



LEUCO

p-system[®]

**LEUCO p-SYSTEM
TOOLS**

Peeling – the revolutionary wood
processing technology by LEUCO

New quality dimensions and
application possibilities.
Maximum efficiency.



www.leuco.com

IMPOSSIBLE WAS YESTERDAY

SAWING, PLANING, MILLING →



PEELEN

LEUCO
waysys®

waysys®

LEUCO is the first tool manufacturer
to realize tools with shear angles $\geq 55^\circ - 90^\circ$

We call these tools »LEUCO p-System«.

The process is called »Peeling«.

PEELING – THE REVOLUTIONARY WOOD PROCESSING TECHNOLOGY BY LEUCO



FEATURES

Wood processing standard: milling with shear angles of up to 54°

To date, the state of technology considers the positioning of the cutting edge under a shear angle as a „drawing cut“. This results from the fact that in the direction of cut, the wedge angle of a cutting edge with shear angle is smaller than the wedge angle of a cutting edge without shear angle. In fact, however, it is just an „inclinated“ cut.

Wood processing NEW: peeling with shear angle $\geq 55^\circ$

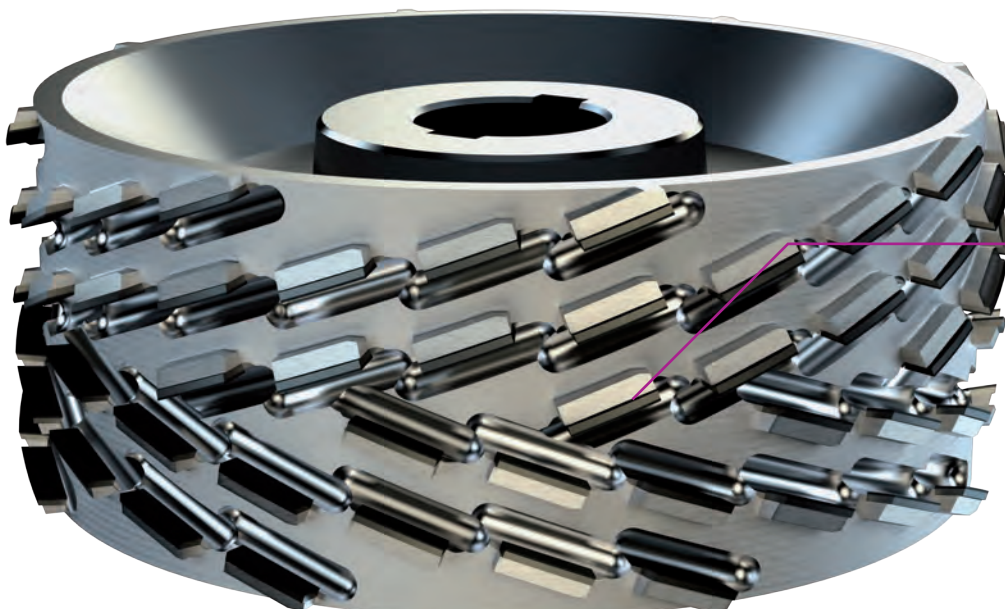
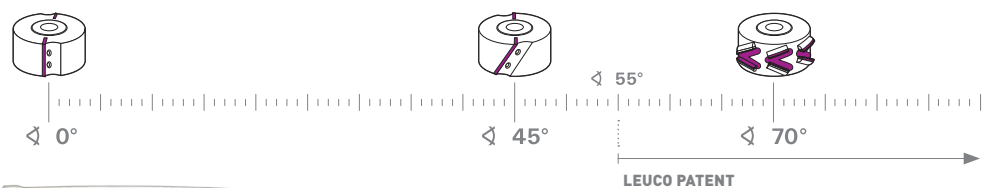
New and unnoticed by the technique is the real drawing cut with the cutting edge being positioned under a very large shear angle. Here, the cutting edge functions like a knife blade, really drawing. The features of the p-System are achieved by the interaction of the two influencing variables:

The features of the p-System are achieved by the interaction of the two influencing variables:

1. The reduction of the effective wedge angle by a large shear angle, i.e. drawing cut.
2. The movement of the cutting edge towards the material i.e. drawing cut. The tools do not generate a cutting process in the classical sense – rather a material removal which is similar to peeling.

Peeling with the LEUCO p-System stands for:

1. More than a punctual improvement with regard to cutting quality, edge life and economic efficiency.
2. A new type of wood processing apart from sawing, planing and milling
3. Increased range of applications for the user which have been considered as impossible so far



All LEUCO p-System stocked tools have an axis angle of 70°. LEUCO's patent covers axis angles from $\geq 55^\circ$ to 90°.

→ APPLICATION

LEUCO p-System tools are used for jointing, rabbeting, dividing, chamfering and grooving on stationary and through-feed machines.

→ BRANCHE

Universal application in the most various production areas such as corpus production, individual machining of linoleum, flooring or machining of high-gloss boards. Can be used by joineries as well as by industrial woodworking companies.

→ FEATURES

Uncommon, eye-catching optics of the tools due to the extreme shear angles (shear angles = 70°)

LEUCO DIA cutting edges

Peeled chips which are finer and lighter



Video about LEUCO p-System.
Get excited!

p-SYSTEM

TOOLS



LEUCO's system concept includes transfer of one tool's successful parameters to a whole group or family of tools.

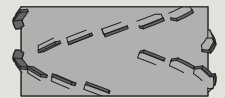
This means that there is not just a tool type with a 70° axis angle, but a large, systematic range of tools for various applications with the large axis angle of 70°.

Advantages of the system concept:

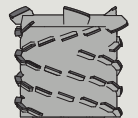
A group of tools and applications whose quality, range of uses and efficiency LEUCO customers can rely on.



• JOINTING



• CHAMFERING



• RABBETING



• GROOVING



• PROFILE CUTTING



p-system®



01

FINISHED!

MILLING WITH FINISHCUT QUALITY WITHOUT POSTPROCESSING

So far

In the case of multiplex and plywood, due to veneers glued on top of each other, cutting across and along the grain is made at the same time.

This produces a rough edge which had to be sanded so far.

Advantage

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

02

CHIPFREE

CHIP-FREE JOINTING OF VENEERD BOARDS

So far

Cutting along and across the grain of veneered boards has often caused edge chipping, particularly in the case of jointing of overlapping veneer.

Advantage

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.

03

HIGH-GLOSS

LONG EDGE LIVES IN THE CASE OF HIGH-GLOSS MATERIAL WITH PROTECTION FOIL

So far

As soon as the foil is no longer cleanly cut, the tools have been changed although the cutting quality of the edge is still o.k.

Advantage

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.

04

EXOTICS

FIBROUS AND EXOTIC MATERIALS

So far

Fabric coatings, leather, lightweight-wood core plywood made from ceiba or poplar are very fibrous materials; clean milling has been difficult or impossible.

Advantage

Thanks to the large shear angle the fibers are cleanly cut, often not even postprocessing is needed.

05

SAVE TIME

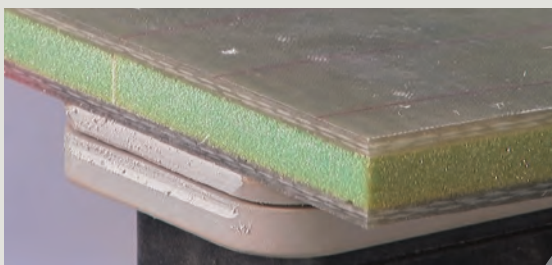
REDUCTION OF DOWNTIMES

So far

On working centers, downtimes have been caused by the change of cutters from right-hand rotation to left-hand rotation.

Advantage

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.



For highest precision

ZERO JOINT WITH LASER- / PLASMA-TECHNOLOGY



OPTIMUM QUALITY WITH p-SYSTEM

The most important advantages of edging by means of laser or plasma-technology are the jointless optics and humidity resistance of the edge. This becomes possible only when optimal jointing quality is achieved. Thanks to the cutting edges with very large shear angle, p-System tools cut the surface „like a pair of scissors“ with exceptional edge quality. Thanks to the perfect p-System jointing without micro chippings, the advantages of laser edging can in fact be benefited from.

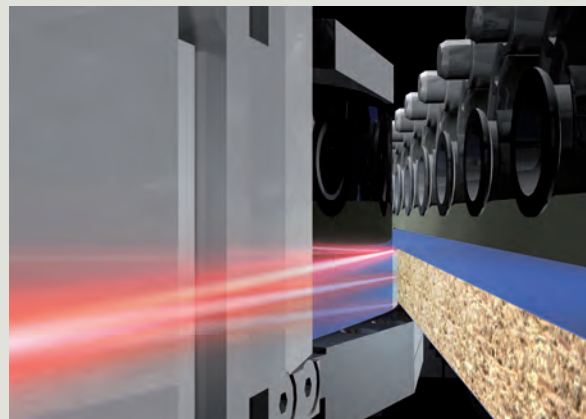


Photo: HOMAG Holzbearbeitungssysteme GmbH

» Even porous, dark and very difficult cover layers can be machined better than ever with the p-System. And the cutter is running, running, running... «

Office furniture manufacturer





ECONOMIC EFFICIENCY

$$= \frac{\text{PROFIT}}{\text{COST}}$$

WHY SHOULD I BUY A p-SYSTEM?

BECAUSE EVERY DEGREE OF SHEAR ANGLE MORE PAYS OFF!



THIS IS ECONOMIC EFFICIENCY

How can you calculate the economic efficiency of the LEUCO p-System tools?

You only have to consider the edge life in relation to the tool's shear angle. The edge life of a tool with a shear angle of 55° is twice as long compared to a common shear angle of 35° for instance. The p-System tool with a shear angle of 70° reaches 8 times the edge life. This was documented by the engineers of the LEUCO R&D department.

Why does each degree in shear angle count?

The edge life of tools is clearly increasing with larger shear angles. The cutting edge is exposed to less pressure. This means less wear and longer edge life.

THIS INCREASE OF EDGE LIFE BY ITSELF MAKES THE p-SYSTEM THE MOST ECONOMIC TOOL IN THE INDUSTRY SEGMENT.

How are resharpener costs of the diamondtipped LEUCO p-System tools included?

After resharpener, the tools reach the extremely long edge lives once again and additionally increase the profit.

FREE OF CHARGE ...

Apart from the reduction of tool costs and the increase in profit you will receive: Free of charge excellent cutting quality, reduced machine downtimes thanks to less tool changes, chip-free quality when cutting on end, new processing possibilities also for difficult materials and much more.

» No more chipping in the case of end-grain jointing. Not even after more than 1 million parquet scantlings!«

Flooring manufacturer

» The machining of multiplex boards with p-System tools does not longer require sanding.«

Manufacturer of table leaves

» Even if I were given the planing knives free, the p-System would be cheaper.«

Flooring manufacturer

SIX-DIGIT AMOUNT SAVED!

A large kitchen manufacturer produces the cabinet components on several production lines and processes pre-coated 16 mm and 19 mm particle boards. Production is made on through-feed machines with feedrates of up to 70 m/min. The customer's demand as to jointing is finish-quality as the edging of the panel is done directly afterwards. For approx. 2 years the kitchen manufacturer has been using LEUCO p-System jointing cutters with a shear angle of 70°. Detailed edge life analyses prove: compared to the previous standard jointing cutters this solution offers 1 million running meters per edge life which means 10 times the edge life of the standard cutters.

The production manager reports:

„We were able to reduce waste due to edge chippings in the decor by 80-90%. As well, machine downtime caused by the change of jointing cutters could be reduced by 90%.“

„THESE TWO FACTORS BY THEMSELVES ALLOWED SAVINGS IN THE SIX-DIGIT RANGE.“

Inspired, he sums up:

THE LEUCO p-SYSTEM PAYS OFF!



Machine concept: On one machine jointing is done without hogsers with and against feed. On another machine hogging is done with LEUCO PowerTec hogsers in a double hogging process. The next step is jointing with LEUCO p-System cutters.

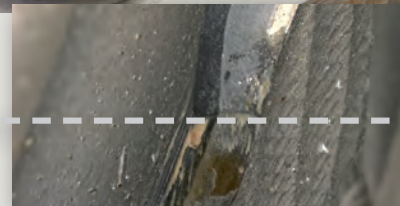
3,5 YEARS EDGE LIFE +

What did you do 3,5 years ago? LEUCO mounted a p-System tool for milling the long side of hard wood scantlings. The cutter which was in operation at the parquet manufacturer Bauwerk in Switzerland was stopped after 3,5 years only because of a steel pin in the wood. „It is true that planing knives are much less expensive compared to a p-System tool, but after 4,906,729 running meters and an edge life of 3.5 years the p-System proved highly efficient,“ says Paul Hehle of Bauwerk.

„The p-System was not resharpened. I only cleaned it from time to time.“

„The approx. 5 million running meter match the distance between Hamburg and Dubai. Each single cutting edge cut the distance between Leipzig and Göteborg“, explains Dr. Dressler from the LEUCO R&D Department. „Even if I was given the planing knives free of charge, the p-System would be more inexpensive,“ states Hehle. A parquet scantling processed with the damaged tool still shows an excellent cutting quality next to the damaged spot on the cutting edge. The microscope picture shows that next to the break the cutting edge is still sharp.

This means that the way back from Dubai to Hamburg would certainly have been possible without the steel pin. With all advantages.



Stop after 4,906,729 running meters only because of a nail in the wood. The microscope image show that next to the break, the cutting edge is still sharp.

p-SYSTEM

ADVANTAGES AT A GLANCE!



In classical wood-based panels and solid woods LEUCO p-System tools generate:

- **A BRILLIANT CUTTING QUALITY PRESENTLY UNMATCHED ON THE MARKET**
- **MOSTLY CLEARLY INCREASED EDGE LIVES THAN COMMON DIAMOND TOOLS**



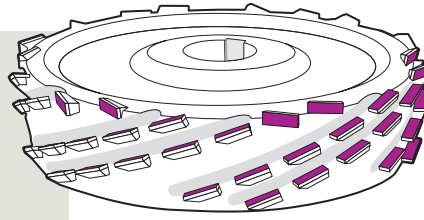
LEUCO p-System tools open new possibilities and cutting quality dimensions for:

- **PROCESSORS OF SPECIAL MATERIALS („MATERIALMIX“)**
- **PRODUCTION PROCESSES REQUIRING EXTENSIVE POST-PROCESSING**



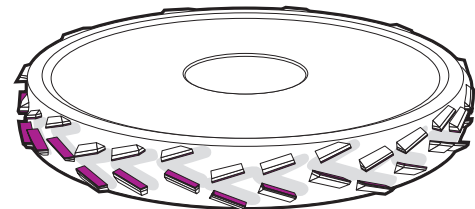
With the diamond-tipped LEUCO p-System tools, the edge lifes far exceed that of diamond-tipped tools with an axis angle up to 55°.

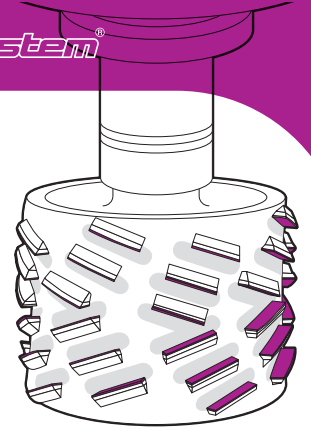
- **p-System stands for the greatest possible tool efficiency.**



LEUCO p-SYSTEM TOOL PRODUCTION IN HORB AM NECKAR

The new and – for the woodworking industry – revolutionary shear angle of $\geq 55^\circ - 90^\circ$ implies completely new production processes for the manufacturing of these tools. LEUCO meets these high demands concerning development, construction and production. Well-founded production know-how, a modern tool production facility and steadfastness are the basis of this revolution.





THE p-SYSTEM PROGRAM



LEUCO offers an inventory of p-System shank-type cutter and drilling tools:

- For jointing, dividing, grooving and rabbeting on CNC machines
- For jointing on edge gluing machines and for jointing protection cutters on through-feed machines
- Symmetrical or asymmetrical design depending on the cutting width
- More cutters for example rabbeting, chamfer cutter and more tools with crowned design on request!
- Cutting material: LEUCO DIA, full diamond tips
- Sharpening service and sharpening know-how exclusively from LEUCO



You can see the current LEUCO p-System stock program in the LEUCO online catalog - e.g. the latest program access, a shank-type cutter for use on Weeke BHX 050/055 machines and the p-System shank-type cutter with a diameter of 12, 14 or 16 mm.

LEUCO recommendation:

- Use the LEUCO p-System tools only in high-precision clamping devices.
- Recommended clamping devices for use on CNC machines: ps-System hydraulic expansion chuck, heat shrinking chuck or TRIBOS power shrink chuck
 - On through-feed machines, you get highly precise rotation accuracy and therefore the best milling quality with an HSK or hydro expansion interface



Alternative:

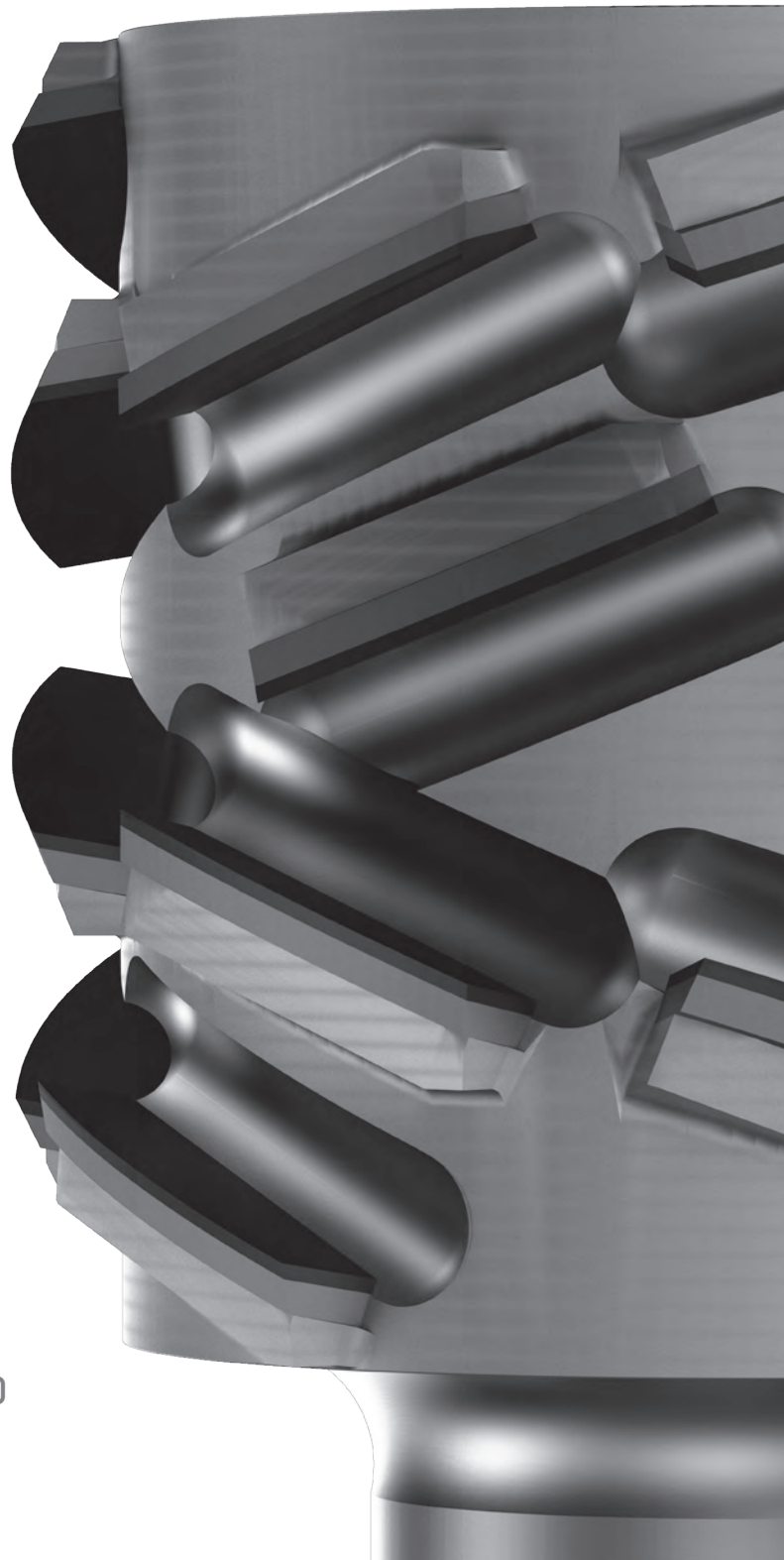
Scan in the QR code and get information on the LEUCO p-System stock program.

SIMPLE & FAST

- 1 www.leuco.com/products
 - 2 Click on the "LEUCO product names" filter
 - 3 Select LEUCO p-System
- Select milling cutters for through-feed or CNC machine



LEUCO



Peel it, see it, feel it!

Interested?

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