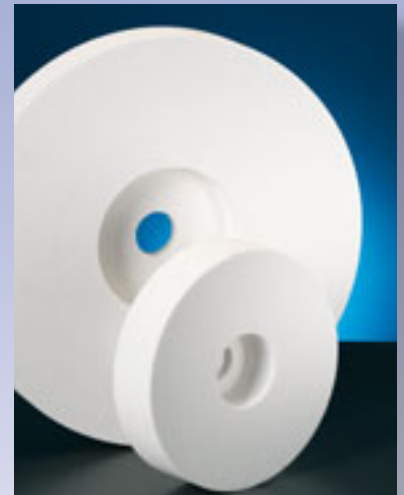


# AbraPlan-20



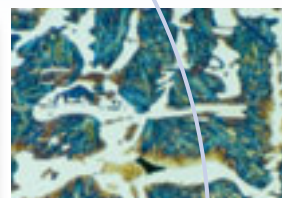
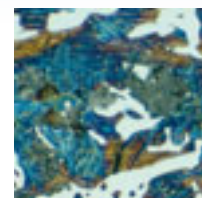
**An automatic, high-capacity machine for fast and efficient plane grinding**



**AbraPlan-20 is a powerful and fast plane grinding machine ideal for laboratories or workplaces carrying out quality control testing of very large specimens or a high volume of specimens**

## **Unique advantages**

- Fast and efficient plane grinding providing high planeness and reproducibility, thus saving valuable time on the subsequent preparation steps
- Easy to operate without requiring extensive training
- Fully automatic dressing of grinding stone
- Controlled material removal
- Sturdy and powerful design ensuring trouble free operation year after year
- Maximum level of operator safety
- Various grinding modes
- Built-in flush hose for easy maintenance



### Sturdy and powerful

AbraPlan-20 is the strongest plane grinding machine available on the metallographic market. The powerful motors, the sturdy design and the well-known Struers technology contribute to many years of trouble-free use.

The AbraPlan-20 is an ideal plane grinding machine for users with very large specimens or with a high volume of specimens.

On the 356 mm / 14" diameter grinding stones, 200 mm / 8" diameter sample holders can be utilized efficiently taking up to 12 specimens at a time.

Whenever capacity or preparation time is crucial, AbraPlan-20 is the obvious choice. One AbraPlan-20 can easily provide enough work for two or three polishing machines, or be employed as a pre-grinder for the fully-automatic MAPS system.

### Time saving

The grinding stone rotates at 1,450 rpm guaranteeing a very high material removal. Using  $Al_2O_3$  and SiC grinding stones, AbraPlan-20 can grind both ferrous and non-ferrous metals. For ceramics and sintered carbides a resin bonded diamond grinding disc is available.

With typical grinding times of 20-30 seconds, a high quality surface finish is achieved quickly. Specimen planeness and reproducibility is unmatched on the metallographic market, saving time on the subsequent fine grinding and polishing steps.

### User-friendly design

The AbraPlan-20 is very easy to operate and extensive training is therefore unnecessary. A large display offers the operator a good overview of the process parameters, and the push/turn knob makes it easy to select and edit parameters.

A countdown feature allows the operator to see the remaining grinding time or remaining material removal.

### Automatic dressing

The AbraPlan-20 is provided with an automatic diamond dresser that keeps the grinding stone plane and sharp. The performance of the grinding stone is monitored continuously, and as soon as the removal is reduced below a pre-defined level, the stone is dressed.

This guarantees the best possible performance of the AbraPlan-20 and a perfect surface quality of the ground specimens. The dresser also automatical-

ly monitors the remaining thickness of the grinding stone and informs the user when the stone has to be replaced.

### Controlled material removal

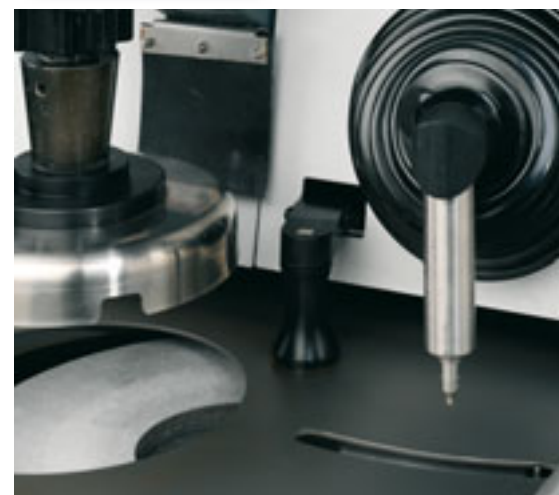
In many situations grinding for a specified grinding time is not a good idea. With small samples too much material might be removed, while large samples or hard materials may barely have been touched. Therefore, the AbraPlan-20 is equipped with a sensor to accurately measure the material removal. The Accurate Material Removal Unit allows you to pre-set the amount of material that has to be removed. The removal can be set from 0.01 mm to 2.00 mm in increments of 10  $\mu m$ .



*A large display offers a good overview of the process parameters*



*A high quality surface finish is achieved quickly, saving time on the next preparation steps*



*The automatic dresser maintains a perfectly plane and sharp grinding stone at all times*

### Three different grinding modes

On the AbraPlan-20 you can choose between three different grinding modes: Removal, Time and Removal/Time.

The **Removal** function allows removing a specified amount of material when grinding, and is advantageous when specimens of different size and hardness have to be prepared together.

The **Time** function can be used when specimens of the same size and hardness have to be ground every time.

The **Removal/Time** function can be used to obtain the most plane specimens: First the specimens are ground using removal mode until the required amount of ma-

terial has been removed. Then the stone is dressed, to make sure it is absolutely plane and well cutting, and then the specimens are ground again for a very short time, i.e. 5 seconds. This guarantees the most plane specimens possible.

### Maximum operator safety

Struers recognizes the importance of a safe working environment and has equipped AbraPlan-20 with several safety features.

The grinding stone and the sample holder are totally encapsulated with stainless steel covers, eliminating the risk of incorrectly clamped specimens flying out.

The entire working area is encapsulated using a transparent cover. Thus there is no access at all to any rotating parts. The machine cannot be started before the cover is closed, and the cover can first be opened again when the machine has stopped.

Additionally the machine is equipped with an emergency stop, which stops all machine functions immediately when engaged.

### Easy cleaning

The flushing unit allows for easy cleaning of the grinding area, samples and the grinding chamber.

A recirculation cooling unit can be connected for cost-efficient water utilization and to collect removed abrasives.

It is recommended to connect a cooling unit so that a rust inhibitor can be used in the cooling water and the debris from grinding can be collected.

*AbraPlan-20 is the strongest plane grinding machine available on the metallographic market*



*Inside AbraPlan-20 there is room for a recirculation cooling unit, or a band filter can be placed next to the machine*



*AbraPlan-20 is equipped with a transparent safety shield to secure operator safety*







## Technical data

|                                 |  |  |
|---------------------------------|--|--|
| <b>Grinding wheel</b>           | Rotational speed<br>Size                                 | 1450 rpm<br>356 mm / 14"   |
| <b>Specimen holder</b>          | Speed<br>Force<br>Max. size sample holder                | 150 rpm<br>50-700 N<br>200 mm / 8"                                       |
| <b>Software and Electronics</b> | LC Display<br>Controls                                   | 320 x 240 characters<br>Touch pad and Push-turn knob                     |
| <b>Environment</b>              | Noise level<br>Surrounding temperature<br>Humidity       | 70 dB(A)<br>5-40 C°<br>Max. 95 % RH                                      |
| <b>Supply voltage</b>           | Power consumption<br>No. of phases<br>Output, main motor | 4.5 kW<br>3 (3L+PE)<br>4 kW  |
| <b>Compressed air</b>           | Compressed air supply                                    | 6-10 bar   |
| <b>Dimensions and weight</b>    | Width<br>Depth<br>Height<br>Weight                       | 832 mm / 32.8"<br>957 mm / 37.7"<br>1570 mm / 61.8"<br>481 kg / 1060 lbs |

*Struers' equipment is in conformity with the provisions of the applicable International Directives and their appurtenant Standards (please contact you local supplier for details).*

## Specifications

### AbraPlan-20

Automatic plane grinding machine for specimens in specimen holders 160 mm / 6.3" and 200 mm / 8" diameter. With automatic diamond dresser and removal rate sensor. Recirculation cooling unit (COLTE), grinding stone and specimen holders are ordered separately.

### Code

ABPLA

### Accessories

Recirculation Cooling Unit.  
With 50 l tank, small pump, Cooli-1, 50 l static filter with filter paper, consists of: COLST, COLSS, COOL1, COLSF, COLSP.

COLTE

### Grinding Stone

Grit 60. Aluminium oxide grinding stone for plane grinding of soft and ductile metals (<HV 250). 356 mm / 14" diameter.

ABGOF

### Grinding Stone

Grit 150. Aluminium oxide grinding stone for plane grinding of harder metals (>HV 250). 356 mm / 14" diameter.

ABGAL

### Grinding Stone

Grit 150. SiC grinding stone for plane grinding of non-ferrous metals. 356 mm / 14" diameter.

ABGAS

### Diamond Grinding Disc

Grit 120. Resin bonded disc, grooved in a square pattern, for grinding of ceramics and sintered carbides. 356 mm / 14" diameter.

ABWEE

### Diamond Point for Dressing Tool

For AbraPlan-10 and AbraPlan-20.

PLAMT

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