

# OWNER'S MANUAL

## *Model 476* *MOISTURE MONITOR*



*Equipment and Products  
for Quality Hay.™*

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010-0476

**REVISED 2-08**

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## Overview

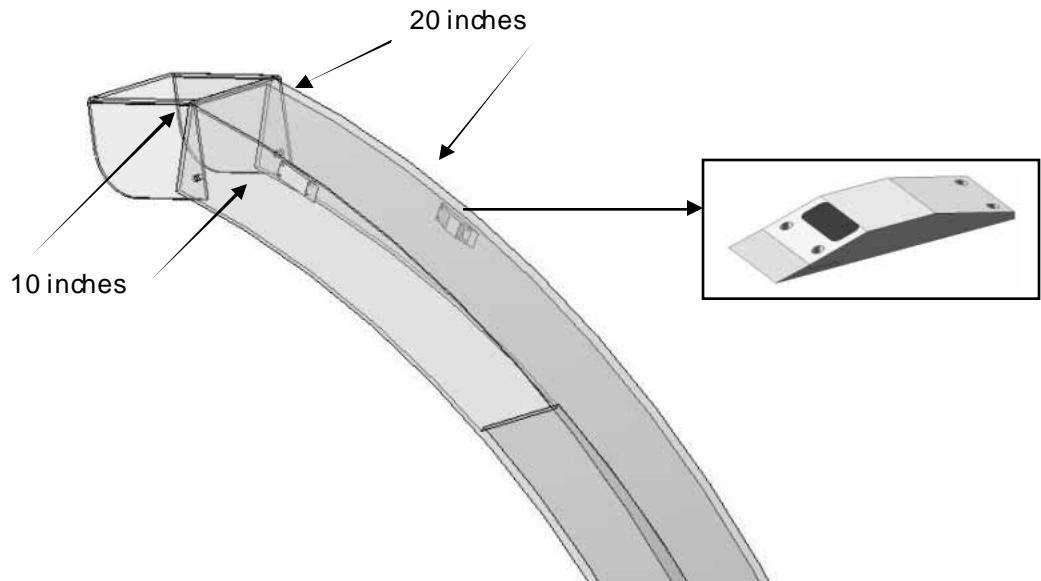
The 476-moisture monitor is designed for installation on a Self-Propelled Forage Harvester to aid in harvesting by giving percent moisture of haylage and corn silage. The 476 gives moisture readings from 37% to 80% moisture and also keeps load and field averages. The 476 uses two sensor pads mounted in the blower discharge to sense the moisture. To aid in making load and field averages more accurate the 476 has two crop eyes mounted on the spout flap to signal when there is crop flow. This greatly increases accuracy of load and field averages by automatically pausing the averaging function when no crop is being processed.

## Tools Needed

- Drill
- Drill bits 3/16 & 5/16
- Allen w rench 3/32 & 3/16
- Standard wrench / nut driver 11/32 & 1/2
- Side cutter
- Hammer
- Center punch
- Crescent w rench

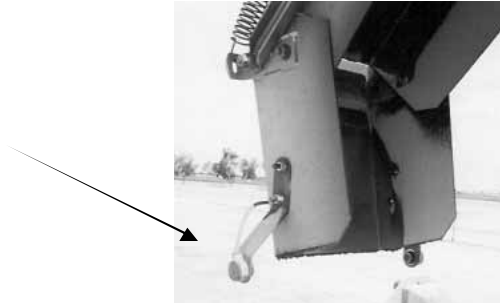
## Sensor pad installation for all forage harvestors

Mount one sensor 10 inches from the end of the spout on one side of the spout and mount the other sensor approximately 20 inches from the end of the spout. The sensors should not be mounted on flipper or spout extensions. The sensors should be mounted near the top of the spout curvature in a location that is free of buildup and where the paint has worn off. They are usually within 1/2" of the top of the spout curvature. Make sure that leading edges (metal wedge) of sensor assemblies are towards the accelerator.



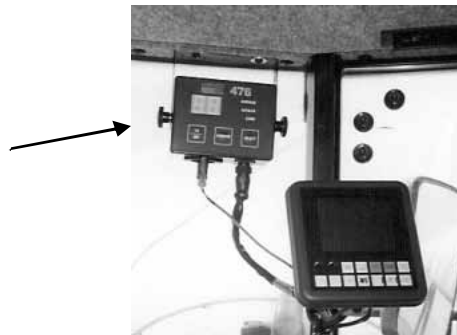
## Mounting Crop-Eye Brackets

1. Identify the crop-eye bracket location. **NOTE:** One crop-eye bracket is mounted on each side of the spout flap so when installed the crop-eyes are located directly across from each other. Position the eyes so that they are located toward the top of the spout where there will be a continuous flow of crop while harvesting.
2. Mark the location of holes that need to be drilled with a marker and center punch.
3. Drill holes using a 5/16" bit.
4. Bolt crop-eye brackets to outside of spout flap using the 5/16" Allen head bolts. **NOTE:** Lock washers and nuts are on outside of spout.



## Mounting Monitor

Install monitor in location that is easy to see and reach, but not obstructing the view of operator. A good potential location is to hang the monitor from the roof. Make sure not to penetrate wiring or ductwork when drilling into the roof.



## Installation of Wiring Harnesses

When routing wire harness, be aware of moving parts, and have enough cable allowed, so that when the spout is moved the wire or harness doesn't get stretched or pinched.

1. Connect power harness to a 12-volt source. The power source may be a keyed switch.
2. Next, attach the crop eye portion of the main harness to the crop eye brackets installed earlier. Use internal tooth lock washers.
3. Route the harness down the spout making sure to leave enough slack for the spout to turn. Secure with cable ties.
4. Connect the main harness to both sensor pads.
5. Finally, route the harness into the cab and plug into the monitor. There is a grommet available if you would like to drill a hole in the floor and route the wire into the cab from below.

# Wiring Diagram

Pin 1	Black	Sensor lead
Pin 2	Green	Sensor lead
Pin 3	White	Crop flow signal
Pin 4	Gray	Remote average switch
Pin 5	Brown	Crop eye positive
Pin 6	Blue	Crop eye ground
Pin 7	Not used	
Pin 8	Not used	
Pin 9	Not used	



# Display Features



# Operation Instructions

## Turning 476 On and Off

The 476-moisture monitor can be turned on and off using the **ON / OFF** button located on the bottom left hand side of monitor. When the unit is first turned on all the lights on the display will be lit up for a short time before it goes into operating mode.

## Selecting Crop Type

The 476 moisture monitor allows you to choose the crop that is being harvested.

To switch crop types:

1. With the monitor turned on, press the **SELECT** button to change between crop types **ALFALFA** and **CORN** on the right side of the monitor. Use the **ALFALFA** selection for alfalfa, alfalfa grass mixtures, grasses, oats and another small grain silage crops. Use the **CORN** selection for corn and sorghum crops.
2. After pushing the crop selection keys a light next to the selection will come on within 1 second, indicating that the box is re-set for that crop.
3. Once crop type is selected, monitor is ready to take reading for that crop. **NOTE:** The Load Average and the Field Average is reset when crop type is changed.

## Checking Load Average

The load average is the average of all moisture readings that have accumulated since the last time the load average had been checked. **NOTE:** The load average will automatically reset after each time the **AVERAGE** button is pushed.

To display the load average:

1. Press and release the **AVERAGE** button.
2. LA will display then the percent moisture will display. Example 68.
3. The percent moisture will be followed by (--) meaning that the load average has been reset.

## Checking and Resetting Field Average

The field average is the average of all moisture readings that have accumulated since the last time the field average was checked.

To display the field average:

1. Press and hold the **AVERAGE** button for longer than 3 seconds.
2. Keep holding the **AVERAGE** button. **FA** will display.
3. After **FA** is displayed, keep holding **AVERAGE** button then field average will display. Example **64**.
4. At this time, you can release the **AVERAGE** button to allow the monitor to keep accumulating the field average.
5. To reset the field average press and hold both the **AVERAGE** and **SELECT** buttons.

## Remote Average Switch

The gray pigtail wire that comes out of the wiring harness, allow you to connect a switch (not provided) that can be used for remotely signaling/checking the Load Averages. A more convenient location such as, the armrest console or a floor-operated switch, may make it easier to check averages more frequently. The switch should be a momentary on switch.

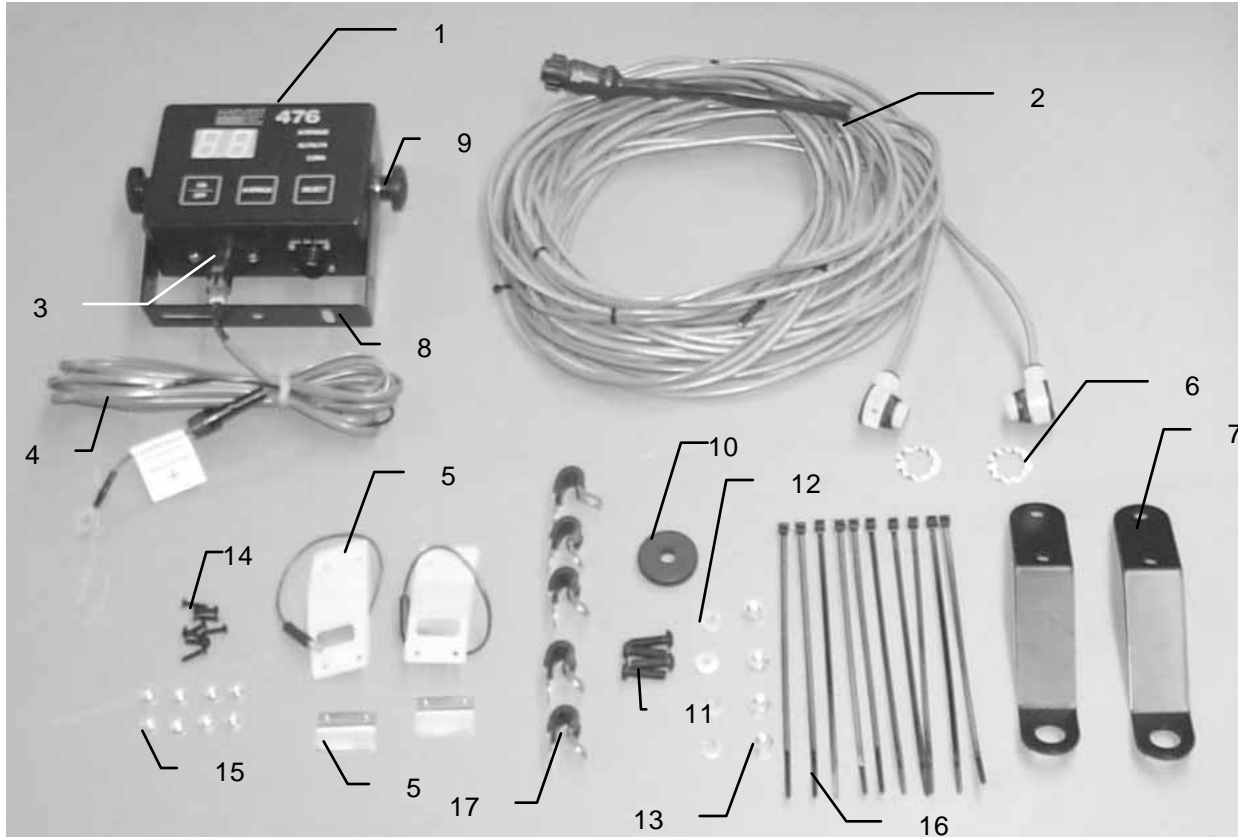
To do this:

1. Connect the gray wire to one side of the switch and a 12-volt power to the other side of switch.
2. Press or trigger the switch using the same procedures as used for checking and resetting load average. It doesn't work for field average.

# Troubleshooting

<u>Symptom</u>	<u>Problem</u>	<u>Solution</u>
<b>Monitor reads HI</b>	Main harness shorted to machine or to itself	Replace harness
	Sensor pads shorted to machine	Replace sensor pads
	Crop built up between sensors	Clean sensors
	Harvesting crop with less than 80% moisture	Try another spot in field
	Sensor pad worn out	Replace sensor
<b>Monitor reads LO</b>	Broken wire in main harness	Replace harness
	Sensor wire broken	Replace sensor
	Disconnected sensor	Reconnect sensor
	Sensor pad worn out	Replace sensor
	Poor main harness connection at monitor	Unplug and reconnect harness
	Harvesting crop drier than 38% moisture	Try another spot in field
	Crop eyes not working, green light not lit on each crop eye	Check main harness connection at monitor
		Check for stretched or broken cable Replace main harness
<b>Load average is LO or significantly lower than real time averages</b>	Dirty crop eyes	Clean crop eyes
	Crop eyes out of alignment	Readjust crop eyes. See "Crop eye adjustment"
<b>On the go readings increase when no crop entering</b>	Extra juice from corn silage	None action needed as long as light in lower right of display goes out
<b>Monitor will not turn ON</b>	No power	Connect to 12 volt source
	Blown fuse	Replace with correct size fuse(1Amp)

# HARVEST TEC MODEL 476 PARTS BREAKDOWN



<u>Ref.</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Control box	006-4760	1
2	Main harness	006-4761	1
3	Box plug	006-4581	1
4	Power cord	006-4580C	1
5	Sensor and diverter	006-4765	2
6	Internal tooth lock washer-M18		
7	Crop eye brackets	001-5105X	2
8	U-bracket	001-2012E	1
9	Control box knobs	008-0923	2
10	Grommet	008-0840	1
11	Allen head bolt-5/16"x1"		
12	Lock washers-5/16"		
13	Nut-5/16"		
14	Allen head pan-8/32"x7/8"		
15	Nylon lock nut-8/32"		
16	Cable ties-8"		
17	Jiffy clip-3/8"	008-9012	4
NP	Optional harness extension	006-4766	1



## NOTES:

# WARRANTY AND LIABILITY AGREEMENT

Harvest Tec, Inc. will repair or replace components that are found to be defective within 12 months from the date of manufacture. Under no circumstances does this warranty cover any components which in the opinion of Harvest Tec, Inc. have been subjected to negligent use, misuse, alteration, accident, or if repairs have been made with parts other than those manufactured and obtainable from Harvest Tec, Inc.

Our obligation under this warranty is limited to repairing or replacing free of charge to the original purchaser any part that in our judgment shows evidence of defective or improper workmanship, provided the part is returned to Harvest Tec, Inc. within 30 days of the failure. Parts must be returned through the selling dealer and distributor, transportation charges prepaid.

This warranty shall not be interpreted to render Harvest Tec, Inc. liable for injury or damages of any kind, direct, consequential, or contingent, to persons or property. Furthermore, this warranty does not extend to loss of crop, losses caused by delays or any expense prospective profits or for any other reason. Harvest Tec, Inc. shall not be liable for any recovery greater in amount than the cost or repair of defects in workmanship.

There are no warranties, either expressed or implied, of merchantability or fitness for particular purpose intended or fitness for any other reason.

This warranty cannot guarantee that existing conditions beyond the control of Harvest Tec, Inc. will not affect our ability to obtain materials or manufacture necessary replacement parts.

Harvest Tec, Inc. reserves the right to make design changes, improve design, or change specifications, at any time without any contingent obligation to purchasers of machines and parts previously sold.

Revised 01/03/06

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