



iCut-80M Manual Metallographic Abrasive Cutting Machine

Instruction Manual



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Important cautions and safety information

When using the cutting machine, the following safety instructions shall be followed to prevent from fire hazard, electric shock and body injury.

1. Read and understand all the operation instructions.
2. Keep in mind the elementary knowledge of electrical appliances.
3. Abide by all the warnings and instructions either marked on the product or mentioned in the documents delivered with the cutting machine.
4. If any discrepancy be found between the instructions and safety note, the safety note shall prevail . For more detail, please refer to the sales agency or service organization.
5. Pull out the power plug and clean the surface of the cutting machine. Clean with damp cloth instead of detergent or kerosene.
6. Don't place the machine onto an unstable table otherwise, serious damage may happen when falling down in case.
7. Nothing is allowed to put on the power and the machine.
8. Don't overload the power socket in case of fire hazard or electric shock.
9. Don't try to disassemble the cutting machine in order to avoid electric shock. Only qualified maintenance technicians are allowed to repair the machine. You will be exposed to dangerous voltage or other danger once the cover is opened or removed. Improper reassembling may result in future electric shock.
10. Remove the plug from wall and call qualified technician in following cases:
 - a. The supply cords, plug or the connecting cables are damaged or worn out .
 - b. The machine can't run in normal operation.
 - c. The machine falls down or the shell is damaged.
 - d. Sudden and obvious change occurs to the performance.
11. Only permit adjusting the mentioned parts in the manual.
12. Keep the manual carefully.

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1.Applications of the Cutting Machine

The cutting machine is suitable for cutting all kinds of specimens including metallic materials and nonmetallic materials so as to observe metallographic structure and lithofacies structure

The built-in cooling circuit could help to prevent burning the sample tissue due to overheating during the cut-off process.

The cutting machine is quiet convenient, safety and reliable .It is one of the specimen-making equipments necessary for metallographic test for factory, researching unit and college and university laboratory.

2.Main Technical Data of the Cutting Machine

- 1) Power : 3phases, 4cords (380V, 50HZ)
- 2) Rotation rate of spindle : 2800rpm
- 3) Size of abrasive blade : 250x2x32mm
- 4) Max cut-off diameter : 80mm
- 5) Motor : Y2-1001-2 3.0KW

3.Installation of the Cutting Machine

- 1) The machine is placed on the stable corking table.
- 2) Mount the intake pipe, the drain pipe is under the intake pipe so as to prevent the drain from being not clear.
- 3) Check the supply cord and plug if they are intact .If there is no problem, turn on the power and start the motor. The rotating direction of the motor is in accord with the direction mark of the machine.

Note: The power of the machine is of three phases and four-cord plug .The power socket must be grounded.

4. Installation and Remove of the Abrasive Blade

- 1) Open the upper cover of the machine, loose the wing nut laid on the end of the spindle with the spanner provided with the machine, then remove the clip of the abrasive disc and the abrasive blade.
- 2) Fit the abrasive blade and the clip in the spindle, fasten the pagoda style nut fitly with the spanner and rotate the spindle two circuits with hand. Check two sides of the abrasive blade if they flicker, It's flicker quantity is no more than 2mm, If its deviation of sway is more than 2mm, check the cause and re-assemble properly.

5. Installation and Gripping of the Specimen

Proper clamping specimen is an important guarantee that work is safe and reliable when operating the machine, the specimen will be put in the vice jaw and tighten the clamping lever with the spanner provided with the machine, push or rotate specimen with hand, check the binding if it is stable, otherwise remount it and re-clamp it.

6. Specimen Cutting

Cut the specimen after having finished the preparing work above, when cutting, cover the upper cover and turn on the cooling switch so that there is plenty of cooling flow, start the motor, then hold the lever with hand and let the abrasive blade contact specimen slowly, then cut the specimen, Don't use too much strength when cutting

Caution :

- 1) Don't use too much strength when cutting, It is suggested that you raise the abrasive wheel slightly when cutting in every 1-2mm
- 2) The coolant fluid must be mixed with the better lubricity cooling agent (presented with the machine), don't use general water supply as liquid coolant.
- 3) It is imperative to cut specimens such as rock, ceramics etc, with the diamond abrasive blade
- 4) Cut off the power supply when mounting workpieces and clamping workpieces.

7.Maintenance and Safety Techniques

- 1) The power of the machine is of three phases and four cords, install the reliable ground wire.
- 2) The intake pipe and the drain pipe are clear and non-leakage.
- 3) Don't cut specimens with cracked and worn abrasive blade.
- 4) Don't cut specimens with the abrasive blade whose linear velocity is less than 35meter per second.
- 5) Do cleaning and maintenance in good time after operation is finished every time, Take the filter net out of the drain situated in the left back of the working table of the machine and clean it so that the drain is clear.
- 6) Change high-speed lubricating grease in bearings mounted on the spindle and the motor after one year.
- 7) Change the cooling liquid regularly to prevent from deterioration and losing efficacy.
- 8) Stop the machine and check it immediately when hearing unusual sound.