



WE CREATE SYNERGIES

METALLOGRAPHIC MACHINES



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CUTTING MACHINES

Sectioning, the removal of a conveniently sized and representative specimen from a larger piece is the first major operation in the preparation of **metallographic specimen**. Incorrect preparation techniques can cause micro-structural changes that lead to erroneous interpretation.

The selection of the right cutter is the first crucial step of specimen preparation. Abrasive cutting, with copious supply of coolant to ensure that no thermal damage takes place, is the most widely used method of sectioning materials for microscopic examination. CRASE provides a wide range of cutting machines by Chennai Metco; very large cutters to section bigger and long sized components, such as crankshafts, are also available.

BAINCUT LSS - Low Speed Saw

The precision section saw is designed for slicing all types of materials with ease.

The slow speed cutter is mostly used for accurate sectioning of very small, hard components for R&D.

FEATURES

- Cutting capacity up to 20 mm
- Built-in coolant tray
- Down-feed facility with different weights up to 400 g
- Variable speed up to 600 rpm
- Micrometer for cross-feed adjustment up to 25 mm
- AC motor single phase, 220 V / 50Hz or 110 V / 60 Hz
- Diamond blade size: Ø 127 mm
- Touch screen with pre-set programs
- Automatic safety button
- Dimensions: 400 x 300 x 250 mm



CUTTING MACHINES

BAINCUT HSS PLUS - High Speed Saw



The precision saw for cutting all types of materials with variable spindle speed. Automated Y movement adds to the convenience.

A must for slicing surface engineered components, hard, sensitive applications. Preferred by research laboratories.

FEATURES

- Cutting capacity up to 60 mm
- Variable speed 100-5000 rpm
- AC motor 3-phase (750 W), 220 V / 50 Hz or 110 V / 60 Hz
- Y axis automatic movement
- Z axis movement up to 40 mm
- Diamond or abrasive wheel up to Ø 200 mm
- Door safety interlock system
- Re-circulating coolant system
- Dimensions: 845 x 784 x 600 mm



BAINCUT M - Medium

A popular general purpose cut-off machine with viewing window, internal illumination, re-circulation coolant system, washing jet, safety limit switch. Chop cutting by lowering the wheel with the handle (Z movement).

FEATURES

- Cutting size up to 60 mm
- Spindle speed 2800 rpm
- Motor 3 HP, 3-phase, 415 V / 50 Hz or 220 V / 60 Hz
- Cutting wheel Ø 250 mm
- Z axis manual movement
- Built-in movable re-circulation coolant tank
- T-slot bed, 110 x 200 mm
- Dimensions: 850 x 750 x 1550 mm



CUTTING MACHINES

BAINCUT UM - Upper Medium

A sturdy floor model general purpose cutter. Large space in the cutting zone offers flexibility to use wide variety of fixtures. Cutting action is carried out by lowering the arm (Z movement) through cutting plane (Y axis); additional X axis movement. Suitable for many applications including small gears, medium sized auto components and shafts.

FEATURES

- Cutting capacity up to 80 mm
- Spindle speed 2800 rpm
- Cutting wheel 300 mm
- Motor 5 HP, 3-phase. 415 V / 50 Hz or 220 V / 60 Hz
- Three axes movement X, Y and Z
- Built-in movable re-circulation coolant tank
- Table size: 260 x 260 mm with 8 mm T-Slot
- Dimensions: 1100 x 1000 x 1650 mm



BAINCUT L - Large

Large heavy-duty cutting machine for sectioning large samples. Has similar features to UM model, but with higher capacity (Z, Y and X movements).

FEATURES

- Cutting capacity up to 110 mm (L Plus: 130 mm)
- Spindle speed 1900 rpm
- Cutting wheel 350 mm (L Plus: 400 mm)
- Motor 7.5 HP, 3-phase, 415 V / 50 Hz or 220 V / 60 Hz
- Built-in movable re-circulation coolant tank
- Easy operator panel
- Side opening for longer components
- Table size: 254 X 355 mm with 12mm T-Slot
- Dimensions: 1040 x 1600 x 1800 mm



CUTTING MACHINES

BAINCUT XL Auto



Automatic extra large cutting machine with integral sliding door. Standard Y axis automatic movement, optional Z axis automatic movement. Pulse cutting, step cutting, etc., for burn-free cutting. Preset parameters for consistency and ease of use.

FEATURES

- Cutting capacity up to 150 mm
- Automatic Z movement with Servo System
- Advanced PLC based graphical touch screen
- Variable cutting speed 1000 - 3000 rpm
- Cutting wheel Ø max. 500 mm
- Motor 15 HP, 3-phase, 415 V / 50 Hz or 480 V / 60 Hz
- Coolant tank with 150 L capacity
- Fume digester
- Table 500 x 500 mm with 12 mm T-Slot
- Dimensions: 1700 x 1700 x 1900 mm

BAINCUT XXL Auto

Automatic bigger sized fully loaded cutting machine. Two side sliding door provides voluminous internal space to section big components and also easy access. Standard automatic movement Y and Z axes. Pulse cutting, step cutting, etc., for burn-free cutting. Variable spindle speed included.

FEATURES

- Cutting capacity up to 200 mm
- Variable spindle speed 1000 - 3000 rpm
- Motor 30 HP, 3-phase, 415 V / 50 Hz or 480 V / 60 Hz
- Cutting wheel Ø max. 500 mm
- Advanced PLC based graphical touch screen
- Automatic Y and Z movement with Servo System
- Fume digester
- Table 500 X 500 mm with 12 mm T-Slot
- Dimensions: 2100 x 2150 x 2400 mm



MOUNTING MACHINES

Mounting the specimen after sectioning is often necessary for subsequent handling and metallographic polishing.

Mounting has several benefits, especially in hand polishing when specimen flatness and edge retention are important.

Specimen mounting has other benefits such as:

- uniform flatness for either manual or automatic grinding and polishing machine;
- easier handling of specimens that are too small and fragile;
- Chennai Metco **mounting presses** are engineered with best in class techniques with international standards.

BAINMOUNT H



FEATURES

- Hydraulic mounting press
- Touch screen LCD parameter indicator
- Mould dimensions Ø 30 - 40 - 50 mm
- Heater 1600 Watt, single phase
- Water cooling re-circulation system (optional)
- Digital temperature indicator and digital timer
- Timer-buzzer for heating and cooling cycles
- Dimensions: 580 x 610 x 550 mm

BAINMOUNT H AUTO

FEATURES

- Hydraulic automatic system
- Auto-doser
- Mould dimensions Ø 30 - 40 - 50 mm
- Heater 1600 Watt, single phase
- Automatic water cooling system
- Ideal for transparent, EPO and bakelite moulds preparation
- Timer-buzzer for heating and cooling cycles
- Presets and data storage up to 25 programs
- Dimensions: 430 x 570 x 510 mm



MOUNTING MACHINES

BAINMOUNT TWIN H AUTO



FEATURES

- Hydraulic automatic system
- Mould dimensions \varnothing 30 - 40 - 50 mm
- Heater 1600 Watt, single phase
- Automatic water cooling system
- User friendly advanced LCD touch screen
- Timer-buzzer for heating and cooling cycles
- Ideal for transparent, EPO and bakelite moulds preparation
- Presets and data storage up to 25 programs
- Simultaneous mounting in both cylinders
- Dimensions: 650 x 630 x 510 mm

GRINDING/POLISHING MACHINES

Grinding involves process of coarse grinding prior to fine grinding to obtain flat surface, followed with steps of fine grindings.

Polishing, in one or more final steps, in specimen preparation is to get mirror finished surface. This process is necessary to get the clear view of the microstructure in the specimen.

It is done through a series of SiC sheets, diamond platens, cloths, and suspensions to obtain mirror like and planar surface in the specimen.

Chennai Metco offers a full range of table top, floor model, manual, semi-automatic and fully automatic polishing machines. Fully automatic polishers are ideal for laboratories looking for high quality consistent results for demanding applications.

BAINLINE TWIN WET

FEATURES

- Endless belt, 100 x 915 mm
- Motor 1 HP, 3-phase
- Simplified belt change mechanism
- Water cooling system
- Speed 1440 rpm
- For flat, coarse grinding prior to fine grinding
- Dimensions: 670 x 680 x 290 mm



BAINLINE GP

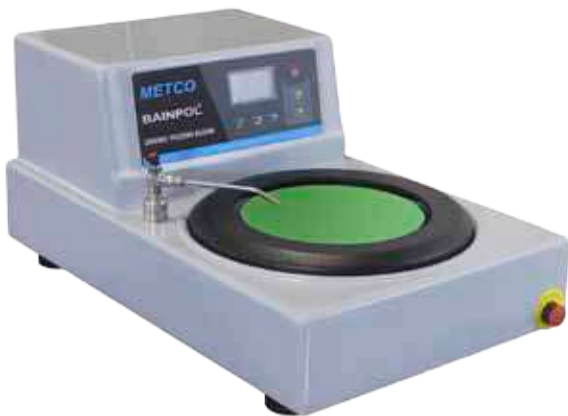
FEATURES

- Endless belt 100 x 915 mm
- Motor 0.5 HP, single phase
- Simplified belt change mechanism
- For flat, coarse grinding prior to fine grinding
- Dimensions: 560 x 350 x 230 mm



GRINDING/POLISHING MACHINES

BAINPOL VT



FEATURES

- Single disc, standard Ø 200 mm
- Optional discs Ø 250 - 300 mm
- Motor 0.5 HP, single-phase, high torque
- AC drive
- Variable speed 50 - 1000 rpm or 50 - 600 rpm
- Display LCD
- Corrosion resistant
- Flexible water jet with control valve
- Power supply: 220 V / 50 Hz or 110 V / 60 Hz
- Dimensions: 360 x 660 x 310 mm

BAINPOL VTD

FEATURES

- Double disc, standard Ø 200 mm
- Optional discs Ø 250 - 300 mm
- Motor 0,5 HP, single-phase, high torque
- AC drive
- Variable speed 50 - 1000 rpm or 50 - 600 rpm
- Display LCD
- Corrosion resistant
- Flexible water jet with control valve
- Power supply: 220 V / 50 Hz or 110 V / 60 Hz
- Dimensions: 710 x 660 x 310 mm



GRINDING/POLISHING MACHINES

BAINPOL SEMI-AUTOMATIC

FEATURES

- AC motor 0.5 HP, single-phase
- LCD touch display
- Variable speed 50 - 600 rpm
- Head speed 100 rpm
- Digital timer
- Auto head to hold 3 samples: 30 - 40 - 50 mm
- Independent powered polish head
- Standard disc Ø 300 mm, optional Ø 250 mm
- Dimensions: 435 x 750 x 520 mm



Also available with double disc

BAINPOL AUTO

FEATURES

- AC motor 1 HP, single-phase, high torque
- LCD touch display, digital timer
- Variable speed 50 - 600 rpm
- Variable pressure 1 - 4 bar
- Water cooling system
- Automatic head, up to 6 moulds
- Independent powered polish head, variable speed 30 - 150 rpm
- Standard disc Ø 200 - 250 - 300 mm
- Dimensions: 850 x 500 x 600 mm



*Also available with double disc
Dimensions: 950 x 850 x 750 mm*

GRINDING/POLISHING MACHINES

BAINPOL VFD



FEATURES

- Heavy duty floor model with storage compartment
- Double disc, variable speed 50 - 600 rpm
- AC motor 0.5 HP, single-phase
- Standard disc Ø 300 mm
- Optional discs Ø 200 - 250 mm
- Corrosion resistant
- Drainage system
- Dimensions: 870 x 750 x 1020 mm

Also available the semi-automatic version

BAINPOL VFF

FEATURES

- Heavy duty floor model with storage compartment
- Four discs, variable speed 50 - 600 rpm
- AC motor 0.5 HP, single-phase
- Standard disc Ø 250 mm
- Optional discs Ø 200 - 300 mm
- Corrosion resistant
- Drainage system
- Dimensions: 1740 x 750 x 1020 mm



MICROSCOPES

Optical microscope remains the most important tool for the study of microstructure. All examination of microstructure should begin with use of light microscope starting at low magnification followed by progressively higher magnification. Reflected light microscopes are commonly used for the study of metals and are classified as *upright* and *inverted*. These terms refer to the orientation of the light path to the plane-of-polish of the specimen during observation.

METSCOPE - I

Trinocular inverted metallurgical microscope with plan optics and incident light illumination. Convenient model for quick micro analysis, with ergonomic design. Available options to add quality enhancing the optic. Objectives: 10x - 20x - 50x - 100x Magnification range: 100x - 1000x (standard) Illumination: 6 V, 20 Watt A third port available for camera.



VERTIMET CP

Trinocular vertical metallurgical microscope with plan optics and incident light illumination. Best suited for situations demanding vertical viewing. Practical no-frill microscope with amazing clarity. Objectives: 10x - 20x - 50x - 100x Magnification range: 100x - 1000x (standard) Illumination: 6 V, 20 Watt A third port available for camera.

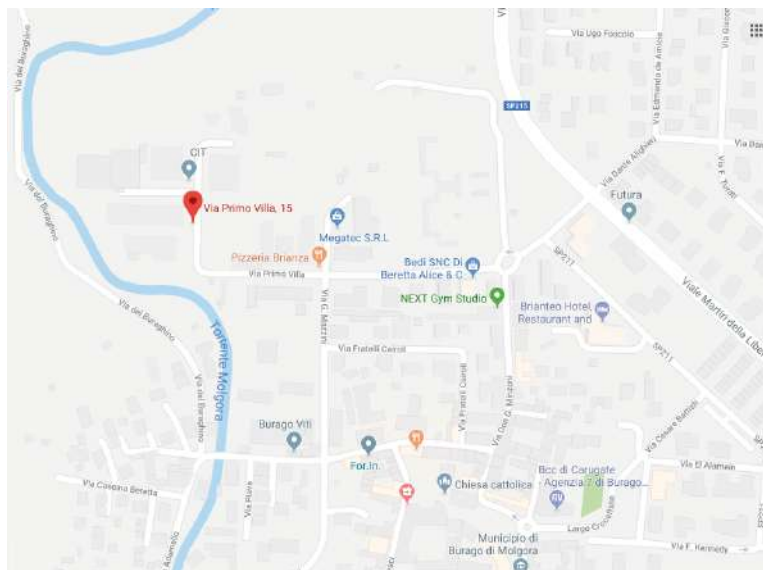


MACSCOPE - Z (Stereo Zoom)

Stereo zoom microscope with camera port. Designed with excellent clarity and ergonomics. Modular design enables configuration to suit your applications. Standard magnification: 6.2x to 50x Magnification: 3.1x to 100x with suitable eye pieces and objectives Fiber optic illuminator (optional) Illumination: ring illuminator 10w bulb



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