



GROWBOSS

MONITOR TO MAXIMIZE

OWNERS MANUAL

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GROWBOSS

MONITOR TO MAXIMIZE

Meet the GrowBoss

Display Panel

Plant Friendly
High vis LED

pH 7

Calibration
trim pot

pH 4 | 10

Min | Max

Nutrient

Calibration trim pot

Nutrient

Scale indicator

.5 | .67 | EC

Push Button

Nutrient Scale

PPM | 442 | EC

Temperature

FIC

Min | Max

Total Recall



External Connections

Nutrient Scale

pH BNC | USB Nutrient | Power Supply

Min | Max

Indicators

On | Off

Power up

GROWBOSS FEATURES

NUTRADIP GROWBOSS

The Nutradip GrowBoss is a constant nutrient monitoring system that assists growers in achieving maximum results for their growing efforts. The GrowBoss indicates to the grower the exact levels of Nutrient strength, pH and temperature.

This allows the grower to adjust and optimize each parameter as the crop progresses through each growth cycle.

The GrowBoss display receives information from the input devices, each monitoring and measuring specific parameters within the nutrient solution. Display readings are push button selectable via the front keypad toggling between temperature readings in Fahrenheit & Celsius, as well Nutrient Scales including NaCl, 442, and EC.

The Min/Max recalls the minimum or maximum levels that each of the parameters experienced since the last reset.

Knowing what happened in your nutrient supply is now just a touch away.

Power

Push button to turn the meter on and off. When powering up GrowBoss will be displayed as the meter runs through its set-up sequence.

ppm/EC

Push button to select your preferred nutrient scale to cycle through the ppm and EC scales. The LED will illuminate for you to choose your preferred scale.

TEMP

Push button to display your preferred temperature reading. The temperature symbol for your selection will appear in the display.

MIN/MAX

Push button to recall the MIN/MAX readings across all three parameters. To reset, push and hold until both LED's illuminate.

Scale .5ppm NaCl

LED display indicator. This measurement is the most common ppm scale used by growers.

Scale .67 ppm 442

LED display indicator. The ppm measurement is also commonly referred to as the 442 scale.

EC

LED display indicator. Electrical conductivity (EC) is used by many growers.

Before You Begin

Your Nutradip GrowBoss is engineered to provide years of dependable service, however, as with any monitoring equipment, it does require periodic calibration and maintenance.

In order to optimize meter longevity and performance, we strongly recommend that you thoroughly read this manual prior to using your new meter for the first time. Store this manual in a safe place. Should you require a new copy of this manual, please visit www.futureharvest.com

Unpacking Your New Meter

Carefully unpack your meter and additional contents. Your carton should contain the following pieces:

1. Nutradip Growboss
2. PPM/Temperature probe
3. pH probe with storage bottle cap
4. Power adaptor
5. 125mL pH 4 calibration solution
6. 125mL pH 7 calibration solution
7. 125mL 1000 PPM calibration solution
8. Wall mounting bracket
9. Mounting bracket screws (2)
10. Calibration screw driver

Contact your dealer immediately if there is damage to any of the above contents, or if a component is missing.

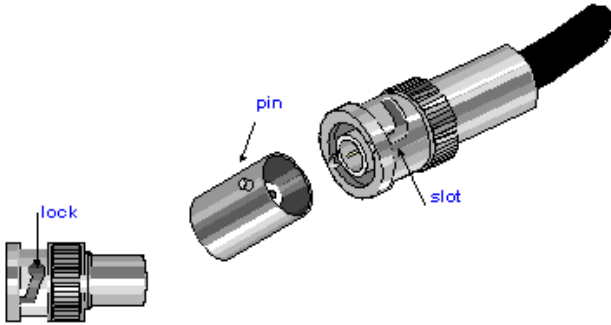


First Time Use

Working from left to right, attach the probes and power adaptor to the Nutradip GrowBoss.

Attaching the pH Probe

The pH probe uses a twist-lock connector. Ensure the pins on GrowBoss are aligned with the slot on the probe, and push firmly. Twist the locking nut clockwise to tighten.



Attaching the Nutrient/Temperature Probe

The nutrient and temperature probe attaches in only one direction. Ensure that the side of the plug that reads "1394" faces up, and push firmly into place.

Attaching the Power Adaptor

Push the power adaptor barrel plug firmly into the GrowBoss

Preparing the pH Probe

1. Remove the protective liquid filled cap from the pH probe. Do not touch the pH probe bulb. Put cap in a safe place. **The pH buffer solution is required for storage of the pH probe.**
2. Gently shake the probe downward to remove any air bubbles which may be trapped within the glass bulb.

Your Nutradip Growboss has been personally calibrated by a trained service technician before leaving our assembly facility in Kelowna British Columbia, Canada and arrives to you in ready-to-use condition. However, we also recommend that calibration be performed prior to initial use in the environment that the device will be used most often to ensure the greatest possible degree of accuracy from your new meter.

Calibration

Calibration should be done on your Nutradip GrowBoss at least once a month; whenever a probe is cleaned; when a new cycle is about to begin, or when the GrowBoss has been taken out of storage.

Over time, all probes naturally degrade due to environmental stresses, and calibration ensures that the natural changes in the integrity of the probe are compensated for over the life of the probes. To ensure the longest possible life for probes, please refer to the CARE & CLEANING section of this manual.

pH Probe Calibration

For calibrating pH, we recommend using a two point calibration between 4.0 and 7.0 to ensure that the meter is accurate across the scale, and calibrated within the most desirable pH target areas.

What you will need:

- pH 4 Buffer Solution (Future Harvest Part Number 1100002)
- pH 7 Buffer Solution (Future Harvest Part Number 1100001)
- Calibration screwdriver
- Three small, clean plastic cups
- 30 minutes
- Clear tap water

What to do:

1. Place all supplies on your calibration table, and let sit. All supplies MUST be the same temperature before starting to achieve an accurate calibration. It is recommended to float the calibration solution bottle in your reservoir for five to ten minutes to reach the reservoir temperature. This will allow for a more accurate calibration.
2. Place the GrowBoss on a level surface and connect all probes and power supply. Power up the GrowBoss.
3. Pour pH7.0 solution into one of the small cups (enough to cover pH bulb)
4. Pour pH 4.0 solution into one of the small cups (enough to cover pH bulb)
5. Pour clear tap water in the third cup for rinsing the pH probe.
6. Place the probe in the pH 7.0 solution, and agitate for 10 seconds. Let stand for 60 seconds.
7. **Rotate the 7.0 calibration screw counter clockwise very slowly and gently until the display increases to 7.0.**
8. Place the probe in the clear tap water cup, and agitate for 10 seconds. Let stand for 60 seconds.

9. Place the probe in the pH 4.0 solution, and agitate for 10 seconds. Let stand for 60 seconds.
10. Rotate the 4.0 calibration screw counter clockwise very slowly and gently until the display increases to 4.0.
11. Place the probe in the clear tap water cup, and agitate for 10 seconds. Let stand for 60 seconds.
12. Repeat steps 6 to 11 as needed. This may take several cycles, especially with worn or older probes.

Nutrient Probe Calibration

What you will need:

- 1000ppm Calibration Solution
- Calibration Screw Driver
- Two small, clean plastic cups
- 30 minutes
- Clear Tap Water

What to do:

1. Place all supplies on your calibration table, and let sit. All supplies MUST be the same temperature before starting to achieve an accurate calibration. It is recommended to float the calibration solution bottle in your reservoir for five to ten minutes to reach the reservoir temperature. This will allow for a more accurate calibration.
2. Place the GrowBoss on a level surface and connect all probes and power supply. Power on the GrowBoss.
3. Pour some calibration solution into the cup. Use enough solution to completely cover the probe pins.
4. Pour clear tap water into the second cup for rinsing the ppm probe.
5. Place the probe in the EC/PPM solution and agitate for 10 seconds. Let stand for two minutes.
6. Set the scale factor on the meter to .5 via the push button selector. This is the NaCl scale. **Rotate the PPM calibration screw counter clockwise very slowly** until the display reads 1000 ppm.
7. Due to the sensitivity of the ppm probe, this process can take 10 + minutes during initial setup, where fine tuning of the calibration trimpot may be necessary. Turn the screw counterclockwise to increase the value.
8. If you wish to calibrate to a different scale then choose your preferred setting and follow the above procedure. Refer to the conversion graph on page 10.

Care & Cleaning

Regular care and cleaning of the Nutradip GrowBoss and its probes is the best way of ensuring that your device has a long, and trouble free life.

Caring for pH Probes

The pH Probe is the only component of the GrowBoss that requires periodic replacement. pH probes age through normal use, and over time accuracy decreases. Eventually, the probe fails completely. The life span of a pH probe depends on the level of care it receives, with good care, they will give a long service life.

- **DO NOT let the pH probe dry out. If allowed to completely dry out, the probe will no longer function.** Return the probe to the buffer cap when not in use.
- **DO NOT knock the probe.** It contains a sensitive thin walled glass tube. If that tube breaks, the probe will no longer function.
- **DO NOT allow the connector of the probe to become wet.** Corrosion on the connector will prevent the signal from reaching the GrowBoss
- **DO NOT rapidly move the probe from cold to hot liquids.** The thermal stress will fracture the internal glass and the probe will no longer function
- **DO NOT put in greasy or oily substances**
- **DO NOT bend the probe.** It is made of glass and it will break
- **DO NOT lengthen the cord** either with extension pieces or by modifying the cord. The GrowBoss expects every pH cord to be the same length, and changing this length will confuse the GrowBoss resulting in inaccurate readings.

Cleaning pH Probes

As water evaporates from the solution that the pH probe is in, residue can be left behind on the pH Probe.

Every Cleaning

The probe bulb should be carefully cleaned with a soft toothbrush and pH 4.0 calibration solution. Do not touch the bulb with your fingers.

Every Third Cleaning

The probe bulb should be carefully cleaned with a mixture of 250mL of water and two-three drops of mild dish washing liquid using a soft toothbrush, then rinsed with tap water to remove all traces of detergent, and left overnight in pH 4 storage solution.

When Heavily Contaminated

Heat a diluted Potassium Chloride (KCl) solution to 60-80 degrees Celsius. Place the tip of the probe into the heated solution and let sit for an hour. Remove the probe from the solution and let it cool to room temperature. Then clean with a toothbrush. Rinse with pH 4 solution.

Storing the pH Probe

The pH probe ships with a cap that contains pH 4.0 buffer solution. This ensures that the tip of the probe is always wet. The probe should always be stored in pH 4.0 solution. Storing the probe in distilled, reverse osmosis, or deionized water will cause premature wear to the probe. Rinse the probe before putting it into the storage bottle solution to prevent contamination of the solution in the bottle. Storage solution that becomes contaminated should be promptly replaced.

If the probe has been allowed to dry out

Place the probe in pH 4.0 Calibration solution for 24 hours, then attempt to complete a calibration to see if the probe has suffered permanent damage.

Cleaning the Nutrient Probe

The nutrient probe should be carefully cleaned with a soft toothbrush to clean off any tds residue. Ensure the probe pins are dry.

Caring for Calibration Solutions

Your calibration is only as good as the solution used to perform the calibration. Nutradip manufactures its own calibration solution at our Kelowna British Columbia laboratory to ensure that our solution is of the highest quality.

Storage

Store your calibration solutions in a cool dark place with the lids firmly secured.

Ensure caps are always replaced. Calibration solution that has been stored uncovered or with the seal compromised should be discarded.

ALWAYS discard calibration solution after use. NEVER add solution to the storage bottle.

Replacement

Replace your calibration solution within 2 months of opening for continued accuracy.

Specifications

Abilities

	pH Probe	EC/TDS/PPM	TEMPERATURE
Range	0.0-14.0	0-9999 ppm	5-32°C 40-90°F
Accuracy	±0.1%	±2%	±1°C ±2°F
Resolution	0.1pH	20µS/cm 20ppm	1.0°C 1.0°F
Calibration	2 point, manual	1 point, manual	None needed

Operational Environment

-20 to 80C / -4 to 176 F

Measurement	Conversion
ppm	NaCl conversion 1000 1µS/cm EC = 500 ppm
ppm	442 conversion 1000 µS/cm EC = 700 ppm
EC	1000 µS/cm = 1mS



Troubleshooting Guide

Problem - No Display

Follow the steps below until a solution is reached:

1. Check that the Growboss is connected to the 5dcv/0.5 amp power supply
2. Check that the Power supply is connected to the wall outlet
3. Verify that the outlet has power by connecting another device such as a lamp or fan
4. Unplug all cords and probes, wait 15 minutes, reconnect and attempt to power on
5. Replace the Power Supply

Problem – pH Probe Inaccurate

Follow the steps below until a solution is reached:

1. Ensure the pH probe is connected to the GrowBoss and locked into place
2. Ensure probe and solution are the same temperature, this can take up to 15 minutes
3. Ensure the probe to meter connection is not soiled. Clean with compressed air
4. Ensure the probe is clean. See cleaning instructions
5. Calibrate your Growboss following the calibration guide
6. Rehydrate your pH Probe following the rehydration guide
7. Replace the pH Probe

Problem - Temperature Inaccurate

Follow the steps below until a solution is reached:

1. Ensure device is set to either Celsius or Fahrenheit, depending on your preference
2. Ensure probe and solution are the same temperature, this can take up to 15 minutes
3. Ensure the PPM probe is fully plugged into the meter

Problem - Nutrient reading is inaccurate

Follow the steps below until a solution is reached:

1. Ensure the device is set to display Nutrient in your preferred method of display
2. Ensure probe and solution are the same temperature, this can take up to 15 minutes
3. Ensure the probe to meter connection is not soiled. Clean with compressed air
4. Ensure the probe pins are clean. See cleaning instructions
5. Calibrate your GrowBoss following the calibration guide
6. Ensure the PPM probe is fully plugged into the meter
7. Replace your Nutrient probe

Problem Won't Hold Calibration

Follow the steps below until a solution is reached:

1. Power off the unit. Unplug probe(s) and carefully plug back in, ensuring connections are tight.
2. Replace calibration solution and recalibrate as per procedures
3. Leave probe in solution for at least 10 minutes
4. Replace probe(s)

Warranty Coverage

The Nutradip GrowBoss is covered by three separate warranty programs.

The 12 month warranty coverage protects the product from material/workmanship defects.

The Accidental Damage Coverage plan protects product from damage caused by user error or negligence.

The theft coverage plan allows a replacement Nutradip GrowBoss to be obtained at a discounted rate in the event of loss or theft. (Please visit <http://www.futureharvest.com/warranty/nutradip/loss-theft-coverage/> for more information)

Registration of the product within 30 days of purchase is required in order warranty coverage to be obtained. PLEASE **SAVE YOUR RECEIPT** AS A COPY MAY BE REQUIRED FOR ALL WARRANTY SERVICES.

Nutradip 12 Month Warranty Coverage

	GrowBoss Monitor	Power Supply	pH Probe	Nutrient Probe
Program Duration	12 Months From Purchase	12 Months From Purchase	6 Months From Purchase	6 Months From Purchase
Product Return Required	Yes ¹	photo only ²	photo only ²	photo only ²

Nutradip Accidental Damage Coverage

	GrowBoss Monitor	Power Supply	pH Probe	Nutrient Probe
Program Duration	24 Months From Purchase	24 Months From Purchase	24 Months From Purchase	24 Months From Purchase
Deductible Cost	\$125.00	\$15.00	\$35.00	\$35.00
Available Replacements	2	2	4	4
Product Return Required	Yes ¹	Yes ¹	photo only ²	photo only ²

1. The product must be shipped back to Future Harvest
2. Only a photo proving the item is defective must be sent

Do not return to the store of purchase. Warranty claims are handled directly by Nutradip. All warranty claims must be submitted online at: **www.futureharvest.com/warranty**

What is Not Covered:

1. Use of parts not assembled or installed in accordance with the instructions of Future Harvest. The product guarantee becomes effective from the date of purchase by the first purchaser. Coverage terminates if you sell or otherwise transfer the product.
2. The repair of your product under guarantee will not extend the period of the guarantee.
3. Purchase of the product from a third party site that is not an authorized distributor or retailer.

Provided you supply proof of purchase via a store-printed receipt, we will repair or replace your product if your product is found, within the guarantee period, to be defective due to defective materials or workmanship existing at the time of purchase. If any part is no longer available or out of manufacture, Future Harvest will replace it with a functionally-equivalent replacement part. Future Harvest shall not be liable for costs of repair or replacement of a product incurred as a result of:

1. Normal wear and tear.
2. Accidental damage, faults caused by negligent use or care, neglect, careless operation or handling of the product which is not in accordance with the Nutradip GrowBoss Instruction Manuals. See accidental warranty coverage.
3. Use of parts or accessories other than those produced or recommended by Future Harvest.
4. External sources such as transit damage or weather.
5. Repairs or alterations carried out by parties other than Future Harvest or its authorized agents.
6. Serial numbers defaced or missing.



Making a Warranty Claim

All warranty plans are subject to change without notice. Visit www.futureharvest.com/warranty for more information. Shipping and handling charges may apply.

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