

User's Manual for DXMM-20C80 Magnetizer

Summary

DXMM-20C80 magnetizer can be used for magnetizing products made of permanent magnets, such as speakers, DC motor, DC fan, stepper motors, rubber magnets and magnetic toys, with excellent performance of low energy consumption, high efficiency, and fast magnetization.

Constitution principle

DXMM-20C80 magnetizer is composed of high-pressure oil-immersed capacitor SCR (SCR) and control circuit. Rise the power supply voltage, transform to DC through a rectifier to charge the capacitor. The high-voltage direct current energy stored in the capacitor, through control SCR, high-voltage energy discharges the magnetizing coil to generate a strong magnetic field to magnetize the magnet saturation.

Feature

- 1) Adopting the patent technology of energy recovery, low power consumption, high magnetizing efficiency and no need to cool down the coil;
- 2) Magnetizing time: 1.0-3.0 sec/time, the efficiency is 2 times of the same level magnetizer
- 3) Can work for long time due to stable lines

Technical parameters

- 1) Input power: AC220V \pm 10%
- 2) Input current: about 40A
- 3) Charging voltage: 10V-2500V
- 4) Output current: maximum 30KA
- 5) Magnetizing time: 0.1-2 millisecond (determined by the load)
- 6) Charging magnetizing interval: 0 -6.0 sec/time
- 7) Main control component: silicon-controlled rectifier (SCR)
- 8) Electric capacity: 8000uF
- 9) Biggest stored energy: 25KJ

Note

1 preparation before the operation:

- 1) Connect the output cable and capacitance wire to corresponding terminal (Tightly lock the screw). As for the multi-polar magnetized products, you should firstly connect the cooling water route and pneumatic section, then complete this step. Magnetizing solenoid doesn't need to be cooled down.
- 2) Fix power cable on 220V power supply. The air switch should be more than 40A.

- 3) The specification of power supply wire should be copper wire with 6-10 square millimeters;
- 4) Turn the charging voltage to the smallest (except the automatic set-up in the internal.)
- 5) Select eligible specification of air switch (40A with leakage protection);
- 6) Verify the magnet polarity is correct in the process of magnetization, if any loss caused by error, our company is not responsible.

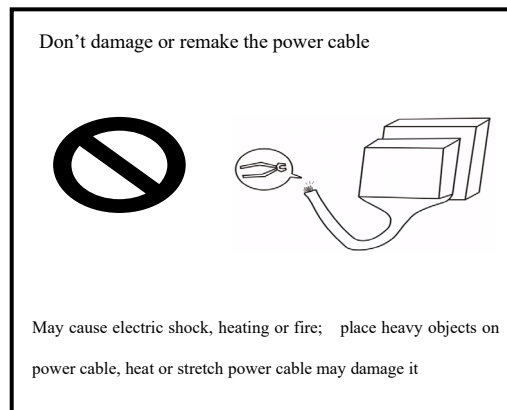
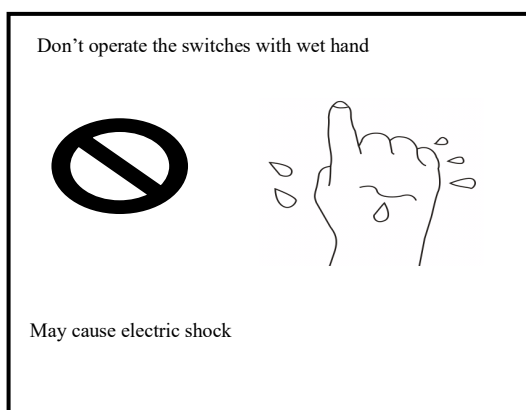
2 Starting up and running:

- 1) Connect the foot switch, connect to the external AC220V power, turn on the power switch (POW. SWITCH), power indicator light, fans begin to work;
- 2) Adjust the charging voltage setting knob. The charging voltage would increase with the adjusting range. The internal set maximum output voltage is 2500V. If users need lower voltage to magnetize, they could appropriately turn down the setting knob;
- 3) Put the sample on the magnetizing coil solenoid and fix it by fixture in order to avoid sample's popup. As for the multi-polar magnetized samples, please open the section of cooling water circulation. The ejector rod of control cylinder will place sample in the luggage carrier. Place the magnetizing sample in the magnetizing fixture, then press the foot switch. Battery charging and magnetizing would complete at the same time;
- 4) After completing magnetizing, take out the sample for the circling magnetizing next time;
- 5) Before power off, adjust the voltage setting knob (VOT.SET) and trigger a foot switch by counter-clockwise rotation to the end (to zero), then turn off the main switch;

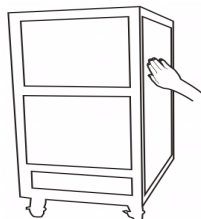
Other description

- 1) It cannot magnetize the sample triggering the foot switch at first time. This process is to charge the capacitance. Until the charging voltage to a certain set value, each time you trigger the foot switch, it will magnetize the sample.
- 2) The shift of magnetizing and demagnetizing: The terminal switch in the upper end is demagnetizing function. Shift during mid time, please turn down the voltage knob and then shift it.

Safety caution

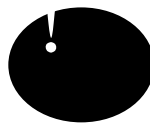


Amateurs do not open the equipment or touch the internal components



May cause electric shock (high voltage inside the machine)

If need to repair, please let professional service technician do or contact us



Improper repair may cause electric shock or fire

Equipment maintenance and notes

- 1) This device is a high-voltage electrical equipment, the working environment must be dustproof, moisture, ventilation, preventing the conductive dust flying into the body, if occurred, the conductive dust should be immediately cleared; (such as using air guns)
- 2) Set the magnetizing strength according to the actual production, if too high, the power consumption will be large and magnetizing fixture will be hot, which will affect service life; generally do not exceed 2500V (the voltage of the machine has been set).
- 3) Do not place the equipment near electrical equipment such as computers, air conditioners, do not place any item on the equipment;
- 4) Do not place any object within the equipment ventilation district 300mm, no flammable, explosive objects or corrosive gas near it.
- 5) The wire of this equipment can not be placed in the aisles, do not damage any wires;
- 6) Do not upside down or recline the equipment during handling and transportation, if need to tilt, the tilt angle can not be more than 45 degrees;
- 7) In order to avoid the risk of electric shock, do not open the cabinet. If need to repair, it should be done by a qualified professional service technician or notify the company to send someone to repair. Any electrical shock caused by self-disassembly, self-maintenance or improper operation, our company is irresponsible;
- 8) Without our permission, the user can not open the host during warranty period. Warranty is only valid under normal use, please operate in accordance with the instructions. Man-made damages caused by maintenance without our permission, self-disassembly, connecting inappropriate accessories, equipment waterlog or impurities, migration and accessories required update exceeding warranty period are not within the scope of the warranty. Due to wearing or the limitation of service lifted, the external devices are not covered by the warranty, such as foot switch, magnetizing fixture, indicator lights, fans, voltmeter, timely maintenance and replacement;
- 9) Do not place metal tools, electronic components, watches and other items near the magnetizing fixture or cable during operating;
- 10) Make sure that the main power is turned off and the energy storage capacitor is discharged before overhaul;
- 11) Turn off the power after operation;



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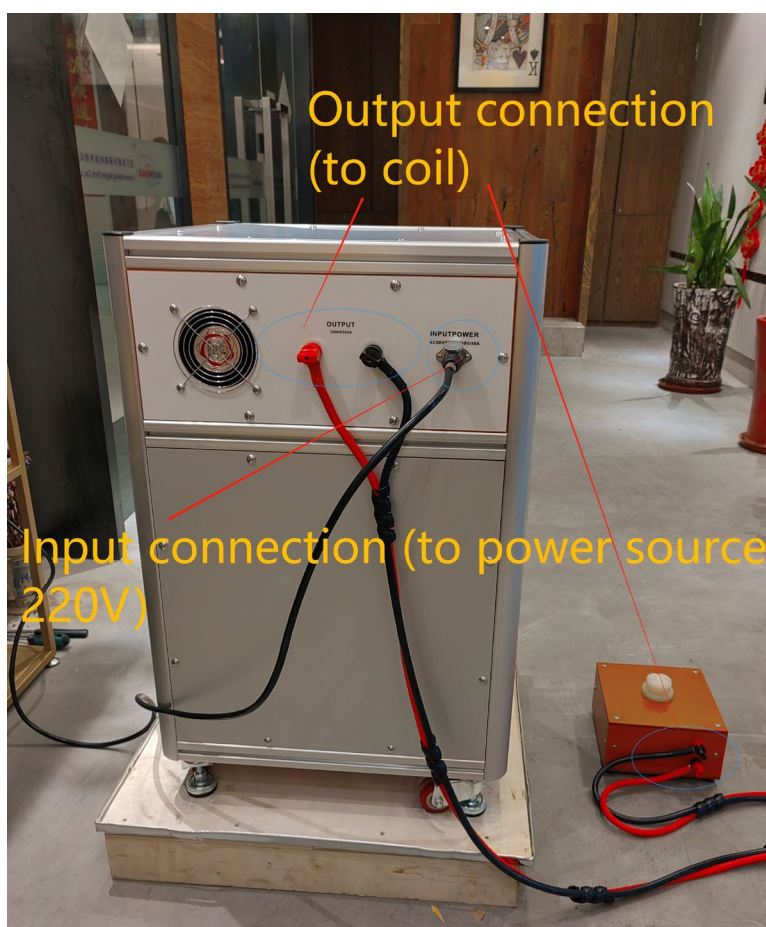
- 12) Please use the specified coil. If use close to the short-circuit of the coil, the large current may damage the SCR;
- 13) The products sold by our company has our dedicated nameplate, which is the credential of the after-sales service warranty, please keep it well. If damaged (the words is unclear) or lost, this equipment will not enjoy free warranty service.
- 14) The power line should be inspected according to safety standards before operation every time; it should be replaced every six months;
- 15) Magnetizing fixture should use radiator coolant in car as cooling liquid, (replace frequently when using water) and within the normal range of liquid level.
- 16) If occur failure, the equipment should be stopped immediately, continue to work after removing the fault.

Technical Parameters

Power source model	DXMM-20C80
Input voltage	50Hz 220V/40A
Output voltage	10-2500V
Charge voltage fineness	1V
Electric capacity	8000uF
Biggest pulse current	30KA
Biggest stored energy	25KJ
Magnetizes the cycle	0-6s
Quantitative Mode	Surface Gaussian Value
Function of Demagnetization	Yes
Pulse Current Output Control	SCR (Silicon control trigger circuit)
Communication Interface	RS232
Size & Weight	600x600x1000mm, 90kg

DXMM Impulse Magnetizer

1. Installation and connection



2. Display of Main Panel



Display of main panel

1. Power switch and indicator light
2. Trigger key and interface, turn on to realize to one-key trigger
3. Current direction selection, the left side is forward, the right side is reverse
4. Forward voltage setting
5. Reverse voltage setting
6. Capacitor voltage indication
7. Charge and discharge indicator light

3. Operation Process

(1) Operation for Regular magnetization

Step 1 Power Switch: Turn on the power switch, the indicator light will be on.

Step 2 Magnetization: Adjust and set the forward voltage value, turn the current direction selection knob to the magnetization gear on the left, press the start button, start automatic charging, and reach the set voltage value, then stop charging immediately and discharge once, and complete once.

Step 3 Demagnetization: The power supply with bidirectional output current function can realize the demagnetization function. Turn the current direction selection knob to the right, demagnetize the gear, adjust and set the reverse voltage value, and automatically complete a charge and discharge after pressing the start button.

(2) Operation for Quantitative magnetization

Sample 1#, after saturation magnetization, assuming the surface magnetic value of the measuring position is 1050GS, the target value of magnetization is 900GS

① Software Control Method

Automatic quantitative magnetization can be realized simply by using the control intelligent software.

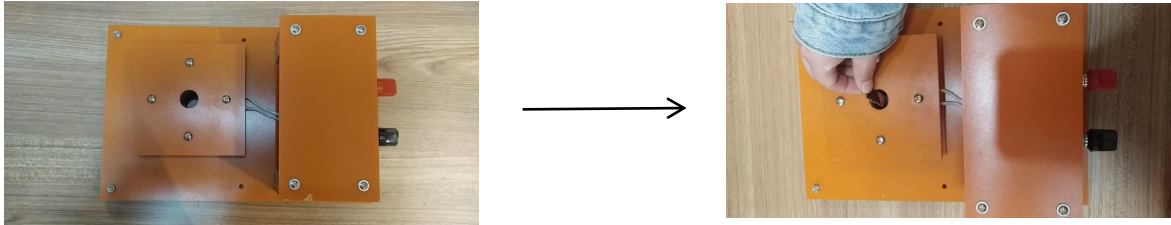
According to the shape & size and the position tested of end user's specific samples, producer would specially design magnetizing coils so that the hall probe will be fixed on an specific position with the coil & samples to measure the sample's surface magnetism to make sure the accuracy of the sample's surface magnetism measured .

Above design is for making sure the whole system for quantitative magnetization can be controlled by the control software to realize one key to complete quantitative magnetization.

② Manual Control Method

Step 1 Sample Placement:

Placing sample into the magnetizing coil.



Note, During the process of magnetization and demagnetization, the front and back sides of the magnet placed in the coil should be consistent.

Step 2 Forward saturation magnetization:

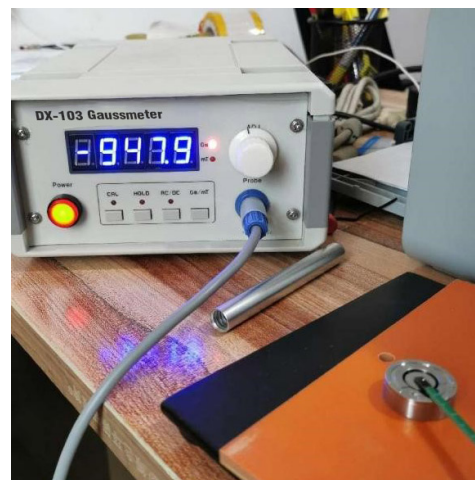
Turning the current direction knob to the forward direction (i.e. Choosing the function of magnetizing), setting the forward voltage value (eg.1015V) to make the forward magnetic field reach sufficient saturation magnetization, pressing the button to trigger.

After the system automatically completes charging and discharging, take out the sample and measure the corresponding position. If the surface magnetic value is about 1050GS, it means that it has reached saturation;



Step 3 Reverse demagnetization:

Putting the sample into the coil again in the same direction, turning the current direction knob to the opposite direction (i.e. Choosing the function of demagnetizing), and roughly to estimate a reverse voltage according to the target value, such as 80V, pressing the button to trigger that the system automatically completes charging and discharging, and then take out the sample, and then measure the surface magnetic value of the corresponding position. If it is the value which is more than 900GS (eg.947.9Gs), it means that the demagnetization is too much, that is, the reverse voltage of 80V is too high.



Step 4 Step-by-step approximation method for demagnetization

Repeating steps 2-3, that is, repeating step 1 to magnetize the sample to be state of saturation once again, and then repeating step 2 to adjust the reverse voltage value to 60V.

If the measurement result still does not reach the target value, continue to repeat steps 1 and 2 for several times to find the most suitable reverse voltage.