

INSTRUCTION and SAFETY MANUAL
for
METALLOGRAPHIC SPECIMEN CUTTING MACHINE
MODEL AC-100/AC-80/Q-100B/Q-80Z



PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

CAUTIONS and SAFETY NOTE

Following instruction shall be followed to prevent from fire hazard , electric shock and injury:

1. Read carefully 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 machine.
4. Should 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 after market service.
5. Remove the power plug prior to clean the surface 。 Detergent or kerosene is forbidden 。
Wet rug is all right
6. Don't place the machine onto unstable table 。 Otherwise ,serious injury may happen when falling down in case 。
7. Nothing is allowed to put on the machine 。
8. Don't overload the power socket in case of fire hazard or electric shock 。
9. Don't try to dismantle the cut-off machine to prevent from electric shock 。
10. Only qualified maintenance technicians are allowed to repair the machine 。
11. You will be exposed to dangerous voltage or other danger once the cover is opened or removed 。
12. Improper reassembling may result in future electric shock 。
10. Remove the plug and call qualified technician in following cases:
 - 1) The cable or plug is damaged or worn out 。
 - 2) The machine can't run in normal operation 。
 - 3) The machine falls down or the shell is damaged 。
 - 4) Sudden and obvious change occurs to the performance。
11. Only the parts mentioned in this instruction manual are allowed to adjust 。
12. Keep the manual

1. Descriptions:

The cut-off machine is composed of the frame, electric box, cut-off chamber, motor, cooling circuit, cutting abrasive chip, etc. Not only can it cut-off those round bars under the diameter of 100mm, but also can cut rectangular specimens ranging within 100mm height to 200mm depth. The built-in cooling circuit could help to prevent burning the tissue due to overheating during the cut-off process. The cut-off speed is adjustable depending on different specimens, resulting in improving the quality of specimens. It can be operated either automatically or manually. Its large-capacity cut-off chamber facilitates its operation. It is one of the specimen-making equipments necessary for metallographical test in colleges and factories.

2. Technical parameter:

- 1) power : 3phases ,4cords ,2.2kw
- 2) Rotation rate of abrasive disc: 2000rpm
- 3) Specification of abrasive disc: 350mm×2.5mm×32mm
- 4) Max. cut-off diameter: 100mm round bar
- 5) Max. cut-off capacity : 100mm×200mm
- 6) Motor: YS802, 3phases ,380V,50HZ
- 7) Dimensions of cut-off table : 310mm×280mm

3. Method 1: Comparison Table of Cut-Off Speed

Select cutting speed according to various diameters

Cutting speed: mm/min

Diameter of specimens	Under ϕ 10	ϕ 10-15	ϕ 15-25	ϕ 25-35	ϕ 35-55	ϕ 55-75	ϕ 75-100	Over ϕ 100
Cutting speed	15	12	9	7	5	4	3	2.25

Method 2: automatic mode

- 1) Fix the specimen between the anvils of cutting chamber to pinching screw on the "L" tongs and clamp the specimen with hand, and reghten the screw .
- 2) Select cutting speed as per Method 1. Turn on the power switch and choose right speed by pressing the cutting speed setting button until the LCD indicates the selected speed.
- 3) Press "auto/manual" button to choose auto mode.
- 4) Rotate the hand-wheel of cutting chamber , the abrasive disc contact the specimen ,but not let the disc contact the specimen.
- 5) Press the "start" button to start the motor, Then the machine will cut-off the specimen automatically . Press the "pump" button to cool down the specimen during the cut-off process.
- 6) After cut-off is completed , press the "withdraw" button, then the cut-off motor stops cutting and step motor is actuated to withdraw the tools.
- 7) In cases the operator is not present in the process of cut-off , it will stop automatically and withdraw the tools at the end of cutting operation.

Method 3: cutting the specimen manually

- 1) Press “power” button to turn on the power .
- 2) Press the “auto/manual” button to select manual mode.
- 3) Fix the specimen as per Article 1 of Method 2 .
- 4) Press “start” button to start up cut-off motor.
- 5) Press the “pump” button to start up coolant .
- 6) Rotate left – handed wheel to start cut-off manually
- 7) At the end of cut operation , withdraw the abrasive wheel to original position.

4. Maintenance and safety note :

- 1) The power of this machine is of three phases and four cord plug. The power socket must be grounded.
- 2) The water pipe should be free from leakage and block out .
- 3) Clean and maintain the machine in time at the end of shift .
- 4) Should any abnormal noise be heard . stop the machine immediately

Cautions: Power must be turned off prior to specimen clamping.

Power socket in connection with the machine must have zero line.