ADVANCED AUTOMATION SYSTEM

BQC BOARD QUALITY COCKPIT

steinemann

BQC – the process control system for a fully integrated, automated sanding process.

Board Quality Cockpit (BQC) from Steinemann is an innovative solution for achieving integrated, end-to-end surface quality.

Operating as discrete, autonomous software outside the main machine control, BQC offers automated control of the sanding process. Relevant data and information from internal and external systems throughout the entire sanding process are collected and analyzed within BQC.

Thanks to this seamless integration, selected parameters can be adjusted automatically during calibration or fine sanding and then continuously optimized. The end result is a consistently high level of quality and efficiency plus a simultaneous reduction in costs.

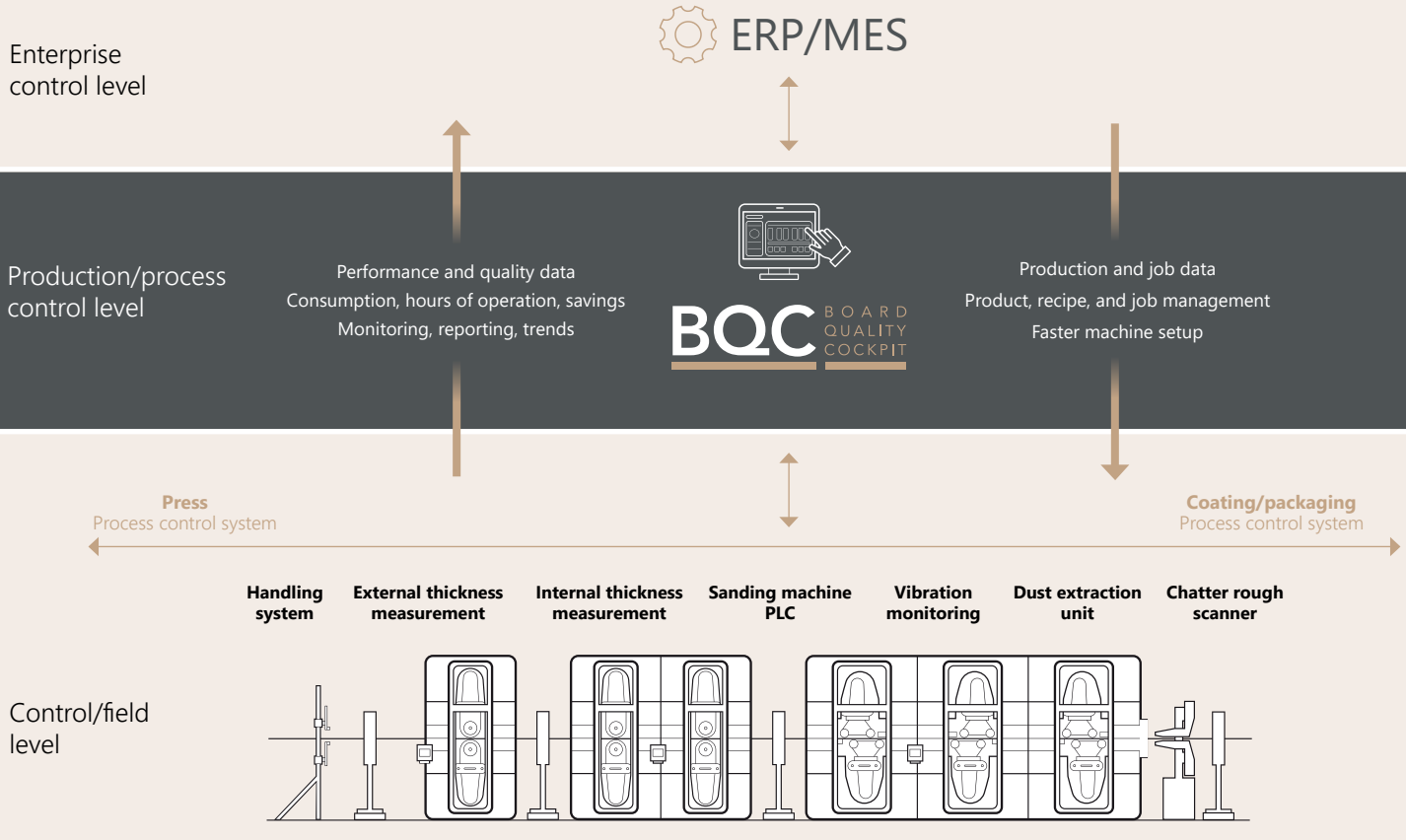
Benefits that pay their way – automatically.

Once BQC is deployed, 'autopilot' mode can be set to ensure sanding quality and avoid the costs involved with reject panels.

Consistently high quality
We offer you the guarantee of consistent, reproducible panel quality across all shifts, thanks to the constant monitoring of the sanding process and the automatic adjustment of machine settings.

Efficiency improvements
Integration with an ERP system or MES offers faster machine setting and simplified production planning, resulting in more efficient processes within manufacturing.

Short ROI
If you deploy all three modules, you can look forward to an ROI of less than three years. For an individual ROI calculation, please talk to your local Steinemann contact.



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Three steps to fully integrated automation.

The BQC process control system offers a modular set of functions, with three seamlessly coordinated modules working together to power automation and process integration across your production line.

Process integration
(data management)

Module 3
Process integration

Networking of the sanding line for efficient process and quality reporting

Sanding line report
- Provides feedback on key process and performance data
- Allows tracking of panel quality

Module 1
Sanding Automation Level 1

Fully automated calibration sanding + semi-automated fine sanding

Test license (6 months)

Module 2
Sanding Automation Level 2

Fully automated calibration sanding + fine sanding

automation

The right module for any requirement.

The three BQC modules offer solutions to match any requirement – from fully automated calibration and find sanding to end-to-end process integration.

Module 1

Starter module for fully automated calibration sanding and semi-automated fine sanding

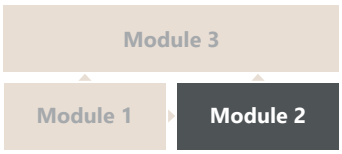
Fully automated calibration sanding

- Continuous monitoring of sanding with thickness measurement
- Contact drums set and adjust to required panel thickness automatically

Semi-automated fine sanding

- Operator checks panel surface and can optimize surface quality at the touch of a button
- Sanding platens and contact drums then adjust to this setting automatically

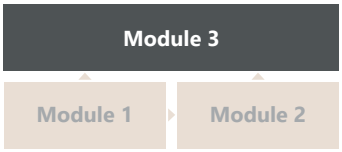
Module 2



For fully automated fine sanding

- Surface QA is completed automatically by the chatter rough scanner (CRS) without operator interaction
- The CRS supplies roughness and chatter mark values continuously to the BQC, which sets and adjusts the fine sanding heads and contact drums
- Panel quality is definable, verifiable, and reproducible without operator intervention

Module 3



Sanding line networking for efficient process control and quality monitoring

- Integration with the ERP/MES and handling system means job and production management can be leveraged for faster machine setting

- Key quality and performance data are exchanged, and the detailed sanding line report provides a summary of qualities, consumption, hours of operation, and savings

So BQC isn't just about the overall system: it's also a question of the specific benefits offered you by individual modules.

Module 1

- Uniform panel thickness across all shifts
- Fewer panels needed for machine setting
- Faster job start thanks to automatic machine height adjustment
- Semi-automated fine sanding adjustment
- Additional functions for process control and monitoring
- Longer belt lifetimes and improved panel quality, thanks to uniform power and material removal distribution
- Fewer customer complaints

Module 2

- Continuous supply of roughness and chatter mark readings to BQC
- Constant, uniform surface quality across multiple shifts, in accordance with chatter mark and roughness specifications
- Constant, objective online quality control
- Fewer B quality due to fulfilment of surface requirements for downstream processes (coating)
- Faster adjustment to required panel quality

Module 3

- End-to-end monitoring and control of the sanding process
- Feedback on key process and performance data
- Tracking of panel quality
- Faster machine setting and less downtime thanks to automated job management
- Optimization of material input: end-to-end material flow monitoring possible

"Since we've been running BQC in its automatic mode, we've had fewer B-quality, less belt consumption, and faster format changes.
Operators really appreciate working with BQC in automatic mode, because it allows them to concentrate their efforts on handling, sawing, and the packaging system."

BQC also brings your older satos machine pool up to date.

The BQC process control system is not only available for the latest generation of satos TSQ machines but can also be used with existing satos basic versions (with Siemens control). Check the following table to find out which machine installations are required for the integration of the individual BQC modules.

Machine installations required per module for **satos TSQ**

	Module 1	Module 2	Module 3
CDA – Motorized fine adjustment of contact drums	✓		
SPA – Motorized fine adjustment of sanding platens	(✓)	✓	
INT – Internal thickness measurement	✓		
EXT – External thickness measurement	✓		
CRS – Chatter rough scanner		✓	

Machine installations required per module for **satos BQC retrofit**

	Module 1	Module 2	Module 3
CUS – Control unit upgrade	✓		
BTS – Belt tensioning sensors	✓		
CDA – Motorized fine adjustment of contact drums	✓		
SPA – Motorized fine adjustment of sanding platens	(✓)	✓	
EXT – External thickness measurement	✓		
CRS – Chatter rough scanner		✓	

Please note: If SPA is not installed, then no automated sanding platen adjustment will be possible for semi-automated fine sanding. Module 1 can be implemented with reduced functionality by arrangement with Steinemann.

Better data – greater efficiency.

Using BQC doesn't just automate the sanding process but can also optimize the exchange of data.

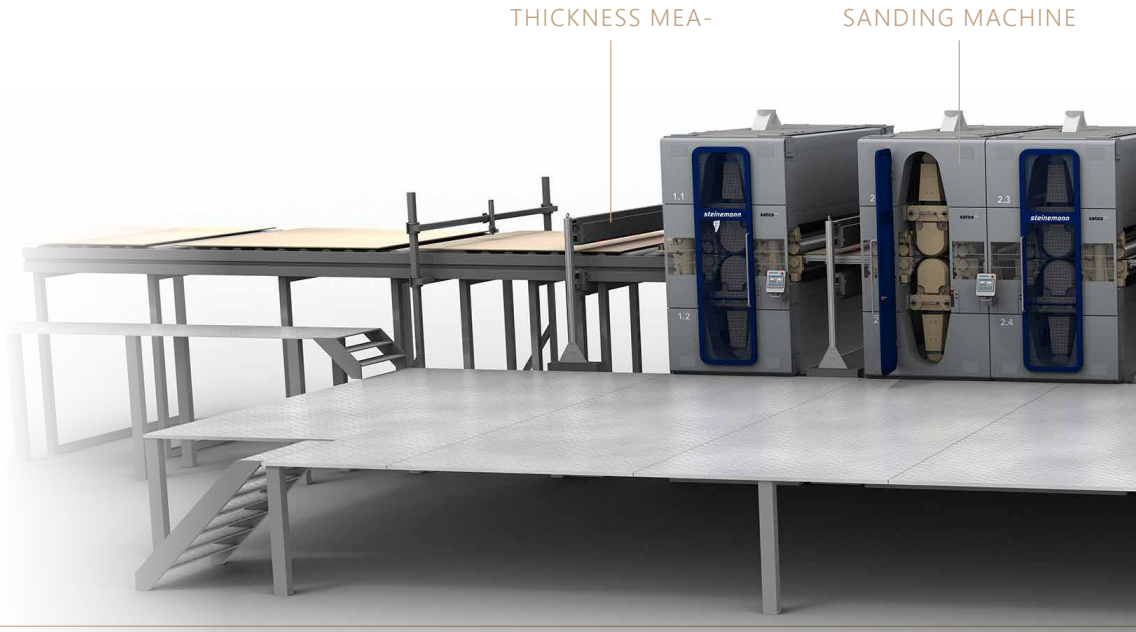
Thanks to the seamless integration of the key sanding line participants, all process, quality, and performance data can be accessed at any time. With quality values at your fingertips at all times, you can ensure that these are maintained consistently across all shifts while also generating valuable data for process improvements.

Sanding line report

Exchange of key quality and performance data from the sanding line. Examples here include actual sanding stock removal, current over sanding volume, machine availability, hours of operation, consumption of abrasives and overall equipment effectiveness (OEE).
All datasets can also be provided directly for use by in-house reporting systems.

Chatter rough scanner (CRS)

The chatter rough scanner (CRS) monitors panel quality after the sanding stage. Constant online quality control of required surface roughness and incidence of chatter marks.

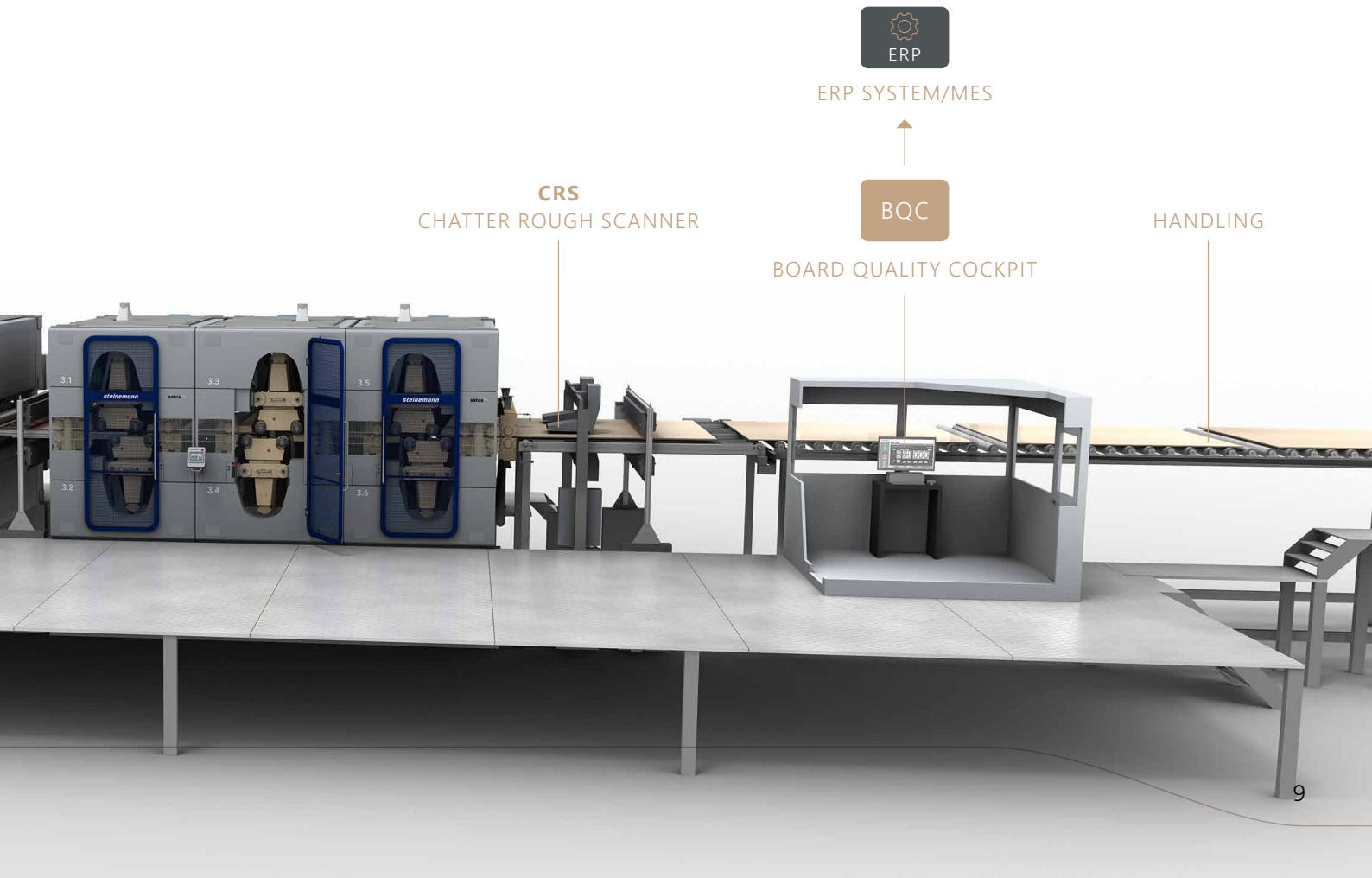


Check out our YouTube channel for the BQC introductory video

BQC order matrix

The matrix below summarizes the individual expansion options to let you put together your ideal BQC package.

	Variant 1	Variant 2	Variant 3	Variant 4
	Module 3 (inactive) Module 1 (active) Module 2 (inactive)	Module 3 (inactive) Module 1 (active) Module 2 (active)	Module 3 (active) Module 1 (active) Module 2 (inactive)	Module 3 (active) Module 1 (active) Module 2 (active)
Module 1 – Automation Level 1 Fully automated calibration sanding Semi-automated fine sanding	✓	✓	✓	✓
Module 2 – Automation Level 2 Fully automated calibration sanding and fine sanding		✓		✓
Module 3 – Process Integration Networking of the sanding line for efficient process and quality reporting			✓	✓

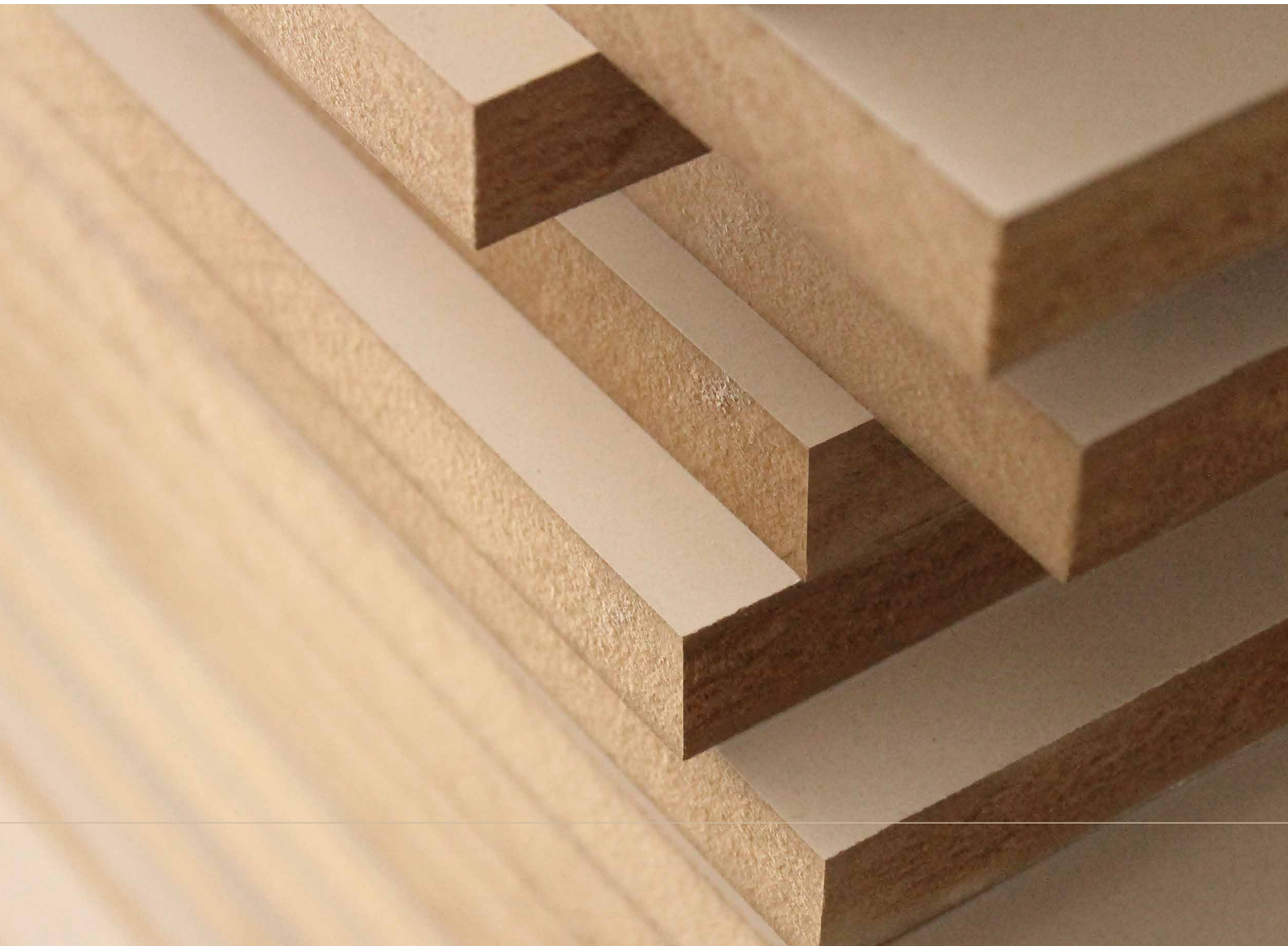


Quality that goes
beyond the surface.

TSQ TOTAL SURFACE QUALITY

Total surface quality – we pursue this goal with every solution that we develop for our customers. Every project places very specific demands on the machine, abrasives, process flows, and service performance.

Only the coordinated interplay of all these components enables sanding results that meet the high standards of Total Surface Quality that we aim for and you demand.



1.Q

PROCESSES

The configuration of a sanding process determines whether you reach your quality, performance and efficiency targets. To ensure it does, Steinemann offers not only sanding seminars, but also an innovative process control system called the BQC (Board Quality Cockpit). It provides the machine operator with relevant information on the ongoing processes that helps him produce panels of consistently high quality every time.

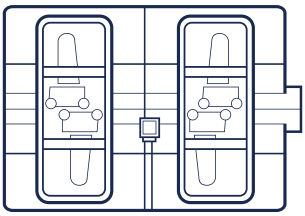
2.Q

SERVICES

Steinemann's range of services is geared to maintaining the high performance and uptime availability of all machines currently in operation. We support our customers by offering customized, on-site maintenance and operator training classes, online remote servicing and numerous training videos. Our network of service technicians provides on-site service all over the world.

3.Q

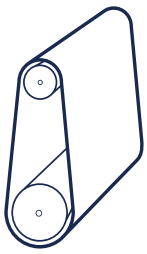
MACHINES



Thanks to innovative technologies, Steinemann wide belt sanders have been setting new standards in quality for over 50 years. Whether the focus is on factors such as sanding results, durability, machine availability, safety, cost-efficiency, or on materials such as particle boards, MDF, plywood, OSB boards or laminates, Steinemann has the right sanding technology for every need.

4.Q

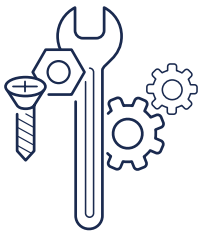
ABRASIVES



The perfect interplay between abrasives and machines is a key factor in quality panel production. That's why we don't leave anything to chance and manufacture segmented belts ourselves. By doing so, we ensure both the machine and material are a perfect match for a given production process.

5.Q

PARTS



Even the best machine is not immune to wear over the long run. To prevent a worn part from causing extended downtime unnecessarily, Steinemann offers an exceptionally well-organized spare parts and repair service with short turnaround times and extensive warranty services.

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