



**Prepare your
specimens perfectly**

- **Sturdy, durable design**
- **Intuitive user interface**
- **Automatic dosing**
- **Different system for different requirements**

Expect more from your preparation equipment

You don't have time to waste. That's why the Tegramin preparation system combines ease of use with advanced functionality. Use it to prepare perfect specimens from a variety of materials.

Three disc sizes:

Tegramin-30: 300 mm (12") dia.

Tegramin-25: 250 mm (10") dia.

Tegramin-20: 200 mm (8") dia.



PERFECT
PREPARATION RESULTS

Quality down to the last detail

We worked closely with experienced metallographers to ensure that every aspect of Tegramin gives you the ease and reliability you need.

Plane specimens, quiet operation

A massive cast aluminum base and sturdy, two-column construction support the specimen mover head for a rock-solid system. That means minimal noise while you prepare perfectly plane specimens.

Protect sensitive specimens

Avoid damaging small or sensitive specimens by grinding and polishing with a force as low as 5 N per specimen.

More plane than ever

Since the specimen mover plate is firmly – and automatically – locked inside the specimen mover head, specimen planeness improves dramatically.

Precise control

Precise start-and-stop control ensures optimal preparation results, preventing potential specimen damage. Force increases and decreases gradually, while the speed of both the preparation disc and specimen mover plate ramps up and down at pre-defined rates.

Optimal dynamic relations

The specimen holder automatically rotates in the same direction as the disc during preparation (counterclockwise) for the best results. For special applications and polishing with oxide suspensions, simply change the rotation to clockwise to keep the oxide suspension on the disc.

No waste, no mess

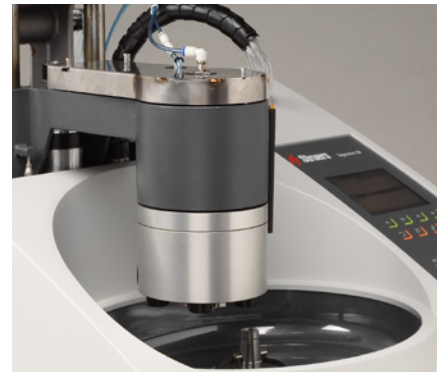
Suspension/lubricant distributes equally and stays on the disc, since the disc turns slowly while pre-dosing.

Maximum efficiency

Minimize grinding time while ensuring sufficient removal of material with a built-in sensor that measures removal in the 50-5,000 μm range.

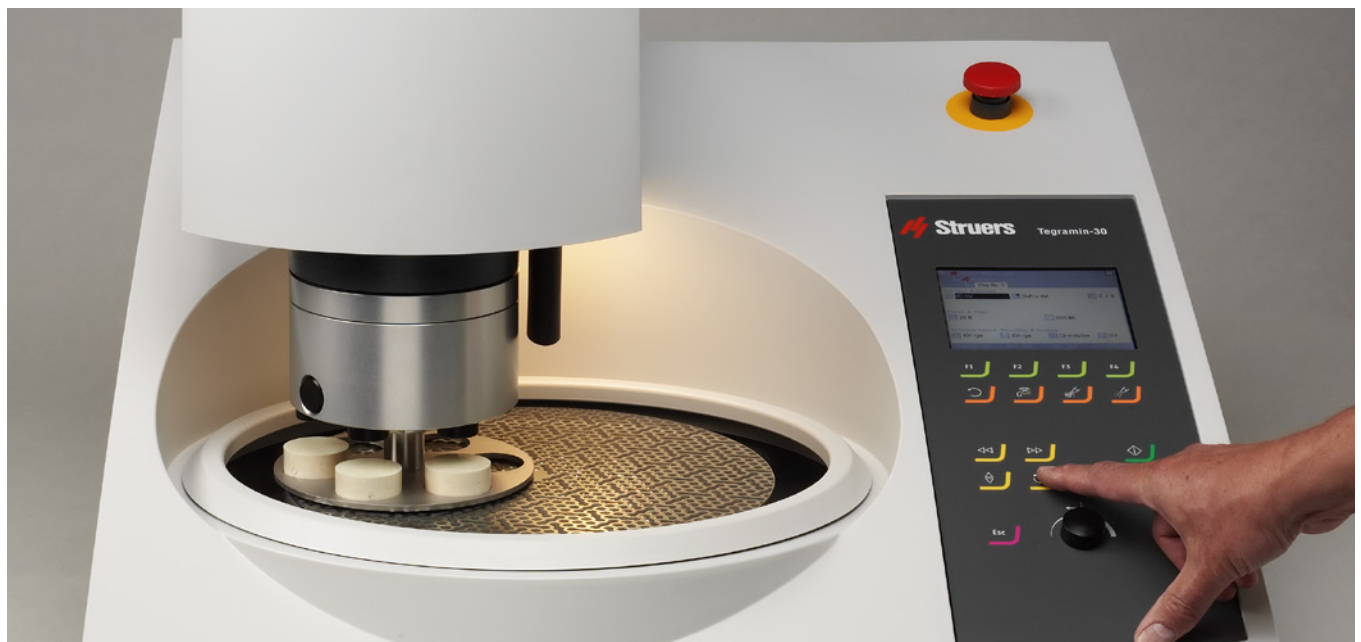
Easy insertion and removal of specimens

Insert and remove specimens quickly and easily, since the mover head always stops in the same position as it started. With the touch of a button, the specimen mover plate also rotates 180° for easy access.



Versatile operation

Prepare individual specimens and specimens clamped in holders with the Tegramin-30 or -25. Use Tegramin-20 to prepare only individual specimens.



For maximum reproducibility

Since you need precise dosing of diamond suspension/lubricant to get the perfect preparation result, Tegramin gives extra attention to dosing.

More reproducibility, less cost

Automatic dosing regulates the amount of suspension/lubricant applied to increase reproducibility and control your use of consumables.

Efficient manual preparation*

Use the automatic dosing and timer function for manual preparation, too. Dosing starts automatically when you press start. The disc stops at your preset time. This means that controlled, short manual repolishing of specimens after etching is also efficient.

Never run out of suspension/lubricant

To be sure that the suspension/lubricant bottles are never empty, Tegramin has an automatic level calculator. The total volume in each bottle is specified after refilling, and the remaining volume is calculated during each preparation.

Always correct dosing

Dosing is always correct, thanks to the calibration function. Simply calibrate the pump at regular intervals, and Tegramin doses identically every time. Now any method produces the same preparation result.

No contamination

Pump(s) reverse slightly to retract the suspension/lubricant from the dosing nozzle.

Save time cleaning tubes

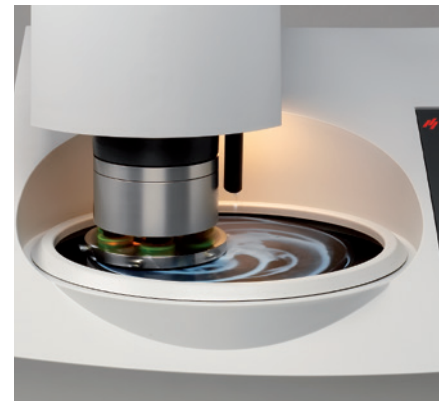
A built-in tube cleaning routine makes your life easier. Tegramin monitors which suspensions and pumps/tubes have been used, so you only clean what's necessary. Messages on the display tell exactly what to do to clean a tube and make it ready for a different grain size, for example.

Automatic tube cleaning after OP-polishing

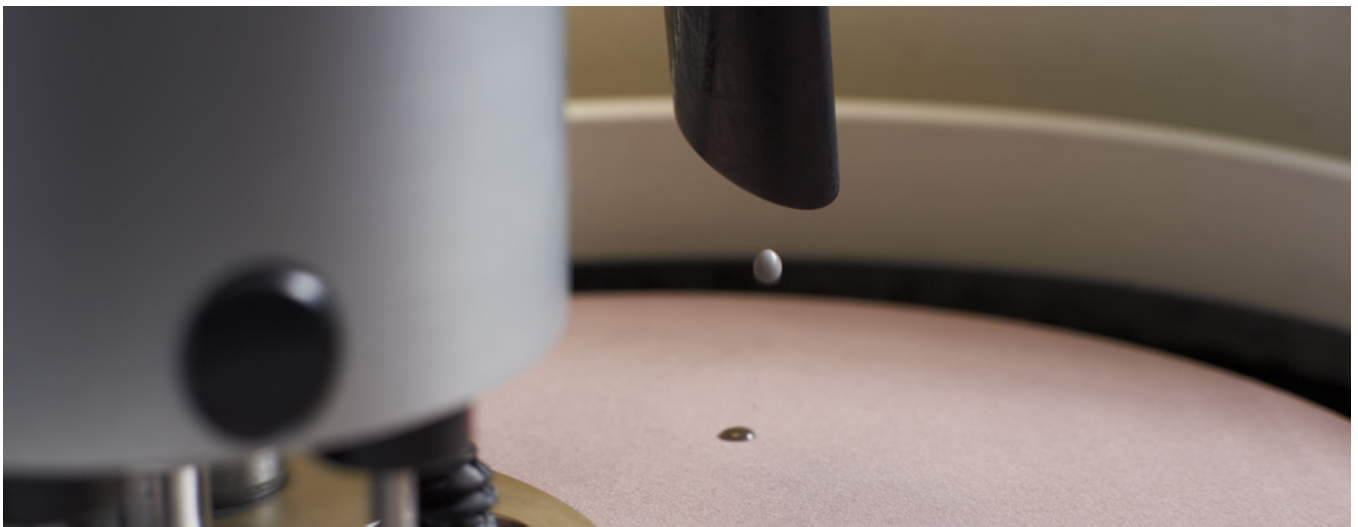
At the end of an OP-polishing step, the force is reduced to the lowest possible value, the rotation changed from counter- to corotation and tap water is used to clean the tube just after the pump to the nozzle. This means that the tube is flushed completely, removing all OP-suspension and cleaning both polishing cloth and specimens as well. This prevents chemical attack after the OP-step is finalized.

Clog-free OP-tubes

To limit the risk of clogging the tubes, Tegramin pumps the OP-suspension back



to the bottle and replaces it with water after each OP-step. Struers OP-S NonDry and OP-U NonDry silica suspensions provide excellent polishing results without drying out in the tubes.



* Not for Tegramin with safety cover

Users will appreciate the many features

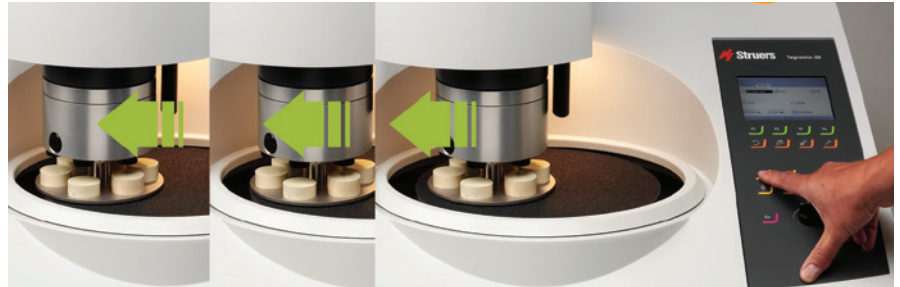
Of course you need to prepare high-quality specimens. But it is a more enjoyable process for everyone when machine operation is optimal.

Adjusts for optimal use

Utilizing the preparation surface optimally is easy, with the adjustable specimen mover head. Adjustments are motorized on Tegramin-25/-30 and manual on Tegramin-20.

Prevents drain blockage and saves water with recirculation

Collect grinding debris and avoid blocking the draining system by connecting a recirculation cooling unit. It's also useful when water is scarce or there's no water connection nearby.



Recirculation and tap water

You can use water from a recirculation system for grinding. But OP-polishing requires clean tap water. The shift valve on the drain hose automatically directs the drain water

either back to the recirculation tank when grinding or to the drain when cleaning with tap water. No overfilling, and no emptying of the recirculation cooling unit.

CONSISTENT and perfect result everytime

Every preparation is important.

And every preparation should be perfect. Here are more ways Tegramin helps ensure certainty.

Increases reproducibility

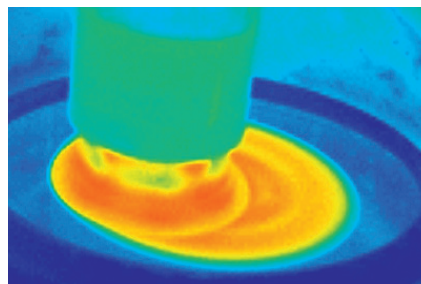
You need consistent preparation procedures to ensure repeatability and reproducibility. Tegramin's database stores up to 200 preparation methods.

Helps you start right away

Tegramin includes Struers' 10 Metalog Guide Methods, covering all major material groups. Developed for maximum performance, they help you get started right away. You can also use them as a great starting point to develop your own methods.

Combines steps automatically

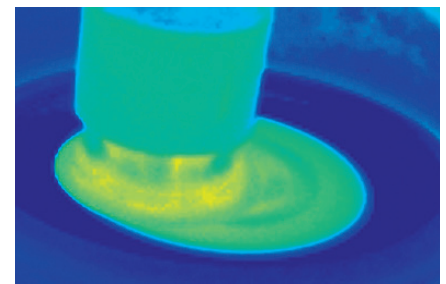
Sometimes it's an advantage to divide a preparation step into two or three sub-steps – for example, different force or dosing levels for more reliability and faster preparation. Tegramin automatically recognizes steps



as sub-steps when the same preparation surface and lubricant/suspension are used. It then runs these steps in succession, without any user intervention. This function can be un-selected when SiC Foils/Papers are used, as several steps are created to change worn papers.

Disc cooling boosts quality, cuts costs

The temperature of the preparation surface



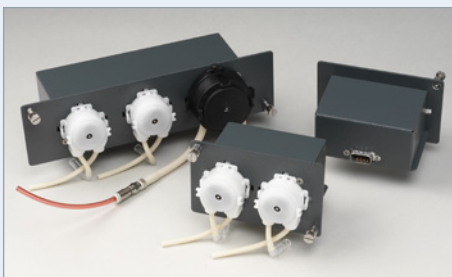
stays low – even with high volume preparation. A nozzle underneath the MD-Disc applies water to the backside of the disc, reducing the temperature by up to 20°. This improves preparation quality and minimizes consumption of suspensions and/or lubricants on the Tegramin-30 and -25.

Ensuring certainty



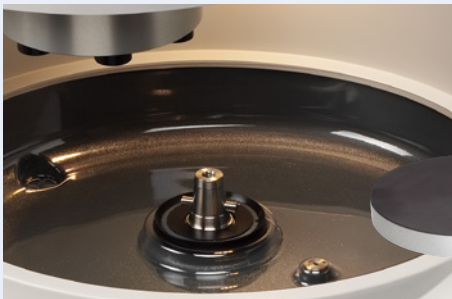
Choose what meets your specific needs

- With cover to encase fumes and block noise
- With safety cover for a protected preparation area
- Without cover for fast operation



Mix modules

Combine three different dosing modules in various ways. Mount up to six suspension/lubricant pumps and one oxide pump.



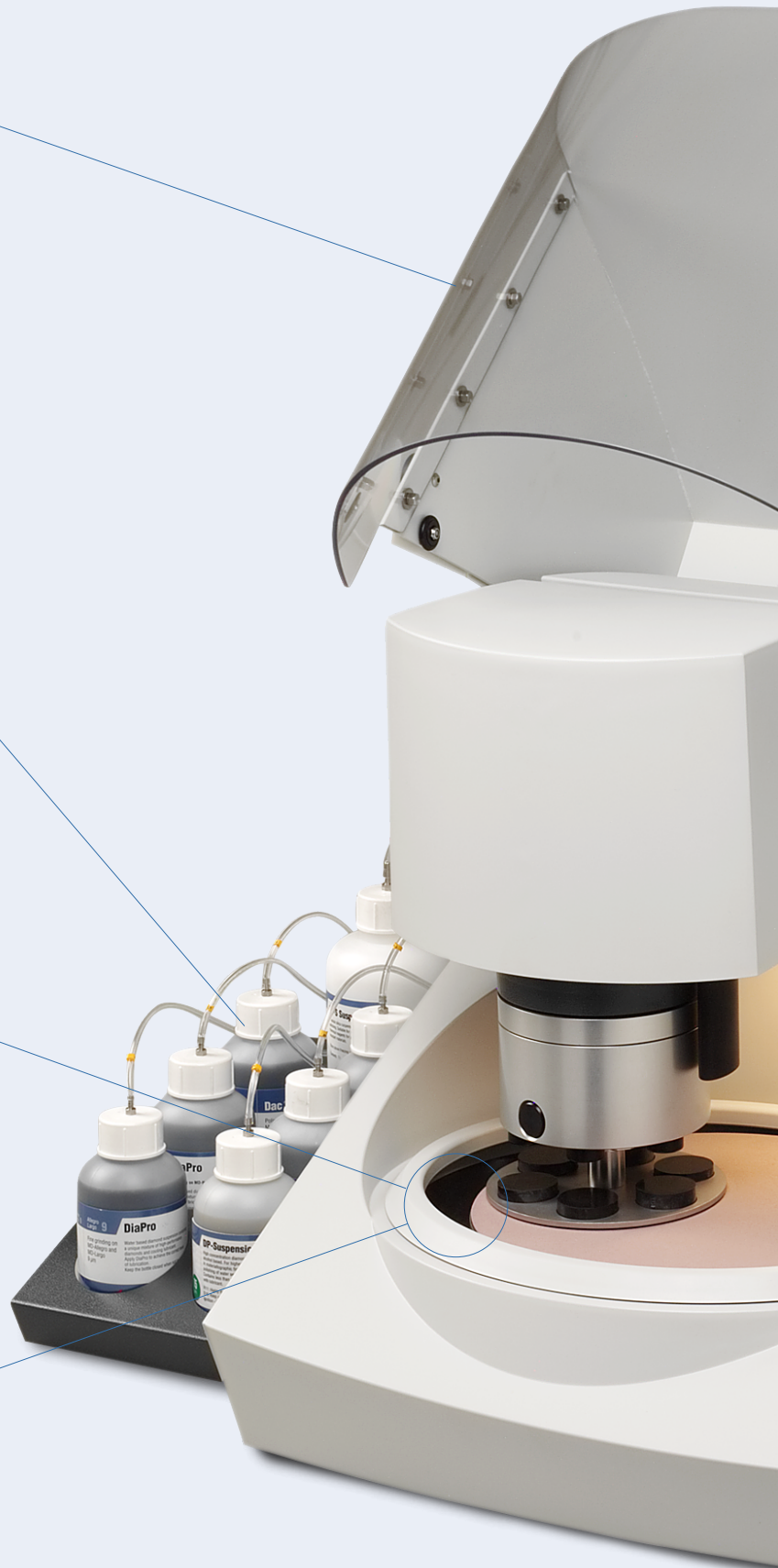
Fast placement/removal

A center cone* makes the MD-Disc even faster and easier to work with.

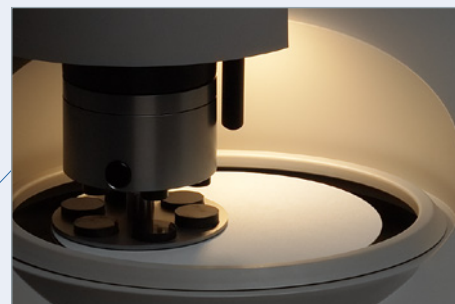


Easy cleaning

A removable bowl liner* makes it easy to clean and collect debris that does not wash down the drain.



* To be ordered separately



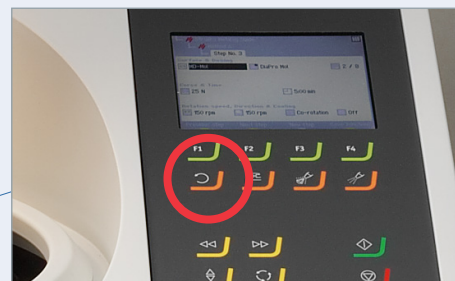
See exactly what you're doing

An LED light illuminates the preparation area so you can follow the preparation process clearly.



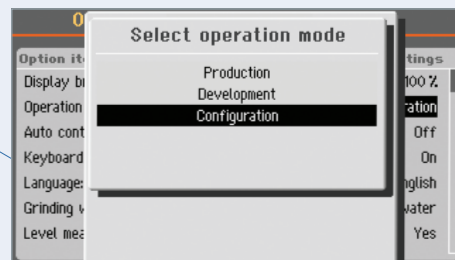
Flush away debris

Disc cooling is activated while the disc is rotating. Water sprayed on the bottom of the MD-Disc is sent out to the walls of the bowl, removing loose debris.



Remove excess water fast

Press a button, and the disc spins up to max speed to remove excess water from the preparation surface after cleaning.



Prevent unauthorized changes

Three different user levels ensure only authorized people can change preparation methods.

Technical data		Tegramin-20	Tegramin-25	Tegramin-30
Capacity		4 x 40 mm dia. individual specimen	6 x 40 mm dia. / 3 x 50 mm dia. individual specimen Specimen holder 140 mm dia.	6 x 50 mm dia. individual specimens Specimen holder 160 mm dia.
Disc	Diameter	200 mm / 8"	250 mm / 10"	300 mm / 12"
	Speed	40-600 rpm, variable in steps of 10		
	Rotational direction	Counter-clockwise		
	Motor power continuous / max	370 W / 0.5 HP (500 W / 0.75 HP)	750 W / 1.0 HP (1125 W / 1.5 HP)	
	Torque at disc Cont. at <300 rpm Cont. at 600 rpm Max.	11.8 Nm / 8.7 ft-lbf 5.9 Nm / 4.4 ft-lbf > 18 Nm / 13.3 ft-lbf	23.8 Nm / 17.6 ft-lbf 11.9 Nm / 8.8 ft-lbf > 40 Nm / 29.6 ft-lbf	
Head	Speed	50-150 rpm, variable in steps of 10		
	Rotational direction	Clockwise, counter-clockwise		
	Force	Individual specimens: 5-50 N	Specimen holder: 30-300 N Individual specimens: 5-50 N	Specimen holder: 30-400 N Individual specimens: 5-65 N
	Motor	120 W		160 W
	Torque	7.5 Nm / 5.6 ft-lbf		10.2 Nm / 7.6 ft-lbf
Material removal sensor (built-in)	50 - 5,000 µm			
Software and electronics	Controls	Touch pad and turn/push knob		
	Memory	FLASH-ROM / RAM / NV-RAM		
	LC Display	TFT-color 320x240 dots with LED back light		
Safety	CE labelled according to EU Directives			
Stop mechanisms Designed to comply with:	Emergency stop	EN60204-1, Stop Category 0 EN13849-1, PL=c, Category 1		
	Safety cover	EN60204-1, Stop Category 0 EN13849-1, PL=c, Category 1		
Surrounding temperature	5-40°C / 41-104°F			
Humidity	Non condensing	0-95% RH		
Supply	Voltage / frequency	200-240 V / 50-60 Hz		
	Power inlet	1-phase (N+L1+PE) or 2-phase (L1+L2+PE) The electrical installation must comply with "Installation Category II"		
	Power, nominal load	680 W	1060 W	
	Power, idle	9 W	13 W	
	Current, nom.	3.4 A	5.3 A	
	Current, max.	6.3 A	10 A	
	Pressure for tap water	1-10 bar / 14.5-145 psi		
	Water inlet	¾" dia.		
	Water outlet	30 mm / 1¼" dia.	40 mm / 1½" dia.	
	Air inlet	6 mm dia.		
	Air pressure	6-10 bar / 86-145 psi		
Air quality	The air supplied must be of Class 5.6.4. or better, as specified in ISO 8573-1			
"Exhaust" (with cover only)	Dimension	50 mm / 2" dia. Recommended capacity for exhaust system: 50 m³/h / 1750 ft³/h at 0 mm water gauge.		
Dimensions and weight (without cover)	Width	60 cm / 23.6"	67.5 cm / 26.6"	
	Depth	65 cm / 25.6"	75 cm / 29.5"	
	Height	48 cm / 18.9"	56 cm / 22"	
	Weight	52.5 kg / 116 lbs	90 kg / 198 lb	
Dimensions and weight (with cover/safety cover)	Width	60 cm / 23.6"	67.5 cm / 26.6"	
	Depth	65 cm / 25.6"	75 cm / 29.5"	
	Height cover closed (cover open)	50 cm / 19.7" (85 cm / 33.5")	58.2 cm / 22.9" (90 cm / 35.4")	
	Weight	58 kg / 128 lbs	98 kg / 216 lb	

Struers' equipment conforms with the provisions of the applicable International Directives and their pertinent Standards (please contact your local supplier for details). Struers' products are subject to constant product development. Therefore, we reserve the right to introduce changes in our products without notice.

Tegramin-30

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 300 mm MD-Disc with cone. Dosing modules, MD-Disc with cone and specimen holders and mover plates are ordered separately. 06036127

Tegramin-30 with cover

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 300 mm MD-Disc with cone. With transparent cover. Dosing modules, MD-Disc with cone and specimen holders and mover plates are ordered separately. 06036227

Tegramin-30 with safety cover

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 300 mm MD-Disc with cone. With transparent safety cover. Dosing modules, MD-Disc with cone and specimen holders and mover plates are ordered separately. 06036527

Tegramin-25

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 250 mm MD-Disc with cone. Dosing modules, MD-Disc with cone and specimen holders and mover plates are ordered separately. 06026127

Tegramin-25 with cover

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 250 mm MD-Disc with cone. With transparent cover. Dosing modules, MD-Disc with cone and specimen holders and mover plates are ordered separately. 06026227

Tegramin-25 with safety cover

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 250 mm MD-Disc with cone. With transparent safety cover. Dosing modules, MD-Disc with cone and specimen holders and mover plates are ordered separately. 06026527

Tegramin-20

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 200 mm MD-Disc with cone. Dosing modules, MD-Disc with cone and specimen mover plates are ordered separately. 06016127

Tegramin-20 with cover

Automatic, microprocessor-controlled machine for grinding and polishing of specimens on 200 mm MD-Disc with cone. With transparent cover. Dosing modules, MD-Disc with cone and specimen mover plates are ordered separately. 06016227

Tegramin Dosing Module with 1 DP pump

To be installed on Tegramin-30 / -25 or -20. With one pump for diamond suspensions or lubricants. 06036900

Tegramin Dosing Module with 2 DP pumps

To be installed on Tegramin-30 / -25 or -20. With two pumps for diamond suspensions or lubricants. 06036901

Tegramin Dosing Module with 2 DP and 1 OP pump

To be installed on Tegramin-30 / -25 or -20. With two pumps for diamond suspensions or lubricants and one pump for OP suspensions. 06036902

Lavamin

Specimen cleaning unit for cleaning of specimen holders up to 160 mm dia. and for individual specimens in specimen mover plates for Tegramin-25, -30, TegraForce-5 and RotoForce-4. 06236133

Bottle tray for Tegramin. With space for six ½ l bottles and one 1l bottle. To be used with Tegramin-30 / -25 or -20. 06036910

Preparation discs MD-Disc with cone for Tegramin-30, 300 mm dia. 06086403
MD-Disc with cone for Tegramin-25, 250 mm dia. 06086402
MD-Disc with cone for Tegramin-20, 200 mm dia. 06086401

Cover Transparent cover for Tegramin-25/-30 06036903
Transparent cover for Tegramin-20 06016903

Lid For Tegramin-25 and Tegramin-30 06036906
For Tegramin-20 06016906

Splash guard For Tegramin-30 06036905
For Tegramin-25 06026905
For Tegramin-22 06016905

Disposable bowl liner For Tegramin-25 / -30. 5 pcs. 49900052
For Tegramin-20. 5 pcs. 49900056

Shift valve for Tegramin For recirculation cooling unit (05766xxx) or drain. 06036904

Struers Cooling Unit, System 3. With 50 l tank, small pump, Cooli-1, and static filter. 05766516
1 x 100 V / 50 Hz 05766522
1 x 220-240 V / 50 Hz 05766523
1 x 100-120 V / 60 Hz 05766524
1 x 220-240 V / 60 Hz 05766616
1 x 100-120 V / 50-60 Hz CSA 05766616

Leveling device. For levelling of specimens in specimen holders (140 mm dia.) 05256903

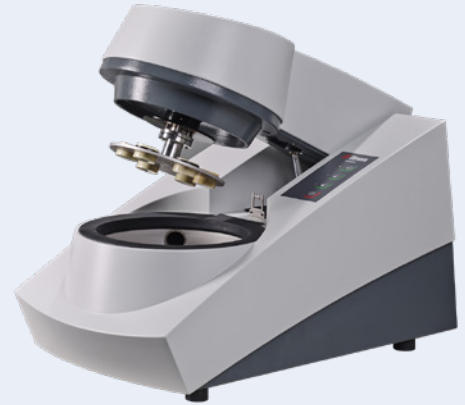
Leveling device, Uniforce. For leveling of specimens in specimen holders 140, 160 and 200 mm dia. 04886101
With pressure foot for positioning of specimens. 04886102

Coupling For Tegramin-30 and Tegramin-25 specimen mover plates. 06086901
For Tegramin-20 specimen mover plates. 06086900

Specimen mover plates, for individual specimens

	For Tegramin-25	For Tegramin-30
Without holes	06086906	06086936
For 6 specimens 25 mm dia.	06086902	06086932
For 6 specimens 1" dia.	06086909	06086939
For 6 specimens 30 mm dia.	06086903	06086933
For 6 specimens 1¼" dia.	06086910	06086940
For 6 specimens 1½" dia.	06086911	06086941
For 6 specimens 40 mm dia.	06086904	06086934
For 3 specimens 50 mm dia.	06086905	-
For 3 specimens 2" dia.	06086943	-
For 6 specimens 50 mm dia.	-	06086935
For 6 specimens 2" dia.	-	06086942
For 6 specimens 20 x 30 mm	-	06086944
For Accustop 30	06086907	06086937
For Accustop 40 + TYNDS	-	06086938

	For Tegramin-20
Without holders	06086918
For 4 x 25 mm dia.	06086912
For 4 x 30 mm dia.	06086913
For 4 x 40 mm dia.	06086914
For 4 x 1" dia.	06086915
For 4 x 1¼" dia.	06086916
For 4 x 1½" dia.	06086917



Lavamin – Fully automatic cleaning unit

You save time with a faster cleaning process and get the opportunity to change the preparation surface while the specimens are being cleaned. Get automated cleaning perfection every time and avoid replacement of preparation surfaces due to accidental contamination. Lavamin eliminates chemical cleaning agents and leaves no environmental footprint.



Choose the exact specimen mover plates you need for your task.



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Ensuring Certainty

With offices and affiliates in 24 countries and a presence in more than 50 countries worldwide, Struers is the world's leading materialographic solution supplier. We are dedicated to enabling our customers to ensure certainty in all aspects of materialographic preparation and testing as well as material hardness testing - wherever they are in the world. Struers offers a complete range of equipment, consumables, service and training programs - all supported by the most comprehensive knowledge base, global applications support and a certified global service set-up.

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