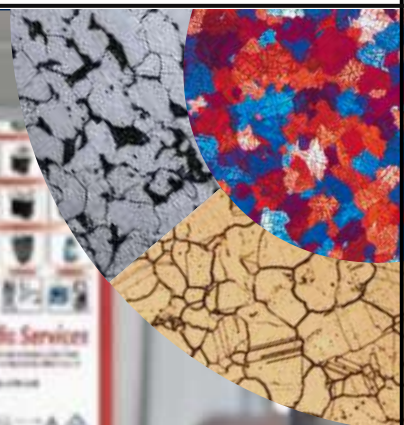


**Complete
Metallographic
Equipment Crafted for
Precision, Reliability
and Performance.**



***Micro Structure
Sample Preparation
Equipments***

MADE IN INDIA



ABOUT MODERN METALLURGICAL & SCIENTIFIC SERVICES

Established in 2005, Modern Metallurgical & Scientific Services has emerged as a leading manufacturer, exporter, and solutions partner in the field of metallurgical and laboratory testing equipment in India. With over two decades of industry presence, the company combines deep technical expertise with precision engineering to serve a wide spectrum of industrial and research clients.

Built on the foundation of quality, innovation, and service excellence, Modern Metallurgical specializes in the design, engineering, and supply of metallographic testing instruments, material analysis systems, and laboratory consumables that support critical quality control and R&D workflows. The product range includes advanced cutting, grinding, polishing, and mounting machines, metallurgical microscopes, image analysis systems, and a comprehensive suite of laboratory equipment and consumables tailored for modern testing environments.

As an ISO-certified and professionally managed enterprise, the company is driven by a team of seasoned professionals with rich experience in metallurgical laboratory solutions. Its products are engineered to deliver reliable performance, repeatable results, and long service life, enabling laboratories and production facilities to uphold the highest standards of precision and productivity.

Beyond manufacturing, Modern Metallurgical also offers turnkey installation, calibration services, training, and ongoing technical support, ensuring seamless integration of equipment into customer workflows and maximized operational uptime. The company is also an active member of the Institute of Indian Foundrymen (IIF), Coimbatore Chapter, underscoring its strong industry engagement and commitment to metallurgy standards.

Headquartered in Chennai, India, with operational presence in key industrial regions, Modern Metallurgical serves a diverse clientele including automotive OEMs, engineering firms, academic institutions, research laboratories, and quality assurance facilities across India and internationally.



CUTTING MACHINE

Our precision cutting machines are engineered for accurate and clean sample sectioning with minimal deformation. Designed to handle a variety of metals and alloys, they ensure consistent results, preserving the integrity of your specimens for reliable metallographic analysis.

MODERN LIGHT DUTY ABRASIVE CUT-OFF MACHINE

MODEL : MODERN CUT - 1

- Sturdy tabletop design with rust-proof base
- Cuts metals up to 50mm diameter*
- 3HP, 3-phase ISI motor (Bharat Bijlee)
- Spindle speed 2880 RPM
- T-slot bed with twin-thread vice (250mm x 70mm)
- In -built 50 Ltrs Re -Circulation Coolant Tank with 1/10 H.P. Coolant Motor
- Cut-off wheel: 10" (250mm)
- Machine Size: 680L x 760W x 600H mm



MODERN TABLE TOP - 1



MODERN FLOOR CUT - 1

ALSO AVAILABLE IN A COMPACT **FLOOR CUT** MODEL WITH THE SAME TECHNICAL SPECIFICATIONS.

MODERN MEDIUM DUTY ABRASIVE CUT-OFF MACHINE

MODEL : MODERN CUT - 2

- Floor-standing, durable Heavy duty base
- Cuts up to 70mm diameter (standard steels)
- 2880 RPM spindle
- 5 HP, 3-phase ISI motor (Bharat Bijlee)
- T-slot bed (300mm x 75mm) with twin-thread vice
- 1/10 HP coolant motor included
- Cut-off wheel size: 12" (300mm)
- Machine Size: 800 x 630 x 660 mm
- Vibration observation table for stability



MODERN FLOOR CUT - 2
(X-Y-Z-AXIS MOMENT AVAILABLE)



MODERN TABLE TOP - 2

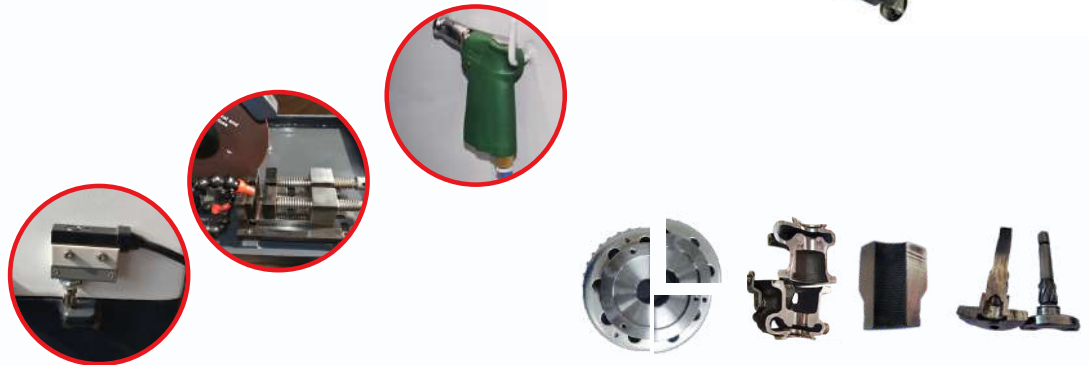
ALSO AVAILABLE IN A COMPACT **TABLE-TOP** MODEL WITH THE SAME TECHNICAL SPECIFICATIONS.



CUTTING MACHINE

MODERN HEAVY DUTY ABRASIVE CUT-OFF MACHINE MODEL : MODERN CUT - 3

- Designed for cutting metal and mineral samples
- Cutting capacity: up to 80mm diameter, 70mm height, 400mm length*
- Powerful 5 HP, 3-phase motor at 2880 RPM with TEFC waterproof insulation
- 1/3 HP coolant pump for efficient cooling
- Large bed size: 250mm x 250mm, 300mm with T-slots for various clamps
- X-Y movement with 50mm travel on X-axis
- Cut-off wheel size: 300mm (12 inches)
- Machine Size: 1290L x 1100W x 1700H mm



MODERN CUT - 4



MODERN EXTRA LARGE ABRASIVE CUT-OFF MACHINE MODEL : MODERN CUT - 4

- Sturdy floor model with heavy fabricated cabinet
- Cuts metal and mineral samples up to 110mm diameter, 75mm height, 500mm length*
- Powerful 7.5 HP, 3-phase motor at 2880 RPM with TEFC waterproof insulation and belt drive
- 1/2 HP coolant pump included
- Extra Large 300 x 300 mm T-slotted bed with X-Y-Z movement (50mm X-axis travel)
- Side opening for extra-length samples (75mm height x 400mm length)
- Variable speed system wheel RPM starts from 500-3000
- Cut-off wheel size: 350mm (14 inches)
- Machine size: 1250L x 1400W x 1860H mm

AUTOMATIC ALSO AVAILABLE !

MODERN HEAVY DUTY ABRASIVE CUT-OFF MACHINE
EXTRA LARGE PLUS
MODEL : MODERN CUT – 5

- Sturdy Floor Model Cutter for Selecting Metal and Mineral samples.
- Cutting capacity up to 130 mm Dia./ 100 mm Height X 500 mm Long
- Standard steels (Not Significant For all Materials)
- 10 HP,(7.5KW) phase motor,2880 rpm, TEFC water proof insulation With Belt Drive
- Belt Drive Mechanism for efficient cutting
- Variable speed System Wheel RPM start from 500 to 3000
- 0.18 Kw coolant pump.
- Splash proof, Corrosion resistant MS cover with see-through Hood
- Overload protection provided for safe operation of motors.
- Control panel With Push button, Emergency Stop, Over load protection 415 Volt operated contactors and relays.
- Safety limit switch provided to stop motor when hood is opened.
- Heavy Large 500 mm X 350mm Aluminium Bed
- 12mm T – slotted bed for fixing Different Type of clamps
- ThreeAxis Movement (X,Y,Z)
- MULTI PURPOSE TWIN THREADLOCK VISES for holding samples
- Small opening in the side wall for extra length jobs & 110mm height X 500 mm length
- Cut – off wheel diameter 16" (400mm)/14" (350mm)
- Cooling by four high flow water jets to provide optimum cooling
- One large (70 mm) drain, re-circulation coolant tank with 120 Ltrs Capacity
- Suitable-filtering part is provided to filter slugs formed during cutting
- Cleaning Hose hand flush jet to clean the working area of the Machine
- LED light illumination inside the chamber to illuminate the cutting area.
- Machine size: 1500L X 1600W X 1900H mm. Weight: 550 Kgs Approx.

MODERN CUT – 5



AUTOMATIC ALSO AVAILABLE !



DIAMOND CUTTING MACHINE

Modern Slow Speed Cutting Machines are precision-engineered solutions designed for accurate and deformation-free sample cutting in metallographic applications. Built with advanced control systems, stable operation, and efficient cooling mechanisms, these machines ensure smooth cutting performance and high repeatability. Ideal for laboratories, research centers, and quality control environments, they deliver reliable results with enhanced safety and user-friendly operation.

MODERN SLOW SPEED CUTTING MACHINE

MODEL : MMSS - 600

SPECIFICATION :

- Max.cutting dia 30mm
- Rotating Speed: 0-600 rpm (variable)
- Cutting Wheel: Ø100 x 12.7 x 0.3 mm
- Dimensions: 415 x 340 x 270 mm
- Control and Display: Film key operation, LCD display



LOW SPEED SAW CUTTING MACHINE – AUTOMATIC

MODEL : MMSS-LSS-50A

SPECIFICATION :

- Max cutting ability: 50mmdia
- Accuracy X movement: 0.01mm
- Speed: 150~2000 RPM
- X Movement: 40mm
- Water tank: 1Lit
- Power supply: 220V
- Dimension: 570×620×450mm
- Wheel: External dia.127-177mm,Internal dia.12.7 or 25.4mm
- Cutting type: Chop, With automatic shutdown protection function



Our mounting machines are engineered to provide secure and uniform encapsulation of metal samples. Designed for precision and consistency, they create stable surfaces that facilitate accurate grinding, polishing, and metallographic analysis, preserving specimen integrity throughout preparation.

MODERN AUTOMATIC PNEUMATIC MOUNTING PRESS

- Corrosion-resistant mild steel cabinet
- Pneumatic operation with automatic water cooling
- 1500W mould heater
- Advanced HMI LCD touch screen with digital temperature and timer display
- Standard 32 mm mould; compatible with 40 mm and 50 mm moulds
- Machine size: 490L x 660W x 540H mm



HMI CONTROL

MODERN AUTOMATIC PNEUMATIC MOUNTING PRESS (INDIVIDUAL OPERATION)

- Individual HMI Controller With Dual Mounting Operating System
- Specification : Same As Above
- Compressed air required 4 Bar Pressure
- 1500 Watts Mould Heater
- Quick ram return to speed up reloading
- Dovetail slot for easy changeability of Mould assemblies
- Machine Size : 1100L X660WX520Hmm



HMI CONTROL

SPECIFICATION

- corrosion resistant steel cabinet with built in electro hydraulic power pack system
- user friendly advanced 5" LCD touch screen
- 1500 Watts mould heater with built in water circulating coil and automatic water cooling system
- Mould chamber size 32mm,40mm,50mm
- Mould size 32mm comes with machine as standard
- Pressure can be varied from 10 to 90 bar for different moulding powder
- Timer and buzzer for After cooling cycle

MODERN HYDRAULIC AUTOMATIC MOUNTING MACHINE



SPECIFICATION

- Efficient sample preparation with mirror-like finish
- Digital temperature indicator and timer for precise control
- 1500 Watts high-speed mould heater for rapid heating
- Built-in water cooling system for faster cooling cycles
- Interchangeable moulds – 50 mm (standard), 32 mm & 40 mm compatible
- Quick ram return for faster reloading and improved productivity
- Corrosion-resistant mild steel cabinet for durability
- Timer and buzzer for After cooling cycle
- Machine size : 650 × 600 × 580 mm with 230V / 50Hz power supply

MODERN HYDRAULIC SPECIMEN MOUNTING MACHINE



SPECIFICATION

- Hydraulic press with 2-ton capacity
- Mould chamber fits samples up to 1.18 inches (30 mm)
- Electronic LED timer display for precise cycle control
- 500-watt mould heater for consistent mounting
- Buzzer alerts at cycle completion
- Constructed and Activated By hydraulic Press
- Machine size: 310 x 250 x 500 mm

MODERN HYDRAULIC SPECIMEN MOUNTING PRESS (ECONOMIC)



GRINDING MACHINE

Our precision grinding machines are engineered to achieve consistent, defect-free surface planarization with controlled material removal rates. Designed to accommodate diverse metals and alloys, they ensure optimal flatness and surface finish, preserving microstructural integrity for accurate and reproducible metallographic evaluation.

"These grinders seamlessly integrate into any laboratory or production environment that requires precise and repeatable surfacing results"

MODERN BELT GRINDER MODEL : MEDIUM DUTY

- Sturdy tabletop grinder for pre-grinding metallurgical specimens
- Motor: 0.5 HP single-phase motor, 1440 RPM
- Aluminum idler pulley with easy belt release
- Removable dust cover with tray
- Belt Size: 100 mm x 915 mm, grit 36,60,120 endless belt
- Machine Size: 590 x 400 x 240 mm



MODERN BELT GRINDER MODEL : LIGHT DUTY

- Sturdy tabletop model for pre-grinding metallurgical specimens
- Motor: 0.25 HP single-phase motor at 1440 RPM
- Aluminium idler pulley with easy belt release mechanism
- Easy-to-remove safety cover
- Belt: 100 mm x 915 mm, grit 36,60,120 emery cloth belt for dry polishing
- Provides smooth grinding
- Machine Size: 500 x 350 x 260 mm



MODERN BELT GRINDER MODEL : HEAVY DUTY – FLOOR MODEL

- Multi-purpose floor model for pre-grinding metallurgical specimens
- Motor: 1 HP, 3-phase motor running at 1440 RPM
- Double speed mechanism 1440 RPM and 1800 RPM
- Aluminum pulley with simplified belt release mechanism
- Less vibration design for stable operation
- Belt: Endless belt size: 150 x 1220 mm, grit 120
- Machine Size: 780 x 520 x 1000 mm



**HEAVY DUTY – VARIABLE SPEED
ALSO AVAILABLE..!**



GRINDING MACHINE

Our precision grinding machines are engineered to achieve consistent, defect-free surface planarization with controlled material removal rates. Designed to accommodate diverse metals and alloys, they ensure optimal flatness and surface finish, preserving microstructural integrity for accurate and reproducible metallographic evaluation.

MODERN SPECTRO GRINDING MACHINE

MODEL : TABLE TOP



SPECIFICATION :

- Disc RPM 2880
- 350 mm Aluminium disc dynamically balanced
- Air section with vacuum blower
- Bharat Bijilee / ISI standard motor
- Power Supply 2HP 3Phase MOTOR
- Machine Size: 400L x 560W x 500H mm

ECONOMIC MODEL AVAILABLE

SPECIFICATION :

- Swivel surface grinder for spectra coin polishing
- 2 HP 2880 RPM Bharat Bijilee / ISI motor
- Magnetic chuck : 8" L x 4" W x 3" H
- 150mm dia cup wheel of standard make
- Machine Size: 330L x 550W x 700H mm



**MODERN SPECTRA SAMPLE
GRINDING MACHINE STAND**



**HIGH POWER MAGNET
(CLOSE POLE)**

MODERN SPECTRA SAMPLE GRINDING MACHINE

MODEL : SWING TYPE



GRINDING MACHINE

MODERN SPECTRO GRINDING MACHINE

MODEL : FLOOR – VARIABLE SPEED

- 350 mm dynamically balanced rotating disc
- Air section with vacuum blower for dust extraction
- 2 HP, 3-phase Bharat Bijilee / ISI standard motor
- Variable speed control: 100–3000 RPM
- Machine size: 400L x 610W x 900H mm



MODERN SPECTRO GRINDING MACHINE

MODEL : FLOOR – FIXED SPEED

- Heavy-duty sheet metal body
- 350 mm dynamically balanced disc
- 2 HP, 3-phase Bharat Bijilee motor at 2880 RPM
- Push-button ON/OFF with overload protection
- Machine Size: 400L x 590W x 890H mm



ECONOMIC MODEL AVAILABLE

MODERN DOUBLE DISC SPECTRO GRINDING MACHINE

MODEL : FLOOR – FIXED SPEED INDIVIDUAL OPERATION

- DISC DIA 350mm (Dynamically Balanced)
- Disc RPM 2880
- POWER ON/OFF Starter With over loading Protection
- Weight 75 kgs approx.
- Power Supply 3Phase MOTOR 2HP 415 volts Ac 50Hz
- Machine Size : 800 X 580 X 880 mm



MODERN DOUBLE DISC SPECTRO GRINDING MACHINE

MODEL : FLOOR – VARIABLE SPEED INDIVIDUAL OPERATION

- 350 mm dynamically balanced disc
- Safety guard and overload protection with ON/OFF starter
- Air section with vacuum blower for clean and safe working
- 2 HP, 3-phase (2880 RPM)
- Machine size: 800 × 580 × 880 mm



MODERN SINGLE DISC VARIABLE SPEED GRINDER/POLISHER **MODEL : MODERN - 3**

- Disc: 8" (200mm dia) single disc polisher
- Speed: Variable speed range from 100 to 900 RPM
- Motor: 0.25 HP high-torque DC motor with LED display
- Features: Holding spring for stainless steel samples
- Machine Size: 400 x 680 x 310 mm
- Table for store consumable



MODERN SINGLE DISC FIXED SPEED GRINDER/POLISHER **MODEL : MODERN - 4**

- Disc: 8" (200mm dia) single disc polisher
- Speed: Fixed speed at 800 RPM
- Motor: 0.25 HP high-torque AC motor
- Drive: V-belt drive for extended disc life
- Features: Holding spring for stainless steel samples
- Power Supply: 230 V, 50 Hz, L+N+E
- Machine Size: 400 x 680 x 310 mm
- Table for store consumable



MODERN SINGLE DISC VARIABLE SPEED GRINDER/POLISHER **MODEL : MODERN - 5**

- Disc: 12" (300mm dia) single disc polisher
- Speed: Variable speed range from 100 to 900 RPM
- Motor: 0.25 HP high-torque DC motor with LED display
- DC drive with LED display
- Flexible water jet with control valve
- Paper holding band for stainless steel samples
- Machine Size: 500 x 730 x 450 mm
- Table for store consumable



MODERN SINGLE DISC FIXED SPEED GRINDER/POLISHER **MODEL : MODERN - 6**

- Disc: 12" (300mm dia) aluminum disc polisher
- Speed: Fixed speed at 800 RPM
- Motor: 0.5 HP high-torque AC motor
- Safety: Flash guard with lid
- Features: Holding spring for stainless steel samples
- Design: Fully covered polishing table with storage cabinet
- Machine Size: 480 x 620 x 330 mm
- Table for store consumable



POLISHING MACHINE

MODERN DOUBLE DISC VARIABLE SPEED GRINDER/POLISHER MODEL : MODERN - 1

- Disc: 8" (200mm dia) double disc polisher
- Speed: Variable speed range from 100–900 RPM
- Control System: DC drive with LED display and controller
- Motor: 0.25 HP high-torque DC motor
- Sample Holding: Stainless steel holding Spring and ring
- Machine Size: 720 x 680 x 320 mm
- Table for store consumable



MODERN DOUBLE DISC FIXED SPEED GRINDER/POLISHER MODEL : MODERN - 2

- Disc: 8" (200mm dia) double disc polisher
- Speed: Fixed speed at 800 RPM
- Motor: 0.5 HP AC motor
- Sample Holding: Stainless steel paper holding band
- Machine Size: 740 x 680 x 320 mm
- Table for store consumable



MODERN INDIVIDUAL DOUBLE DISC VARIABLE SPEED GRINDER/POLISHER MODEL : (MODERN - IDCM - 05)

- Disc: 8" (200mm dia) double disc polisher
- Speed: Variable speed from 100 to 900 RPM
- Drive System: DC drive with LED display
- Motor: 0.25 HP high-torque DC motor
- Sample Holding: Stainless steel holding spring & ring
- Machine Size: 740 x 680 x 320 mm
- Table: Polishing machine table



MODERN INDIVIDUAL DOUBLE DISC FIXED SPEED GRINDER/POLISHER MODEL : (MODERN - IACM - 06)

- Disc: 8" (200mm dia) double disc polisher
- Speed: Fixed speed at 800 RPM
- Motor: 0.5 HP AC motor
- Sample Holding: Stainless steel holding spring & ring
- Machine Size: 740 x 680 x 320 mm
- Table: Fully covered polishing machine table with storage cabinet



MODERN INDIVIDUAL DOUBLE DISC VARIABLE SPEED GRINDER/POLISHER

MODEL : (MODERN – IDCM-03)

- Disc: 12" (300mm dia) double disc polisher
- Speed: Variable speed – 100 to 900 RPM
- Drive System: DC drive with LED display
- Motor: 0.25 HP high-torque DC motor
- Special Feature: Extra power for individual motor and drive operation
- Machine Size: 960 × 720 × 330 mm



MODERN INDIVIDUAL DOUBLE DISC FIXED SPEED GRINDER/POLISHER

MODEL : (MODERN – IACM – 04)

- Disc: 12" (300mm dia) double disc polisher
- Speed: Fixed speed at 800 RPM
- Motor: 0.5 HP AC motor (Independent motor)
- Sample Holding: Holding spring and stainless steel holding band
- Machine Size: 960 × 720 × 330 mm



MODERN DOUBLE DISC VARIABLE SPEED GRINDER/POLISHER

MODEL : MODERN – DCM-01

- Disc: 12" (300mm dia) double disc polisher
- Speed Range: 100–900 RPM variable speed
- Drive System: DC drive with LED display
- Motor: 0.5 HP high torque DC motor
- V-belt for disc rotation and longer life
- Sample Holding: Stainless steel paper holding band



MODERN DOUBLE DISC FIXED SPEED GRINDER/POLISHER

MODEL : (MODERN – ACM-02)

- Disc: 12" (300mm dia) double disc polisher
- Speed: Fixed speed – 800 RPM
- Motor: 0.5 HP high-torque AC motor
- Corrosion-resistant wash bowl with free-flow drain
- Paper Holding: Stainless steel paper holding band
- Table: Fully covered polishing machine table with storage cabinet
- Machine Size: 960 × 720 × 330 mm



POLISHING MACHINE

AUTOMATIC DOUBLE DISC POLISHING MACHINE

SPECIFICATION :

- Model : MODERN 2S
- wheel diameter : $\Phi 250\text{mm}$
- wheel quantity : 2
- Rotational speed : 50-1000RPM&150/300RPM
- Rotational direction : Clockwise or anticlockwise
- Power headspeed : 50-150rpm
- Loading range : 5-60N
- Sample preparation time : 0-995S
- Preparation sample quantity : 4 PCS / 6 PCS
- Sample diameter : $\Phi 30\text{mm}$ (22mm or 45mm)
- Lighting : LED
- Air pressure : 0.6-0.9MPa
- Input voltage : 220V/50HZ
- Input power : 1.1kw
- Dimension : 758mm x785mmx680mm
- Net weight : 98kg



SEMI-AUTOMATIC POLISHING MACHINE

SPECIFICATION :

- Model : 2B
- Wheel diameter : $\Phi 203\text{mm}$
- Rotational speed : 0-1400r/min
- Rotational direction : Clockwise or anticlockwise
- Emergency stop : YES
- Input voltage : AC220V 50Hz
- Wheel quantity : 2
- Input power : 0.75KW
- Dimension : 758*785*310mm
- Net weight : 40kg



POLISHING MACHINE

HEAVY DUTY FLOOR MODEL (FOUR DISC POLISHER)



FIXED SPEED AVAILABLE

SPECIFICATION :

- 12" Four Aluminum disc polisher
- Variable speed from 100-900 RPM
- Rigid table top corrosion proof FRP cabinet
- Corrosion Resistant wash bowl free flow drain
- V Belt Used for Rotate Disc For Long Life
- DC Drive LED Display (Independent Drives)
- 0.25HP High Torque DC Motor
- Holding Spring(Stainless steel)
- Flexible Water Jet with Control Valve
- Paper Holding Band For (Stainless Steel)
- Extra Power for Individual Motor , Drive Operation
- Power Supply 230/ 50 Hz, L+N+ E
- Size: 1900x 720 x 330mm

MODERN SINGLE DISC-TABLE TOP ECONOMIC MODEL



SPECIFICATION :

- 8" Single Aluminum disc polisher
- Fixed speed 1400 RPM
- 0.25HP High Torque AC Motor
- Flexible water jet with control Valve
- Paper Holding Band / Cloth holding spring (S.S)
- Front Control Panel with on off Switch
- Mc size 410 x490 x560
- Power Supply 230/50 Hz, L+N+E

MODERN DOUBLE DISC-TABLE TOP ECONOMIC MODEL



SPECIFICATION :

- 8" Double Aluminium disc polisher
- Fixed speed 1400 RPM
- 0.25 HP High Torque Individual AC Motors
- Flexible water jet with control Valve
- Paper Holding Band / Cloth holding spring (S.S)
- Front Control Panel with on off Switch
- Mc size 750 x 420 x 560
- Power Supply 230/50 Hz, L+N+E

METALLURGICAL MICROSCOPES

- Metallurgical microscopes are essential instruments for detailed examination of metal microstructures. Inspections begin at low magnification and gradually move to higher levels for comprehensive analysis.
- These microscopes use reflected light to reveal surface details and are generally categorized as "Upright" or "Inverted," based on the orientation of the light path relative to the polished metal sample.
- Upright microscopes illuminate the specimen from above, while inverted models provide lighting from below, allowing flexibility for various sample sizes and types.
- We offer a broad range of metallurgical microscopes tailored to different applications and budgets, ensuring precise, dependable, and easy-to-use solutions for research and quality control.

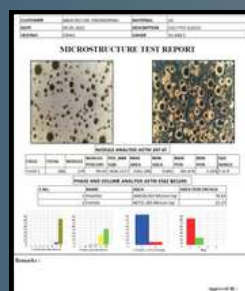
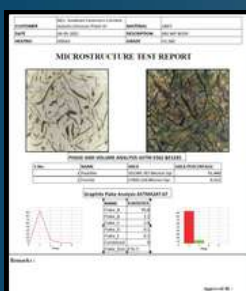
SPECIFICATION :

- **TOH:** Trinocular Siedentopf, 45° inclined, ± 5 diopter, vertical phototube with 100% or 80/20 light split.
- **Eyeiece:** 10x wide field, anti-fungal
- **Objectives:** Infinity corrected 5x, 10x, 20x, 50x, optional 100x dry
- **Focus:** Co-axial with pre-focus, tension adjust, quintuple nosepiece
- **Illumination:** 12V 50W halogen, variable brightness
- **Polarizer:** 360° rotatable analyzer, slide-in/out polarizer
- Quadruple nosepiece on ball bearing
- Mechanical stage is 210mm X 180mm and moving range 50mmX50mm
- Mechanical stage has low positioned co-axial controls on ball bearing guide ways
- Upper port with phototube for micro photography

MS – VICTORY



METALLURGICAL SOFTWARE :



SPECIFICATION :

- **Optical System:** Finite Optical System
- **Eyepiece:** 10x/18mm
- **Objectives:**
 - Plan Achromatic objective 10x
 - Plan Achromatic objective 20x (Optional)
 - Plan Achromatic objective 40x
- **Focussing System:** Coaxial coarse & fine focusing adjustment, focus distance 25mm
- **Illumination:** LED, DC4.2V, brightness adjustable



DIGITAL PORTABLE METALLURGICAL MICROSCOPE



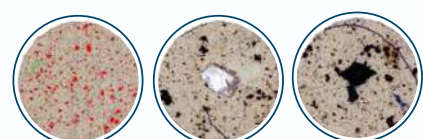
SPECIFICATION :

- **TOH:** Trinocular Siedentopf head, 30° inclined, 360° rotatable, vertical phototube, ± 5 diopter, 50–75 mm I.P.D.
- **Eyepiece:** 10x wide field, anti-fungal treated
- **Objectives:** 5x, 10x, 20x, 50x LWD Plan Achromatic
- **Magnification:** 50x to 1000x
- **Focusing:** Co-axial with pre-focus and tension control
- **Illumination:** 5W warm LED, Kohler with oblique device
- **Automatic millipore filter based particle analysis system**

SOFTWARE INTERFACE



SAMPLE IMAGE



MODEL : MS – OPTIMA

MODEL : MS – ULTIMA

MS-ULTIMA Metallurgical Microscope is a high-performance optical instrument designed for precise metallographic analysis and material inspection. Equipped with advanced infinity-corrected optics, it delivers sharp, high-resolution images for detailed observation of metal structures and micro-features. Its robust mechanical design with a precision stage and powerful illumination system ensures stable, accurate, and repeatable examination.

SPECIFICATION :

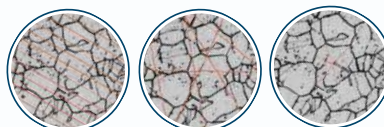
- **TOH:** Trinocular Siedentopf, 45° inclined, ± 5 diopter, 52–75 mm I.P.D., focusable vertical phototube.
- **Eyepiece:** 10x wide field, anti-fungal, F.O.V. 20 mm
- **Objectives:** 5x, 10x, 20x, 50x, 100x (dry), infinity corrected
- **Magnification:** 50x–1000x
- **Illumination:** Epi-Köhler, 12V/100W halogen, adjustable, with blue, green & yellow filters
- **Mechanical:** Co-axial focusing, pre-focus lever, quadruple nosepiece, 350x208 mm stage with 50x50 mm travel, side phototube port

“Ideal for metallurgical laboratories, research institutions, and industrial quality control, the MS-ULTIMA microscope provides reliable results for microstructure analysis and material evaluation”

- **Pre-Focusing Mechanical Body:** Equipped with a co-axial focusing system featuring large, smooth operating knobs for precise focusing.
- Includes a **Pre-Focusing Lever and Tension Adjustment Ring** to control focus movement and prevent specimen damage.
- Fitted with a **Quadruple Nosepiece on Ball Bearings** for smooth and accurate objective lens rotation.
- Mechanical Stage Size: 350 mm × 208 mm with a movement range of **50 mm × 50 mm** for precise specimen positioning.



SAMPLE IMAGE



SOFTWARE INTERFACE



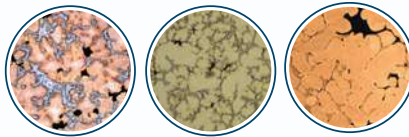
SPECIFICATION :

- **TOH:** Trinocular, 30° inclined, 360° rotatable, ± 5 diopter, 55–75 mm I.P.D., focusable vertical phototube.
- **Eyepiece:** 10x wide field, anti-fungal, F.O.V. 18mm
- **Objectives:** 5x, 10x, 20x, 50x (LWD), optional 100x dry
- **Magnification:** 50x–1000x
- **Illumination:** 6V/20W halogen, variable brightness, filters included
- **Mechanical:** Co-axial focus, pre-focus lever, 210x140mm stage with 75x50mm travel

SOFTWARE INTERFACE



SAMPLE IMAGE



MODEL : MS – PRIME



STEREOZOOM MICROSCOPES

Weld Check Microscope is a precision optical instrument designed for detailed inspection and analysis of weld joints and weld quality. It enables accurate examination of weld structures, cracks, porosity, and other surface defects with high magnification and clarity. The microscope provides reliable measurements and clear imaging, making it ideal for quality control and metallurgical analysis.

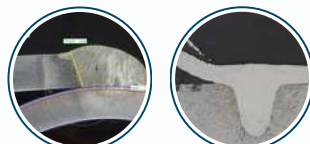
SPECIFICATION :

- **OH:** 45° inclined, 360° rotatable, vertical phototube, diopter ± 5 , I.P.D. 52–75mm
- **Eyepieces:** Wide field 10x (paired), F.O.V. 22mm
- **Magnification Range:** 0.7x–45x
- **Illumination:** LED reflected & transmitted, separate brightness controls

SOFTWARE INTERFACE



SAMPLE IMAGE



MICROSTRUCTURE TEST REPORT	
ORIGINAL IMAGE	PROCESSED IMAGE
MEASUREMENTS	
Height (mm)	25.000
Width (mm)	25.000
Depth (mm)	25.000
Area (mm²)	25.000
Volume (mm³)	25.000
Weight (g)	25.000
Length (mm)	25.000
Width (mm)	25.000
Height (mm)	25.000
Area (mm²)	25.000
Volume (mm³)	25.000
Weight (g)	25.000

MODEL : MS – STEREOZOOM II

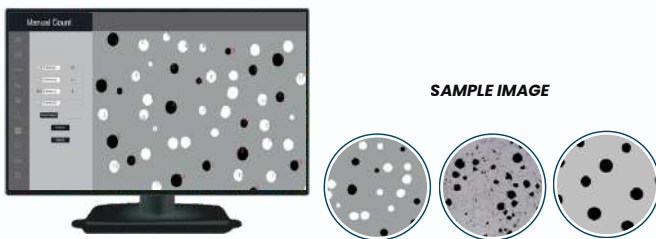


MODEL : MS – STEREOZOOM III

SPECIFICATION :

- **OH:** Galileo optical system, 45° inclined, vertical phototube, diopter adjustment, interpupillary distance 54–76mm.
- **Eyepiece:** Wide field 10X (paired), F.O.V. 22mm.
- **Magnification Range:** 8X to 50X zoom, magnification ratio 1:6.3.
- **Illumination:** Incident LED light with intensity control.

SOFTWARE INTERFACE



MODEL : MS – STEREOZOOM AUTOFOCUS

SPECIFICATION :

- **OH:** Mouse-controlled with real-time autofocus and easy image/video capture.
- **Camera:** 1/3" HIS + ARM chip, 1920x1080 resolution, 60 fps, autofocus, auto exposure & white balance
- **Magnification:** 10x to 140x
- **Illumination:** Built-in LED illumination

SOFTWARE INTERFACE



MODEL : MS – POLARIZING MICROSCOPE

Polarizing Microscope delivers precise analysis of minerals, crystals, and materials using advanced polarized light technology. Ideal for geology, metallurgy, and quality control, it ensures accurate and reliable results. Available at competitive prices, it provides top-quality performance without compromising your budget.



SPECIFICATION :

- **TOH:** Siedentopf, 30° inclined, 360° rotatable, diopter ± 5 , I.P.D. 48–75mm
- **Eyepieces:** 10x wide field (anti-fungus)
- **Objectives:** Plan Achromatic 10x, 20x, 40x, 60x (stain-free)
- **Polarizing:** Rotatable analyzer & polarizer, Bertrand lens, optical compensators
- **Illumination:** Transmitted 12V/20W & epi 12V/50W halogen, brightness adjustable

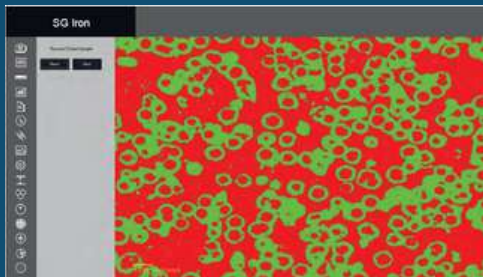
SOFTWARE INTERFACE



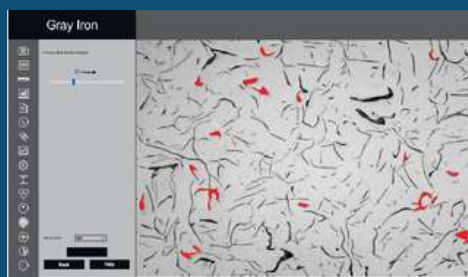
SAMPLE IMAGE



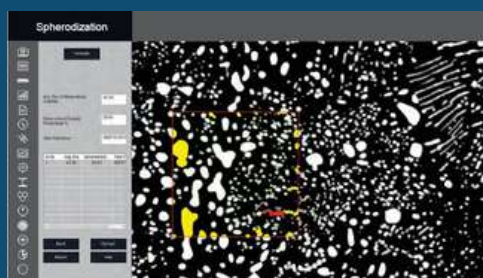
SOME SOFTWARE INTERFACES



SG IRON



GRAY IRON



SPHERODIZATION



CARBIDE BANDING

"OUR METALLOGRAPHIC IMAGE ANALYSIS SOFTWARE OFFERS"

- MEASUREMENT
- SG IRON
- GRAIN SIZE
- POROSITY
- CARBIDE BANDING
- INCLUSION
- MICRO THICKNESS
- SEGMENTATION
- DECARBURISATION
- GRAY IRON
- SPHERODIZATION
- DENDRITES
- MANUAL STITCHING

UNIVERSAL TESTING MACHINE



SPECIFICATION :

- Measuring Capacity: 100 kN → 2000 kN
- Load Range ($\pm 1\%$ Accuracy): 2–100 kN → 40–2000 kN
- Piston Movement Resolution: 0.1 mm → 0.1 mm
- Max. Tensile Clearance: 700 mm → 900 mm
- Compression Test Clearance: 700 mm → 900 mm
- Distance Between Columns: 450 mm → 850 mm
- Power Supply: 3 Phase AC (Common for all models)
- Motor Power: 1.5 HP → 6.5 HP

IMPACT TESTING MACHINE

SPECIFICATION :

- Maximum Capacity: 5J – 400J
- Maximum Capacity: 0.05J – 2J
- Overall Size (Approx.): 0.5mx0.3mx 0.52 m(H) – 1.4mx0.5mx1.9 m (H)
- Net Weight (Approx.): 70kg – 400kg



In the Auto Impact-30, the pendulum is automatically lifted to the required height, and the specimen is positioned in the testing area. The system then releases the pendulum automatically to strike the specimen. After the specimen fractures, the test result is instantly displayed on the digital panel.



The Digital Rockwell, Brinell, and Vickers Hardness Testers are advanced material testing instruments designed for precise measurement of metal hardness across various scales and applications. These systems provide accurate and reliable results with digital displays, controlled loading mechanisms, and user-friendly operation.

DIGITAL ROCKWELL HARDNESS TESTING



SPECIFICATION :

- Initial test Force : 10kgf(98.07N)
- Total test force :
60kgf (588.4N), 100kgf (980.7N) 150kgf (1471N)
- Max. Height of Specimen : 210mm
- Throat : 165mm
- Loading method Automatic: (Loading/Dwell/Unloading)

DIGITAL BRINELL HARDNESS TESTING



SPECIFICATION :

- Test Force : 62.5kgf-3000kgf
- Test Range : 3.18~653HBW
- Max. Height of Specimen : 280mm
- Throat : 150mm
- Hardness Reading : Touch Screen Digital Display

DIGITAL VICKERS HARDNESS TESTING



SPECIFICATION :

- Test Force : 0.3kgf-10kgf
- Test Range : 1HV~2967HV
- Loading Method : (Loading/Dwell/Unloading)
- Max. Height of Specimen : 175mm
- Throat : 135mm
- Light Source : Halogen Lamp

Material testing plays a vital role in evaluating the mechanical properties, strength, hardness, and durability of materials to ensure quality, reliability, and performance. Widely used in laboratories, and metallurgical analysis, material testing equipment helps maintain industry standards and supports accurate material evaluation for improved product performance and safety.

MODEL : MS – DIGITAL MICRO VICKERS HARDNESS TESTER



SPECIFICATION :

- Testing Force Range: 0.3 kgf – 10 kgf
- Hardness Testing Range: 1 HV ~ 2967 HV
- Total Magnification: 100x , 400x
- Loading / Unloading Method: Automatic
- Max Specimen Height: 175 mm

AUTOMATIC MICRO VICKERS HARDNESS TESTER (COMPUTERIZED TOUCH SCREEN) MODEL: MS-1000A



SPECIFICATION :

- Testing Force Range: 10 gf – 1000 gf
- Hardness Testing Range: 1 HV ~ 2967 HV
- Total Magnification: 100x , 400x
- Loading / Unloading Method: Automatic
- Max Specimen Height: 90 mm

PORTABLE HARDNESS TESTER



SPECIFICATION :

- Range: (170–960) HLD, (17–68.5) HRC, (19–651) HB, (80–976) HV, (30–100) HS, (59–85) HRA, (13–100) HRB
- Direction: 360°
- Scales: HL, HB, HRB, HRC, HRA, HV, HS
- Memory: 100 groups
- Output: RS232 interface
- Power: 3V (2×AA) – 100 hrs use
- Weight : >5kg



SPECIFICATION :

- Range: (170–960) HLD, (19–683) HB, (80–1042) HV, (30.6–102.6) HS, (59.1–88) HRA, (13.5–101.7) HRB, (17.9–69.5) HRC
- Direction: 360°
- Scales: HL, HB, HRC, HRA, HV, HS
- Memory: 600 groups
- Power: (2×AA) – 200 hrs use
- Weight : 0.4kg

SAND TESTING

Modern Metallurgical & Scientific Services offers a comprehensive range of precision-engineered Sand Testing Equipments designed to evaluate critical physical and mechanical properties of foundry sand. These systems enable reliable testing of parameters such as compression strength, permeability, moisture content, compactability, grain fineness, and mould hardness, ensuring strict quality control throughout the casting process.

FOUNDRY SAND TESTING EQUIPMENTS

- Sand Rammer, Permeability Meter, Clay Washer
- Sieve Shaker with set of Sieves, Compactability Tester.
- Universal Sand Strength Machine - Hydraulic, Mechanical & Digital
- Mould and Core Hardness Tester, Shutter Index Tester
- Wet Tensile Tester, Sand Shooter
- Shell Transverse Strength Tester
- Core Gas Determinator, Auto Hot Shell Tensile Tester (Digital)
- Peel Back Tester, Stick Point Tester (Digital)
- Sand Muller, Sand Mixer, Infrared Moisture Tester & etc



CHEMICAL TESTING

Chemical testing equipment in industrial settings is primarily used for quality control (QA/QC), process optimization, environmental compliance, and research & development. These instruments identify, measure, and quantify chemical components in raw materials, intermediate products, and finished goods

CHEMICAL TESTING EQUIPMENTS

- Hot Air Oven, Muffle Furnace, Hot Plate.
- Electronic Weighing scale
- Carbon & Sulphur Strohlein Apparatus
- Water Still, Constant Temperature Bath, Water Baths.
- PH Meter, Conductivity Meter, IGC Apparatus
- Salt Spray Chambers
- Fume Cuphood, Laminar Air flow meter



JOMINY END QUENCH APPARATUS

This apparatus is used for determining the Hardenability of steel by an experiment called Quench Test. This experiment will enable the Engineer to know about the Hardenability characteristics of different alloying elements. The material to be evaluated is heated uniformly on a particular range of temperature for a limited time-period along with water quenching at one end which helps in measuring the hardness of the test material at various points.



SPECIFICATION :

- The apparatus is designed in accordance with IS: 3848-1981 & ASTM : A-255 Motorized water circulation through ½ HP water pump with storage Tank and Test tank.
- Standard test piece dimensions: length, $100 \pm 0.5\text{mm}$, dia $25\text{mm} \pm 0.5$
- Height of free water jet (without test piece in position) $65 \pm 10\text{mm}$.
- Distance from tip of nozzle to the bottom of test piece $12.5 \pm 0.5\text{mm}$ approx.
- Inside vertical water supply pipe.
- The nozzle, specimen holders and pipes for maintaining specific water head are included
- Power supply: Single phase 230 Volts 50 Hz A.C

METROLOGY EQUIPMENTS



- Tool Makers Microscope
- Profile Projector-Vertical & Horizontal Models
- Auto Callimeter, Stereo Zoom Microscope
- Comparators – Pneumatic, Electronic, Digital & Mechanical
- Floating Carriage Micrometer
- Surface Roughness Tester, Bench Centres
- Vernier Caliper, Micrometer, Height Gauge, Depth Gauge
- Surface Plates – Granite & Cast Iron
- Slip Gauges
- Universal Bevel Protractor

CONSUMABLES

Modern Metallurgical And Scientific Services offers a wide range of high-quality consumables designed for metallurgical sample preparation and laboratory testing applications. Our consumables include cutting wheels, mounting powders, polishing cloths, diamond pastes, abrasive papers, and other essential materials required for accurate sample preparation. Manufactured with premium quality standards, these consumables ensure consistent performance, precision results, and longer usability.



SERVICE / SPARE PARTS / CALIBRATION

We provide complete **after-sales support including service, spare parts, and calibration** to ensure the reliable performance of all metallurgical and laboratory testing equipment. Our skilled technical team offers installation, maintenance, and prompt service support to minimize downtime. We supply genuine, high-quality spare parts designed for perfect compatibility and long equipment life. Our precision calibration services ensure accurate measurement and consistent testing results. With our comprehensive support, we help customers maintain efficiency, reliability, and long-term machine performance.

SPARES



FURNITURES

STORAGE CABINET



SPECIFICATION

- Construction: Made from 0.7 mm thick CRCA formed sheet metal for strong and durable structure.
- Design: Completely knock-down construction for easy transportation and installation.
- Locking System: 2-point locking mechanism supplied with two keys for enhanced security.
- Door Design: Zero side-edge design enabling door opening up to 180° for full access.
- Door Material: Fitted with 4 mm toughened glass doors for clear visibility and safety.
- Finish: High-quality powder-coated cabinet finish.
- Colour Code: RAL 7035 (Industrial Grey).

STORAGE TABLE



OUR PARTICIPATION EVENTS HIGHLIGHTS



ACMEE CHENNAI - 2023
(India's Premier International Machine Tools Show)



IFEX BANGALORE - 2024
(International Foundry Exhibition)



RMTS RAJKOT - 2024
(RAJKOT MACHINE TOOLS SHOW)



IMTEX BANGALORE - 2025
(International Machine Tool Exhibition)



ACMEE CHENNAI - 2025
(India's Premier International Machine Tools Show)



INTEC COIMBATORE - 2026
(India's Premier International Machine Tools Show)



OUR MACHINES BEING EXPORTED TO MORE THAN 10 COUNTRIES



GLOBAL PRESENCE

Expanding beyond borders, our machines are proudly exported to more than 10 countries worldwide. With a strong commitment to quality, precision, and reliability, we have established a trusted presence across Asia, the Middle East, and Africa.

Our global footprint reflects our dedication to delivering advanced metallurgical solutions that meet international standards. Backed by consistent performance and customer satisfaction, we continue to build long-term partnerships across diverse industries worldwide.



— SINCE 2005 —

MICRO STRUCTURE SAMPLE PREPARATION EQUIPMENTS



**Modern Metallurgical
& Scientific Services**

Scan the Code



To visit our website

Scan the Code



For location

Office & Factory :

T-73, Phase-2, Sidco Women's
Industrial park, vellanur Post,
Thirumullaivoyal, Chennai-
600062.

Branch Office :

No : 6/46, Plot No : 15, Modern Villa,
Kongu nagar, Kaniyur,
Coimbatore – 641659

☎ 044 26572473 / 96771 11411 / 96771 00992 / 75500 10260

✉ mmss_metal@yahoo.co.in / modernmetal2005@gmail.com

BRANCHES : COIMBATORE | KOLHAPUR | DELHI | BANGALORE

www.modernmetallurgical.com