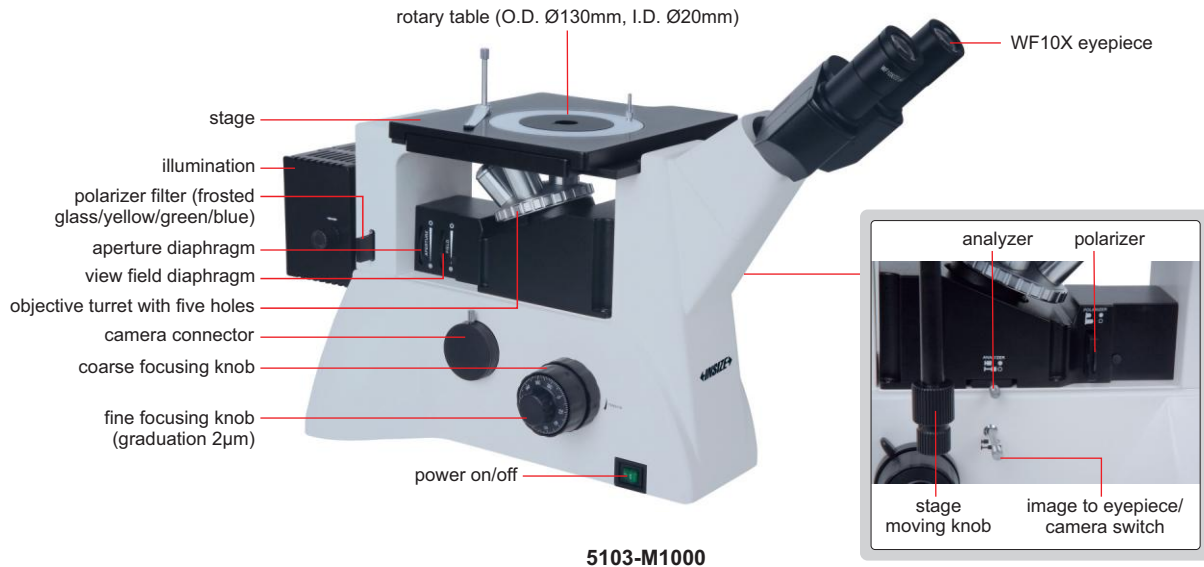


## METALLURGICAL MICROSCOPES



- Infinite optical system, polarization observation
- Kohler illumination system provides uniform illumination field
- Objectives 50X, 100X are spring type

### SPECIFICATION

Code	5103-M1000 (bright field objectives)				5103-M1000BD (bright & dark field objectives)			
Illumination	6V/30W halogen lamp, brightness is adjustable				12V/50W halogen lamp, brightness is adjustable			
Objective (infinite plan achromatic)	bright field objectives				bright & dark field objectives			
	10X	20X	50X	100X	5X	10X	20X	50X
Working distance	20.2mm	8.80mm	3.68mm	0.40mm	9.70mm	9.30mm	7.23mm	2.50mm
Numerical aperture	0.25	0.40	0.70	0.85	0.12	0.25	0.40	0.70
Magnification	100X~1000X				50X~500X			
Eyepiece (wide field)	10X (view field: Ø22mm)							
Stage	double layer							
	size: 242×200mm							
	travel: 30x30mm							
Pupil distance	53~75mm							
Diopter adjustment	±5 diopter (one eyepiece)							
Power supply	220V, 50/60Hz							
Dimension (L×W×H)	614×250×394mm							
Weight	13kg							

### STANDARD DELIVERY

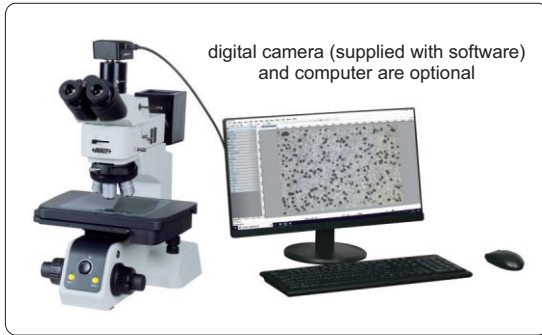
Main unit	1 pc
Polarizer and analyzer	1 pc of each
Anti-dust cover	1 pc

### OPTIONAL ACCESSORY

Bright & dark field objective (for 5103-M1000BD)	PL40X	5101-M-BD40X
	PL60X	5101-M-BD60X
	PL80X	5101-M-BD80X
	PL100X	5101-M-BD100X
10X dividing eyepiece (0.1mm/div.)		5103-M-EPD10X
Bright field objective (for 5103-M1000)	PL5X	5101-M-OB5X
	PL40X	5101-M-OB40X
	PL60X	5101-M-OB60X
	PL80X	5101-M-OB80X
Digital camera		ISM-CM63
Camera adapter *		5101-M-ADAPTER

\*Digital camera must be used with camera adapter

## METALLURGICAL MICROSCOPES (ADVANCED TYPE)



- Infinite chromatic aberration correction optical system
- Three way observation tube with infinite hinge
- Translucent and reflective frame, front low-hand position coarse and fine coaxial focus adjustment mechanism, with adjustment elastic device to prevent sliding and random upper limit device
- Bright and dark field five-hole converter with DIC slot
- Adopt digital dimming, with light intensity reset and setting function
- With polarizer insert plate and 360° rotating analyzer insert slot



5108-M3000

### SPECIFICATION

Code	5108-M3000 (standard type)				5108-M3000H (high-definition type)			
Eyepiece	high eye point large field SWH10X-H (view field: Ø25mm, adjustable visibility)							
Objective (infinite long working distance bright and dark field semi achromatic)	5X	10X	20X	50X	5X	10X	20X	50X
Working distance	15mm	8.4mm	10.3mm	3.0mm	20mm	11mm	3.0mm	1.0mm
Numerical aperture	0.15	0.30	0.40	0.75	0.15	0.30	0.45	0.80
Optical magnification	50X~500X (up to 1000X with optional 100X objective)							
Digital magnification	170X~1700X (on 21.5" monitor), up to 3400X with optional 100X objective							
Stage	double layer size: 310×240mm travel: 150×100mm							
Condenser	roll-out achromatic condenser (numerical aperture 0.9)							
Illumination	5W LED, transmitted and reflected							
Observation tube	inverse image, distance adjustment: 50~76mm, two grade spectral ratio binocular: trinocular=100:0							
Diopter adjustment	±5 diopter (two eyepieces)							
Power supply	AC 100-240V							
Dimension (L×W×H)	310×600×500mm							
Weight	27kg							

### STANDARD DELIVERY

Main unit	1 pc
Anti-dust cover	1 pc
0.65X camera adapter (adjustable focus)	1 pc
Polarizer and analyzer	1 pc of each

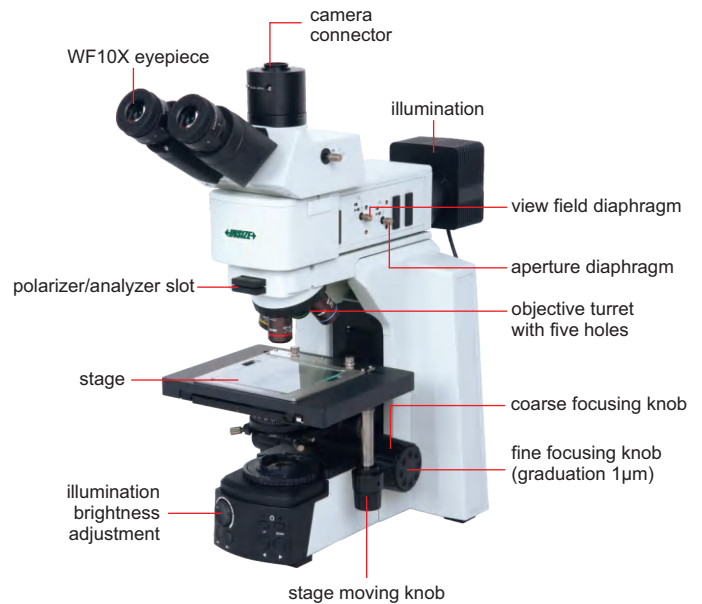
### OPTIONAL ACCESSORY

Camera and software	ISM-CM63
Glass calibration ruler	ISM-MAS-SCALE
Computer	5108-M-COMPUTER
2.5X infinite long working distance bright field semi achromatic objective	5108-M-OB2D5X
100X infinite long working distance bright and dark field semi achromatic objective	5108-M-BD100X
50X infinite long working distance bright and dark field achromatic objective	5108-M-APO50X
100X infinite long working distance bright and dark field achromatic objective	5108-M-APO100X
Differential interference module (DIC)	5108-M-DIC



## METALLURGICAL MICROSCOPE (STANDARD TYPE) CODE 5110-M900

- Infinite chromatic aberration correction optical system
- Three way observation tube with infinite hinge
- Translucent and reflective frame, front low-hand position coarse and fine coaxial focus adjustment mechanism, with adjustment elastic device to prevent sliding and random upper limit device
- With brightness memory function



### SPECIFICATION

<b>Eyepiece</b>	high eye point large field SWH10X-H (view field: Ø23mm, adjustable visibility)			
<b>Objective (infinite long working distance semicomplex achromatic)</b>	bright field objectives			
	5X	10X	20X	50X
<b>Numerical aperture</b>	0.15	0.30	0.45	0.70
<b>Working distance</b>	13.5mm	10.3mm	3.0mm	2.5mm
<b>Optical magnification</b>	50X~500X (up to 1000X with optional 100X objective)			
<b>Digital magnification</b>	100X~1000X (on 21.5" monitor), up to 2000X with optional 100X objective			
<b>Stage</b>	double layer glass workbench size: 101×101mm travel: 75×50mm			
<b>Condenser</b>	roll-out achromatic condenser (numerical aperture 0.9)			
<b>Diopter adjustment</b>	±5 diopter (two eyepieces)			
<b>Illumination</b>	10W adjustable LED, transmitted and reflected			
<b>Observation tube</b>	inverse image, distance adjustment: 50~75mm, two grade spectral ratio binocular: trinocular=100:0			
<b>Power supply</b>	power adapter			
<b>Dimension (L×W×H)</b>	255×510×530mm			
<b>Weight</b>	25kg			

### STANDARD DELIVERY

Main unit	1 pc
Anti-dust cover	1 pc
0.5X camera adapter	1 pc

### OPTIONAL ACCESSORY

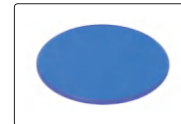
Camera and software	ISM-CM63, ISM-KM60, ISM-MP8B, ISM-ZS70
Glass calibration ruler	ISM-MAS-SCALE
Computer	5110-M-COMPUTER
Polarizer and analyzer	5110-M-POA
100X infinite long working distance bright field semi-apochromatic objective	5110-M-BD100X

# METALLURGICAL MICROSCOPES (BASIC TYPE)



5102-M600

- Infinite optical system, observation in reflected or transmitted illumination, polarizing observation
- Kohler illumination system provides uniform illumination field
- Objectives 40X, 60X are spring type



blue filter (included)



frosted glass filter (included)

## SPECIFICATION

Code	5102-M600 (bright field objectives)				5102-M600BD (bright & dark field objectives)			
illumination	6V/30W (transmitted)		6V/30W (reflected)		12V/30W (transmitted)		12V/50W (reflected)	
Objective (infinite plan achromatic)	bright field objectives				bright & dark field objectives			
	5X	10X	40X	60X	5X	10X	20X	40X
Working distance	26.1mm	20.2mm	3.98mm	3.18mm	9.70mm	9.30mm	7.20mm	3.00mm
Numerical aperture	0.12	0.25	0.60	0.70	0.12	0.25	0.40	0.70
Magnification	50X~600X				50X~400X			
Eyepiece (wide field)	10X (view field: Ø22mm)							
Stage	double layer							
	size: 210×140mm							
	travel: 75×50mm							
Pupil distance	53~75mm							
Diopter adjustment	±5 diopter (one eyepiece)							
Power supply	220V, 50/60Hz							
Dimension (L×W×H)	456×260×498mm							
Weight	11kg							

## STANDARD DELIVERY

Main unit	1 pc
Anti-dust cover	1 pc
Filter (blue/frosted glass)	1 pc of each

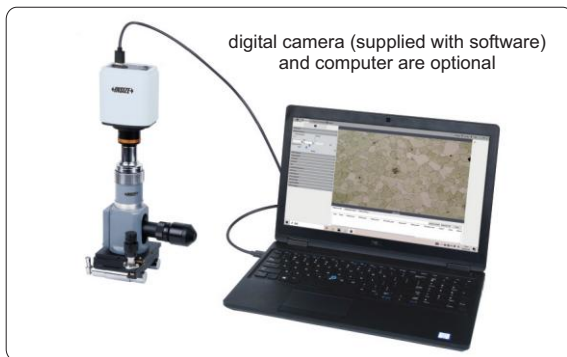
## OPTIONAL ACCESSORY

Bright & dark field objective (for 5102-M600BD)	PL50X	5101-M-BD50X
	PL60X	5101-M-BD60X
	PL80X	5101-M-BD80X
	PL100X	5101-M-BD100X
10X dividing eyepiece (0.1mm/div.)		5101-M-EPD10X
Bright field objective (for 5102-M600)	PL20X	5101-M-OB20X
	PL50X	5101-M-OB50X
	PL80X	5101-M-OB80X
	PL100X	5101-M-OB100X
Digital camera		ISM-CM20, ISM-CM63, ISM-ZS70-S
Camera adapter *		5101-M-ADAPTER

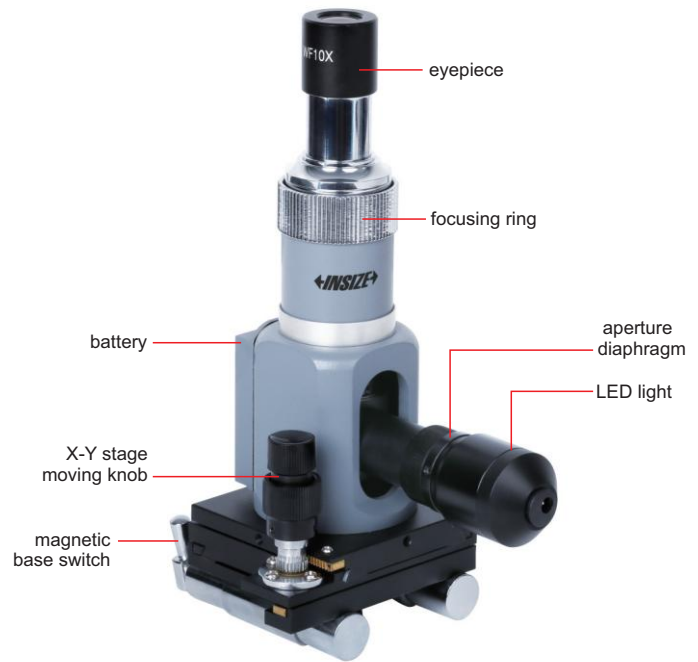
\* Digital camera must be used with camera adapter



## PORTABLE METALLURGICAL MICROSCOPE CODE 5109-PM500



connect to digital camera



- Illumination is powered by batteries
- Aperture diaphragm improves image quality and increases depth of field
- Magnetic base with on/off switch can adhere on metal workpieces
- Can be connected to digital cameras

### SPECIFICATION

Magnification	100X~500X	
Eyepiece (wide field)	10X/12.5X	
Objective (plan achromatic)	10X (included)	40X (included)
Numerical aperture	0.25	0.64
Illumination	3W LED, built-in batteries	
Stage	double layer, size: 15×12mm	
Dimension (L×W×H)	210×160×95mm	
Weight	1.5kg	

### STANDARD DELIVERY

Main unit	1 pc
Eyepiece	2 pcs
Objective	2 pcs
Battery (AAA)	3 pcs

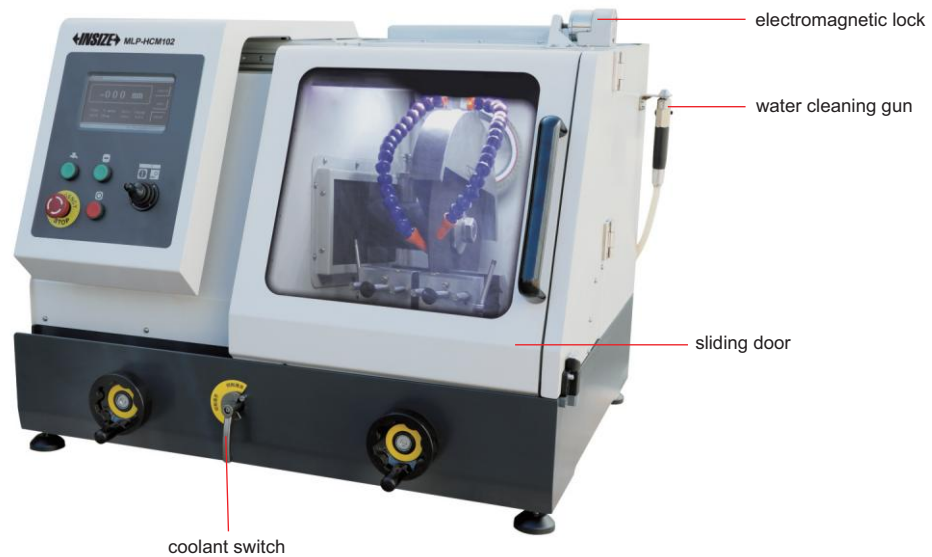
### OPTIONAL ACCESSORY

Objective	5X plan achromatic	5109-PM500-OB5X
	20X plan achromatic	5109-PM500-OB20X
	100X plan achromatic	5109-PM500-OB100X
Eyepiece	5X	5109-PM500-EP5X
	15X	5109-PM500-EP15X
Digital camera*		ISM-CM20, ISM-CM63, ISM-ZS70-S
Camera adapter 0.5X		ISM-MAS-ADAPTER

\*Digital camera must be used with camera adapter



## AUTOMATIC CUTTING MACHINE (ADVANCED TYPE) CODE MLP-HCM102



- Suitable for cylinder workpieces (diameters ≤ 100mm) and rectangular samples (height ≤ 70mm, width ≤ 100mm)
- Cooling system avoids overheating and destroying sample structure
- Three cutting modes (manual, pulse, continuous cutting), the cutting feed speed and cutting stroke can be programmed

### SPECIFICATION

Maximum cutting diameter	Ø100mm
Cutting blade	Ø350×2.5×Ø32mm
Rotation speed	2200r/min
Spindle travel	145mm
Table travel	300mm
Illumination	LED ceiling light
Noise	≤85dB
Cooling tank	60L
Removable baffle	contain
Table dimension	330×280mm
Power	3kW
Power supply	AC 380V, 50Hz
Dimension	900×860×620mm
Weight	285kg

### STANDARD DELIVERY

Main unit	1 pc
Cutting blade	5 pcs
Cutting blade chuck	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc

### OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø350×2.5×Ø32mm, 40 pcs/box)	MLP-50Z4
	MLP-60Y4 *
Cutting blade chuck (for Ø32mm cutting blade)	MLP-HCM102-CHUCK

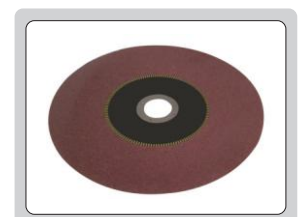
\* Special cutting blade for high hardness



coolant (included)



cutting blade MLP-50Z4 (included)



cutting blade MLP-60Y4 (optional)

# CUTTING MACHINE (STANDARD TYPE) CODE MLP-CM60



- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure
- With safety switch, the machine will automatically stop when the cover is opened



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### SPECIFICATION

Maximum cutting diameter	Ø60mm
Cutting blade	Ø250×1.5×Ø25.4mm
Rotation speed	2800r/min
Motor power	2.2kW
Power supply	AC 380V, 50Hz
Dimension	830×620×450mm
Weight	82kg



cutting blade **MLP-CM60-CUT2**  
(included)

### STANDARD DELIVERY

Main unit	1 pc
Cutting blade	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc

### OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	<b>MLP-OL3</b>
Cutting blade (Ø250×1.5×Ø25.4mm, 60 pcs/box)	<b>MLP-CM60-CUT2</b>
Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)	<b>MLP-50Z2 *</b>
Cutting blade chuck (for Ø32mm cutting blade)	<b>MLP-CM60-CHUCK</b>



coolant (optional)

\* When use **MLP-50Z2**, please purchase **MLP-CM60-CHUCK**



## CUTTING MACHINE (BASIC TYPE) CODE MLP-CM86



- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure

### SPECIFICATION

Maximum cutting diameter	Ø80mm
Cutting blade	Ø250×2×Ø32mm
Rotation speed	2800r/min
Power	3kW
Power supply	AC 380V, 50Hz
Dimension	690×790×670mm

### STANDARD DELIVERY

Main unit	1 pc
Cutting blade	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc

### OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)	MLP-60Y2*
	MLP-50Z2
Cutting blade chuck (for Ø32mm cutting blade)	MLP-CM86-CHUCK

\*Special cutting blade for high hardness



coolant (included)



cutting blade MLP-50Z2  
(included)



cutting blade MLP-60Y2  
(optional)



# AUTOMATIC GRINDER AND POLISHER (ADVANCED TYPE) CODE MLP-GP406



**AUTOMATIC DISPENSING  
OF ABRASIVES**

**CUSTOMIZED GRINDING  
AND POLISHING PROGRAMS**

**TOUCHSCREEN  
OPERATION**

- ABS shell and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 6 samples (4 holes are optional)
- Smooth rotation, low noise
- Adjustable speed
- Intuitive pressure and time setting, 256 sets of grinding and polishing programs can be stored
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Replaceable platen, platen rotation direction can be selected
- Centre loading and single point loading, automatic abrasive distribution



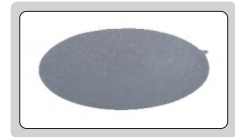
polishing cloth  
(included)



anti-stick disc  
(included)



magnetic pad  
(included)



silicon carbide  
paper (included)



dripping system  
(optional)

## SPECIFICATION

Wheel diameter	Ø250mm (customizable)	
Wheel rotation speed	0~1000r/min (adjustment step 20rpm), 150r/min, 300r/min, 600r/min, 1000r/min (four fixed speeds)	
Wheel rotation direction	clockwise or counterclockwise	
Grinding head speed	50~150r/min (stepless adjustable)	
Pressure range	5~60N (single point loading), 20~200N (centre loading)	
Operation	number	6
	time	0~12h
Sample diameter	Ø30mm (customizable)	
Air pressure	>0.35MPa	
Programmable quantity	256 sets of grinding programs can be stored	
Power supply	AC 220V, 50Hz, 3.1kW	
Dimension (W×H×D)	760×706×717mm	
Weight	126kg	

## STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	20 pcs each (240, 400, 800, 1200), 80 pcs in total
Polishing cloth	3 pcs each (velvet silk, woolen fabric), 6 pcs in total
Polishing agent	1 pc (W2.5, 500ml)
Spray polish agent	1 pc (W2.5, 500ml)
Anti-stick disc	2 pcs (Ø250mm)
Magnetic pad	5 pcs (Ø250mm)

## OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZ□□*	diameter: Ø250mm 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000
Polishing cloth	MLP-CT□□*	Ø250mm
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Diamond spray polish agent	MLP-DSA□□*	350ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD2	Ø250mm
Anti-stick disc	MLP-DC2	Ø250mm

\*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40µm

TOUCHSCREEN  
OPERATION

AUTOMATIC DISPENSING  
OF ABRASIVES

CUSTOMIZED GRINDING  
AND POLISHING PROGRAMS

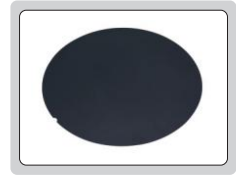


## AUTOMATIC GRINDER AND POLISHER (ADVANCED TYPE) CODE MLP-GP505

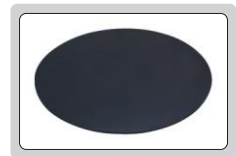
- ABS shell and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 6 samples (4 holes are optional)
- Smooth rotation, low noise
- Adjustable speed
- Intuitive pressure and time setting, 256 sets of grinding and polishing programs can be stored
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Replaceable platen, platen rotation direction can be selected
- Centre loading and single point loading, automatic abrasive distribution



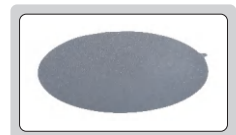
polishing cloth  
(included)



anti-stick disc  
(included)



magnetic pad  
(included)



silicon carbide  
paper (included)



dripping system  
(optional)

### SPECIFICATION

Wheel diameter	Ø250mm (customizable)	
Wheel rotation speed	0~1000r/min (adjustment step 20rpm), 150r/min, 300r/min, 600r/min, 1000r/min (four fixed speeds)	
Wheel rotation direction	clockwise or counterclockwise	
Grinding head speed	50~150r/min (stepless adjustable)	
Pressure range	5~60N (single point loading), 20~200N (centre loading)	
Operation	number	6
	time	0~12h
Sample diameter	Ø30mm (customizable)	
Air pressure	>0.35MPa	
Programmable quantity	256 sets of grinding programs can be stored	
Power supply	AC 220V, 50Hz, 2.1kW	
Dimension (W×H×D)	596×714×707mm	
Weight	102kg	

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	20 pcs each (240, 400, 800, 1200), 80 pcs in total
Polishing cloth	3 pcs each (velvet silk, woolen fabric), 6 pcs in total
Polishing agent	1 pc (W2.5, 500ml)
Spray polish agent	1 pc (W2.5, 500ml)
Anti-stick disc	1 pc (Ø250mm)
Magnetic pad	5 pcs (Ø250mm)

### OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZ□□*	diameter: Ø250mm 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000
Polishing cloth	MLP-CT□□*	Ø250mm
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Diamond spray polish agent	MLP-DSA□□*	350ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD2	Ø250mm
Anti-stick disc	MLP-DC2	Ø250mm

\*□□ is granularity specification, for example, code MLP-DLA40 stands for 40µm

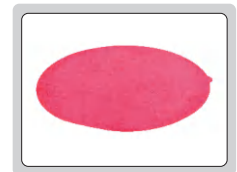
# AUTOMATIC GRINDER AND POLISHER (STANDARD TYPE) CODE MLP-GP305



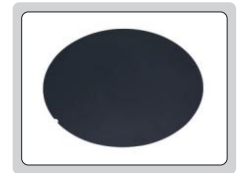
- Replaceable double wheels, rotation direction can be selected
- Multi sample holder, pneumatic single point loading, automatic abrasive distribution
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished



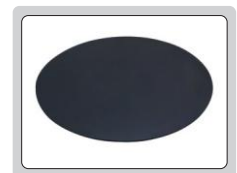
silicon carbide paper  
(included)



polishing cloth (included)



anti-stick disc (included)



magnetic pad (included)

## SPECIFICATION

Wheel diameter	Ø250mm (customizable Ø300mm)
Wheel rotation speed	50~1000r/min (stepless adjustable), 150r/min, 300r/min (two fixed speeds)
Wheel rotation direction	clockwise or counterclockwise
Grinding head speed	50~150r/min (stepless adjustable)
Pressure range	5~60N
Operation number	6
Operation time	0~995s
Sample diameter	Ø30mm (customizable Ø22mm, Ø25mm, Ø30mm, Ø40mm, Ø45mm, Ø50mm)
Air pressure	0.6~0.9MPa
Power supply	AC220V, 50Hz
Input power	1.1kW
Dimension	758×785×680mm
Weight	125kg

## STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	20 pcs each (240, 250, 400, 800, 1200), 100 pcs in total
Polishing cloth	3 pcs each (velvet silk, woolen fabric), 6 pcs in total
Polishing agent	1 pc (W2.5, 500ml)
Spray polish agent	1 pc (W2.5, 350ml)
Magnetic pad	2 pcs (Ø250mm)
Anti-stick disc	3 pcs (Ø250mm)

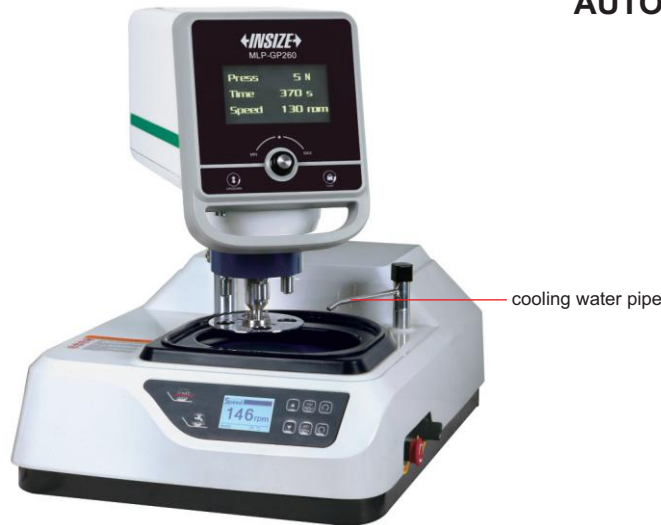
## OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZ□□*	diameter: Ø250mm 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000
Polishing cloth	MLP-CT□□*	Ø250mm
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Diamond spray polish agent	MLP-DSA□□*	350ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD2	Ø250mm
Anti-stick disc	MLP-DC2	Ø250mm

\*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40µm



## AUTOMATIC GRINDER AND POLISHER (STANDARD TYPE) CODE MLP-GP260



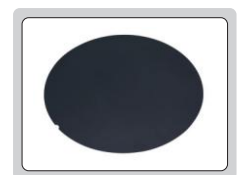
- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 4 samples (6 holes are optional and can hold up to 6 samples)
- Smooth rotation, low noise
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Wheel rotation direction can be selected
- Replaceable wheel

### SPECIFICATION

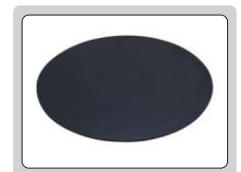
Wheel diameter	Ø250mm
Wheel rotation speed	50~999r/min (stepless adjustable), 150 or 300r/min (two fixed speeds)
Wheel rotation direction	clockwise or counterclockwise
Grinding head speed	50~150r/min (stepless adjustable)
Pressure range	5~60N
Operation time	5~995s
Sample diameter	Ø30mm (can be customized)
Air pressure	0.6~0.9MPa
Power supply	AC 220V, 50Hz
Input power	1.1kW
Dimension	594×795×687mm
Weight	98kg

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	20 pcs each (240, 400, 800, 1200), 80 pcs in total
Polishing cloth	3 pcs each (velvet silk, woolen fabric), 6 pcs in total
Polishing agent	1 pc (W2.5, 500ml)
Spray polish agent	1 pc (W2.5, 500ml)
Anti-stick disc	1 pc (Ø250mm)
Magnetic pad	5 pcs (Ø250mm)



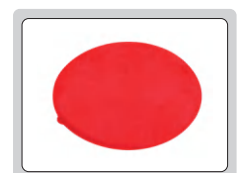
anti-stick disc (included)



magnetic pad (included)



silicon carbide paper (included)



polishing cloth (included)

### OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZ□□*	diameter: Ø250mm 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000
Polishing cloth	MLP-CT□□*	Ø250mm
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Diamond spray polish agent	MLP-DSA□□*	350ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD2	Ø250mm
Anti-stick disc	MLP-DC2	Ø250mm

\*□□ is granularity specification, for example, code MLP-DLA40 stands for 40µm

## MANUAL GRINDERS AND POLISHERS (STANDARD TYPE)



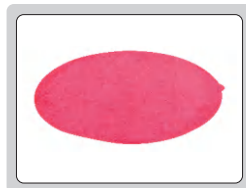
- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Replaceable double wheel, wheel can be controlled independently, rotation direction can be selected
- Smooth rotation, low noise
- Four fixed speeds/stepless adjustable speed
- Water cooling device, prevent samples from overheating and destroying structure
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished



MLP-GP280



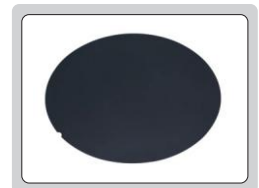
silicon carbide paper  
(included)



polishing cloth (included)



magnetic pad (optional)



anti-stick disc  
(optional)

### SPECIFICATION

Code	MLP-GP270	MLP-GP280
Wheel diameter	Ø203mm	Ø250mm
Wheel rotation speed	0-1400r/min (stepless adjustable)	0-1000r/min (stepless adjustable)
Wheel rotation direction	clockwise or counterclockwise	
Fixed speed	150r/min, 300r/min, 600r/min, 1000r/min	
Power supply	AC 220V, 50Hz	
Input power	1.5kW	
Dimension	758×785×310mm	
Weight	50kg	

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	5 pcs each (240, 400, 800, 1200), 20 pcs in total
Polishing cloth	3 pcs
Polishing agent	1 pc

### OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZ□□* (for MLP-GP270)	diameter: Ø200mm 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 3000
	MLP-SZ□□* (for MLP-GP280)	diameter: Ø250mm 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 3000
Polishing cloth	MLP-CT□□* (for MLP-GP270)	diameter: Ø200mm
	MLP-CT□□* (for MLP-GP280)	diameter: Ø250mm
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Diamond spray polish agent	MLP-DSA□□*	350ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD1 (for MLP-GP270)	Ø203mm
	MLP-AD2 (for MLP-GP280)	Ø250mm
Anti-stick disc	MLP-DC1 (for MLP-GP270)	Ø203mm
	MLP-DC2 (for MLP-GP280)	Ø250mm

\* □□ is granularity specification, for example, code MLP-SZB120 indicates 120 grit Ø200mm sandpaper without adhesive backing



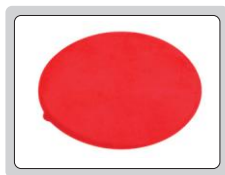
## MANUAL GRINDER AND POLISHER (BASIC TYPE) CODE MLP-GP314



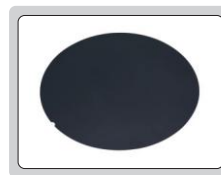
- Double wheels, rotation direction can be selected
- Smooth rotation, low noise
- Water cooling device, prevent samples from overheating and destroying structure
- Replaceable silicon carbide paper and polishing cloth for grinding and polishing process



silicon carbide paper  
(included)



polishing cloth (included)



anti-stick disc (optional)



magnetic pad (optional)

### SPECIFICATION

Wheel diameter	Ø203mm
Wheel rotation speed	0~1400r/min (stepless adjustable)
Wheel rotation direction	clockwise or counterclockwise
Power supply	AC 220V, 50Hz
Input power	0.75kW
Dimension	755×700×310mm
Weight	50kg

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	5 pcs each (240, 400, 800, 1200), 20 pcs in total
Polishing cloth	4 pcs
Polishing agent	1 pc (W2.5, 500ml)

### OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZ□□*	diameter: Ø200mm 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000
Polishing cloth	MLP-CT□□*	Ø200mm
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Diamond spray polish agent	MLP-DSA□□*	350ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD1	Ø203mm
Anti-stick disc	MLP-DC1	Ø203mm

\* □□ is granularity specification, for example, code MLP-SZB120 indicates 120 grit Ø200mm sandpaper without adhesive backing

## AUTOMATIC LIQUID DROPPERS



MLP-PLD101



MLP-PLD101S

- Adopting advanced micro-controller, compact structure, reliable operation, strong anti-interference ability
- Suitable for various types of grinding and polishing machines, the polishing liquid is automatically dripped between the abrasive disk and the sample tray to achieve the purpose of polishing
- Reduced polishing time, increased polishing efficiency



polishing fluid (Optional)

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### SPECIFICATION

Code	MLP-PLD101 (single type)	MLP-PLD101S (combination type)
Dropping rate	0.3~10ml/min	
Number of steps	10-speed	
Tank volume	750ml	
Power supply	AC 220V, 50Hz	
Dimension (W×H×D)	144×231×197mm	580×235×212mm
Weight	2.95kg	19.5kg

### STANDARD DELIVERY

Main unit	1 pc
Diamond polishing liquid	1 pc (W2.5, 500ml)

### OPTIONAL ACCESSORY

Diamond polishing liquid	MLP-DLA <sup>□□*</sup> , MLP-DLB <sup>□□*</sup> , MLP-DLC <sup>□□*</sup> , MLP-DLD <sup>□□*</sup> , MLP-DLE <sup>□□*</sup> , MLP-DLF <sup>□□*</sup>
Aluminum oxide polishing liquid	MLP-LXA <sup>□□*</sup> , MLP-LXB <sup>□□*</sup>
Silicon dioxide polishing liquid	MLP-GF1, MLP-GF2, MLP-GF3
Polishing lubricant	MLP-RH1, MLP-RH2, MLP-RH3

\*□□ is granularity specification, for example, code MLP-DLA40 stands for 40μm



## MOUNTING PRESSES (ADVANCED TYPE)



MLP-MP43



MLP-MP53

- Built-in heating and cooling structure reduces the mounting time to 6 minutes
- The programmed control system reserves 10 customized preparation schemes to meet different mounting requirements
- The thickness of the middle mold is up to 15mm, and 2 samples can be mounted at the same time at one station
- Can accurately control the pressure size, adjustment range: 1~20MPa



hot mounting resin (included)

### SPECIFICATION

Code	MLP-MP43	MLP-MP53
Station number	1	2
Power	1100W+heating power *	1200W+heating power×2
Mounting diameter	Ø30mm (customizable Ø25, Ø40, Ø50mm)	
System pressure	1~20MPa, optional increase or decrease 1MPa	
Pressure mode	automatic electro-hydraulic	
Cooling mode	automatic water cooling **	
Heating range	90~200°C	
Holding time	0~10min	
Cooling temperature/time	40~90°C/0~10min	
Power supply	AC 220V, 50Hz	
Dimension	530×485×463mm	671×485×463mm
Weight	44kg	77kg

\* Heating power of mounting sleeve: 1800W (mounting diameter≤31.8mm), 2400W (mounting diameter≥38.1mm)

\*\* Cooling water pressure should not be higher than 1MPa, must be filtered through 40µm filter

### STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (250g)
Funnel	1 pc
Filter	1 pc
Vacuum cleaner tip	1 pc

### OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3
---------------------------------	---------



## MOUNTING PRESS (STANDARD TYPE) CODE MLP-MP30



- Automatic heating, pressuring, cooling and pressure relief
- Water cooling system



hot mounting resin (optional)



### SPECIFICATION

Diameter of workpiece	Ø30mm
Heating temperature range	100~200°C
Delay range	0~999s
Hold time	0~999s
Cooling temperature	20~90°C
Heating power	600W
Power supply	AC 220V, 50Hz
Dimension	350×450×470mm
Weight	45kg

### STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (250g)
Funnel	1 pc

### OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3
---------------------------------	---------

## MOUNTING PRESS (BASIC TYPE) CODE MLP-MP62



- Suitable for tiny, difficult to handle or irregular metallographic and petrographic samples
- The sample preparation program has three modes: bakelite powder, electric jade powder and user-defined
- The sample preparation program controls the sample preparation time and realizes unattended sample preparation



hot mounting resin (included)



### SPECIFICATION

Mounting diameter	Ø30mm (customizable Ø22mm, Ø45mm)
Heating range	room temperature~200°C
Timing range	0~30min
Power	≤800W
Power supply	AC220V, 50Hz
Dimension	440×253×310mm
Weight	32kg

### STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (60g)
Funnel	1 pc

### OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3
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- Suitable for epoxy resins and cold mosaic compound of polyester castable
- High efficiency, simple and reliable



cold mounting compound (optional)

VACUUM MOUNTING PRESS  
CODE MLP-MP25



SPECIFICATION

Maximum vacuum	-58kPa
Vacuum chamber size	Ø260×125mm
Transposition speed	5r/min
Input power	6W
Power supply	220/110V
Dimension	460×400×403mm
Weight	30kg

STANDARD DELIVERY

Main unit	1 pc
Vacuum pump	1 pc
Ø25mm mold	1 pc
Ø30mm mold	1 pc
Ø40mm mold	1 pc
Ø50mm mold	1 pc
Epoxy resin (400g)	1 pc
Curing agent (200g)	1 pc
Waxed paper tray	10 pcs

OPTIONAL ACCESSORY

Cold mounting compound	MLP-CM1, MLP-CM6
Epoxy resin	MLP-CM3, MLP-CM4

REFER TO PAGE  
736-740 FOR DETAILS



5102-M600



5108-M3000

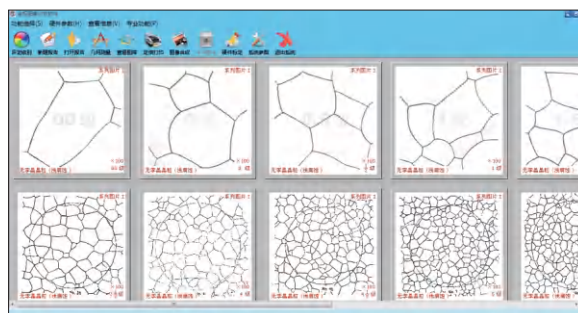


5103-M1000

METALLURGICAL MICROSCOPES

METALLURGICAL ANALYSIS SOFTWARE AND CAMERA

REFER TO PAGE  
761-762 FOR DETAILS



ISM-MAS100

## DIAMOND BLADES

- Specially for precision cutting of carbide, ceramic materials, optical glass and other brittle metal materials

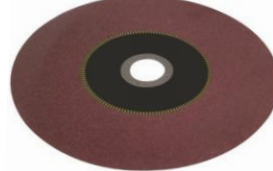


Code	Description	Specification (mm)
MLP-DQ1	1. saw blade is made of edge electroplating 2. used for small workpieces made of crystal, ceramic, glass and alloy materials	Ø100×0.4×12.7
MLP-DQ2		Ø150×0.5×12.7
MLP-DQ3	1. saw blade is made of edge sintering technology 2. used for hard alloy, ceramic, optical glass and other brittle metal materials	Ø100×0.5×20
MLP-DQ4		Ø200×1×32

## CUTTING BLADES



MLP-50Z1



MLP-60Y1

Code	Application	Cutting blade size	Package (pcs/box)
MLP-10R1	1. light non-ferrous metal 2. high toughness metal (Ti) 3. HV hardness value: 0~250	Ø250×1.5×32mm	60
MLP-10R2		Ø250×2×32mm	50
MLP-10R3		Ø300×2×32mm	50
MLP-10R4		Ø350×2.5×32mm	40
MLP-20R1	1. soft ferrous metal 2. HV hardness value: 50~300	Ø250×1.5×32mm	60
MLP-20R2		Ø250×2×32mm	50
MLP-20R3		Ø300×2×32mm	50
MLP-20R4		Ø350×2.5×32mm	40
MLP-30R1	1. medium soft ferrous metal 2. HV hardness value: 120~500	Ø250×1.5×32mm	60
MLP-30R2		Ø250×2×32mm	50
MLP-30R3		Ø300×2×32mm	50
MLP-30R4		Ø350×2.5×32mm	40
MLP-40Z1	1. medium hardness ferrous metal 2. HV hardness value: 180~600	Ø250×1.5×32mm	60
MLP-40Z2		Ø250×2×32mm	50
MLP-40Z3		Ø300×2×32mm	50
MLP-40Z4		Ø350×2.5×32mm	40
MLP-50Z1	1. hard ferrous metal 2. HV hardness value: 180~700	Ø250×1.5×32mm	60
MLP-50Z2		Ø250×2×32mm	50
MLP-50Z3		Ø300×2×32mm	50
MLP-50Z4		Ø350×2.5×32mm	40
MLP-50Z5		Ø400×3×32mm	25
MLP-50Z6		Ø450×3.2×32mm	25
MLP-50Z7		Ø509×4×38.1mm	10
MLP-50Z8		Ø610×4×38.1mm	10
MLP-60Y1	1. high hardness ferrous metal 2. HV hardness value: 250~900	Ø250×1.5×32mm	60
MLP-60Y2		Ø250×2×32mm	50
MLP-60Y3		Ø300×2×32mm	50
MLP-60Y4		Ø350×2.5×32mm	40

- Cutting surfaces are bright and smooth without burning

## CUTTING COOLANT

- Free of mineral oil and sodium nitrite, suitable for all kinds of metallographic cutting machines
- Harmless to human health and environment



Code	Description	Specification
MLP-OL1	1. fully synthetic concentrate, used for various types of cutting machines, specially for built-in cooling circulatory system models 2. concentrate, dilute 1:20 with water 3. replace regularly, recommended once a month	1L
MLP-OL2		2L
MLP-OL3		4L
MLP-OL4		6L
MLP-OL5		10L
MLP-OL6	1. oily mixture, use directly 2. cut water sensitive materials at low speed (high speed cutting machine is prohibited) 3. replace regularly, recommended once a month	1L
MLP-OL7		4L

## HOT MOUNTING RESIN



- Suitable for small sample preparation

Code	Color	Description	Package (barrel)
MLP-DR1	black	for common sample preparation, fast grinding speed	0.5kg
MLP-DR2			1kg
MLP-DR3			4kg
MLP-DR4	black	edge protection type, low shrinkage, sample binding, high hardness, good wear resistance, slow grinding speed	0.5kg
MLP-DR5			1kg
MLP-DR6			4kg
MLP-DR7	black	carbon phenolic polymer, used in highly conductive fields, medium grinding speed	0.5kg
MLP-DR8			1kg
MLP-DR9	red	for common sample preparation, fast grinding speed	0.5kg
MLP-DR10			1kg
MLP-DR11	white	for common sample preparation, fast grinding speed	0.5kg
MLP-DR12			1kg
MLP-DR13			4kg
MLP-DR14	green	for common sample preparation, fast grinding speed	0.5kg
MLP-DR15			1kg
MLP-DR16			4kg
MLP-DR17	transparent	transparent, soluble, for sample with size, position, depth and other requirements	0.5kg
MLP-DR18			1kg
MLP-DR19			4kg

## COLD MOUNTING CONSUMABLES



cold mounting resin



curing agent

Code	Description	Package
MLP-CM1	<ol style="list-style-type: none"> <li>1. cold mounting compound, fast speed/good transparency/low viscosity/high strength</li> <li>2. for metal processing without heating, pressure and mounting press</li> <li>3. curing time: 25°C, 25min</li> <li>4. usage: cold mounting resin 3:curing agent 2</li> </ol>	<ol style="list-style-type: none"> <li>1. cold mounting resin 1000g</li> <li>2. curing agent 800ml</li> <li>3. Ø30mm cold mounting mold 1pc</li> <li>4. plastic cup 20pcs</li> <li>5. stirring rod 40pcs, spoon 1pc</li> </ol>
MLP-CM2	<ol style="list-style-type: none"> <li>1. epoxy resin, low viscosity, good permeability, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 5-6h</li> <li>4. usage: resin liquid 2:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml</li> <li>2. curing agent 500ml</li> <li>3. Ø30mm cold mounting mold 1pc</li> <li>4. plastic cup 20pcs</li> <li>5. stirring rod 40pcs</li> </ol>
MLP-CM3	<ol style="list-style-type: none"> <li>1. fast epoxy, fast curing products, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 1h</li> <li>4. usage: resin liquid 2:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml</li> <li>2. curing agent 500ml</li> <li>3. Ø30mm cold mounting mold 1pc</li> <li>4. plastic cup 20pcs</li> <li>5. stirring rod 40pcs</li> </ol>
MLP-CM4	<ol style="list-style-type: none"> <li>1. low viscosity epoxy, good permeability, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 3-4h</li> <li>4. usage: resin liquid 2:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml</li> <li>2. curing agent 500ml</li> <li>3. Ø30mm cold mounting mold 1pc</li> <li>4. plastic cup 20pcs</li> <li>5. stirring rod 40pcs</li> </ol>
MLP-CM5	<ol style="list-style-type: none"> <li>1. low heat release epoxy, small, shrink, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 20-24h</li> <li>4. usage: resin liquid 3:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml,</li> <li>2. curing agent 300ml</li> <li>3. Ø30mm cold mounting mold 1pc</li> <li>4. plastic cup 20pcs</li> <li>5. stirring rod 40pcs</li> </ol>
MLP-CM6	<ol style="list-style-type: none"> <li>1. cold mounting compound, fast speed/ceramics white/low viscosity/high strength</li> <li>2. for metal processing without heating, pressure and mounting press</li> <li>3. curing time: 25°C, 25min</li> <li>4. usage: cold mounting resin 3:curing agent 2</li> </ol>	<ol style="list-style-type: none"> <li>1. cold mounting resin 1000g</li> <li>2. curing agent 800ml</li> <li>3. Ø30mm cold mounting mold 1pc</li> <li>4. plastic cup 20pcs</li> <li>5. stirring rod 40pcs, spoon 1pc</li> </ol>

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## COLD MOUNTING MOLDS

Code	Description	Specification (mm)
MLP-QM1	round soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	Ø20×18
MLP-QM2		Ø25×18
MLP-QM3		Ø30×18
MLP-QM4		Ø40×23
MLP-QM5		Ø50×23
MLP-QM6	square soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	55×20×22
MLP-QM7		70×40×22
MLP-QM8	round hard mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	Ø25×23
MLP-QM9		Ø30×27
MLP-QM10		Ø32×27
MLP-QM11		Ø40×29



## MOUNTING DISCHARGING AGENT



Code	Description	Specifications
MLP-RA	for hot mounting press and cold mounting mold discharging	200ml/bottle

## SLICE CLIPS



MLP-QP1



MLP-QP2

Code	Description	Specifications
MLP-QP1	stainless steel roll slice clip, for hot and cold mounting fixing	100 pieces/pack
MLP-QP2	PET roll slice clip, for hot and cold mounting fixing	100 pieces/pack

## DIAMOND POLISHING LIQUID

- For surface grinding and polishing of metallographic, lithographic, ferrous and non-ferrous metals, ceramics, composite materials, gems, instruments, optical glass of high finish
- Compared with ordinary polishing agent, under the same grinding and polishing quality, consumption is saved 30%, time is saved 60%



Code	Description	Granularity ( $\mu\text{m}$ )	Package/Bottle
MLP-DLA $\square\square$ *	1. single crystal, water-based, ethylene glycol-based polishing lubricant formulation 2. for general metallographic preparation	40, 30, 28, 20, 14, 10, 9, 7, 6, 5, 3.5, 3, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLB $\square\square$ *	1. single crystal, water-based, propylene glycol-based polishing lubricant formulation 2. for grinding and polishing of soft and ductile materials	30, 20, 15, 14, 9, 7, 6, 5, 3, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLC $\square\square$ *	1. single crystal, water-based, propylene glycol-based polishing lubricant formulation 2. for ultra-precision polishing	0.05	500ml
MLP-DLD $\square\square$ *	1. single crystal, oil-based, solvent-based polishing lubricant formulation 2. for grinding and polishing of soft materials and materials which cannot touch water	20, 14, 9, 7, 5, 3.5, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLE $\square\square$ *	1. polycrystalline, water-based, propylene glycol based polishing lubricant formula 2. for grinding and polishing of different materials and hardness components	9, 6, 3, 1.0, 0.5, 0.25	500ml
MLP-DLF $\square\square$ *	1. polycrystalline, water-based, denatured ethanol based polishing lubricant formula 2. for grinding and polishing of materials which cannot touch water	9, 6, 3, 1.0, 0.5, 0.25	500ml

\* $\square\square$  is granularity specification, for example, code **MLP-DLA40** stands for diamond polishing liquid 40 $\mu\text{m}$  granularity