

# Mikrosize®

## iCut-110A/120A/130A Abrasive Abrasive Metallographic Automatic Cutting Machine



Video



### Contact us

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## Product Features and Application

### Product Features

- The touch screen displays and controls various cutting data, and better positions the workpiece during cutting;
- It has three functional cutting modes: chopping cutting, flat push cutting, and sweeping cutting;
- When cutting, the cutting speed can be adjusted according to the hardness of the material to achieve the purpose of quickly cutting the workpiece;
- The cutting room motor is waterproof and isolated for easy cleaning;
- LED lighting is installed in the cutting room to achieve effective lighting of the entire cutting room area; it increases the brightness and clarity of the workroom.

### Product Application

- Material science research

It can perform high-precision cutting and processing of various metal materials (such as steel, aluminum alloy, etc.), providing reliable samples for microstructure analysis of materials;

- Industrial manufacturing and quality control

It can be used to prepare metallographic specimens of various mechanical parts, helping engineers analyze the performance and reliability of parts, optimize material selection, and improve the performance and durability of parts

- Product failure analysis

It can accurately cut out the sample area containing the fracture source, providing key evidence for diagnosing the cause of the problem. This is of great significance for improving product design and improving product reliability.



## Product Details



### Cut-off Wheel

This machine adopts a large-size cut-off wheel, 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.

It is equipped with multiple cooling water nozzles around it. On the one hand, it can significantly reduce the cutting temperature and prevent the workpiece from being deformed by heat. On the other hand, it can promptly remove the waste generated by cutting.



### Clamp

This machine adopts quick double-sided clamps, which has a simple structure, easy and quick installation, and has high strength and wear resistance.



## Product Details



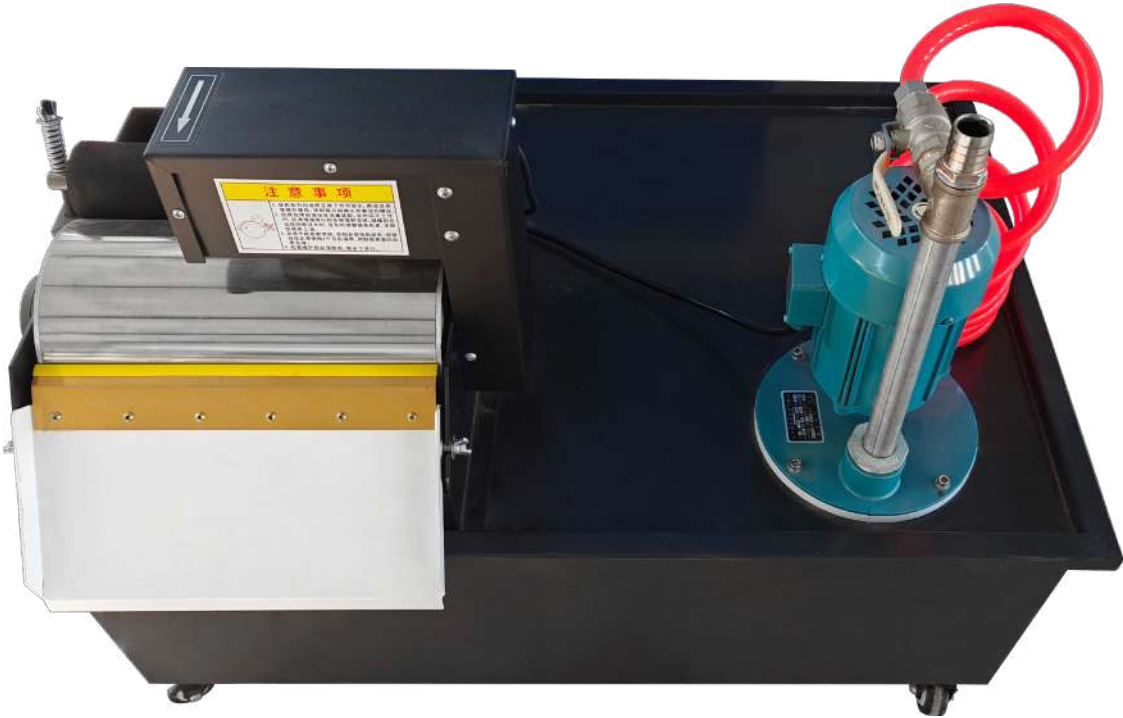
### Lighting

LED lighting is installed in the cutting room, which can effectively illuminate the entire area of the cutting room; it increases the brightness and clarity in the studio, and the transparent observation window on the protective door can clearly see the situation in the cutting room.



### Closed-door Detection

A door closed detection is installed on the top of the machine. When the protective door is open, the cutting blade of the machine will not start, and the screen interface will prompt "The door opens". The equipment can only operate normally when the protective door is closed.



### Water Tank

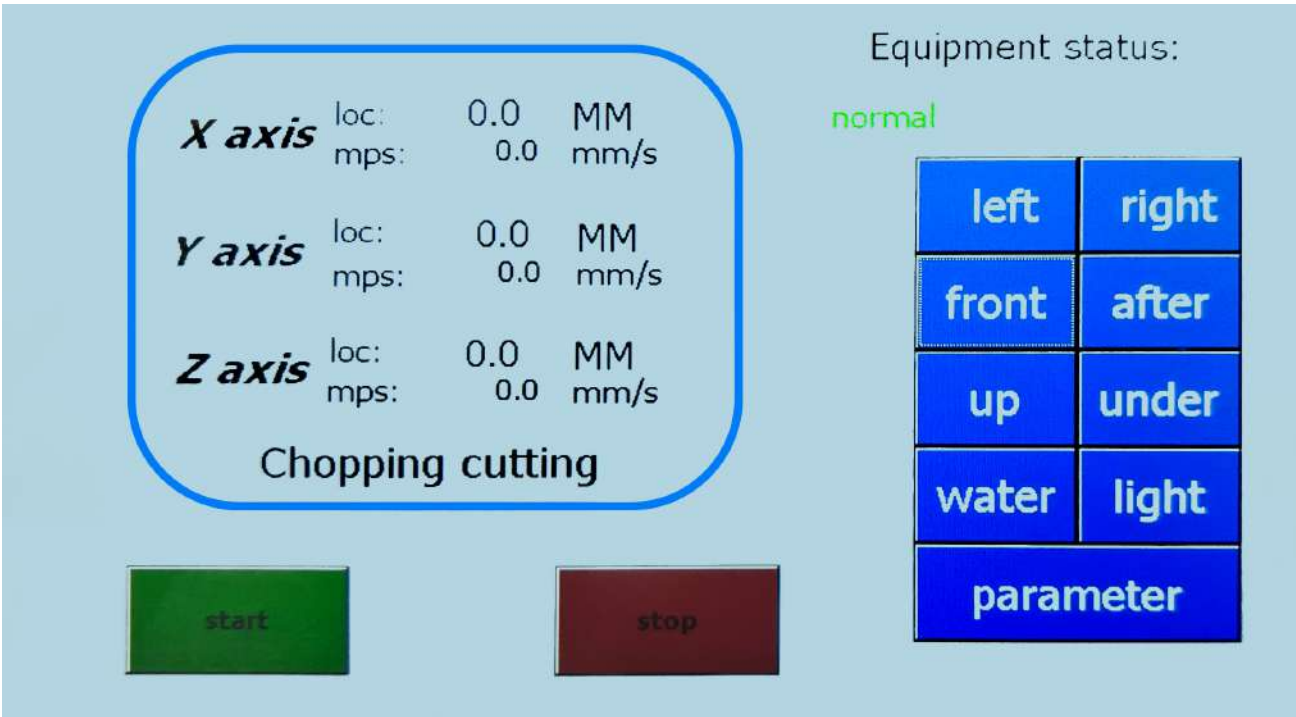
The machine is equipped with a 120L large-capacity water tank, a water pump and a flushing water gun for easy cleaning of the cutting chamber, and a magnetic separator to absorb the metal waste generated by cutting to avoid damage to the water pump.

# Screen and Functions



## Screen + Buttons

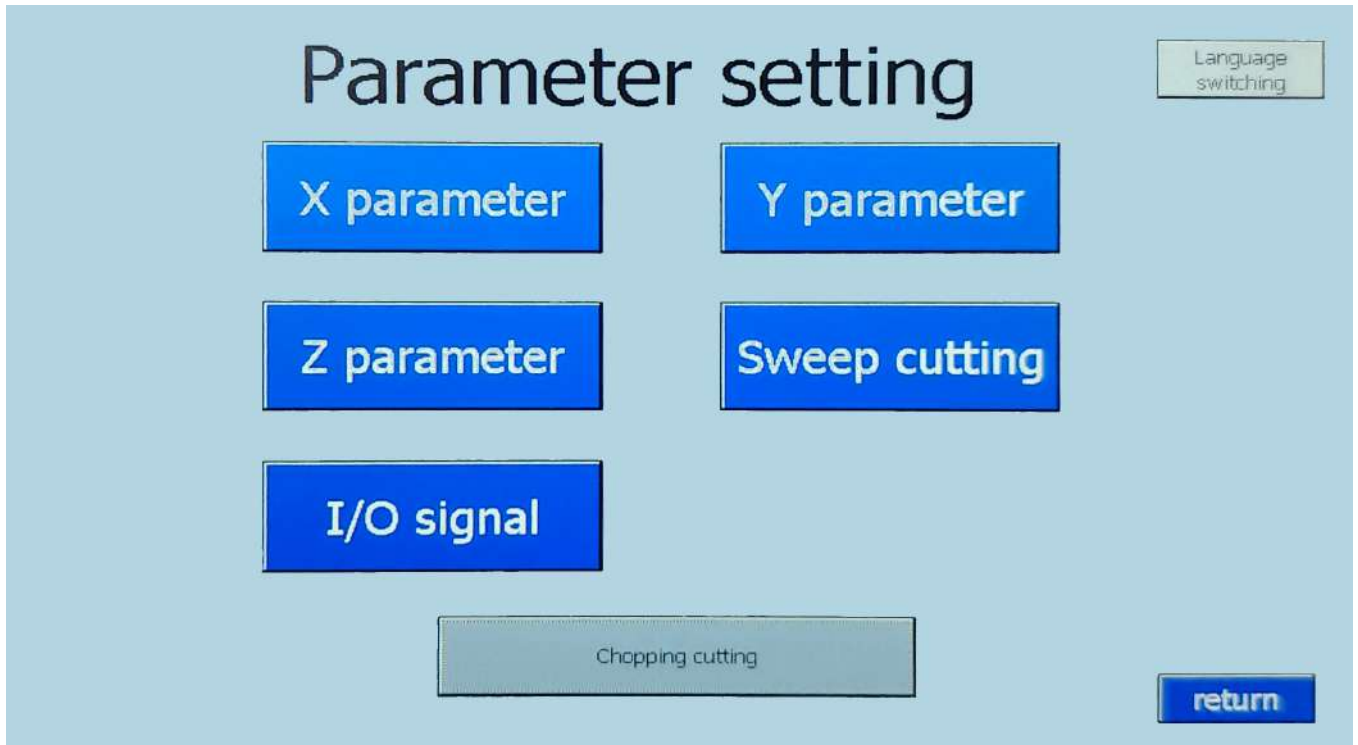
1. Display screen
2. Emergency stop button
3. Start button
4. Stop button



## Interface

After turning on the machine, enter this interface. This interface can control the adjustment of the cutting direction (left and right, front and back, up and down), the switch of the water pump and the lighting, and the start and stop of the equipment. At the same time, it will display the position of the XYZ axis.

## Parameter Setting



### Interface

Click the "parameter" button to enter this interface. This interface is a menu of various parameters that can be set for this machine, mainly including the setting of XYZ three-axis parameters, sweep cutting parameter settings, I/O signal debugging, and the cutting mode switch button below. This machine has 3 cutting modes: push test cutting, sweep cutting, and chop cutting.

The upper right corner is the language switch button. This machine supports two languages: Chinese and English.

## X-axis Parameter Settings

### X-axis parameter setting

Manual speed setting  mm/s

current location  mm

Position clearing

return

### Interface

Click the "X parameter" button to enter this interface, which can set the manual adjustment speed and display the current X-axis position parameters. If you need to clear the position parameters, click the "Position clearing" button below.

## Y-axis Parameter Settings

### Y parameter setting

Manual speed setting	5.0	mm/s
Automatic speed setting	0.05	mm/s
Cutting distance setting	0.0	mm
Back distance setting	0.0	mm
Cutting stroke setting	60.0	mm
Cutting pause time setting	0	S
Y current distance	0.0	mm

Position clearing

return

### Interface

Click the "Y parameter" button to enter this interface. The functions of this interface are:

1. Manual adjustment speed and automatic cutting speed settings;
2. Set the cutting distance and the back-off distance. The two are combined to achieve reciprocating cutting. It should be noted that the setting value of the cutting distance should be greater than the setting value of the back-off distance;
3. Set the cutting stroke according to the cutting length of different workpieces;
4. Set the intermittent pause time of cutting to achieve intermittent cutting mode;
5. Display the current position parameters of the Y axis. Click the "Position clearing" button below to clear the position parameters.



## Z-axis Parameter Settings

### Z parameter setting

Manual speed setting	5.0	mm/s
Automatic speed setting	1.0	mm/s
Cutting distance setting	0.0	mm
Back distance setting	0.0	mm
Cutting stroke setting	40.0	mm
Cutting pause time setting	0	S
Z axis current distance	0.0	mm

Position clearing

return

### Interface

Click the "Z parameter" button to enter this interface. The functions of this interface are similar to those of the Y axis parameter interface, so I will not repeat them here.

## Scanning and Cutting Parameter Settings

### Scanning parameter

Y axis speed setting	0.0	mm/s
Z axis speed setting	0.0	mm/s
Z cutting distance setting	0.0	mm
Z-axis cutting stroke setting	0.0	mm
Y-axis cutting stroke setting	0.0	mm

return


### Interface

Click the "Sweep cutting" button to enter this interface. Sweep cutting is completed by Z-axis movement and is controlled by the cutting distance and cutting speed within the Y-axis parameter settings. Therefore, this interface is mainly used to set the parameters of the Y and Z axes, including the cutting speed and cutting distance of the Y and Z axes, and the cutting stroke of the Z axis.

## I/O Signal Debugging Interface

### I/O signal debugging

 Left limit

 Right limit

 Front limit

 Rear limit

 Upper limit

 Lower limit

 water pump

 saw blade

 Access control switch

 jerk

The door opens

return

### Interface

Click the "I/O signal" button to enter this interface, which displays the status of each system part of the cutting machine. When a system failure occurs, you can enter this interface to check it.







# Technical Specification

<b>Product Name</b>	Abrasive Metallographic Cutting Machine		
<b>Model</b>	iCut-110A	iCut-120A	iCut-130A
<b>Cutting Method</b>	Chop cutting, flat push cutting, sweep cutting		
<b>Cutting Speed</b>	0.01-1mm/s (adjustment step 0.01)		
<b>Reset Mode</b>	Automatic		
<b>Control System</b>	Siemens PLC 7"touch LCD screen		
<b>Rotation Speed</b>	2800rpm		
<b>Max Stroke</b>	Z-axis 130mm; Y-axis 200mm; X-axis 100mm		
<b>Working Table Size</b>	128*320mm, 180*320mm		
<b>Max Cutting Diameter</b>	φ110 mm	φ120 mm	φ130 mm
<b>Cutting Disc</b>	350*2.5*32mm		
<b>Motor</b>	4KW		
<b>Voltage</b>	AC380V±10% , 50-60Hz		
<b>Machine Dimension</b>	1350*1100*1750mm (L×W×H)		
<b>Packing Size</b>	1450*1200*1850mm		
<b>Net Weight</b>	707.5kg		
<b>Gross Weight</b>	727.5kg		



## Standard Delivery

Name	Qty	Picture
Machine Mainframe (with clamp)	1 set	
Water Tank (with water pump)	1 pc	
Cut-off Wheel 400×4×32mm	2 pcs	
Clamp	1 pc	
Outlet Pipe	1 pc	
Inlet Pipe	1 pc	
Pipe Hoop	2 pcs	
Wrench	3 pcs	
Instruction Manual	1 copy	
Product Certificate	1 copy	
Warranty Card	1 copy	