



KRAMP

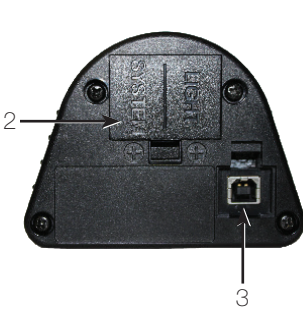
Grain Moisture Meter



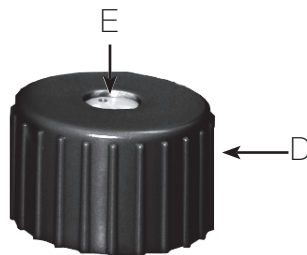
Operators manual

COMPONENTS

- 1 TESTER
- 2 BATTERY DOOR
- 3 USB DOOR
- 4 USB CABLE
- 5 CARRYING CASE



- A - Test Cell
- B - Display
- C - Keyboard
- D - Cap
- E - Pressure-indicator Screw



OPERATING CONDITIONS

Test cell and grain **MUST** be free of any condensation or surface moisture. Moisture on grain or in test cell will cause high readings. Very hot or cool grain will pick up moisture when it warms or cools.

Because grains are irregularly shaped and may not always pack the same way in the test cell, minor variations in readings may occur. To enhance accuracy, always take three (3) successive readings of the total sample being tested and average the results. Empty and refill the tester with new grain from the sample between each test.

The tester is most accurate when grain and tester are between 16°C and 32°C. For best results, grain temperature should not be below 4°C or above 43°C.

Condensation on the grain or test cell is best avoided by having the tester and grain at the same temperature.



SCREEN AND KEYBOARD

BUTTON FUNCTIONS

A - Power button is used to turn the tester on or off

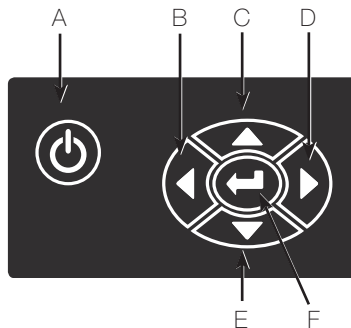
B - Back arrow is used to go back to the previous menu. When the back arrow is used any changes made in a previous menu will not be saved.

C - Up arrow is used to scroll up through a list of menu items or increment a value

D - Forward arrow is used in some menus to advance to the next item

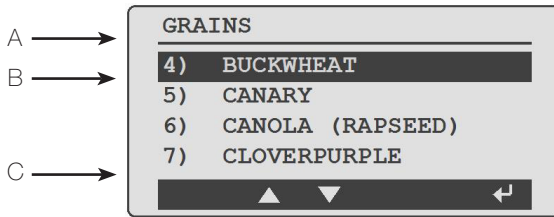
E - Down arrow is used to scroll down through a list of menu items or decrement a value

F - Enter button is used to select a menu item or accept and save changes made in a menu



MENU SCREENS

- A - The name of the menu that is currently displayed
- B - The list of menu items to select from
- C - The button bar indicates which buttons are active in the menu

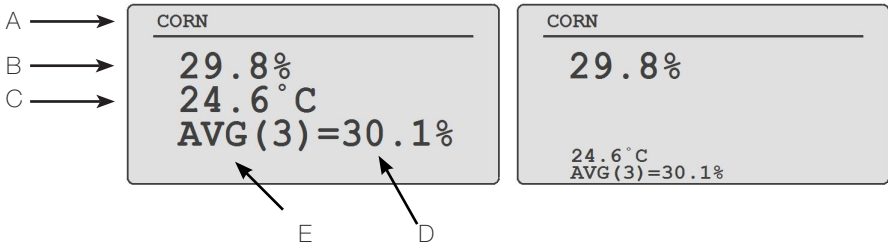


GRAIN RESULTS SCREEN

- A - Name of the grain tested
- B - Current moisture result
- C - Temperature of the grain
- D - Averaged moisture result
- E - Number of tests averaged

Big Font

Small Font



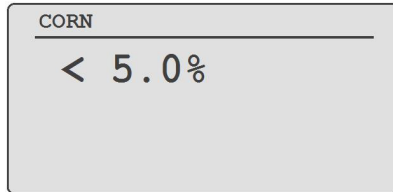
MOISTURE TESTING PROCEDURE

1. Remove cap and inspect test cell to be sure that it is clean and empty.
2. Press the "POWER" button to turn on tester.
3. When the grain to be tested has been selected by using the "UP OR DOWN" buttons, fill the test cell even to the top. Use finger to level grain in the test cell.
4. Replace cap and tighten until pressure-indicator screw is flush with the top of cap.
5. Press the "ENTER" button to start measuring. Once the test is complete the moisture %, temperature and the average moisture will be displayed.
6. Once a test has been taken empty the test cell.

NOTE: For best results always take at least three tests and use the average of the results as the grain samples moisture.

TESTING GRAINS THAT ARE ABOVE OR BELOW THE LIMITS

If the grain being tested in the tester is above or below the grains calibration limits the tester will display a < (less than) or > (greater than) symbol followed by the tested grain's upper or lower moisture limit.



DISPLAYING THE AVERAGED MOISTURE RESULTS

1. Each time a moisture test is taken the averaged moisture result is automatically displayed along with the current moisture and temperature.
2. The averaged results are stored for each individual grain, so when switching between grains there is no need to clear the averaging results as the tester calculates the average for each grain individually.
3. The tester by default will display the averaged results of the last selected number of tests performed on the tested grain. (The default is the average of the last 3 tests)

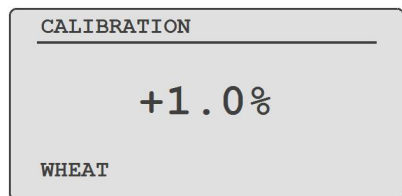
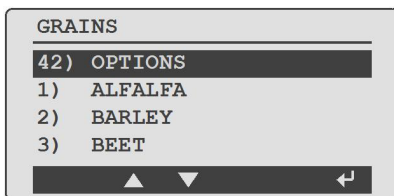
FUNCTIONS AND SETTINGS

Settings can be checked and changed in options menu. Navigate to options in grain menu with arrow buttons and select with enter button. Following settings are found in options menu.

GRAIN OFFSET /CALIBRATION

Each grain can be individually adjusted by 5 % in increments of 0.1% to match the results of an elevator tester.

Choose grain with right side arrow button. Adjust the offset with up/down buttons. Save offset with enter button.



CLEAR AVERAGE

In Clear average option choose between current grain or all grains and press enter.

OPTIONS

A) CALIBRATION
B) CLEAR AVERAGE
 C) #TO AVERAGE
 D) LANGUAGE

▲ ▼ ◀ ▶ ↵

CLEAR AVERAGE

CURRENT GRAIN
ALL GRAINS

▲ ▼ ◀ ▶ ↵

Trash can will be displayed to confirm that your averages have been cleared

SELECT THE NUMBER OF TESTS TO AVERAGE

The tester can automatically average 3, 6 or 9 tests. (default is 3). Choose by pressing enter.

OPTIONS

A) CALIBRATION
 B) CLEAR AVERAGE
C) #TO AVERAGE
 D) LANGUAGE

▲ ▼ ◀ ▶ ↵

#TO AVERAGE

3
 6
 9

▲ ▼ ◀ ▶ ↵

LANGUAGE

Select preferred language.

OPTIONS

A) CALIBRATION
 B) CLEAR AVERAGE
 C) #TO AVERAGE
D) LANGUAGE

▲ ▼ ◀ ▶ ↵

LANGUAGE

ENGLISH
 FRENCH
 GERMAN
 ITALIAN

▲ ▼ ◀ ▶ ↵

TEMPERATURE

Select preferred temperature units (Celsius or Fahrenheit). Choose by pressing enter.

OPTIONS

D) LANGUAGE
E) TEMPERATURE
 F) AUTO SHUTOFF
 G) VERSION

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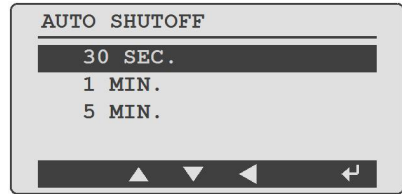
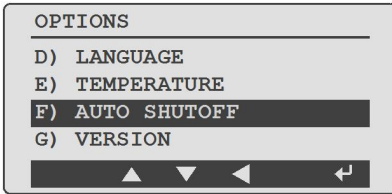
TEMPERATURE

70F
21C

▲ ▼ ◀ ▶ ↵

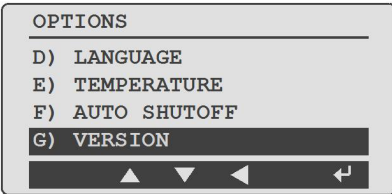
AUTO SHUTOFF

The tester can automatically turn off in 30 seconds, 1 minute or 5 minutes. Choose preferred time by pressing enter.



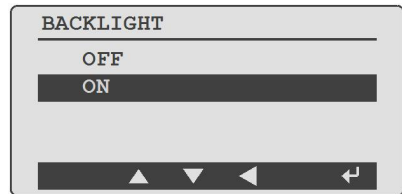
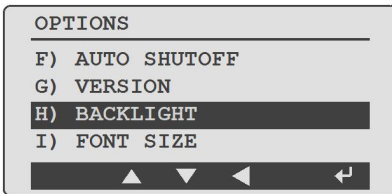
DISPLAYING THE SOFTWARE VERSION OF THE TESTER

Software version is shown in Version section of options. Choose by pressing enter and software version will then be displayed for a few seconds.



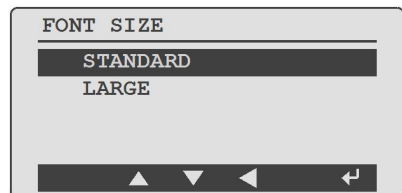
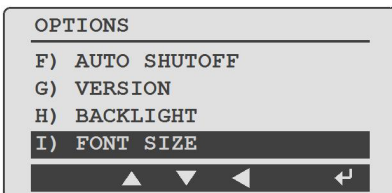
BACKLIGHT

The display and keypad backlight can be turned on or off. Choose by pressing enter.



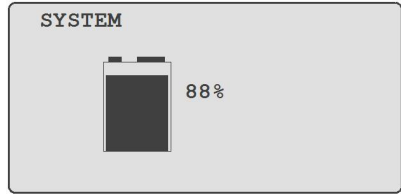
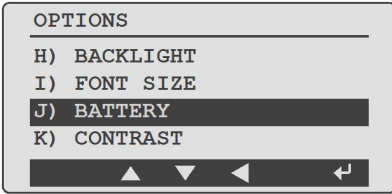
SELECT A DIFFERENT FONT SIZE

The tester has two different font sizes: standard and large to allow for easier viewing. Choose by pressing enter.



BATTERY

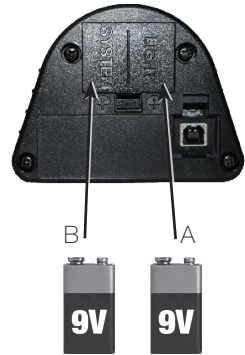
Battery level can be checked. Replace battery if battery level is low.



The tester is powered with two 9 volt alkaline batteries. The left battery (A) powers the backlight circuit. The right battery (B) powers the system.

The tester will display a percentage of battery life left in both the system and backlight batteries.

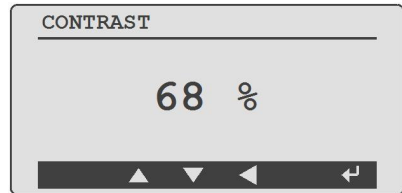
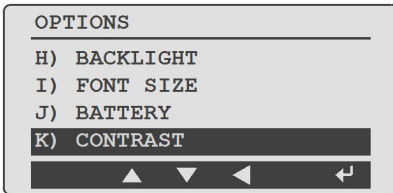
The tester system functions will operate if no backlight battery is installed or if it is low.



NOTE: When you first turn on the tester if the system battery is at or below 5% the tester will automatically flash the battery life on the display to let you know the battery needs to be replaced. If the backlight battery is fresh and the system battery needs replacing, the backlight battery can be used to operate the system by moving it to the system battery location.

LCD CONTRAST

The tester's display contrast can be adjusted from 50% to 100%. Adjust the contrast with the up/down buttons and confirm with ente.



PERSONALIZING AND UPDATING THE TESTER

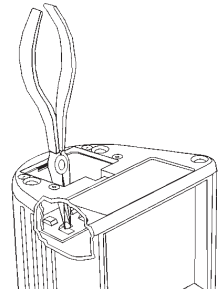
1. The tester is equipped with a USB port and when connected to a computer will allow diagnostics and updates to its software and grain calibrations.
2. Visit our website to use your USB port for personalization (adding user name), grain scale, firmware and diagnostic updates

SYMPTOM A: Unit does not power up or loses power occasionally (or backlighting does not operate.)

SOLUTION 1: Press ON-OFF button for shorter time. Do NOT hold button down.

SOLUTION 2: Check batteries for 0% or higher. Replace as necessary.

SOLUTION 3: Battery contacts may be making poor contact. Remove batteries and pull metal contacts (A) up from bottom of compartment and above height of plastic knob using needle-nose pliers.



SYMPTOM B: Unit is inaccurate.

SOLUTION 1: Temperature of the grain and unit may be more than 11°C different.

SOLUTION 2: If grain is at an extreme temperature, let grain settle to reach room temperature. Retest grain.

SOLUTION 3: Grain and/or test cell may have developed surface moisture from rapid change in temperature of the grain sample. Allow grain and tester to stabilize near room temperature. Inspect for visible moisture on grain and inside test cell. Dry the test cell with a soft cloth or a blow dryer if necessary. Retest grain.

SOLUTION 4: If the tester displays SYSTEM BATTERY LOW, the test results may be inaccurate. Replace battery.

SOLUTION 5: Unit may need to be re-calibrated by factory.

SYMPTOM C: Unit reads MOISTURE BELOW LIMIT or MOISTURE ABOVE LIMIT.

SOLUTION 1: Grain may be too wet or dry to test.

SYMPTOM D: Unit reads ERROR (---).

SOLUTION 1: Electronic failure. Return to your Dealer for repair or replacement or contact manufacturer.

ERROR MESSAGES

Symbol	Definition
ERROR (---)	Tester is in need of service

NOTE: Contact manufacturer if an ERROR message occurs.

CLEANING THE TESTER

Remove cap and wipe out inside of the tester with a dry paper towel.

NOTE: Grain may become lodged in threads of cap and should be removed with a small blade screwdriver.

WARRANTY

This product has a warranty valid for one (1) year from the date of purchase. The warranty covers the materials and workmanship.

To claim the warranty, the customer should return the defected product to the Manufacturer, re seller or the nearest Service Partner at the customer's own expense. The warranty claim must be accompanied with the description of the fault, copy of the sales receipt and customer's contact information.

The manufacturer / Service Partner will repair or replace the defected product and return it as soon as possible.

The warranty does not cover any damages that are caused by incorrect or careless use of the product, installation that does not correspond to the provided instructions and other damages which may arise due to causes beyond the control of the manufacturer.

The liability of KRAMP is limited to the price of the product at a maximum. KRAMP does not accept any responsibility for any direct, indirect or consequential damages that are caused by the use of the product or the fact that the product could not be used.



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