

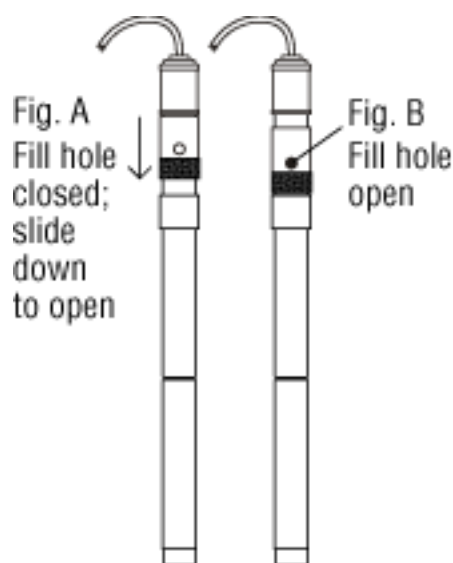
PINPOINT™ Calcium Monitor **User's Guide**

American Marine is proud to introduce the **PINPOINT™ Calcium Monitor**, the only truly affordable and accurate digital Calcium measurement instrument. Powered by a 9-volt battery (not included), the **PINPOINT™ Calcium Monitor** will operate for approximately 150 continuous hours before battery replacement is indicated on the display. Use the **PINPOINT™ AC Adapter Kit** for continuous monitoring.

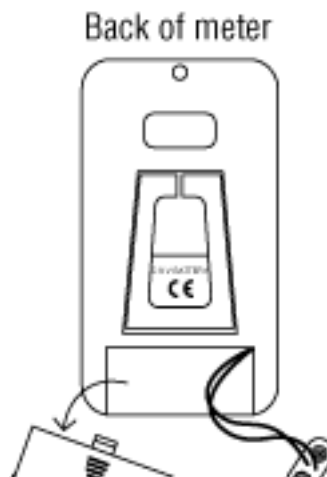
NOTE: The Calcium Monitor unit is NOT waterproof and must be operated on a dry surface. Liquid contact on the printed circuit board will cause corrosion and void the warranty.

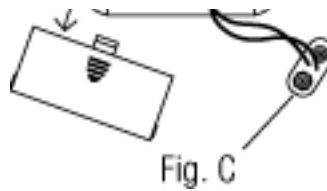
Probe Set-up

1. Remove the storage bottle that protects the probe tip by unscrewing the bottle from the bottle cap. When not in use, probe should be stored dry with a drop or two of 100ppm Ca + calibration in the storage bottle. Never store in reverse osmosis, deionized or distilled water.
2. On the top of the calcium probe slide the black collar (Fig A) down to expose the electrolyte fill hole. (Fig B)
3. The reference fluid bottle has a special filling cap that will fit into the electrolyte fill hole. While holding the probe vertically, add additional probe electrolyte fluid to a level approximately 1 inch below the black cap. Collar (Fig A) can be left closed or open.
4. Be careful not to damage the flat PVC membrane on the probe tip.



Meter Set-up





1. All calibration fluids should be 77°F for greatest accuracy.
2. Pour the 100 ppm Ca⁺ calibration fluid into a clean cup.
3. Pour the 1,000 ppm Ca⁺ calibration fluid into a 2nd clean cup
4. Install a new 9-volt battery or the **PINPOINT™ AC Adapter** to the battery compartment wires on the back of the meter. (Fig C)
5. Attach the BNC connector from the probe cable to the front of the meter. Lock it into place with a 1/4 turn to the right.

Calibration and Measurement

1. Activate meter on by pressing the ON/OFF/CAL button for 1 second
2. Now press the ON/OFF/CAL button continuously for 3-4 seconds until "CAL" appears on the display.
3. The number 100 should appear on the display. If not; then press the Range button to change the calibration value to 100.
4. Put the probe tip into the 100 Ca⁺ Calibration Fluid. Wait until the number 100 begins to flash on the display on a regular basis (4–5 steady flashes or longer is advised). This may take a minute or two. Then press the Enter button to register the 100ppm Ca⁺ calibration. The LCD should display the word "good."
5. Shake dry.
6. Press the Range button until 1000 is displayed.
7. Put the probe tip into the 1000ppm Ca⁺ Calibration Fluid. Wait until the number 1000 begins to flash on the display on a regular basis (4–5 steady flashes or longer is advised). This may take a minute or two. Then press the Enter button to register the 1000ppm Ca⁺ calibration. The LCD should display the word "good."
8. Now press the ON/OFF/CAL button to read calcium ppm.
9. Test your sample. Take a small cup of water from your system and insert the probe to take a precision measurement. Allow enough time for the reading to settle down.

Continuous Monitoring

The accuracy of this and other electronic instruments is the greatest immediately following a calibration process. Should the calcium reading start to drift while continuously monitoring, it is recommended that you recalibrate to verify the reading. Calibration should be done frequently. The probe should not be submerged. Only the bottom 1–2 inches of the probe tip should be in the water. Replace the electrolyte fluid every 5-6 weeks with fresh

electrolyte fluid.

Troubleshooting/Important Points to Remember

- If the **PINPOINT™ Calcium Monitor** show "err" at any part of the calibration process it is recommended that you re-build the probe. Remove the electrolyte fluid from inside the probe by shaking the open fill hole over a sink. Unscrew the gray PVC calcium tip from the end of the probe. Clean all surfaces of the probe body and calcium tip with a damp paper towel. Insert a Q-tip into the probe body to clean the inside surfaces. Allow the probe tip and probe body to air dry. Reinstall the probe tip by tightly screwing it to the probe body. Fill the probe with fresh electrolyte fluid. Recalibrate using the 100ppm and 1,000ppm Ca+ standards. Calibration Fluids can be reused until they no longer calibrate the meter.
- At the end of the calibration process if the meter shows a ppm reading of zero, one or both of the calibration fluids may be out of specification and are no longer accurate. Obtain new calibration fluids and recalibrate. Do not mix old calibration fluids with new calibration fluids; use the new set only and discard the old set.
- **PINPOINT™ Calcium Monitor** is NOT waterproof and must be operated on a dry surface. Liquid contact with any of the printed circuit boards will cause corrosion and void the warranty.

€ Electrolyte Fill Solution is a mixture of 1M KCL (potassium chloride) without any preservative and is safe for livestock if mixed with system water. The probe should have the electrolyte fluid replaced every 5–6 weeks.

- Measurements above the instrument range will be indicated on the LCD as "Hi."
- If you observe an unusually high or low calcium ppm value, it is advisable to re-check the calibration.
- The calcium probe tip should be stored dry. The storage bottle is used to prevent physical damage to the tip and should not be totally filled with fluid.
- Replace batteries in the **PINPOINT™ Calcium Monitor** when the LCD battery icon appears.

- Is it recommended that you replace the calcium probe tip every 18–24 months.
- Do not allow saltwater to enter the electrolyte fill hole; this will cause the calcium readings to drift.
- **Display Range:** 000.0 – 9,772 ppm Ca+
Resolution: 000.2 ppm
Accuracy: +/- 2% of the reading after calibration

Warranty

PINPOINT™ Calcium Monitor by American Marine Inc. is warranted to be free of defects in material and workmanship for a period of 2 years from date of sale.

PINPOINT™ Calcium Probe is warranted to be free of defects in material and workmanship for a period of 6 months from the date of sale.

Positive proof of purchase is required for warranty claim.

American Marine Inc. will not be liable for any costs of removal, installation, transportation charges, or any other charges, which may result in connection with a warranty claim.

American Marine Inc. will not be liable for any damage or wear to products or livestock caused by abnormal operating conditions, water damage, abuse, misuse, unauthorized alternation or repair or if the product was not installed in accordance with the printed operating instructions. Any defective product must be sent freight prepaid with appropriate documentation supporting the warranty claim. Replacement or repair will be at the discretion of American Marine Inc.

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