



GRINDING & POLISHING

# FORCIPOL



**mettler**<sup>®</sup>  
Technology behind Specimen

**20**  
YEARS

# FORCIPOL®

Grinder & Polishers

# FORCIMAT®

Automatic Head

The FORCIPOL Series of grinding and polishing machines offer practical and economical solutions to your metallographic sample preparation needs...

FORCIMAT is a microprocessor controlled sample mover designed to be used with FORCIPOL grinder / polishers. It is ideal for medium size labs where consistent result are desired.



FORCIPOL 1V ( above left ), FORCIPOL 2V with FORCIMAT ( above right ).

## Versatile & Durable



FORCIPOL 1V variable speed grinder / polisher

All materials testing laboratories in the industrial, research or educational field have a demand for sample preparation. Whether your requirements call for individual components or basic sample preparation, FORCIPOL family of instruments will meet your needs. FORCIPOL Series of instruments are available as Single wheel and Dual wheel Units (200/250/300 mm wheel size). Both single or double wheel versions are available with variable rotating speeds with digital display. This allows the setting of the optimum speed for each individual preparation process. The modern electronics provide a smooth speed variation.

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. Water inlet and flexible water outlets with control valves for wet grinding are standard features. Motor on/off and water on/off buttons are mounted on the front panel. FORCIPOL instruments can be used for grinding, lapping and polishing with magnetic backed discs and cloths or by quick and simple exchange of wheels.

When the number of specimens to be prepared increases, FORCIPOL instruments can be fitted with FORCIMAT automatic head for automation. FORCIMAT automatic head provides high rate sample preparation and frees the operator from the grinding and polishing procedures.



Retractable water hose for easy cleaning



Splash Guard



Simple exchange of working discs



Enviro recirculating filtering unit (1 micron)



FORCIPOL 1V, Variable speed grinder / polisher with FORCIMAT Automatic Head.



FORCIPOL 2V, Variable speed unit with two discs.



By using the FORCIMAT automatic head, the efficiency increases and same consistend sample quality is guaranteed.

**Forcipol 1V** For laboratories preparing a wide range of different materials, Forcipol 1V is the ideal grinder/polisher with its indefinitely variable speed range between 50-600 rpm.

**Forcipol 300-1V** For large specimens and/or for having a spacious working environment with Forcimat automatic head, Forcipol 300-1V offers an ideal solution with its 300 mm working wheel. It's variable speed between 50-600 rpm makes it suitable for grinding and polishing of wide range of materials.

**Forcipol 2V** Having two discs and variable speed range between 50 and 600 rpm, Forcipol 2V is the most universal grinder/polisher, especially for labs having wide veraiety of materials. When coupled with Forcimat, Forcipol 2V becomes a versatie automatic sample preparation system with high operator comfort.

## Automatic Operation

The FORCIMAT Automatic Head is mounted on a rigid hardened post which is fixed to the base of the FORCIPOL grinder/polisher. It can be adapted to all FORCIPOL series grinder/polishers, and is easily and rapidly positioned by means of a quick-locking clamping mechanism.

The sample holder can prepare 6 samples simultaneously and it is driven by a 100 Watt DC motor at 50-150 RPM. The pneumatically applied individual force is adjustable between 5 N (1.1 lb.) and 60 N (13.5 lb.) from the front panel and is displayed on a gauge. The housing is made of ABS with a touchpad front panel.

An adjustable and exchangeable drip lubricator is optional and the dosing level is done through and adjustable flow valve. The Forcimat Automatic Head offers variable speed with reversable (clockwise or counter -clockwise) rotation. A choice of easily exchangeable sample holders with set of rings from 25 to 50 mm and 1 " to 2 " diameter are available for use on the FORCIMAT. The samples (1 to 6) are placed in the sample holder and the dosing level of the drip lubricator is adjusted. Sample force is set on the front panel of the FORCIMAT. Cycle time, wheel speed and direction are set on the control panel of the FORCIPOL grinder/polisher. When the start button is depressed, both the FORCIMAT and FORCIPOL start operating simultaneously. Upon completion of the cycle, both instrument stop and an audio signal notifies the operator.



## FORCIPOL Specifications

Order No	Models	No. of stations	Motor (s)	RPM	Wheel Diameter	Dimensions (mm)	Weight kg
36 02 -	<b>FORCIPOL 1V</b>	1	0.75 HP 220 V 50 Hz., 1 pH	50-600 Var.	200/250 mm	380 x 690 x 340	30
36 06 -	<b>FORCIPOL 300-1V</b>	1	1.0 HP 230 V 50 Hz., 1 pH	50-600 Var	300 mm	420 x 730 x 350	37
36 09 -	<b>FORCIPOL 2 V</b>	2	0.75 HP 230 V 50 Hz., 1 pH	50-600 Var	200/250 mm	700 x 690 x 340	40

Each FORCIPOL is delivered with a standard set of consumables consisting of

\*An assortment of 100 grinding papers:(various grits)

\*An assortment of 5 polishing cloths

\*Diamond suspensions, one of each of 3 mic. and 1 mic., plus lubricant

Please specify the diameter when ordering

Wheels, splash guards, paper ring and covers are extra. ( pls choose from list below )

### Accessories

200 mm Application		250 mm Application		300 mm Application	
31 01	PVC Wheel, 200 mm	31 21	PVC Wheel, 250 mm	31 31	PVC Wheel, 300 mm
31 02	Aluminium Wheel, 200 mm	31 22	Aluminium Wheel, 250 mm	31 32	Aluminium Wheel, 300 mm
31 53	Splash Guard, 200 mm	31 63	Splash Guard, 250 mm	31 73	Splash Guard, 300 mm
31 04	Paper Ring, 200 mm	31 24	Paper Ring, 250 mm	31 34	Paper Ring, 300 mm
31 06	Cover 200 mm	31 06	Cover 250 mm	31 36	Cover 300 mm
31 10	Special Plexyglass Protection Unit, to be used with Forcipol 1V (To be ordered simultaneously together with the machine order)	31 10	Special Plexyglass Protection Unit, to be used with Forcipol 1V (To be ordered simultaneously together with the machine order)	31 11	Special Plexyglass Protection Unit, to be used with Forcipol 300-1V. (To be ordered simultaneously together with the machine order)

### 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

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

## FORCIMAT Specifications

FORCIMAT Automatic Head, microprocessor controlled, pneumatically adjustable individual force loading system, Upto 6 specimens, front panel with touch-pad controls, variable rotational speed between 50-150 rpm, 100 Watt DC motor, quick-locking swing mounted design, audible warning signal, communication capability with all FORCIPOL instruments, steel mounting column, complete and ready for operation.

230 V, 50 Hz, 1- ph

**Order No: 30 09**

31 82 Special Splash Guard, 200 mm. for automatic heads.  
 31 83 Special Splash Guard, 250 mm, for automatic heads.  
 31 93 Special Splash Guard, 300 mm, for automatic heads.  
 GR 0874 DOSIONE Peristaltic Fluid Dispenser

### Technical Data

Mains Voltage : 230 V, 50 Hz, AC 1 Phase

Motor : 100 Watt, DG

Rotational speed : 50-150 RPM

Sample Capability : 1 to 6

Force : Min 5N, max. 60N

Compressed air : 6 bar

Dimensions : 230 x 430 x 250 mm

Weight : 16 kg.

### Specimen Holders

Specimen Holder 6 x ø 40 mm Specimens	Order No: 33 01
Set of rings for 30 mm for 30 mm specimens	Order No: 33 02
Set of rings for 25 mm for 1" specimen	Order No: 33 03
Set of rings for 1 1/2" specimens	Order No: 33 04
Set of rings for 1 1/4" specimens	Order No: 33 05
Blank specimens holder	Order No: 33 06
Specimen Holder 3 x ø 50 mm specimens	Order No: 33 07
Specimen Holder 4 x ø 2" specimens	Order No: 33 08
Specimen holder 6 x ø 25mm	Order No:45 51
Specimen holder 6 x ø 30mm	Order No:45 52
Specimen Holder 6xø 1"	Order No: 45 54
Specimen holder 6x 1 1/4"	Order No:45 55
Specimen holder 6x 1 1/2"	Order No:45 56
Specimen holder 3x 2"	Order No:45 58

\* Other voltages and frequencies available upon request.

Please state when ordering.

All specifications are subject to change without notice.



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