MIDLAND METROLOGY LTD

# iCut-100A

## Auto Metallographic Abrasive Cutting Machine


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# Product Features and Application

## Product Features

●Stainless steel housing
●Extra-large cutting chamber
●Manual/automatic dual cutting mode
●Enclosed cutting
●Automatic 3-channel cooling system to avoid damage to samples due to overheating
●Pattern programming is more suitable for batch cutting sampling
●Automatic reset function of the cutting knife after sampling
●Real-time tracking and display of the feed depth (LCD digital display)
●The feed stroke can be set arbitrarily (0-200mm)

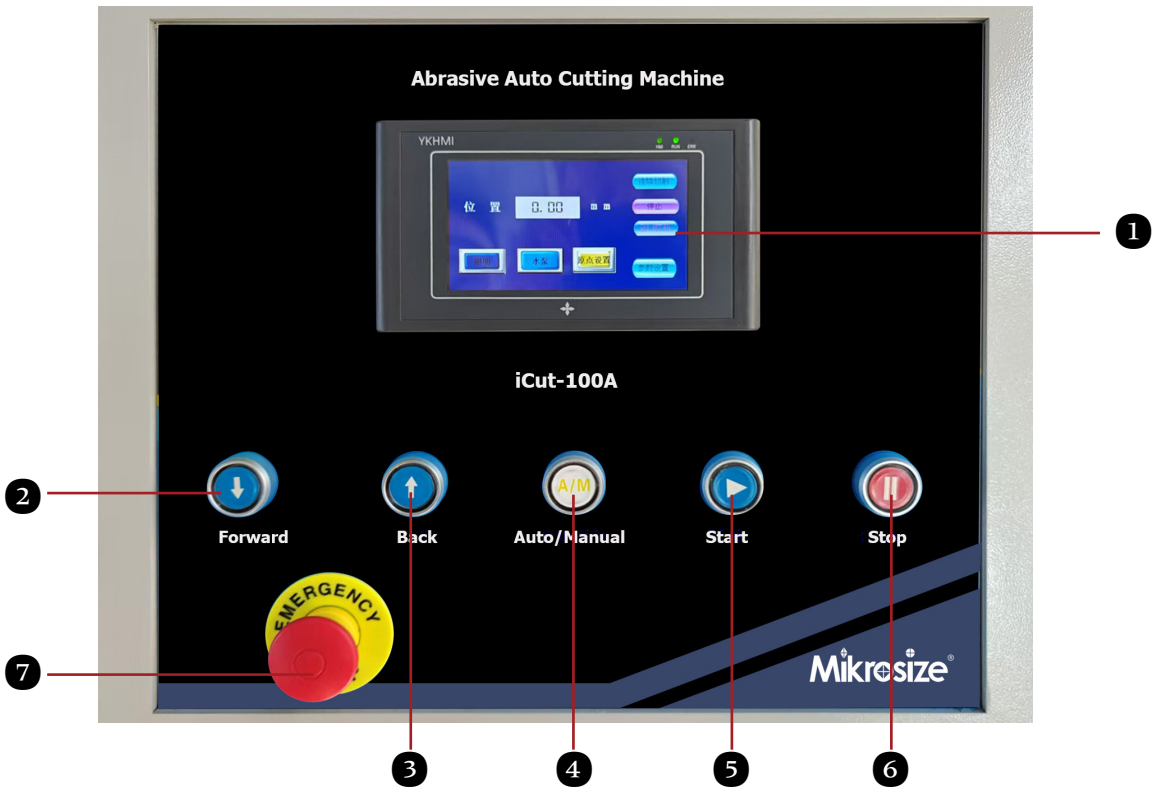
## Product Application

●Material science research and performance testing.
This machine can be used to prepare high-quality metallographic samples, conduct various scientific research, study the microstruc-ture and crystal structure of experimental materials, reveal the performance and mechanism of materials, and provide technical support for the development of new materials and the improvement of existing material performance.
●Industrial manufacturing and quality control. This machine can perform high-precision cutting and processing on various metal materials such as steel, aluminum alloy, etc., to meet the needs of industrial manufacturing with high precision requirements; it can also be used to prepare metallographic samples of various mechanical parts, helping engineers analyze the performance and reliability of parts, optimize material selection, and improve the performance and durability of parts.

●New material research and development and product failure analysis
The metallographic cutting machine can accurately cut out the sample area containing the fracture source, providing key evidence for diagnosing the cause of the problem.

# Instrument Appearance

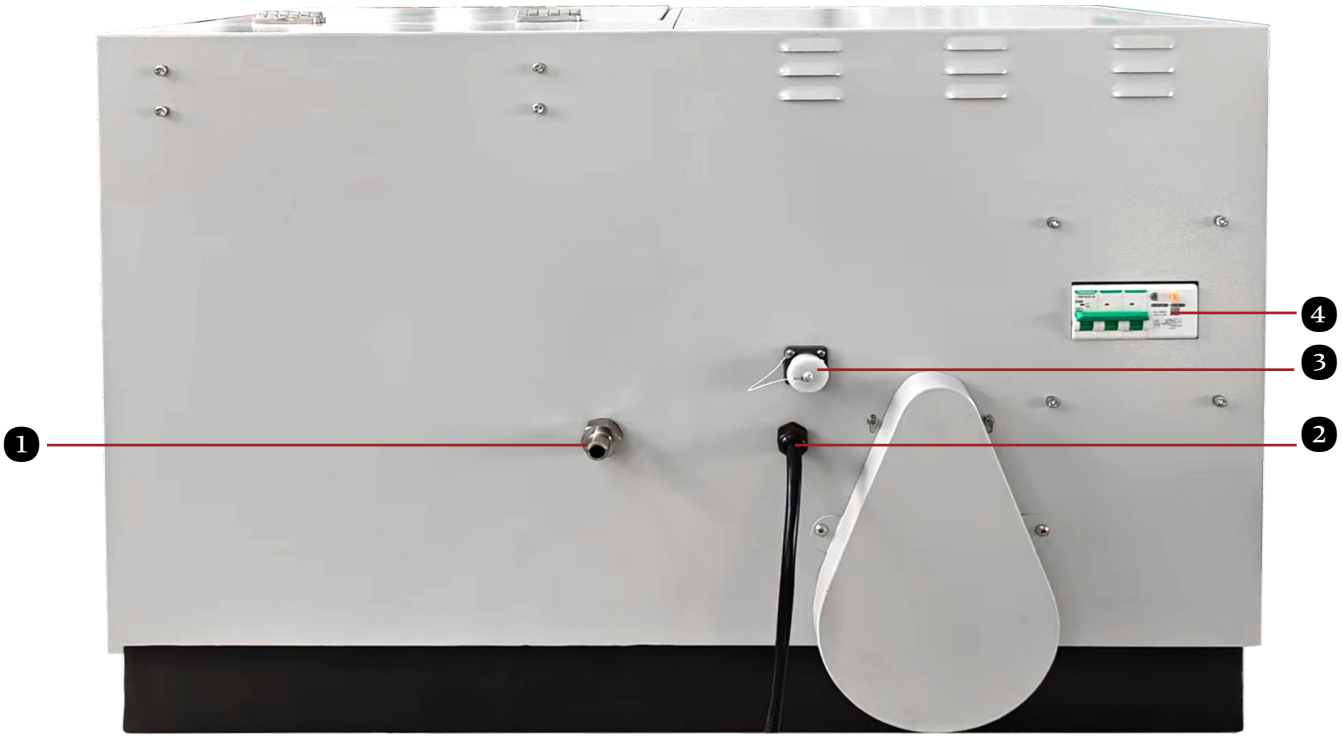

1. Protective housing 2. Support rod 3. Lighting 4. Cut-off wheel 5. Outlet pipe port 6. Clamp 7. Handwheel 8. Screen and buttons 9. Coolant nozzle 10. Transparent observation window




## Screen & Button

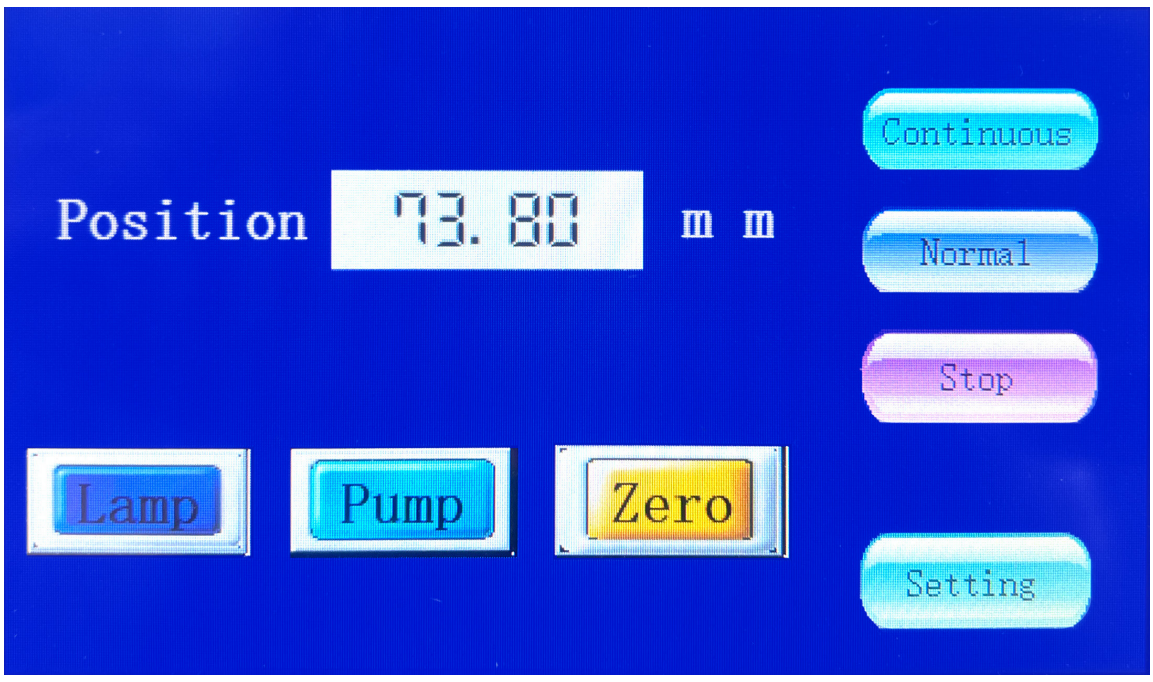
1. Display screen 2. Forward button: Manual mode forward button
3. Back button: Manual mode back button
4. Automatic/manual switch button: The button has a self-locking function, "pressed" state is manual mode; "pop-up" state is automatic mode 5. Start button: Automatic mode start button
6. Stop button: Automatic mode stop button 7. Emergency stop button

# Instrument Appearance




1. Inlet pipe
2. Power cord
3. Water pump port
4. Switch

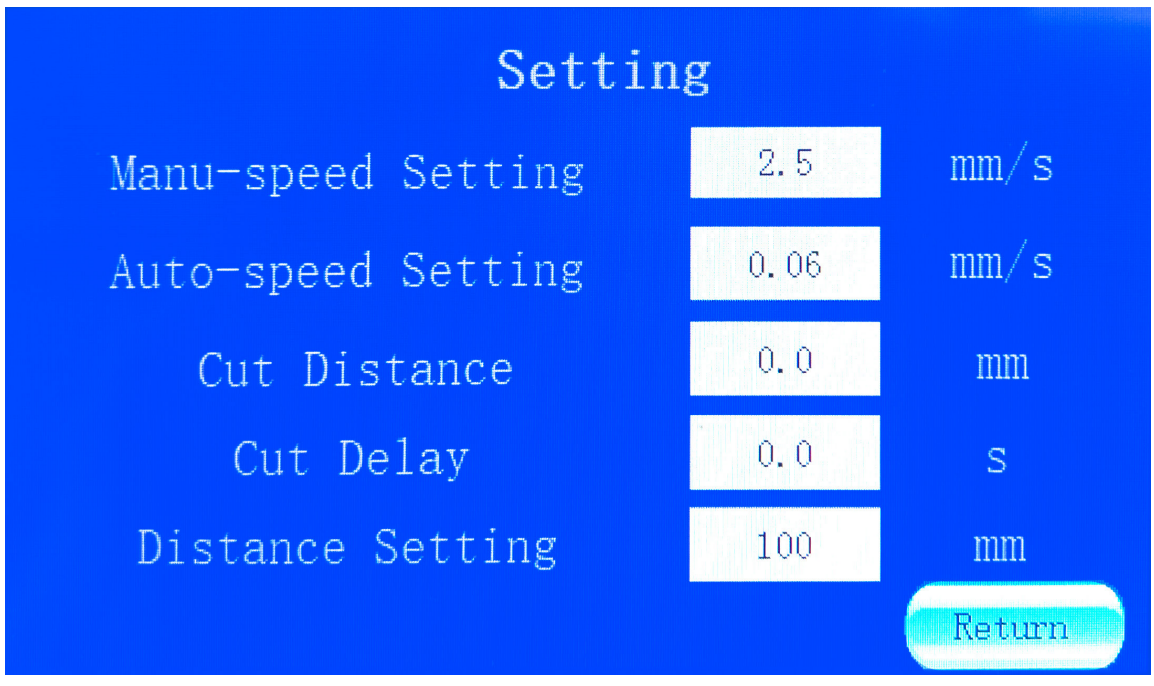
# Screen Interface




## Interface

After booting up, enter this interface, which mainly includes the following functions:

1. Y-axis position parameter: the relative position of the cutting table. During the automatic cutting process, the Y-axis position parameter will be displayed in real time
2. Lighting: the lighting switch in the cutting room, tap to turn it on or off
3. Water pump: cutting water pump switch, in manual mode, press the water pump switch to turn on the water pump; in automatic mode, press the start button to automatically turn on the water pump
4. Origin setting: tap once to clear the Y-axis position parameter
5. Continuous cutting: This machine has two modes: continuous cutting and intermittent cutting. For metal materials, the "intermittent cutting" mode must be used; some non-metallic materials can use the "continuous cutting" mode
6. Stop
7. Warehouse door alarm: the screen will prompt when the protective door is opened
8. Parameter setting




This interface is the setting screen of the main cutting parameters of the machine, including the following functions:

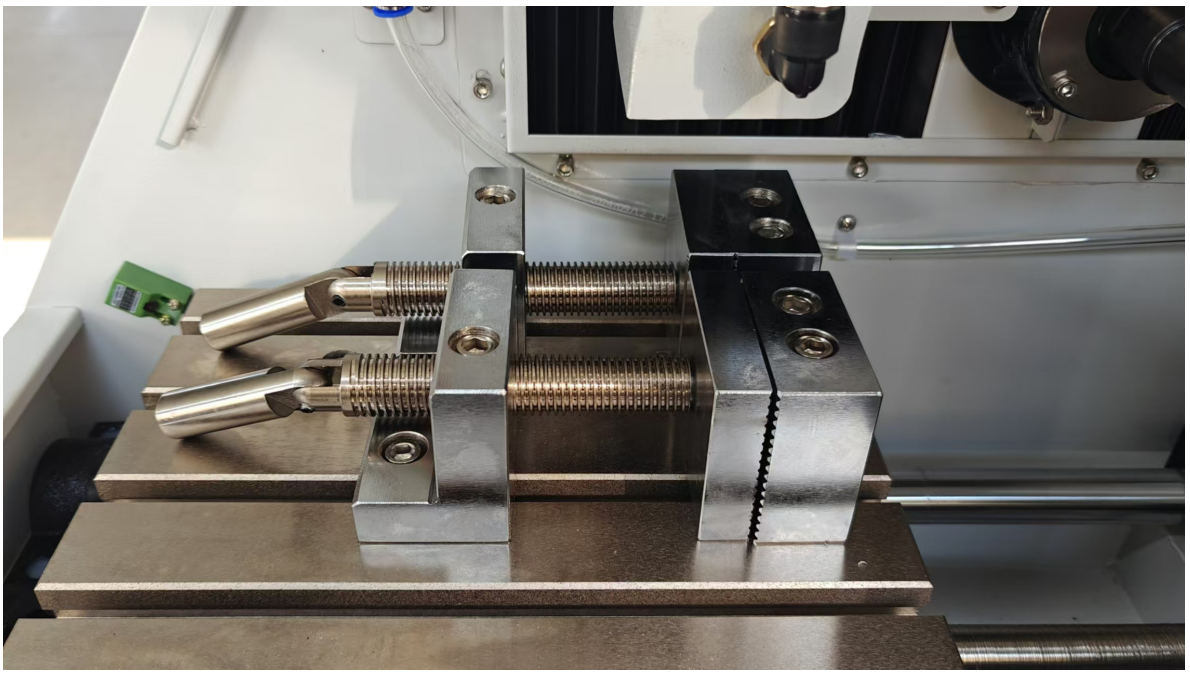
1. Manual cutting speed: the speed of manually moving the cutting spindle, the maximum value is 2 mm/S
2. Automatic cutting speed: set the cutting speed according to the hardness and material of the workpiece to be cut, the maximum is 0.25mm/s
3. Intermittent cutting distance: set the cutting distance for automatic cutting and intermittent cutting mode
4. Intermittent cutting time: set the pause time for automatic cutting and intermittent cutting mode
5. Cutting stroke: set the cutting distance for automatic cutting.

Click the number behind to pop up the input keyboard, press the OK button to confirm

# Product Details

## Cut-off Wheel

This machine adopts a large-size grinding wheel cutting disc, which has high hardness and good wear resistance. It can process the workpiece with high precision and high quality. It can be applied to most metal materials, and the air cooling effect of the grinding wheel cutting disc can significantly avoid work. The phenomenon of surface heating and burning.



## Clamp

This equipment uses a double-sided clamp with threads that can be tightened to clamp the sample. It has a simple structure, is easy to use, and can clamp tightly.

# Product Details

## Cooling

This equipment is equipped with a cooling system. Users can adjust the coolant flow through the valve, and the water nozzle can be bent and rotated freely to ensure that the cutting part can be effectively cooled.

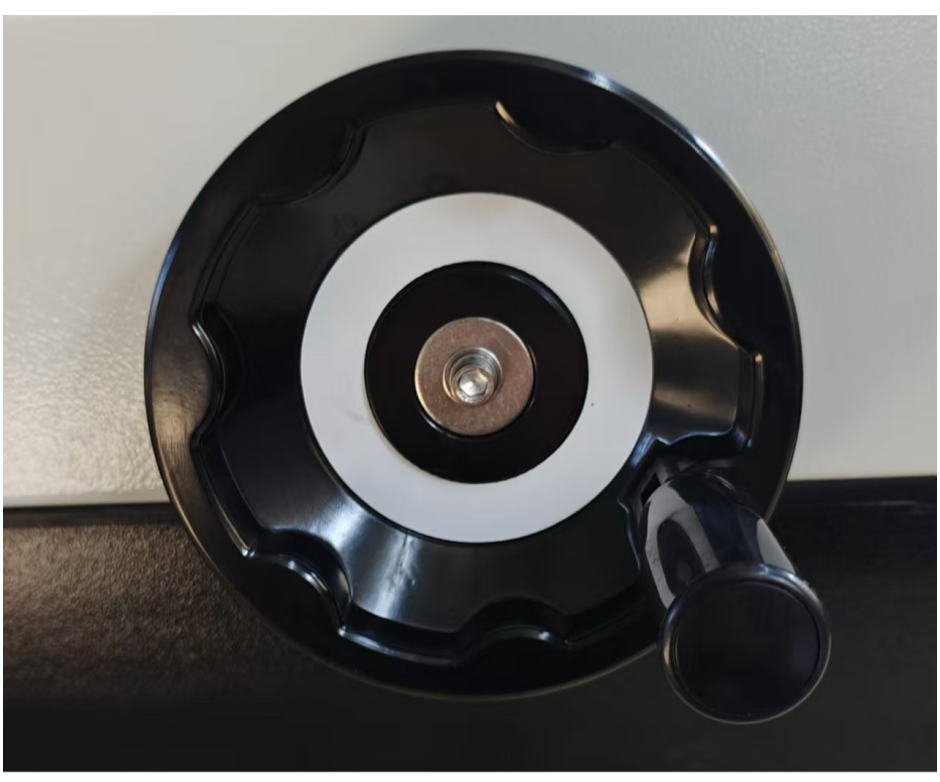
## Lighting

LED lighting is installed in the cutting room to effectively illuminate the entire area of the cutting room; it increases the brightness and clarity of the studio, and the transparent observation window on the protective door allows a clear view of the situation in the cutting room.

# Product Details

## Closed-door Detection

The machine cutting room is equipped with a closed door detection to ensure that the protective shell is closed when the equipment is running, protecting the safety of the operator.



## Handwheel

The handwheel is used to move the sample forward and backward during cutting. After installing the sample, turn the handwheel to bring the sample close to the cutting blade without touching it; after cutting, turn the handwheel to move the sample to the appropriate position before removing it.

Water Tank

High Pressure Nozzle

The equipment is equipped with a large-capacity water tank and a water pump. The water tank has a filter to separate the waste generated by cutting, and is also equipped with a pressure water nozzle to facilitate users to clean the cutting chamber.

# Technical Specification

| | |
|---|---|
| **Product Name** | Metallographic Abrasive cutting Machine |
| **Model** | iCut-100A |
| **Cutting Chamber Housing** | Steel Plate |
| **Cutting Capacity** | 100mm（pipe） |
| **Cutting Depth Tracking** | LCD Digital Display |
| **Platform Y-axis Movement** | 200mm |
| **Cutting Table Size** | 280X310mm |
| **Cut-off Wheel** | 350X2.5X32mm |
| **Clamping Table** | Divided into left and right, with central cutting edge |
| **Cutting Method** | Manual/automatic |
| **Feeding Method** | Adjustable (manual, automatic) |
| **Cutting Speed** | Maximum 0.25mm/s, automatic cutting mode can be selected: intermittent cutting (metal workpiece) and continuous cutting (non-metal workpiece) |
| **Feed Distance** | Set as needed |
| **Reset Method** | Automatic reset |
| **Cooling System** | Automatic |
| **Water Tank Capacity** | 50L |
| **Spindle Speed** | 2100rpm |
| **Motor Power** | 3.3KW |
| **Machine Type** | Desktop |
| **Machine Dimension** | 887X795X600mm |
| **Power Supply** | 380V |
| **Gross Weight** | 220KG |

Special workpieces can be customized: disc fixture, rack fixture, universal fixture

# Standard Delivery

| Name | Specification | Qty | Picture |
|---|---|---|---|
| Machine Mainframe | iCut-100A | 1 set |  |
| Water Tank | With water pump | 1 pc |  |
| Cut-off Wheel | 350*2.5*32mm | 2 pcs |  |
| Outlet Pipe | φ32×1.5m | 1 pc |  |
| Inlet Pipe | φ25×1.5m | 1 pc |  |
| Hose Clamp | iCut-100A | 4 pcs |  |
| Wrench | 24-27mm | 1 pc | |
| Wrench | 36mm | 1 pc | |
| Instruction Manual | iCut-100A | 1 copy | |
| Product Certificate | iCut-100A | 1 copy | |
| Warranty Card | iCut-100A | 1 copy | |