

METLAB

It's Used for Metallographic Analysis of Iron and Steel, Ferrous & Non-ferrous Material, Casting & Forging, Coating-thickness & Other Metallurgical Analysis of Metals

INVERTED METALLURGICAL MICROSCOPE



TRINOCULAR OBSERVATION HEAD

EYEPIECE : Wide field eyepiece 10X (Paired) with FOV 18 MM

OBJECTIVES (INFINITY CORRECTED) : Long Working Distance Plan Achromatic 5X,10X,20X,50X & 100X (Optional)

MAGNIFICATION : 50X to 1000X

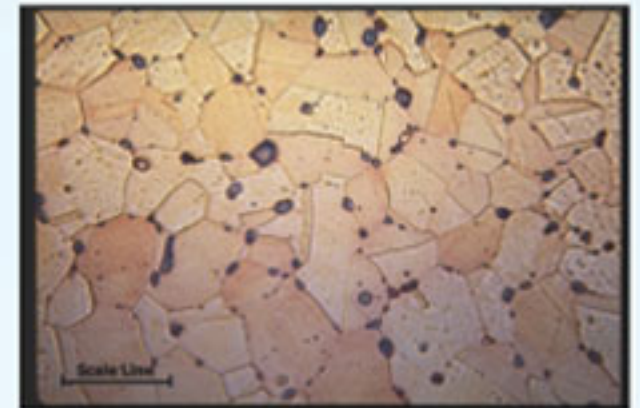
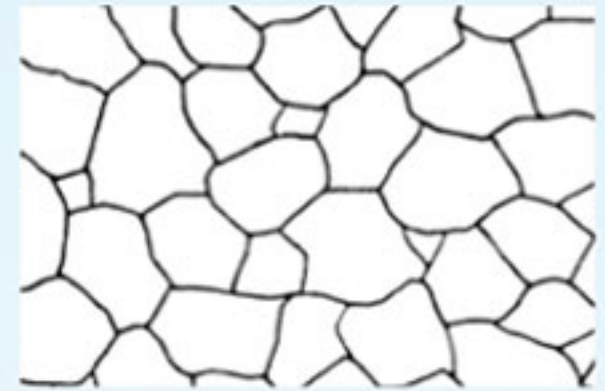
MECHANICAL BODY : Co-axial focusing system with large knobs, Pre focusing lever & tension adjustment ring. • Quadruple nosepiece on ball bearing. • Mechanical stage is 180mmX155mm with Moving Range 75mmX40mm. • The Mechanical stage has low positioned co-axial controls on ball bearing guide ways.

ILLUMINATOR : The Epi illuminator has 5W LED lamp with adjustable brightness.

METALLURGICAL IMAGE ANALYSIS SOFTWARE WITH CAMERA



2 M.P. / 5 M.P. / 10 M.P.



MEASUREMENT

- Spatial calibration
- Line measurements for Distance, Length, Width, Perimeter, Angle, Three Point Radius.
- Area by enclosed line controlled by four arrow keys available on keyboard arrows with zoomed preview.

THRESHOLD PARTICLE MEASUREMENT

Manual, Auto bright and Auto dark methods to identify intensity range defined object to be measured. Various calculation & measurements available for selected Particle are; Dimensions, Area, Perimeter, Feret Length, Min/Max Radius, Thread Length, Thread Width, Fibre Length, Fibre Width.

COUNT AND CLASSIFICATION

Identification of objects in an image, count them, obtain several features measurements. Objects identification by user or automatically. User defined classification on basis of size or intensity.

PHASE ANALYSIS

Measure area fraction & volume fraction. Identify multiple phases within Microstructure. Also delineate phases from the histogram as per ASTM Standard E562 & E1245.

NODULES

Measure Nodularity as per ASTM 247 standard. The Nodules & Flakes are separated on the basis of its shape and aspect ratio. The detail measurement of each microstructure is available for further analysis. The processed image displays non-Nodules in different color. The Nodules can be classify by its range on the basis of its size & shape.

GRAIN SIZE

The module analyze Grain image and measure the Grain no. & Grain size using ASTM E 112 method. The options for measurement available are 1. Manual Trace, 2. Popular Comparison Method, 3. Quick single Grain measurement, 4. ALA method, 5. Interception method. Various filters to make user defined templates. Grain boundary repair mathematical function.

COATING THICKNESS

This application rapidly measures the thickness or width of a coating at multiple positions along a sample as per ASTM B487 standard. Tabulated results available for min/max and mean of width measured at various points of sample cross section.

DECARBURISATION

Measured depth or width of decarburisation occurs as per ASTM 1077 standard.

POROSITY

They are recognized on the basis of its intensity as per ASTM B-276 standard. The measurement of each pore is displayed. The processed image displays pores in Red color.

NON METALIC INCLUSION

Measure inclusions and report ASTM E-45, E-1245 numbers, cumulative length, width ratio.

GRAPHITE FLAKES

Graphite Flakes length, width, distribution and percentage as per ASTM A-247-67

DOUBLE DISC POLISHING MACHINE

- Table top design with continuously variable speed. Fully moulded FRP body with easy disc change design.
- Quick change disc design enables discs with different emery grits/polish cloths to be used in desired steps.
- ½ or 1 HP high torque ac motor
- 8" disc dia. standard
- Electronic speed controller
- Digital speed indicator-50 to 1000rpm



DOUBLE DISC POLISHING MACHINE FLOOR MODAL



Specifications:

- Two 200 MM Aluminum discs over which polishing paper or cloth can be stretched
- Separate Motors for individual disc of ½ HP
- Variable speed from 50-1400 RPM
- Variac Variable Transformer for smooth speed change
- Water inlet/outlet for wet polishing .
- Flexible water jet with control valve
- Complete Powder Coated Body for Corrosion resistant
- Paper & Polishing Cloth holding Ring
- Front control panel with ON-OFF Switch & for change the speed.

AUTOMATIC SINGLE DISC POLISHING MACHINE

- Single Powerful High-Torque Motor 1 HP
- Disc Dia 250 mm.
- Frequency Converter Allows Smooth Speed Variation
- Variable Speed: 50 - 1000rpm
- Holds up to 5 Moulds 1" , 1 1/4" or 1 1/2".
- 1 1/4" Holder comes with Machine as a Standard
- Independent Powerful Polish Head.
- Head Single Speed AC Motor 50rpm
- Digital Timer.
- Emergency Stop Safety Switch Provided.



HOT MOUNTING PRESS

Technical Specification:

- Specimen Pressing Size 30x15mm
- Mould Diameter : 22 mm, 30mm or 45 mm (You can choose only one)
- Heater Capacity 650W 220V
- Adjustable Temperature Range : 0 - 200°C
- Power 15% 220V 50Hz voltage fluctuation less than + 15%
- Overall dimensions 340mm x 270mm x 400mm

ABRASIVE CUT OFF MACHINE

Abrasive cutter is rugged, sturdy and designed to cut Metallurgical Samples to optimal quality consistently and safely.

Features & Technical Specification:

- Machine is covered with powder coated sheets
- Specially designed Vice to hold any kind of piece.
- Absolute minimal deformation, cool & burn-free sample production.
- Large and Effective coolant delivery with adjustable focused vains fitted on wheel guard.
- Coolant circulation System is provided with suitable filtering arrangement.
- Light attachments system is provided for clean and accurate cutting of samples.
- Large Viewing window to monitor the cutting operation.
- Heavy Duty motor is provided 3HP 3 Phase as per your cutting needs.
- Cutting Operation By manual cut-off wheel in chop type procedure.
- Cutt-Off Wheel Speed 2800 rpm.
- Cutting Capacity up to 90-110 mm.



BELT GRINDER

This belt polisher is designed for initial rough grinding, with ½ hp motor. The grinder has rigid construction complete enclosed body with full cover mask in its base. Dynamically well balanced rollers made up of aluminium material.

Specification:

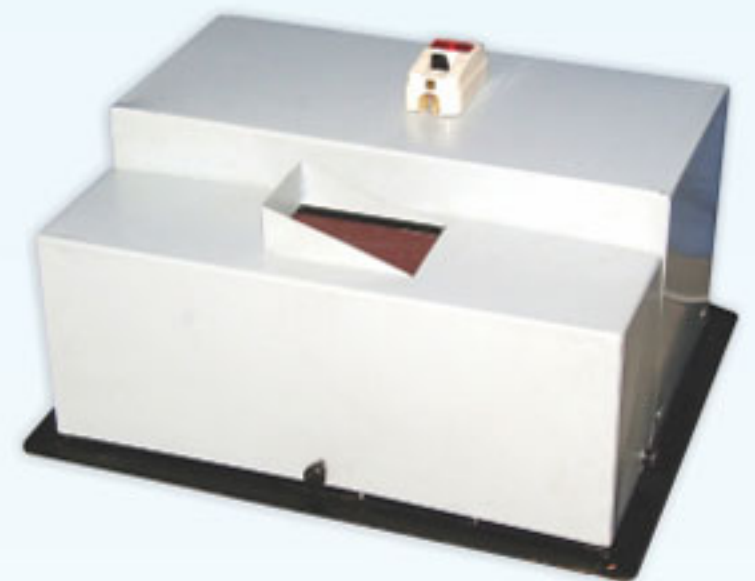
Working on : 220V in single phase

Operation : Manual

Belt Size : 915 X 100 mm Endless Belt

Pulleys System : Balanced aluminium pulleys

Polishing Motor Power : ½ H.P Single Phase



SPECTRO SAMPLE POLISHER

Disc Diameter: 350 MM

Disc Motor: 2 HP, 3 Phase 415 Volt supply

Suction Motor: 1HP

Disc Speed: 2800 RPM



METALLURGICAL CONSUMABLES ITEM

- Abrasive Cutting Wheel • Emmerly Polish Paper grit 120 to 2,000 • Polishing Cloth • Alumina Pest / Powder
- Diamond Pest • Cold Setting Compound (Powder + Liquid) • Black Phenolic Powder
- Etching Solution • Metallurgical Chart

METLAB EQUIPMENTS & ENGINEERING SYSTEMS

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