

Delmhorst Instrument Co.

## **Model JL-2000** **Owners Manual**

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### **JL-2000 FEATURES**

- 10% to 28% moisture range
- Digital readout
- Built-in calibration check
- Averages up to 100 accumulated readings
- Proven microcontroller circuit for increased reliability and accuracy
- External port for 4-E electrode
- Includes one 9 volt battery
- 1 Year Warranty

### **BUTTON FUNCTIONS**



Read Button (#1) Reads the Percent Moisture Content value %MC.



Check Button (#2) Checks the meter calibration. Displays the average of up to 100 accumulated readings; displays the highest stored reading; erases the readings.

### **CHECK CALIBRATION**

Press and hold the calibration check button (#2) and the read button (#1) simultaneously. Meter is in calibration if it displays 17% ( $\pm .2$ ).

If you check the calibration and the meter does not display 17% it is likely an indication of a low battery. If this occurs, change the battery immediately.

Continued use with a low battery may cause the meter to go out of calibration. If you have a fresh battery and the instrument still does not indicate a proper calibration, return it to DELMHORST for service. See “**Service for Your Meter**” section.

When the battery is removed and then reconnected, the meter displays its software version for one second and then turns itself off.

## **TAKING A READING**

- **Remove the protective cover** to expose the pins. Check that the contact pins #2497/A-100 are firmly hand tightened.
- **Press the read button (#1)**. The meter displays the %MC for two seconds.
- **To add a reading** to the sum of all the previously stored readings, release the read button within two seconds.
- **If you press and hold the read button**, the meter will repeat its read cycle, but will not add a new reading to the storage until the key is released.

## **INFORMATION ABOUT YOUR READINGS**

Readings below 10% will be displayed with a “-” sign. Those above 28% will be displayed as 999. Neither will be added to the accumulated readings or used in calculation of average or highest reading.

The meter will accumulate up to 100 readings. After all 100 readings are stored, it will not add new readings until the memory has been cleared. It will also continue to display the average of all 100 readings as a reminder that the memory is full.

The temperature of the leather is an important factor that affects accuracy of the readings. As the leather temperature increases, its electrical resistance decreases and indicated moisture content rises; the lower the temperature, the lower the indicated moisture content. Depending on the temperature and moisture content, a “correction” may be required.

The meter is calibrated at 70°F (20°C). No correction need be applied if the Leather temperature is between 50°F and 90°F. As a guideline, for every ten degrees less than 50°F, add one point to the reading; for every ten degrees higher than 90°F, subtract one point from the reading.

## TO CHECK THE ACCUMULATED READINGS

This feature displays the total number of accumulated readings, the average of those readings, and the highest stored reading.

- **To view the readings**, press and release the calibration check button (#2). First the meter displays the number of accumulated readings for one second, then the average of those readings for two seconds. Then it displays the highest stored reading for two seconds. The total cycle time is five seconds.
- **To keep the accumulated readings in memory**, release the calibration check button (#2) before the total cycle time is complete.
- **To erase all the accumulated readings**, hold the calibration check button (#2) for more than five seconds. All the accumulated readings will be erased and the meter will display "ZERO."

## CARE OF YOUR METER

To keep your meter in good working order:

- Store your meter in a clean, dry place. The protective carrying case provided is an ideal storage place when the meter is not in use.
- Change the 9-Volt battery as needed. Continued use with a low battery may cause the meter to go out of calibration.
- Change contact pins as needed. Keep pin retainers hand tightened.
- Clean the meter and contact pins with any biodegradable cleaner. Use the cleaner sparingly and on external parts only. Keep cleaner out of the external connector.
- Remove the battery if the meter will not to be used for one month or longer

## SERVICE FOR YOUR METER

- Pack your meter securely. Enclose a purchase order or letter with a brief description of the problem.
- There is no need to call us for a return authorization number if you are within the U.S. Customers outside the U.S. must contact us for more specific instructions prior to returning a meter.
- Include your name, address, daytime phone and fax numbers or e-mail

address. If you believe the meter is under warranty, please provide the original sales slip or invoice.

- Ship via UPS, Express Mail, Priority Mail or any overnight courier who provides prompt service. Do not use standard parcel post.
- Insure your instrument for its full value and ship prepaid. We are not responsible for damage in transit.
- We do not accept COD shipments or cover any incoming freight or duty charges on returned merchandise
- Turnaround time on repairs is approximately two weeks.
- We will call you with an estimate if you specifically request one, or if we determine that the meter may be too costly to repair.
- Non-warranty repairs will be returned via UPS/COD unless you have already established other payment terms. There is no COD service outside the U.S. To pay by credit card, include the card number and expiration date with your repair. We accept Visa/MasterCard, American Express, and Discover.
- Warranty repairs will be returned at no charge if shipped within the U.S. via UPS Ground Service. Freight charges for expedited services (i.e., Federal Express, UPS/2 Day, UPS/1 Day, etc.) are the customer's responsibility and will be charged as per the above terms.

## **WARRANTY**

Delmhorst Instrument Co., referred to hereafter as Delmhorst, guarantees its JL-2000 meter for one year from date of purchase and any optional electrodes against defects in material or workmanship for 90 days. If, within the warranty period of the JL-2000, you find any defect in material or workmanship return the meter following the instructions in the “**Service for Your Meter**” section. This limited warranty does not cover abuse, alteration, misuse, damage during shipment, improper service, unauthorized or unreasonable use of the meter or electrodes. This warranty does not cover batteries, pin assemblies, or pins. If the meter or any optional electrodes have been tampered with, the warranty shall be void. At our option we may replace or repair the meter.

Delmhorst shall not be liable for incidental or consequential damages for the breach of any express or implied warranty with respect to this product or its calibration. With proper care and maintenance the meter should stay in calibration; follow the instructions in the “**Care of Your Meter**” section.

Under no circumstances shall Delmhorst be liable for any incidental, indirect, special, or consequential damages of any type whatsoever, including, but not limited to, lost profits or downtime arising out of or related in any respect to its meters or electrodes and no other warranty, written, oral or implied applies. Delmhorst shall in no event be liable for any breach of warranty or defect in this product that exceeds the amount of purchase of this product.

The express warranty set forth above constitutes the entire warranty with respect to Delmhorst meters and electrodes and no other warranty, written, oral, or implied applies. This warranty is personal to the customer purchasing the product and is not transferable.

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For over 50 years, Delmhorst has been the leading manufacturer of high-quality resistance moisture meters. Today we also offer a complete line of portable moisture meters for a variety of applications including woodworking/lumber, agriculture, construction and paper.

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