agraTronix DHT-1 Digital Hay Tester Owner's Manual

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agraTronix DHT-1 Digital Hay Tester

Introduction

THANK YOU for purchasing a DHT-1 Digital Hay Tester. READ THIS MANUAL carefully to learn how to operate and service your equipment correctly. Failure to do so could result in personal injury or equipment damage. THIS MANUAL SHOULD BE CONSIDERED a permanent part of this equipment and should remain with the unit when you sell it. WRITE IDENTIFICATION NUMBERS in the Specifications section. Accurately record all the numbers to help in tracing the equipment should it be stolen. Your dealer also needs these numbers when you order parts. If this manual is kept with the equipment, also file the identification numbers in a secure place away from the unit. WARRANTY is provided through Agratronix for customers who operate and maintain their equipment as described in this manual. The warranty is explained at the end of this section. This warranty provides you with the assurance that Agratronix will back its products where defects appear within the warranty period. Should the equipment be abused, or modified to change specifications, the warranty will become void.

Safety

⚠ DANGER

⚠ WARNING

⚠ CAUTION

Recognize Safety Information
This is a safety alert symbol. When you see this symbol on your tester or in this manual, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.
Understand Signal Words
A signal word – DANGER, WARNING or CAUTION – is used with the safety alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.
Follow Safety Instructions
Carefully read all safety messages in this manual and on your tester safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and re-pair parts include the current safety signs. Learn how to operate the tester and how to use controls properly. Do not let anyone operate without instruction. Keep your tester in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life. If you do not understand any part of this manual and need assistance, contact Agratronix.

Operation

Understanding Hay Conditions and Test Readings

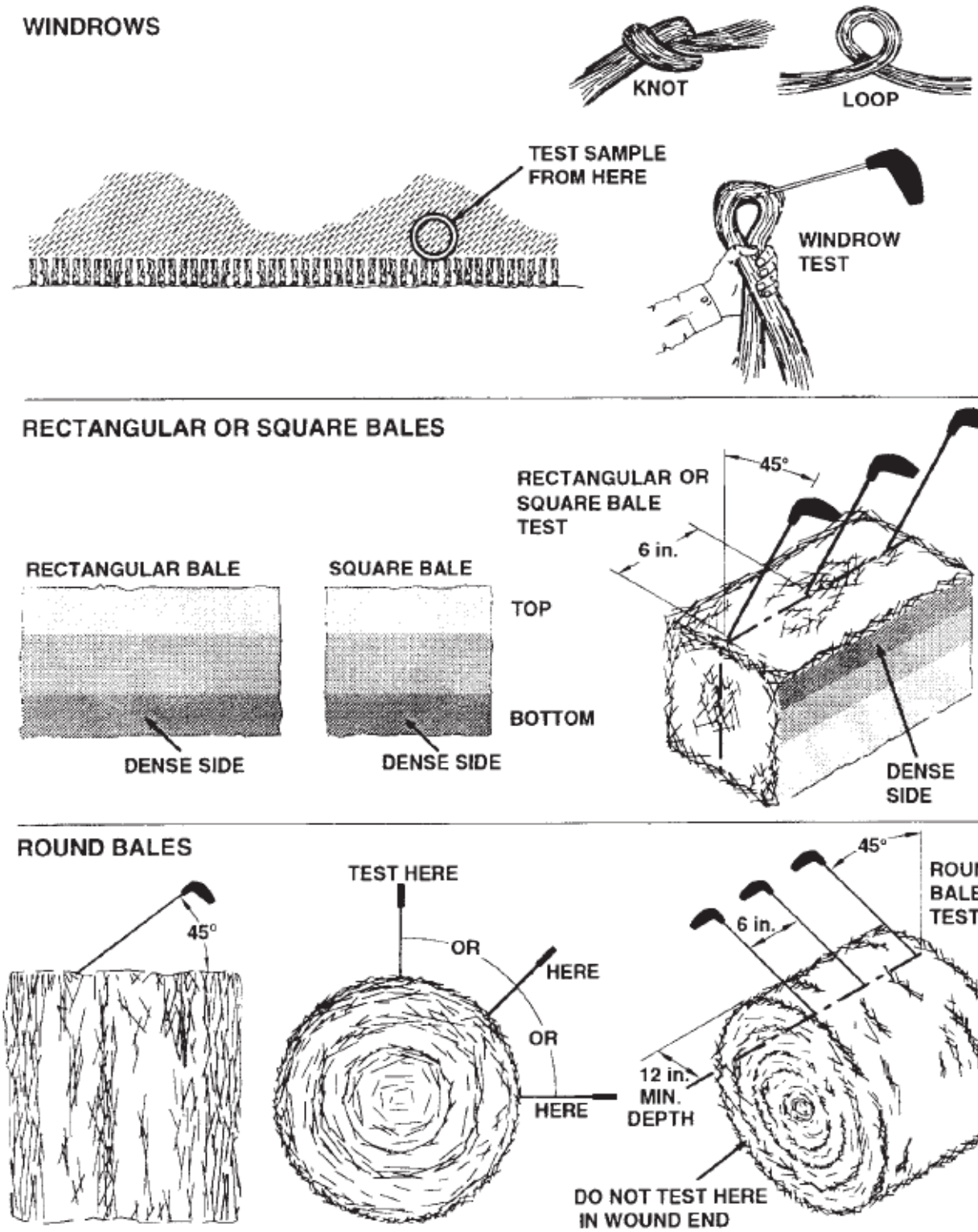
Many variables affect the accuracy of test readings. Understanding these variables can help to obtain accurate test readings.

IMPORTANT:

Because of the numerous variables which affect test readings, the indicated moisture content should not be used as an absolute, quantitative measurement. Test readings are, however, very useful guidelines for baling and storing hay.

- Bale Density: The tighter the bale, the higher the moisture readings. Com-paction also varies within each bale. Although each brand of baler feeds hay into its chamber differently, in general, small, rectangular bales are denser toward the bottom or “tight” side; and large rectangular bales are densest in their upper corners.
- Natural variations within the plant before proper curing: The higher the moisture content, the wider the variations. Greater uniformity can be expected as more curing takes place.
- Sweating: Higher readings may occur during the first couple of days after baling, moisture readings may below and then climb during the “sweating” process. As the hay cures, moisture readings should drop and continue to decline as the hay becomes progressively drier. It is important to continue to monitor moisture for several days.
- Some preservatives increase conductivity initially: Until the preservative is absorbed, usually in 1-2 days, it may cause the moisture reading to be 2- 4% above the same hay that is untreated.
- Percent of grass in the hay: Tester has been calibrated on 100% alfalfa hay. The more grass in the hay, the higher the moisture readings vs. actual. Independent tests have shown that differences of up to 5 points at 20%moisture can exist with 100% mixed grass hay.

Hay Testing Guidelines



Windrow:
Windrow moisture will vary greatly in different parts of the field. Thick, heavy sections of the windrow will contain much higher moisture hay than thin areas. Look for “humps” in the windrows. Check windrows at several locations by turning the windrow up on its side and selecting a handful of hay from the bottom.
NOTE: Hay from the bottom should contain the most moisture since the top of the windrow will dry out first.
Twist the sample handful into a tight knot or loop, trying to simulate the density of a bale. Insert probe tip into the tightest part of the knot so both brass parts are within the knot. Use highest reading as a guideline for when to bale. There are more variables to testing moisture in the windrow than in a bale. For greater accuracy, several bales should be baled and tested, before baling the entire field.
IMPORTANT: DO NOT AVERAGE RESULTS.
Rectangular or Square Bales:

The way hay is fed into the baler's compression chamber results in more hay toward the bottom of the bale than at the top. Any shattered leaves, etc., will sift downward, causing the bottom or "tight" side of the bale to be denser than the top or "loose" side. (An exception to this is a baler that "folds" hay into the chamber on each side. The top third of a folded bale and its upper corners are the densest areas.) Because the inside of each bale is not uniform in density or leaf-to-stem ratio, moisture readings will vary from one part of the bale to another. It will read highest if the probe is inserted into the "dense" side. The tester will give higher readings in tight bales than in loose bales. For best results, insert probe into the "dense" side of bale at a 45˚ angle. Take readings in at least five (5) places (approximately 6 in. apart along the bale centerline) and use the highest reading as a guideline.

Round Bales:

Test readings can be taken anywhere around the outside surface of the bale, as long as the probe tip is inside the outer wrap since the outer wrap tends to dry out first.

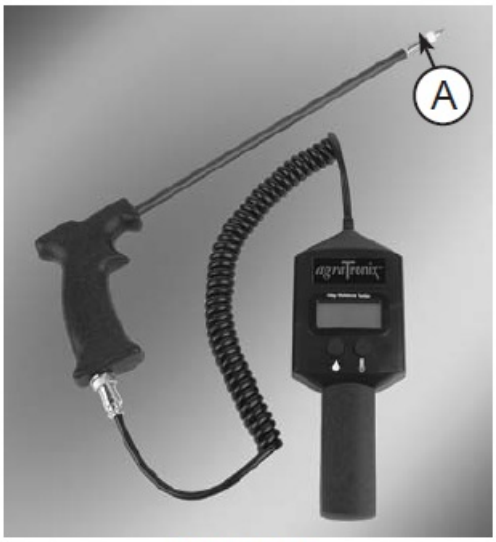
IMPORTANT: Do not insert the probe into the wound end of the bale. If inserted from the wound end, the probe tip can end up between the hay wraps and not have sufficient contact to produce an accurate test reading.

For best results, insert the probe into the outside radius of the bale at a 45˚ angle and at least 12 in. deep. Take readings in at least five (5) places (approximately 6 in. apart) and use the highest reading as a guideline.

Operating Hay Tester (Moisture Test)

NOTE: If both temperature and moisture % switches are pressed simultaneously, the tester will not be harmed but a meaningless number will be displayed.

1. Insert probe tip (A) into hay so both brass pieces are in contact with hay. See Hay Testing Guidelines for probe information and hay preparation.



Probe Tip

"Moisture %" Switch

2. Press and hold the "Moisture %" switch (B) until digital readout stops changing (settles). Moisture content may vary widely in different parts of the windrow and within each bale. Tester will display moisture reading from 14.5% to 45%, with most accurate readings between 15% and 30%.

IMPORTANT: Take readings in at least five (5) places in the windrow or bale and use the HIGHEST read-ing as a guideline.high Moisture Readings (above 30%): Readings over 30% should only be used as a qualitative

indication of very high moisture.
NOTE: Hay at more than 20% moisture should not be baled or stored without preservatives. Hay at more than 25% moisture should not be baled or stored.

IMPORTANT: If one reading is over the recommended moisture content, do not bale. Low Moisture Readings (under 14.5%): Hay tester will not test below 14.5%. If a hay bale being tested is 12% moisture, the tester will still read at 14.5% (+/–0.3%). If you suspect that the hay being tested is very low moisture, take a reading of the air before probing the bale. If the display does not change from the air reading (14.5%), then the bale moisture is below the limits of the tester.

Operating Hay Tester (Temperature Test)

NOTE: If both temperature and moisture % switches are pressed simultaneously, the tester will not be harmed but a meaningless number will be displayed. Temperatures can be measured from 33˚ to 200˚F.

1. Insert probe tip (A) into hay so both brass pieces are in contact with hay. See Hay Testing Guidelines for probe information and hay preparation.

Probe Tip

"Temperature" Switch

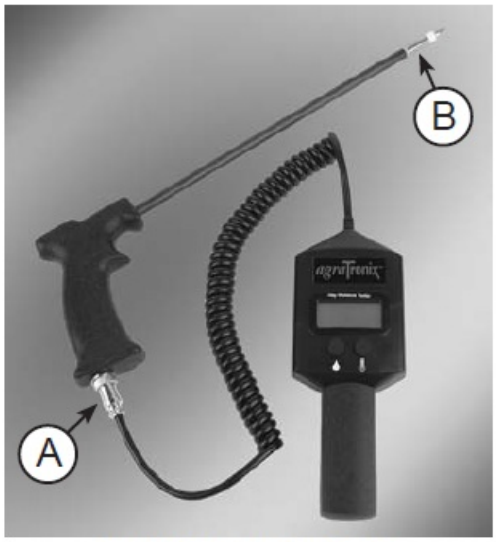
2. Press the "Temperature" switch (B). Because the metal tip of the probe must adjust to the temperature of the bale, it may take from 1-2 minutes until the correct temperature stabilizes. It is not necessary to keep the switch depressed for this period. Just leave the probe in the bale and periodically check the reading to allow the metal tip of the probe to adjust to the bale temperature. The temperature circuitry of each tester is individually calibrated to its probe. If a replacement probe is installed, the temperature readings may be off by 1˚ to 3˚ from the actual.

IMPORTANT: Temperature may vary widely in different parts of the bale. Take readings in at least five (5) places and use the HIGHEST reading as a guideline.

Troubleshooting

Troubleshooting the Hay Tester
If the tester fails to operate, follow these steps:

1. If no display appears when switches are pressed, check battery connections.



Troubleshooting Tester

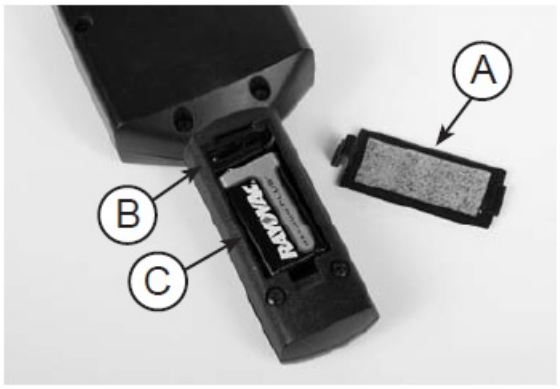
2. If “LOW BAT” is displayed, replace the battery with a new 9-volt alkaline battery. (See Replacing 9 Volt Alka-line Battery.) If the tester displays inaccurate read-ings, or if readings are lower than actual, follow these steps:
3. Make certain cord connection (A) between tester and probe is dry and fastened correctly.
4. Clean tarnish from probe tip (B) and retest hay.
5. To check tester calibration, take a “Moisture %” reading at room temperature (72˚F) with nothing touching the end of the probe.

- Test reading should be 14.5% (+/–1%).
  Short two brass parts of probe tip with a piece of aluminum foil and take a second “Moisture %” reading.
- Test reading should be 45.0% (+/–1%).
  If tester fails to display above readings, replace tester.(See “Product Warranty”, Page 12.)

Service

Replacing 9-Volt Alkaline Battery
NOTE: “LOBAT” will display when a switch is pressed and battery needs replacement.

1. Remove battery door (A) from back of the tester.
2. Attach leads (B) to 9-volt alkaline battery (C) terminals.
3. Attach battery door to the tester.



Replacing Battery

Displaying "LOBAT"

Care, Maintenance, and Storage

CAUTION: Never attempt to wear a tester probe on your belt. Serious injury could occur from the sharp tip of the probe.

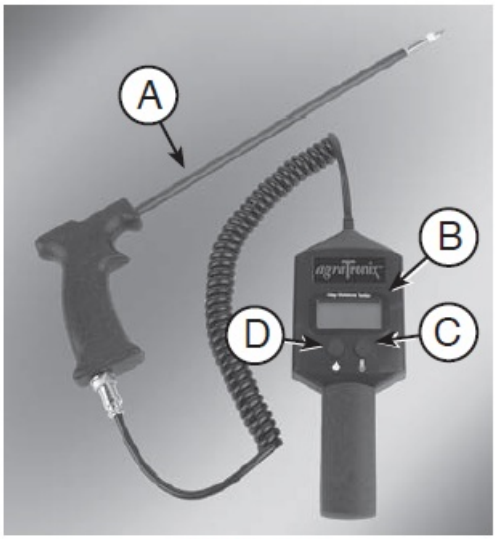
1. After each use, store tester in a clean, dry place.

Maintaining Tester

2. The probe's metal tip should be wiped clean between each use for best results. Clean both parts of the metal tip from time to time with fine steel wool and/or mineral spirits or alcohol. A dirty tip can cause lower test readings. Keep brass shiny for best results.
3. Never immerse the probe in water.
4. Remove the battery if tester will not be used for several months.

Specifications

Features



Features

- 18 in. Probe with Gun-Type Grip (A)
- DIGITAL Readout (B) for % Moisture and Temperature (˚F) (+/–1% accuracy throughout the normal test range of stored, baled hay.)
- Temperature Range (C): 33˚ to 200˚F
- Moisture Range (D): 14% to 45%
- Factory Calibrated: No field adjustments required

Updated Features

- The moisture and temperature are now live readings instead of one average reading per test
- Improved display with greater visibility
- Added graphical symbols for greater information readability
- higher temperature accuracy when probing bales
- New style tip made from Stainless Steel for increased strength and durability
- Increased battery life
- Direct temperature reading F or C user selectable
- Improved moisture calibration

Record Serial Number
NOTE: Hay Tester serial number is located on the back side of the tester. Write your model number, serial number and date of purchase in the spaces provided below. Agratronix or your local dealer needs this information when ordering parts and when filing warranty claims.

Accessories

Standard 18 inch Probe

Tester Probes
A Standard 18-inch probe is provided with the DHT-1 Hay Tester. Optional 24 inch and 32 inch probes are available as an accessory

Warranty

The Agratronix DHT-1 Hay Probe Tester is guaranteed 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 foregoing warranty is exclusive and in lieu of all other warranties of merchantability, fitness for purpose and any other type, whether expressed or implied. Agratronix neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with its prod-uct and will not be liable for consequential damages. For repair or service information, call Agratronix at 1-800-821-9542.

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Agratronix Moisture Testers are formerly known as Farmex Moisture Testers

Documents / Resources

	**agraTronix DHT-1 Digital Hay Tester** [pdf] Owner's Manual DHT-1, Digital Hay Tester, DHT-1 Digital Hay Tester
	**agraTronix DHT-1 Digital Hay Tester** [pdf] User Manual DHT-1 Digital Hay Tester, DHT-1, Digital Hay Tester
	**agraTronix DHT-1 Digital Hay Tester** [pdf] Owner's Manual DHT-1, Digital Hay Tester, DHT-1 Digital Hay Tester

References

- **Agriculture Moisture Meter & Agricultural Eqipment Provider | Agratronix**