

PROCESSING INSTRUCTIONS

MANUFACTURER: senosan®

MATERIAL: TOPX ACRYL GLASS CLEAR

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



PROCESSING INSTRUCTIONS

senosan® TOPX ACRYL GLASS CLEAR

senosan

a member of klepsch group

TABLE OF CONTENTS

	Page
1. General information	3
2. Trimming cut / sizing	3
2.1 Panel trimming with circular saw blades	3
2.2 Sizing saw	3
2.3 Panel sizing saw	4
2.4 Through-feed machine: hogger	4
3. Milling / edge processing	4
4. Processing on CNC stationary machines	5
5. Drilling	5
6. Formulas	5
6.1 Cutting speed – vc	5
6.2 Tooth feed – fz	5
6.3 Feed speed – vf	5
7. LEUCO tools for processing senosan® TopX Acryl Glass Clear panels	6
7.1 Circular saw blades for panel sizing saws	6
7.2 Circular saw blades for sizing saws	6
7.3 Hoggers	6
7.4 Jointing cutters	6
7.5 CNC shank-type cutters	7
7.6 Through-hole, dowel- and blind hole bits	7



PRODUCT DESCRIPTION **senosan® TOPX ACRYL GLASS CLEAR**

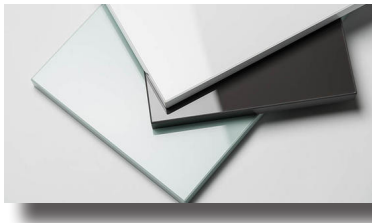
Co-extruded furniture board and sheets made of PMMA (acrylic) Highly scratch-resistant and chemically resistant, provided with a glossy surface With a PE surface protective film on both sides.

PROCESSING INSTRUCTIONS **senosan® TOPX ACRYL GLASS CLEAR**

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; **S-S** = (quick-quick)



senosan® TOPX ACRYL GLASS CLEAR

The product **senosan® Acrylic Glass**, which is available in 8 standard colors in high gloss and in matt appearance (image source: **senosan®**)

1. GENERAL INFORMATION

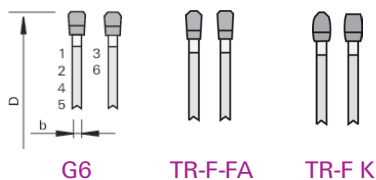
Glass fronts look extremely elegant and give the living room a better visual appearance – but in production and in daily use real glass is a very demanding, fragile material sensitive to shock and requiring intensive cleaning. The solution is: Painted acrylic glass of the **senosan®** type, with high-quality surfaces in glass optics that has an enormous depth effect and a maximum degree of gloss. This co-extruded material combines the aesthetic benefits of real-glass fronts with the advantageous processing and use properties of **senosan®** sheets. In short: Top design, top handling!

2. TRIMMING CUT / 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 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:**



2.2 SIZING SAW

For sizing saws, the HW circular saw blades with the tooth shape TR-F K are particularly suitable. Outstanding cutting results are possible also with the "solid Surface" HW circular saw blade featuring a 0° effective cutting angle. The cutting speed should be at 80 m/sec.



2.3. PANEL SIZING SAW

Excellent cutting results can be achieved on panel sizing machines with the new circular panel sizing saw blades from the "Q-Cut" range (Q-Cut K). Good results can also be obtained with circular panel sizing saw blades from the "Q-Cut G6" range. The recommended feed per tooth (fz) is between 0.06 – 0.07 mm. The maximum feed per tooth is $fz = 0.096$ mm and should not be exceeded. 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

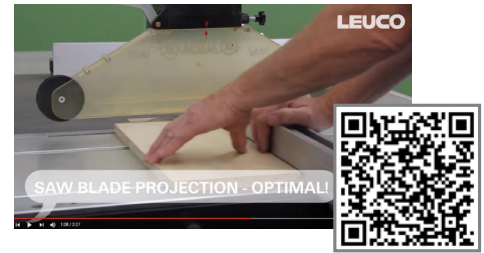
- D = 250 mm
- D = 300 mm
- D = 350 mm
- D = 400 mm
- D = 450 mm

Saw blade projection

- approx. 15 - 20 mm
- approx. 15 - 25 mm
- approx. 18 - 28 mm
- approx. 25 - 30 mm
- approx. 25 - 33 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 <<<



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 hoggers with low cutting pressure, such as the LEUCO PowerTec hogger. The number of hogger teeth should be matched to the respective machining feed. All hoggers tested were used with the following application parameters: **speed:** $n = 6,000$ rpm, **abrasion:** $a = 3$ mm, **feed:** $vf = 30$ m/s. The PowerTec hoggers have a favorable cutting geometry for the TopX Acrylic Glass Plate. With other types of hoggers, small break-offs must be expected, which, however, can be compensated by additional jointing work.



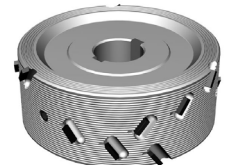
PowerTec airFace

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 exclusively those tools with a shear angle of between 35° and 48°. Although outstanding results can be achieved using jointing cutters with a shear angle of 35°, you get better results and longer service lives using jointing cutters with a shear angle of 48°. Jointing in two stages is recommended if a double jointing unit is available. Here it is important that **the feed per tooth (fz) be not less than 0.6 mm**, in order to avoid initial melting of the acrylic plate.



SmartJointer airFace



DIAMAX airFace



4. PROCESSING ON CNC STATIONARY MACHINES

Tools without a shear angle do not work. For long edge lives, the cutting work should be done with diamond-tipped shank-type cutters with alternating shear angles. Small series can also be produced using VHW spiral finishing cutters. The recommended feed per tooth (fz) is in the range from 0.2 – 0.35 mm.

Example:

Number of cutting edges (Z)	Speed (rpms)	Feed Vf (mm/min)
Z=2	18.000 / 24.000	7 - 10 / 10 - 13
Z=3	18.000 / 24.000	10 - 15 / 14 - 20
Z=4	18.000	20 - 25

Grooving or pocket milling can be done very effectively with VHM shank-type cutters with negative spiral. The feed per tooth (fz) should be approx. 0.3 mm (e.g. 18,000 rpm and 8-10 m/min)

5. DRILLING

Wall plug holes and through holes can be made with commonly available HW drill bits. Better results are usually achieved by using VHW dowel and through hole drill bits on account of their higher rigidity.

Application data: Speed: 5.000 rpm Feed: 1 m/min
Drilling mode: S-S (quick-quick)

In case of hole edge problems on the acrylic glass side, the use of drill bits with back-guide may be useful. Hinge holes: When using cylinder boring bits, designs with special geometries to reduce cutting pressure are more advantageous in terms of quality and tool life.

Application data: Speed: 6.000 rpm Feed: 1,5 m/min
Drilling mode: S-S (quick-quick)

VHW drill pins of $\varnothing 5\text{ mm}$ are also very well suited to produce small grid-pattern holes.

Application data: Speed: 7.000 rpm Feed: 1 m/min
Drilling mode: S-S (quick-quick)

6. FORMULAS

6.1. CUTTING SPEED – VC

- | Unit: m/s
- | Necessary data: diameter = D [mm];
Tool speed = n [1/min]
- | Calculation: $vc = (D * \pi * n) / (60 * 1000)$

6.2. TOOTH FEED – FZ

- | Unit: mm
- | Required data: feed speed = vf [m/min];
tool speed = n [1/min]; no. of teeth = z
- | Calculation: $fz = (vf * 1000) / (n * z)$

6.3. FEED SPEED – VF

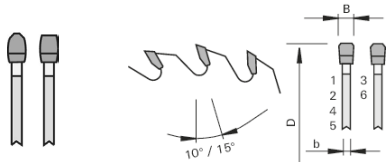
- | Unit: m/min
- | Required data: tooth feed = fz [mm];
Tool speed = n [1/min]; no. of teeth = z
- | Calculation: $vf = (fz * n * z) / 1000$



7. LEUCO TOOLS FOR PROCESSING senosan® TOPX ACRYL GLASS CLEAR PANELS

7.1. CIRCULAR SAW BLADES FOR PANEL SIZING SAWS

Dimension	Description	Z	Tooth Shape	Cutting Material	Projection	Ident-No.
Ø 450 x 4,0 x Ø 60	Q-Cut K	72	TR-F K	HL Board O4+	approx. 25 mm	192978
Ø 450 x 4,8 x Ø 60	Q-Cut G6	72	G6	HL Board O4+	approx. 25 mm	192883

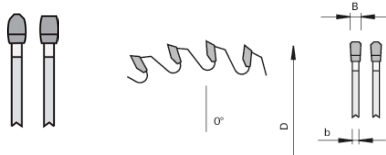


Additional saws with different diameters, cutting widths, bores, and number of teeth **available upon request**.

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

7.2. CIRCULAR SAW BLADES FOR SIZING SAWS

Dimension	Description	Z	Tooth Shape	Cutting Material	Projection	Ident-No.
Ø 350 x 4,0 x Ø 30	Q-Cut K	72	TR-F K	HL Board O4+	approx. 25 mm	192974
Ø 303 x 3,2 x Ø 30	HW solid Surface	84	TR-F-FA	HL Board O6	approx. 25 mm	193133

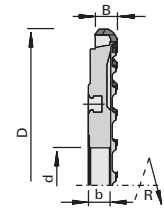


Additional saws with different diameters, cutting widths, bores, and number of teeth **available upon request**.

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. (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+10	DP	186552	186551

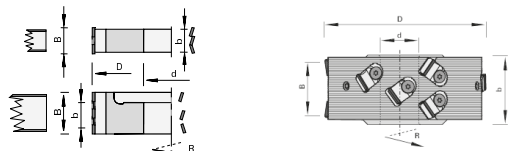


PowerTec airFace

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

7.4. JOINTING CUTTERS

Dimension	Description	Machine	Z	Shear<	Cutting Material	Ident-No. (L)	Ident-No. (R)
Ø 125 x 42,8 x Ø 30	DIAREX airFace	Homag	3+3	48°	DP	186323	186323
Ø 100 x 42,8 x Ø 30	DIAREX airFace	SCM	3+3	48°	DP	186362	186363
Ø 85 x 43,2 x Ø 30	DIAMAX airFace	OTT	3+3	35°	DP	186408	186409
Ø 125 x 43,2 x Ø 30	DIAMAX airFace	Homag	3+3	35°	DP	186399	186399
Ø 100 x 43 x Ø 30	SmartJointer airFace	Brandt	3+3	35°	DP	186065	186066
Ø 125 x 63 x Ø 30	SmartJointer airFace	IMA	3+3	43°	DP	186055	186056



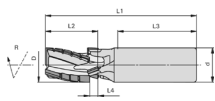
DIAREX/DIAMAX airFace SmartJointer airFace

Additional jointing cutters for other machine brands with different diameters, cutting widths, bores and number of cutting edges **available on request**.

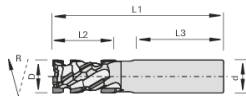


7.5. CNC SHANK-TYPE CUTTERS

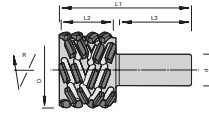
Dimension	Description	Z	Cutting Material	L/R	Ident-No.
Ø 12 x 22 x Ø 16	Nesting shank-type cutter, negative	2+2	DP	R	186113
Ø 12 x 22 x Ø 16	Nesting shank-type cutter, positive	3+3	DP	R	185571
Ø 20 x 28 x Ø 25	Nesting shank-type cutter, negative	3+3	DP	R	185518
Ø 20 x 28 x Ø 25	DIAREX high-performance cutter	2+2	DP	R	186151
Ø 25 x 28 x Ø 25	High-performance cutter, negative	3+3	DP	R	186120
Ø 60 x 38 x Ø 25	p-System shank-type cutter	4+4	DP	R	184084
Ø 48 x 28 x Ø 25	High-performance trimming cutter	4+2+4	DP	R	186142



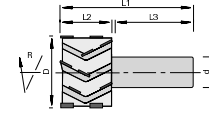
DP High-performance cutter negative



DP High-performance cutter DIAREX



p-System shank-type cutter



DP High-performance trimming cutter

Additional shank-type cutters with different diameters (Ø) and cutting lengths (CL) available on request.

7.6. 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	Through hole drill bit with back-guide	HW	176255	176254
Ø 8 x L1=70 x Ø 10	Through hole drill bit with back-guide	HW	176257	176256
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	topline through-hole drill bit	VHW	185742	185741
Ø 8 x L1=70 x Ø 10	topline through-hole drill bit	VHW	185744	185743

Dimension	Description	Cutting Material	Ident-No. (L)	Ident-No. (R)
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 5 x L1=70 x Ø 10	topline dowel drill bits	VHW	185760	185759
Ø 8 x L1=70 x Ø 10	topline dowel drill bits	VHW	185764	185763
Ø 5 x L1=70 x Ø 10	High-performance dowel bits	VHW	185772	185771
Ø 8 x L1=70 x Ø 10	High-performance dowel bits	VHW	185776	185775

Dimension	Description	Cutting Material	Ident-No. (L)	Ident-No. (R)
Ø 2,5 x L1=57,5 x Ø 10	Standard drill pins	VHW	183061	183061
Ø 3 x L1=57,5 x Ø 10	Standard drill pins	VHW	183062	183062

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

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

→ 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

You can find LEUCO tool recommendations for processing senosan® TopX Acryl Glass Clear 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 senosan® TopX Acryl Glass Clear
- 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