

Delmhorst Instrument Co.

## **Model G-70** **Owners Manual**

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### **BEFORE YOU BEGIN**

The G-70 features an analog scale that reads wood moisture content directly as a percentage of the dry weight in the wood. The scale covers the range from 6% to 70%; readings above 30% (the fiber saturation point) are not accurate and are to be used only as qualitative indications of moisture content.

**\*NOTE:** The numbers in parentheses refer to the G-70/SP

### **CHECK CALIBRATION**

To check the calibration push the switch to the “ON” position and hold; the meter is in calibration if it reads “20” (23) or within the green band. If the needle does not read within the green band on the wood scale, it is likely an indication of low battery power. If this occurs, change the battery immediately. Continued use with a low battery may cause the meter to go out of calibration. If you install a new battery and the instrument still does not indicate a proper calibration, return it to DELMHORST for service. See the “**Service for Your Meter**” section.

### **BATTERY CHECK**

To check the battery voltage push the switch down to the “OFF” position and hold;

The battery is “OK” if the needle moves beyond “34” (38) (BATT OK) on the wood %MC scale.

## **TAKING A READING**

The meter is turned on, and remains on for four minutes whenever the switch is pushed up to the “ON” position and released. The timer is reactivated for four minutes with each subsequent test yielding a reading of 8% (10%) or higher. If readings are below 8%(10), push the switch “ON” periodically to prevent the meter from automatically turning off. The meter will then stay on for another four-minute period. The meter may be turned off manually by pushing the switch to the “OFF” position.

Connect the external electrode to the meter. Align the contact pins parallel to the grain of the wood. Drive the pins into the wood and read the moisture content on the meter scale. When using uninsulated pins drive them to their full length into the wood. Insulated pins can be driven to any desired depth.

## **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 6 and species correction table page 4 for more information.

## **PIN TALK**

There are two types of contact pins – uninsulated 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 FOR YOUR METER**

- Store your meter in a clean, dry place.
- 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 on probe as needed. Keep pin retainers hand tightened.
- Clean the meter and probes with any biodegradable cleaner. Use the cleaner sparingly and on external parts only. **DO NOT IMMERSER THE METER OR ANY PROD IN WATER.**
- Remove the batteries if the meter will not 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/2Day, UPS/1 Day, etc.) are the customer's responsibility and will be charged as per the above terms.

## WARRANTY

Delmhorst Instrument Co., Inc., referred to hereafter as Delmhorst, guarantees its G-70 moisture 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 G-70 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 retainers, 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 for 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. This warranty also gives you specific legal rights, and you may have other rights that may vary from state to state.

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For more detailed information about using a wood moisture meter, call us toll-free at 1-800-222-0638. Ask for your free copy of Measuring Wood Moisture Content: Straight Talk from Delmhorst. Or find it on our web site at [www.delmhorst.com](http://www.delmhorst.com).

For over 50 years, Delmhorst has been the leading manufacturer of high-quality resistance moisture meters. Today we offer the innovative KIL-MO-TROL® in-kiln monitoring system, and a complete line of portable moisture meters for woodworking/lumber, agriculture, construction and paper.

## SPECIES CORRECTION TABLE

SPECIES	METER READINGS WITH <b>NON-INSULATED</b> PINS										
	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

	METER READINGS WITH <b>NON-INSULATED</b> PINS										
SPECIES	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

The species correction values shown in this chart have been rounded for easy reference.

\*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  
Eastern White Spruce  
Black Spruce  
Jack Pine

**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 **shaded** are only qualitative, since they are above the fiber saturation point.

The temperature correction values shown in this chart have been rounded for easy reference. If you desire a reading closer to your temperature for greater accuracy we have included a temperature correction slide rule. This will give you correction values for your meter readings in small gradual increments.