

HarvestLab Station User Guide

BZ100166, BZ100167, BZ100168



JOHN DEERE

INSTALLATION INSTRUCTIONS

HarvestLab Station

Z104258 19OCT09 (ENGLISCH)

**John Deere Werke Zweibrücken
Z104258 (19OCT09)**

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Z104258-19-19OCT09

Disclaimer

READ THIS MANUAL carefully to learn how to operate and service your HarvestLab station correctly. Failure to do so could result in component damage.

IMPORTANT: This manual provides all necessary information for an appropriate operation of the HarvestLab station system.

John Deere is not responsible for faulty reading or operator errors.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The HarvestLab hardware warranty is explained on the warranty certificate which you should have received from your dealer.

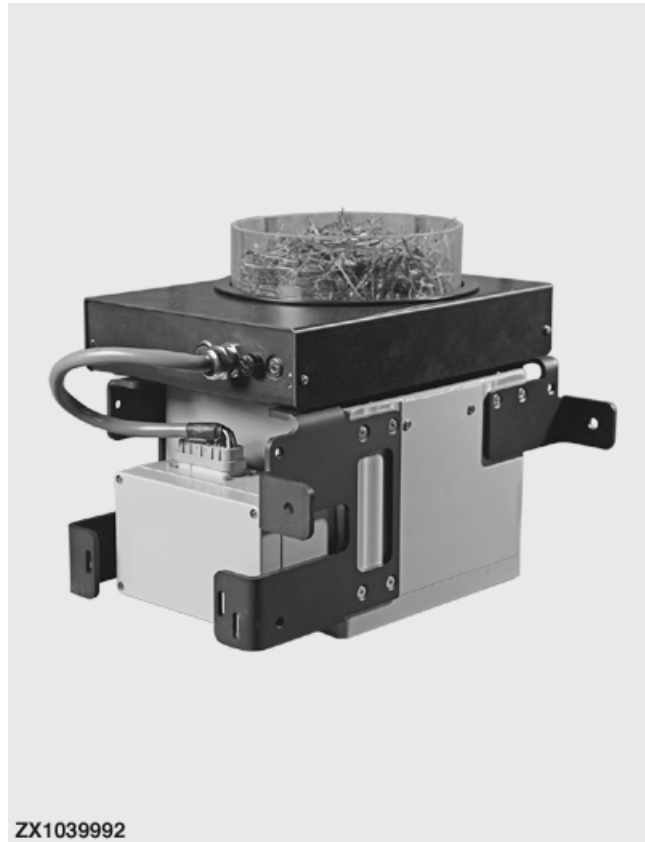
This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. Should the HarvestLab system be abused, or modified to change its performance beyond the original factory specifications or the NIR sensor opened within the warranty period, the warranty will become void.

The HarvestLab sensor can be mounted on the forage harvester spout to measure moisture of fresh crop. The sensor can also be used with the stationary kit to measure moisture of fresh and ensiled crops. The following information included in this users guide will include instructions on setup and use the HarvestLab with the stationary kit.

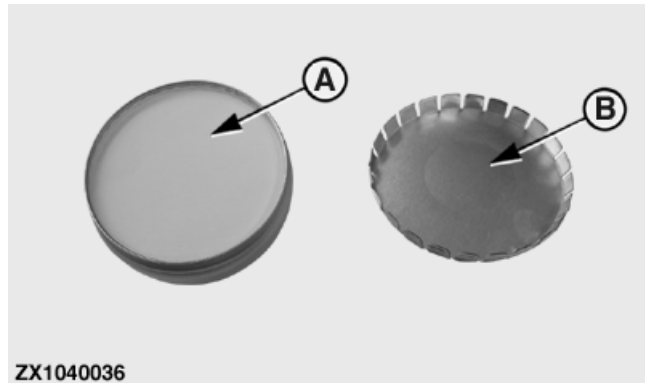
The HarvestLab station sensor is delivered with its specific wave length standard (A) that is to be used for checking sensor functionality by measuring the sensor wave length. The wave length standard (A) must be kept in good condition for further measurement.

In this way, special attention must be paid so that the wave length standard (A) doesn't come in contact with chemical products such as:

- Diesel
- Gasoline (Leaded or unleaded)
- Thinners
- Engine cleaner
- Cavity sealing
- After cleaning
- Finishing paint
- Blackboard lacquer



ZX1039992



ZX1040036

A—Wave Length Standard

B—Cover

- Freeze protection

ZX1039992 —UN—01NOV06

ZX1040036 —UN—20NOV06

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HarvestLab Station Components

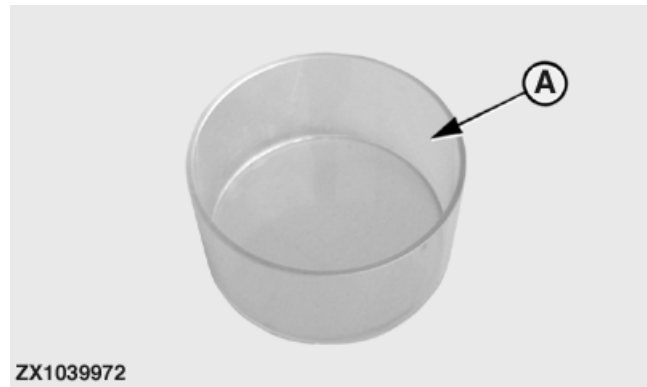
BZ100166—Glass Bowls

Two glass bowls (A) are provided to be used with the turn table for material analysis.

Glass bowls (A) should be cleaned with glass cleaner and a clean towel. When not in use always place the glass bowl on a clean towel or back in the turn table.

IMPORTANT: For an accurate sample measurement result, always use genuine John Deere glass bowl (A) provided with the bundle BZ100166. Do not use any other type of glass bowl.

Avoid scratching the bottom of the glass bowl.



ZX1039972 —JUN—01NOV06

A—Glass Bowl

Continued on next page

OUCC002,0002804 -19-22OCT07-1/3

BZ100167—Turn Table

The turn table (A) is intended to be installed on NIR sensor frame for material analysis purposes. It is used in conjunction with the glass bowl and the connection box.

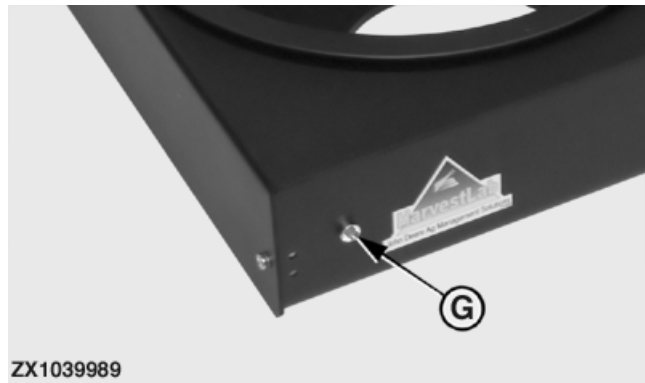
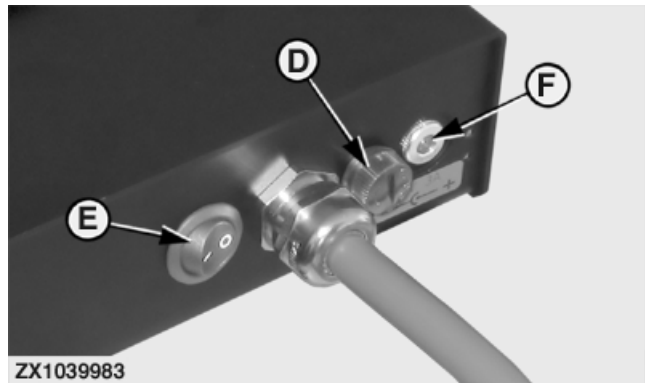
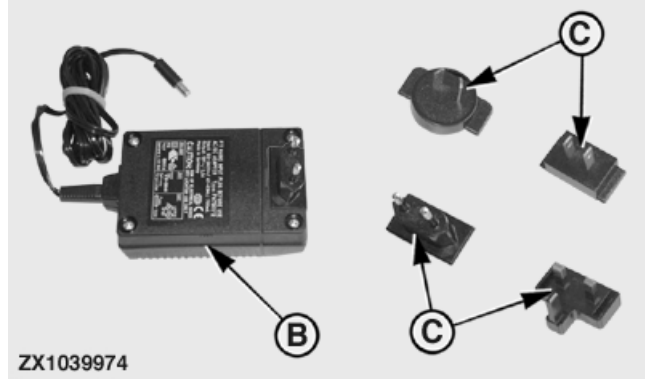
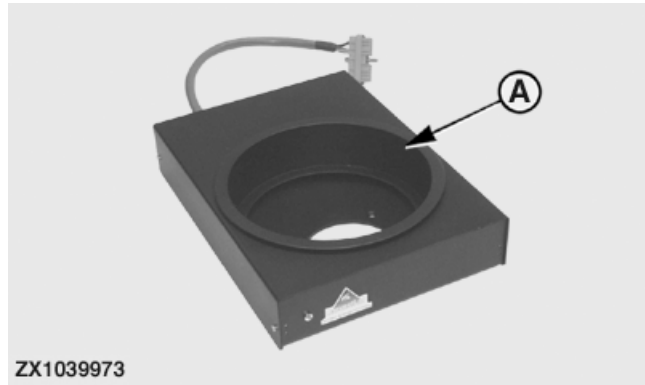
The turn table (A) provides the sensor with multiple views of the forage in order to achieve a more accurate moisture prediction.

NOTE: Three attaching socket-head screws M5X12—21M7307 are provided with the turn table (A)—not illustrated.

An AC/DC¹ converter (B) with a set of four power plug adapters (C) are provided to comply with all country power plug requirements.

The turn table is protected by a 2.5 Amp fuse (D).

- | | |
|----------------------|----------------------|
| A—Turn Table | E—ON/OFF Switch |
| B—AC/DC Converter | F—Power Socket |
| C—Power Plug Adapter | G—ON Indicator Light |
| D—Fuse—2.5 Amp | |



¹AC/DC: Alternative Current/Direct Current

Continued on next page

OUCC002,0002804 -19-22OCT07-2/3

BZ100168—Connection Box

The connection box (A) is designed to be installed on the back of the NIR sensor. It is used as an USB¹ and an Ethernet² interface for the personal computer connection and application upload purposes.

1. A cross over cable (B) with two RJ45³ connectors and an adapter (C) are provided for the connection box (A) to the Ethernet port of the computer connectivity.

IMPORTANT: Always use the cross over cable (B) furnished with the connection box (A) for a proper connection between box and personal computer. The use of other kind of cable may lead to a non-operating system.

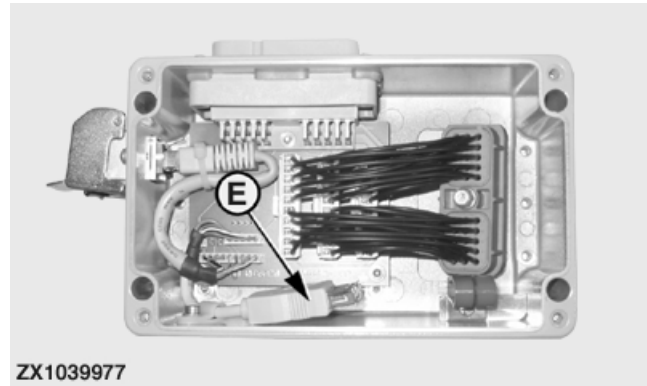
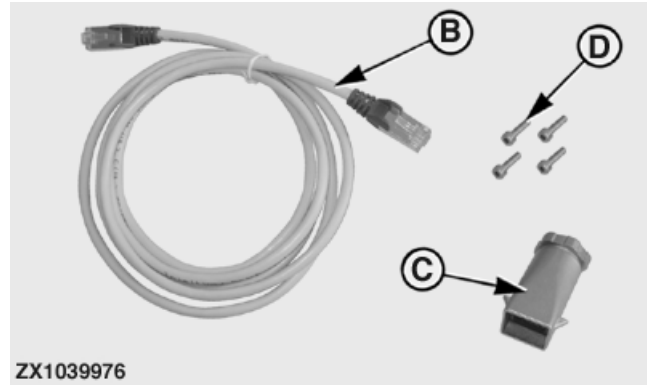
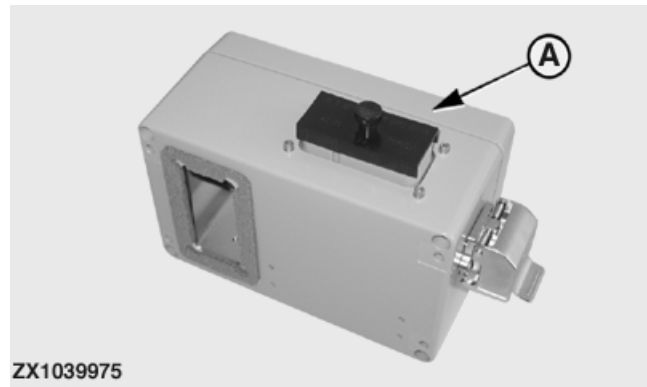
NOTE: Ethernet port of the personal computer must comply with the Ethernet 10 base T or 100 base T standard as defined by the iso IEEE 802.3 standard. For more information contact your John Deere dealer.

Four attaching socket-head screws J850414 (D) are provided to attach connection box (A) on sensor frame.

2. The USB connector (E) is located inside the connection box (A).

NOTE: No USB memory stick or cable is furnished with the connection box (A). If data recording is required, connect an USB memory stick to the USB connector (E) then close cover of connection box (A).

- | | |
|------------------------------------|------------------------|
| A—Connection Box | D—Attaching |
| B—Ethernet Cross Over cable | Screws—J850414 |
| C—RJ45 Connector | E—USB Connector |



ZX1039975 —UN—01NOV06

ZX1039976 —UN—01NOV06

ZX1039977 —UN—01NOV06

¹USB: Universal Serial Bus

²Ethernet: Network protocol as defined by iso IEEE 802.3 standard (10 /100 Mbits/s)

³RJ45: Registered Jack 45 for Ethernet cable

Build up HarvestLab Station

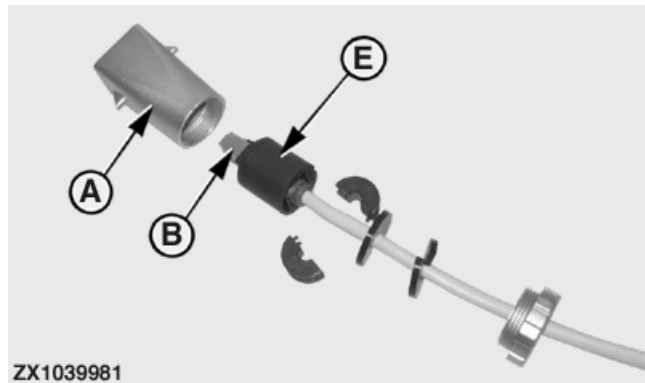
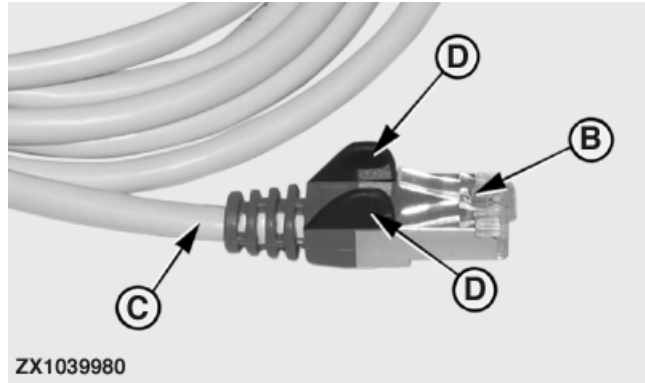
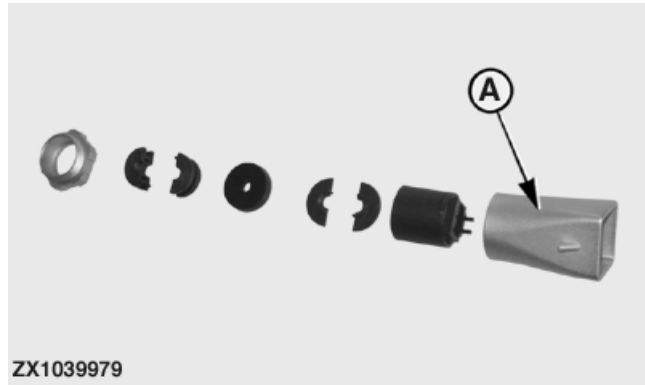
Ethernet Cross-cable Preparation:

1. Disassemble connector adapter (A) and take note of each component location as shown.
2. On one RJ45 connector (B) of the cross-cable (C), cut out both plastic ears (D) as shown to allow connector insertion.
3. Insert the modified RJ45 connector (B) through the connector adapter (A) components then close connector adapter (A).

IMPORTANT: Firmly push connector (B) into sleeve (E) until it bottoms to allow correct assembly of connector adapter (A).

A—Connector Adapter
B—RJ45 Connector
C—Cross-cable

D—Plastic Ears
E—Sleeve



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ZX1039979—UN—01NOV06

ZX1039980—UN—01NOV06

ZX1039981—UN—01NOV06

Turn Table and Connection Box Installation:

IMPORTANT: UTMOST cleanness must be applied while installing turn table on NIR sensor frame. Always work in a clean environment. Always keep the NIR sensor and glass adapter clean and free from dust.

NOTE: Store glass adapter in a clean towel. Reinstall glass adapter when the sensor is being shipped, placed in storage or for use on the forage harvester.

1. Remove the three socket-head attaching screws (A) then the glass adapter (B) from sensor frame.

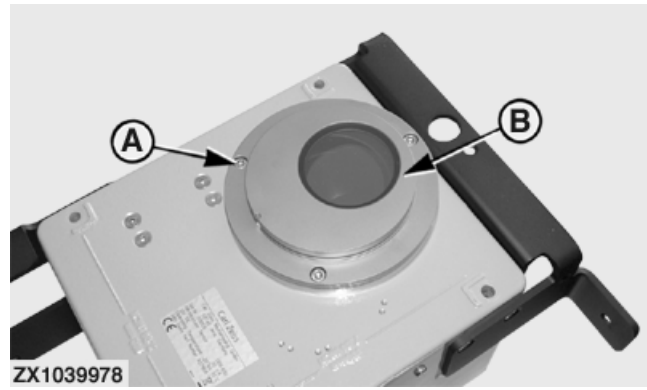
IMPORTANT: Pay attention to the glass adapter (B) orientation for further installation process.

2. Remove the four attaching screws (C) then open rear cover (D) of connection box (E).
3. From the inside of the connection box (E) pass main connector (F) through the box opening as shown
4. Install connection box (E) on back of NIR sensor frame using the four socket-head screws (G) as shown.

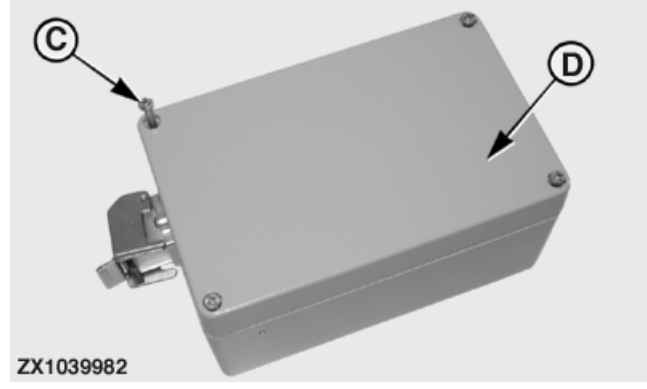
NOTE: Access to the lower right-hand attaching screw may be limited. In this case fasten other three screws and main connector while leaving the lower right-hand screw out.

5. Connect and secure main connector (F) to the free receptacle of NIR sensor.

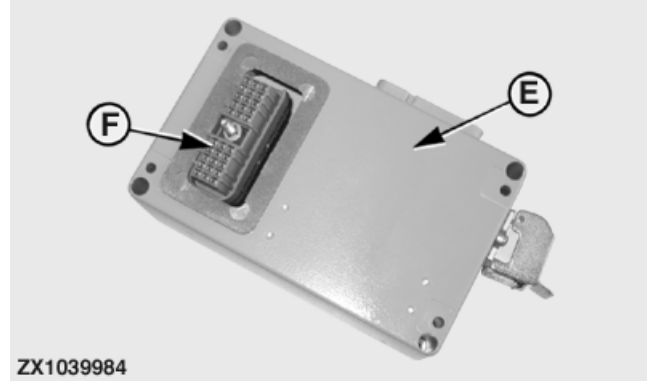
- | | |
|----------------------|------------------|
| A—Socket-head Screws | E—Connection Box |
| B—Glass Adapter | F—Connector |
| C—Attaching Screws | G—Socket-head |
| D—Rear Cover | Screws—J850414 |



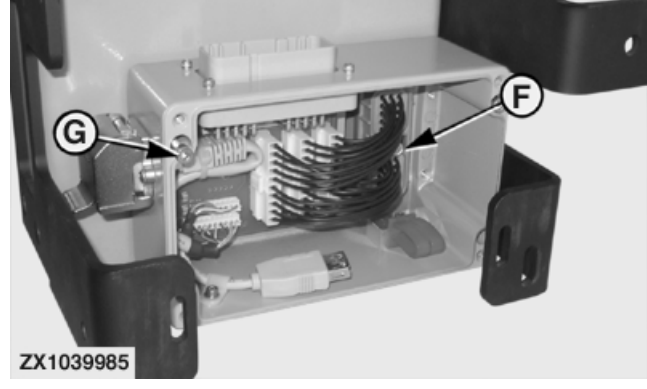
ZX1039978 —UN—01NOV06



ZX1039982 —UN—01NOV06



ZX1039984 —UN—01NOV06



ZX1039985 —UN—01NOV06

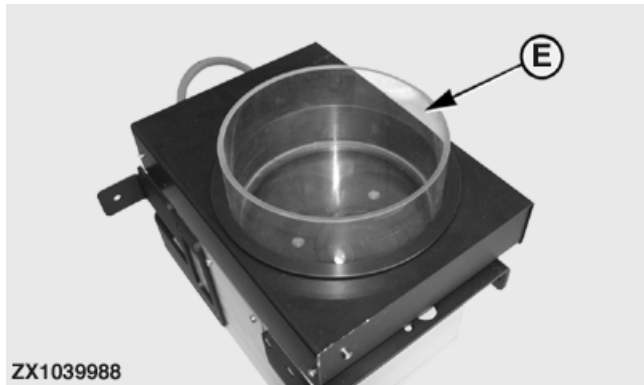
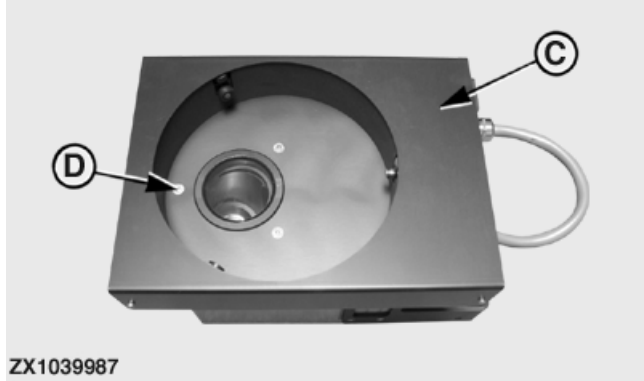
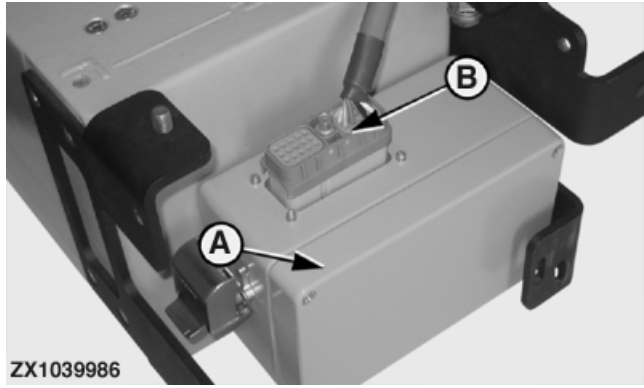
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OUC002,0002805 -19-22OCT07-2/3

6. Install rear cover (A) back on connection box then connect turn table connector (B).
7. Remove the holder ring from the turn table by lifting straight up.
8. Carefully position turn table (C) above sensor and use the three socket-head screws M5X12 21M7307 (D) to firmly fix the turn table (C) to the sensor housing.
9. Replace holder ring into turn table and place glass bowl (E) in the holder ring to protect the sensor's lens.

A—Rear Cover
B—Turn Table Connector
C—Turn Table

D—Socket-head Screws
 M5X12—21M7307
E—Glass Bowl



ZX1039986 —UN—01NOV06

ZX1039987 —UN—01NOV06

ZX1039988 —UN—01NOV06

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Setup Personal Computer for HarvestLab Station Connection

IMPORTANT: Prior to using the HarvestLab station for the first time, it is required to modify the network properties of the Personal Computer to be connected to the HarvestLab station.

NIR station must be directly connected to a Personal Computer that is not part of a local network.

Setup PC¹ as follows:

1. Start the PC.
2. Click on the "Start Menu →Settings →Network Connections".
3. Double click "Local Area Connection".
4. Click "Properties".
5. In the General tab, use the scroll bar and click on Internet Protocol (TCP/IP) and click Properties.
6. Click "Use the following IP address" and enter the following:

- **IP Address** set to **192.168.0.100**
- **Subnet mask** set to **255.255.255.0**
- **Default gateway** set to **NULL**
- **NO DNS**

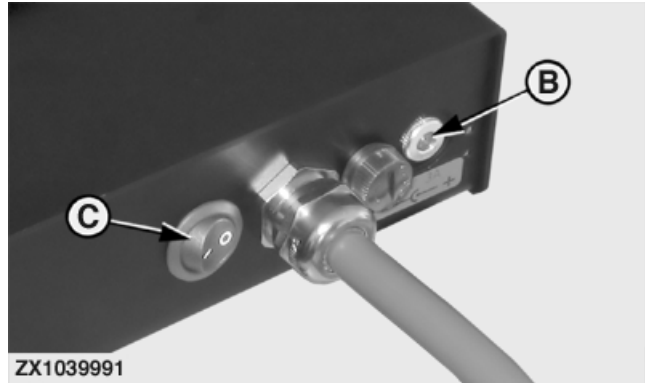
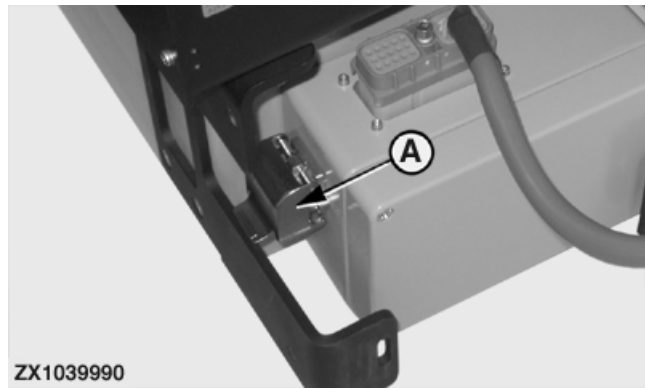
NOTE: Default IP address of the HarvestLab station is 192.168.0.1

7. Save the new configuration.
8. Shut down PC.
9. Connect the cross over cable between PC Ethernet port and connecting box socket (A).
10. Plug in power adapter to turn table power socket (B).
11. Press part "I" of switch (C) to turn ON the NIR sensor and the turn table.

IMPORTANT: The sensor requires about 30 seconds to turn its light on. The turn table still rotates until NIR sensor has fully started. When turning

¹PC: Personal Computer

²URL: Uniform Resource Locator



A—Ethernet Socket
B—Power Socket

C—ON/OFF Switch

turn table OFF, the turn table will rotate some seconds and the light will take about 20 seconds to go off. Do not remove power supply until NIR sensor has fully shut down.

12. Re-start PC.
13. Start your familiar browser application then enter the following URL² address: **http://192.168.0.1**. The HarvestLab station user WEB interface should now pop up.

NOTE: In case of difficulties encountered while setting up the PC contact your John Deere dealer.

HarvestLab Station User WEB Interface

Sample #	Spectra #	Time	Constituent 1	Constituent 2	Constituent 3	Constituent 4	Constituent 5
1	0	03 Sep 2007 04:37:56 PM	79.5	0.0	0.0	0.0	0.0
Sample #	Spectra #	Time	Constituent 1	Constituent 2	Constituent 3	Constituent 4	Constituent 5
ZX1041123							

ZX1041123—UN—20SEP07

A—Measure

Before using the HarvestLab station, check that the cross over cable between PC Ethernet port and connecting box socket is correctly plugged.

Plug in power adapter to turn table power socket.

Turn ON turn table.

Start the PC

NOTE: Following procedure is given for Internet Explorer 8 under Windows XP Professional Operating System—for other browser and Operating System version, please refer to the relevant product documentation.

Go to “Control Panel>>Internet Properties>>General tab>>Browsing History Settings” screen.

Make sure that temporary internet files and cookies are managed as follows :

¹URL: Uniform Resource Locator

B—Calibration

C—System Settings

D—System Status

- “Check for newer versions of stored pages” set to **AUTOMATICALLY**

Start your familiar browser application then enter the following URL¹ address: **http://192.168.0.1**. The “Measurement Screen” of NIR station user WEB interface should now pop up.

NOTE: HarvestLab station WEB interface is available in English only.

From this screen, you can :

- Start sample **Measurement** (A).
- Access **Calibration** page (B).
- Access **System Settings** page (C).
- Access **System Status** page (D).

Continued on next page

OUC002,0002CDA -19-19OCT09-17

Sample Measurement Page

Adresse <http://192.168.0.1/cgi-bin/measurepage?measure=1> Wechseln zu Links >>

JOHN DEERE
03 Sep 2007 04:37:14 PM

Measurement Calibration System Settings System Status ZEISS

Measure

Sample #	Spectra #	Time	Constituent 1	Constituent 2	Constituent 3	Constituent 4	Constituent 5
			FRESH_CORN_01.AMO				
1	0	03 Sep 2007 04:37:56 PM	79.5	0.0	0.0	0.0	0.0
Sample #	Spectra #	Time	Constituent 1	Constituent 2	Constituent 3	Constituent 4	Constituent 5
ZX1041124							

ZX1041124—UN—20SEP07

A—Measure

B—Constituents

The measurement page allows the user to sample forage for moisture prediction. For measurement steps, see "Measurement Procedures" section.

Click **"Measure"** (A) to start sample measurement.

Depending on calibration (model file) used by the system, the measurement results can display up to five constituents (B) (i.e Moisture, Proteins and Starch). The system automatically saves the sample results.

Continued on next page

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Calibration Page



Measurement

Calibration

System Settings

System Status



JOHN DEERE

03 Sep 2007 04:41:16 PM

Model-Info

Nr#	Select	Content	Action	Model File	Calibration-ID	Filter	Model Date
1.	<input checked="" type="checkbox"/>	View	Delete	FRESH_CORN_01.AMO	3200	0	03/28/2007 10:24
2.	<input type="checkbox"/>	View	Delete	FRESH_GRASS_YOUNG-WCS_01.AMO	3300	0	04/24/2007 11:48
3.	<input type="checkbox"/>	View	Delete	FRESH_WCS_01.AMO	400	0	01/12/2007 15:04
4.	<input type="checkbox"/>	View	Delete	FRESH_ALFALFA_01.AMO	100	0	01/16/2007 11:37

(Sensor storage space: 22528 kByte, available: 21272 kByte, free: 94%)

Filter-Info

Nr#	Content	Action	Filter File	Filter Date
		<input type="button" value="Add"/>	<input type="text"/>	<input type="button" value="Browse..."/>

(Sensor storage space: 22528 kByte, available: 21272 kByte, free: 94%)

ZX1041125

A—Model-Info
B—Browse

C—Add
D—Delete

E—Select
F—Save

G—Filter-Info

The Calibration page allows the user to select different moisture curves for different crops and crop conditions in order to provide an accurate moisture prediction.

Model-Info (A): The model-info section allows the user to select the specific moisture curves. Each model file represents a different moisture curve, there are moisture curves for fresh crop and ensiled crop. Before measuring forage the proper moisture must be selected.

To select a moisture curve:

- Place a check in the "Select" column (E) if desired.

- If other moisture curves are checked, remove the check in the "Select" column (E).

- Once the appropriate moisture curve is selected click "Save" (F).

NOTE: By selecting multiple moisture curves, the measurement page will display moisture values for each moisture curve selected on the calibration page.

New moisture curves may be developed and distributed at HYPERLINK "http://www.StellarSupport.com".

Continued on next page

OUC002,0002CDA -19-19OCT09-3/7

If new curves are available:

- Save the new curve to the PC.
- Select "**Browse**" (B) and select the curve located on your PC.
- Select "**Add**" (C) to add the curve to the calibration page.

NOTE: After adding a new curve, the sensor will need to be restarted.

Curves can be deleted from the calibration page as follows:

- Place a check in the "**Select**" column (E) for the moisture curve.

- Select "**Delete**" (D).

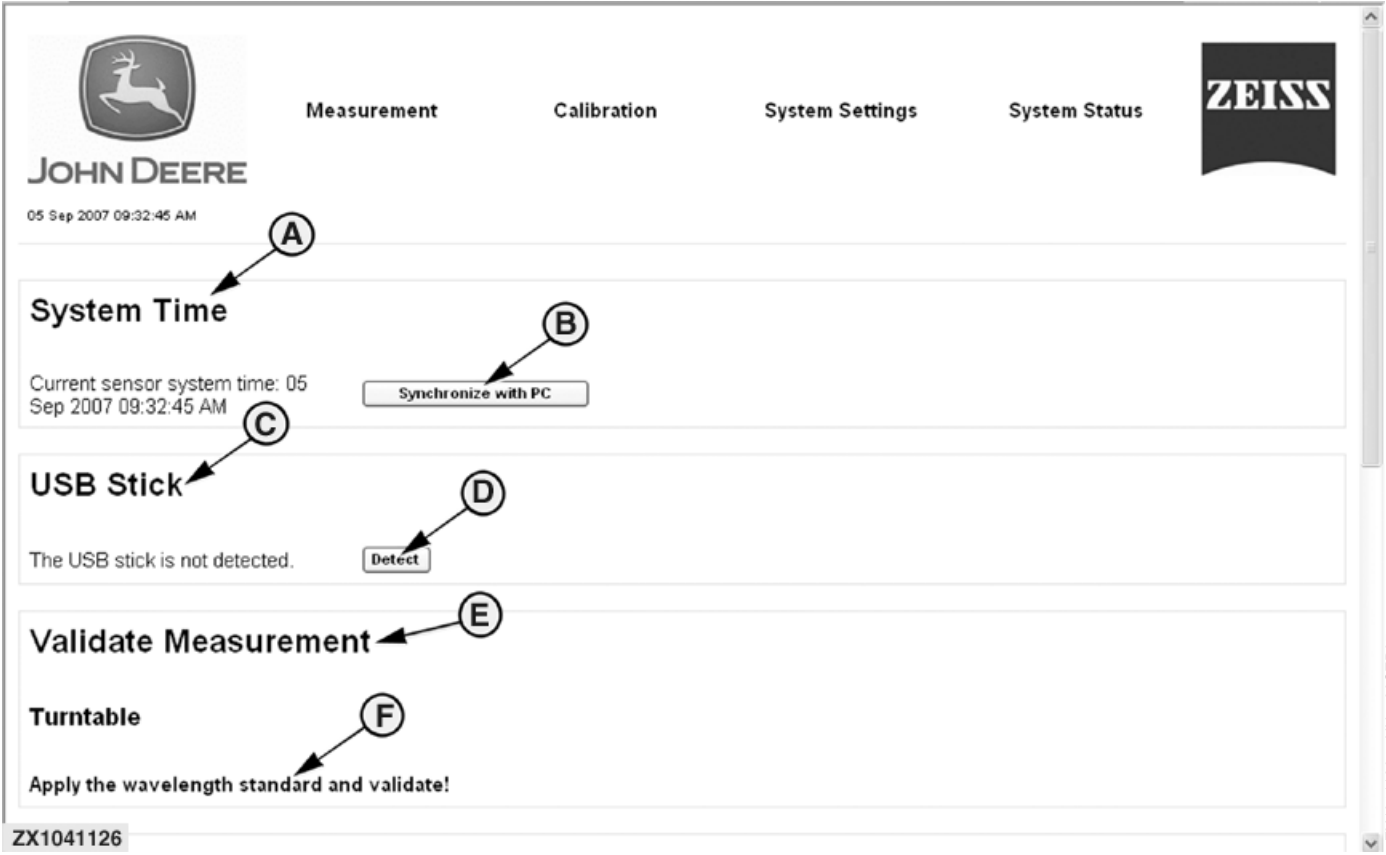
In stationary use, model files shall be located on the PC hard drive. Use "**Select File**" (B) to select model files in your file system.

Filter-Info (G): For factory use only.

Continued on next page

OUCC002,0002CDA -19-19OCT09-4/7

System Settings Page—Part One



- A—System Time
- B—Synchronize With PC
- C—USB Stick
- D—Detect
- E—Validate Measurement
- F—Apply the wavelength standard and validate

The system settings page allows the user to:

- Synchronize time with PC
- Connect a USB memory stick
- Validate measurement with wave length standard
- Change the number of repacks
- Update Firmware

System Time (A): Provides the ability to synchronize the sensor’s time with the PC time. This will provide an accurate time stamp on the measurement page. When the sensor is disconnected from the power supply, the time synchronization will be lost. Click **“Synchronize with PC”** button (B) to synchronize the sensor’s time with the PC’s time.

USB Stick (C): Provides the ability to connect an USB memory stick to the sensor to collect spectra data. To connect the USB memory stick:

- Connect the USB memory stick to the connection box.
- Select **“Detect”** (D) for the sensor to detect the USB stick.

To safely disconnect the USB memory stick:

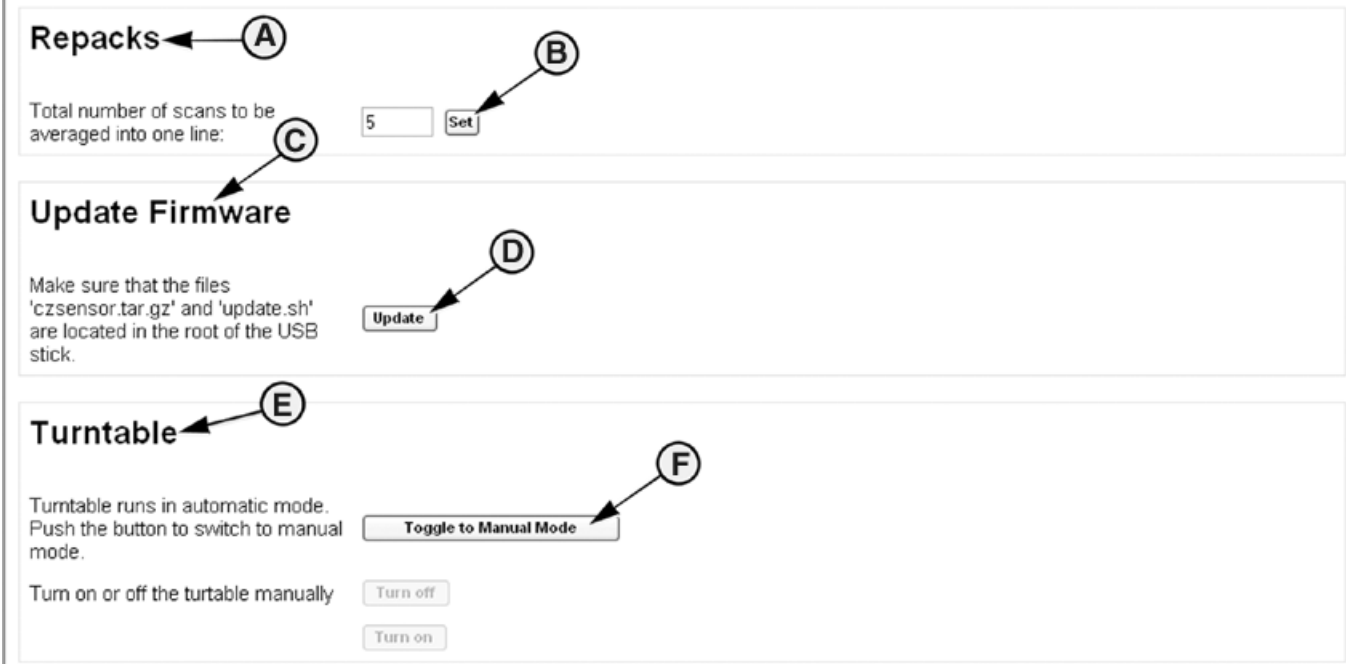
- Select **“Disconnect”**.
- Disconnect the USB memory stick from the connection box.

Validate Measurement (E): Provides the user the ability to check the sensor function using the wave length standard. This procedure should be performed if the sensor is providing inaccurate measurements or inconsistent measurements. Click **“Apply the wavelength standard and validate!”** (F) then refer to **“Validate Measurement”** hereafter.

Continued on next page

OUC002.0002CDA - 19-19OCT09-5/7

System Settings Page—Part Two



ZX1041127

ZX1041127—UN—20SEP07

Repacks (A): Repacks are the number of measurements of one forage sample that will be averaged to provide a prediction of the moisture value on the measurement page. Two repacks are the minimal number of measurements to provide an accurate moisture prediction. For a higher accuracy moisture prediction, five repacks are recommended.

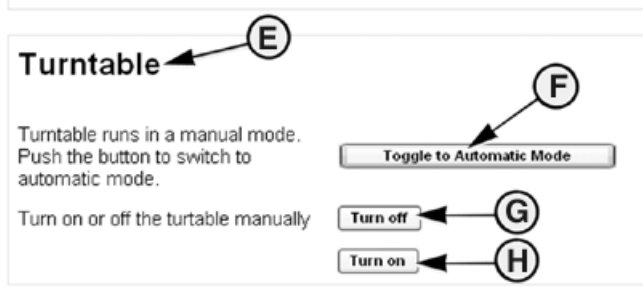
To change the number of repacks: Enter the new number of repacks and click “Set” (B).

Update Firmware (C): Provides the user the ability to upload new firmware to the sensor. If new firmware is available, it can be downloaded at [HYPERLINK "http://www.StellarSupport.com"](http://www.StellarSupport.com) onto an USB stick.

NOTE: The updated firmware must be located on the root of the USB stick.

To update the sensor:

- Download the updated firmware to the USB memory stick. The update must be on the root of the USB memory stick (can not be located inside folders on the USB memory stick).
- Connect the USB memory stick to the USB connection inside the connection box.
- Within the “System Settings” page, select "Detect" under the USB Stick section.
- Within the “System Settings” page, select "Update" (D) under the Update Firmware section (C). This will automatically update the sensor with the new firmware.



ZX1041128

ZX1041128—UN—20SEP07

- | | |
|-------------------|--|
| A—Repacks | E—Turntable |
| B—Set | F—Toggle to Manual Mode/Toggle to Automatic Mode |
| C—Update Firmware | G—Turn off |
| D—Update | H—Turn on |


- Disconnect the USB memory stick, see USB Stick section.

Turntable (E): Allows a functionality test for the turn table. In normal operation, the turn table runs under automatic mode, means is driven by the HarvestLab system. The turning functionality can be turned ON (H) or OFF (G) to allow a measurement on standing crop. Click “Toggle to Manual Mode” (F) to quit the automatic mode and activate the “Turn off” (G) and “Turn on” (H) buttons.


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OUC002,0002CDA -19-19OCT09-6/7

System Status Page



Measurement Calibration System Settings System Status



05 Sep 2007 09:37:52 (A)

USB Info	USB stick is unmounted USB size: 0 MB USB in use: 0 MB USB available: 0 MB USB free: 0%
Integration Time SPFH:	13 ms
Integration Time Turntable:	15.1 ms
Average:	10 (B)
Application Software Version:	37 (C)
Sensor Serial Number:	131 (D)
Modul Number:	43382
Board Temperatur:	33 C
Sensor Temperatur:	23 C
Lifetime Lamp:	135 hours
Lifetime Sensor:	135 hours
CAN available:	no
GPS available:	no

ZX1041129
Internet

ZX1041129—UN—10OCT07

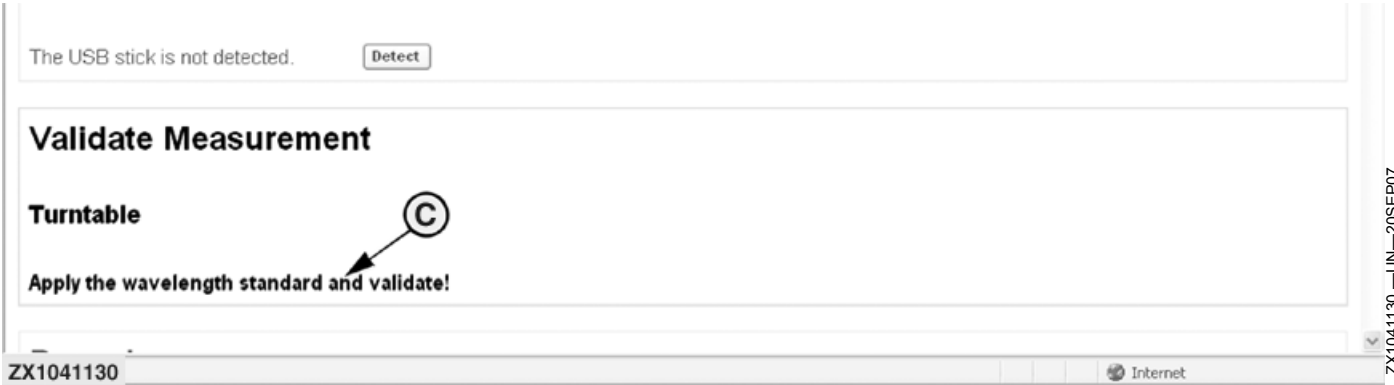
A—USB Info B—Application Software Version C—Sensor Serial Number D—Lifetime Lamp/Sensor

This page provides miscellaneous information such as USB stick capacity (A), software version (B), sensor serial number (C) or sensor/bulb lifetime (D).

NOTE: USB stick with new software needs to be installed in connection box.

OUCC002,0002CDA -19-19OCT09-777

Validate Measurement



ZX1041130 —UN—20SEP07

The HarvestLab station sensor is delivered with its specific wave length standard (A) that is to be used for checking sensor functionality by measuring the sensor wave length .

The wave length standard (A) must be kept in good condition for further measurement. In this way, special attention must be paid so that the wave length standard (A) doesn't come in contact with chemical products such as:

- Diesel
- Gasoline (Leaded or unleaded)
- Thinners
- Engine cleaner
- Cavity sealing
- After cleaning
- Finishing paint
- Blackboard lacquer
- Freeze protection

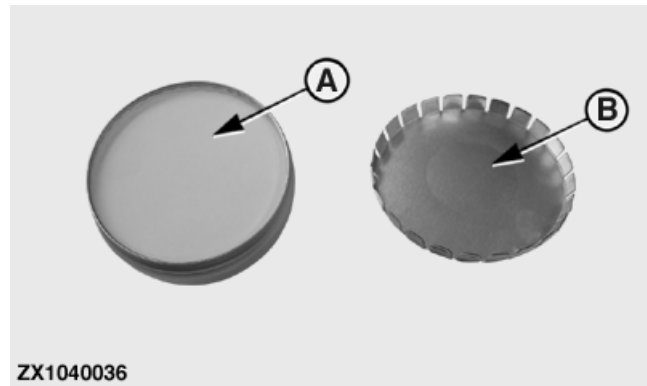
To check sensor functionality with the wave length standard (A):

1. Make sure the glass bowl (D) is clean on the inside and bottom surfaces and free from scratches or other damage. Use a glass cleaner and a towel to remove any residue, dust or moisture.
2. Remove cover (B) from the wave length standard (A) then place wave length standard (A) above sensor glass in the glass bowl (D) on turn table and maintain it in this position all along the wave length measurement.
3. Turn ON turn table.

IMPORTANT: Prior to starting measurement procedure, make sure sensor has fully started. Sensor light should light up after about 30 seconds. If this is not the case, check all connections or contact your John Deere dealer.

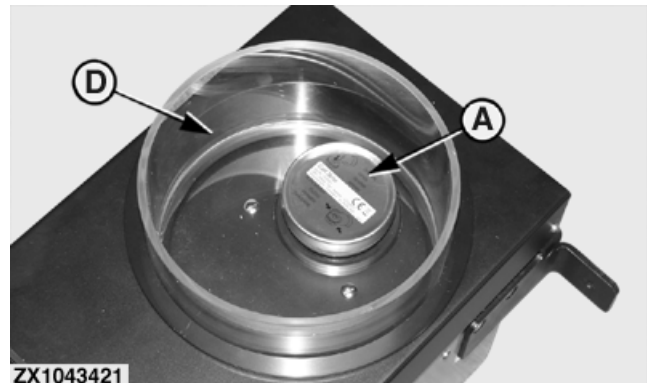
Prior to starting measurement procedure, thoroughly clean sensor glass environment.

Make sure that no external light source is interfering with wave length standard measurement.



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ZX1043421

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**A—Wave Length Standard
B—Cover**

**C—Apply the wave length standard and Validate
D—Glass Bowl**

4. Click on “Apply the wave length standard and validate” (C) then follow the instructions given while procedure is carried out.
5. Once wave length standard measurement is over, turn OFF turn table.
6. Remove wave length standard reference from sensor glass.

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Measurement Procedures

In order to receive an accurate moisture prediction, follow the steps below:

Prior to measuring samples:

- Select the appropriate moisture curve for the forage being sampled (See “Calibration Page” section)
- Change the Repack number to 5 at the “System Settings page” (See “System Settings” section)
- Navigate to the “Measurement Page” and follow the scanning routine below.

Scanning routine

1. Clean the glass bowl. Make sure the glass bowl is clean on the inside and bottom surfaces. Use a glass cleaner and a towel to remove any residue from earlier scans.
2. Fill the bowl halfway to 3/4 full with a representative sample of the forage that matches the calibration selected.
3. Put the bowl on the turn table.
4. Click “**Measure**” on the “Measurement Page”. Wait for scan to complete (around 50 seconds on first scan in order to complete an internal reference and 30 seconds on each scan after that—expect one 50 second scan for every 30 minutes of scanning).

Repack:

5. Remove sample from glass bowl by dumping contents into a clean container.
6. Clean the glass bowl. Use a dry towel to wipe out the bottom surface of the bowl.

NOTE: Do not clean the glass bowl with glass cleaner between scans of the same forage sample, this could affect the prediction.

7. Mix sample. Mix sample for an accurate prediction.
8. Put sample back into the glass bowl.
9. Repeat steps 3 to 8 four more times for a total of 5 scans of one forage sample.
10. After the fifth scan an additional line will appear on the measurement page. This line is gray and shows the average of the five scans. This number is the prediction of moisture content in the forage sample.



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11. Clean the glass bowl and start the procedure over for the next sample. Don't forget to change the calibration if the forage type has changed.

NOTE: Temperature and crop conditions may affect the moisture prediction. See “HarvestLab Station Specifications” section for the recommended measuring conditions.

For a proper use of the station:

- Avoid oil on glass parts
- Make sure light path between sensor and glass is clean
- Avoid scratches inside turn table ring
- Don't start measurements with empty glass bowl
- Don't store samples in glass bowl
- Avoid condensing water inside glass bowl
- Don't remove sensor brackets to keep sensor sealed.

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Troubleshooting the HarvestLab Station

Wave length Standard Procedure

If the sensor is providing inaccurate and/or inconsistent predictions, the sensor should be validated with wave length standard (A).

NOTE: Prior to starting wave length standard procedure:

- Check to see if the sensor has fully started. Sensor light should turn on after 30 seconds. If the light does not turn on, please see "Sensor Not Working" hereafter.
- Glass bowl must be clean on the inside and bottom surfaces. Use a glass cleaner and a towel to remove any residue, dust or moisture.
- Sensor lens should be clean. Use soft tissue paper or compressed air to clean lens.
- Make sure no external light source is interfering while validating the sensor.

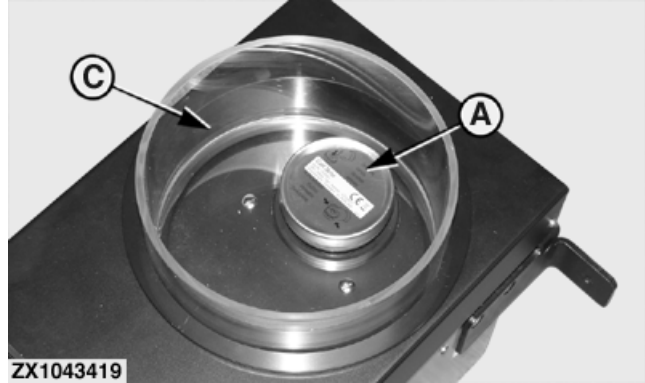
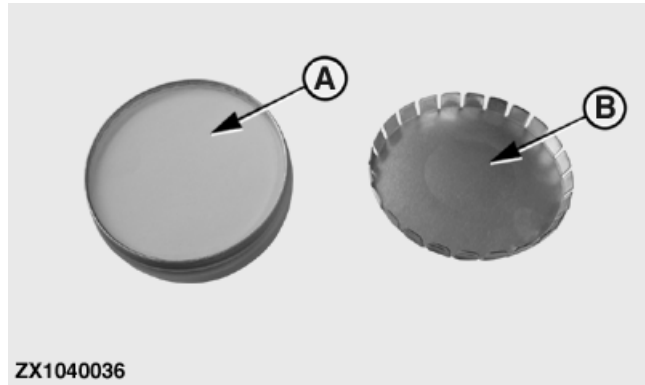
To validate the sensor with the wave length standard:

1. Remove cover (B) from the wave length standard (A) then place the wave length standard above the sensor glass in the glass bowl (C) on turn table and maintain the position throughout the validation process.
2. Turn ON turn table
3. Navigate to the "System Settings" page and click on "Apply wave length standard and Validate" under Validate Measurement.
4. Once the validation is complete, the Validate Measurement should display Valid or Invalid.
 - a. - If **Valid**, the sensor is correctly sensing the known value (the wave length standard). No additional steps needed.
 - b. - If **Invalid**, repeat the wave length validation steps.

NOTE: To perform another wave length standard validation, navigate to the "Measurement" page, then back to the "System Settings" page. After three unsuccessful attempts at validating the wave length standard, the sensor will need to be validated using the black and white reference materials —Contact your John Deere Dealer.

Sensor Not Working

If the sensor is not powering up or the bulb is not on, check the following items:



A—Wave Length Standard C—Glass Bowl
B—Cover

- Power cord is properly connected to the turn table and power outlet.
- Connector from the turn table to the connection box is firmly/properly connected.
- Connector from the connection box to the sensor is firmly/properly connected.
- Replace sensor bulb, contact your John Deere Dealer.

Web Interface Will Not Display

If the web interface will not display in the web browser check the following items:

- Ensure the proper network properties are selected, see "Setup Personal Computer for HarvestLab Station Connection" section of this manual.
- Cross over cable is properly connected to the PC and the connection box.
- If using a laptop computer, the laptop must be undocked.

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HarvestLab Station Specifications

The HarvestLab station supports USB 2.0 compatible communication for data exchange, update, calibration upload and raw data sampling.

NOTE: The processor interface is USB1.1 compatible. USB2.0 slave components switch to low speed respectively full speed (12Mbit) mode down when USB master 1.1 is in "on" mode.

The sensor uses a Halogen Light source.

The lifetime for the light source is at least 3000 hours with 3000 cycles (on/off). The service interval for the halogen light source is 3000 h.

IMPORTANT: Bulb replacement should only be carried out by authorized service personnel.

Measuring crop outside of the following conditions may result in inaccurate moisture predictions.

- outside temperature storage: -45 to +85 °C (-49 to 185 °F)
- outside temperature work: +5 to +50 °C (41 to 122 °F)
- material temperature: +5 to +45 °C (41 to 113 °F)
- humidity: 10 % to 99 % relative humidity
- crops: alfalfa, corn, grass, whole crop

Crop	Moisture Range
Corn	40 - 75 %
Alfalfa	25 - 70 %
Grass	30 - 80 %
Whole Crop	20 - 70 %

Optical Parameters

Spectrometer	Single beam diode array
Polychromator	NIR ^a
Sensor array	InGaAs array without cooling
Number of diodes	256
Wavelength range	950...1530 nm
Spectral resolution	3...2 nm/pixel, <7 nm FWHM
Accuracy of wavelength	< 0,6 nm (within the range of 1100 nm to 1300 nm)
Resolution of amplitude	15 bit
Light source	Halogen lamp 12 V, 20 W, stabilized
Lifetime of light source	> 3000 h for 3000 power cycles
Measuring geometry	0°/45° tilt
Working distance	approx. 13 mm (0.512 in.)
Measuring area	approx. 15 mm (0.590 in.)
Frequency of measurements	5 measurements/second
100 %-calibration	Onto external white standard and with automatic internal reference

^aNIR= Near Infra-Red

Measuring Parameters

Reflectance range	0,2...100 %
Accuracy of reflectance	< 1 %
Reproducibility for 0,1 s measurement period for 1 s measurement period	30 measurements within 2-sec-interval, onto white < 0,0003 AU ms < 0,0002 AU ms
Inter instrument agreement	< 10 mAU difference between different instruments
Scattered light	< 0,2 % R (measured with H2O on water band 1,45 nm)
Drift	< 0,1 % R/h (after running-in period > 30 minutes)

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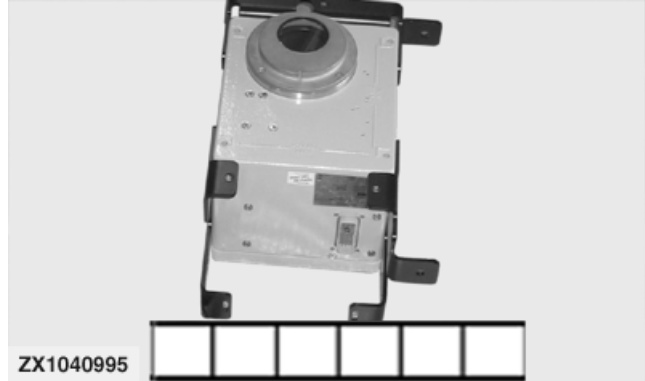
Serial Numbers

Your GreenStar™ HarvestLab system has identification labels. The letters or numbers on these labels identify a component or assembly. All of these characters are needed when ordering parts or identifying the system or component for any John Deere product support program. Also, they are needed for law enforcement to trace your forage harvester if it is ever stolen.

Accurately record these characters in the spaces provided in each of the following illustrations.



Connection Box Serial Number



Turn Table Serial Number

ZX1039993 —UN—01NOV06

ZX1040995 —UN—17AUG07

ZX1040033 —UN—18NOV06

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