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Manual
Wood Moisturemeter
PCE-WMH3

This warranty becomes null and void if you fail to pack your PCE-WMH3 in a manner consistent with the original product packaging and damage occurs during product shipment.

This warranty does not cover: circumstance beyond our company's control; service required as the result of unauthorized modifications or service; misuse, abuse; failure to follow our company operating or maintenance instructions.

Repair or replacement without charge is our company's only obligation under this warranty. Our company will not be responsible for any special, consequential or incidental damages resulting from the purchase, use, or improper functioning of this equipment regardless of the cause. Such damages for which our company's will not be responsible include, but are not limited to, loss of revenue or profit, downtime costs, loss of use of the equipment, cost of any substitute equipment, facilities of services, or claims of your customers for such damages.

Important

We recommend to prevent faulty result in measurements please check your meter reading results within a adequate time period by the dry oven test according DIN 52 183 Standard.

4. PREPARING THE INSTRUMENT

Use the "WOOD TYPE" button to select the appropriate wood type group and the "WOOD TEMP." button to set the wood temperature. The temperature setting step is 2°C. Pressing and holding the "WOOD TEMP." button "fast forwards" the setting. This can be used to quickly change the temperature setting e.g. from -10°C to 40°C.

The most common European wood types are listed in a table on the instrument.

All exotic wood types (270 species) listed in the users manual (page 6 and next) are divided into 4 groups. During measurements of moisture contents of exotic wood types the "WOOD TYPE" should be set to:

- Group 1 - select 1
- Group 2 - select 2
- Group 3 - select 3
- Group 4 - select 4

5. SELECTING NEEDLES

We recommend that the length of the needles you use should be about 25-30 % of the thickness of the timber. With this length of needles the device displays the average moisture contents.

6. THE MEASUREMENT

To conduct measurements:

- press and hold for a while the "ON/OFF" button to turn the instrument on,
- hammer the instrument into the wood, a line drawn between the needles should be perpendicular to the fibers (the resistance should be measured across the fibers),
- the strength used for hitting the wood should be appropriate to the hardness of the wood, do not use excess force, hitting the wood with the body of the device (when the needles have been completely inserted into the wood) may damage the device,
- wait until the result stabilizes,
- read the result on the LCD,
- the instrument can be turned off by pressing and holding the "ON/OFF" button or it will turn off automatically after approx. 5 minutes.

Gruop 3 cont. (set “WOOD TYPE” to **3**)

Birch, yellow	Guatambu	Merawan
Birch, meanness	Gum-tree	Merbau
Blackwood, afr.	Haldu	Mersawa
Blackwood, austr.	Hemlock	Moringui
Blue Gum	Hickory	Muninga
Bomax	Hornbeam	Musizi
Borneo	Horse-cestnut	Mutenye
Camphorwood	Ilomba	Myrtle
Brushbox	Izombe	Nyatch Oak, jap.
Bruyere	Jacareuba	Oak, red
Boire	Jelutong	Oak, stone
Cabbage-bark, black	Juniper	Oak, white
Campeche	Kauri	Oak, grape
Campherwood, real	Keruing	Oak, haft
Campherwood, afr.	Koto	Okan
Canarium, afr.	Landa	Okwen
Cativo	Larch, europ.	Olivillo
Chengal	Larch, jap.	Opepe
Cherry	Larch, sibir.	Ovangkol
Chickrassy	Laurel, Chile	Ozigo
Cocobolo	Laurel, Indian	Padouk, afr.
Coigue	Limbali	Padouk, burma
Cypresse	Lime	Padouk, Manila
Daniellia	Louro, vermecho	Paldao
Danta	Madrono, Pacific	Partidge
Diambi	Magnolia	Pencil-wood,
Douka	Mahagony, Kosipo	afr. + virg.
Elm	Mahagony, Tiama	Pencil-wood, calif.
Esia	Makore	Pernambuc
Eucalyptus	Manbarklak	Pine, black + red
Europen-plane	Manio	Pine,
Evino	Maple, Mountain	weymouth + stone
Eyong	Maple, soft	Pine,
Fraké	Maple, sugar	pitch + insignis
Gerongang	Menkulang	Plum-tree
Gedu Nohor	Meranti, yellow	Podo
Guarea	Meranti, white	Ponderosa Pine

- do not walk around the device,
- use thin needles because they provide a better contact with the wood,
- after inserting the needles, turn the device off and on again, place your hands on the wood to discharge any electrostatic charges,
- in extremely difficult conditions place the timber on a grounded metal plate or wire mesh.

9. REPLACING THE BATTERY

During normal operation the battery should last for at least 1 year. The meter is equipped with an active power level control unit. When the power drops below acceptable level a pulsating sign "BAT" appears on the LCD. This indicates that the battery has expired and should be replaced with a new one. To replace the battery (Fig. 2):

- unscrew the plastic cork in the handle of the device (an internal spring will push the battery out),
- gently sidle the battery compartment out of the handle (but no further),
- take out the old battery,
- put the new battery into the compartment (pay attention to correct polarization – minus towards the spring),
- push the battery compartment back in and screw the plastic cork back on.

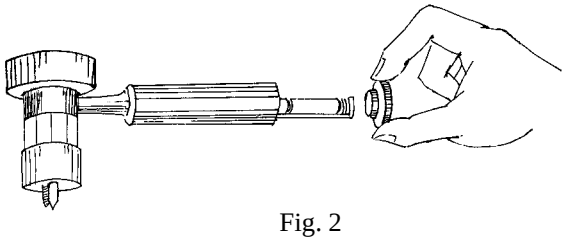

Fig. 2

10. ADDITIONAL INFORMATION

(a) The most common cause of bending or breaking the needles is an incorrect way of pulling it out of the wood. To prevent the needles from bending (especially long needles in a hard wood) slide something (like a screwdriver) between the electrode and the wood.

1. DECRIPTION AND APPLICATIONS

The Wood Moisture Meter PCE-WMH3 is a state-of-the-art electronic device for measuring wood moisture in a range from 6% to 60% of moisture contents. The whole device is fitted into a hammer electrode. The device can be used for measuring moisture contents in over 270 different wood types. The moisture meter is also equipped with a temperature compensation circuit.
Moisture Meter PCE-WMH3 is widely used in wood industry, forestry and other industries utilising wood.

2. TECHNICAL DATA

Range	6 % - 60 % moisture contents
Accuracy (at 20°C)	
within range 6 – 12%	± 1%
within range 13 – 28%	± 2 %
within range 29 – 60%	approx. 10 % of measured value
Number of wood types	12 (270)
Wood temp. range	-10° ÷ 60° C
Display	LCD
Power	1 battery 23A, 12 V
Auto power off	yes
Battery life	approx. 10.000 measurements
Size	180 x 80 x 42 mm
Weight	approx. 0.8 kG

3. EQUIPEMENT

The standard Wood Moisture Meter PCE-WMH3 is equipped with 2 sets of needles ϕ 3.5 x 12 mm.
The following optional electrodes are available:
- needles ϕ 2.0 x 8 mm
- needles ϕ 2.5 x 10 mm
- veneer electrodes (no holes) (measuring range 6 % to 20 %)

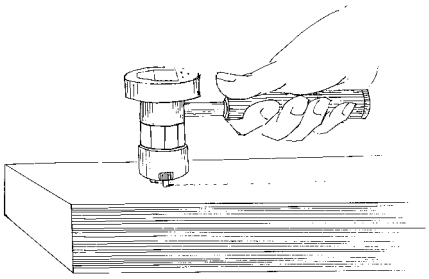

Fig. 1

While conducting the measurements you should observe the following rules:

- Conduct the measurement no closer than 0.3 m from each end of the timber or in the middle, if the planks are shorter than 0.6 m.
- Choose the spots for measurements at random.
- Do not take the measurements where defects in the wood occur.
- Make 3 measurements on each side of the timber.

7. RESULTS

The measuring range of the Wood Moisture Meter PCE-WMH3 is
6% – 60% moisture contents. Moisture contents below 6% is indicated as “LO” on the LCD. All results over 60% are indicated as “HI”.

8. MEASURING VERY DRY WOOD

Measurements of moisture contents in a very dry wood (below 10%) are subject to interference. This can be observed when the result of the measurement becomes unstable. The sources of the interference are electrostatic charges and electromagnetic fields. Often the measurements of very dry wood are conducted in a very dry environment (below 30% RH) and this additionally increases the problem.

When measuring a very dry wood:

- do the measurements in a place where the electro-magnetic interference is minimal (away from electric engines, high voltage wires etc.),

Group 3 cont. (set “WOOD TYPE” to **3**)

Port-orfordcedar	Seraya, white + red + yellow	Tupelo
Purpleheart	Sikon	Umbrella-tree
Quaruba	Spruce Western	Walnut, americ.
Rauli	White	West-indian-locust
Red peroba	Shore-pine	Whitewood
Redwood, calif.	Sucamore	White-afara
Rengas	Sugi	White-peroba
Robinie	Sweet-chestnut	Willow
Roble	Sweetgum	Wood-fiber insulating panels
Safukala	Tchitola	Yang
Saligna Gum	Thuya-Maser	Yemane
Sapo	Tangile	Yew
Sen	Toosca	
Sepetir		

Group 4 (set “WOOD TYPE” to **4**)

African walnut	Bubinga	Mahagony
Akatio	Brasilian walnut	Mansonia
Aniegré	Lauran, white + red	Meranti, dark red
Aningori	Mahagony, Sipo	Meranti, light red

13. GUARANTEE AND SERVICE

TANEL Electronic warrants the Moisture Meter PCE-WMH3 to be free from malfunction and defects in both materials and workmanship for one year (12 months) from the date of purchase.

If the Moisture Meter WMH3 does not function properly during the warranty period due to defects in either, materials or workmanship, our company will, at its option, either repair or replace the instrument without charge, subject to the conditions and limitations stated herein. Such repair service will include any necessary adjustments and replacement part.

Limitations

This warranty does not cover damage that may occur if you use excess force (in variance with instructions of this users manual) to hammer the device into the wood.

(b) Every several hundred measurements check if the needles didn't become loose. Loose needles bend or break more easily.
(c) When measuring a very thick timber you can use nails of appropriate length and ϕ1.5-2.5 mm. (see 5. SELECTING NEEDLES). The distance between them should be 25 mm. A line drawn between them should be perpendicular to the fibers. Then touch the nail heads' with the needles of the device, turn on the moisture meter and read the result..
(d) When measuring moisture contents in narrow pieces of wood you can do it along the fibers. For moisture contents over 20% the result will be a little bit higher than the real moisture contents. Results below 20% will not be noticeably influenced by the direction of the measurement.
(e) Wood Moisture Meter WMH3 is an electronic device. The components used for production of WMH3 guarantee its reliable and long operation. The part that is most often subject to accidental damage is the LCD. Please pay special attention not to damage the LCD during the measurements.
(f) When a needle breaks use a small screwdriver to unscrew the broken part of the needle or remove the plastic part, unscrew the bolts with the springs and unscrew the broken needles from the inside.

11. STORAGE

Store the device in a chemically neutral atmosphere In temperature 5°C to 40°C and relative humidity 20% - 70% RH. If the electronic circuits become moist, dry the whole device. Unscrew the plastic part with the needles and heat the device up to 40 – 50°C (not more). The drying should last at least a few hours. For example you can put the device on a radiator.

12. EGSOTIC WODO TYPES

Group 1 (set "WOOD TYPE" to **1**)

Chipboard (phenolic resin bonded)	Gonzales Alves Parana Pine	Zebrano

Group 2 (set "WOOD TYPE" to **2**)

Assegai	Iroko	Pillarwood
Avodiré	Jarrah	Pink Ivory wood
Box-tree	Karri	Pockholz
Brazilian-rosewood	Kempas	Pyinkado
Chipboard (urea bonded)	Kokrodua	Quebracho blanco
Cedar, white + red	Mahagony, Khaya	Quebracho colorado
Cocuswood	Mahagony, Sapelli	Ramin
Columbian pine	Massaranduba	Redcedar, western
Cypress, southern	Mecrusse	Sandalwood
Dahoma	Moabi	Sapele
Dogwood Douglasie	Mora	Sasswood
Ebony, afr. + asiat.	Mucarati	Satinwood
Ebony, macassar	Muhimbi	Snake wood
Europen aspen	Muhuhu	Sucupira
Freijo	Mukulungu Mukusi	Tali
Goncalo	Niove	Teak
Groupie	Nyankom	Tulipwood
Greenheart	Obeche	Wacapou
Guaycan	Okoume	Wattle, black
Hardboard	Olive tree	Wenge
Idigbo	Ozouga	Zapatero
Indian-Rosewood	Pear	
	Persimmon	

Group 3 (set "WOOD TYPE" to **3**)

Abura	Andiroba	Azobé
Afcelia	Andoung	Baboen
Agathis	Angelin	Bahia
Agba	Angelique	Baitoa
Alder	Antiaris	Balau
Alstonia	Ash, americ.	Balsa
Amazokoue	Ash, jap.	Balsamo
Amendoim	Ash, meanness	Banga Wanga
American - mahagony	Aspe	Basswood
	Assacu	Berlinia