Operator's Manual
Portable Wood Chip Moisture Tester

ENGLISH

DOCU-M0137 0212

Introduction

THANK YOU for purchasing a Wood Chip Moisture Tester.

READ THIS MANUAL carefully to learn how to operate and service the Moisture Tester correctly. Failure to do so could result in personal injury or equipment damage.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of the Moisture Tester and remain with the Moisture Tester when you sell it.

WARRANTY is provided for customers who operate and maintain the Moisture Tester as described in this manual.

This warranty provides you the assurance that we will back our products where defects appear within the warranty period. In some circumstances, the manufacturer also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the Moisture Tester be abused, or modified to change specifications, the warranty will become void and field improvements may be denied.

PROOF OF PURCHASE (retail sales receipt) must be included with the returned Moisture Tester to obtain free warranty service. Without proof, the Moisture Tester will be assumed to be out of warranty and repair costs will be invoiced.

RECORD SERIAL NUMBERS. Accurately record all the numbers on the back cover of this manual, and refer to it in all communication with the factory. The manufacturer, needs these numbers when you order parts or obtain service.

Contents

CAUTION: The Wood Chip Moisture Tester may cause harm if used improperly. Please use the pointed probe tip with care.

Set Up and Installation

CONTENTS OF THE CASE

- Wood Chip Moisture Tester with dish probe
- Carrying case
- Operating instructions

GENERAL

The Wood Chip Moisture Tester measures the moisture content of different types of wood chips that are typically used as solid fuels in various power plants. The tester can measure common types of wood chips, from coarse chips to fine logging residue chips. The measurement range extends up to 70% of moisture.

The tester shows the moisture content of the material in weight percent. Measurement range for wood chips is 12-40% and logging residue chips 30-70%.

Operation

GENERAL

One can measure the moisture content of the wood chips directly from the storage pile or from the load. It is also possible to take a measurement by gathering a sample of the material and measuring it from a plastic 5 gallon bucket.

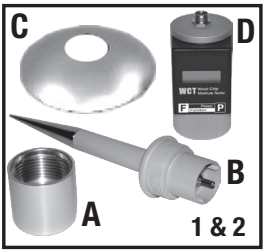
Take measurements from different places throughout the mass to ensure that the final moisture reading represents the average quality of the whole mass. Make several measurements if needed.

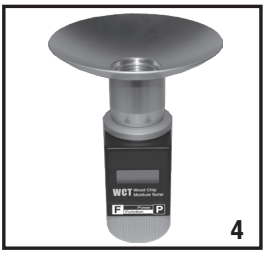
The measurement itself happens in the ball-shaped zone, that is situated between the metal tip of the probe and the dish part. The diameter of the measurement zone is about 7.5 inches (20 cm).

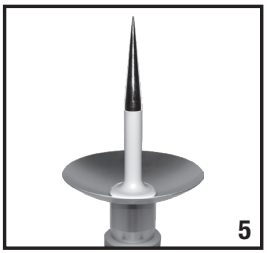
The quality of the wood chips affects the measurement result. Using the pictures and descriptions in section 15, define what type of wood chips is closest to the material you are going to measure. Choose the measurement scale according to the kind of wood chips. **Step-by-step measurement** instructions on page 10-2 explains the important notice on possible risks of measuring moisture content in frozen wood chips.

MEASUREMENT PREPARATION

In order to make the transportation easier the dish probe is packed in a sturdy carrying case disassembled. Assemble the tester as follows:







1. Unscrew cap from probe
2. Identify 4 Pieces:
   A. Cap
   B. Probe
   C. Dish
   D. Tester
3. Screw Cap to Tester
4. Balance Dish on Cap
5. Using little force, tighten Dish into place by screwing Probe into Cap.

Now the moisture tester is ready for use.

Before carrying out any measurements and every time before measuring the new/different types of wood chips choose the appropriate scale.

MEASUREMENT PREPARATION (CON'T)

Switch the tester on with a single press on the **POWER** - button. The number of the used scale will appear on the testers's display. When the number of the scale is displayed, you can change the scale by pushing the **FUNCTION** - button:

-1- Scale for wood chips
-2- Scale for fine logging residue chips
-3- Scale for medium coarse logging residue chips
-4- Scale for coarse logging residue chips

After the correct scale is chosen, **RUN** will display and in a moment the tester will turn off. Now the moisture tester is ready for use.

The setting of the scale is permanent, it will stay the same until the operator changes it.

-0- scale is used by the repair department to calibrate the moisture testers.

Descriptions of the various wood chips mentioned above are presented on page 15-1.

STEP-BY-STEP MEASUREMENT

If using this wood chip tester to measure from a storage pile or from the load, remove some material from the surface. The top layer can be drier because of the sun or more wet because of rain.

In winter, the top layer of the uncovered pile of wood chips can be deeply frozen. **Never measure moisture content in frozen wood chips.** When measuring moisture content in frozen wood chips the measurement result is incorrect. Remember that all the storage piles of wood chips are always melted from the inside. Take the sample of wood chips from the inside of the storage pile and take the measurement from it.

Push the tip of the probe into the storage pile, so that the dish of the probe is firmly touching the wood chips.

IMPORTANT: Keep the tester firmly pressed against the material during the whole measurement.

Switch the tester on with a single press of the **POWER** - button.

The number of the selected scale will appear on the display. After that the tester proceeds to the measurement. **RUN** will be displayed during the measurement. The result of the measurement (moisture content) will be displayed in weight percent. After the measurement the tester will automatically turn off and will be ready for a new measurement.

AUTOMATIC AVERAGE CALCULATION

The tester can calculate the average value of several measurements. After the measurement has been made, the result can be saved for the average calculation.

Saving the measurement result for the average calculation

Take the measurement as usual. When the result is displayed, push the **FUNCTION** - button for a short time. **A** will appear on the display and the tester will add the measurement result for the average calculation. The average calculation is ready when two numbers, for example **A05** and **25.6**, appear alternating on the display.

In this case **A05** means that the number of measurement results included into the average value is 5. Number **25.6** is the average value of those 5 measurements.

If you do not want to include the measurement result into the average calculation, do not take any readings after the measurement, just wait until the tester automatically turns off and is ready for the next measurement.

Before calculating the average value of every new lot of material, make sure that average calculation memory is empty and erase it if needed.

ERASING THE AVERAGE CALCULATION MEMORY

Push and hold the **FUNCTION** - button. Switch the tester on with a single press of the **POWER** - button.

When you see **A** on the display, release the **FUNCTION** - button. If the average value appears on the display now, you can erase it by pushing and holding the **FUNCTION** - button. The memory is erased, when **0** appears on the display.

NOTE: Always remember to erase the average calculation memory after the measurement series so that the previous average value will not affect the average value of the new lot.

Average calculation memory can accommodate a maximum of 99 test results. If no more results can be added to the memory, the number on the display will start blinking.

ADJUSTING THE RESULT

If the quality of the measured material is different from normal, the result can be incorrect. You can adjust the result shown by the tester to conform with a reference value.

Adjusting the value upwards - When the measurement result is displayed make the double press on the **FUNCTION** - button. **Three bars will appear on the upper edge of the display. Wait for a moment and the result appears on the display again.** Now each time you push the **FUNCTION** - button, 0.1 moisture % will be added to the result.

Adjusting the value downwards - When the measurement result is displayed, push the **FUNCTION** - button three times. **Three bars will appear on the lower edge of the display. Wait for a moment and the result appears on the display again.** Now each time you push the **FUNCTION -** button, 0.1 moisture % will be deducted from the result.

NOTE: This adjustment is specific to the used scale. In other words there may be defined specific adjustment for each scale.

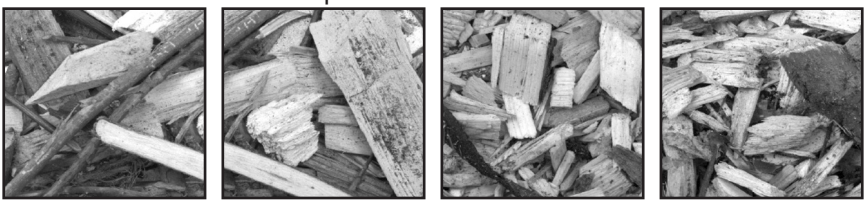
ERASING OF THE SCALE ADJUSTMENT

When the moisture content result is displayed, you can erase the adjustment. To do that push and hold **FUNCTION -** button for about 6 seconds. When the result value on the display changes, you know that the adjustment has been erased.

NOTE: Usually the moisture in wood chip piles is not evenly distributed. Always make several measurements to get a proper average moisture reading for the pile.

Types of Wood Chips

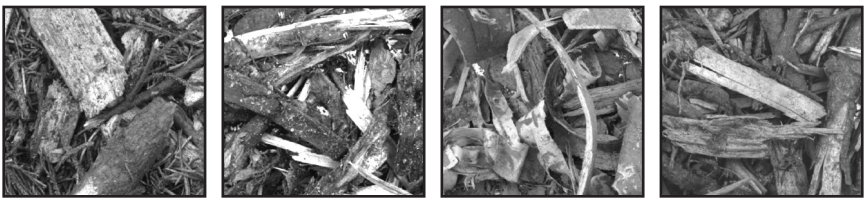
Scale 1: Wood Chips - Some pieces of wood a few inches in size, that are the resultant pieces from many different types of wood: tree trunks, decayed trees, pallets etc. Usually the material is rather dry, often drained under some shelter in the open air.



Scale 2: Fine Logging Residue Chips - Mass of wood chips containing needles, small parts of branches and so on. Usually the mass contains different sorts of rot materials and needles from the soil, often decayed pieces as well.

Scale 3: Medium-Coarse Logging Residue Chips - Type of wood chips containing needles and parts of branches. This sort is coarser than the previous scale. Usually this sort of wood chips contains a lot of needles.

Scale 4: Coarse Logging Residue Chips - Usually contains big, sometimes longer than 4 inches (10 cm), parts of tree branches or tops of trees. Needles and smaller parts of wood are presented in the mass as well. May also contain parts of birch and fir bark.



Battery Replacement

BATTERY

The tester is powered by a 9V alkaline battery.

This tester gives a warning about the low battery voltage with **LOBAT** - text in the left upper part of the display. If the battery is almost empty, the display will show some random marks and **LOBAT** text can fade.

The battery box is located on the bottom of the tester. Open the box by pushing the locking lever over the battery symbol as shown in the picture (see image) and replace the battery.

Remove the battery from the tester, if the device is not used for a long period of time. To ensure the correct functioning of the tester replace the battery regularly. If you suspect a fault in the tester, always test the battery first.

NOTE: A battery slowly discharges itself even if the tester is not used.

Warranty and Service

If the Moisture Tester should display inaccurate readings or cease to operate, follow these steps:

1. Review this manual, particularly the Operations sections.
2. Call the toll-free number, 1-800-821-9542, and ask for customer service. Be certain to call between 8:30 a.m. and 4:30 p.m. Eastern Standard Time. Describe the problem to our service personnel so that a determination can be made as to what is wrong with the tester. If necessary, arrangements can be made for repair or replacement and a Return Authorization number will be given to you. Be certain to have the serial number available.
3. In the event factory service is required AND AUTHORIZATION HAS BEEN OBTAINED, remove the battery from the tester, pack the unit carefully and return to AgraTronix PREPAID. Do not return the battery. Be certain to include your name and return address.
4. Do not return the tester without following the above procedure. THERE WILL BE A $15.00 HANDLING CHARGE MADE ON ALL UNITS RETURNED AND NOT FOUND TO BE DEFECTIVE.
5. Repairs will be made free of charge during the warranty period. After the warranty expires, the tester will be repaired at a flat rate.

IMPORTANT WARRANTY INFORMATION

1. PROOF OF PURCHASE (retail sales receipt) must be included with returned tester to obtain free warranty service. Without proof, tester will be assumed to be out of warranty and repair costs will be invoiced.
2. Every tester has a serial number identification. Note this serial number on the appropriate line on the next page and refer to it in all communication with the factory.

LIMITED WARRANTY

This Moisture Tester is guaranteed to be free from defects in materials and workmanship for two years in North America and for one year overseas from date of retail purchase. This warranty does not cover the battery or damage resulting from misuse, neglect, accident or improper installation or maintenance. This warranty does not apply to any product which has been repaired or altered outside the factory. The manufacturer does not assume any liability for damage from misuse, dropping the tester or damage resulting from or damage caused by water or from unauthorized repair. The warranty does not cover any damage which may directly, indirectly, consequentially or incidentally result from use or inability to use this moisture tester.

The foregoing warranty is exclusive and in lieu of all other warranties of merchantability, fitness for purpose and any other obligation or liability in connection with its product.

Warranty and Service

RECORD SERIAL NUMBER

NOTE: The tester serial number is located on the bottom or back side of the unit.

Write your model number, serial number and date of purchase in the space provided below. The manufacturer needs this information when ordering parts and when filing warranty claims.

Date of Purchase _____

Serial No. _____

Model No. _____

(To be filled in by purchaser)

Manufacturer's Contact Information

Toll-Free 1-800-821-9542
1-330-562-2222
FAX 1-330-562-7403
www.AgraTronix.com

10375 State Route 43
Streetsboro, OH 44241
USA