

# Prepamatic-2



**Fully automatic preparation of materialographic specimens**  
**- from plane grinding to cleaning and drying**

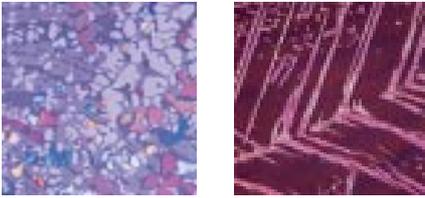


- Fully automatic - allowing unattended operation
- Sturdy construction - vibration-free preparation
- Use of grinding stone - high material removal
- Unsurpassed reproducibility
- Preparation of single specimens and specimens clamped in holders
- Peristaltic pumps for accurate dosing of suspensions and lubricants
- Controlled material removal
- Metalog Guide preparation methods included
- Low cost per sample

Prepamatic-2 is a fully automatic, microprocessor-controlled machine for the preparation of all kinds of materials. Prepamatic-2 is especially well suited for laboratories where high reproducibility is essential, and laboratories handling difficult specimens of a variety of materials. Prepamatic-2 will prepare from 1 to 3 single specimen at a time (or 3-9 small specimens in special

fixtures). Alternatively, 3 or 6 specimens can be prepared clamped in specimen holders. Automatic operation means identically prepared specimens and, consequently, outstanding reproducibility. Another advantage of this principle is precisely controlled consumption of diamond suspensions and lubricants. Therefore, Prepamatic-2 offers very good value for money when it

comes to daily costs. As Prepamatic-2 works completely unattended, the operator can spend his precious time in analysing the specimens instead of preparing them. Prepamatic-2 is available in two versions, one with five grinding/polishing stations and one with a grinding stone in the first position followed by 4 grinding/polishing stations.



*The automatic dosing system with peristaltic pumps guarantees aerosol-free, precise dosing of both suspension and lubricant*



### Fully automatic operation

Prepamatic-2 takes care of the entire preparation process, from plane grinding to final polishing - including cleaning and drying - without operator attendance.

A graphic L.C. display on the operating panel shows all relevant information and allows the operator to select a method. The operator then mounts the grinding and polishing discs specified on the display, inserts the specimens - and presses Start. When this is done, he may attend to other jobs, e.g. microscopy - returning to the machine only to remove the finished, cleaned and dried specimens.

### Sturdy construction for vibration-free preparation

Prepamatic-2 is a floor model, built on a strong, welded steel frame. On the carousel five grinding and/or polishing stations and one, completely encapsulated, cleaning station are mounted. Depending on the actual preparation step, the carousel turns and the respective

disc or cleaning station is positioned underneath the specimen mover. This sturdy construction allows for the preparation of all materials without unwanted vibrations, giving the best possible preparation results.

### Use of grinding stone - high material removal

For the preparation of most ferrous metals a grinding stone will allow for the fastest possible plane grinding. The grinding stone is completely encapsulated, thus allowing for a speed of 1000 rpm. This high speed results in high material removal rates and short grinding times. The necessary dressing of the stone is carried out automatically prior to the grinding step.

### Unsurpassed reproducibility

As all preparation parameters are controlled by the micro-processor the same results will be obtained time after time. Thus changes in the structure can be related to actual changes during the production

of the material instead of possible variations in the preparation method.

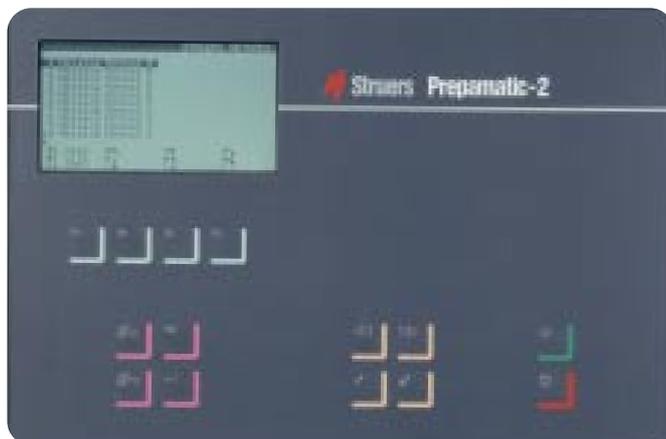
### Preparation of single specimens and specimens clamped in holders

With easy exchangeable heads both single specimens and specimen holders can be prepared. For the occasional specimen or to repeat just the final polishing step, single specimen mode is the most advantageous. There is no reason to waste consumables by preparing "dummy" specimens because a specimen holder has to be filled.

On the other hand, if 3 or 6 specimens have to be prepared, the use of a specimen holder provides several advantages. Handling is facilitated, as all specimens are treated as a single one. Additionally, the accuracy when measuring the removal rate is improved and overall flatness of the specimens is better.

### Peristaltic pumps for dosing of suspensions and lubricant

For the accurate dosing of both diamond suspensions, oxide polishing suspensions and lubricants, peristaltic pumps are used. They not only supply the correct amount exactly where it is needed, they also completely avoid the creation of aerosols. Thus the choice of peristaltic pumps is also very environmentally friendly.



*The control panel and its large display makes Prepamatic-2 very easy to operate*



*Prepamatic-2 can handle both single specimens and specimens clamped in holders*

### **Controlled material removal**

For the examination of electronic components or parts for failure analysis the defined removal of material is crucial. On Prepamatic-2 an advanced strain gauge is used to very accurately control the material removal. This allows for target preparation in the cases mentioned above, but it can also be used to ensure that enough material has been removed, i.e. scratches and deformed material introduced in the preceding step. This system saves time and consumables, and it prevents an entire preparation cycle from being performed on an inadequately ground specimen.

### **Metalog guide methods included**

The Metalog Guide Methods, covering the preparation of most materials are included in the software of Prepamatic-2. When new materials have to be prepared a suitable method can easily be found, and if necessary changed and saved for future use. Thus, even operators with limited preparation experience can prepare all kinds of materials immediately. Modified programs can be saved in one of seven groups, each containing ten methods.

### **Low cost per sample**

Because of the fully automatic

preparation it is possible to optimise each method and to get the necessary quality in the shortest possible time. This, together with the automatic dosing of consumables results in very low, consistent costs per prepared specimen.

### **There are a number of other important features built into Prepamatic-2**

#### **Easy programming**

To establish a new preparation method the user simply transfers one of the Metalog Guide methods to an "open method" and changes the necessary parameters. All methods can be used for the preparation of 1, 2 or 3 specimens. The necessary parameters are recalculated automatically if a different no. of specimens have to be prepared.

#### **Process control**

Once a preparation program has been selected and Start has been pressed, Prepamatic-2 carries out all necessary tasks. However, the user has several additional possibilities to monitor the preparation of his specimens. When developing new methods, the preparation can automatically be stopped after a pre-selected

step to check the quality of the specimen, different cleaning programs can be selected and steps can be omitted or repeated. A control program prevents incorrect operation.

### **Wide range of specimen mover plates and holders**

A wide range of different specimen mover plates for specimens 25, 30, 40 and 50 mm, 1", 1 1/4" and 1 1/2" diameter is available. In addition, specimen holders for 3 or 6 mounted or unmounted specimens and five small fixtures for unmounted specimens are available, making it possible to prepare up to nine specimens at a time.

### **Safety**

Prepamatic-2 is provided with all necessary safety guards and complies with the requirements for machine tools (IEC 204, EN60204 -1).



## Technical Data

<b>Three-phase</b>	Fuse:	max. 16 A
	Compressed-air supply:	min. 5 bar, max. 9.9 bar
	Consumption:	max. 60 l/min
	Water supply:	min. 1.0 bar, max. 10.0 bar
	Grinding/polishing discs:	175-200 mm dia.
<b>Speed:</b>	<b>Grinding/polishing discs:</b>	
	Prepamatic-2 with grinding stone:	75, 150, 300, 500, 1000 rpm (two rates of speed per station)
	Prepamatic-2 with five grinding/polishing steps:	75, 150, 300 rpm (two rates of speed per station)
<b>Specimen holder:</b>	125 rpm, bi-directional rotation	
<b>Specimen height:</b>	Min. 12 mm, max. 32 mm	
<b>Grinding/polishing force:</b>	5-150 N	
<b>Dimensions:</b>	Height:	1710 mm
	Width:	1130 mm
	Depth:	940 mm
	Weight:	430 kg

## Specifications

	Code
<b>Prepamatic-2</b> microprocessor controlled, fully automatic grinding and polishing machine with 5 grinding/polishing stations. Complete with recirculation cooling unit (capacity 30 l) and coupling unit (PAMUN). Heads, specimen mover plates, specimen holders, levelling device, MD-Discs for magnetic fixation or polishing discs are ordered separately.	PAMIF
<b>Prepamatic-2</b> microprocessor controlled, fully automatic grinding and polishing machine with 1 plane grinding station and 4 grinding/polishing stations. Complete with grinding stone and recirculation cooling unit (capacity 30 l) and coupling unit (PAMUN). Heads, specimen mover plates, specimen holders, levelling device, MD-Discs for magnetic fixation or polishing discs are ordered separately	PAMTA
<b>Head for Specimen Holders</b> for mounting of specimen holders on Prepamatic-2 or Prepamatic.	PAMHO
<b>Specimen Holder</b> for clamping of 3 mounted or unmounted specimens 24-40 mm dia., aluminium. To be mounted in head for specimen holder (PAMHO).	PAMLU
<b>Specimen Holder</b> for clamping of 6 mounted or unmounted specimens 20-25 mm dia., aluminium. To be mounted in head for specimen holder (PAMHO).	PAMLO
<b>Head for Specimen Mover Plates</b> for mounting of specimen mover plates on Prepamatic-2 or Prepamatic.	PAMMO
<b>Specimen Mover Plates</b> set with specimen mover plates for the preparation of 3 x 25 mm/1", 3 x 30 mm/1 1/4", 3 x 40 mm, 3 x 1 1/2", and 1 x 50 mm single specimens. Are mounted in head for specimen mover plates (PAMMO).	PAMDI
<b>Levelling Device</b> for levelling of specimens in specimen holders or specimen mover plates.	PAMFU
<b>Specimen Fixtures</b> for inserting into Prepamatic-2 or Prepamatic specimen mover plates.	
for 3 specimens 7-15 mm dia., for specimen mover plate with holes 40 mm dia.	PAMFI
for 3 specimens 12-20 mm dia., for specimen mover plate with hole 50 mm dia.	PAMME
for 3 specimens max. 9 x 19 mm, for specimen mover plate with holes 40 mm dia.	PAMIK
for 3 specimens max. 12 x 23 mm, for specimen mover plate with hole 50 mm dia.	PAMAX
for 1 specimen max. 23 x 26 mm, for specimen mover plate with holes 40 mm dia.	PAMON
<b>Grinding Stone</b> 200 mm dia., grit 150 for Prepamatic-2 (PAMTA)	PAMST
<b>MD-Disc</b> for magnetic fixation 200 mm dia.,	DEMLA
<b>DP-Polishing Disc</b> 200 mm dia.	PAMLA

Struers' products are subject to constant product development. Therefore, we reserve the right to introduce changes in our products without notice.



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