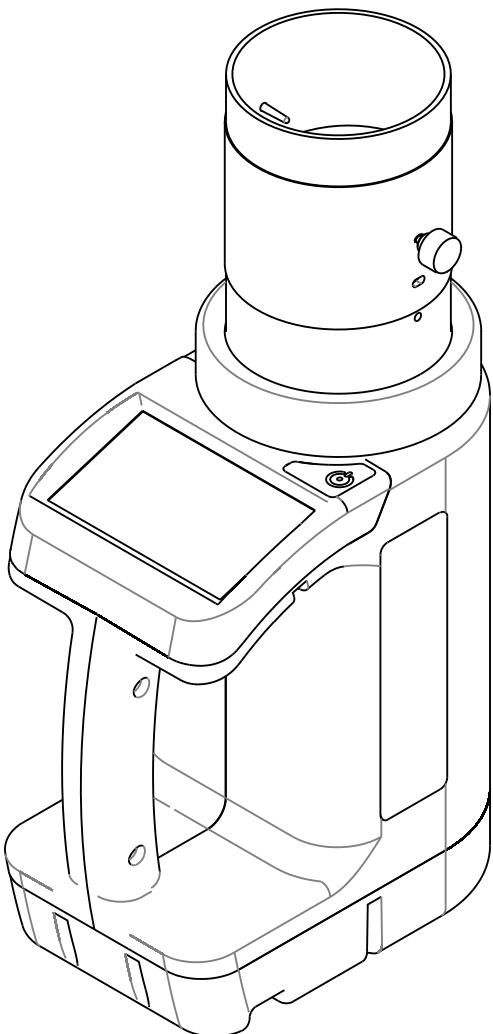


# USER GUIDE

**DELMHORST**  
INSTRUMENT CO.  
WHEN ACCURACY IS THE POINT.™



## **CONGRATULATION ON YOUR CHOICE**

Thank you for choosing us!

We are pleased to offer you the finest technology in grain quality control.

Your Moisture Tester has been tested through an extensive quality control process to ensure its reliability and accurate results.

To take full advantage of the features and technology in this Equipment, as well as, for better performance during operations, please read this manual.

**THE MANUFACTURER RESERVES THE RIGHT TO MAKE CHANGES WITHOUT PRIOR NOTICE.**

FRMT5617EN

# SAFETY INFORMATION

## READ THE USER GUIDE BEFORE USING THE EQUIPMENT.

- Keep it for future reference

## DANGER



- Do not install this equipment exposed to weather conditions
- Do not repair or replace any parts
- Do not break the warranty seal or open the equipment. This action may damage the equipment; if the warranty seal is damaged the warranty will be terminated.
- If you have any questions or problems, call our local authorized service center.

## CAUTION



Plug the power supply into a 100-240 VAC, 50-60Hz and 10A.

- Do not use extensions or connectors; it may cause overloading in the electrical installation.
- Make sure the outlet has the right voltage and frequency for the proper equipment operation



Remove foreign substances, such as dust or water from the contact points using a dry cloth.

- Disconnect the plug and clean it with a dry cloth
- Be sure the power cord is not twisted, kinked, or crimped to prevent possible internal wire damage and electrical shock and/or fire.
- Do not hang or drape the power cord over or on top of the equipment.
- Do not pull or bend the power cord with excessive strength.
- Do not twist or tie the power cord.



Do not touch the charger with wet hands.

- This may cause electric shock



Always unplug the product holding the charger firmly and pulling out from the outlet.

- Damage to the power cord may cause an electric shock or fire.



Do not modify the charger supplied with the equipment.



Do not allow liquids to come into contact with electrical parts of the equipment.



Use care when handling the equipment. Any misuse, such as dropping, tossing or throwing, can potentially damage the load cell.

During the measurement, do not move the equipment.



Avoid using cell phones, radio or other radio-frequency products near the equipment during the measurement. It may affect the accuracy of the reading.



Do not use sharp objects to interact with the touchscreen display.

- Using sharp objects can damage the display, it is considered misuse, and the warranty will be terminated.
- It is recommended to use finger touch or non-tipped objects on the display.
- The display recognizes the press of a finger even with gloves.
- The display does not support multi-touch



Do not use the moisture tester connected to the power supply. It may affect the measurement results.

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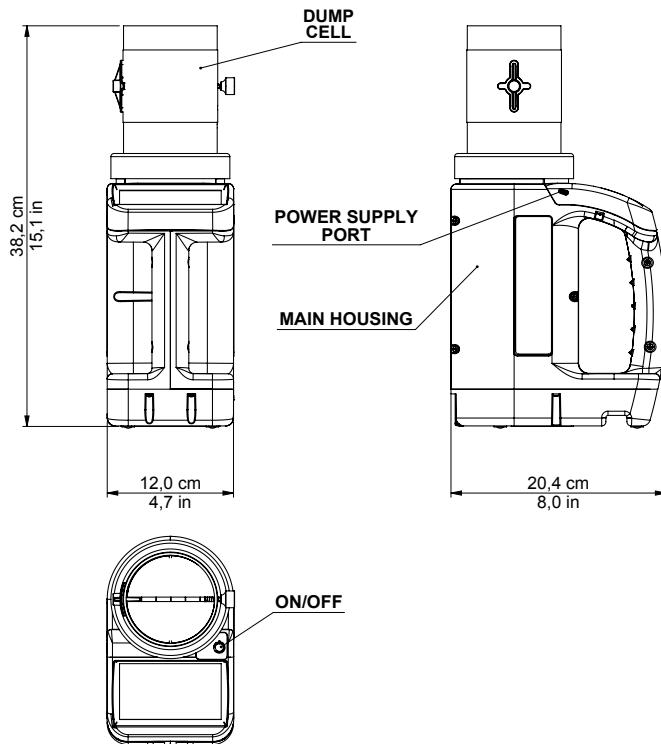
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## GENERAL INFORMATION

Designed to provide fast and accurate results, the instrument also has a simple and intuitive operating interface, offering the user a color display with touchscreen for easy interaction with the equipment.

Built to meet or exceed the accuracy, security and performance demands for grain moisture tester as described in the NIST (National Institute of Standards and Technology) Handbook 44. In addition, the equipment comes loaded with the USDA and CGC calibration charts.

## KNOWING YOUR MOISTURE TESTER



FRMT5617EN

## TECHNICAL SPECIFICATIONS

Charger Power Source	From 100 to 240 VCA (50 to 60Hz)
Equipment Power Source	5 VCC - 2A
Battery Usage life	8 hours of continuous use
Recharge Time (with the equipment in off mode)	2 hours and 30 minutes
Grain Temperature Range	From -20°C to 70°C From -4°F to 158°F
Operating Temperature Range	From -20°C to 70°C From -4°F to 158°F
Temperature Difference between equipment and grain	+10 °C +18°F
Equipment heating and stabilization time .	5 minutes
Equipment Dimension (Width x Length x Height)	12cm x 20,4cm x 38,2cm 4.7 in x 8 in x 15.1 in
Approximate Weight (without package)	1,4 kg / 3 pounds

## SETUP

### UNPACKING THE EQUIPMENT

Carefully, unpack your moisture tester and in case of damaged or malfunction, return the equipment in the original package. Please, contact your customer support.

### PACKAGE CONTENTS

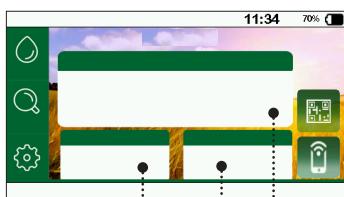
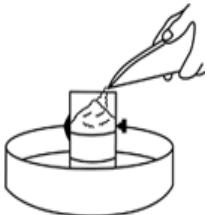
- 01 Moisture Tester
- 01 Dump cell
- 01 Charger
- 01 User Guide
- 01 Warranty term
- 01 Carrying Case

### INSTALLATION GUIDANCE

- Place the Moisture tester on a flat, firm and vibrations free surface.

## QUICK GUIDE TO MEASUREMENT

1. Make sure the equipment is on a level surface.
2. Press the power button in the equipment for 3 seconds.
3. Select the user.
4. Press the magnifier glass button and choose the chart.
5. Place the dump cell inside a proper container, like a tray, and overfill it with the sample you want to measure the moisture of. With a straight edge, remove the excess. The level of the grain sample in the dump cell must be done in a constant and controlled way.
6. Dump the sample into the grain cell
7. The moisture result appears on the screen. If needed or desired, remove the sample and repeat the process from the step 5.



7. The moisture result appears on the screen. If needed or desired, remove the sample and repeat the process from the step 5.

Moisture (%)

TW (only for reference)

Temperature

## FIRST USE

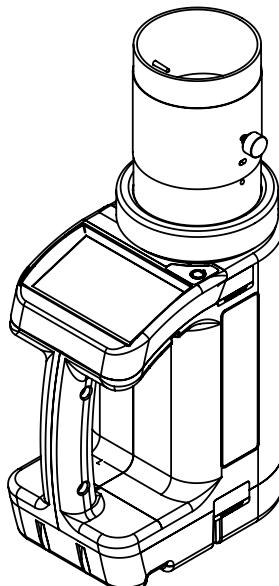
When you turn on the equipment for the first time, you can select the preferences. This is the only time you need to enter this information, with the following information:

1. Choose your language
2. How you want to be called
3. Company Name
4. Commodity selection
5. Acceptance of the use terms
6. Self-Test
7. Grain Chart Calibration selection

If needed, the items 1, 4 and 7 can easily be changed by accessing the **CONFIG** option.

## STARTUP PROCESS

- Make sure that the equipment is installed in accordance with this document.
- Press and hold the on/off button for 3 seconds
- You will hear two beeps.



## SELECT LANGUAGE

- Choose the language.

## USER NAME

- Type the user name.

## COMPANY NAME

- Type the company name

## GRAIN CHART CALIBRATION SELECTION

- Select the chart group

## TERMS OF USE

- Using the arrows, scroll down the term of use
- Click on the check box icon and press **NEXT**.

## SELF-TEST

This step checks all the components and parameters of the software, for a proper operation.

If the equipment requires, follow the steps:

- Place the empty dump cell on the grain cell
- Press OK
- Remove the dump cell
- Press OK

## CHARTS SELECTION

Select the Grain Chart Calibration, the equipment will automatically set all the equation for that specific commodity that you selected.

This completes the startup process and the equipment is ready  
For use.

The device will then go to the **HOME** screen.

## DAILY USE

After you startup, the equipment will have a shorter and simple start. With only two steps:

1. Select the User Name
2. Self-Test

### TURNING ON THE EQUIPMENT

Make sure that the equipment is installed in accordance with this document. Press and hold the on/off button for 3 seconds, you will hear two beeps, place the dump cell on the grain cell.

### SELECTING THE USER

This is the first screen of the equipment

- Press  to use the same user name.
- Press  to replace the user name.
- This button  is only for technician access.

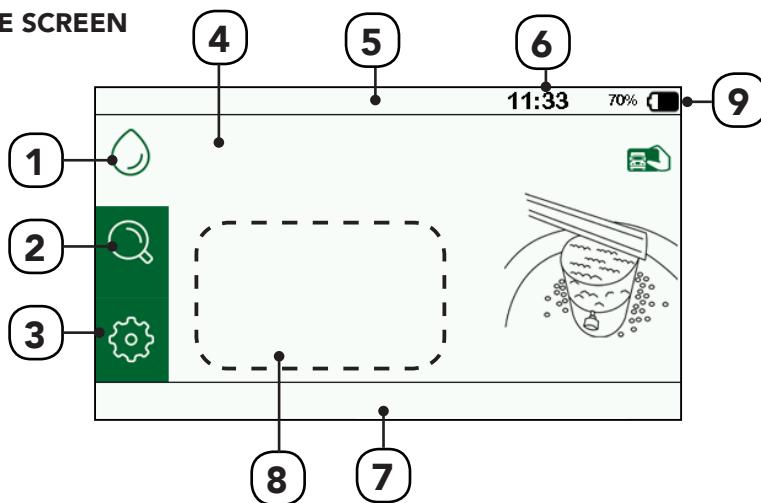
The equipment auto save the last user name.

### SELF-TEST

- If needed the equipment will ask to verify the load cell, please follow the instruction in the screen
- If an error occur, please, restart the process, pressing the **TRY AGAIN** button.

## DAILY USE

### HOME SCREEN



**1** **HOME** screen. This option will do the moisture reading.

**2** Top 5 quick access. You can choose among the 5 most used grain chart

**3** **CONFIG** screen. You can access all the equipment configuration

**4** Grain Chart Name

**5** Screen title

**6** Equipment time. Military time (24h format)

**7** Equipment interface (message) with the user

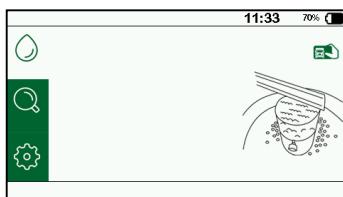
**8** When you choose the average reading, all the partial results will be displayed here.

**9** Battery Level

# DAILY USE

## HOME SCREEN

This is the home screen. If needed, you can add the sample number and vehicle license plate in the icon on the top right.

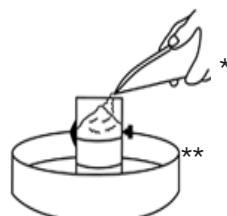


- Type the sample number and press NEXT
- Type the license plate and press SAVE
- You will notice that the icon will disappear and the information saved.

For each measure is necessary to insert the info again. To remove or change, leave the **HOME** screen by clicking ,  or .

## SAMPLE ANALYSIS

To do the moisture reading, follow the steps:



- Place the dump cell in an appropriate container, like a tray.
- Fill the dump cell with the grain sample, until overflow.
- With a straight edge, remove the excess. The level of the grain sample in the dump cell must be done in a constant and controlled way
- Place the dump cell on the grain cell
- Select the correct chart
- Dump the sample into the grain cell
- Immediately remove the empty dump cell



After the procedure, the equipment will show the result screen.

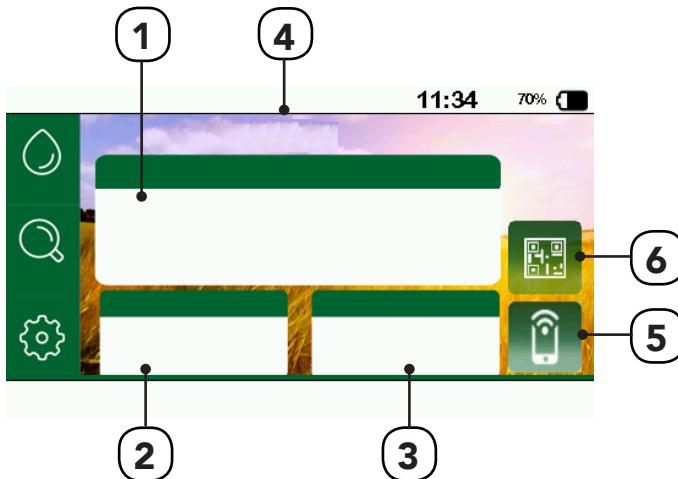
\*Grain Shell (Not included, can be bought separately)

\*\* Tray ((Not included, can be bought separately)

# DAILY USE

## RESULT SCREEN

The moisture results shows on the screen. To repeat the process, remove the sample from the grain cell. Automatically, the equipment returns to the **HOME SCREEN**.



- 1** Moisture content inside the grain sample
- 2** Grain Sample Temperature
- 3** Grain Weight (only for reference)
- 4** Grain Chart Name
- 5** Wirelessly send the info to your smartphone.
- 6** Send the result to your smartphone using the MOTOMCO QR CODE reader app.

---

## DAILY USE

### CHANGING THE CHART

The TOP 5 screen shows the last five selected charts.

- Click in the grain chart that you want. If the one you are looking for is not listed, click on the magnifier icon named **OTHERS**. If you have a custom grain chart, click in **CUSTOM**.
- Choose the desired grain chart by clicking on it. Use the arrows on the right side of the screen to scroll-down all the options. When you choose the desired chart, the equipment will return to the **HOME** screen.

### CUSTOM CHARTS

Please contact the manufacturer to find out how to get a customized grain chart in your equipment. Once installed on your device, look for it in the **CUSTOM** group.

### SENDING THE RESULT THROUGH WIRELESS COMMUNICATION

Your Moisture Tester can wirelessly communicate with your smartphone. It will send the moisture reading from your equipment to your smartphone.

1. Download the **999-FR NEW** app on the AppStore or Google Play.
2. Open the app and turn on the equipment
3. Press "SCAN" on the app.
4. Click on the serial number that you want to synchronize. Now, your equipment and your smartphone are connected.
5. Do the measurement or send the result through **PREVIOUS RESULT**
6. Share the result through your smartphone.

## DAILY USE

### SENDING THE RESULT THROUGH QR CODE (Optional)

Your Moisture Tester can generate QR CODES from the moisture readings. Follow the steps to read and share it.

1. Download the APP **MOTOMCO QR CODE READER** on the App Store or GooglePlay.
2. Open the app and turn on the equipment.
3. Do the moisture measurement and click on the icon 
4. Read the QR CODE with the app.
5. Share the results through your smartphone..

Note: QR Code is registered trademark of DENSO WAVE INCORPORATED.  
Android and GooglePlay are registered trademarks of Google Inc.

## SETTINGS

On the settings screen you have access to choose: TW units, language, moisture average readings, last results, Charts per Country, temperature, time and others. To access or change, just click on the respective icon.

## LAST RESULTS

Click on the icon to access the last results.

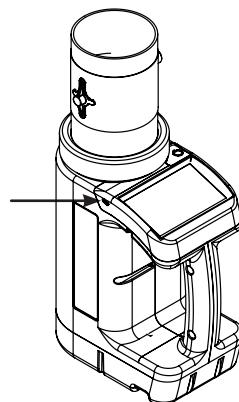
## LOG

By clicking on this icon, you have access to all the errors, access and changes on the equipment.

## CHARGING THE BATTERY

To charge the equipment please follow the steps:

1. Plug the charger in the outlet, after plug the micro USB in the equipment
2. The icon  will appear in the top corner of the screen, when charging.
3. Don't use the equipment during the charging of the battery.



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## MAINTENANCE

The equipment is factory calibrated with a Manufacturer Standard Tester, which goes under periodic verification to assure that it meets the requirements and standards defined by USDA and CGC.

### CLEANING THE EQUIPMENT

Turn the equipment off and unplug it from the outlet. The presence of foreign material inside the grain cell directly affects the equipment accuracy.

- It is recommended to clean the accessible parts with a damp soft cloth.
- Be careful when cleaning the internal side of the grain cell to avoid damage the equipment
- The use of alcohol or other chemicals can damage the equipment

### ANNUAL MAINTENANCE

We strongly recommend sending the equipment for the yearly maintenance to assure its accuracy, where it will be calibrated, updated and fully checked.

For the maintenance, please place your equipment in the original box, with all accessories and send to the manufacturer.

## TROUBLESHOOTING

An error occurs when an abnormal event occurs. Please, first check if the equipment is installed according to the instructions.

Screen Message	Probable Cause	Corrective Action
Oops, I don't have any charts installed! Click on Search and select a chart.	No Charts Installed	Select the Grain Chart.
Let's try again ? I couldn't stabilize the temperature.	Foreign Material in the grain cell	Clean the grain cell or remove any foreign material inside the grain cell
Let's try again ? I couldn't stabilize the weight.	Unstable Base RF presence	Check the use condition of the equipment
An error happened with result's digital signature, the measurement does not have any legal value. The result will not be transmitted to a system or printed.	System Failure	Restart the equipment and do the moisture measure
(User name) the result was outside the moisture range	Moisture out of the range	Make sure your sample is compatible with the selected chart
(User name) checked the machine is inclined, please leave it on a flat surface	Uneven Equipment	Place the equipment on a flat surface

**Please, contact our Customer Support for any error that display and are not listed.**