

# Operators Manual

## **GMT-Grind**

### Grain Moisture Tester



**ENGLISH**  
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## Introduction

THANK YOU for purchasing an Agratronix product.

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

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your GMT-Grind Grain Moisture Tester.

RECORD SERIAL NUMBERS in the Service section. Accurately record all the numbers. Agratronix needs these numbers when you order parts. If this manual is kept with the GMT-Grind, also file the identification numbers in a secure place separate from the GMT-Grind.

WARRANTY is provided through Agratronix for customers who operate and maintain their GMT-Grind Grain Moisture Tester as described in this manual. The warranty is explained in the warranty section located on Page 30-1.

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

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All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

## Parts

### CONTENTS OF THE GMT-Grind CASE

The GMT-Grind case includes:

- GMT-Grind Grain Moisture Tester
- Carrying Case
- Cleaning Brush
- Operation Instructions



# Operation

## TESTING AND REPLACING THE BATTERY

Turn the GMT-Grind Grain Moisture Tester on by pressing and releasing the **ON/OFF** button.

Press the arrow keys until the text **BATTERY VOLTAGE** is displayed. The actual battery voltage will be displayed in the lower left corner.

The battery voltage will now be displayed in the lower left corner of the display.

The battery voltage should be higher than 7.2V. If the battery is low, the GMT-Grind Grain Moisture Tester automatically turns off.



Figure 1. Battery box.

The battery box is located on the end of the tester (see Figure 1). To replace the battery, slide the battery door towards the top of the tester, then pull the battery compartment out. Replace the battery.

Remove the battery from the tester if the tester is not going to be used for a long period of time. To ensure the correct functioning of the tester, replace the battery when needed. If a fault in the tester is suspected, always test the battery first.

*NOTE: A battery can slowly discharge itself even if the tester is not used.*

## CHANGING THE LANGUAGE

- Press the arrow keys until the text **LANGUAGE** is displayed.
- Now press **TEST** and use either of the arrow keys to select the language you desire.
- Once the language you want is displayed, press **TEST** to exit.

## CHECKING THE TEST CELL TEMPERATURE

- Press the arrow keys until the text **TEMPERATURE** is displayed.

# Operation

## IMPORTANT CALIBRATION NOTES

**The GMT-Grind Grain Moisture Tester should be calibrated to match a reference moisture tester before using it.**

See instructions on page 10-5.

If the display shows “- - - -” or “++++”, the measured moisture is out of range.

“- - - -” means that the sample is too dry.

“++++” means that the sample is too wet or that the grinder is short-circuited. If you feel that the sample is within the moisture range, try using a larger test sample. For example, test 11 ml instead of 9 ml.

*NOTE: Store the tester in a dry place, preferably at room temperature. Do not drop the tester or get it wet. Remove the battery when storing the tester for long periods of time or when not in use.*

# Operation

## MEASURING GRAIN MOISTURE

### SAMPLE TAKING

Always take several samples from different locations of the grain. Define the grain moisture content by the average value of the measurements.

Remove foreign material from the grain samples.

Remember that the moisture inside the grain dryer varies up until the final stages of the drying process.

### MEASUREMENT OF THE GRAIN SAMPLE

Start the tester by pressing and releasing the **ON/OFF** button.

Select grain by using the arrow keys.

The correct sample size is shown on the display, e.g. "9 ml".

Fill the test cell with grain, according to the displayed amount, by using the measuring cup in the cap to measure the correct amount of grain, either 9 or 11 ml (see Figure 2).

Pour grain into the test cell and distribute evenly around the cell (see Figure 3).

Mount the upper grinding cap and turn the cap until it reaches the stopper (see Figures 4 and 5).



Figure 2.  
Measure grain.



Figure 3.  
Pour grain into cell.



Figure 4.  
Turn cap.



Figure 5.  
Cap reaches stopper.

## Operation

Press and release the **TEST** button and the testing countdown will begin. When the display reaches zero, the result is ready and average measurement is updated. The current moisture measurement is on the left, and the average measurement reading is on the right (see Figure 6).

After measuring, clean the test cell using the wire brush that is included with the GMT-Grind Grain Moisture Tester kit (see Figure 7).

The cleaning of all grain from the test cell is important, since the next measurement may be inaccurate if the test cell is not cleaned properly!

The tester will automatically turn off when it is not in use.



*Figure 6.  
Reading  
on the  
display.*



*Figure 7.  
Cleaning  
the cell.*

### CALCULATION OF THE AVERAGE VALUE

The GMT-Grind Grain Moisture Tester automatically calculates and displays the average value of the last four measurements.

The average value is shown on the lower right hand corner of the display. The current measurement value displays on the left.

For the first measurement, the average value will be the same as the current measurement value. After the second measurement, the average value is the average of the two measurements. When four or more measurements have been made, the meter will always show the average of the last four measurements.

The average measurement will remain in the memory after the meter is turned off.

The average value is automatically reset when changing to a different grain.



# Operation

## CALIBRATION

The GMT-Grind Grain Moisture Tester should be calibrated to match a reference moisture tester.

- a. Measure a sample with the reference moisture tester. For the purposes of this example, it will be called Result A.
- b. Measure the moisture with the GMT-Grind Grain Moisture Tester. For the purposes of this example, it will be called Result B.
- c. The offset value is Result A minus Result B, e.g.  $17.3 - 16.6 = 0.7 \%$ .
- d. The offset value is changed by pressing and releasing both arrow keys simultaneously. Now the offset value can be changed by using the arrow keys.
- e. Using the example, set the offset value at 0.7 %, and press the **TEST** button to return to the previous mode. Press the **TEST** button again to test the change.

This adjustment is stored for each grain.

## ADJUSTMENT OF THE LCD DISPLAY CONTRAST

The LCD display contrast can be adjusted by pressing either of the arrow keys until the display shows **CONTRAST**. Now press **TEST** and use the arrow keys to adjust the contrast level up or down. When finished, press and release the **TEST** button again.

*CAUTION: Decreasing the LCD contrast too much may result in not being able to see the characters, and increasing it too high may black out the characters.*

## Specifications

- Easy to read LCD display
- Automatic calculation of average value of measurements
- Individual offset adjustment on each grain
- Display of battery voltage
- Multiple language selections

<b>Battery</b>	9 Volt Alkaline	
<b>Accuracy</b>	+ / - 0.5% of grain moisture (below 18%)	
<b>Calculation of Average Measurements</b>	Automatic averaging on the last four measurements	
<b>Offset Adjustment</b>	+ / - 10% on each grain	
<b>Display Contrast</b>	Adjustable	
<b>Measuring Range</b>  <i>The availability of grains vary depending on the language selected.</i>	Barley 10-39%	Ryegrass 10-33%
	Winter Barley 10-39%	Soybeans 6.5-35%
	Wheat 10.5-39%	Wheat Flour 11-50%
	Buckwheat 10-38%	Spelt 10.5-35%
	Oats 10-36%	Caraway 5.5-33.4%
	Rye 11-39%	White rice 10.5-35%
	Triticale 10-37%	Paddy Rice 10.5-39%
	Peas 10-28%	Meadow Grass 10-35%
	Corn 11-50%	Red Fescue 11.5-35
	Beans 10-29%	Durum Wheat 10.5-39%
	Rapeseed (Canola) 5.5-25%	Meadow Fescue 10-37%
	Sunflower 6.5-25%	Timothy 10-33%
	Linseed 6-28%	Rape (Turnip) 5-32.6%
	White Mustard 6-28%	Broad Bean 10-31%
	Red Clover 9.5-33%	Millet 10-36%
White Clover 7-40%		
<b>Temperature Range</b>	Measuring range approximately 0°C to 50°C	
<b>Cabinet</b>	Aluminum	
<b>Test Cell</b>	Hardened steel	
<b>Weight</b>	4.4 lbs.	

*DISCLAIMER: The above moisture limits are approximate values and may vary. Specifications and design are subject to change without notice.*

## Warranty and Service

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

1. Review this manual, particularly the *Operations* sections.
2. Call our 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 GMT-Grind 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.

#### WARRANTY

The Agratronix GMT-Grind Grain Moisture Tester is guaranteed by Agratronix to be free from defects in materials and workmanship for one year 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 the GMT-Grind 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 of the unit.*

Write your model number, serial number and date of purchase in the space provided below. Agratronix 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](http://www.agratronix.com)

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