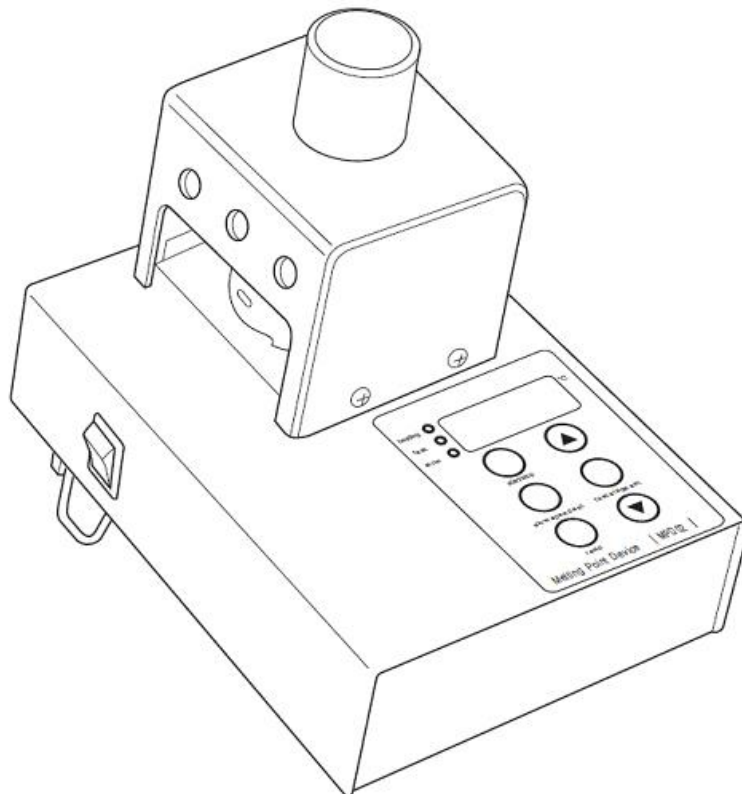




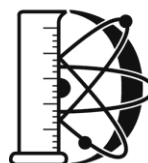
# Melting Point Device

## DMP100 OPERATING MANUAL

VERSION 1.11



February 2022



Dynalon®  
Labware

## **IMPORTANT: - SLOW SPEED SETTING**

The DMP100 has been designed not to overheat the test sample at the measuring time.

When the fast temperature set point has been reached and the slow speed stage has been started the heating will be equalized which will cause the temperature to drop slightly. After 1-2 minutes the heating temperature will start to increase by the rate set by the slow speed setting. This will prevent overheating of the sample and to eliminate incorrect results.

When you set slow speed at low speed, such as 2 C/min, (default setting) it will normally take 2 minutes to see the temperature start to increase.

You can set the slow speed at higher setting such as 5-10 C/min for a reduced wait time.

The slow speed setting controls the speed of temperature increase once the fast setting has been reached. The lower the slow speed number selected the slower the temperature increase will be.

e.g., 2C setting will increase the temperature by approx. 1C every 30 seconds whereas a setting of 10C will increase the temperature by approx. 1C every 6 seconds.

## BEFORE USE:

Please read the following instructions:



**Read the Manual first before operating the instrument**



**For indoor use only**



**Ambient temperature range +5°C to +40°C**



**Use in a well-ventilated area.**



**Relative humidity not exceeding 80%**



**Voltage supply fluctuation not exceeding 10%**

## Warning



***ALL UNITS MUST BE GROUNDED***

**Check that the line supply is sufficient to meet the power requirement of the unit!**

## **Warranty**

**Dynalab Corp., Inc. provides the three-year limited warranty for the units in this series.**

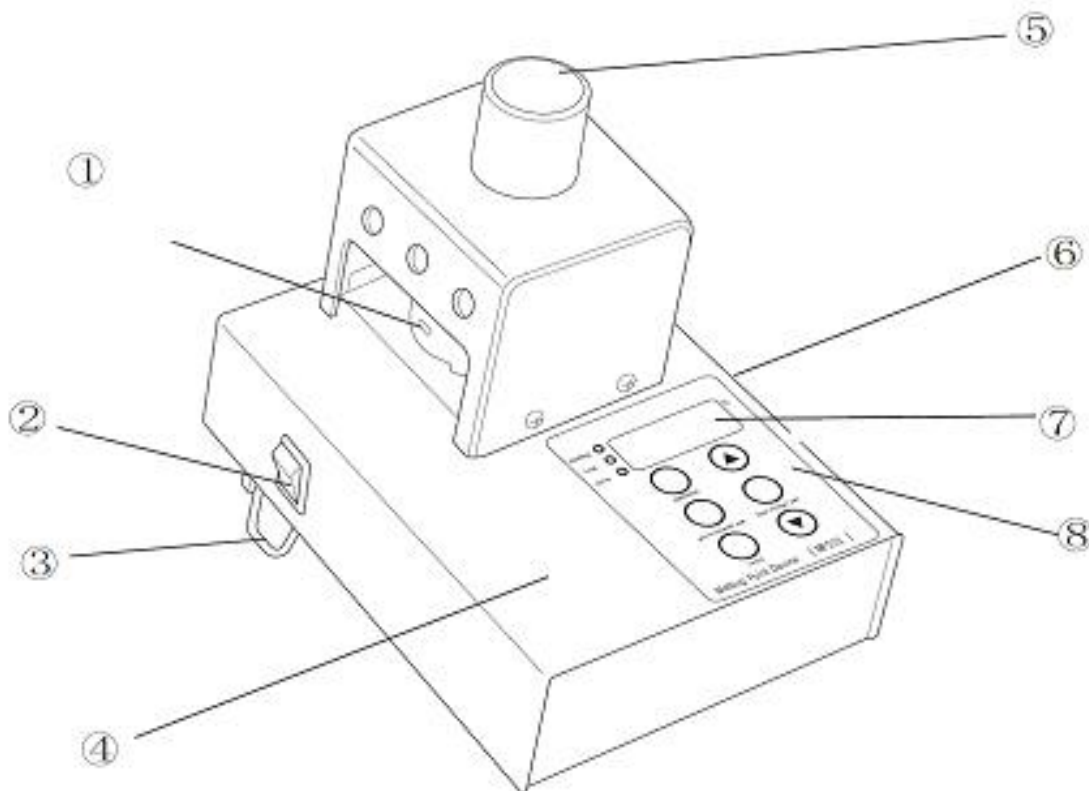
**This warranty does NOT apply if damage is caused by fire, accident, misuse, neglect, incorrect adjustment or repair, damage caused by incorrect installation, adaptation, modification, fitting of non-approved parts or repair by unauthorized personnel. When returning the defective products, customers should be responsible for the shipping and insurance costs.**

### **LIMITATION OF LIABILITY**

**NOTWITHSTANDING ANY OTHER PROVISIONS HEREIN, UNDER NO CIRCUMSTANCES IS EITHER PARTY LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, INDIRECT, MULTIPLE, ADMINISTRATIVE, OR PUNITIVE DAMAGES, OR ANY DAMAGE OF AN INDIRECT OR CONSEQUENTIAL NATURE ARISING OUT OF OR RELATED TO ITS PERFORMANCE, WHETHER BASED UPON BREACH OF AGREEMENT, WARRANTY, OR NEGLIGENCE AND WHETHER GROUNDED IN TORT, CONTRACT, CIVIL LAW, OR OTHER THEORIES OF LIABILITY, INCLUDING STRICT LIABILITY, EVEN IF ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES. THE COMPANY'S TOTAL LIABILITY INCLUDING, BUT NOT LIMITED TO, LIABILITY FOR INDEMNITY, DEFENSE, AND HOLD HARMLESS OBLIGATIONS IS LIMITED TO NO MORE THAN THE AMOUNT PAID TO THE COMPANY UNDER THE CUSTOMER'S ORDER AND THE CUSTOMER AGREES TO INDEMNIFY THE COMPANY FOR ANY EXCESS AMOUNTS. TO THE EXTENT THAT THIS LIMITATION OF LIABILITY CONFLICTS WITH ANY OTHER PROVISION(S) OF THIS AGREEMENT, SUCH PROVISION(S) WILL BE REGARDED AS AMENDED TO WHATEVER EXTENT REQUIRED TO MAKE SUCH PROVISION(S) CONSISTENT WITH THIS PROVISION**

## Overview

The DMP100 is a portable and easily operated melting point device. It has been developed for replacement of the glass thermometer type melting point apparatus. A clear vision view is obtained via a magnified lens, appropriate view angle from the extendible feet, and bright vision through the built in LED light.



**Figure 1: Overview of the Melting Point Device (DMP100).** ① Sample tube chamber; ② Switch; ③ Extendible feet; ④ Main body; ⑤ Viewer; ⑥ Electrical socket; ⑦ Temperature display; ⑧ Control panel

The DMP100 can measure two different samples simultaneously. The product includes one pack of 100 glass capillary tubes (SMP10/1), open one end. Samples are placed in one or two tubes and inserted into the two holes of the sample chamber (Figure 1, ①). When starting the device, the heated block in the sample chamber is heated and the samples are viewed through the viewer (Figure 1, ⑤) until the samples melt. The melting point temperature can be easily read from the temperature display (Fig 1, ⑦). To minimize the viewing time, the heating rate has two different speeds: fast and slow speed. The fast speed runs at less than or equal to 20°C/min to reach a certain temperature point which is called “fast stage”. The user does not need to keep viewing samples at this point. Once attained, the “Fast” light comes on, and the temperature holds steady until further action. The fast stage point can be empirically or experimentally determined. The fast stage is normally set at 10°C below the known melting point of the samples.

The slow speed can be set at any point between 1°C/min to 10°C/min. The user can start the slow speed and view the melt only after the “Fast” light comes on.

### Technical Specification

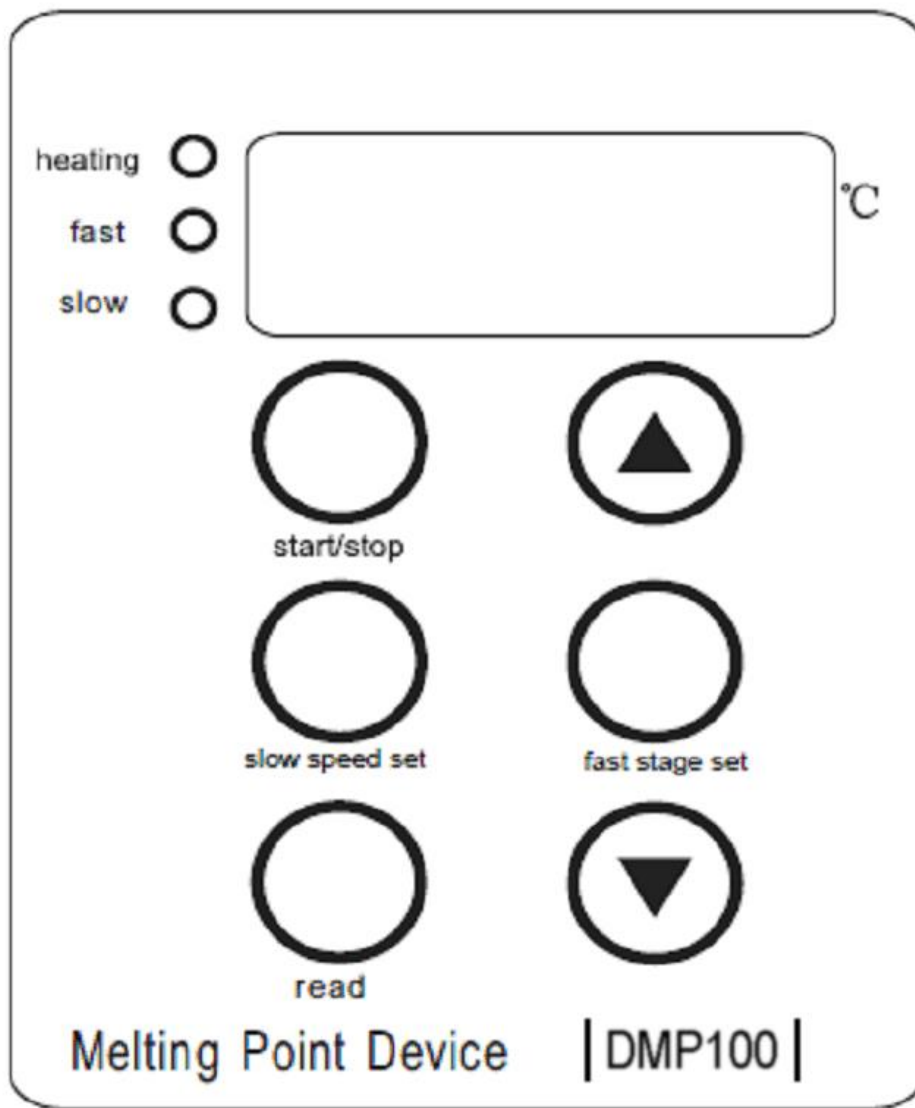
Temperature range (°C )	Ambient to 300
Temperature accuracy (°C )	± 1.0 at 20°C, ± 2.5 at 300°C
Display	Four digit LED
Display resolution (°C )	0.1
Readout hold	Yes
Number of samples	2
Fast Stage Ramp rate (°C/min )*	</= 20°C adjustable between 1 to 10
Slow Ramp rates	160 x 220 x 170mm
Dimensions (w x d x h)	1.8 Kg
Net weight	230V, 50Hz, 75W
Electrical supply	

\*Fast stage rate is dependent upon the variance from the ambient temperature.

## Operation

Place the unit on a firm and flat surface and make sure that the extendible feet are in a position that provides a good viewing angle.

1. Plug the unit into an electrical outlet with correct voltage.
2. Turn on the unit. Be certain all the indicating lights (heating, fast and slow) are off. If not, press the “start/stop” button. The light in the viewer will be on at this time and the temperature display will show the current heated block temperature.



**Figure 2: Overview of the control panel of the Melting Point Device (DMP100).**

3. Prepare the samples: place the sample into the capillary tube, and slightly tap the tubes to move the samples all the way to the bottom of the closed end of the tube.

4. Setting the fast stage point: Press the “fast stage set” button; the temperature display will show the previous set value. Use the two arrow keys to scroll up or down to the desired value and then release the “fast stage set” button.
5. Setting the slow speed: Press the “slow speed set” button; the temperature display will show the previous set value. Use the two arrow keys to scroll up or down to the desired value and then release the “slow stage set” button.
6. Carefully insert the one or two sample tubes separately into the two holes in the sample chamber. Look through the viewer to see whether the tubes are placed correctly or not.
7. Press the “start/stop” button to start the fast stage heating. The “heating” indicator light will come on and will be on even if the block temperature is above the fast stage set temperature. The temperature display will indicate the rising temperature. The “fast” indicator light will come on and blink when the fast stage set temperature is attained. At the same time the device will beep to remind the user that the fast stage temperature has been attained. Before proceeding further, be certain the “fast” light is on.
8. Press the “start/stop” button again to start the slow speed heating. At this time, the “fast” indicator light will go off and the “slow” indicator light will come on.
9. Continuously view the samples until the samples melt. Press the “read” button once to hold the reading; the “slow” indicator light will blink, indicating the temperature is held at that temperature point through the PID control mode. Record the reading.  
  
To continue, press the “read” button again. The “slow” indicator light will stop blinking and remain on. The temperature will start ramping again at the slow speed setting. This function allows users to measure two different samples that have different melting points.
10. After finishing the measurement, press the “start/stop” button. The unit starts to cool down to room temperature and all indicator lights go off.
11. For the next measurement repeat/adjust procedures 2 – 10.
12. Device is calibrated at factory. If user feels that the device needs re-calibration please contact customer service at [www.dynalabcorp.com](http://www.dynalabcorp.com) for calibration procedure instructions.



## Maintenance and Service

**Be certain that the unit is disconnected from the electricity supply and has cooled to room temperature before attempting any cleaning or repair work.**

**Cleaning:** The unit must be cleaned routinely using a soft cloth. To clean the heating block:

- 1) unscrew the sample chamber cover by removing the three screws; and lift the cover.
- 2) loosen the screws that connect the black plate; do not completely remove it.
- 3) push the plate to one side.
- 4) remove the glass window for cleaning by turning the unit upside-down.
- 5) after cleaning, tighten the screws and put the cover back on.

**Changing the fuse:** A fuse may need replacement if the display and/or block light remains off. To replace the fuse: disconnect the unit from the electricity supply; unscrew the four screws from the bottom of the base and find the two fuses mounted on the electrical outlet; remove the old fuses and replace them with new fuses. Please **NOTE:** the fuse used in 220V is T1A while T1.6A is used in the 110V. Reassemble the base and check for electrical safety before using the unit again. **This must be done by qualified personnel!**



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