

J-4

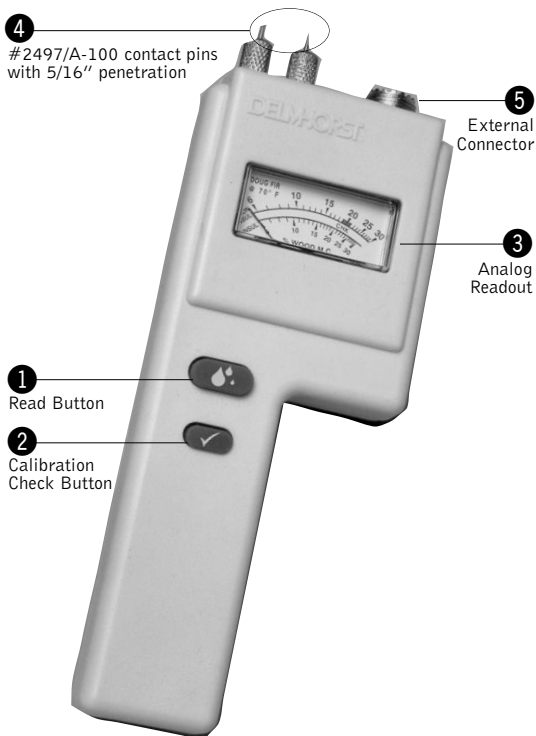
owners manual



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DELMHORST J-4



J-4 FEATURES

- ▶ Resistance technology recognized worldwide as the most accurate method for measuring moisture
- ▶ 6% to 30% moisture range
- ▶ Analog readout
- ▶ Built-in calibration check
- ▶ Temperature-stable circuit
- ▶ Ergonomic case design
- ▶ Easy one-hand operation
- ▶ Includes (1) 9-Volt Battery
- ▶ Includes sturdy carrying case
- ▶ One-year warranty
- ▶ 60 years of proven quality, accuracy and service

CHECK CALIBRATION

Press the calibration check button **2**. Meter is in calibration if the needle pointer moves to "20" on the scale. Any reading within the green band on the dial is acceptable. Make sure the contact pins are not in contact with anything when checking the calibration.

If you check the calibration and the needle does not read within the green band, 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.

TAKING A READING

The contact pins **4** provided are best for stock up to 6/4. On stock over 6/4 or for hardwoods over 4/4 we recommend using a remote probe such as the 26-ES slide hammer electrode. Mount the 26-ES directly to the external connector **5**. See additional information under the **Pin Talk** section.

- ▶ **Remove the protective cover** to expose the pins. Check that the contact pins **4** are firmly hand tightened.
- ▶ **Align the contact pins **4**** parallel to the grain, pushing them their full penetration into the wood, if possible. Insulated pins read only at the tip and can be driven to the desired depth.
- ▶ **Press the read button **1**** and read the moisture content on the meter scale.

UNDERSTANDING YOUR READINGS

Delmhorst uses the USDA standard-Douglas Fir as the basis for all calibrations. For any species other than Douglas Fir and for wood temperature out of the range of 50°F (10°C) to 90°F (32°C) temperature and species adjustment must be made. Correct for temperature first, then species. See temperature correction table on page 4 and species correction table at the back of this brochure for more information.

The J-4 can be used for more than just wood. It will also give a relative reading on plywood, OSB, particleboard and MDF. It can be fitted with a 26-ES slide hammer electrode for specific applications. Call Delmhorst at (877) DELMHORST or e-mail info@delmhorst.com for information on how to interpret the readings for other materials.

TEMPERATURE CORRECTION TABLE

| WOOD TEMP. | | METER READINGS | | | | | | | | | | |
|---------------|-----|----------------|----|----|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| °C | °F | 6 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 |
| -20 | 0 | 9 | 11 | 15 | 22 | 31 | 38 | 45 | 53 | | | |
| -10 | 20 | 8 | 10 | 14 | 20 | 28 | 34 | 40 | 47 | 55 | | |
| 5 | 40 | 7 | 8 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | | |
| 15 | 60 | 6 | 7 | 11 | 16 | 21 | 27 | 32 | 38 | 43 | 54 | |
| 30 | 80 | 6 | 7 | 9 | 14 | 19 | 23 | 28 | 33 | 38 | 47 | 55 |
| 40 | 100 | 5 | 6 | 8 | 12 | 17 | 21 | 25 | 29 | 34 | 42 | 50 |
| 50 | 120 | 5 | 5 | 7 | 11 | 15 | 19 | 22 | 26 | 30 | 38 | 44 |
| 60 | 140 | 4 | 5 | 7 | 10 | 14 | 17 | 20 | 23 | 27 | 34 | 40 |
| 70 | 160 | 4 | 4 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 30 | 36 |
| 80 | 180 | 3 | 4 | 5 | 8 | 11 | 13 | 16 | 19 | 22 | 27 | 33 |
| 95 | 200 | 3 | 4 | 5 | 7 | 10 | 12 | 14 | 17 | 19 | 24 | 28 |
| 105 | 220 | 2 | 3 | 4 | 6 | 9 | 11 | 13 | 15 | 17 | 21 | 26 |

Moisture content values shown in **bold** are only qualitative, since they are above the fiber saturation point.

PIN TALK

There are two types of contact pins - uninsulated, which were provided with your meter, and insulated. When using uninsulated pins, push them in to the wood to their full length, if possible. This will give you the highest measured reading. Insulated pins read only at the tip and can be driven to a desired depth to gather shell and core (gradient) information. Additional types and lengths of both the insulated and uninsulated pins are available for specific applications.

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 contact pins 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 **5**.
- ▶ Remove the battery if the meter will not be used for one month or longer.

SERVICE FOR YOUR METER

- ▶ Before sending in your meter we recommend you give one of our trained technicians a call. Many times troubleshooting can be taken care of over the phone. Call us at **877-DELMHORST**.
- ▶ 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 and American Express.
- ▶ 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 J-4 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, 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 or contact 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.

METER READINGS WITH NON-INSULATED PINS

| | | | | | | | | | | | |
|-----------------------------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| SPECIES | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| ALDER | 8 | 9 | 10 | 11 | 13 | 15 | 17.5 | 19.5 | 21.5 | 24 | 27 |
| APITONG | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 20 | 22 | 24 | 27 |
| ASPEN | 7 | 8 | 9 | 10 | 11.5 | 13 | 15 | 16.5 | 18 | 20 | 21 |
| ASH, WHITE | 6.5 | 7.5 | 8 | 9 | 11 | 13 | 14.5 | 16 | 18 | 19.5 | 21 |
| BASSWOOD | 7 | 8 | 8 | 9 | 10.5 | 13 | 15 | 17 | 19 | 20.5 | 22 |
| BIRCH | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21.5 | 23.5 | 25.5 |
| CEDAR, EAST. RED | 8 | 9.5 | 10.5 | 12 | 14 | 17 | 19 | 21 | 23 | 25 | 26 |
| CEDAR, INCENSE | 7 | 8 | 9.5 | 10.5 | 12.5 | 15 | 17 | 19 | 21 | 23 | 25 |
| CHERRY | 8 | 9 | 10 | 11 | 13.5 | 15.5 | 18 | 20 | 22 | 24 | 26 |
| COTTONWOOD | 6 | 7.5 | 8.5 | 9.5 | 12 | 14 | 15 | 17 | 19.5 | 21 | 23 |
| CYPRESS | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 19.5 | 21.5 | 23.5 |
| ELM, AMERICAN | 7 | 7.5 | 8 | 8.5 | 10 | 11.5 | 13 | 15 | 16 | 18 | 19 |
| FIR, DOUGLAS | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| FIR, RED | 7 | 8 | 9 | 10 | 12.5 | 15 | 17 | 19 | 21 | 23 | 25 |
| FIR, WHITE | 8 | 9 | 9.5 | 10.5 | 12.5 | 15 | 17 | 19 | 21 | 23 | 25 |
| GUM, BLACK | 7.5 | 9 | 10 | 11 | 13 | 15 | 16 | 18 | 19 | 20.5 | 22 |
| GUM, RED | 7 | 8 | 9 | 10 | 12.5 | 14.5 | 16.5 | 19 | 20.5 | 22.5 | 24 |
| HEMLOCK, WESTERN | 7 | 8 | 9 | 10.5 | 13 | 15 | 17 | 19 | 20.5 | 22 | 23.5 |
| HACKBERRY | 7 | 8.5 | 9 | 9.5 | 12 | 13 | 15 | 17 | 18.5 | 20 | 22 |
| HICKORY | 8 | 8.5 | 9 | 10 | 11 | 12.5 | 14 | 15.5 | 17 | 19 | 20.5 |
| KERUING | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 20 | 22 | 24 | 27 |
| LARCH | 7.5 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25.5 |
| MAGNOLIA | 7.5 | 9 | 10 | 11.5 | 14 | 16 | 17.5 | 19 | 21 | 22.5 | 24.5 |
| MAHOGANY, AFRICAN (ALSO KHAYA) | 8 | 9.5 | 10.5 | 12 | 15 | 17 | 19.5 | 22 | 24 | 26 | 28 |
| MAHOGANY, HOND. | 7 | 8 | 9 | 10.5 | 12.5 | 14.5 | 16 | 18 | 19.5 | 21.5 | 22.5 |
| MAHOGANY, PHIL. | 6 | 7 | 7.5 | 8 | 9.5 | 11 | 13 | 14 | 15.5 | 17 | 18 |
| MAPLE, HARD/SOFT | 8 | 9 | 9.5 | 10 | 12 | 14 | 16 | 18 | 20 | 22.5 | 25 |
| MERANTI, DARK RED | 8.5 | 9.5 | 10.5 | 11.5 | 12.5 | 16 | 18 | 20.5 | 22.5 | 24.5 | 26.5 |
| OAK, RED | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| OAK, WHITE | 7 | 8 | 8.5 | 9.5 | 11.5 | 13.5 | 15 | 17 | 18.5 | 20 | 22 |
| PECAN | 6.5 | 8 | 9.5 | 11 | 12.5 | 14 | 16 | 17.5 | 19 | 22 | 24 |
| PINE, LONGLEAF | 8 | 8.5 | 10 | 11 | 13 | 15.5 | 17.5 | 19.5 | 21 | 23 | 25 |
| PINE, PONDEROSA | 7.5 | 8.5 | 10 | 11 | 13.5 | 15.5 | 17.5 | 19.5 | 21 | 23 | 25.5 |
| PINE, SHORTLEAF | 7.5 | 9 | 10 | 11 | 13 | 15.5 | 17.5 | 19.5 | 21.5 | 23.5 | 25 |
| PINE, SO. YELLOW* | 8 | 9.5 | 10.5 | 12 | 14.5 | 16.5 | 19 | 21 | 23 | 25 | 28 |
| PINE, SUGAR | 7 | 8 | 9 | 10 | 12 | 15 | 17 | 19 | 21 | 23 | 25 |
| PINE, WHITE | 7 | 8 | 9 | 10 | 13 | 15 | 17 | 19 | 21 | 23 | 25.5 |
| POPLAR, YELLOW | 8 | 8.5 | 10 | 11 | 13 | 15.5 | 17.5 | 19.5 | 22 | 24 | 26 |
| RAMIN | 7 | 8 | 9 | 10 | 11 | 13 | 15 | 16 | 18 | 20 | 21 |
| RADIATA PINE | 10 | 11 | 11 | 12 | 14 | 16 | 18 | 20 | 23 | 25 | 27 |
| REDWOOD | 7 | 8 | 9 | 10 | 12 | 13.5 | 15 | 17 | 19 | 22 | 24 |
| SPRUCE, SITKA | 7 | 8 | 9 | 10 | 12.5 | 14.5 | 17 | 19 | 21 | 23.5 | 26 |
| SPF** | 9 | 10 | 11.5 | 13 | 15.5 | 18 | 20.5 | 23 | 25 | 28 | 30 |
| SPF/COFI | 8 | 9 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
| TEAK | 7 | 8 | 8.5 | 9 | 11 | 12 | 14 | 15 | 17 | 18.5 | 20 |
| VIROLA | 6.5 | 7 | 8 | 9 | 11 | 12.5 | 14 | 16 | 18 | 18.5 | 20.5 |
| WALNUT, BLACK | 7.5 | 8.5 | 9.5 | 10.5 | 12.5 | 14.5 | 16 | 18 | 20 | 22 | 23.5 |

*Meter readings taken with 26-E 2-pin electrode. Do not apply 2-pin correction.

**SPF correction based on 2-pin 26-E reading with insulated pins. It is based on USDA/Forintek data and can be used for the following species:

Lodgepole Pine

Alpine Fir