

DUST-FREE WORK ON THE CNC

LEUCO „AEROTECH System“

1 system – 2 functions:
Clamping device and extraction turbine at
the same time

Dust-free grooving and milling with all the
benefits for → Tool → Production → Energy
efficiency → Health!



Aerotech® System

www.leuco.com

INNOVATION: 100 % DUST-FREE! AEROTECH SYSTEM

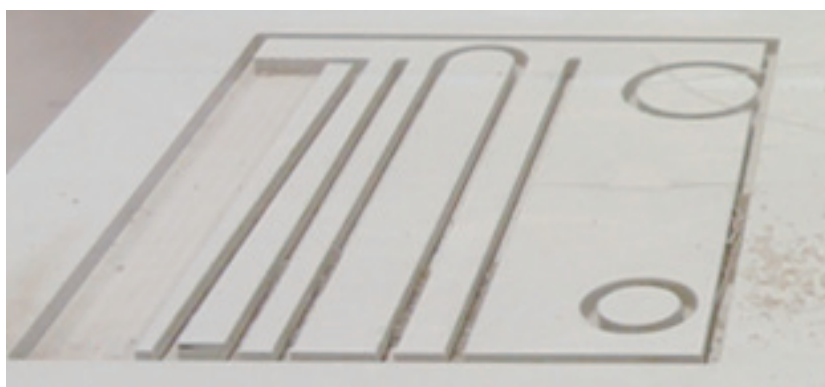
UNTIL NOW

Contaminated workpieces, reduced edgelives, considerable effort cleaning machines, high consumption of compressed air...



→ NEW: WITH AEROTECH SUCTION TURBINE

AEROTECH is a revolutionary tool system! Through the turbine of the AEROTECH chips and dust get captured directly and fed towards the dust extraction of the machine. The turbine greatly improves the removal of chips and keeps the tool a lot cooler!



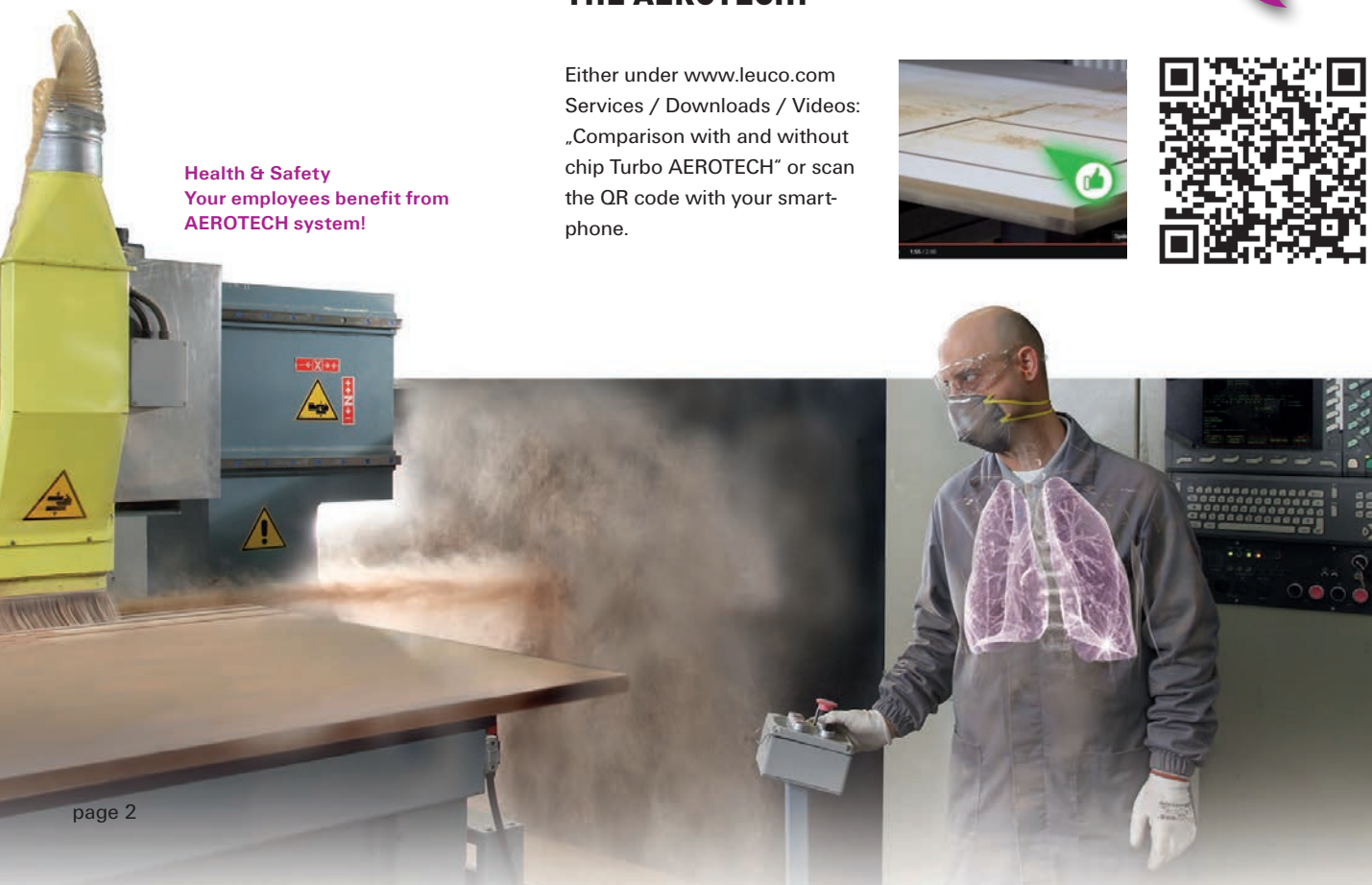
→ VIDEO WATCH THE DIFFERENCE IN MILLING WITH AND WITHOUT THE AEROTECH!

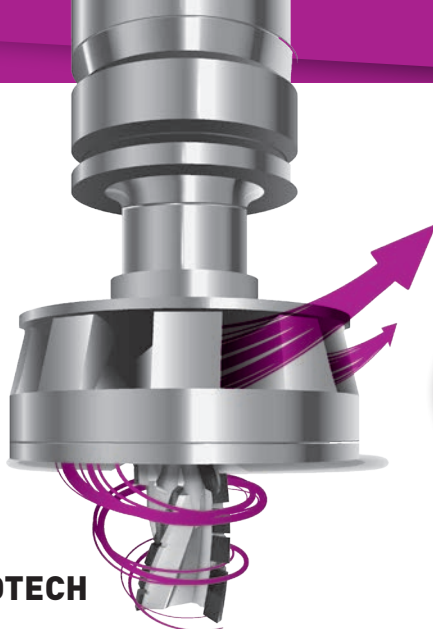
**GET
EXCITED!**

Either under www.leuco.com
Services / Downloads / Videos:
„Comparison with and without
chip Turbo AEROTECH“ or scan
the QR code with your smart-
phone.



Health & Safety
Your employees benefit from
AEROTECH system!





WHAT DOES AN AEROTECH DO FOR ME?

PURE BENEFIT! IN ALL CASES, WHEN DUST IS IN PLAY.

→ ABOUT THE AEROTECH

→ FIELDS OF APPLICATION

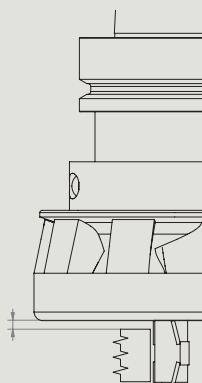
Especially suitable for **Nesting and for all chips- or dust-intensive operations**, such as:
Shutter grooves in series, door panels, pockets in the stair stringers, grooves or pockets in acoustic panels, milling of MDF, chipboard or even machining of cement fiberboard or glassfiber-reinforced materials, etc.

→ DESIGN

An AEROTECH chip turbine is both, a clamping system and a chip-removal system at the same time.
Available interfaces are **HSK 63F and SK30 (DIN)**.
As a clamping system for tools, it is available with **collet technology** or with high precision, but very-easy-to-handle **hydraulic expansion clamping**.

→ APPLICATION DATA

The AEROTECH has been tested by the German Professional Association of Wood according to the latest safety standards and thus tested with at a speed of 60,000 RPM.
Depending on the machine the **RPM** in practice is between 18,000 up to **max. 24,000 RPM**.
Depending on the AEROTECH version used the **ideal floating height** is **2 to 10 mm**.



→ EXCELLENT WORKMANSHIP

The body of AEROTECH system is manufactured from a solid piece of steel.
This makes it extremely durable.
Thus the AEROTECH is the only chip turbine which has a balancing grade of G ≤ 2.5 at 25,000 RPM.
Vibrations get reduced to a minimum.
Each AEROTECH is hardened and heat treated to withstand abrasive attacks by the extracted dust.

→ TOOL SYSTEM

Thanks to the enormous air draft of the turbine and the removal of the heated chips, the tool and the material being worked are cooled, as well as the milling spindle.
The complete removal of the chips prevents the multiple hogging.
| Longer tool edgelives
| Reduced risk of tool breakage
| Higher feedrates

→ PRODUCTION

Avoid time-consuming work such as cleaning.
Lower dust loading of mechanical and electronic components of the machine.
| Save time for the disposal of the chips on the machine and on the workpieces.
| Reduction of standstill, maintenance and repair of the machine
| More time for production!

→ ENERGY

We live in a time in which on CNC machines energy is fed back from frequency converters or energy shall be generated by alternative energies. The AEROTECH does a lot more.
It puts little energy right there, where it is most efficient.
This is innovation.

→ HEALTH

Protection against short-and long-term damage to the employees by the substantially dust-free production.
| Respiratory protection against deposits
| Protection of the skin, nose, eyes, ears

→ PROFITABILITY!

Calculate the savings!
Example for less cleaning on the machine:
In an operation MDF, 18 mm, is processed in 3 shifts in 220 working days. Thanks to the AEROTECH turbine 8.4 tons of dust got captured from the exhaust hood and had not be removed with compressed air gun or vacuum cleaners by the machine operators.
Example for less compressed air consumption:
In general, the blow jets of the milling spindle require 6 cubic meters of compressed air per hour. These can be turned off when using the AEROTECH turbine. Determine your profit by the savings in air.

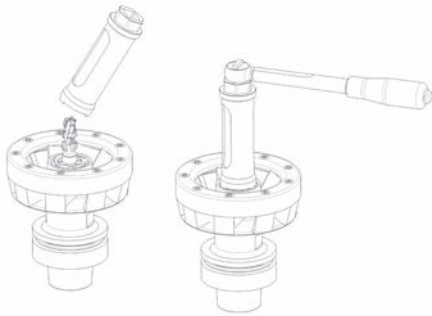
→ AEROTECH UNIVERSAL WITH COLLET



Since 2008 successfully in use: The AEROTECH Universal with collet technology. Specially designed precision collets are for shafts with diameter (D) available 6-16 mm and thus offer high flexibility.

→ DESIGN

- | Monolithic tool clamping system
- | **Balancing accuracy $G \leq 2,5$**
- | 9-fan version
- | Tool mounting with preset torque wrench

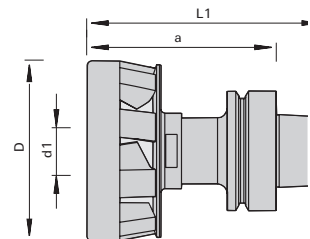


The precision collets allow quick and easy change of any tool with different shank size.

→ RECOMMENDED STARTING PARAMETERS *

Nesting with AEROTECH Universal Floating height: 2 - 3 mm	Standard-milling with AEROTECH Universal
18.000 RPM at 14 m/min feedrate	16.000 RPM at 12 m/min feedrate
20.000 RPM at 16 m/min feedrate	18.000 RPM at 14 m/min feedrate
22.000 RPM at 18 m/min feedrate	20.000 RPM at 16 m/min feedrate
24.000 RPM at 20 m/min feedrate	22.000 RPM at 18 m/min feedrate

→ PROGRAM



	Interface	shank [mm]	D [mm]	clamping technology	no. of fan outlets	field of application	application [max. RPM]	Ident-No.
Uni-T	HSK F63	ø16	ø95	collet	7	Materials with low density (for example, soft wood), plywood, gypsum boards, etc.	24.000	184665

→ AEROTECH HYDRO WITH HYDRAULIC EXPANSION-CLAMPING

The AEROTECH Hydro combines high suction power with high-precision tool clamping: highest concentricity of tools for high performance machining.



HSK F63



SK30



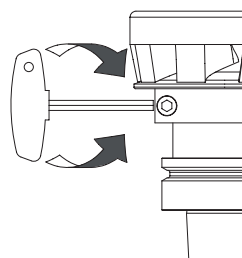
→ DESIGN

- | Monolithic tool clamping system
- | Balancing accuracy $G \leq 2,5$ at 25.000 RPM
- | 7- resp. 9-fan version
- | tool mounting by means of hydraulic expansion clamping technology

→ RECOMMENDED STARTING PARAMETERS *

Nesting with AEROTECH Hydro $\varnothing 95$, Floating height: 2 - 3 mm	Standard milling with AEROTECH Hydro $\varnothing 105$ Floating height: 2 - 8 mm
18.000 RPM at 14 m/min feedrate	16.000 RPM at 12 m/min feedrate
20.000 RPM at 16 m/min feedrate	18.000 RPM at 14 m/min feedrate
22.000 RPM at 18 m/min feedrate	20.000 RPM at 16 m/min feedrate
24.000 RPM at 20 m/min feedrate	22.000 RPM at 18 m/min feedrate

Clamping the cutter in the AEROTECH Hydro is highly precise yet very simple: with an allen key the tension screw is screwed in all the way to the noticeable stop (10 Nm).

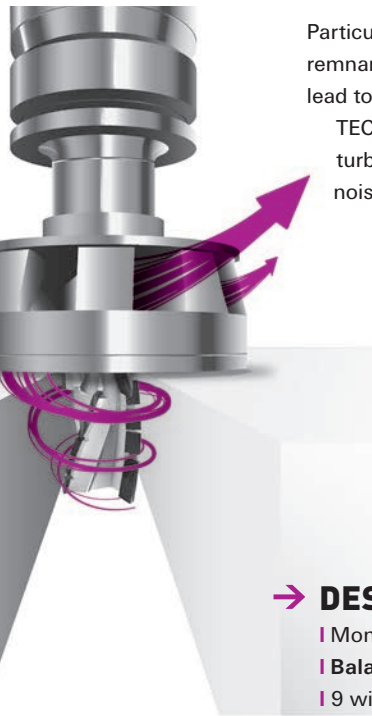


→ PROGRAM

	Interface	shank [mm]	D [mm]	clamping technology	no. of fan outlets	field of application	application [max. RPM]	Ident-No.
Hydro 16	HSK F63	$\varnothing 16$	$\varnothing 95$	Hydraulic expansion	9	Chipboard, MDF, OSB, hardwood, aluminum, plastics	24.000	185018
Hydro 25	HSK F63	$\varnothing 25$	$\varnothing 105$	Hydraulic expansion	9		24.000	184757
Hydro 20	SK 30	$\varnothing 20$	$\varnothing 95$	Hydraulic expansion	9		24.000	185153
Hydro 25	HSK F63	$\varnothing 25$	$\varnothing 105$	Hydraulic expansion	7	Wood and wood-based materials with low density	24.000	186517

* All startup parameters are based on a 19 mm MDF board, at an air suction velocity of 28 m/sec

→ AEROTECH EXPANSION: GRILL AND FACEPLATE



Particularly when nesting MDF and particle board, small remnants can occur which enter the turbine and clog it, or lead to an imbalance. The patented „HOMAG Grill“-AEROTECH-Version (fig. A) ensures that no remnants settle in the turbine. At the same time, the grill reduces the background noise of the AEROTECH.



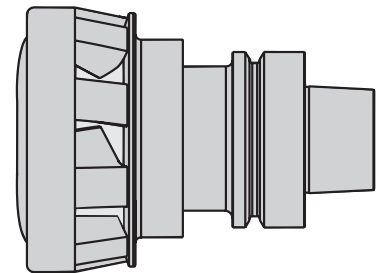
AEROTECH Grill is exceptionally suited for processing on machines with console tables

→ DESIGN

- | Monolithic tool clamping system
- | Balance quality $G \leq 2,5$ at 25.000 rpm!
- | 9 wing design
- | Tool mounting by means of hydro expansion clamping technology or with collet

→ ADVANTAGES

- | No dust
- | Reduced effort of cleaning
- | Save energy
- | Short tooling time
- | Less machine maintenance
- | Can be used on machines of almost all manufacturers, approval for new Homag machines



→ PROGRAM

	cut surface	Shank till [mm]	D [mm]	Field of application	Ident-No.
AEROTECH Hydro „FacePlate“	HSK F63	ø25	ø105	Mainly on machines with console tables	185548
AEROTECH Hydro „FacePlate“	HSK F63	ø25	ø105	Nesting-applications on flatbed machines	185550
Uni-T with collet „FacePlate“	HSK F63	ø16	ø95	Nesting-applications on flatbed machines	185551

→ PRACTICE: TIPS AND TRICKS

I am the LEUCO Coach
I am happy to help you
use the system AERO-
TECH ideally.



Can AEROTECH systems be used on all CNC machines?

- I An HSK 63F or SK-interface is required.
- I Please check that the machine manufacturer has released the system for your machine type.
- I And then: Insert tool into the AEROTECH system, adjust feed and RPM, start the program and profit from the benefits from the first minute!

What is the requirement on the suction of the machine?

- I Make sure that the suction velocity is 28 m/sec.
- I With a lower air velocity, it may happen that the dust is unevenly or not optimally removed by the exhaust hood of the machine.

What role does the exhaust hood of the machine play?

- I The AEROTECH system is extremely powerful to lead dust in the direction of the dust extraction. Make sure that the hood is fully down and the brushes of the hood are not worn or damaged.
- I Some machine manufacturers have blow-off air jet systems installed in the hood.
- I It should be ensured that the air jet systems are off.
- I As a principle the hood position standing should be as far down as possible.

How can I reduce the noise of my AEROTECH system?

- I Avoid free-spinning the AEROTECH and lower the extraction hood as soon possible.
- I Once the AEROTECH enters the panel the sound level is noticeably reduced as the acoustics and air flow get altered.
- I Reduce the RPM in increments until the noise level is acceptable.

Must specific tools be used?

- I A good suction effect is achieved also when rather simple tools (e.g. insert cutters without shear angle) are used. No special arrangement of the cutting edges is needed in order to dispose the dust.

The chip turbine is
the perfect solution
for dust-free grooves,
pocket milling,
dividing cuts



Occasionally I get burn or sanding marks on the surface of my board. How can this happen?

- I Ensure that the Floating Height between the surface of the material and the AEROTECH is 2.0 mm min.
- I It may happen that when you are Nesting (especially in the case of MFC/ particleboard) off-cuts break away from the board and become trapped between the AEROTECH and the surface of the board. To help prevent this, ensure that you program a distance between the components within your nest to approximately >2.0mm greater than the diameter of the tool.
- I Avoid leaving small or thin offcuts of material between odd size components (roundings, cut-outs, corners).
- I These can disintegrate and become the cause of this problem.

My AEROTECH Hydro always has a small amount of dust on it, even if I have just cleaned it and used it for one panel or part. Is there a problem with my tool? Will this dust affect the tools performance?

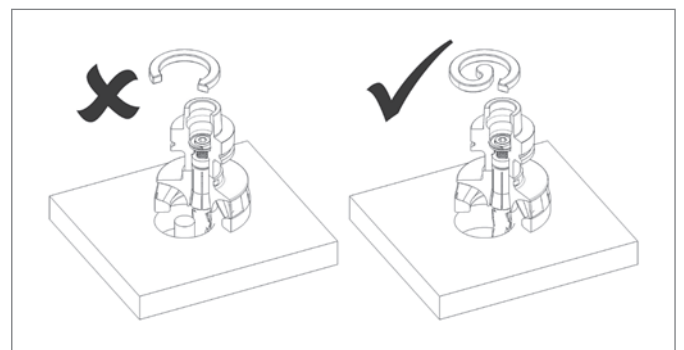
- I It is normal for your AEROTECH to have a thin layer of dust on it. While the tool is spinning at less than 14.000 RPM a small amount of remaining dust accumulates along the fan inlets and the fan outlets. This can neither lead to problems with the tool yet nor does this reduce the performance.

My work piece parts have a very thin layer of dust on the surface!

- I During milling the surface of the workpiece parts charges electrostatically and thus attracts dust. This can be improved, in some cases be dissolved, by making sure that your machine is properly grounded.

What must be considered when programming?

- I AEROTECH system has been designed to remove chips in a directed way. If possible, avoid in the programming residual pieces that can become lodged in the turbine.



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