PROCESSING INSTRUCTIONS

MANUFACTURER: DUROPAL
MATERIAL: XTREME PANELS

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PROCESSING INSTRUCTIONS

DUROPAL XTREME PANELS

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PRODUCT DESCRIPTION DUROPAL XTREME PANELS

Decorative high pressure laminate in postforming quality with durable melamine resin surface and polished back side.

Application examples:

Surface material for high quality kitchen and office furniture, for walls and doors, furniture and fixtures in retail and recreational facilities, gastronomy, administration buildings, sanitary, hospital or laboratory areas. Especially for when there are particularly high standards for strength, ease of cleaning and hygiene.

PROCESSING INSTRUCTIONS DUROPAL XTREME PANELS

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

DEFINITION OF TERMS

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

1. GENERAL

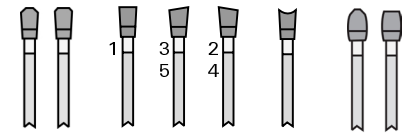
Tool stress when processing Duropal XTreme panels is higher than with the majority of wood-based panels. Carbide-tipped tools (HW) can also be used for processing. For large numbers of pieces and when using modern, automated processes, we recommend the use of diamond tipped tools (DP). These provide very good processing quality and long edge life.

2. TRIMMING CUT / SIZE PROCESSING

2.1. PANEL TRIMMING WITH CIRCULAR SAW BLADES

Various factors are responsible for a good cutting result:

Decorative side up, correct saw blade projection, feed speed, tooth configuration, tooth partition, RPM and cutting speed. HW or DP saw blades are used depending on quantities. **Recommended tooth configurations:**

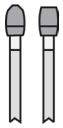


2.2. SIZING SAW

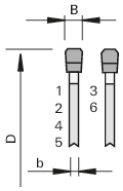
HW saw blades with triple chip - flat chamfer (TR-F-FA) and G5 tooth geometry are particularly well suited for sizing of small quantities Good cutting results can also be achieved with nn-System DP flex (HR) sizing saws. The feed rate depends on the number of teeth. Saw cuts without flares are not possible. Particularly for dark and matt surfaces.

2.3. PANEL SIZING SAW

Exceptional cutting results are achieved on panel sizing systems with a new HW-tipped panel sizing saw blade from the Q-Cut saw family ("TR-F K"). Good results can likewise be achieved with the LEUCO DP panel sizing circular saw blades "G6". Decoration side of panel must be face-up. Good edges on both sides are achieved only by using a suitable scoring unit. For best cutting results the correct saw blade projection should be observed as it depends on the saw blade diameter.



TR-F K

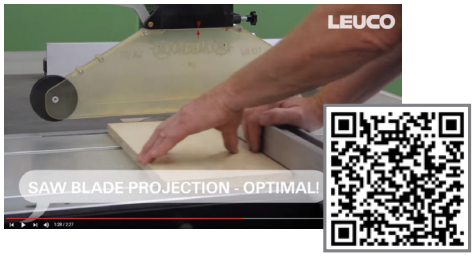


G6

Circular saw blade diameter	Saw blade projection
D = 250mm	15 - 20 mm
D = 300mm	20 - 25 mm
D = 350mm	22 - 28 mm
D = 400mm	25 - 30 mm
D = 450mm	25 - 33 mm

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. A feed per tooth of 0.05 - 0.12 mm should be targeted.

More info on the optimal saw blade projection can be found on our YouTube channel. >>> Scan QR-Code and view video on YouTube. Or directly at **www.youtube.com/leucotooling <<<**



2.4. THROUGH-FEED MACHINES: HOGGERS

Exceptional results can be achieved in the double hogging process when sizing with hogger tools on through-feed machines. Hoggers with low cutting pressure are recommended here, e.g. the LEUCO „PowerTec airFace S hogger.

Cutting speed: 80 m/sec.
Tooth feed: 0.2 - 0.3 mm with LEUCO PowerTec hoggers

PowerTec airFace S

3. MILLING / EDGE PROCESSING

In general, tools with DP blades should be used for jointing work in the run-through process. For formatting with jointing cutters, we recommend the use of tools with a small axis angle, e.g. 35°, either for high gloss and matt surfaces. In order to create optimal conditions for quality and edge lives, a precise hydro or HSK clamping is recommended for the jointing work. Jointing in two stages is recommended if a double jointing aggregate is available. In the first pass, material removal according to the allowance minus finish milling width. In the second pass, a removal of max. 0.5 mm for finish processing.

SmartJointer airFace

DIAMAX airFace

4. PROCESSING ON CNC STATIONARY MACHINES

DP tools, as shown on page 6, are recommended for stationary processing.
However, the following must be observed:

- Always choose the largest possible diameter (lower vibration risk).
- The use of tools with very large shear angles is recommended on stationary systems, because there is a good relationship between the performance of the tools and cutting quality.
- Clamping elements: Use hydro expansion chuck or shrink fit chuck in order to ensure the tool runs smoothly.
- Diameter: Choose as large as possible. When milling pockets or openings, the tool should always be designed with cutting edge/plunge tip.
- Tooth feed: According to table:

Cutting-diameter:	3 - 10 mm	10 - 16 mm	16 - 25 mm	25 - 40 mm	>40 mm
Recommended fz (mm) with particle board & MDF	0,03 - 0,10	0,10 - 0,20	0,20 - 0,30	0,30 - 0,40	0,40 - 0,50

5. DRILLING

Drill bits with low cutting pressure and good chip removal are recommended for drilling processes such as dowels and through-holes. These include drill bits from the LEUCO product families „Mosquito“ (through-hole bits, dowel bits) and „Light“ cylinder boring bits, as well as boring spikes (D = 3-5 mm).

- Clamping elements: precise mounting with secure hold

„Mosquito“ through-hole bits HW

„Mosquito“ dowel bits HW

„Light“ cylinder boring bits

6. FORMULAS

6.1. CUTTING SPEED – VC

- Unit: m/s
- Required data: Diameter = D [mm];
  RPM = n [1/min]
- Calculation: vc = (D * π * n)/(60 * 1000)

6.2. TOOTH FEED – FZ

- Unit: mm
- Required data: Feed speed: = vf [m/min];
  RPM = n [1/min]; number of teeth = z
- Calculation: fz = (vf * 1000)/(n*z)

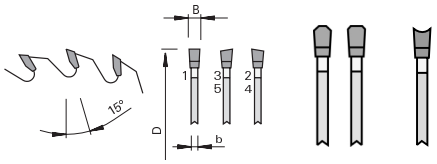
6.3. FEED SPEED – VF

- Unit: m/min
- Required data: Tooth feed = fz [mm];
  RPM = n [1/min]; number of teeth = z
- Calculation: vf = (fz * n * z)/1000

7. LEUCO TOOLS FOR PROCESSING DUROPAL XTREME PANELS

7.1. CIRCULAR SAW BLADES FOR SIZING SAWS

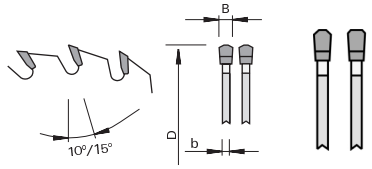
Dimension	Description	Z	Tooth shape	Cutting material	Projection	Ident-No.
Ø 303 x 2,5 x Ø 30	nn-System DP flex	60	HR	DP	approx. 20 mm	192444
Ø 300 x 3,2 x Ø 30	HW solid Surface	84	TR-F-FA	HL Board 06	approx. 20 mm	193133
Ø 300 x 3,0 x Ø 30	Sizing-saw-blade HW „G5“	100	G5	HL Board 04 plus	approx. 20 mm	192794



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

7.2. CIRCULAR SAW BLADES FOR PANEL SIZING SAWS

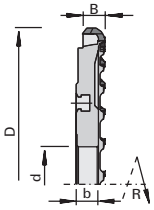
Dimension	Description	Z	Tooth shape	Cutting material	Projection	Ident-No.
Ø 380 x 4,0 x Ø 30	Q-Cut K	72	TR-F K	HL Board 04 plus	22 - 30 mm	192976
Ø 350 x 4,4 x Ø 60	Panel sizing saw	72	G6	DP	20 - 25 mm	193004



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

7.3. HOGGERS

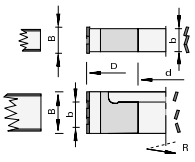
Dimension	Description	Z	Cutting material	Ident-No.
Ø 250 x 14,5 x Ø 60	PowerTec airFace S	20+20	DP	186551 186552



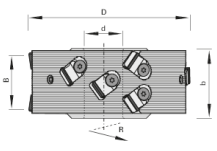
- Additional PowerTec hoggers with other dimensions **available upon request**.

7.4. JOINTING CUTTERS

Dimension	Description	Z	Shear <)	Cutting material	Ident-No.
Ø 125 x 42,3 x Ø 30	DIAMAX airFace	3+3	35°	DP	186399
Ø 125 x 43 x Ø 30	SmartJointer airFace	3+3	35°	DP	186047



DIAMAX airFace

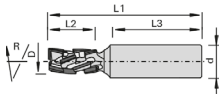


SmartJointer airFace

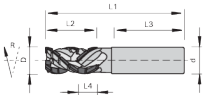
- Additional jointing cutters with other diameters, cutting edge widths, bores and numbers of teeth **available upon request**.

7.5. CNC SHANK-TYPE CUTTERS

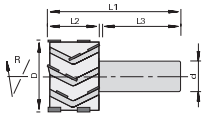
Dimension	Description	Z	Shear ∢	Cutting material	Ident-No.
Ø 20 x 28 x Ø 20	DIAREX High-Performance **shank-type** cutter	2+2	>30°	DP	186150
Ø 12 x 28 x Ø 16	Nesting **shank-type** cutter CM	3+3	25°	DP	186572
Ø 25 x 28 x Ø 25	High-Performance **shank-type** cutter CM	3+3	43°	DP	186130
Ø 25 x 48 x Ø 25	High-Performance **trimming** router bit	4+2+4	48°	DP	186140
Ø 60 x 38 x Ø 25	High-Performance **shank-type** cutter CM "p-System"	4+4	70°	DP	184084
Ø 25 x 48 x Ø 25	High-Performance **shank-type** cutter CM "p-System"	2+2	70°	DP	184384
Ø 12 x 21,5 x Ø 16	High-Performance **shank-type** cutter CM "p-System"	1+1	70°	DP	185501
Ø 100 x 18,6 x Ø 25	High-Performance **rabbeting** shank-type cutter "p-System"	3+3	70°	DP	184731
Ø 18 x 19 x Ø 20	High-Performance **grooving** shank-type cutter "p-System"	1+1	70°	DP	185614



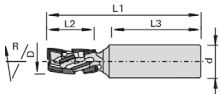
Nesting **shank-type** cutter CM



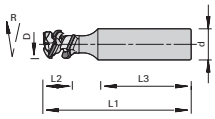
High-Performance **shank-type** cutter CM



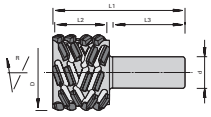
High-Performance **trimming** router bit



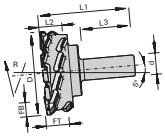
DIAREX High-Performance **shank-type** cutter



High-Performance **grooving** shank-type cutter "p-System"



High-Performance **shank-type** cutter CM "p-System"

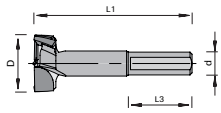


High-Performance **rabbeting** shank-type cutter "p-System"

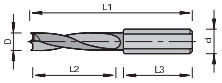
I Additional shank-type cutters with other diameters **available upon request**.

7.6. THROUGH HOLE, DOWEL AND BLIND HOLE BITS

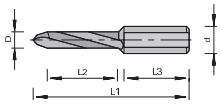
Dimension	Description	Cutting material	Ident-No. (L)	Ident-No. (R)
Ø 25 x L1=70 x Ø 10	"Light" cylinder boring bits	HW	184687	184686
Ø 5 x L1=70 x Ø 10	"Mosquito" through-hole bits	HW	182462	182463
Ø 6 x L1=70 x Ø 10	"Mosquito" dowel bits	HW	181526	181525
Ø 3 x L1=45 x Ø 3	Boring spikes	VHW	180943	180943



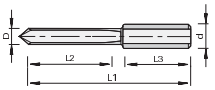
„Light" cylinder boring bits



„Mosquito" dowel bits



„Mosquito" through-hole bits



Boring spikes VHW

I Additional drill bits with other diameters, cutting edge widths, and shaft dimensions **available upon request**.

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

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TIP – LEUCO ONLINE CATALOG

You can find the LEUCO tool recommendations for processing Duropal Xtreme panels in the LEUCO online catalog.

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

SIMPLE & QUICK

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

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