
Ø 8 x L1=70 x Ø 10	Mosquito dowel drill bits	VHW	183151	183150
Ø 15 x L1=70 x Ø 10	"Light" cylinder boring bits	HW	184685	184684
Ø 15 x L1=70 x Ø 10	"Light" cylinder boring bits	HW	184689	184688

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

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TIP – LEUCO ONLINE-CATALOG

You can find LEUCO tool recommendations for processing Pfeleiderer Duropal Magnetic Composite Elements P2 panels in the LEUCO Online Catalog.



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

QUICK &
EASY

- 1 www.leuco.com/products
 - 2 Click "tool" filter
 - 3 "special manufacturer materials"
 - 4 Pfeleiderer Duropal Magnetic Composite P2
- Select saw blades, cutters, drill bits



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