

# LEUCOline

## HIGHLIGHTS 2013



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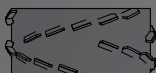
##### 23 LEUCO

**We are LEUCO.**

This is what you can expect!



LEUCO System Philosophy

**p-SYSTEM****JOINTING****CHAMFERING****RABBETING****GROOVING**

**PEELING – THE REVOLUTIONARY WOOD PROCESSING TECHNOLOGY BY MEANS OF THE PATENTED P-SYSTEM IN STATIONARY AND THROUGH-FEED PROCESSING FOR JOINTING, CHAMFERING, RABBETING AND GROOVING.**

**PEEL IT, SEE IT, FEEL IT!**

- | best cutting quality in the whole industry segment
- | long edge lives
- | materials and applications which have been considered as technically impossible so far.



Video about  
[www.leuco.com/](http://www.leuco.com/)  
 LEUCO p-System



NEW application!

**p-SYSTEM**  
**GROOVING CUTTER**  
 Brilliant quality

Especially in the case of small grooving depths it is difficult to reach a good quality with conventional tools.

Thanks to the new grooving shank-type cutter on p-System basis the usual p-System quality of the edges is obtained already with 1 mm grooving depth. The p-System grooving cutter even removes and replaces faults in the veneer.

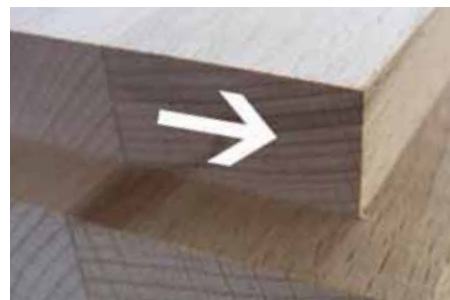
It goes without saying that the cutter can also handle all other grooving operations such as the milling of pockets or cut-outs.

It is available for various groove width and depths.



## Application

**p-SYSTEM**  
**RABBETING CUTTERS**  
 Brilliant quality



For through-feed machines with tiltable motors and 5-axis machines, a p-System rabbeting cutter with all cutting qualities on the rabbeting and periphery side is possible. Folding cuts can be made with the p-System rabbeting cutter, too. Rabbeting is also possible with a non-tiltable motor or a 3-axis machining center. On the rabbet side a good but conventional cutting quality has to be accepted and not all of the p-System tools can be reached.



LEUCO innovation in cooperation with the saw mill specialist Esterer WD GmbH (EWD)

## LEUCO P-SYSTEM PROFILE CUTTERS FOR SAW MILL PLANTS

Chip-free surfaces and edge lives which have not been possible so far

Thanks to the new development of the profile cutter on p-System basis together with the saw mill specialist EWD, the revolutionary shear angle patented by LEUCO found its way into the saw mill technology.

### Advantage: chip-free surfaces

In saw mills, the first step of the production chain, chip-free quality like in the furniture industry is of outstanding importance.

Conventional profile cutters based on wood chip knives removing the wood edge to cut off the respective side board often create chippings in the knotty areas around the branches. If these

chippings are larger than the cutting width of the saw blade which separates the side board, the principle products is damaged. This problem is often solved by an allowance on the sawn timber which has to be planed away later and which logically leads to a

higher top diameter of the log which is used for the cutting plan.

Thanks to the chip-free quality produced by the LEUCO p-System Profile Cutter the allowance can be omitted, the planing efforts decrease and the wood yield can be increased.

» You have to pay attention to not forget this station in the line, as very little effort will be required for it in future.«

Quotation of a pilot saw mill customer

In addition, no more waste due to knotty areas in the principle product is produced. To generate these advantages, the only thing that has to be done is to replace the wood chip knives used so far by LEUCO p-System Profile Cutters.

### Advantages: overwhelming edge lives which have not been possible so far

The LEUCO profile cutters work and work. In the test, after 2,000,000 running meters the lowest knives were turned to bring the next of the 4 cutting edges into operation. At this time, the quality was still perfect, only the slowly increasing current consumption of the motors suggested the turning of the knife.

The reduction of plant downtimes by itself, due to the changing, resharping and adjusting of the wood chip knives already pays for the new LEUCO p-System Profile Cutters. Thanks to the segmented construction of the new tool, the tool change does not take more time than for the knives used so far. The segments are screwed out, new seg-



Above left: previous wood chips and new chips suitable for pellet

Below: Profiling quality of the LEUCO p-System profile cutter

ments are mounted and the turning of the knives can be comfortably made in the sharpening room while the plant has long since been in operation again.

### Advantage: chips can directly be used for the production of pellets

Nowadays, perfect wood chips are no longer required for paper production. In the meantime, a high percentage of the chips is used directly for pellet production. Normally, the wood chips have to be shredded once again. However, the pellet-like chips created by the LEUCO p-System can directly be further processed to pellets.

If this cannot be called a revolution, what can be?



p-System profiling head in a chipping line



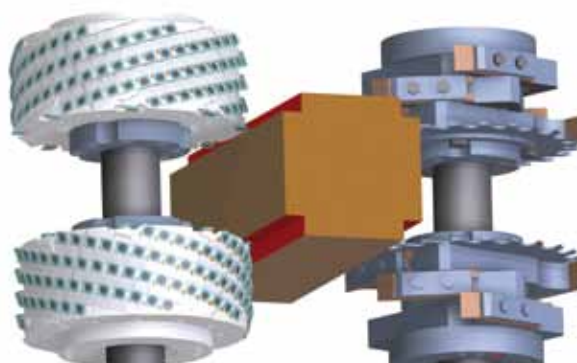
LEUCO p-System Profile Cutter with exchangeable turnover knives positioned under a large shear angle. The tool is built with exchangeable segments.

## COMPARISON: PREVIOUS WAY AND NEW PROFILE CUTTER ON P-SYSTEM BASIS

So far, all profile cutters in the saw mills are used in combination with finishing saw blades which have to be changed regularly like the knives. The new p-System profile cutter does no longer need a saw blade.

Thus, the permanent saw blade change can be dropped.

It works with finishing cutting edges whose edge lives are clearly longer than those of the saw blades.





## Applications

## NEW QUALITY DIMENSIONS AND APPLICATION POSSIBILITIES

Peeling - The revolutionary wood processing technology by LEUCO



**FINISHED!**

**Milling with finish-cut quality without postprocessing**

The p-System produces edges in finish-cut quality, time-consuming sanding is no longer necessary.



**CHIP-FREE!**

**Chip-free jointing of veneer boards**

The cutting edges of the p-System cut veneer like a sharp knife. Across the veneer they hardly exert cutting force and make a clean cut, regardless whether the veneer overlap is 2 or 10 mm.



**PROTECTION FOIL!**

**Long edge lives in the case of high-gloss material with protection foil**

As soon as the foil was no longer cleanly cut, the tools were changed. Thanks to the shear angle design the p-System cuts the foil „sharp as a razor“ which allows to benefit from the whole edge life of the cutter.



**SAVE TIME!**

**Reduction of downtimes**

In the case of end-grain cutting, the p-System often allows to pass the edge against the feed without causing edge chipping. This also works with edged workpiece materials depending on edge thickness and board quality; tool changes are no longer necessary, machine downtimes can be reduced.

» We are processing veneered honeycomb panels. Up to now we had to change the knives 3 times a day. Now, after 5.5 months working with the p-System we changed the tool for the first time. We saved 100 hours of machine downtimes.«

Processor of honey comb panels

## SUPERIOR PERFORMANCE WITH THE P-SYSTEM – EASY MILLING OF LIGHTWEIGHT PANELS

### Why is it problematic to process lightweight woods?

The boards are made of lightweight woods such as poplar, Ceiba etc. These wood types however, are very fibrous and the cutting of the fibres is difficult. The materials can be easily processed, however, it is not easy to obtain a smooth surface.

### Why is the LEUCO p-System the ideal tool system?

Especially thanks to the LEUCO p-System fibres can be cut extremely well. This results in a good cutting quality not only along the grain but also across the grain. Thus, in wood-based panels such as plywood a clearly increased surface quality can be obtained already

by milling as the critical cutting direction across the grain determines the cutting quality of these materials. The round opening on the pictures clearly shows the difference in quality. The p-System cut separates all layers cleanly, the turnover knife cut creates a raw surface in all layers across the grain.

### Machining of solid wood with a diamond-tipped tool

In addition, we want to point out that the LEUCO p-System tool is a diamond tool with a much longer edge life than a carbide-tipped turnover knife tool. So far, the meaning was that such materials consisting of solid wood layers require the sharper cutting edge of tungsten carbide.



**So far: Jointing quality with TC tipped turn over knives**



**New: Opening in the same poplar plywood processed by means of a diamond-tipped LEUCO p-System tool. It can be seen and felt that all layers have a smooth and clean surface in spite of the difficult fibrous wood type poplar.**



LEUCO Hogger

**LEUCO POWERTEC „III“ AND „TOPLINE III“**

High-Speed and hogging of materials, which were unthinkable

**POWERTEC III****Benefits**

- | Raker and finish-cut tooth on one wing
- | Feed rate of more than 100m/min with excellent edge lives
- | Hogging of materials – which were unthinkable for a long time

**Hogger PowerTec III**

Since its market launch approx. 2 years ago, the DP hogger PowerTec III has developed to the LEUCO best-seller among the DP compact hoggers.

Compared to the PowerTec predecessors, the difference is that - thanks to a new manufacturing process - the finish-cut cutting edge (negative hook angle) and the pre-hogging cutting edge (positive hook angle) can be positioned on one wing. This allows twice as many cutting edges with the same diameter, i.e. the possible feed rate on double-end tenoners is almost without limits. In the meantime, the PowerTec III hogger is applied with a feed rate of more than 100 m/min with excellent edge lives.

**POWERTEC III TOPLINE****Benefits**

- | 1 Optimized peripheral cutting edge
- | 2 Number of pre-hogging cutting = number of finish-cut cutting edges
- | Number of resharpenings increases
- | High quality when cutting against the grain when the cutting edges emerge against the edge
- | Feed rate of more than 100 m/min with excellent edge lives

**Selective optimization of single features of the „PowerTec III Topline“**

- | The peripheral cutting edge is subject to the highest mechanical strain which is why it partly shows signs of bad damage at the end of the edge life. LEUCO geometrically optimized these peripheral cutting edges. Less material has to be removed when resharpening which increases the number of possible resharpenings.
- | The number of pre-hogging cutting edges is adapted to the number of finish-cut cutting edges as well.
- | Even middle layers of extremely poor quality can be cut with excellent cutting quality and edge lives. This advantage pays particularly when cutting against the grain when the cutting edges emerge against the edge.

**THROUGH-FEED**

CUTTING QUALITY

THROUGH-FEED SPEED

NOISE REDUCTION

CHIP CAPTION

INTERFACES



## TOGETHER WITH LEUCO ON SILENT FEET

**LowNoise Jointing Cutter Family: DIAMAX-, DIAREX- and SmartJointer-Cutters**

When jointing wood materials before glueing or laser edging, there are 3 decisive success factors for the jointing cutters used for jump-milling:

1. the achievable cutting quality depending on panel and coating
2. the achievable edge life
3. the noise emission on a milling aggregate which is not encased by a cabin but only by the metal sheet of the dust hood

The new DP LEUCO Jointing Cutter family offers a solution for each requirement.

## A TOOL LIKE OUT OF THE WIND TUNNEL

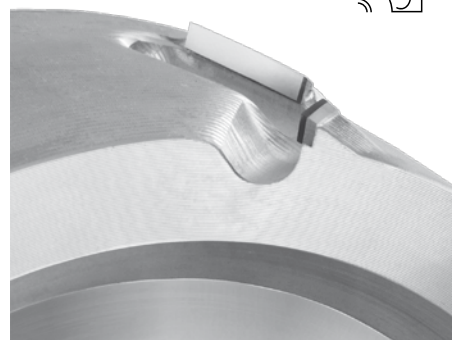
**LowNoise brazed DIA Jointing Cutter**

**The changes are in the detail and have great effects.**

The task was to reduce the noise of the standard jointing cutter considerably without renouncing on the advantage of a brazed tool.

Thanks to the change of the gullets and the tooth backs the air flow could be optimized. This avoids turbulences and reduces noise considerably. Thanks to the noise reduction of up to 5 dB(A) when idling and up to 2 dB(A) during operation, working conditions could be improved significantly. The application by renowned machine manufacturers as standard equipment and the number of imitations shows the efficiency of this LowNoise design

This new design of the tools was made possible only thanks to LEUCO's most up-to-date production know-how.



## LEUCO DIAREX FINISHJOINTER

**Large resharping area, brilliant quality**

**LEUCO continued the success path taken with the LowNoise DIAMAX Jointing Cutters and transferred it to the DIA Jointing Cutter with full height diamond tips. This means:**

- 1. **Larger DIAREX resharping area** compared to DIAMAX or similar tool systems with reduced resharping area or tipping height. Up to 10 resharpenings are possible - the maximum which can be reached with a given adjustment range of the jointing aggregate.
- 2. **Consequent implementation of the LEUCO LowNoise design with rounded gullets** for reduction of wind noise.

1. **Adaption of the tooth geometry to high-quality applications which are increasingly demanded for the production of furniture fronts and for high-quality furniture.** This means shorter teeth and optimized shear angles and especially less variations with the effective hook angle. This improves above all the cutting quality in loose cores and thicker panels as well as in difficult and sensitive coatings.

The LEUCO DIAREX FinishJointer is **resharpenable worldwide on conventional machine technology** and can be obtained with **symmetric or asymmetric tooth configuration** depending on the machine type.

**Quality also depends on the interface**

The LEUCO standard program covers the new aggregates too, which need a high-precision adapter with hydro bushing increasingly used with machines for laser edging.

For these machine types no spindles



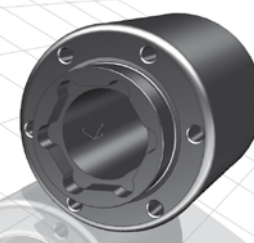
with feather key are used but high-precision smooth spindles with a 30 mm diameter and a hexagonal adapter serving as twist-lock.

Another positive effect is the reduced residual imbalance of the whole system thanks to the centric clamping. The tool is mounted on the hydro bushing and remains there during the whole life cycle to form a unit with highest run-out accuracy. The clamping of the tool including the hydro bushing on the spindle is made via axial impression which avoids time-consuming dismantling of the dust hood.

**A solution for everybody**

The solution offered by LEUCO covers all edge banding machines with hydro spindle currently available on the market - a solution for all machines with clamping heights of 30-100 mm and tool diameter of 125-150 mm.

**Hydro bushing on the machine side**



In this case too, the achieved quantity effects have a positive influence on the price-performance ratio.



## Overview

## THE RIGHT ONE FOR ALL CASES

### LEUCO jointing cutter program for each demand

The DIAREX FinishJointer completes the current LEUCO jointing cutter program.

The advantages of the cost-optimized DIAMAX LowNoise jointing cutter and the LowNoise SmartJointer are combined with an increased resharpening area prolongating tool life and an optimized tooth geometry.

In detail, this means excellent cutting quality in coatings and middle layers, long edge lives and low noise as well as a good price-performance ratio.

➔ The overview on the right shows the details:

#### Features

	DIAMAX LowNoise	Smart Jointer	DIAREX FinishJointer	LEUCO p-System
tool body features	steel	aluminium body	steel	steel
gullet design	pocket shape with rounded-off edges and studs	pocket shape in interchangeable steel version	pocket shape with rounded-off edges and studs	pocket form
shear angle	30+°	35+°	43+°	70°
tooth length	approx. 12.35 mm	approx. 14.2 mm	approx. 8.5 mm	approx. 14 mm
flow optimization / LowNoise design	++++	++++	+++	+
resharpening area	1.5 mm	1.5 mm	3 mm	4 mm
tooth configuration	asymm. and symmetrical	asymm. and symmetrical	asymm. and symmetrical	symm. recommendable
arrangement of cutting edges	in pairs	mostly in pairs	random	arranged linear obliquely
availability from stock	stock	mostly stock	mostly stock	partly stock
chip caption	++++ / CM	+++	++++ / CM	+++
suitable for laser-edge-technology	++	++	+++	++++
tooth fixation	soldered	exchangeable DP cutting edges	soldered	soldered
running meter performance	++	++	+++	++++
cutting quality cover layer	++	++	+++	++++
cutting quality middle layer	++	++	++++	+++
no. of teeth	2-3	2-3	3-5	2-4

Legend

+ suitable

++ good

+++ very good

++++ maximal

## LOW WEIGHT AND LOW NOISE – TWO SMART CHARACTERISTICS

### LowNoise brazed DIA Jointing Cutter

① The low weight of the SmartJointer is due to the high-tensile aluminum body. Dynamic processes such as jump-milling consume only a fraction of the energy needed so far.

② The main characteristic of this system is the re-usable tool body which saves resources.

The exchangeable cutting inserts are designed with integrated gullets => these gullets reduce the scouring by abrasive chips. The body can be re-used more often.

③ During the development of the system special attention was given to noise reduction like in the case of the brazed LowNoise Jointing Cutter. No problem for the low-weight DP SmartJointer. The sound pressure level is reduced by 2 dB(A) during operation

thanks to the lower weight of the aluminum body (vibration reduction) and thanks to measures described above (e.g. lower edge projection). With 4 dB(A), this reduction is even more significant when idling.

**Less weight, less noise, resource saving and technically convincing - simply smart, the SmartJointer by LEUCO.**

With regard to performance, results are similar to the brazed diamond tools, e.g. long edge lives and high cutting qualities. The shear angle was even increased compared to standard jointing cutters. Thus, the LEUCO DP SmartJointer is designed for even higher cutting qualities.



①

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## LEUCO A COMPETENT PARTNER FOR DOOR MANUFACTURERS

Small production batch, high quality expectations – producing door panels in a batch size of 1



The new machine is a unilateral IMA Combina through-feed system, which is equipped with a double feed chain due to the heavy workpieces that can be processed.

Neuform –Türenwerk Hans Glock GmbH & Co. KG manufactures door panels at 2 locations with approximately 240 employees in Germany. Door sizes of up to 3200 x 1600 mm, with a thickness of up to 90 mm and therefore a mass of up to 250 kg per panel, illustrate the extremity of the necessary specifications of the machine and tooling.

**Whether 4 or 10 passes are needed per door until finished, the selection of LEUCO tools meets the necessary requirements.**

At stations 1 and 2, the panel is scored with the feed. This is carried out by a scoring hogger, which inwardly removes various top surfaces and core materials in a step cut design, which prevents chipping of the trailing edge during cross-processing.



**Perfect quality from Neuform: Door panel with foiled edges without chipping; double rebate and 3.5mm door seal.**

Station 3 is a servo-controlled scoring unit, and at station 4 the whole cutting width is milled with a hogging tool. It is important to cut with a minimised feed rate per tooth; this is also the case for the second and third hogging lines. At stations 5 and 6 the rebate is milled in alternate directions, the second aggregate is a jumping spindle.

At stations 7, 8, 9, 37, 38 and 39 the whole range of door panels are trimmed and Schallex-grooved in alternate directions with an automatic controlled z-axis. The Neuform product range covers 8 – 34mm and all common double-grooves for the complete door panel.

The jointing cutters are all specifically designed for each door panel width to achieve maximum cutting quality and tool life. For example, the cutters for processing fire-doors have special tooth geometry and cutting material. It is remarkable, that in between these corresponding aggregates there are 26 further stations. The reason for this is the limited space in the formatting section, at the same time this proves the precision of machine and tooling when the same Schallex-groove is processed over such a distance without any offset.

There is yet another LEUCO specialty at station 10. The rebate is processed with a special prism rebate cutter at an inclination of 45°. In this way a long and soft tooth entrance can be achieved.



The scoring hogger inwardly removes various top surfaces and core materials in a step cut design, which prevents chipping of the trailing edge during cross-processing.

This helps to smoothen the surface and to make the usual cutter marks almost invisible – even after lacquering or spraying.

**Now the conventional part of door panel and rebate processing is commenced.**

One specific aggregate is the double-ripping unit; here the overhang is scored in 2 lines to enable the precise positioning of the veneer in the rebate.

At stations 34 and 35 there is a rebate clipping saw with a lower positioned raker tip to avoid adhesion on the side of the teeth. On the multi-profiling units, different radii and bevels can be processed in a batch size 1 manner, within a gap of less than 400mm.

All these rebate processing aggregates have in common that they are specifically designed to cover the extreme variety of door panels and ensure the highest possible productivity of the line.

In a project like this, the challenge for the tool manufacturer is to define together with the customer and the machine manufacturer the technical parameter, performance requirements and processing line-up as well as to support the customer during installation and set-up of the line. LEUCO proves once more to be an innovative, trend-setting and reliable partner for the door manufacturing industry.



The new LEUCO AirStream-System

## WE LEAD THE CHIP IN THE RIGHT DIRECTION!

Edge trimming with a chip caption degree of 97%

Where work is done you have to clean up chips. This fact was already known by our grandfathers. Now, in cooperation with HOLZ-HER, LEUCO found a solution to show the chips the right direction, furthermore without loud noise.

In the case of edge trimming, everybody wants a clean machine and no chips on the workpiece. With the new „AirStream-System“ we actively influence the chip flow. The AirStream-System uses the rotation of the tool and exerts targeted effect on the air flow to direct the chip flow. In combination with the hood the chip is „told“ at the right time when and in which direction it has to leave

the gullet. Thus, a chip caption degree of 97% can be reached! Furthermore, the improved chip direction prevents double hogging of the chips. This has positive effects on the edge life.

### How do tools work on the LEUCO „AirStream“ basis?

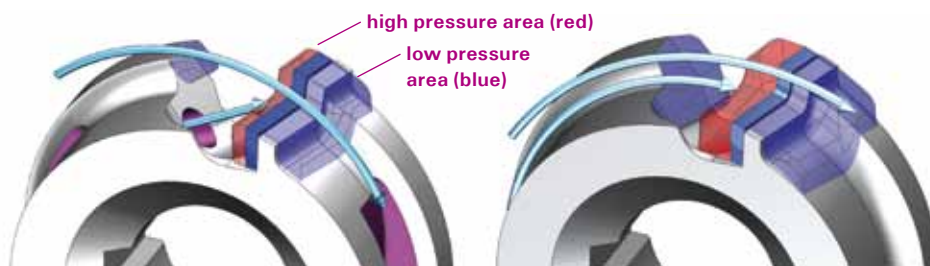
In the case of standard tools, a low pressure area is created behind the cutting edge and on one side of the gullet as here the air flow stalls. A high pressure area is created on the face of the cutting edge (see illustration 1). These different air pressure areas try to level out and the pressure fluctuations are perceived as noise. In the case of „AirStream“ tools



a bore at the right place on the tool prevents the creation of air pressure areas. So where nothing is, nothing has to level out and in addition to the 97% chip caption a sound reduction of 3 dB(A) is reached. For the machine operators this means a halving of the sound source. They have the impression that only one tool is in operation.

With immediate effect, the AirStream-System is integrated in all HOLZ-HER edge trimming machines with aggregates 1826 and 1828.

Quite a lot of technology in one single tool: LEUCO and HOLZ-HER show that innovation and quality are in the details.



Air pressure areas on a standard tool (left) and on an AirStream tool (right)

Innovations for edge trimming

## WE MAKE THE RADIUS SHINE

Scraper „LEUCO TwinBlade“

Thanks to its convincing advantages, laser edging has established itself quickly in the furniture industry and contributes its share in the trend to high-brilliance furniture parts. The jointless edge optics makes new demands with regard to edge trimming such as avoiding material fracturing, mat surfaces and color fastness.

### LEUCO makes the radius shine -

„TwinBlade“ stands for two intelligently combined scrapers which are characterized by precisely matched dimensions and a specially developed jointing technique.

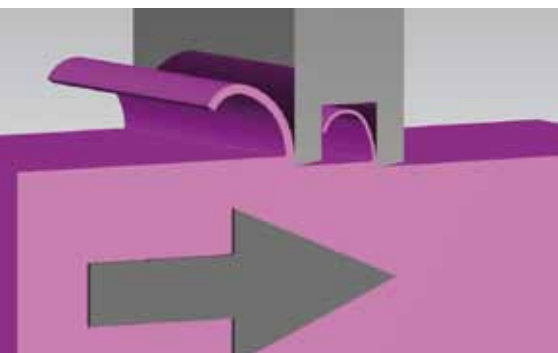
The TwinBlade tool works according to the principle of linear hogging. The high brilliance of acrylic edges is reached thanks to the perfect match of pre-cut knife and finish-cut knife by a vertical offset of the profiles. The pre-cut knife creates the overall profile and a thick chip. With a constant, razor-thin chip, the finish-cut knife creates a smooth and brilliant edge surface without material fracturing or cutter marks.

„TwinBlade“ scrapers offer a new quickly changeable tool for the finishing process of edge trimming.



A decisive criteria is the exact positioning of both knives in the range of thousandths of a millimeter. The function of the knife combination is additionally supported by a nozzle which blows out the chips and is integrated in the spacer.

Thanks to the „TwinBlade“ scraper, LEUCO made convincing progress in linear hogging. It backs the trend to visually appealing and humidity-resistant high quality furniture in high-gloss optic and makes serial production of these furniture parts profitable.





## NEW FINGER JOINT CUTTER TYPES

### LEUCO faces needs

With immediate effect, new interesting finger joint cutters are available: finger joint cutters for the production of PUR glueings, finger joint cutterheads with HSS profile knives and coated HSS finger joint cutters.

#### Program for the production of fingers for PUR glueing:

The HSS-tipped tools for finger jointing lines without cross-cutting device are applied for the production of longitudinal joints. The advantage of the cutter lies in the cutting angle of the single fingers. This cutting angle is flatter than in the case of conventional finger joint cutters and is excellently suitable for the glueing with PUR glue.

On the one hand the special feature of the finger joint cutterhead is the cutterhead version with exchangeable HSS knives.

On the other hand, most of the common knives can be used, no special design is neces-

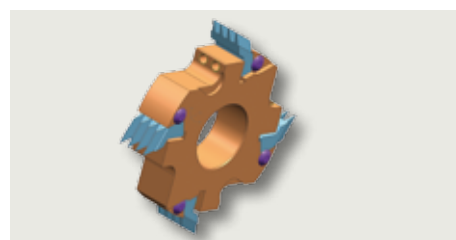
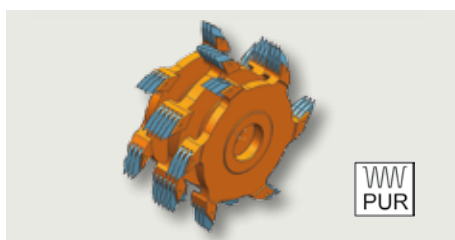
sary. On request, the cutter for finger jointing lines for the machining of soft and hard woods can be delivered with a LEUCO Topcoat coating which prolongs the edge life up to 3 times.

The new HSS-tipped finger joint cutter with LEUCO Topcoat coating prolongs the edge life up to 3 times.

Thanks to the coating, both cutting pressure and knife breakage are reduced. The coating is permanent and can be resharpened without problems.

The manufacturing quality of finger joint cutters is one of the most important factors to obtain quality for the production of finger joints.

Process-safe solder connections, polished hubs ground in the micrometer range, high balancing quality and sharpening know-how are factors LEUCO customers can rely on in the case of the new finger joint cutters, too.



Cutterhead for fingers for PUR glueing (left) and cutterhead with exchangeable HSS standard knives

## COMPLETE FINGER JOINT CUTTER PROGRAM OF LEUCO

Application / Design		Finger Joint Cutters									Disc-Type Finger Joint Cutters							Cutterhead			
		Finger Joint Cutters HS			Finger Jointing Cutters HS Solid 34			Finger Joint Cutters HW			Finger Joint Cutters HW soft wood	Finger Joint Cutters HW hard wood			Finger Joint Cutters HW exotic wood			Finger Joint Cutterhead			
Glueing	normal	++			++			++			++	++			++			++			
	fiber free	++			o			o			o	o			o			o			
Wood types	coniferous wood	++			++			o			++	++			o			++			
	deciduous wood	+			++			++			-	++			++			o			
	tropical timber	o			+			+			-	+			++			o			
Profile length	with hogger saw blade	10/11	15/16,5	20/22	10/11	15/16,5	20/22	10/11	15/16,5	-	10/11	10/11	15/16,5	-	10/11	15/16,5	-	-			
	without hogger saw blade	10/10	15/15	20/20	10/10	15/15	20/20	10/10	15/15	-	-	-	-	-	-	-	-	10/10	10/11	15/15	15/16,5
Coating possibilities	non-stick coating	-			-			-			topcoat	topcoat			-			-			
	edge life coating	topcoat			topcoat(*)			topcoat(*)			topcoat/topcoat plus	(*)			(*)			topcoat			
Edge life comparison	uncoated	100%			up to 300% - 400 %			400% (increased risk of breaking)			100%	100%			100%			100%			
	topcoat	300%			> 500 % (*)			(*)			200%	200%			-			200% - 300%			
	topcoat plus	-			-			-			> 400%	(*)			(*)			-			

\* on request

++ very well suited + well suited o possible -- not possible / not suited



# NONSTICK, WEAR REDUCTION OR HEAT PROTECTION

LEUCO coating of tools with system



**LEUCO topcoat:** Coatings of the cutting edges  
**LEUCO OXYTOP and PTFE:** Coating of the tool body to protect from corrosion and adhesion.

## Not all coatings are alike

Before a tool will be coated it is already operational. The treatment with a coating only makes sense if the benefit increases. Because coating does not mean to make a colored surface to a operational tool. So you should understand the problem tool / material / customer expectations (= performances):

pers, it is better to work on the quality of sharpening for solid carbide.

„Non stick“ applied to the substrate, e.g. to the sawblade body will prevent clogging and unwanted heating.

„Wear reduction“ is obviously the primary objective of coatings technology. Degradation phenomena of tungsten carbides are well known: adhesive wear, abrasion, corrosion or

## THE FOLLOWING TABLE SETS FOR DIFFERENT TYPES OF TOOLS, WHAT IS THE FEASIBLE, USEFUL AND EFFECTIVE FUNCTION OF A COATING:

Type of tool	Aim of the coating				
	nonstick (teeth)	nonstick (body)	wear reduction (teeth)	wear reduction (body)	heat protection
TCT sawblade	✓	✓	✓	✗ (1)	✓
PCD sawblade	✗	✓	✗	✓	✓
Finger jointing cutter	✓	✗	✓	✗	✗
Finger jointing disc	✓	✗	✓	✗	✗
TC endmill	✗	-	✓	-	✗
Turn over knife	✗	✓	✗	✓	✗
Brazed cutter	✗ (2)	-	✓ (3)	-	✗
PCD hogger	✓	-	✓	-	✗
TC scraper	✓ (3)	-	✓ (3)	-	-
PCD scraper	✗	-	✗	-	-

✓ = feasible and effective ✗ = feasible, but without any effect and therefore not recommended

(1) Evtl. for hogger saw blade; (2) For NF and plastics: grinding quality is more important than a coating.

For solid wood: yes; For chipboard, abrasive material: rather no; (3) For NF and plastics: grinding quality is more important than a coating. For solid wood: no; For chipboard, abrasive material: yes

**The tool:** its components will determine the type of coating: brazed solid carbide or piece; cutting material of carbide or HSS

**Workpiece:** for the choice of the most suitable grade of carbide, the material cut, milled or drilled directs the choice of the coating. If a material is particularly abrasive or sticky, the most effective coating can vary.

**Performance:** To improve this, we have to determine the reason for failure on the tools: wear, contamination or deformation.

diffusion. Applied on a carbide substrate with medium hardness of 1800HV, a coating can double the hardness; for TCT saw blade, brazed cutter, finger jointing tools; scraper knives. The heat resistance or the possibility to keep the hardness at high temperature is effective to and maintain the hot hardness of some coating is effective on finger jointing cutters and on solid carbide mills.

„Wear reduction“ applied to the support, is useful for tools that have a very high lifetime (PCD hogger, PCD saw blades) or in the case of highly abrasive materials (gypsum, cement).

„Non stick“ applied to the edge of the tool will be particularly sought when solid wood will be milled or profiled: finger jointing tools, TOK, knives. For plastics, except for scrap-

Take advantage of the LEUCO know-how about coatings.



LEUCO System Philosophy

## LOW NOISE WITH SYSTEM



### SAWING



### JOINTING



### EDGE TRIMMING



**AUDIBLE:**  
**LEUCO LOWNOISE TOOLS REDUCE THE NOISE LEVEL WHEN IDLING AND DURING OPERATION.**

Depending on the tool type different measures are applied.

- noise reduction via material choice / tool body weight like steel/aluminum
- tool body treatment e.g. expansion slots and laser ornaments
- aerodynamic design of tooth geometries and gullets



LEUCO System Philosophy

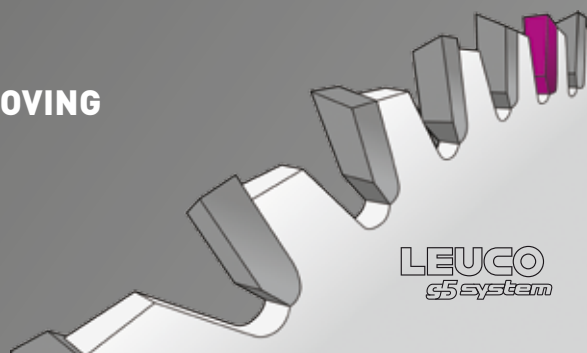
## g5-SYSTEM

### DIVIDING

### SIZING

### TRIMMING

### GROOVING



**EXCELLENT CUTTING:**  
**THE SUCCESSFUL LEUCO G5 TOOTH COMBINATION CONSISTING OF ATB RIGHT-LEFT-RIGHT-LEFT AND A FLAT TOOTH WAS TRANSFERRED TO FURTHER APPLICATIONS.**

#### g5-SYSTEM STANDS FOR

- excellent cutting quality
- low cutting pressure
- thin kerfs
- long edge lives
- low noise level

#### PERFECT FOR USE IN

- wood-based panels, solid wood, plastics, material mix, lightweight construction
- table saws, panel sizing saws, cross-cut saws, CNC





Excellent cutting quality achieved with a G5 sawblade without counter-piece

User report

## „HIGH FIVE“ FOR EXCELLENT CUTS

Four alternate top bevel teeth followed by a flat one – that is the LEUCO line up for extremely precise and clean cuts. Much ado about nothing? That is exactly what dds is investigating with, and at the user and cabinet manufacturer WOCHNER.

The first G5 experience for MD and owner Wolfgang Wochner and his staff was two years ago, when LEUCO ordered cutting samples in various materials for the LIGNA fair. LEUCO supplied the latest developed sawblade to cut the samples. The idea was to prove the precision and quality of the cuts in various materials and profiles. Even when cutting against the grain and without a counter-piece, the cutting quality is absolutely chip-free.

Approximately 50 people are employed by the expert in cabinet making and exclusive timber products in Rosenfeld-Heiligenzimmern. Among the clients are clockwork manufacturers and producers of luxury goods that have wooden components and/or wooden surfaces. They all value the quality and precision of Wochner products, exactly what they expect from their own products, too.

Whether cutting with or against the grain, the G5 gives such a precise and fine finish – it even saves additional treatment. The cutting surfaces have a fine finish and are immediately ready for lacquering or painting. With end cuts across the grain there is no chipping and therefore no additional grinding is required as is necessary with conventional sawblades. The cutting quality is also identical on both sides. The production process is easier and more efficient.

### Special tooth configuration

The secret is the „group-of-five“ tooth configuration, combining four alternate top bevel teeth (with shear angle) and one flat tooth.

The precision achieved convinced Wolfgang Wochner and his staff immediately, particularly because they process expensive and exclusive solid wood for grandfather clock cabinets, exclusive side boards and cabinets, jewellery boxes, automatic watch movers, Humidors, desks and safe casings. The original and main product still is, however, solid wood grandfather clock cabinets.

### Nice and easy

WOCHNER have installed the G5 sawblades on various table saws as well as on their 4 and 5-axis CNC work centres. The employees at these machines are not only satisfied with the quality achieved, but also with the reduced noise emission of the sawblades. Specific laser ornaments reduce the vibration of the saw body and therefore the noise emission. According to LEUCO the noise level is reduced by up to 10 dB compared with conventional sawblades. The human ear perceives the noise to have been reduced by 50% when a reduction of 3 dB is achieved.

### Low cutting pressure

According to WOCHNER, the reduced kerf of 3 mm for format sawblades and 4 mm for panel sizing sawblades is an additional advantage, because smaller cutting widths mean less cutting pressure. This effect becomes evident when contemplating the power consumption of the machines and the quality, especially when cutting veneer or paper-faced wood-derived panels, materials that are frequently in use at WOCHNER.



Groove cuts on CNC work centre. WOCHNER carries out inclined cuts.

### Universal tool

The G5 sawblade also shows its wide range of cutting applications when cutting honeycomb lightweight panels, or when cutting thin plastic profiles. Wolfgang Wochner appreciates the fact that no additional sawblades are required for these types of materials. In addition the G5 sawblades are also a top solution for groove cuts. It is available as a standard item in cutting widths of three, four and 5 mm. It is also very important that he can cut even carbon foil panels with the same sawblade – a lamination used for high-end loudspeaker cabinets.

pictures: Wolfgang Rüter. Extract, Original article was published in the magazine „dds“, issue 4/2103



Tight: Whoever has had to do a mitre joint by hand, knows what it takes to achieve such a result.



Innovative program of TC tipped panel sizing saw blades

## OVERVIEW PANEL SIZING SAW BLADE PROGRAM

LEUCO sets standards for quality, edge live and noise level



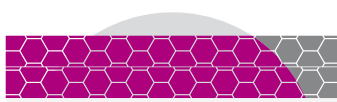
### SPEEDCUT PLUS

The powerful saw blade for stack cuts with high running meter performance is available from stock in diameters from 480 to 730 mm.

The maximal cutting height is 215 mm.



SPEED-CUT



### UNICUT g5-SYSTEM

For excellent cutting results in plywood boards, wood core plywood, veneered or paper-laminated panels and – due to the very low cutting pressure – also in honeycomb panels. Cutting width 4.0 mm. The UniCut g5 is available from stock with diameters from 350 to 450 mm. Matching the main saw blades there are scoring saw blades with cutting width 4.0 - 4.8 mm.



UNI-CUT



### UNICUT / UNICUT PLUS

The multi-functional saw blade for pressure beam machines is available from stock in diameters from 350 to 450 mm.

Excellent cutting results can be obtained in single sheets and stacks up to 80 mm.



UNI-CUT



### FINISHCUT PLUS

For finish cuts in single sheets, best cutting edge quality.

Stack cuts are possible to a maximal cutting height up to 100 mm.

Available ex stock with diameters from 280 to 520 mm.



FINISH-CUT

## THE RIGHT ONE FOR EACH APPLICATION!

Cutting quality, volumes, material variety ... the LEUCO Panel Sizing Saw Blade program offers the opportunity to meet these demands in an individual way. LEUCO improved 2012/ 2013 the whole range of TC tipped panel sizing saw blades with a high-performance cutting material, developed the grinding technology for less surface roughness and optimizes the tool bodies.

**The benefits are: no tooth breaking in spite of extremely wear resistant tungsten carbide, increase of edge lives by approx. 30 % as well as audible reduced noise when cutting or idling by 4 dB (A).**

## LOWNOISE SAWING

What does „LowNoise“ & „LowVibration“ mean?

A saw blade is noise-reduced if a quick dampening and thus calming of the saw blade in the case of external stimulation is reached. In practical tests you knock against the saw blade and if you hear only a thud, the saw blade is vibration-reduced and running smoothly when cutting and idling. This result is reached by laser ornaments and additional expansion slots.



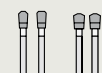
Due to the improvements through the new saw blade range the noise at work and when idling is reduced to 4 dB(A).

## ESSENTIAL FEATURES OF THE HW-PROGRAM

SpeedCut-, UniCut- and FinishCut-Family

### SPEEDCUT PLUS UNICUT PLUS FINISHCUT PLUS

- Carbide grade HL Board 03 plus
- Tooth shape TR-F-FA with SpeedCut Plus and UniCut Plus
- Tooth shape TR-TR with FinishCut Plus
- Laser ornaments and expansion slots



### UNICUT

- Carbide grade HL Board 03 plus (TR-F)
- HL Board 06 (WS)



### UNICUT g5-SYSTEM

- HL Board 03 plus
- Cutting geometry „g5-System“
- Laser ornaments and expansion slots

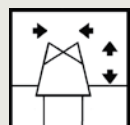




## NEW CONICAL „ECO“ SCORING SAW BLADES

Achieve more with less!

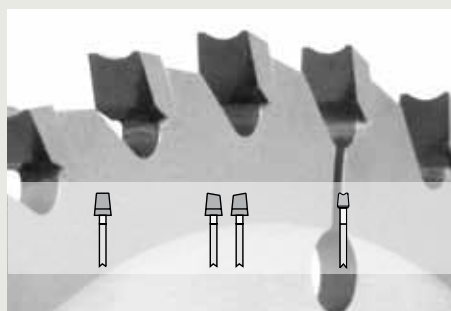
Visibly less tungsten carbide is used for the tipping of the new conical scoring saw blades than in the case of other scoring saw blades. Thus, tungsten carbide is saved which reduces the price for these tools. Nevertheless, the number of possible resharpenings remains constant in spite of the smaller tipping height. The scoring depth of the new scoring saw blades is smaller than usual; e.g. in the case of a conical scoring saw blade with hollow back with a cutting width of 5.2 mm requires now a scoring depth of only 1.6 mm whereas previously 2.4 mm were necessary. Cutting pressure is reduced, current consumption decreases.



Adjustment of the scoring depth in relation the scoring widths:  $\pm 1$  mm height adjustment results in a change of cutting width by  $\pm 0,21$  mm

The new program is equipped with a new higher quality carbide grade and offers edge lives increased in average by 20%.

The new conical scoring saw blades are suitable for all common table and panel sizing saws. They are offered with a flat tooth, ATB or a hollow back tooth.



### SAWING

## LEUCO HIGHLINE

The new quality standard by LEUCO

LEUCO  
highline

With immediate effect, LEUCO offers the most popular sizing saw blades with different tooth rows and tooth configurations for the machining of the most various materials - e.g. solid wood, particle boards, composite materials - in the new LEUCO quality standard „LEUCO Highline“. This quality standard is also available for scoring, trimming and NF saw blades. It replaces the previous LEUCO quality level „Proline“.

Saw blades of the „LEUCO Highline“ quality standard have a multitude of new features in common:

- All saw blades are heat-treated and thermically adjusted for optimal runout tolerance.

- HW-tipped saw teeth in ultra grain quality:
- „HL Board 06“ for sizing saw blades, „HL Board 10b“ for trimming and NF-saw blades
- Special laser ornaments for vibration dampening and a clearly perceptible noise reduction.

With the LEUCO Highline saw blades, the customers benefit from the excellent cutting results with convincing edge lives. The new Highline Sizing and Scoring Saw Blades by LEUCO convince through an excellent price-performance ratio and are the ideal tool for users of standard saw blades.

## SAW BLADES FOR SAW MILLS

Complete range of products by LEUCO

The LEUCO saw blade program stands for excellent results with regard to edge life, cutting quality and process safety in saw mills.

The advantages of the saw blades are

- Surface treatment of the tool bodies for less friction. Less friction means that less heat can penetrate the tool body. Thanks

to the surface protection less resin can be deposited on the tool body.

- Tool body quality of the program: lower risk of sawing untrue and thus higher process safety
- The saw blades are perfectly suitable for sawing frozen wood.



EDGE LIFE

CUTTING QUALITY

REDUCTION OF CUTTING PRESSURE

LOW NOISE, LOW VIBRATION

RESOURCE EFFICIENCY



## Overview clamping systems

# CLAMPING ELEMENTS FOR CNC TECHNOLOGY

## Which is most suitable for you?





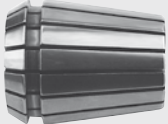

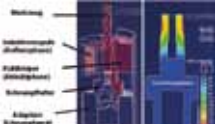
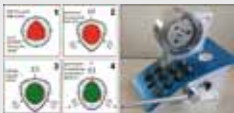
The main task of a clamping system is to create a link between tool and spindle regardless whether it is a shank-type tool or a tool with bore. It has to be made sure that the necessary torque can be transmitted and that

during operation the emerging longitudinal and lateral forces can be absorbed.

In addition, the clamping element must create a perfectly aligned link to the tool as well as to the motor spindle.

The LEUCO range of clamping elements covers applications with low demands as well as high-end applications.

## LEUCO CLAMPING SYSTEM FOR STATIONARY ROUTERS

Clamping System	Draw-in collet chuck	Hydro Clamping System ps-System	Heat shrink-fit chuck	Power shrink-fit chuck Tribos
				
Operating principle	The collet chuck (1) is cone-shaped on the outside and has a cylindrical bore where tools are inserted. The collet chuck is radially slotted. The round head screw (2) clamps the collet chuck in the draw-in collet chuck (3); thus the tool is fixed.	The closed hydraulic system allows highest clamping forces. By means of an allen wrench the liquid (1) is squeezed and compresses the cylindrical bore (2). This creates high clamping forces which fix the tools safely.	In a special shrinking device the chuck is warmed by induction to up to 250° so that the clamping area is widened and the tool can be inserted. During the following cooling process the clamping area shrinks and the tool shaft is clamped.	
				
Concentric accuracy	0.02 to 0.06 mm	< 0.006 mm	< 0.003 mm	< 0.003 mm
Max. RPM	18,000 min <sup>-1</sup> (24.000 min <sup>-1</sup> )	30,000 min <sup>-1</sup>	30,000 min <sup>-1</sup>	40,000 min <sup>-1</sup>
Sense of rotation right/left	Righth/Left suitable (Attention with large Ø diameter and heavy tools!)	Righth/Left to be used without problems	Righth/Left to be used without problems	Righth/Left to be used without problems
Handling	Simple handling in cost-effective tool holders by means of hook wrenches	Very simple handling, impressurement without effort by means of hexagonal allen wrench	Complex handling by means of shrinking device. Trained staff and separate room (high temperatures when clamping) necessary.	Simple handling by means of hydraulic press
Clamping errors	Operating error possible when building up the clamping force. User determines the torque.	Operating error improbable when building up the clamping force.	Operating error improbable when building up the clamping force.	No operating error when building up the clamping force.
Smooth running	good	excellent	excellent	excellent
Cutting quality	good	excellent	excellent	excellent
Edge life	good	excellent	excellent	excellent
Recommended application area	Low demand applications (e.g. drill bits, Z1-shank-type cutters).  Cost-effective and flexible clamping element.	High demand applications.  User-friendly clamping element.	High demand applications.  Shrinking device and possibly additional induction coils for larger tool diameter necessary.	High demand applications.  Very slim design.

Solutions for chip optimized processing on stationary routers

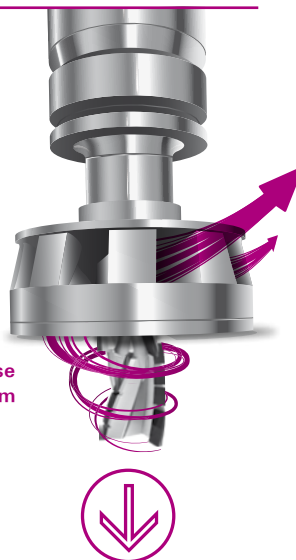
## LORD OF THE CHIPS

LEUCO Chip Meister (CM) tools, extraction turbine „AEROTECH Universal“

The «Lord of the chips» is characterized by maximum gullet size designed to optimize the chip flow. The CM concept was realized for the DP Nesting High Performance Shank-Type Cutters, too.



The chip extraction turbine AEROTECH Universal allows the use of shank diameters from 6 to 16 mm.



The directed chip flow thanks to the optimized „LEUCO CM“ cutting edge geometry can be seen during the milling process on a machine.

Long edge lives, excellent cutting quality in the top layers and on the edges combined with high economic efficiency. These are the demands on high performance shank-type cutters.

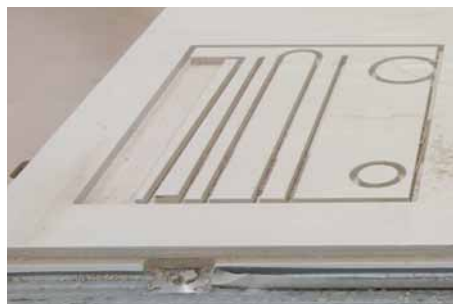
**In this case, the «CM» cutter concept developed by LEUCO takes effect.**

CM stands for «Chip Meister», casually formulated «Lord of the chips».

By means of this measure the chip caption degree could be considerably improved.

This means increased edge lives, increased machine availability and at the same time excellent workpiece quality. The advantages for the customers are increased productivity and economic efficiency of the machine.

The worse chips which are created by milling are transported through the cutting gap – especially in the case of dividing cuts (Nesting!), the bigger the effect of double hogging. This inevitably leads to increased heat development and thus accelerates the blunting of the tool. The CM cutting edge and gullet design



Remaining chip quantities when nesting with CM Cutters & AEROTECH

improves upward chip transport and keeps the tool cooler.

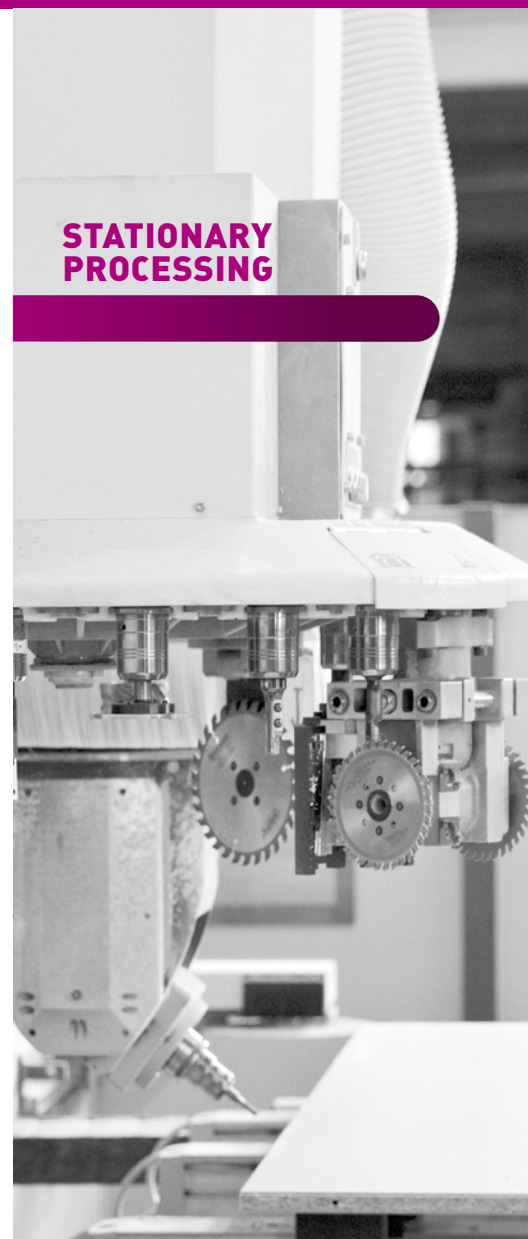
**Clean environment thanks to the chip turbo**

Another step to optimize the whole system of CNC operators is made by the use of the AEROTECH Universal. The turbine-like clamping and chip removal system funnels the chips lead upwards by the CM cutter and guides them through integrated openings to the dust extraction of the machine.

The impressive effectiveness of the system is shown by the small quantity of chips remaining on the workpiece or in the cutting gaps. In addition, the cooling effect which is created has a positive effect on the edge lives of the tools.

The special features of the AEROTECH take effect particularly in Nesting processes but also in the case of chip- and dust-intensive processes such as in series production of shutter grooves, door fillings, pockets in stair stringers, grooves or pockets in acoustic panels, milling of MDF or machining of Eternit panels.

## STATIONARY PROCESSING



SMART CNC

DUST PREVENTION

CONCENTRIC ACCURACY

PRODUCTIVITY INCREASE

TOOTH GEOMETRY





## SOLUTION FOR „HARD MATERIALS“

LEUCO Saw Blades „UniCut PN“ achieve smooth surfaces like planed

The best way to machine materials such as fiber and mineral composite materials as well as MDF and hard materials is by using diamond tools. By means of diamond, edge lives are reached which would not be possible using carbide saw blades.

Generally, standard saw blades have one disadvantage in these applications: They are designed for an optimal quality of the edge to the top layer. The narrow surfaces are not



Tooth diagram „positive-negative saw blade“



Above: clean cut thanks to pos-neg saw blade  
Below: cut with standard saw blade

considered. **Here is the optimal solution for this problem: The LEUCO Positive-Negative Diamond Saw blade - the quality saw blade.**

### Features of the positive-negative Saw blade

Thanks to the combination of two different tooth configurations on the saw blade, the cutting results are optimized. The teeth are positioned in a group of 7 teeth: 5 quality teeth and 2 pre-cut teeth. The saw blade cuts easily thanks to the reduced number of teeth. Compared to a standard saw blade, the result is visibly and palpably better.

Thanks to the peeling cut, a very smooth and plane surface with superior surface finish is generated. Postprocessing is clearly reduced or is no longer necessary at all.

Compared to particle boards, so-called „non-wood materials“ have uncoated edges. This means that the edge to the top layer and the edge surface have to be chip-free and score mark free. With the right tools, „non-wood materials“ can be cut without problems on woodworking machines in finish-quality without postprocessing.

NEW in the catalog

## HIGH PERFORMANCE DRILL BIT...

... with solid carbide body, D 10 mm now with length adjusting screw

Thanks to its special tooth geometry, the through hole and dowel bit works with less cutting force, cutting pressure and heat development. LEUCO customers which have this drill bit already in operation are very satisfied with the drilling quality and the long edge lives also in composite materials.

Recently, the VHW High Performance Drill Bitt with 10 mm diameter is available with a length adjusting screw and thus can be used for even more application cases on stationary boring machines, CNC machining centers and automatic boring machines.



Perfectly suited for drilling in solid wood, wood-based panels and composite materials.

## IT IS THE RIGHT TOOL CONCEPT THAT COUNTS

Tools for the machining of lightweight panels



Athletics means sophisticated techniques of running, jumping and throwing. The LEUCO lightweight construction athletes stand for technique and concepts with HW and DP-tipped tools for sawing, milling, drilling and hogging.

It is important to analyze the application and consider the demands.

### The decisive tool criteria for the machining of lightweight panels are:

- I Homogeneous construction of the panel or cavity system panels
- I Edging on panels or special techniques

such as Support Edge or Double Edge

- I Top layer in laminate thickness (< 1mm) or HDF top layer (> 2mm)
- I Material thicknesses of 16 mm up to > 100 mm

**Above all, the decisive tool criterion for the machining of lightweight panels is the reduction of cutting pressure by means of:**

- I Reduction of the cutting widths
- I Aggressive tooth geometries, e.g. hogger with positive hook angle and increased use of shear angles
- I Combined cutting materials for combined workpiece materials
- I Adapted feedrate per tooth for less stable panels, but also larger cutting widths and cutting heights.

For lightweight construction the same is true as in the processing of conventional wood-based panels: The more precise the preparation, the better the result - and work becomes easier with the right partners. Challenge us with your specific application!

Examples light-weight panels:

AirMaxx®



Dendrolight®



Honey comb panel



## LEUCO – SERVICE PROVIDER

...more than just a tool!

In the tooling industry, the development of the tool manufacturers and sharpening service professionals to service providers is emerging ever more clearly. Parallel to tools and sharpening services, service provisions are now indispensable. True to the company philosophy - innovative - trend-setting and reliable - LEUCO provides its customers with tools that are specific to their needs and requirements, depending on the application and the material to be processed.

Not only is the correct tool selection important for LEUCO, but also the high quality repair and sharpening service plays an important role. As well as the sharpening expertise among our employees, modern high-tech equipment guarantees the worldwide availability of tools in manufacturer quality.

LEUCO has been offering a diverse range of module based services for a number of years. Customers can select single components, or the entire service package.

Different invoicing models, or a gradual, modular tool management are the selections a customer can make depending on the application.

### What are LEUCO's invoicing models?

First of all, there is the **consignment stock**. This enables the customer to have a stock of tools at their factory. A tool can be taken from stock when it is needed in production, and then the customer receives an invoice for the tool.

**Life cycle invoicing** is a second alternative. The customer is invoiced according to the sharpening frequency, i.e. the customer pays a percentage of the new tool cost at the same time as paying for the sharpening service.

Last but not least there is also the so-called „**LEUCO-Leasing**“. In this interesting model, LEUCO places the tool at the customer's disposal. The tool remains the property of the manufacturer - the customer is invoiced for produced units (pay-on-product).

### Gradual, modular tool management

This is the first step of a special visualisation - the LEUCO colour code scheme. This is a colour guiding scheme for tool, stock position and machine that provides a certain transparency for customer tool management. The benefits are clear - a clear improvement in the tool acquirement and tool provision process.

### How does this system work?

Each tool has a code consisting of a colour, which defines the tool type, and a letter, which defines the position on the machine at which the tool is required.

Additionally, each tool has an accompanying card including a colour code; this colour code is also allocated to a stock position, and a machine position for clear and easy recognition. If required, LEUCO can assist the customer in developing a concept for their stock system, as well as helping to implement it. It is also possible to retrieve a stock balance from the ERP system at any point in time, in this way orders can be given in time to re-stock, so that the customer has a constant supply of tools. The danger of a production stop is ruled out entirely.

Based on these evaluations, useful information about the tool and its use can be obtained. At first it is information about the total amount of processes achieved with the tool or tool life that comes to mind. However, just as interesting is the actual number of re-sharpening compared to the pre-defined sharpening quota.

These parameters are extremely important for the further development of tools and therefore also play a crucial role in the manufacturing process optimisation at the customer. The focus is to minimise tool change and optimise set-up time, both contribute noticeably to higher efficiency in production processes.



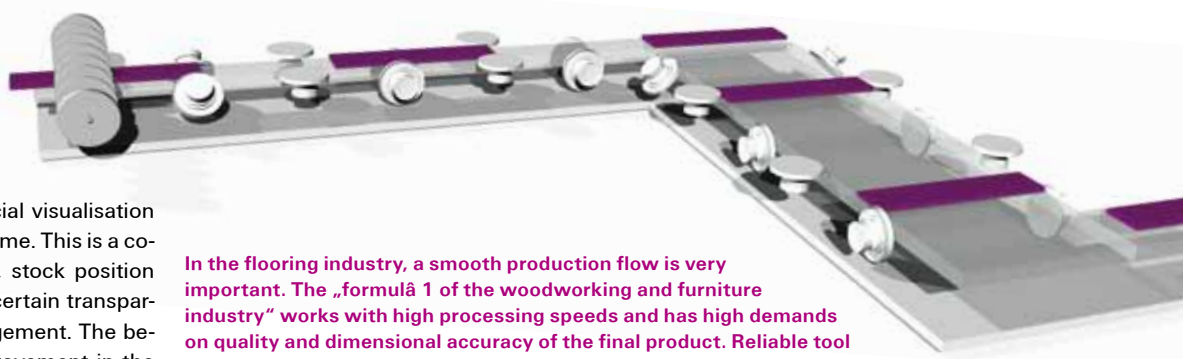
LEUCO offers a diverse range of module based services. The customer can either select single components, or an entire package.

### Why should flooring manufacturers take advantage of LEUCO services?

In the past few years the flooring manufacturers, the **formular1** in the woodworking industry, have been using the LEUCO leasing invoicing module. The module is combined with a co-ordinated tool management system. In our experience, this is a long process, which gives both sides the opportunity for a sustainable and on-going process development.

Such a module must be interesting for both sides i.e. customer and tool manufacturer. The following rule of thumb applies - the greater the capital commitment and the more assessable the required product spectrum, the more interesting this module can be. These parameters are very often met by the flooring manufacturers.

Years of successful partnerships in this sector, confirm LEUCO as a solution orientated and competent partner.



In the flooring industry, a smooth production flow is very important. The „**formular 1** of the woodworking and furniture industry“ works with high processing speeds and has high demands on quality and dimensional accuracy of the final product. Reliable tool logistics and correct use during assembly of the aggregates are therefore of equal importance to the flooring industry as tool accuracy.



iBlade – the tool Intelligence

## TRANSPARENCY AND COST CONTROL

The LEUCO „iBlade“ is a comprehensive tool-data tracking package

The desire to know all the exact details of tool performance and cost, is as old as the history of tools. How long has the tool been working on the machine? How many meters per hour does it process? How often has it been re-sharpened? What are the tool dimensions after sharpening? Companies have been committing a lot of time and effort to compiling Excel lists, databases and accompanying documents for years, in order to keep track of this data.



By the iBladeReader data is read from the chip or uploaded to the chip

### LEUCO heralds a new era with its RFID-system „iBlade®“

The system consists of a RFID-Chip (Radio-Frequency Identification) in the tool, an iBlade® data reader and the iBlade® software. The chip can store up to 30 sharpening cycles plus additional information. The chip can be installed in nearly every tool. The iBlade® -chip is resistant against external disturbances such as magnetic fields, ultrasound and temperatures up to 150°. The iBlade® Reader can read and write data at a distance of up to 3mm. The reader can be connected to the computer system via either USB or Bluetooth, making it extremely user friendly.

The iBlade® provides a new concept in the wood and furniture industry, whether in through-feed or stationary processing machines, whether for industrial or craft businesses. The decisive factor is the company organisation and the desire for transparency of tools.

**iBlade®**  
the tool intelligence



With the new „RFID-System iBlade“ LEUCO provides its customers with a system, where data stored on the chip in the tool can easily be transferred to a PC and then processed using the i-Blade software, whether as protocols, analysis, or use and production flow optimisation.

## BLUE COMPETENCE

LEUCO has always stood for sustainability

Blue Competence is an initiative for innovative, environmentally-friendly product processing, product design and ecological technologies in all branches of the German machine manufacturers association (VDMA).



We, as a tool manufacturer, consider ourselves responsible to provide the wood processing industry with solutions for reduced consumption of resources and energy.

[www.leuco.com](http://www.leuco.com)

### Blue Competence – how does it work?

All associated companies publish their specific reports and solutions for this current high priority subject. This task is supported by directives from the VDMA as the head organisation, and its sub-organisation “wood”. Strict sustainability criteria and standards must be adhered to by all the associated companies.

### How does LEUCO implement Blue Competence?

LEUCO does not regard the subject of sustainability to be a trend or just something to talk about – it is and has been for a long time an important guideline in the company's history. For decades we have been engaged with the task of sustainability and the combined task of protection and improvement of the quality of life. Prominent highlights for LEUCO sustainability are Duplovit saw-blades, i-system tooling, quick clamping systems and hogsers.

**BLUECOMPETENCE**  
Alliance Member

### What does Blue Competence mean for LEUCO's customers?

- | Efficient use of raw materials within the tool production.
- | Optimum utilization of the DP cutting material with p-system tools.
- | Optimized carbide grade and carbide dimensions achieve a better tool life while wasting fewer raw materials on the new LEUCO scoring sawblades.
- | Reduced reject ratio for our customers when using high quality and high performance tooling systems and therefore reduced costs per piece.
- | Significantly reduced noise- and dust emissions, for example by using LowNoise and or Chipmeister system tools.

On [www.bluecompetence.net](http://www.bluecompetence.net) the VDMA publishes more information about linked partner associations and companies.

**LEUCO**



LEUCO Poland



## INNOVATION AWARD FOR LEUCO POLAND

Award for the „LEUCO p-System“

For several years, the Drema trade show in Poznań (Poland) grants awards to the most innovative products presented on the trade show.

This year, LEUCO Poland was granted the innovation award for the „LEUCO p-System“ by the exhibition company. The tool convinced the jury by the outstanding new technology of the tool itself, the application possibilities not possible so far and the achievable quality.



At the awards ceremony

LEUCO Ukraine



## 5 YEARS OF GROWTH AND STABILITY

Anniversary celebrations at LEUCO Ukraine! 5 years have passed since LEUCO Ukraine started to offer the complete LEUCO tool program, application consulting in the traditional „LEUCO Know-how“ way, and an excellent sharpening service. With pride we can say that there is no comparable sharpening service in the Ukraine, which offers a similar service for its customers. Furthermore, LEUCO Ukraine can sharpen the LEUCO p-System on site.



At our Kiev location we have over 20 employees working in production, service and administration. LEUCO Ukraine is a reliable partner for all major furniture producing and wood processing companies.

LEUCO USA



## NEW SERVICE-CENTER IN THE USA

LEUCO extends the service offer

The LEUCO daughter company in the USA, LEUCO Tool Corporation, extended their service net at the beginning of 2013. In Brea (California, near Los Angeles) LEUCO opened a new ServiceCenter for sharpening service and new tools. Above all, the nearby compa-



The new LEUCO ServiceCenter in Brea

nies will benefit as LEUCO can meet their requirements faster and in a better way. Southern California is an important base of the American furniture industry.

LEUCO China



## BEST SUPPLIER 2012

LEUCO China wins the supplier award by Homag China

LEUCO China won the „Supplier Award 2012“ granted by the machine manufacturer Homag Machinery China. LEUCO China clearly won the award among 150 suppliers.

Homag Machinery China applied a complex process to determine the best supplier which comprised among other factors the parameters quality, on-time delivery, price



At the awards ceremony

development, stock turnover, terms of business and service.

The staff of LEUCO China is happy about this acknowledgement that Homag Machinery China is satisfied not only with the tools but also with the overall performance.

LEUCO Russia



## TOGETHER ON THE WAY TO SUCCESS

Production of special profile cutters

Some time ago already, the production of diamond-tipped custom made tools started operations in Moscow. On-site, high-quality cutters are produced for Russian customers with short delivery times.

LEUCO Russia was founded in Moscow in 2005, developed successfully and owns apart from the new production also a service center with the most recent technical equipment and highly qualified employees.



The colleagues Sergei Skoptsov, Vjateschslav Sokolunin, Alexei Mordvinov and Anatolij Zajtsev (left to right) made a major contribution to the building of the DP special tool production in Russia.

The customers benefit from the knowledge of the experienced sales team in Moscow as well as from qualified sales partners all over Russia.



## THE NEW WWW.LEUCO.COM!

Perfect on all devices

LEUCO completely changed their online presence. With the clearly structured and modern new homepage LEUCO present themselves as a competent partner for premium tools for the woodworking and furniture industry on an international level.

The first page lists the newest information about LEUCO and gives a quick overview of the LEUCO contact data. The menu item „Products“ gives information as to the tools. The new menu item „Solutions“ provides a multitude of information around the tools, e.g. about specific applications such as through-feed and

stationary machining, door manufacturing, flooring and cutting materials used for the tools. Clicking on „Career“, qualified young people as well as professional and managerial staff can get an overview of LEUCO as an employer. In the Service menu item folders, catalogs and

videos can be downloaded. Whether you have a PC, tablet or smartphone - the display of the LEUCO homepage is optimal on all devices.

[www.leuco.com](http://www.leuco.com)



## FRANK DIEZ, NEW HEAD OF BOARD

LEUCO AG shows personal continuity at the top of the company group

Frank Diez is CEO of LEUCO AG with effect from July 01, 2012.

With Frank Diez changing from the Supervisory Board to the Executive Board, the shareholder families and the Supervisory Board show the personal continuity at the head of the company: Frank Diez has been an active member of the Supervisory Board since 1994 - he became Vice President in 1996 and since 2002 he has been President of the Supervisory Board.

Mr. Diez, representing the shareholders, had a decisive part in the development of our company during the last two decades. As CEO he will be responsible for HR, Finance, Production, Service, Research & Development and Supply Management.

Frank Diez is married and has 4 children. He studied law and economics at the Universities in Tübingen and in Reutlingen (Germany).



Frank Diez

## JÖRG REINER DIMKE, MEMBER OF THE EXECUTIVE BOARD OF THE VDMA

This is the first time in the 60 years of the LEUCO history that LEUCO is a member of the top management body of the VDMA.

„LEUCO is worldwide one of the leading manufacturers of precision tools for the machining of wood“, said Mr. Dimke. „The system partnership with the manufacturers of woodworking machines has a long tradition at LEUCO and is considered to be an innovation platform for our customers and also for ourselves. I am glad to contribute the LEUCO knowledge and our understanding of the markets to the executive board of the VDMA association.“

Since 2005, Mr. Dimke has been a member of the LEUCO executive board in charge for Marketing and Sales. Before joining LEUCO, he worked in top management positions of renowned globally operating companies.

The woodworking machine sector within the VDMA association (Association of German Machine and Plant Engineering Companies) represents 90% of the German manufacturers of machines and tools for woodworking.



Jörg Reiner Dimke



## About LEUCO

**DAS IST LEUCO**

Innovative, trend-setting and reliable –ww right from the beginning!

The company Ledermann & Co. was founded in 1954 by Willi Ledermann and Josef Störzer in Horb am Neckar / Germany. The LEUCO brand was born.

Today, almost 60 years later, LEUCO is one of the world's largest suppliers of carbide and diamond-tipped machine tools for wood and plastic processing. Wealth of ideas and technical know-how have been the heart of

LEUCO since the beginning. The product range includes circular saw blades, hoggers, bore-type and shank-type cutters, drills, clamping systems and inserts.

Sharpening service, application consulting and service packages bundled under the term „Tool management“ complete the spectrum. LEUCO sells via direct sales. Our customers are sawmills, building-, furniture-

and paneling-industry as well as interior finishing.

Internationally, around 1,100 employees work for LEUCO. Sales affiliates are in Australia, Belgium, England, Japan, Malaysia, Poland, Russia, Singapore, Thailand, Ukraine, USA and Belarus. Sales and production subsidiaries are in China, France, Switzerland and South Africa.

**LEUCO BRANDS YOU CAN RELY ON**

DUPLOVIT®





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