

*Heesemann*



# HSM .2/.3

THE SURFACE SANDING MACHINE



THE WHOLE PRODUCTION OF  
HEESEMANN SANDING MACHINES IS  
LOCATED AT THE HEADQUARTERS IN  
BAD OEYNHAUSEN, GERMANY.

# HEESEMANN

## SANDING WITH PASSION

Heesemann has produced sanding machines for industry and handicraft for more than 80 years.

Numerous essential and trend-setting innovations were made during this time, many of which are now industry standards. Heesemann has consistently provided new impulses to the sanding technology and developed it further.

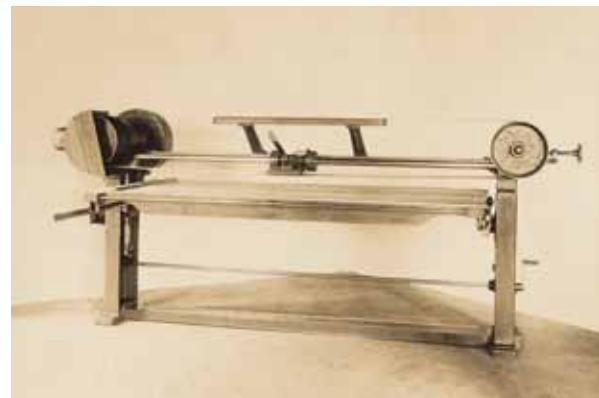
Our demand has always been to be the innovation leader in sanding technology and we do everything possible to comply with this demand.

Today Heesemann has about one hundred fifty employees in Bad Oeynhausen, Germany and is world market leader in the area of wood sanding machines. The production program includes machines for sophisticated handicraft as well as heavy duty industry machines.

A world-wide organized dealer network as well as distribution and service subsidiaries in the most important regions and markets provide appropriate contact persons on-site and guarantee short communication channels and highest-performance service.

We support our customers with diversified service offers covering the entire life-time of our machines. We offer all services starting with an extensive consultation, professional training of your staff and technical service up to functional upgrades.

*One of the first Heesemann  
belt sanding machines.*



# FIELDS OF APPLICATION

## SOLID WOOD AND PANEL PROCESSING

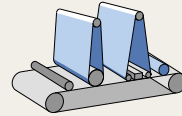
Today the surface qualities demanded from solid wood are comparable to those obtained with veneers. Consequently, the requirements placed on calibrating machines in the furniture and panel industry have been extended beyond a purely dimensional stability towards a high surface quality. Heesemann machines possess important technical advantages for the calibration of solid lumber panels, parquet material and solid wood frames.

- Torsion free unit suspension, combined with solid and precise NC controlled height adjustment, ensuring dimensionally stable parts throughout the entire machine operating life.
- A steel roller which, due to its virtually non-existent wear and precision bearing, achieves a high degree of accuracy even when sanding aggressively.
- A press-on lip at the infeed of the calibration roller permitting an intensive contact pressure on workpieces.
- The cross sanding technology employed for the downstream fine sanding units avoids the washing out effect encountered with soft woods resulting from different annular ring hardness and ensures a flat sanded surface of knots characterized by varying wood hardness. A greater jump in grit sizes is possible between rollers and cross sanding unit due to the aggressive sanding cut of the cross belt.
- A greater jump in grit sizes is possible between rollers and cross sanding unit due to the aggressive sanding cut of the cross belt.
- The CSD® electromagnetic pressure beam technology, with infinite pressure regulation of each pressure element, precludes a rounding of the edges on calibrated surfaces.
- An effective and cost saving extraction and belt cleaning which can handle even large dust quantities.

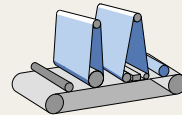




#### Configurations 2 units

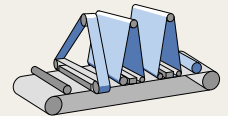


**HSM .2 R/L**  
Calibration and  
fine sanding in one pass

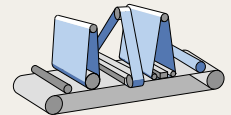


**HSM .2 R/Lc**  
Calibration and  
fine sanding in one pass

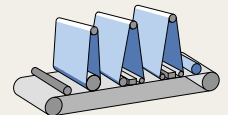
#### Configurations 3 units



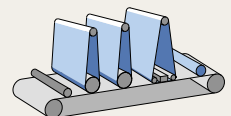
**HSM .3 C/Lc/L**  
Fine sanding machine  
for high surface qualities



**HSM .3 R/C/L**  
Calibration and fine sanding machine  
for high surface qualities



**HSM .3 R/Lc/L**  
Calibration and fine sanding machine  
for high stock removal



**HSM .3 R/R/L**  
Calibration and fine sanding machine  
for higher stock removal

## PANEL PROCESSING

Stable dimensions and fine surfaces also play an important role in the calibration of chipboard, MDF, table board and plywood. Surfaces must be perfectly sanded especially for subsequent coating with laminates or foils. To this must be added a high working capacity and functional safety as special processing requirements to be able to cope with large production quantities as encountered in the panel industry. Heesemann calibration machines meet this requirement by combining modern technology and capacity reserves.

# FIELDS OF APPLICATION

## VENEER SANDING

The application of veneered work pieces is just as versatile as their multitude of design possibilities. In everyday production we encounter cross-wise or longitudinally veneered workpieces, with rounded, rectangular, irregular shapes, with and without cut-outs. In addition, an increasing spectrum of parts are to be sanded, from soft to hard veneers- in part with inlay work on one side- or with overhanging solid lippings. Due to economic reasons veneers become thinner and thinner. For this reason particularly innovative sanding technology solutions must imply a high degree of flexibility for industrially manufactured veneered parts.

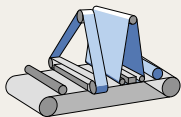
Heesemann [veneer sanding machines](#) are equipped for this task with:

- a wide, elastic pressure beam for the cross and longitudinal belts, in conjunction with sensitive work piece tracing which ensures a large contact surface with the workpiece.
- a delicate work piece detection.
- the unique infinite electromagnetic CSD® pressure regulation, which also precludes the danger of sanding through in edge areas and cut-outs.
- a tolerance compensation of max. 2mm in the pressure beam permitting the clean sanding of warped parts or those with deviating thickness.
- computer controlled automatic pressure calculation for the individual pressure shoes, which, for example, calculates an asymmetric pressure application in the event of a solid lipping on one edge.
- cross sanding units, which cut off wood fibres across the grain. At the same time the cross sanding units give cross veneered parts a final sanding in veneer direction.
- a workpiece suction device, which ensures the secure transport of small parts such as drawer fronts.
- safety circuit and electronic brakes on the units avoid damage to the workpieces in case of a belt rupture.
- a programme memory for storing various sanding settings for different veneer types, to reduce setting time to a minimum.
- an energy saving intensive belt blasting device for a longer belt operating life.

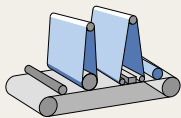




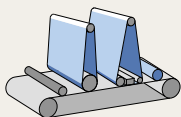
Configurations 2 units



**HSM .2 C/L**  
Cross sanding machine

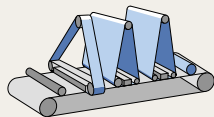


**HSM .2 R/L**  
Calibration and fine sanding in one pass

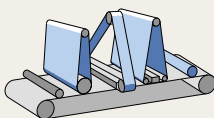


**HSM .2 R/Lc**  
Calibration and fine sanding in one pass

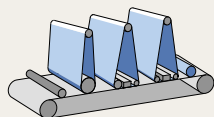
Configurations 3 units



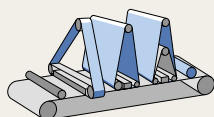
**HSM .3 C/Lc/L**  
Fine sanding machine for high surface qualities



**HSM .3 R/C/L**  
Calibration and fine sanding machine for high surface qualities



**HSM .3 R/Lc/L**  
Calibration and fine sanding machine for higher stock removal



**HSM .3 C/Lc/Lef**  
Cross sanding machine for highest surface qualities

# FIELDS OF APPLICATION

## LACQUER AND HIGH-GLOSS

### LACQUER SANDING

The trend is clear- low quantities applied of stains and lacquers containing as little solvent as possible. For surface finishing UV lacquers with a high solid matter content, water based lacquers, waxes and low solvent stains are increasingly being used. Application quantities of markedly less than 10 g/m<sup>2</sup> are no longer rare occurrences.

Heesemann sanding machine technology has positively taken this development into account:

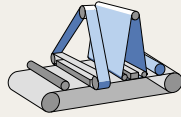
- The infinite CSD® electromagnetic pressure regulation of the individual pressure elements in the pressure beam which permit an intensive but careful sanding of the endangered side, front and rear edges.
- The elastic pressure beam which optimally compensates for frequent tolerances within or between workpieces of max. 2 mm without sanding through.
- The intermeshing pressure shoes which ensure gentle transitions on the surface and which avoid sanding marks.
- Wide pressure beams for a uniform and surface sanding attack.
- The frequency controlled sanding belt drives with a wide regulation range, permitting the belt speed to be infinitely adapted to the individual lacquer and stain quality.
- The optional sanding belt cleaning, preventing sanding marks resulting from adhering dust grains.

### HIGH-GLOSS SANDING

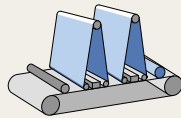
The use of a combination of cross and longitudinal sanding belts has proven particularly suitable for this lacquer type. Heesemann employs cross sanders for this work which ensure a uniform material removal rate even with fine grits and a good surface finish with the cross sanding. This technology ensures a uniform and flat surface.



Configurations 2 units

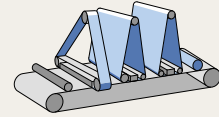


**HSM .2 C/L**  
Cross sanding machine

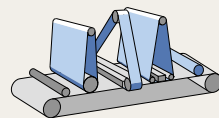


**HSM .2 L/L**  
Longitudinal sanding machine  
for medium lacquer application

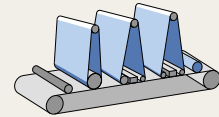
Configurations 3 units



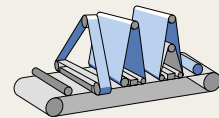
**HSM .3 C/Lc/L**  
Sanding machine  
for high application quantities



**HSM .3 R/C/L**  
Calibration and fine sanding machine  
for higher application quantities



**HSM .3 R/Lc/L**  
Calibration and fine sanding machine  
for higher application quantities



**HSM .3 C/Lc/Lef**  
Sanding machine  
for higher application quantities  
and highest surface qualities



HSM SERIES IS THE NEW HEESEMANN ENTRY-LEVEL SERIES. 9 STANDARD CONFIGURATIONS OF 2 OR 3 UNIT SANDING MACHINES UNITE HIGHEST SURFACE QUALITY AND ATTRACTIVE PRICES.



**1 300 mm**  
Sanding width



**3 - 15 m/min**  
Feed speed



**2 or 3**  
Sanding units

# HSM .2/.3

## THE SURFACE SANDING MACHINE



HSM series is the new Heesemann entry-level machine. Nine standard configurations of 2 or 3 units sanding machines are available. At the same time the HSM is the most favorable cross sanding machine in the market.

Its standardized design allows shortest delivery times and attractive prices. Although HSM offers Heesemann sanding technology proven for decades like the CSD® magnetic pressure beam system.

The configurations offer an assortment that covers all possible sanding tasks, be it solid wood processing, veneer sanding or lacquer or high-gloss sanding.



*All Heesemann sanding machines are operated via touch screen with an intuitive user interface based on Microsoft® Windows®.*



## HSM .2/.3 AVAILABLE UNITS



*Contact roller*



*Cross sanding unit*



*Longitudinal sanding unit*



# HSM .2/.3

## EFFECT SANDING

Utilizing Heesemann surface sanding machines equipped with at least one cross sanding unit and one longitudinal sanding unit you can achieve stunning sanding effects. This is a brief description of what you can achieve and how it works:

### ROUGH SAW-CUT PATTERN

Utilizing a Heesemann cross sanding unit and a very rough abrasive grain you can create an outstanding rough saw-cut pattern onto the surface of veneered boards in through-feed operation.



### SCATTERED DEEPENINGS

Using a Heesemann longitudinal sanding unit in combination with highly flexible sanding belts, a special steel plate and a special sanding program you can create scattered deepenings onto the surface of your work pieces.



### VINTAGE LOOK

You can achieve a vintage look of your work pieces using a Heesemann longitudinal sanding unit on a surface with two different lacquers. Work pieces primed with a dark paint and then lacquered with a lighter varnish can be processed using a special sanding program to create a deliberately irregular sanding result.





THE HSM CONTACT ROLLER WORKS WITH A GROOVED STEEL ROLLER WITH A DIAMETER OF 200 MM.

# HEESEMANN

## CONTACT ROLLER UNIT

The HSM contact roller unit works with a steel roller with a diameter of 200 mm and allows the exact calibration of materials like solid wood, particle boards, MDF or plastics. The surface of the roller is grooved in a spiral shape. This allows a better cooling of the roller and makes it easier to extract the generated abrasive dust.

The contact roller unit is available in sanding belt lengths of 2 150 mm or 2 620 mm and can optionally be equipped with press-on lips.







THE CROSS SANDING UNIT HAS A SANDING BELT LENGTH OF 4 800 MM.

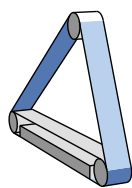


# HEESEMANN CROSS SANDING UNIT

For wooden surfaces the cross sanding method achieves the worldwide accepted best sanding result. The work pieces are sanded crosswise to the grain direction first and are afterwards sanded in direction of the grain with one or more sanding units.

This way the upper harder areas of the annual rings are leveled and loosened fibres are sheared off whereby a wash out effect is avoided and the fibres cannot straighten up again after lacquering.

The Heeseemann cross sanding units are equipped with the Heeseemann CSD® magnetic pressure beam system and a pressure segment belt.



*The optionally available sanding belt cleaning removes the sanding dust from the sanding belt directly after the sanding process.*





THE HSM LONGITUDINAL SANDING UNIT IS AVAILABLE IN DIFFERENT VERSIONS WITH CALIBRATION ROLLER OR PRESSURE SEGMENT BELT.

# HEESEMANN

## LONGITUDINAL SANDING UNIT

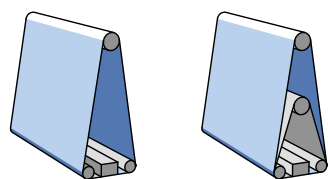
A longitudinal sanding unit with an optimized distance between the lower return drums allows a large amount of a freely suspended sanding belt for a highly flexible pressure onto the work piece. This way a smooth sanding and high working speeds are achieved.

The longitudinal sanding units are available for sanding belts with belt lengths of 2 150 mm or 2 620 mm.

Optionally the longitudinal sanding unit can be equipped with an eccentric bearing of the front return drum for slight calibration work (**combi unit**). The return drum is activated via the terminal.

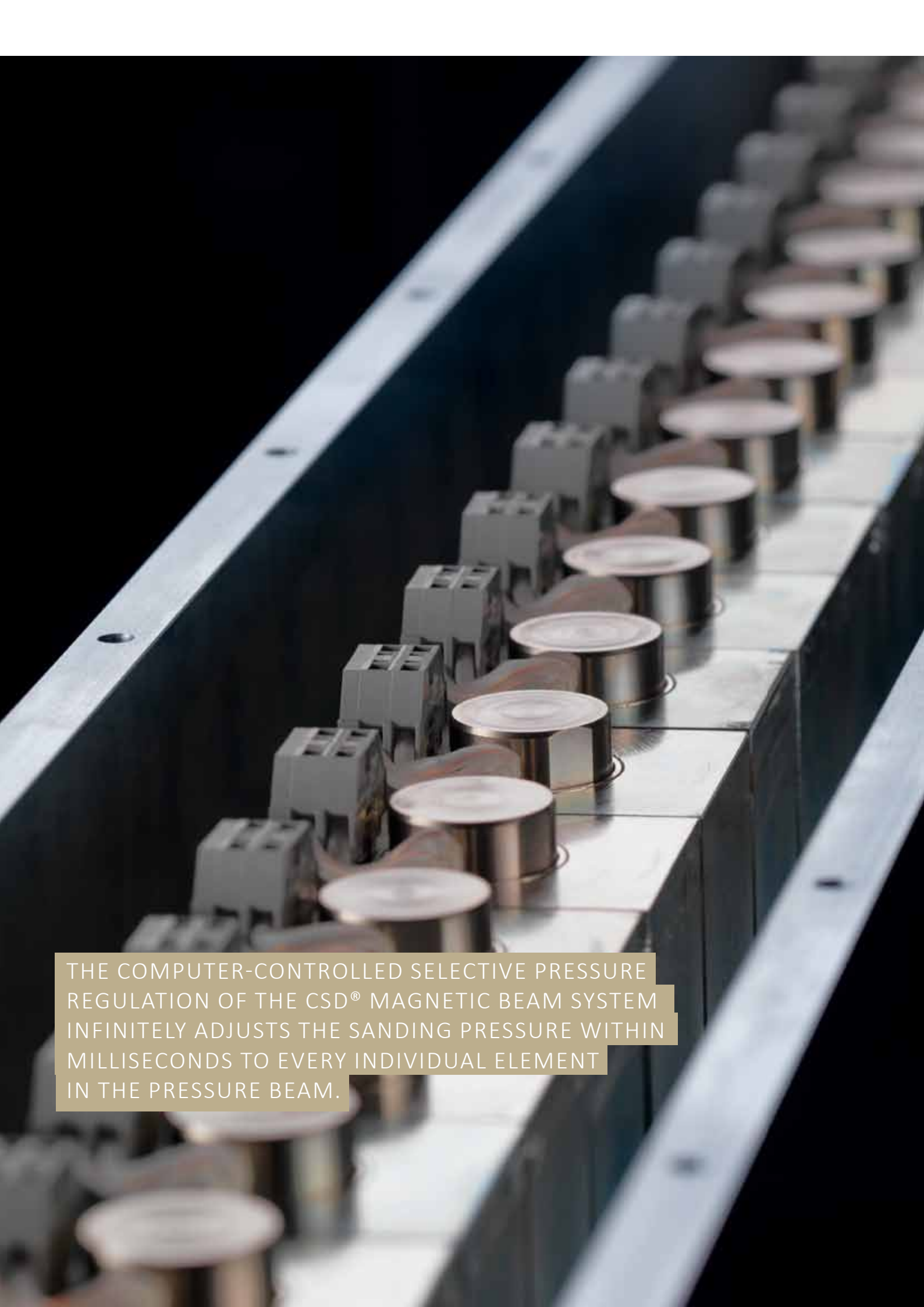
The **longitudinal unit with an internally running pressure segment belt** is a reasonable addition to many applications that makes sense. The pressure segment belt interrupts the sanding traces of the grit and thus offers a harmonious and more even sanding pattern.

If a particularly fine grit is being used for lacquer sanding, the pressure segment belt may significantly increase the lifetime of the abrasive material.



*The longitudinal sanding unit is equipped with the Heesemann CSD® system proven for more than 25 years.*





THE COMPUTER-CONTROLLED SELECTIVE PRESSURE REGULATION OF THE CSD® MAGNETIC BEAM SYSTEM INFINITELY ADJUSTS THE SANDING PRESSURE WITHIN MILLISECONDS TO EVERY INDIVIDUAL ELEMENT IN THE PRESSURE BEAM.



# HEESEMANN

## CSD® MAGNETIC PRESSURE BEAM

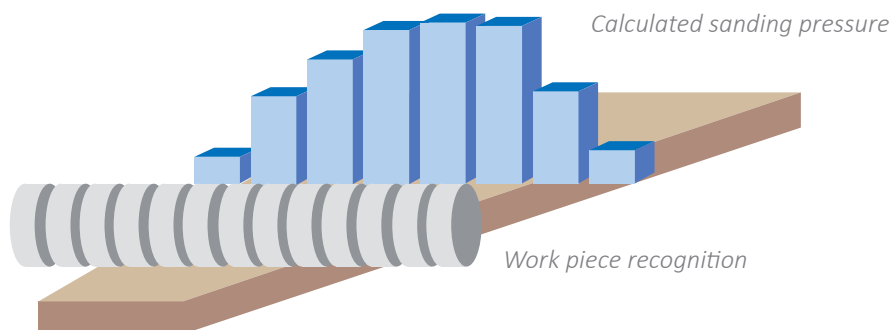
The precise control of the sanding pressure is decisive for a consistently high-grade sanding quality.

The computer-controlled selective pressure regulation of the CSD® magnetic beam system infinitely adjusts the sanding pressure within milliseconds to every individual element in the pressure beam. A highly sensitive sensing system at the infeed supplies the data for exact calculation of the required pressure.

The elastic pressure beam compensates for work piece thickness differences of 2 mm and more, whether the variation occurs within a single work piece or from one work piece to another.

A pollution of the pressure beam elements as it may occur on pneumatically working systems is impossible at the electromagnetically working CSD® pressure beam system.

The CSD® magnetic pressure beam is an integral part of all Heesemann cross and longitudinal sanding units.



*The elastic pressure beam compensates for work piece thickness differences of 2 mm and more.*



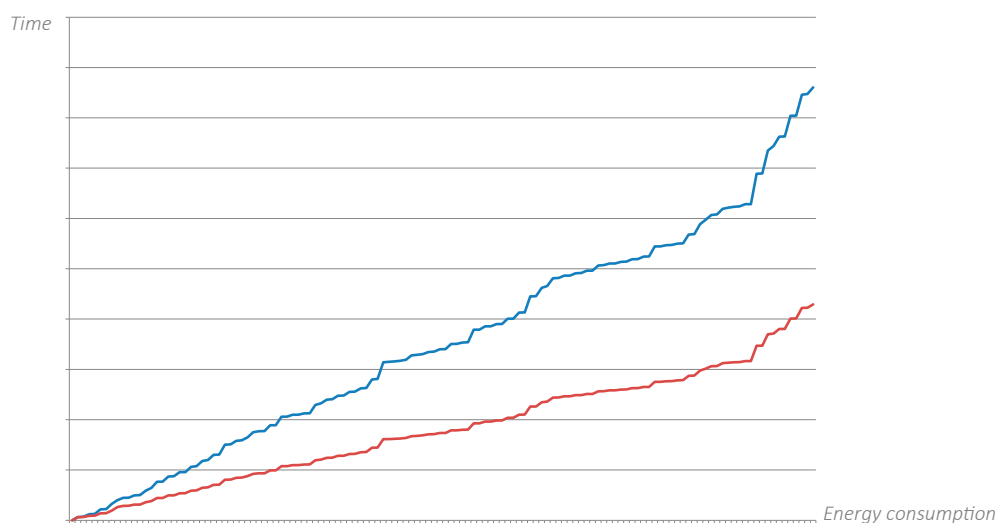
*From our EnergyManagement-System our environment and the machine-user benefit to the same degree. A diminished energy consumption unburdens the environment and reduces the cost.*

# HEESEMANN ENERGYMANAGEMENT-SYSTEM (EMS)

The HSM .2/.3 can optionally be equipped the EMS system. Both, our environment and our users, benefit from this energy-saving system to the same degree. A diminished energy consumption unburdens the environment and reduces the cost.

If no work pieces are being fed into the machine, the drive motors of the sanding units and the suction blower are run down to a low speed. Depending on its actual load, this reduces the energy consumption of the machine quite considerably. When new work pieces are fed into the machine, all motors are rapidly started up again.

If the customer-supplied extraction system provides this option the machine can prevent the airflow through units that are not in operation by controlling closure flaps attached to the individual extraction hoods and thus makes the extraction system save energy.



*The use of our EnergyManagement System leads to significant savings of power consumption of the machine and the whole installation.*



ALL HEESEMANN MACHINES ARE EQUIPPED WITH A POWERFUL AND HIGHLY FLEXIBLE INDUSTRIAL PC.





# HEESEMANN

## IPC WITH TOUCH SCREEN

All Heesemann machines are equipped with a powerful industrial PC. All frequently repeated adjustment values are graphically displayed clearly on one screen page.

Optionally the IPC can be connected to internal and external networks using Ethernet TCP/IP. This enables the Heesemann service team to connect to the control for remote maintenance.

The industrial PC is available in a screen size of 7"



*The 7" industrial PC offers a completely new user interface.*



## **HSM .2/.3**

### **WORK PIECE DETECTION**

The sensitive work piece detection by means of control rollers at distances of 21 mm provides the machine control system with information about the shape and size of the work pieces to be processed as well as its position on the transport belt.



## **HSM .2/.3** POLY-V DRIVE BELTS

The units are driven by a vibration-free poly-V belt. The profile of the drive belt is integrated into the most finely balanced drive roller (quality class G1, cf. car tyre G40). This way a permanently low vibration run is ensured. All bearings have been lubricated for life; this excludes maintenance errors in the selection of the lubricant and the lubrication intervals as well as assembly faults; any maintenance work is not required.





## **HSM .2/.3**

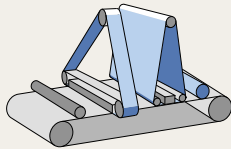
### SANDING BELT CLEANING

All sanding units can optionally be equipped with a cleaning device that loosens the sanding dust from the sanding belt and makes it ascertainable for the dust extraction. This cleaning takes place directly after the sanding process has been completed so that the sanding belt does not move the sanding dust through the machine.

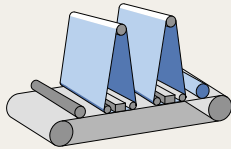


# AVAILABLE MACHINE CONFIGURATIONS

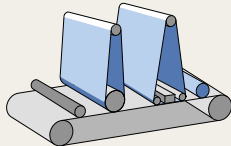
## Machines with 2 units



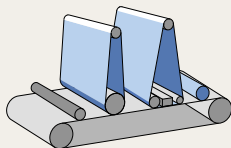
**HSM .2 C/L**  
Cross sanding machine



**HSM .2 L/L**  
Longitudinal sanding machine  
for medium application quantities

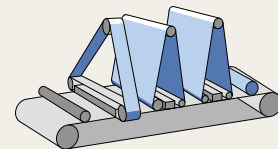


**HSM .2 R/L**  
Calibration and  
fine sanding in one pass

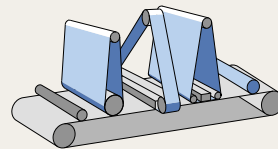


**HSM .2 R/Lc**  
Calibration and  
fine sanding in one pass

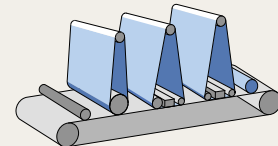
## Machines with 3 units



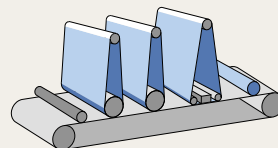
**HSM .3 C/Lc/L**  
Fine sanding machine  
for high surface qualities



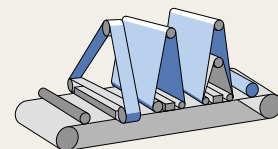
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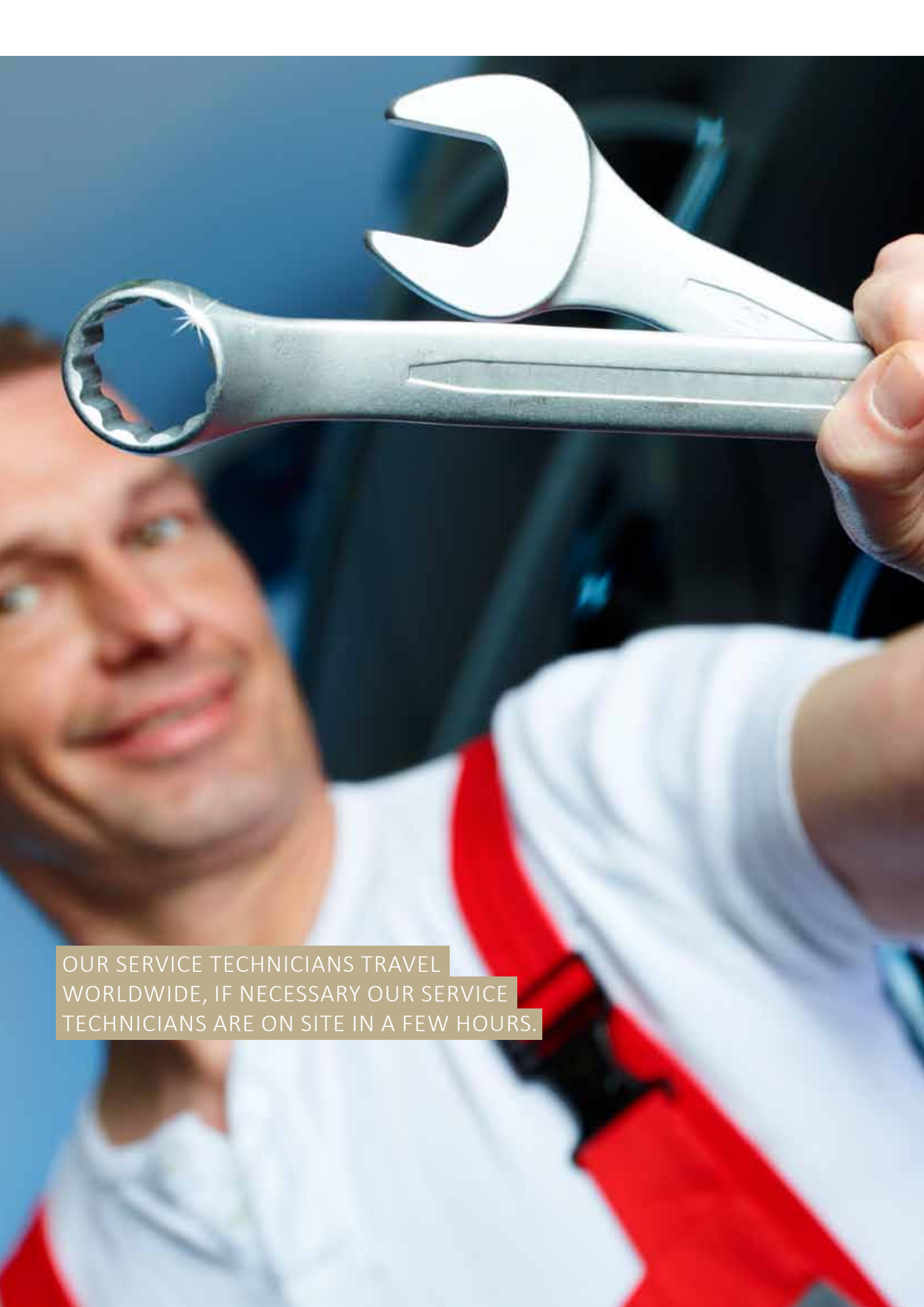
**HSM .3 R/Lc/L**  
Calibration and fine sanding machine  
for higher stock removal



**HSM .3 R/R/L**  
Calibration and fine sanding machine  
for high stock removal



**HSM .3 C/Lc/Lef**  
Sanding machine for  
higher application quantities and  
highest surface qualities



OUR SERVICE TECHNICIANS TRAVEL  
WORLDWIDE, IF NECESSARY OUR SERVICE  
TECHNICIANS ARE ON SITE IN A FEW HOURS.

# HEESEMANN

## SERVICE - ON SITE WORLD-WIDE

As a manufacturer of technically mature and individual machines with a long machine life our customers' satisfaction is our highest priority. To prove our customers' confidence in our competence is one of our most important tasks.

Our technical customer service supports you discovering an effective solution for possible problems. If an advice by phone is insufficient, an online diagnosis via tele service can take place. If the intervention of a technician is necessary, no problem- our service technicians travel worldwide, if necessary our service technicians are on site in a few hours.

Heesemann offers their customers all classical service activities like installation, maintenance and repair. We ensure a fast supply of wear and spare parts by our extensive spare parts warehouse. In cooperation with our logistic partners we deliver worldwide, fast and reliable. Heesemann delivers original spare parts exclusively which meet our high demands in their fitting accuracy, material properties, durability and functionality.

Our inspection service provides a detailed evaluation of your machines' technical condition. On demand we prepare offers for further provisions, installation possibilities of latest sanding technology and control upgrades.

Such as our machines our customer service and spare parts are warrantors for quality and reliability "made in Germany".



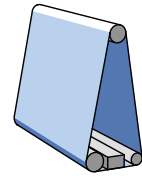
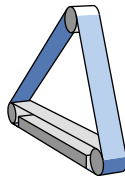
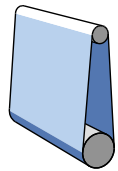
Service hotline:  
+49 5731 - 188-0

*Our service team is available on  
working days between 7 am and 5 pm.*



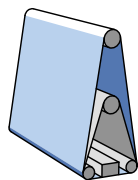
# TECHNICAL DATA

## HSM .2/.3 - UNITS



### Modules

	Contact roller (R)	Cross unit (C)	Longitudinal unit (L)	Longitudinal unit with calibration roller (Lc)
<b>Sanding belt dimensions</b> (LxW mm)	2 150 x 1 350 2 620 x 1 350	4 800 x 150	2 150 x 1 350 2 620 x 1 350	2 150 x 1 350 2 620 x 1 350
<b>Ø Contact roller</b>	Steel    Ø 200 mm			
<b>Drives</b> Performance/Belt speed (kW   m/s)	22        24	15 FU        2 - 20	13 / 17        10 / 20 15 FU        1,8 - 18	13 / 17        10 / 20 15 FU        1,8 - 18
<b>Connection diameter</b> (mm)	Ø 180	Ø 160	Ø 160	Ø 160
<b>Extraction value</b> (m³/min)	30,5	24	24	24
<b>Air velocity</b> (m/s)	20	20	20	20



### Modules

	Longitudinal unit with pressure segment belt (Lef)
<b>Sanding belt dimensions</b> (LxW mm)	2 620 x 1 350
<b>Drives</b> Performance/Belt speed (kW   m/s)	15 FU        1,8 - 9
<b>Connection diameter</b> (mm)	Ø 160
<b>Extraction value</b> (m³/min)	24
<b>Air velocity</b> (m/s)	20



# TECHNICAL DATA

## HSM .2/.3

Machine base: Working height 880 mm/Working width 1 300 mm

W 2 260 H 2 250	Length (mm)	Weight (kg)	Feed (m/min)		Suction device (kW    m <sup>3</sup> /min)	
<b>2 units</b>	approx. 1 960	approx. 4 000	1.5 / 3.0	3 - 15	2.2	11
<b>3 units</b>	approx. 2 510	approx. 5 500	2.2 / 4.0	3 - 15		

Subject to technical modifications.

# PRODUCT MATRIX

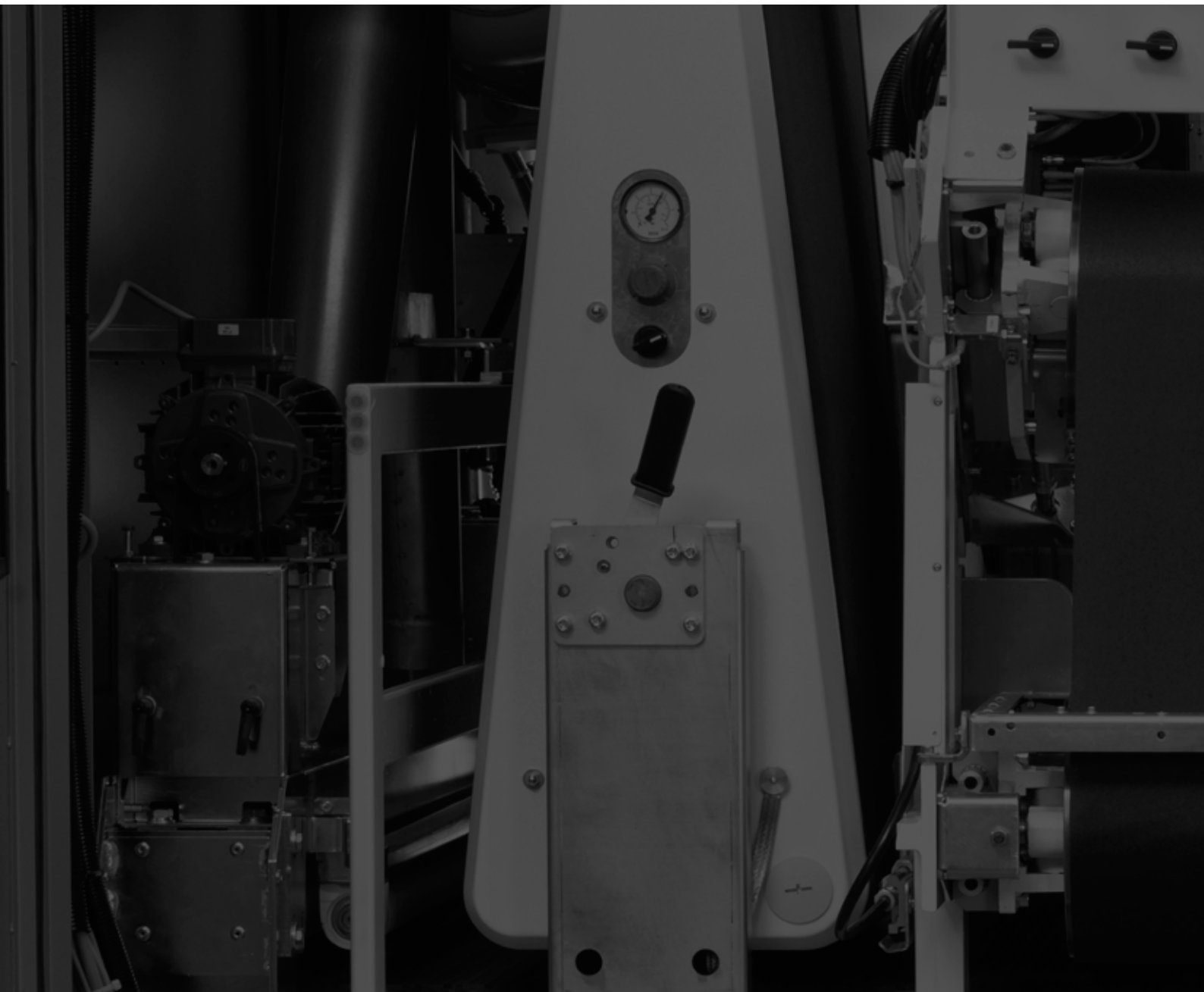
## SURFACE SANDING MACHINES







	Sanding width	Feed speed	Sanding units
HSM	1 300 mm	3 - 15 m/min	2 or 3
MFA Impression	1 350 mm	3 - 15 m/min	up to 4
MFA 10	1 350 mm	5 - 25 m/min	up to 6
BM 8	1 350 mm	5 - 25 m/min	up to 6
LSM 8	1 300 mm / 1 400 mm	5 - 25 m/min	up to 6
KSA 8	1 600 mm - 2 600 mm	5 - 25 m/min	up to 6
FBA 8	650 mm / 1 350 mm	6 - 30 m/min	up to 4







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-  Surface sanding machines for wood  
*MFA Impression, MFA 10, LSM 8, KSA 8, BM 8, FBA 8*
-  Surface sanding machines for metal  
*MSM 10*
-  Edge and profile sanding machines  
*UKP 20*
-  Sanding machines for 3D processing  
*BM 8, UKP 20*