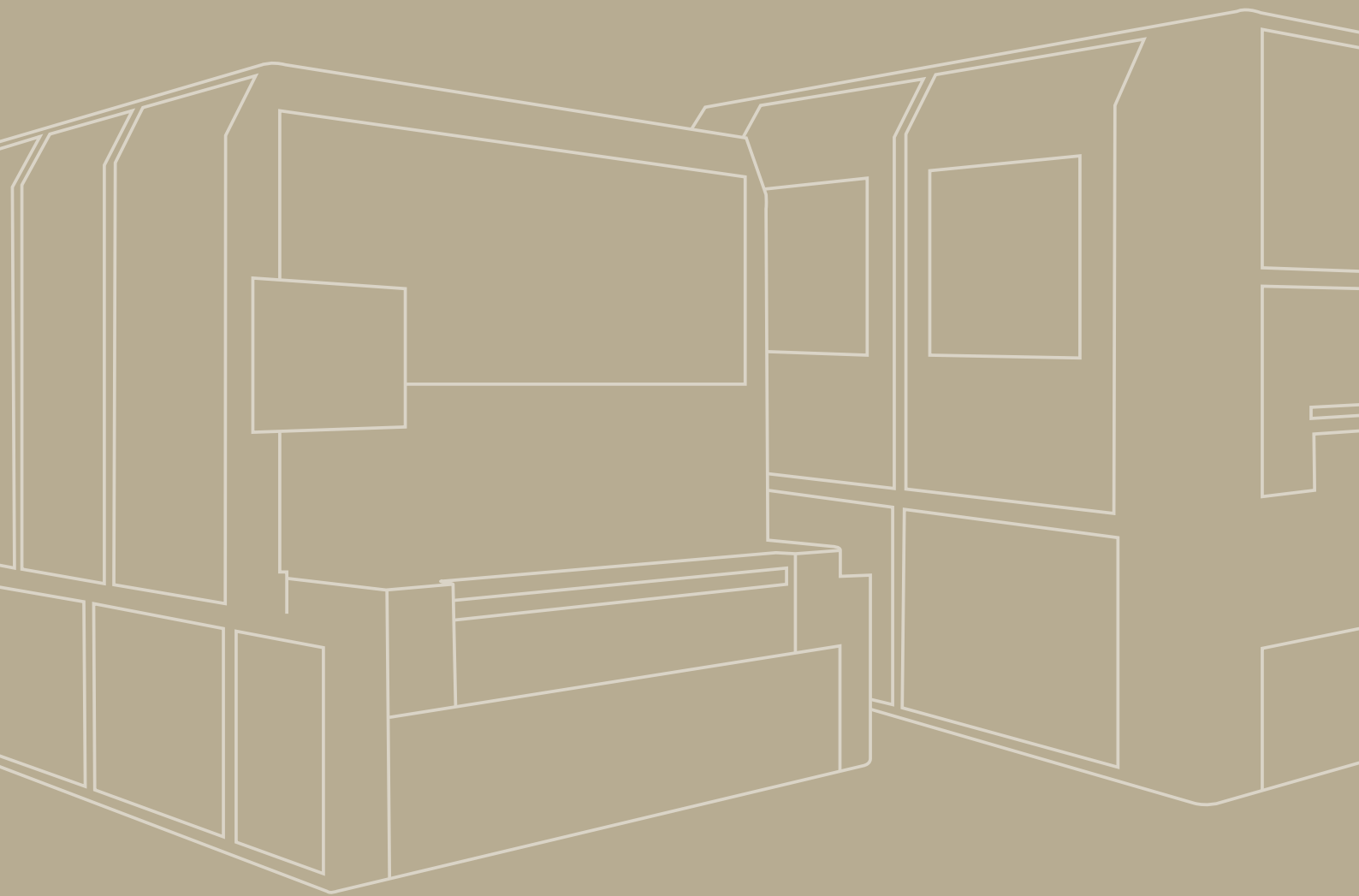


Perfect surfaces:

Heesemann machines for woodworking





Heesemann's industrial machines for wood, metal or any other solid material can be perfectly configured to meet your needs thanks to a wide range of technically superior units. You define the requirements, we manufacture the machine that takes your production to new levels of precision, process reliability, efficiency and durability.

INDUSTRIAL MANUFACTORY

Heesemann – there is responsibility in this name.

Major industrial companies and small craft businesses throughout the entire world have relied on our machines and our service for more than 80 years.

The perfect sanding result, the long life cycle and the low maintenance requirements are just some of the many reasons to choose a Heesemann. These demanding machine standards have evolved over the course of the company's long history.

Founded in 1933, Karl Heesemann Maschinenfabrik has developed into an industrial manufactory. We design and produce sanding machines for diverse applications and materials. Our goal is to find the perfect balance between modern sanding technologies, the highest technical demands on the machine and every customer's unique needs.

Our machines are suitable for both owner-run craft businesses and for the major players in the world markets which manufacture large volumes around the clock.

We are especially proud of the high level of vertical integration in our manufacturing. We handle almost every process step which has an influence on the final sanding results. The machines are developed and configured by the design department. The machine body is constructed at our own welding center. We also manufacture the units which we then install.

Our development team programs the control software and applications. Our application engineers and service team then handle the delivery and installation of the finished machines. This enables you, as our customer, to achieve exceptionally precise results with our machines. That is our promise.

Heesemann – the world of sanding.



APPLICATIONS FOR WOODWORKING

SURFACE SANDING

EDGE SANDING

3D SANDING

VENEER
SANDING

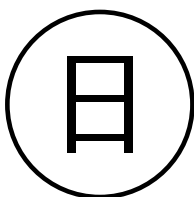
SOLID WOOD
AND PANEL
PROCESSING

EFFECT
SANDING

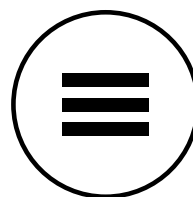
Heesemann sanding machines are used to produce furniture, doors and wooden floors, in the panel industry, in trades and crafts as well as in interior finishing and for manufacturing moldings.

They are suitable for calibrating and fine sanding solid wood, for veneer sanding as well as varnish and foil sanding. The various machine types are capable of sanding surfaces, edges and profiles (on straight and curved parts) along with three-dimensional workpieces (e.g. vehicle interior trim).

Our customers work in the following industries:



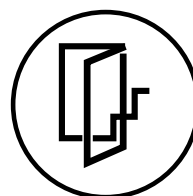
Furniture and kitchen
production



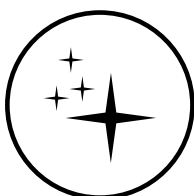
Panel industry



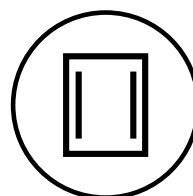
Flooring



Doors / Windows / Stairs



High gloss production

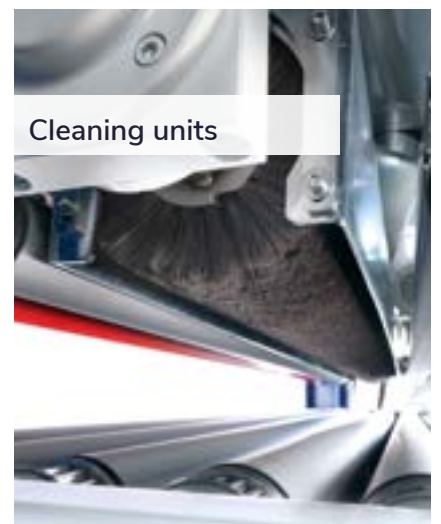
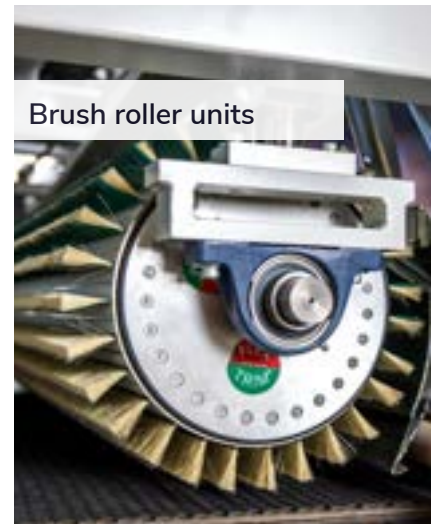


Interior trim

RESULTS THAT HESSEMANN ACHIEVES



OVERVIEW OF OUR UNITS



CONTACT ROLLER UNIT

The Heeseemann contact roller units are available with both steel rollers and rubber-coated rollers with various Shore hardnesses. Both models can also be equipped with diverse roll diameters.

The contact roller unit with a steel roller allows the exact calibration of materials such as solid wood, chipboard, MDF or plastic. The roller surface has spiral grooves. This serves to improve the cooling of the roll and enhances the removal of the sanding dust.

Contact roller units with rubberized roller bodies are also available. With diverse Shore hardnesses, they are suitable for a range of sanding tasks.

The contact roller unit can be equipped with different pressure lips depending on the specific requirements.



CROSS SANDING UNIT

The cross sanding process is known to produce the best sanding results for wood surfaces. This involves first sanding across the grain of the wood, then sanding in the direction of the grain with one or more sanding units.

This serves to level out the higher, hard areas of the annual rings and shear off the loose wood fibers, preventing a wash-out effect and stopping the fibers from standing up again after varnishing.

The Heesemann cross sanding units are equipped with the Heesemann CSD® magnetic pressure beam system and a pressure segment belt. They are available as three-point and four-point units and with a jointly or separately driven pressure plate belt.



BRUSH ROLLER UNIT



Heesemann sanding machines can be equipped with an extensive range of brush units featuring different heads for sanding and structuring. The brush units can be positioned at an angle to the feed or can oscillate.

Sanding brush unit

Sanding brush (Ø 400 mm) featuring Flex Trim for sanding deeper areas and breaking milled edges, for example.

Structuring brush unit

The structuring brushes allow intensive structuring in the direction of the grain. The softer areas of the wood are sheared out in the process.



LONGITUDINAL SANDING UNIT

Longitudinal unit

A longitudinal sanding unit with optimized lower deflection drum spacing enables a long free sanding belt length for highly flexible contact pressure on the workpiece. This allows high-precision sanding together with fast working speeds.

For light calibration work, the longitudinal sanding unit can be configured as a combination unit with contact roller.



Longitudinal unit with pressure segment belt

The longitudinal sanding unit with an internal pressure segment belt is a useful addition for numerous applications. The pressure segment belt breaks up the sanding marks left by the abrasive, creating a harmonious and even more uniform sanding pattern without oscillation marks.

When sanding paint with particularly fine grit (e.g. high gloss), the pressure belt significantly increases the service life of the abrasive.

The two lower deflection drums are equipped with eccentrics, enabling adjustment to regulate the wear of the segment belt, ensuring a significantly longer service life. Optionally, the unit can also be operated without a segment belt.

ORBITAL SANDING UNIT OSR

When sanding frames and other workpieces with different grain directions, sanding across the grain is unavoidable. The resulting sanding marks are very clearly visible, especially when the wood is treated with dark stains. The Heeseemann orbital sanding unit removes these marks, leaving behind a clear surface.

This unit utilizes a frequency-controlled, eccentric oscillation with a large stroke. An additional lamella contact pressure system moves across the feed between the pressure beam and a vibrating sanding belt.

This breaks up the sanding marks from the oscillating sanding belt and produces a harmonious sanding pattern without unattractive sanding marks.



DISC BRUSH UNIT DB-S

The DB-S consists of 5 satellites (6 satellites for a sanding width of 1,600 mm) and each satellite holds two disc brushes with a diameter of 150 mm. The direction and speed of rotation of the satellites and discs can be adjusted independently for maximum application flexibility and performance.

Different discs can be used depending on the specific application. Plates with sanding strips for processing three-dimensional workpieces, for breaking edges or for intermediate paint sanding, discs fitted with Anderlon or stranded wire for structuring or sanding pad plates for sanding and finishing the surface.

The disc brush unit produces a flawless surface. As such, the DB-S can also serve as the final unit of a sanding machine. This delivers a perfectly homogeneous surface. In addition to wood, the DB-S can also be used for sanding paint, solid surface materials or plastics.

The DB-S can be pulled out of the side of the machine on integrated rails, enabling easy tool or application changes and free access to all of the discs. Using the quick-release fasteners, the tools can be changed in only a few minutes.



DISC BRUSH UNIT RUT



The RUT disc brush unit consists of 18 disc brushes arranged to enable unmatched quality when sanding contours. All of the areas are sanded evenly in different directions.

The frequency-controlled drive system allows stepless adjustment of the rotational speed of both the disc brushes and their rotational speed transverse to the feed direction. The disc brushes can be equipped with two different abrasives simultaneously. This enables sanding using different grit sizes in synchronous and counter-rotation directions.

The unit can be rapidly changed over from disc brushes with abrasive trim to texturing brushes, for example, with the aid of the quick-change device.

- The RUT can be used to sand out deeper areas and to break edges.
- Structuring discs can also be used to structure across the grain.

LAMELLA ROLLER UNIT RUL



The RUL unit consists of 6 brush rollers that rotate around both the horizontal and vertical axes. The brushes orbit the conveyor belt, ensuring that all of the workpieces are processed with exactly the same intensity. The RUL is suitable for sanding three-dimensional workpieces made of solid wood, veneer and MDF. It delivers perfectly uniform rounding on all work-piece edges. The infinitely variable control of all movements enables the edge breaking intensity to be adjusted to your precise needs. With highly flexible, horizontally rotating brushes, the RUL unit is capable of working deeper surfaces much more intensively than conventional solutions. Due to its unique design, it is the only unit on the market with pressure rollers in front of, between and behind the brushes. This allows the machine to securely hold long and narrow parts on the conveyor belt even without vacuum.

CLEANING UNITS

Heesemann machines can be equipped with contactless or contact cleaning units.

Contactless cleaning units



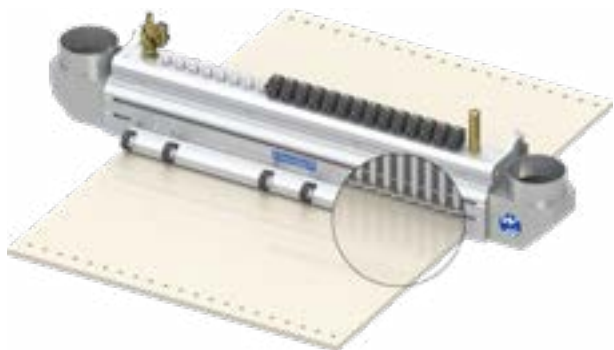
Ionizing bar

Ionization significantly reduces the buildup of static dust.



Rotating blasting

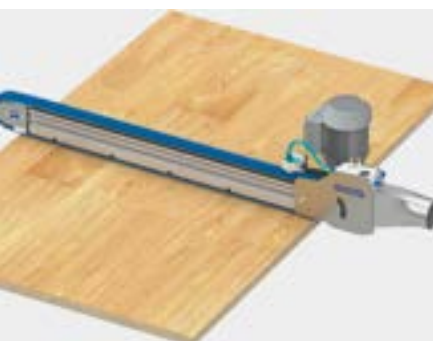
serves to remove sanding dust from the surface before painting, for example.



Wandres Tornado Channel

The particles flow through the integrated vacuum channel for extraction.

Contact cleaning units



Wandres Sword brushes always wipe across the transport direction of the surface to be cleaned. The proven Ingromat® process guarantees gentle and safe removal of dust and coarser particles from the surface. A thin film of liquid is applied to the bristle tips. The resulting capillary adhesive force binds particles to be removed to the bristles.



Cleaning brushes

for easy removal of dust from the surface.

APPLICATION AREAS

SOLID WOOD & PANEL PROCESSING

From dimensional accuracy to high surface quality

The surface qualities demanded from solid wood are now comparable to those obtained with veneers. Consequently, the calibrating machines utilized in the furniture and panel industry have a broader requirement profile extending beyond a purely dimensional stability to encompass high surface quality. Heesemann machines offer decisive technical advantages when calibrating solid lumber panels, solid wood frames and parquet material.

- Torsion free unit suspension, combined with solid and precise height adjustment, ensuring dimensionally stable parts throughout the machine's entire service life.
- A steel roller achieves excellent accuracy even when sanding aggressively due to the virtually non-existent wear and precision bearing.
- A pressure lip on the inlet of the calibration roller exerts intense pressure on the workpieces.
- The cross-sanding technology utilized for the subsequent fine sanding units prevents the wash-out effect encountered with soft woods as a result of different annual ring hardnesses. This technology ensures a flat sanded surface despite knots with different wood hardnesses.
- The aggressive sanding attack of the cross belt enables a greater jump in grit sizes between rollers and the cross-sanding unit. The CSD® electro-magnetic pressure beam technology with stepless pressure regulation of each pressure element prevents rounding of the edges on calibrated surfaces.
- An effective and cost-saving extraction and belt cleaning system is capable of handling even large dust quantities.



Accurate dimensions and fine surfaces also play an important role when sanding chipboard, MDF, wood core plywood and plywood. The surfaces have to be perfectly sanded, especially when subsequently laminating or film coating the wood. To handle the high production volumes in the panel industry, the calibration machines also have to be capable of providing high working capacity and functional safety. Heesemann sanding machines take this into account. They combine modern technology and power reserves.

APPLICATION AREAS

veneer sanding



Properly sand soft and hard veneers

Veneered workpieces are as versatile as their design possibilities: with tape, cutouts and solid lipping. Ever thinner veneers are being developed in response to economic concerns. As a consequence, sanding technology has to provide especially innovative solutions with a high degree of flexibility for the industrial production of veneered parts.

Heesemann veneer sanding machines have the perfect capabilities to handle this demanding task:

- A broad, elastic pressure beam for the cross and longitudinal belts ensures a large contact surface with the workpiece.
- Precise workpiece scanning.
- The unique stepless CSD® magnetic pressure beam, which also eliminates the risk of sanding through edge areas and cutouts.
- 2 mm tolerance compensation on the pressure beam, enabling the clean sanding of warped parts or parts with deviating thicknesses.
- The computer-controlled automatic pressure calculation for the individual pressure shoes is capable of calculating asymmetric pressure settings for solid, single-edge lipping.
- Cross-sanding units that cut off wood fibers across the veneer grain. These cross-sanding units simultaneously handle the final sanding in the veneer direction for cross-veneered surfaces.
- A workpiece suction clamping device ensures the safe transport of small parts such as drawer fronts.
- A safety circuit and electronic brakes on the units to prevent damage to the workpieces in the event of a belt rupture.
- A program memory stores the sanding settings for different veneer types, minimizing the set-up time.
- An energy-saving intensive belt blasting system ensures a longer belt service life.

APPLICATION AREAS

LACQUER & HIGH GLOSS

Lacquer sanding

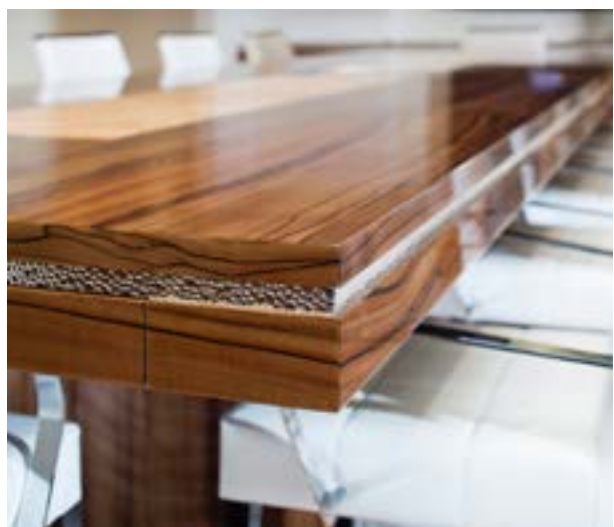
The trend is clear – low application quantities plus stains and paints with minimum solvent content. As a consequence, surface finishing UV lacquers with a high solids content, water-based paints, waxes and low-solvent stains are seeing increasing use. Application quantities of markedly less than 10 g / m² are becoming increasingly common.

Heesemann sanding technology has the forward-looking solutions for precisely these developments:

- The stepless regulation of the individual pressure elements on the CSD® magnetic pressure beam enables intensive yet gentle sanding of the otherwise at-risk side, front and rear edges.
- The elastic pressure beam optimally compensates for tolerances within or between workpieces of up to 2 mm without sanding through the workpieces.
- The intermeshing pressure shoes ensure gentle transitions on the surface, preventing streaking.
- Wide pressure beams create a uniform surface sanding attack.
- The frequency-controlled sanding belt drives have a wide regulation range, enabling stepless belt speed adjustment to match the specific paint and stain quality.
- The optional thorough sanding belt cleaning prevents sanding marks caused by dust grains adhering to the belt.

High gloss sanding

The combination of cross and longitudinal sanding belts has become the standard for high-gloss surfaces. Heesemann utilizes cross sanding machines capable of consistent material removal even when using fine grits and the cross-sanding delivers a good surface finish.



APPLICATION AREAS

EFFECT SANDING

Individual effects for creative customer solutions

Incredible sanding effects can be achieved using a Heesemann surface sanding machine equipped with at least one cross and one longitudinal sanding unit. These are a few of the possibilities:

Sawed surfaces

A Heesemann cross sanding unit and a very coarse sanding belt can create extraordinary saw surface structures on veneered workpieces in a continuous process.



Vintage Look

A Heesemann longitudinal sanding unit can be used to create a „vintage look“ on workpieces with two different coats of paint. Heesemann has developed a special sanding program to achieve an intentionally irregular surface effect on workpieces with a dark primer and a lighter topcoat.



Planing

A Heesemann longitudinal sanding unit in combination with highly flexible sanding belts, a special steel plate and a special sanding program can produce random depressions on the surface of workpieces to create a planed look.



OUR MACHINE STANDARDS

Workpiece recognition

The sophisticated workpiece recognition via control rollers provides the machine control system with information about the shape and size as well as the position of the workpieces on the conveyor belt.



Poly-V drive belt

The units are driven by a Poly-V belt. The profile of the drive belt is integrated into the finely balanced drive roller (grade G1, cf. car tire G40), ensuring permanently low-vibration operation.

All bearings feature life-long lubrication, eliminating maintenance and mounting errors.



OUR MACHINE STANDARDS



IPC with touchscreen

All Heesemann machines are equipped with a powerful and highly flexible industrial PC as standard. All frequently used settings are clearly displayed graphically on a single screen page. In addition, this industrial PC offers a wide range of applications for diagnostics and connecting peripheral devices via standard interfaces. Furthermore, the system can connect both to internal and external networks via Ethernet TCP/IP. In this case, the industrial PC functions as a web server and diagnostics can be carried out via a conventional browser.

Intuitive HMI operation

The optional HMI package equips your Heesemann with LED strips on the infeed and outfeed. The LEDs have two key functions: Firstly, the strips utilize simple color symbols to indicate where to insert the workpiece in order to optimize wear on the sanding belts. The control system utilizes various parameters that the operator can adjust. This process immediately and significantly reduces your tooling costs by ensuring more even belt wear. Secondly, the LED strips also display warnings or errors, enabling the operator to identify error messages from a distance.

hB

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Optionally, you can also equip your machine with an additional camera. This provides the operator with a live view of the outfeed via the terminal and the operator can react immediately if a workpiece blocks the outfeed, for example. The HMI package gives you an additional measure of control and helps to sustainably improve the profitability of your processes.



Sanding belt cleaning

All sanding units are equipped with a cleaning device that removes the sanding dust from the sanding belt and enables the sanding dust to be extracted. This cleaning is carried out immediately after the sanding process in order to ensure that the sanding belt does not transport the sanding dust through the machine..



Water cooled servo drives

The use of new, extremely thin coating systems can make it necessary to reduce the sanding belt speed below the speed that can normally be achieved with frequency control. Water-cooled servo drives enable consistently reliable belt travel with the full sanding performance and without speed fluctuations even at minimum belt speeds of 0.1 m/s. As a consequence, machines equipped with these servo motors are capable of processing modern water-based coating systems. The water-cooled servo drives fulfill the efficiency class IE 4.

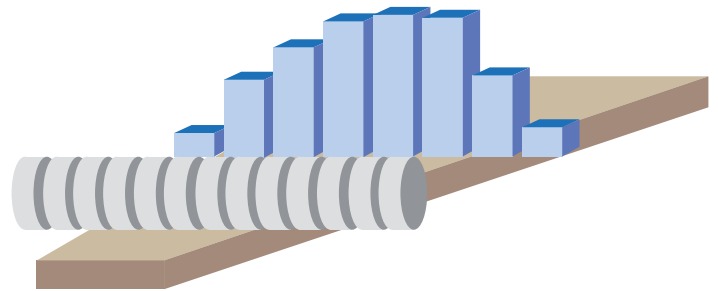
HEESEMANN CSD® MAGNETIC PRESSURE BEAM

Adaptive sanding for uniform surfaces

Precise control of the sanding pressure is crucial to achieve consistently high grinding quality. The computer-controlled selective pressure control of the CSD® magnetic pressure beam system enables the sanding pressure of each element on the pressure beam to be steplessly adjusted in a matter of milliseconds. Fine scanning on the infeed of the machine ensures the exact calculation of the required pressure.

This elastic pressure beam is capable of compensating for tolerances in the workpiece thickness of 2 mm and more, on a single workpiece and also between workpieces.

The magnetic CSD® pressure beam system eliminates the soiling of the pressure beam elements that can otherwise occur with pneumatically operated systems. The CSD® magnetic pressure beam is installed on all Heesemann cross sanding and longitudinal sanding units as a standard feature.



HEESEMANN ENERGY MANAGEMENT SYSTEM (EMS)



Benefits for the environment and users

With Heesemann's EMS energy-saving system our environment and users benefit equally: Decreasing energy consumption reduces both the burden on the environment and your costs.



When no workpieces enter the machine, the drive motors in the units reduce speed and a flap on the extractor fan closes to greatly reduce the air flow rate. This significantly reduces the machine's energy consumption depending on its workload. When new workpieces arrive, all of the motors quickly start up again.

If the customer's extraction system has the capability, the machine can stop the air flow through the units that are in standby by controlling the closing flaps on the individual extraction hoods. This enables power consumption savings of the extraction system.

PRODUCT MATRIX

WOOD SANDING MACHINES

	Standard machine		Handcraft / Semi-industrial				
	HSM		MFA Impression	MFA 10 FL			
	HSM .2	HSM .3	MFA Impres- sion FL	MFA 10 FL	MFA 10 FL 1.600	MFA 10 FL OSR	MFA 10 FL-U
Configura- tion	2 belts	3 belts	2-4 belts	2-8 belts	2-8 belts	2-8 belts	1-8 belts
top / bottom	top	top	top	top	top	top	bottom
Max. feed rate	15 m / min	15 m / min	15 m / min	70 m / min	50 m / min	70 m / min	70m / min
Max. number of units	3	4	6	10	10	10	9
Max. unit power	22	22	30	45	45	22	45
Belt legths	2.150 / 2.620 / 4.800	2.150 / 2.620 / 4.800	2.150 / 2.620 / 4.800 / 5.400	2.620 / 3.250 / 4.800 / 5.400 / 7.000	2.620 / 3.250 / 5.400 / 7.000	2.620	2.620 / 3.250
Sanding	√	√	√	√	√	√	√
Calibration	√	√	√	√	√		√
Brushing	√	√	√	√	√	√	√
Cleaning			√	√	√		√

Industrial					Special machines		
LSM 8			KSA 8		Special machines		
							
LSM 8	LSM 8-C	LSM 8-U	KSA 8	KSA 8-U	EA10	FBA 8	UKP
1-6 belts	3-4 belts	1-5 belts	1-6 belts	1-4 belts	1-3 units	2-3 belts	1-12 belts
top	top	bottom	top	bottom	both sides	top	both sides
80 m / min	15 m / min	80 m / min	140 m / min	80 m / min	80 m / min	30 m / min	80 m / min
8	5	6	8	5	5	4	12
75	55	55	75	75	1,5	22	7,5
2.620 / 3.250 / 4.800 / 5.400 / 6.200 / 7.000	2.620	2.620 / 3.250 / 5.400	2.620 / 3.250 / 6.600 / 7.400 / 8.000 / 8.600	2.620 / 3.250 / 6.600 / 7.400 / 8.000 / 8.600		2.620	2.300 / 2.800
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OVERVIEW

SERVICES

Our service team continues to support our customers after delivery.

We guarantee that our customers enjoy maximum availability together with excellent value for money thanks to our comprehensive maintenance services. Our supplementary consulting services along with extensive upgrades, for example, help our customers to continuously improve their productivity. We can still supply 40- or 50-year-old machines with spare parts or upgrade them to the state-of-the-art thanks to Heesemann Rebuild services.

Service and spare parts – only rely on the original!

Thanks to our numerous service locations around the globe, you will always receive fast and excellent service. In addition, you can also purchase all wear and spare parts directly from us. You will benefit in many ways: In the process, you benefit from the best possible process reliability thanks to original equipment manufacturer quality, highly trained and experienced technicians, a practical subscription service for wear parts along with a loyalty program that rewards you with improved special conditions with every order.

Service makes the difference!

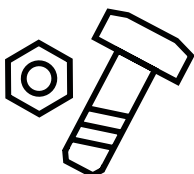
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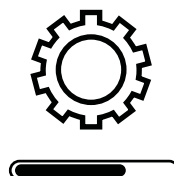
Installation & training



Virtual Service



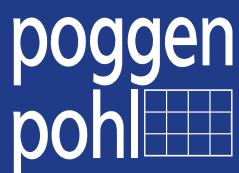
Spare parts & maintenance



Machine upgrade



MY NOTES



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