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**MLP-MP30**  
**Model Automatic Mounting Press**  
**OPERATION MANUAL**



**Special Warnings**



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

- ◆ Read carefully all the operation instructions. Keep the manual.
- ◆ Keep in mind the elementary knowledge of electrical appliances.
- ◆ Abide by all the warnings and instructions either marked on the product or mentioned in the documents delivered with the machine.
- ◆ Should any discrepancy be found between the instructions and safety notes, the safety note shall prevail .For more details .please refer to the sales agency or after market service .
- ◆ Remove the power plug prior to clean the surface .Detergent or kerosene is forbidden .Wet rug is all right .
- ◆ Don't place the machine onto unstable table .Otherwise ,serious injury may happen when falling down in case .
- ◆ Nothing is allowed to put on the machine.
- ◆ Don't overload the power socket in case of fire hazard or electric shock.
- ◆ Don't try to dismantle the mounting press machine to prevent from 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 .
- ◆ 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
- ◆ Only the parts mentioned in this instruction manual are allowed to adjust.

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**1. Foreword**

This machine is designed for purpose of the last process before polishing. It is setting up those small, difficult-to-hold or irregular specimens for metallographic test. It can facilitate polishing and watch properly the ideal material structure and measure the hardness of the material by hardness tester.

In the sample preparation process, this machine is controlled by automatic program, including automatic heating, pressing, automatic cooling and automatic shutdown relief. This machine has the following features such as humanize, easy operation and Superb efficiency.

It is an ideal equipment for factory, scientific research institution and colleges universities laboratory.

1.1 working principle

- ◆ motor-driven gear, screw and other components, make the lower mold do upward movement.
- ◆ the subsequent pressing force of mosaic material squeeze the spring.
- ◆ When pressed into the spring limit switch, pressure start time, with the mosaic materials melt the spring will continue to squeeze until the end of the dwell time.

1.2 working principle

This machine mosaic materials is limited to a thermosetting material. pressing temperatures for different thermosetting material can be adjusted and customized according to the material.

For thermoplastic materials (such as transparent inlaid powder), the machine can not sample.

**2. Main Technical Parameter**

- ◆ Punch diameter of specimen: Φ22, Φ30, Φ45 (select one of these standard configurations when ordering)
- ◆ Thermoforming ranges: 100-200°C
- ◆ Cooling temperature range: 20-90°C
- ◆ Holding time range: 0-999s
- ◆ Heating power: 600W
- ◆ Input voltage: AC220V 50Hz
- ◆ Overall dimensions: 350mm×400mm×470mm

### 3. Machine Schematic Drawing



Please read the following terms!

### 4. Installation & Precaution

- 4.1 Equipment must have a good grounding, you must use the three-pole standard power outlet.
- 4.2 Equipment should be installed in a stable, vibration-free work surface. Environment should be ventilated and dry. Temperature range is 10 °C-30°C. Relative humidity is less than 85%, surrounding without corrosive gas and conductive dust.
- 4.3 Upper knob and the top of device is a little hot, take care in the processing.
- 4.4 There is a small amount of smoke while first heating, it is a normal phenomenon.

### 5. Screen Displays and Operating Instructions

#### 5.1 Panel operating instructions

All the keys on the panel are open to the user, its function shown in Table 5-1.

Table 5-1 Key Description

| Key   | Key name     | Mark   |
|---|--------------|--|
|    | Shuttle knob | Used for parameter setting; Stop the key combination into the system settings interface                          |
|   | Up           | Control the rise of the mosaic mold; System Settings Interface Restores system default parameters                |
|  | Down         | Control the falling of the mosaic mold   |
|  | start        | Start a mosaic process   |
|  | stop         | Stop this mosaic; Shuttle button combination into the system settings interface; Exit the system setup interface |

Note: pressing the emergency stop button will stop any operation. And the following screen is displayed. Rotate the emergency stop button to restore the main interface to operate the device properly.



Fig. 5.1

5.2 System entry

The front panel of the device is shown as shown in Figure 5.2. In this interface can modify the mosaic parameters, the operation of the mosaic mode of the rise and fall and mosaic process start and stop.

|            |        |
|------------|--------|
| TEMP.      | 145 °C |
| Delay-1    | 300 s  |
| Delay-2    | 125 s  |
| Cool TEMP. | 60 °C  |

Fig. 5.2

5.3 Mosaic parameter setting

You can set all mosaic parameters with the shuttle knob, as follows:

5.3.1 Parameter selection

When all parameters are yellow or red, you can select the parameters by rotating the jog dial, the selected parameter will turn red as shown in Figure 5.3.

|            |               |            |              |
|------------|---------------|------------|--------------|
| TEMP.      | <u>145</u> °C | TEMP.      | 145 °C       |
| Delay-1    | 300 s         | Delay-1    | <u>300</u> s |
| Delay-2    | 125 s         | Delay-2    | 125 s        |
| Cool TEMP. | 60 °C         | Cool TEMP. | 60 °C        |

Fig. 5.3

5.3.2 Parameter activation

When a parameter is selected after the parameters of the font color red, then press the shuttle knob, the parameters become light blue, as shown in Figure 5.4, this parameter is activated, you can modify, press again After the shuttle knob is activated, the parameter is inactive and the parameter font turns red.

|            |              |            |              |
|------------|--------------|------------|--------------|
| TEMP.      | 145 °C       | TEMP.      | 145 °C       |
| Delay-1    | <u>300</u> s | Delay-1    | <u>300</u> s |
| Delay-2    | 125 s        | Delay-2    | 125 s        |
| Cool TEMP. | 60 °C        | Cool TEMP. | 60 °C        |

Fig. 5.4

5.3.3 Parameter Description

TEMP: Heating temperature, which is the average temperature that needs to be controlled during system preparation. The setting range of this parameter is 100~200°C (135 °C recommended for phenolic resin mosaic powder).

Delay-1: When the parameter setting is greater than zero, the heating temperature reaches the set temperature during the setting process and the extrusion time is delayed after the set time. This mode is beneficial to the large particle transparent inlay; if the parameter is set At 0, the entire inlay process maintains a constant pressure and is suitable for conventional inserts. The setting range is 0~999 seconds.

Delay-2: When the set temperature and pressure are satisfied at the same time, the system starts counting down according to the set value of the parameter, that is, the holding pressure delay, the setting range is 0~999 seconds.

Cool TEMP: The mosaic powder that is heated and melted during the inlay process is not sufficiently cooled, and the resulting mosaic block will have a bulging phenomenon. The parameter setting range is 20~90°C, and the general setting temperature is 60~70°C.

5.4 Device status information

When the user operates on the device, the status information of the device is displayed in the lower left corner of the display. The following is a description of the device status information:

5.4.1 Such as when the user press the drop button mosaic mold began to automatically drop until the lower left corner of the display shows "Upper limit" no longer rise, as shown in Figure 5.5.



Fig. 5.5

5.4.2 Such as when the user presses the up button inlay the mold starts to automatically rise until the lower left corner of the display shows "Lower limit" no longer drops, as shown in Figure 5.6.



Fig. 5.6

5.4.3 When the lower left corner of the display shows "ERROR" as shown in Figure 5.7, it indicates that the device has more than one limit at the same time, Should require professional maintenance equipment. Check the limit switch is faulty, Whether the line is loose open welding. When the mosaic material is too large, this alarm will be produced.



Fig. 5.7

5.4.4 The device is automatically pressurized during the mosaic process.

When the lower left corner of the display shows "Pressure ready" as shown in Figure 5.8, the device pressure is reached and the device is automatically pressurized when the status message disappears until the pressure is restored "Pressure ready".



Fig. 5.8

5.4.5 When the sampling process occurs in the mosaic block, mosaic die stop automatically rising and in the lower left corner of the display as shown in Figure 5.9 "Please press up" At this point the user needs to hand on the mold, press the up button to force sampling.



Fig. 5.9

### 5.5 Method of operation

Example: mosaic material jade powder; room temperature 8 °C -20 °C, heating temperature 135 °C; holding time 200 s; cooling temperature 80 °C

- Please connect the inlet and outlet, keep the interface is not leaking.
- Unscrew the upper gland, remove the linoleum between the upper and lower molds, wipe the upper and lower molds and the antifoam oil on the cylinder liner (for the first time).
- Turn on the power of the device and unscrew the emergency stop knob.  
According to the characteristics of inlay material, through the shuttle knob to set the appropriate sample preparation parameters.  
In this example, the heating temperature was set at 135 °C, the holding time was 200 s, and the cooling temperature was 80 °C
- Press the "Up" button to raise the lower mold and place the specimen to be stowed on the lower mold. Press the "drop" button, the lower mold down to the end, add the appropriate amount of mosaic materials. If the sample is not easy to firmly placed on the lower mold, should be along the side edge plus mosaic.



Fig. 5.10



When the lower mold reaches the uppermost end, the residual material around the lower mold is cleaned. Be sure to confirm the position of the lower die before pressing the "Down" button at the bottom of the screen.(Fig. 5.10)

d. Cover the upper gland. (Fig. 5.11)



Fig. 5.11

- f. Press "Run" to start sampling. After the cooling is complete, the device is automatically depressurized and has a beep.
- g. Turn the upper grommet counterclockwise to make sure that the gland is released and then press the upper gland on the cover. Press the "up" key and the mosaic will automatically lift and remove the specimen.  
In this process, if the mosaic block is jammed, the mosaic die will stop automatically. At this time, the screen will display "Please press up". The user applies one hand to the upper gland, and the other hand holds the rising key to perform the forced sampling operation.  
Rotate the top cover counterclockwise, from "OFF" to "ON" position.(Fig. 5.12) When the release of the plug can be released after the release button, then mosaic mold automatically rise.



Fig. 5.12

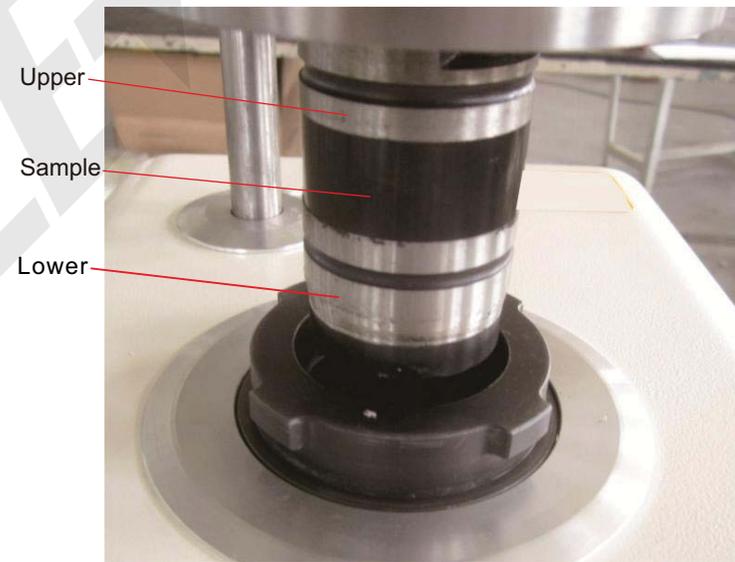


Fig. 5.13

**Precautions:**

The upper cover cannot be removed (Fig. 5.13) until it is determined that the lower mold is not freely movable, so as to prevent the lower mold and the sample from being injured!  
When the lower mold is not ejected, do not use the eyes to look down from the top of the insert sleeve to the inside of the insert sleeve! In order to avoid the sample and the lower mold popping hurt!



**5.6 Suppress the sample elements**

Qualified samples should be regular cylinders, the surface is smooth, the workpiece is firmly embedded in the center.  
In the sample pressing process, the heating temperature and holding

time and cooling temperature and material is a key factor in pressing the sample.

◆ Samples by heating, the forming pressure mainly rely on the spring to automatically adjust the compensation.

◆ The sample appears as shown in the following list of various states, it is recommended to increase the appropriate holding time, reduce the cooling temperature.

A The specimen has a concave and convex shape



1

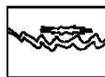


2

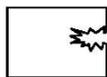


3

B The sample cracks and local particles phenomenon



4



5

### 6. Safety Rules



- ◆ Once the operation is completed, you should keep the device cleaning and maintenance work.
- ◆ The machine should be reliable grounding device.
- ◆ To ensure the life of the equipment, prohibited the emergency stop button is used as stop key, In non-emergency situations it is not recommended to frequently operate the emergency stop button.
- ◆ Plastic parts of the machine should be operated at temperatures below -10 °C, you should be particularly careful to avoid damage.
- ◆ When the machine has found abnormal sound, it should be immediately shut down for inspection.

### 7. Simple Trouble shooting

| Failure phenomenon                         | Exclusion methods  |
|--|--|
| No display after pressing the power switch | <ul style="list-style-type: none"> <li>◆ Electrical power is good</li> <li>◆ Power cord and socket contact is good</li> <li>◆ Fuse is not open circuit</li> </ul>            |
| No response after pressing run key         | <ul style="list-style-type: none"> <li>◆ The key is not damaged</li> <li>◆ LCD screen display is normal</li> <li>◆ The device is not in the upper and lower limit</li> </ul> |
| Inlet valve is not controlled              | <ul style="list-style-type: none"> <li>◆ Water too dirty, repair or replace the inlet valve</li> <li>◆ Electrical Wiring Fault</li> </ul>                                    |

## 8. Wiring Diagram

