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DEEP DIVE INTO XMATIC AND XMATIC COMPACT

Tests, data and proofs



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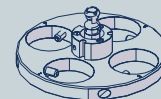
CERTAINTY THAT ONLY AUTOMATION CAN DELIVER. EVERY TIME.

Get the very best reproducibility, throughput and process standardization with Xmatic – the fully automated grinding & polishing solution for high throughput labs.

- ✓ **Maximize reproducibility** with fully automated and consistent grinding & polishing
- ✓ **Improve safety** with minimal operator intervention
- ✓ **Increase lab efficiency** by minimizing operator time per specimen
- ✓ **Simplify your processes** with fast, easy and intuitive operation
- ✓ **Boost throughput** with an optimized and high-quality preparation process



Xmatic prepares up to



8 specimen holders



**with just
4 minutes of
operator time**

Maximize reproducibility with full automation

Xmatic is the ideal colleague. It fully automates the grinding and polishing process, reducing human error to ensure a very high degree of reproducibility.



Xmatic handles the entire grinding, polishing and cleaning process, but has a small footprint, freeing up lab space for other workstations.



Footprint: 75 x 243 cm (29.5 x 95.5")

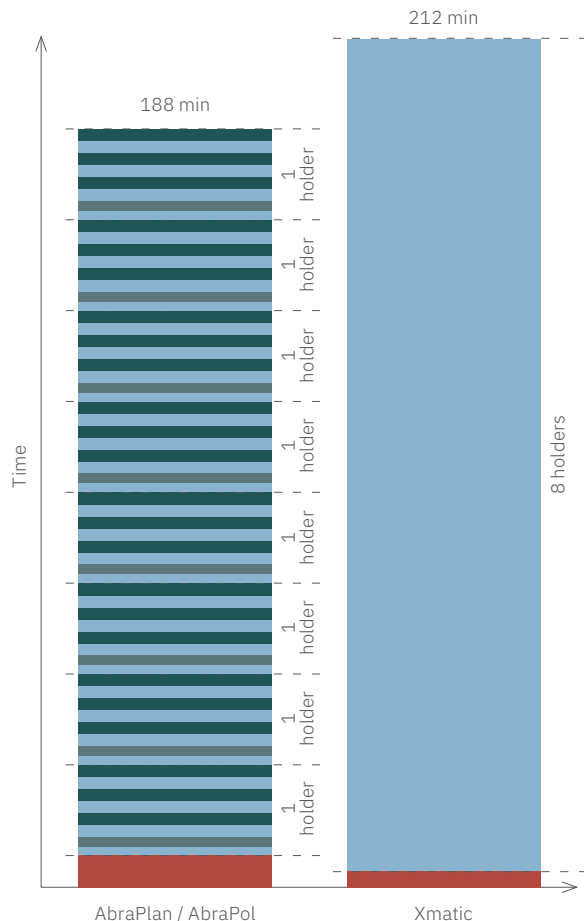


Footprint: 75 x 149 cm (29.5 x 58.6")

[Play video](#)

Increase efficiency with minimal operator time per specimen

Preparation of 8 specimen holders



Xmatic reduces the amount of time you need to spend on specimen preparation. You can load up to 8 specimen holders at one time and allocate the same or a different method to each specimen holder. Xmatic will then prepare the specimens automatically, while you work on other tasks.



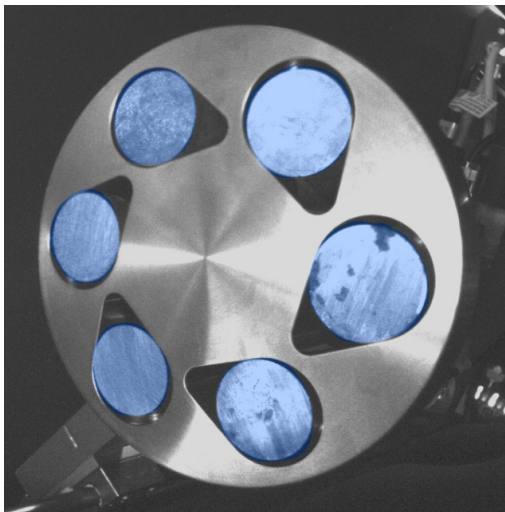
It takes just 4 minutes for an operator to setup Xmatic, insert 8 specimen holders into the machine. These are then prepared automatically with no operator attention. On semi-automatic AbraPlan / AbraPol, the operator will need to attend the machine regularly for washing the specimen holder and changing the consumables.

[Play video](#)

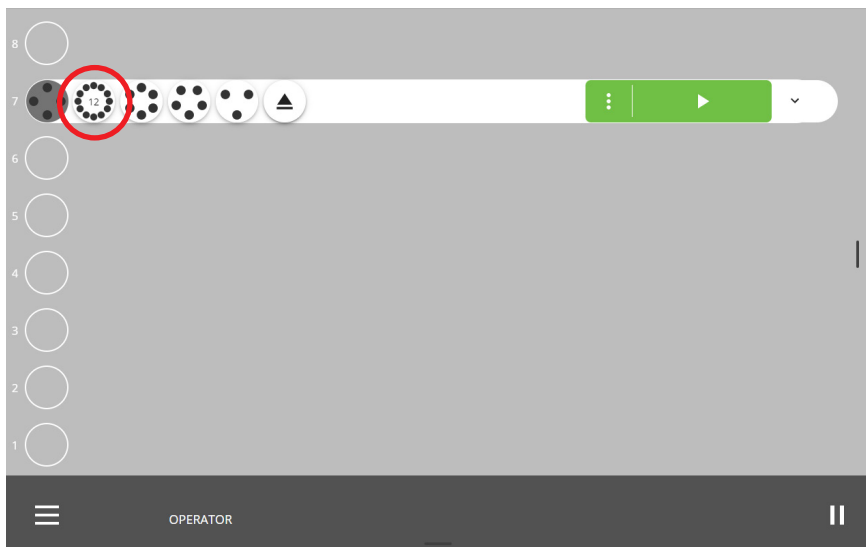
- Wash after grinding or polishing step and change of consumables
- Wash after plane grinding step
- Preparation time
- Setup

Achieve high reproducibility with automatic force adjustment

Xmatic can automatically detect the number of specimens in the specimen holder and adjust the force in the method accordingly. This eliminates the need for you to calculate the force, lowering the risk of error. It also reduces the number of methods required in the method database.



Xmatic's inbuilt camera automatically detects the number of specimens to be prepared.

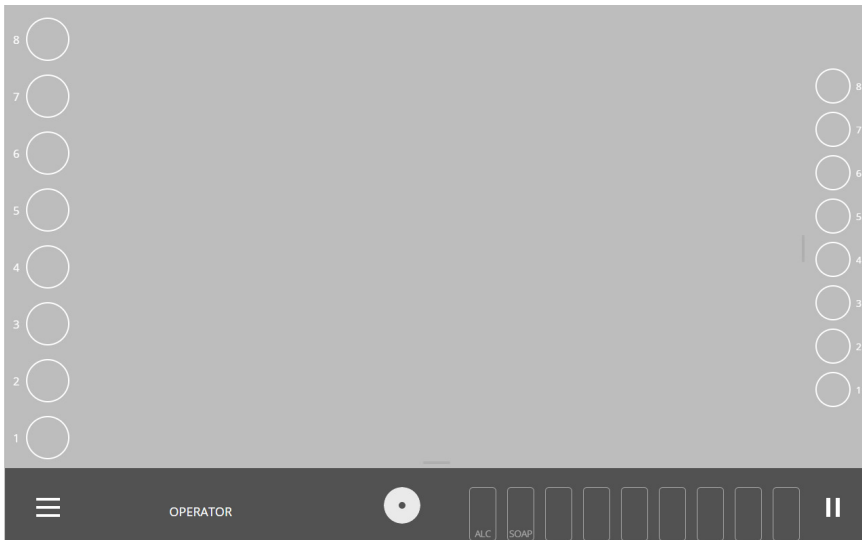


Alternatively you can manually adjust the number of specimens in the holder by clicking the icon.

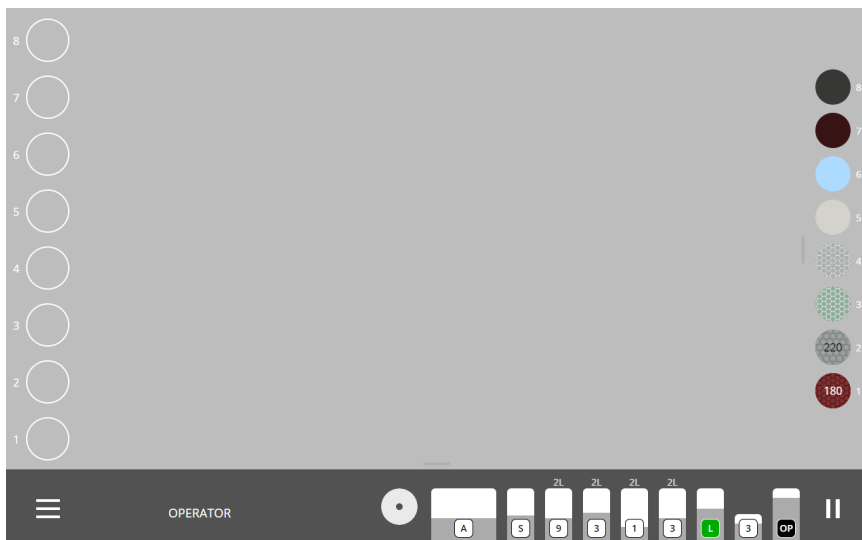
[Play video](#)

Save time with automatic detection of consumables

When a consumable is inserted, Xmatic recognizes the consumable by a unique data matrix code, and its position is automatically registered on the user interface. This saves time and reduces the risk of error.

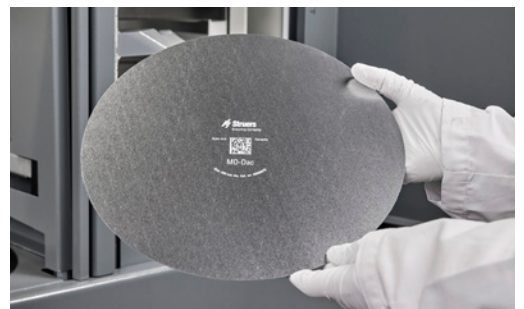


Empty user interface.



User interface reflects the consumables inserted.

[Play video](#)



Every Struers suspension, lubricant or MD-grinding/polishing surface has a unique data matrix code that is automatically recognized by Xmatic.

Ensure consistency and accuracy of results with correct dosing



Xmatic's pumps ensure the correct amount of suspension or lubricant is dosed every time, even if the type of liquid varies. This improves process consistency and the quality of your results.



Different types of liquids, such as blue lubricant and Diapro suspension, are always dosed accurately by Xmatic's pumps.

Optimize your process with automatic dressing

Xmatic can auto-dress MD grinding surfaces. This ensures optimal removal in your grinding step, increasing efficiency in your process.

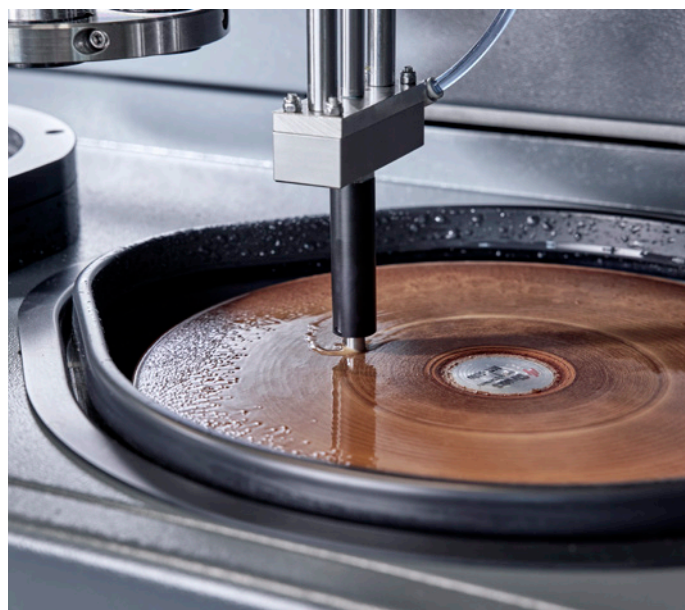


When creating your method, you can choose to include dressing after the grinding step.

[Play video](#)



Dressing MD-Piano with an aluminum oxide stick.



Dressing MD-Alto with a diamond tip.

Boost throughput with simultaneous movements



Thanks to full automation, Xmatic can deliver a high number of specimens in a short period of time. All processes in the method are performed efficiently, with rapid and simultaneous machine movements between steps to optimize throughput.



Xmatic performs multiple operations at the same time. For example, while cleaning specimens, it automatically loads the grinding or polishing surface for the next step.

Ensure non-stop production with long-life design



Xmatic's rugged design and robust engineering ensure a long lifetime, with limited maintenance. Xmatic also automatically tracks the number of cycles it performs, enabling you to schedule maintenance and avoid any unplanned downtime.



All Xmatic's moving parts undergo Struers' extensive life-time tests. Xmatic is designed with an expected lifetime of 10 years (with 220 workdays per year and 16 hours per day). This equates to approximately 35,200 operation hours and 84,000 specimen holders.

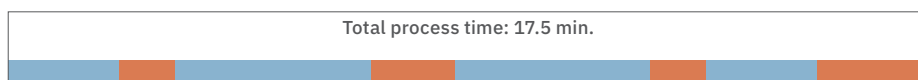
Automatic life cycle test set-up for testing of drawers in the vertical conveyor.

Increase efficiency with faster cleaning programs

Xmatic's cleaning and drying programs are highly efficient. This is due to the angle of the nozzles and the use of high pressure water and different medias, such as soap and alcohol. These short cleaning and drying programs reduce overall process time, resulting in higher throughput.

Xmatic

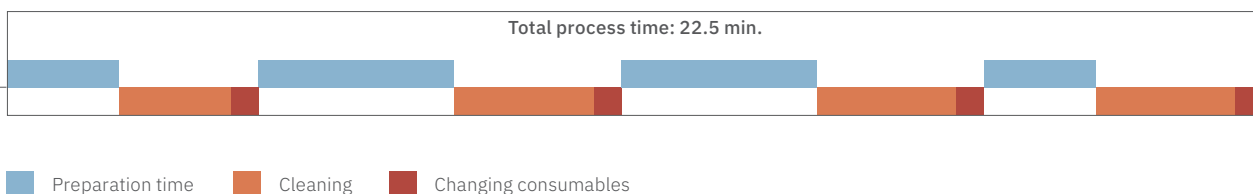
Handled by
the machine



Semi-automatic solution

Handled by
the machine

Manually
handled



Automatic cleaning
reduces total process
time by

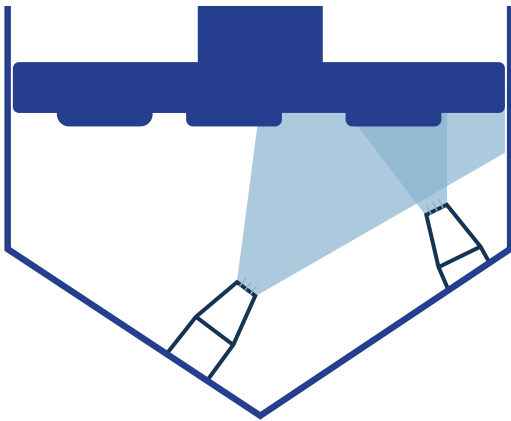
22 %

compared to manual
cleaning*.

* Based on a process with automatic cleaning compared to a process with manual cleaning of 6 specimens in a specimen holder. A full process with automatic cleaning takes 17.5 minutes and the same process with manual cleaning takes 22.5 minutes.

Improve final quality with automatic cleaning between steps

High-quality cleaning is essential to reproducibility and the quality of your preparation results. Xmatic cleans each specimen holder between grinding and polishing steps via thoroughly proven cleaning programs.



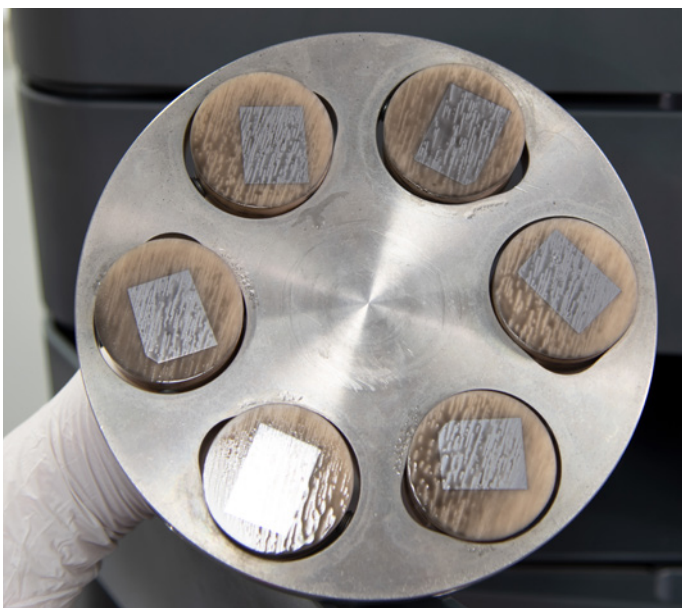
The nozzles are placed to ensure optimal cleaning of the specimen and holder.



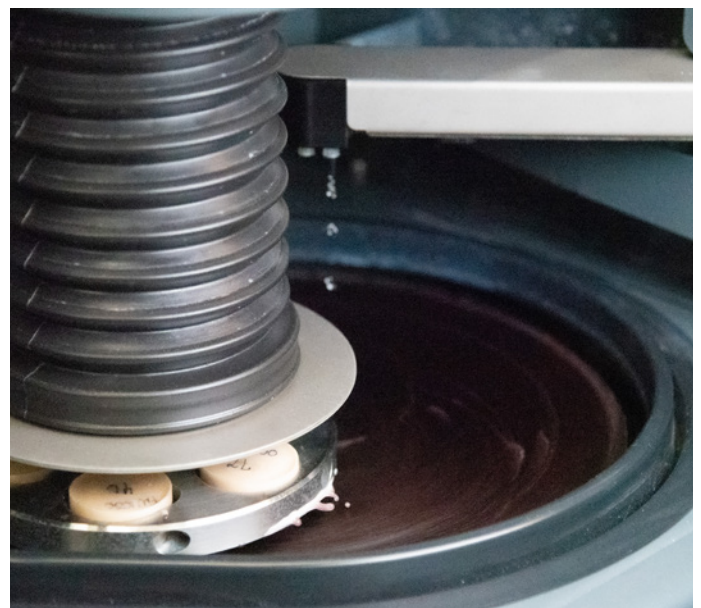
For cleaning of porous specimens you can optionally add ultrasonic cleaning to your machine

Ensure clean specimens, even with oil-based consumables

Oil-based suspensions and lubricants can be difficult to clean off. As part of the method, you can choose to include a pre-cleaning step after the final polishing step.



Specimens prepared with oil-based suspension.



Pre-cleaning step using soap and water prior to the high-pressure cleaning step.

Increase efficiency with inspection-ready specimens

As a result of its high-quality cleaning and high-end drying, Xmatic delivers clean and dry specimens, ready for the microscope.



Reduce training time with an intuitive interface

On Xmatic's intuitive user interface, the operating modules (specimen holders, MD surfaces and consumables bottles) are placed according to where they are on the machine. This is known as 'embodiment' and makes the interface much easier to use, reducing training time.



Change consumables quickly

Xmatic comes with the Easy connector system, which makes it very simple to change consumables without spillage.

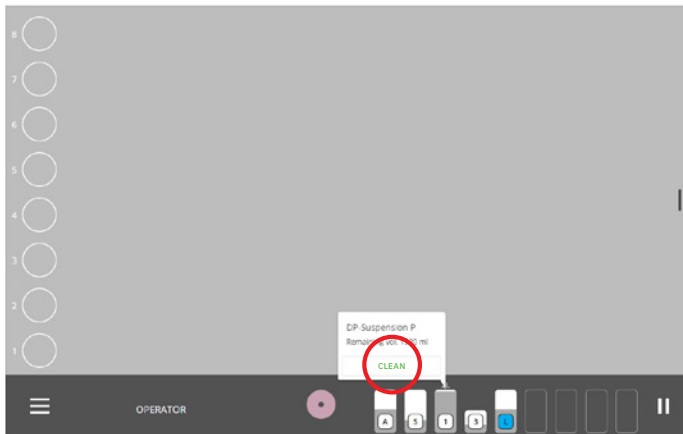


The bottles for suspension and lubricant have an integrated tube. This makes the change of suspension or lubricant fast and you avoid consumables spillage.

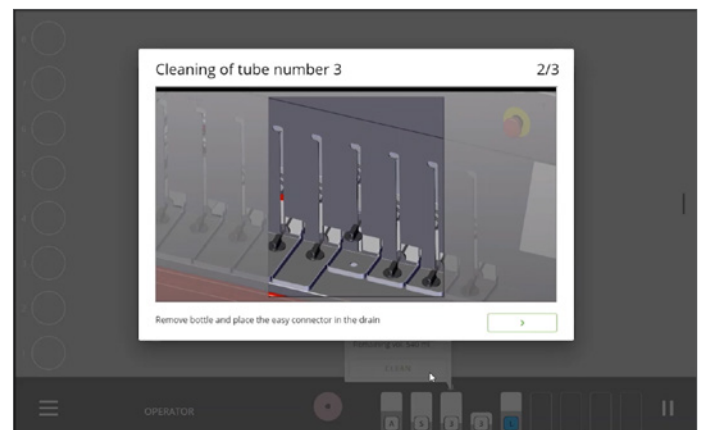
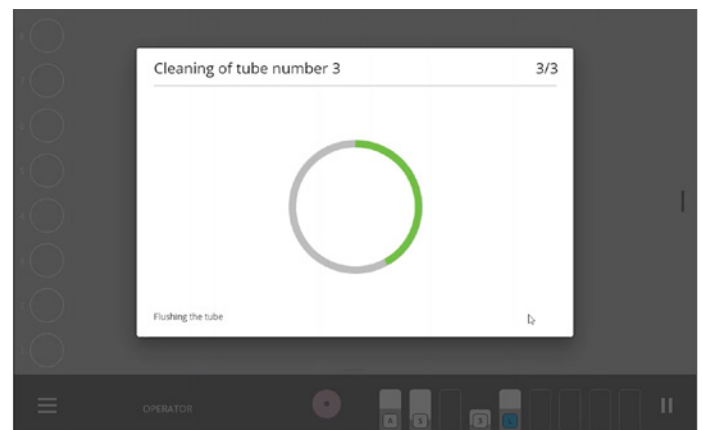
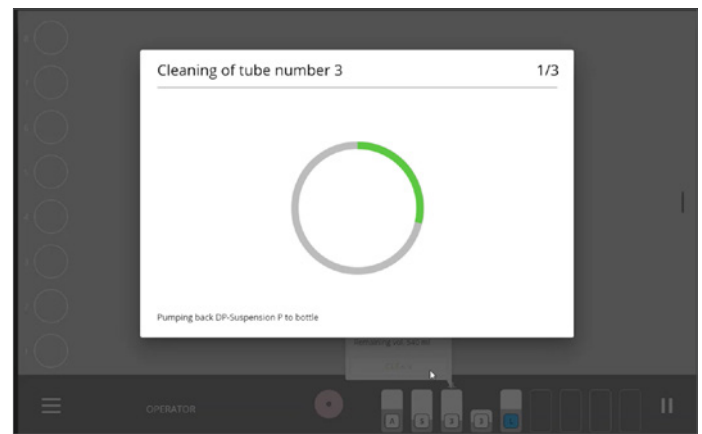


Clean consumables tubes automatically to avoid contamination

Xmatic's tube cleaning function clean tubes automatically, with just the press of a button. If a different suspension or lubricant is added without cleaning, Xmatic will automatically suggest cleaning the tube to avoid contamination.



[Play video](#)



Follow the step by step guide on the user interface shown on the screen dumps

Document your preparation process

Xmatic tracks each specimen holder through the entire preparation process and create a log file of every action. This enables a report that documents the entire process, including consumable consumption, process time, method, and the number of specimens prepared.



Process documentation

Machine Xmatic or Xmatic Compact
 Period choosen dd.mm.yy - dd.mm.yy

	Method	No of specimen holders	No of speciemens	Avg. Time used (min)	Avg. Time spend on high removal grinding surface (min)	Avg. Time spend on MD surfaces (min)	Avg. Lubricant used (ml)	Avg. Suspension used (ml)
Process documentation	 Method 1	7	42	15	3	10	0	130
	 Method 2	2	8	20	3,5	14	131	271
	 Method 3	3	18	12	0	9,5	0	124
	 Method 4	1	3	22	2,5	16,5	0	341
	Total	13	71	69	9	50	131	865

Machine overview

Total amount of time the machine has been in use (hrs, min) 3,38 hours

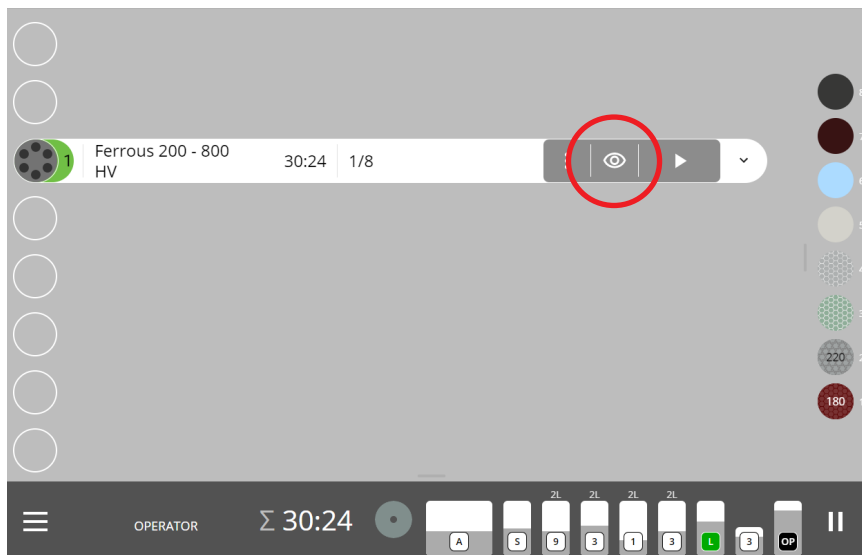
No of times the machine cannot start or complete a method (#) 2 times



Xmatic's automatic log file comprises a range of information, including the number and type of specimens, details of the preparation method and how much consumable was used.

Pause and inspect specimens with Inspect functionality

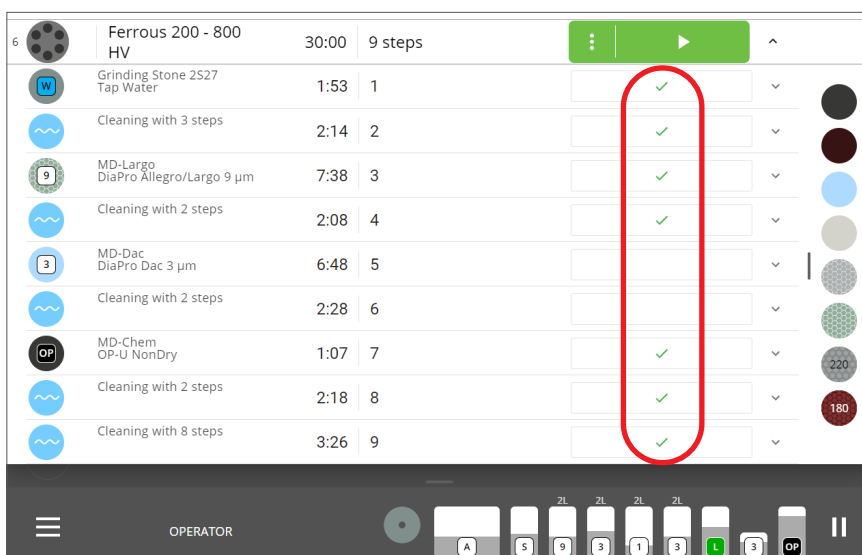
The unique 'Inspect' feature enables you to pause a preparation process at any point and inspect the specimens. After inspection, you can restart the process from the beginning or continue where it finished.



The Inspect feature is useful if, for example, you need to grind to a certain point or are in the process of developing new methods.

Work faster and smarter with full method flexibility

If you do not want to run an entire method, Xmatic enables you to choose which steps to run. Simply select the steps that you would like to run on the user interface.



Improve workplace safety with minimal operator intervention

As a fully automated solution, Xmatic significantly reduces how often operators need to interact with machinery. This improves workplace safety.



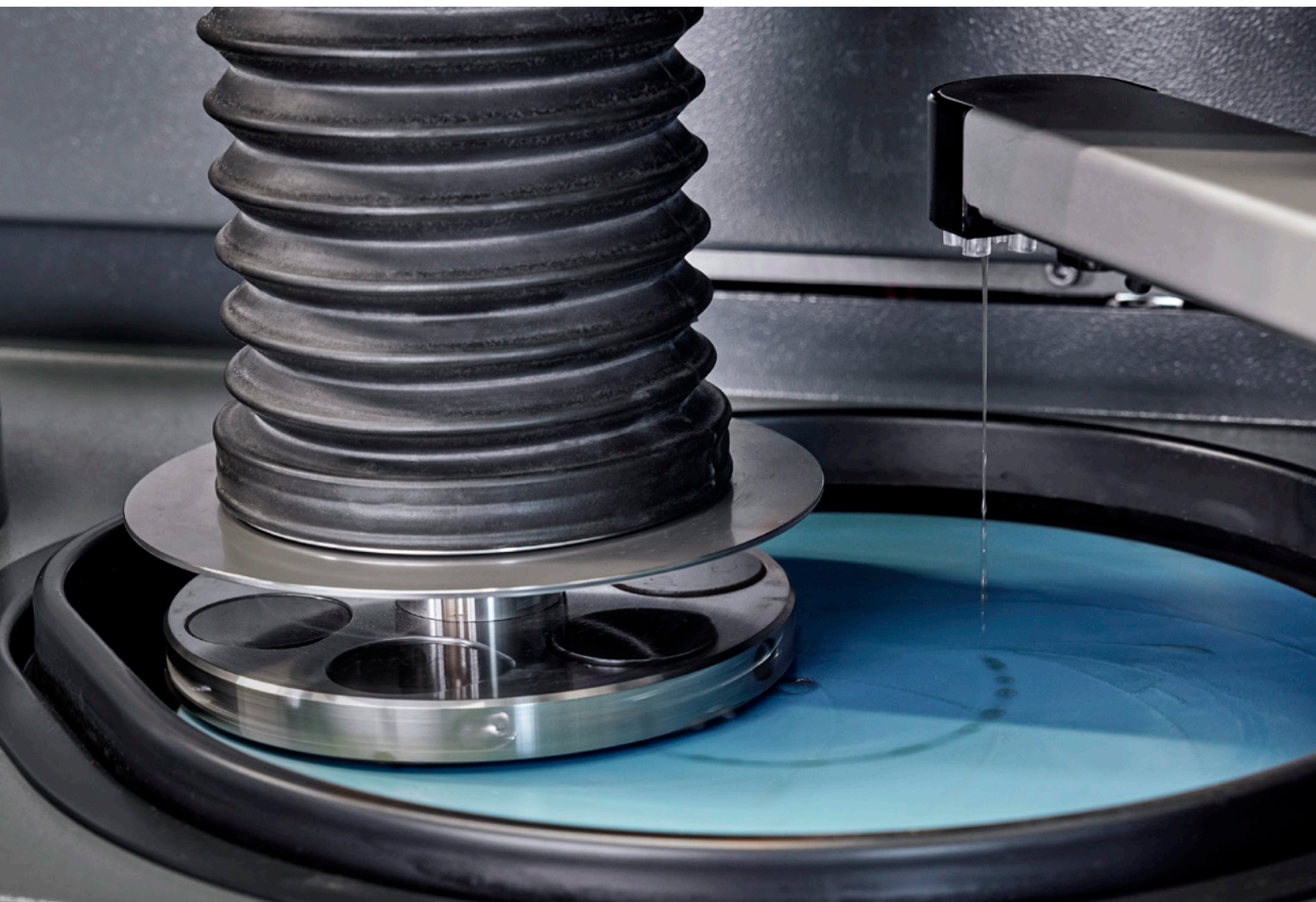
In-built safety features ensure operator safety



Xmatic includes a number of safety 'interlocks'. These lock certain areas of the machine when it is working to prevent operators from coming into contact with any moving parts. Xmatic also includes two emergency stop buttons, located at either end of the machine.

Save water with recirculation

Xmatic comes with a recirculation system as standard for the high speed grinding station, and as an option on the MD grinding and polishing station. The recirculation system ensures the optimal cooling of your specimen and recirculates water to lower water consumption.



Optimize lab space with Xmatic and Xmatic Compact

Xmatic has been carefully designed to optimize space wherever possible. For example, the conveyor is placed vertically, instead of horizontally to minimize footprint. However, if you require an even smaller footprint, you can choose Xmatic Compact. This delivers almost the same features as the Xmatic but does not include a high speed grinding station.



Xmatic gives you full automation and high throughput. It includes a vertical conveyor, which enables you to load up to 8 specimen holders at a time, so you have more time to do other tasks. It also includes a high speed grinding station, which optimizes throughput by reducing the time it takes to plane grind the specimens.



Xmatic Compact has been optimized to reduce footprint. The vertical conveyor has been removed to save space and it does not include a high speed grinding station (all plane grinding is performed with Struers large portfolio of MD plane grinding surfaces).



Xmatic Compact with conveyor has a relatively small footprint, but includes a vertical conveyor. This increases automation so operators have more time for other tasks.

Use Struers consumables and accessories for maximum efficiency

Whatever your material or preparation goal, you will achieve higher throughput and reproducibility with Struers consumables and accessories.

We supply a complete range of high-quality grinding and polishing consumables for Xmatic and Xmatic Compact, including an extensive range of specimen holders, dresser sticks and diamond tips for dressing and truing of grinding surfaces. Additionally, we supply additives for the recirculation system. All grinding and polishing consumables have a unique data matrix code that makes them instantly recognizable to your Xmatic machine and so saves time during set up.

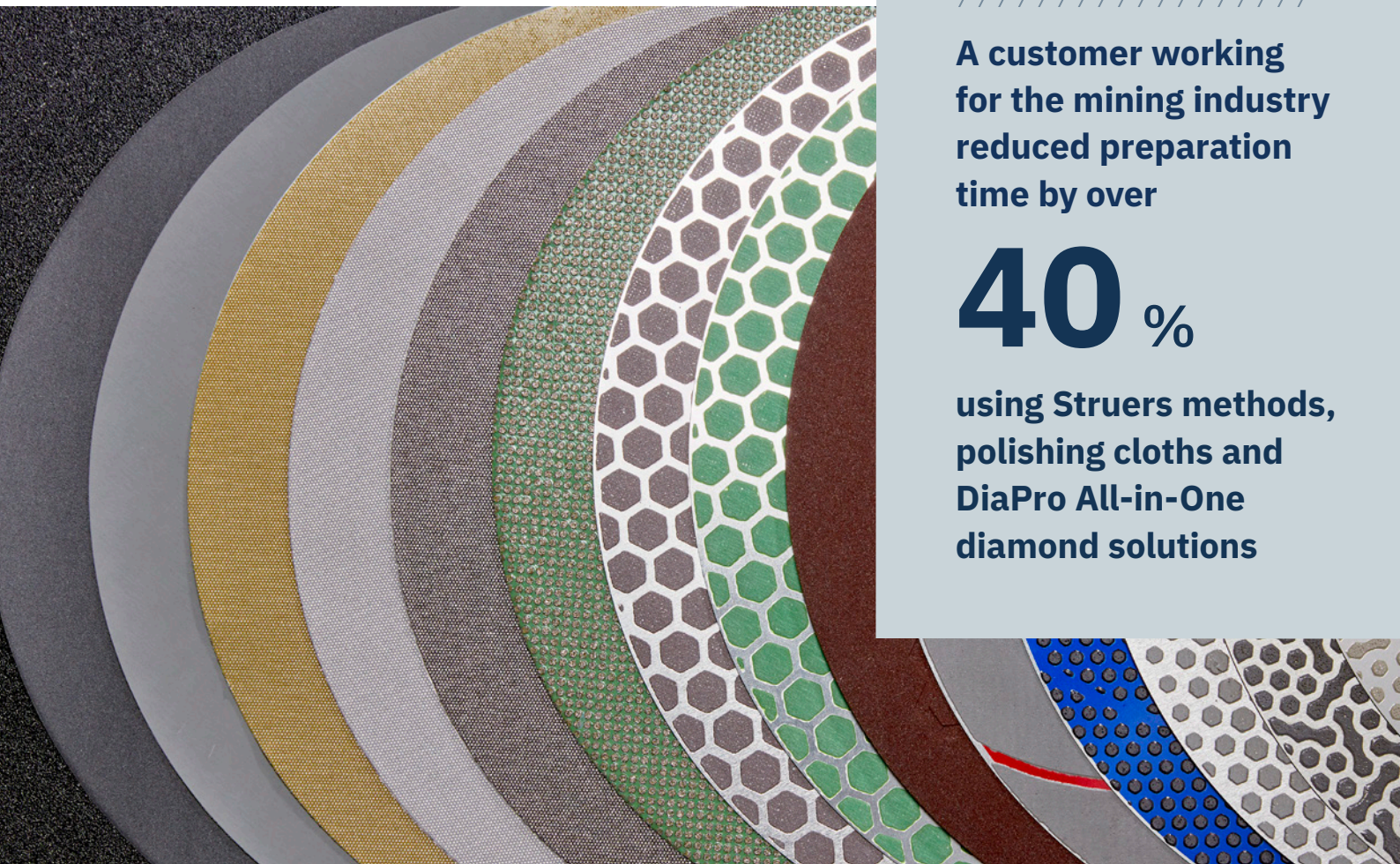
To ensure fast and accurate clamping of your specimens, Uniforce is an easy-to-use levelling device that enables you to clamp your specimens quickly, correctly and securely in your specimen holders. This ensures your specimens are clamped in the best possible way right from the start and thereby shortens the plane grinding step.

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**A customer working
for the mining industry
reduced preparation
time by over**

40 %

**using Struers methods,
polishing cloths and
DiaPro All-in-One
diamond solutions**





Ensuring certainty

Materialographic preparation and testing demands consistent, reproducible results. These come not only from your laboratory process, operators and equipment, but from your supply chain and your partner. As a Struers customer you benefit from high quality design and engineering of equipment and consumables, but just as much from our unique knowledge base, robust global supply chain, and expert service and applications support – where and when you need it. We call all this ensuring certainty

Struers remains dedicated to making the world a better place through the pursuit of deep scientific insights and ground-breaking technology. Today, we're your trusted partner in a fast-changing world, sharing our expertise and practical experience on a global scale. This gives you innovative solutions that help you face the future with confidence. We continue to lead the way in materialographic products and services, and to shape future developments towards a better society.