



MCut-85

Metallographic Abrasive Cutting Machine

Instruction Manual



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1. Introduction

MCut-85 is suitable for general metallographic and lithofacies materials. By pulling the spindle and using the spindle gravity to cut the sample, the speed is high and the cutting ability is strong. It adopts the double-sided clamp structure, which can fix the sample firmly. The main parts of the clamp and cutting table are all made of stainless steel, which has long service life and convenient maintenance. The cutting chamber adopts closed structure with safety limit switch, while there is an opening in the left of the cover which can cut long strip samples, and it has the transparent plexiglass window and built-in LED lamp for observation when cutting. With circulating cooling water tank, the surface of the sample after cutting is bright and flat without burns, thus it is the ideal equipment for sample cutting. This model is divided into benchtop and floor type for customers to choose.

2. Main Parameters

Model	MCut-85
Cutting Method	Manual
Cut-off Wheel	Φ300×2×Φ32mm
Max. Cutting Capacity	85×85mm
Spindle Speed	2800r/min
Electromotor Power	3KW
Cutting Table	204×240mm,T-slot 12mm
Clamping Tool	Quick clamp,Jaw height 60mm
Power Supply	380V, 50Hz,10A, Three-phase four-wire
Dimensions	730×700×540mm
Net Weight	125kg
Water Tank Capacity	60L
Pump Flow	25L/min
Water Tank Dimensions	565×360×600mm
Water Tank Weight	27kg

3. Structure

This machine is made up of machine body, inside and outside enclosers, electrical engine bracket, rapid clamping device, working platform and so on. The body uses the welding structure of steel plate, which has the good rigidity. The bottom surface of the body is an incline, which may accelerate the backflow of the refrigerant. The electric motor is fixed on the electrical engine bracket and installed in the body, linking the axle seat through the rocking shaft. The axle bush on which the grinding wheel piece is clamped with the M16 nut and two clamp covers, of installing grinding wheel piece is fastened on the main axle of electric motor. The rapid clamping device and the regular jaw are all installed on the working platform of the machine body. The working platform uses the T shape trough structure. The rapid clamping device may be handled and moved on the working floor optionally according to the size of the sample. The in-encloser is fastened with the electromotor body, while the outside-encloser links the body with the iron hinges. There is a glass transparency window on the above of the encloser, for the use of the observation when cutting. When the window is opening there are two air-springs as the supporting to guarantee the security of use.

The electrical control panel and the electrical elements are all installed in the separate boxes around the body; the use and maintenance of them are extremely convenient.

The cooling water tank is especially for the use of circulation refrigerant storage with the cold plate welding structure. The box is separated into two storehouses, and isolated by the dummy plate, guaranteeing the deposition of backflow waste material in the first alternate storehouse. The cooling water pump is installed above the box lid, and the power supply of the water pump and the cooling water pipe have the connector to link the body. The installment is extremely convenient.

4. Installation and Usage

First、Installation

- 1.Put this machine on the smooth work table, inspect whether various components of the machine is complete or not and check the fastening pieces are loose or not, complete the clearing.
- 2.Put the cooling water tank in the suitable position in terrace. Pour the prepared cooling liquid into the tank. Please pay attention that the cooling liquid should have better lubricating property, avoid using tap water as cooling liquid by all means.
- 3.Stall the cooling pump power line, the outlet pipe connector and the discharge pipe; put them in the cooling tank.
- 4.Connect to the main power cord. Before the connecting, you should check whether the supply voltage is congruous to the assigned voltage, whether the ground connection of line is reliable.
- 5.Turn on the switch and start the electromotor, check the rotation direction of the electromotor, which should revolve according the counter clockwise. It should be adjusted promptly if it does not.

Second、Usage

Open the external protective covering, and install the grinding wheel piece (has been installed when leaving the factory). When charging and discharging the grinding wheel piece, only press downwardly the rest button on the inner protective covering at first, then rotate the axle bush with hand to the coordination of the pinhole on the axle bush and the rest button, and may use the solid wrench to screw off or up the M16 left-handed nut on the end of the axle sleeve to realize the request of charging and discharging the grinding wheel piece. But when finishing the charging and discharging of the grinding wheel piece each time, You should rotate the axle bush once more to inspect whether the rest button

4. Installation and Usage

and pinhole are uncoupled completely after releasing the rest button, in order to avoid accidents when starting up.

2. After covering the external protective covering, the new installed grinding wheel piece should idle turn for several minutes, to guarantee the security in the use.

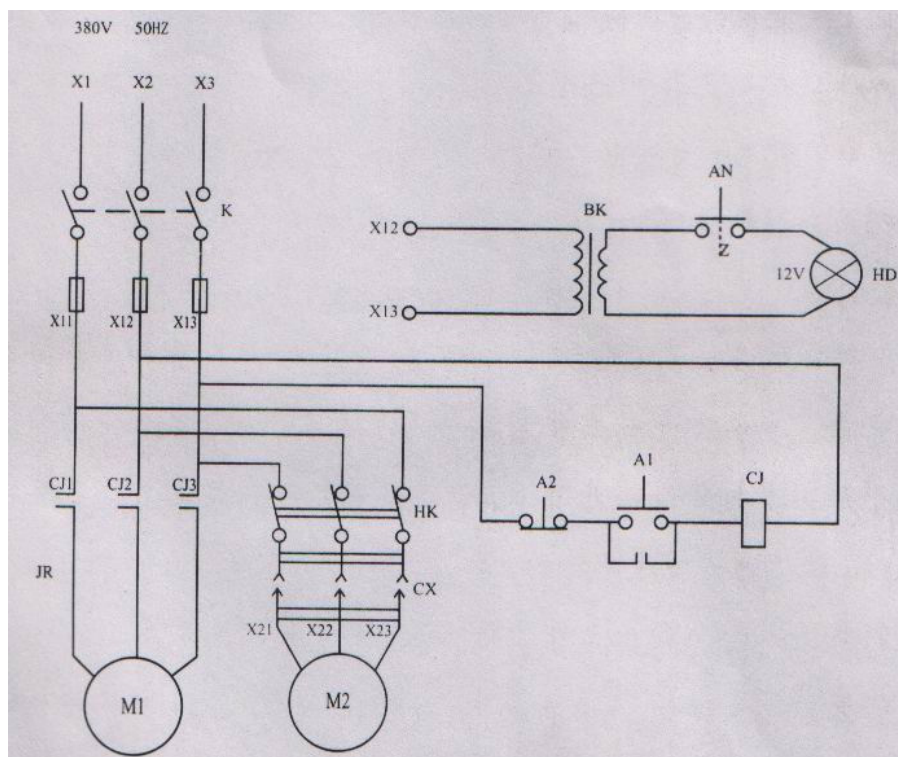
3. Clamp the test sample. When operating, after adjusting the clamp seat to the appropriate position, screw down the nut, then loosen the clamp lever, undraw the pressure lever. After the installation of the test sample, push the pressure lever again to the contact of the briquetting and the test sample, then tighten the compacting handle suitably, and finish the installment. When installing, you may pin the test sample with the spring pressure lever and then do the clamp work. But when installing, you must pay attention to the geometry shape of the test sample, certainly choose the correct position to clamp, and to some special geometry shape sample, you must clamp by dint of essential auxiliary tools, may not clamps randomly, in order to avoid accidents in cutting.

4. After completing the above preparatory work, you may carry on the cutting work of the test sample. Before cutting please open the cool valve at first, cover the external protective covering, and then start the motor and the cooling pump, control the operation handle, to make the grinding wheel piece contact the sample slowly and cut, and avoid the rush force in cutting, in order to avoid the accidents created by the damage of the electric motor because of the over load and the dehiscence of the grinding wheel piece to affect the normal use of the equipment.

5. Maintenance

1. It is necessary to do the clean job after using the machine every time. You should clean away the feculences in machine or in tank, guaranteeing the back flow of the cooling liquid.
2. The cleaning hose (accessory) can do some help to wash when you clean and maintain the machine. Be sure to switch off the cutting cooling valve first.
3. Lubricating oil should be infused into all sliding surfaces frequently in processing work. And the high speed grease should be used in the motor bearing after the machine works for one year.
4. The cooling liquid should be renewed periodically to guard against the deterioration of liquid and guarantee the cutting effect.
5. Do not use the grinding wheel which has crack or has been damaged, neither do not use the grinding wheel with the line speed less than 35m/s in cutting work. That makes you safe in work.

Electricity principle diagram:



6. Packing List

Name	Specification	Qty
Machine Body		1 set
Water Tank		1 set
Cut-off Wheel	$\Phi 300 \times 2 \times \Phi 32 \text{mm}$	2 pcs
Cutting Fluid	Resin cut-off wheel	1 bottle
Spanner	3kg	each 1 pc
Inner Hexagon Spanner	14×17mm, 24×27mm	each 1 pc
Water Inlet Pipe	3mm, 6mm	2 pcs
Water Outlet Pipe	1/2 Metal pipe	1 pc
Usage Instruction Manual	$\Phi 48 \text{mm}$	1 copy

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