



GRINDING & POLISHING

DIGIPREP

251/301



metken[®]
Technology behind Specimen

20
YEARS

DIGIPREP®

251/301



DIGIPREP preparation systems are designed for fully automated materialographic sample preparation for consistent and reproducible specimen quality. DIGIPREP's Automatic Head controls the force applied precisely and specimens are prepared exactly the same way everytime, independent of operator skills. With the ability to store and recall preparation programs on the LCD screen, same consistent results are obtained. Efficiency is further increased with optional DOSIMAT Peristaltic Dispensing Unit for automation and control of consumable consumption.

Base Unit

DIGIPREP's variable speed base unit is available in two version; DIGIPREP 251 with 250 mm diameter wheel and DIGIPREP 301 with 300 mm diameter wheel. The base unit is powered by a high torque 1,0 HP electric motor. The state of the art frequency converter allows smooth speed variation (50-600 rpm) with soft start and soft stop. The stylish and functional ABS housing is corrosion free and easy to clean. Molded wheel bowls and drains eliminate leaks and the build-up of residue is prevented by constant flushing of the bowl. The drive elements are fixed on heavy duty aluminium alloy casting. The wheels are mounted on ball bearings allowing the application of high pressures to prepare even large specimens. Ball bearings used provide quite and vibration free operation. When required, the base unit can be operated in manual mode, as well.

Automatic Head

DIGIPREP's programmable Automatic Head is coloured HMI touch screen controlled and with the Base Unit, thus creating automatic preparation system. It is used to prepare high volumes of metallographic, ceramic and mineralogical specimens with consistent reproducible quality. The Automatic Head can apply both "Central" and /or "Individual" forces. It can accommodate single samples as well as multi - sample holders thus offering a perfect solution for all levels of sample throughput requirements. The Automatic Head is mounted to a hardened steel post which is affixed to the cast base of the grinder / polisher. The force on the specimen. "individual" or "central" is pneumatically controlled by a pressure transducer. Optional encoder allows you to measure the amount of material removed from the surface. The desired grinding depth can be set to grind different type of samples and also for applications that need special accuracy. The system is enclosed in an ABS housing with touch screen LCD. The Automatic Head is rapidly positioned via a quick-locking clamping lever. The "soft start and stop" feature automatically starts the sequence with a low initial force which is then increased to the preset.



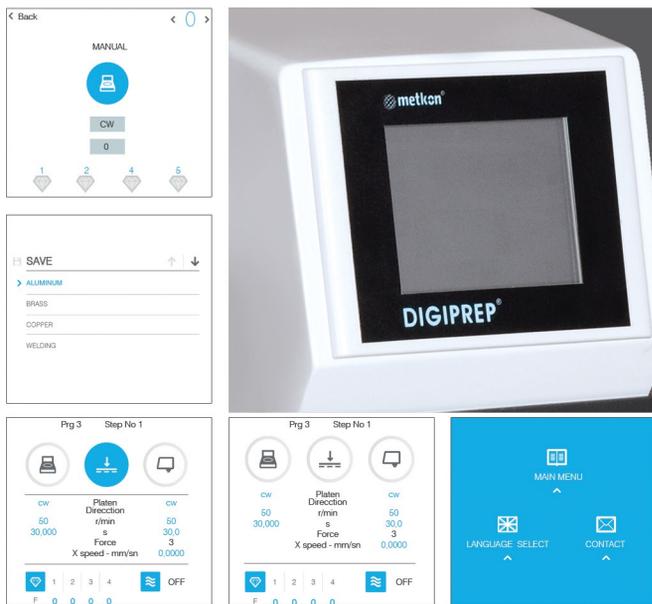
Ergonomic operation



LED lighting to illuminate the working area



Central Force application
Individual force application



Programmable HMI touch screen controls

Towards the end of the cycle the force is automatically reduced to 75 % of the setting to prevent scratching. A variety of sample holders for individual or central force applications are available for different sample sizes.

All preparation parameters can be stored in memory under a specific program number. Each program can be saved for a material specific name such as "Cast Iron, Bronze, Al-Si Alloy, etc." The parameters which can be saved are; Force, Cycle time, Wheel speed and direction, Mode of operation (individual or central pressure). Dispensing frequency can also be saved when DOSIMAT peristaltic dispenser is available. These parameters are entered and stored in memory and displayed on the LCD screen as preset values. All the operator needs to do is to select the mode of operation (individual or central pressure), call up a specific program and press the "Start" key.



Upon completion of the cycle, an acoustic signal lets the operator know that the cycle is over and the samples are ready for the next step. When required, it is also possible to intervene in the program and change the parameters without stopping the instrument.

Enviro Filter Unit is a closed loop recirculating filter system which is optionally available. It has a 20 lt reservoir capacity with 1 micron filter entering the grinder / polisher intake. Enviro can also be coupled with line water and 80 micron filtering system for disposal.



Retractable water hose for easy cleaning



Special plexyglass protection unit



Simple exchange of working discs



Enviro recirculating filtering unit (1 micron)

Dosimat



DOSIMAT Peristaltic Dispenser is an optional accessory for the DIGIPREP systems. It is an automatic fluid dispensing instrument used in combination to obtain consistent specimens and to save time and consumables. DOSIMAT can feed both diamond suspensions / lubricants and aluminium oxide suspensions. Dispensing parameters like; frequency, fluid selection etc. are controlled through the programme memory of the Automatic Head. High quality peristaltic pumps guarantee exactly the same dosing every time. DOSIMAT has 3 peristaltic pumps for diamond suspensions / lubricant and 1 pump for aluminium oxide suspension. The liquid is dosed exactly to where the operator wants it on the polishing cloth. No vaporization or spray mist occurs.

Specifications

45 03 DIGIPREP 251

Programmable with coloured 7" HMI touch screen control, with Siemens PLC control unit. Base Unit with large 0,75HP Motor, Variable wheel speed 50-600 rpm, Quite belt drive, Complementary or Contra rotational direction, Soft Start and Stop, With 250 mm diam. Working kit consisting of "Aluminium Wheel and Splash Guard", Retractable water hose, with water supply and drain tubes. Automatic Head, Large LCD screen, programmable sample preparation parameters, central and/or individual force application, steel mounting column, with variable specimen holder speed 50-150 rpm, 100 Watt DC motor, LED lighting, quick-locking swing mounted design, audible warning signal, with holding chuck. Air supply tubes. Complete and ready for operation. Without Specimen Holders.

230 V, 1-phase, 50 Hz.

Includes the following standard set of consumables;

*Special Magnetic Foil, Ø 250 mm.

*Thin Metal Plate(1 pcs), Ø 250 mm

*Magneto grinding disc 18 mic., 250 mm dia.

*An assortment of 5 polishing cloths 250 mm dia.

*Diamond suspensions one of each of 6 mic. and 1 mic., plus lubricant

45 04 DIGIPREP 301

Programmable with coloured 7" HMI touch screen control, with Siemens PLC control unit. Base Unit with large 1,0HP Motor, Variable wheel speed 50-600 rpm, Quite belt drive, Complementary or Contra rotational direction, Soft Start and Stop, With 300 mm diam. Working kit consisting of "Aluminium Wheel and Splash Guard" Retractable water hose, with water supply and drain tubes. Automatic Head, Large LCD screen, programmable sample preparation parameters, central and/or individual force application, steel mounting column, with variable specimen holder speed 50-150 rpm, 100 Watt DC motor, LED lighting, quick-locking swing mounted design, audible warning signal, with holding chuck, Air supply tubes. Complete and ready for operation. Without Specimen Holders.

230 V, 1-phase, 50 Hz.

Includes the following standard set of consumables;

*Special Magnetic Foil, Ø 300 mm.

*Thin Metal Plate(1 pcs), Ø 300 mm

*Magneto grinding disc 18 mic., 300 mm dia.

*An assortment of 5 polishing cloths 300 mm dia.

*Diamond suspensions, one of each of 6 mic. and 1 mic., plus lubricant

Optional Accessories for Digiprep 251/301

GR 0830 Cabinet for FORCIPOL 1V/300-1V / DIGIPREP 251/301

GR 0440 Air filtering and lubricat unit

GR 0872 Z-axis material removal with depth control, for Digiprep 251/301

(To be ordered simultaneously together with the machine order)

31 10 Special Plexyglass Protection Unit, to be used with DIGIPREP 251

(To be ordered simultaneously together with the machine order)

31 11 Special Plexyglass Protection Unit, to be used with DIGIPREP 301

(To be ordered simultaneously together with the machine order)

Additional Wheels for Digiprep 251/301

31 22 Aluminium wheel, 250 mm for DIGIPREP 251

31 63 Splash guard, 250 mm for DIGIPREP 251

31 32 Aluminium wheel, 300 mm for DIGIPREP 301

31 73 Splash guard, 300 mm for DIGIPREP 301/Accura

40 04 DOSIMAT Peristaltic Fluid Dispenser

Fluid Dispenser, microprocessor controlled, with 4 peristaltic pumps (3 for diamond suspensions/lubricant and 1 for alumina suspensions), with interface to be connected to DIGIPREP's Automatic Head. 230 V, 1 ph., 50 Hz.

GR 0874 DOSIONE Peristaltic Fluid Dispenser

Microprocessor controlled, with peristaltic and non-misting pump for diamond suspensions, lubricant or 2 in 1 suspensions, with interface to be connected to FORCIMAT/DIGIPREP's Automatic Head.

GR 0865 ENVIRO Recirculating Filtering System,

Closed loop 1 micron filtering system with 20 lt. recirculating water tank, suitable to operate with line water on 80 micron filter as well. Requires 4 bar compressed air. Ready for operation with all Metkon Grinder/Polishers

Accessories for Specimen Loading:

45 60 LEVOMAT

Specimen Loading Fixture, to level the specimens within the central force specimen holders, without specimen loading plate.

Specimen Loading Plates

45 10 Specimen Loading Plate Ø 130 mm

45 50 Specimen Loading Plate Ø 160 mm

Specimen Holders for DIGIPREP 251 / 301 (Central Force Application)

45 81 Clamp type specimen holder, Ø130mm, 6 specimens with Ø25 mm.

45 82 Clamp type specimen holder, Ø130mm, 6 specimens with Ø30 mm.

45 83 Clamp type specimen holder, Ø130mm, 4 specimens with Ø40 mm.

45 84 Clamp type specimen holder, Ø130mm, 6 specimens with Ø1"

45 85 Clamp type specimen holder, Ø130mm, 6 specimens with Ø1 1/4"

45 86 Clamp type specimen holder, Ø130mm, 4 specimens with Ø1 1/2"

45 88 Teardrop specimen holder, Ø130 mm, 6 specimen x 10 - 32 mm.

45 89 Teardrop specimen holder, Ø130 mm, 4 specimen x 10 - 42 mm.

45 44 Clamp type specimen holder, Ø 130 mm for 4 rectangular specimen 25 X 32 mm.

45 45 Clamp type specimen holder, Ø 160 mm for 3 rectangular specimen 40 x 70 mm.

45 91 Clamp type specimen holder, Ø160mm, 10 specimens with Ø25 mm.

45 92 Clamp type specimen holder, Ø160mm, 8 specimens with Ø30 mm.

45 93 Clamp type specimen holder, Ø160mm, 6 specimens with Ø40 mm.

45 94 Clamp type specimen holder, Ø160mm, 3 specimens with Ø50 mm.

45 95 Clamp type specimen holder, Ø160mm, 8 specimens with Ø1"

45 96 Clamp type specimen holder, Ø160mm, 6 specimens with Ø1 1/4"

45 97 Clamp type specimen holder, Ø160mm, 6 specimens with Ø1 1/2"

45 98 Clamp type specimen holder, Ø160mm, 3 specimens with Ø2"

45 39 Clamp type specimen holder, Ø220mm, 3 specimens for irregular shaped samples (Specimen holders with Ø160mm can only be used with DIGIPREP 301 instrument)

Specimen Holders for DIGIPREP 251 / 301 (Individual Force Application)

33 21 DIGIPREP specimen holder, Ø145 mm, for 6 x Ø 25mm .

33 22 DIGIPREP specimen holder, Ø145 mm, for 6 x Ø 30mm specimen.

33 23 DIGIPREP specimen holder, Ø145 mm, for 6 x Ø 40mm specimen.

33 24 DIGIPREP specimen holder, Ø145 mm, for 3 x Ø 50mm specimen.

33 25 DIGIPREP specimen holder, Ø145 mm, for 6xØ 1" specimen.

33 26 DIGIPREP specimen holder, Ø145 mm, for 6x 1 1/4 inch specimen.

33 27 DIGIPREP specimen holder, Ø145 mm, for 6x 1 1/2 inch specimen.

33 28 DIGIPREP specimen holder, Ø145 mm, for 3x 2 inch specimen.

33 29 DIGIPREP specimen holder, Ø145 mm, Blank.



Order No	45 03	45 04
Application of Force	Individual + Central	Individual + Central
Individual Force, (N)	5-100	5-100
Central Force, (N)	30-500	30-500
Head Motor, W	100	100
Base Motor, HP	0,75	1
Head Speed, (rpm)	50-150	50-150
Base Speed, (rpm)	50-600	50-600
Wheel Diameter, (mm)	250	300
Head Rotation Direction	CW	CW
Wheel Rotation Direction	CW/CCW	CW/CCW
HMI Touch Screen, (inch)	7"	7"
Program Memory	30	30
"Grinding depth measurement (Z-axis)"	Optional	Optional
"Grinding depth measurement Accuracy, (μ)"	10	10
Dimensions, WxDxH, (mm)	480 X 730 X 640	520 X 770 X 640
Weight, (kg)	73	86
Mains	1 phase, 230V 50Hz. AC	1 phase, 230V 50Hz. AC

* Other voltages and frequencies available upon request.

Please state when ordering.

All specifications are subject to change without notice.



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