

# BREW FERM®

... **COBRA** ...

**pH pen**



**MANUAL**

**CE**

## I. INTRODUCTION

Congratulations on your purchase of the Cobra. Please read the manual completely before first use. Keep the manual for future reference. It is recommended to soak the electrode for at least 30 minutes before use to make the electrode wet.

### Features:

- **IP65 Waterproof** housing
- **Dual display** with ATC
- **Data hold** to freeze readings
- **Compact size**, easily fits in your pocket
- **Low battery indicator**
- **Auto power off**
- **°C/°F** unit switchable
- Power by **2 CR2032 batteries**
- **Multi point calibration**
- **One-touch-only** for calibration

## II. MATERIAL SUPPLIED

### This package contains:

- The meter x 1
- CR2032 button battery x 2
- Manual

## III. POWER SUPPLY

The meter is powered by 2 CR2032 batteries. Check the battery:

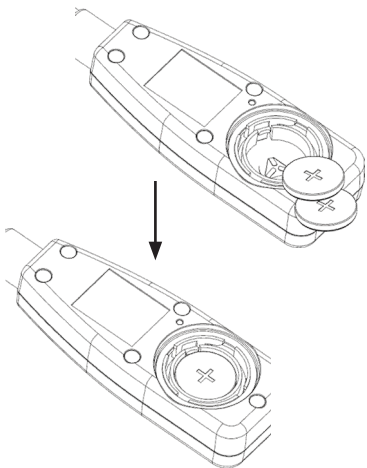
1. before first use;
2. when the battery symbol appears on the LCD screen;
3. when the meter can not be switched on.

To install the batteries:

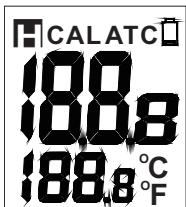
1. Turn off the meter.
2. Loosen the battery cover in clockwise direction with a coin (DON'T discard the black washer!).
3. Replace the old batteries with 2 new button cells CR2032.
4. Make sure the batteries are in place and the polarity is correct.
5. Put back the battery cover and turn it in counter-clockwise direction to lock.


**NOTE:**

1. Please re-calibrate the meters after changing batteries.
2. Remove the battery from the Cobra if you do not plan to use it for a month or more.



#### IV. LCD DISPLAY



- The 1st display shows the measured pH reading.
- The 2nd display shows the temp.
- Cal = Calibration mode
- ATC = Auto Temp. Compensation
-  = Data hold

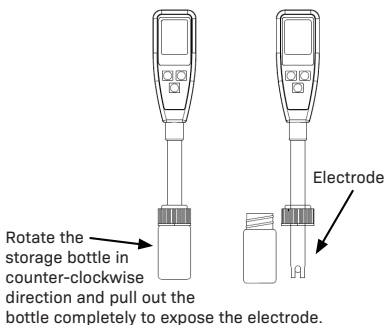
#### V. KEYPAD



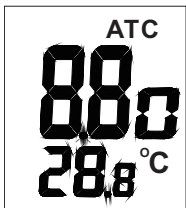
#### VI. HOW TO OPERATE

1. Remove the probe storage bottle from meter to expose the electrode. It is normal to find white crystals on the cap or electrode assembly.

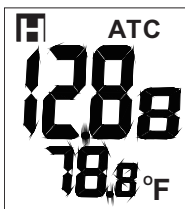
**WARNING:** always make sure the bottle is filled with a storage buffer to keep the electrode wet and in a good storage condition.



2. Dip the electrode into the test solution. Press “ $\text{\textcircled{1}}$ ” to switch on the meter and stir it to get a stable reading.
3. A small dot “.” flashes while the meter is in measurement mode. The LCD not only shows the measured pH value but also displays the temperature.



4. Press “ HOLD ” to freeze current readings. The “ $\text{\textcircled{H}}$ ” icon will appear on the LCD and the small dot will not flash. Press “ HOLD ” again to release the hold mode.



5. Turn off the meter by pressing “ ① ” button.
6. Once you have finished the measurement, clean the electrode, put back the bottle and store the meter below 50°C.
7. Please see page 9 for the calibration procedures.

## VII. AUTO POWER OFF (SLEEP FUNCTION)

This meter will turn off automatically after 20 minutes of inactivity. If you want to operate for a longer time, you can disable the sleep mode.

To disable the auto power off:  
Before turning the power on, press “ ① ” + “ HOLD ” keys simultaneously until an “n” appears on the screen. Then release the keys to return to normal mode.



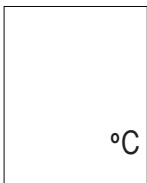
**Note: This setting (sleep function off) will be disabled when you switch the power off.**

## VIII. AUTOMATIC TEMPERATURE COMPENSATION (ATC) & TEMP. UNIT SETTING

The Cobra is capable of measuring with Automatic Temperature Compensation. "ATC" will show in the middle top of the LCD.

### Temp. Unit Setting of the Cobra:

To select the temp. unit ( $^{\circ}\text{C}$  or  $^{\circ}\text{F}$ ), turn off the meter first. When the meter is off, press "Ⓛ" and "CAL" at the same time until the C or F appears on the LCD. Press "HOLD" to select the preferred unit and then press "CAL" to save. "SR" will appear on the LCD for one second and then the LCD screen will go back to normal.

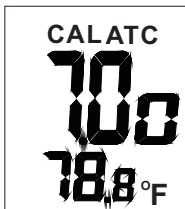


## IX. CALIBRATION MODE (CAL)

Calibration is necessary and should be done regularly. It is recommended to calibrate every day if the meter is used often. The unique calibration design of the meter features an automatic buffer recognition to avoid errors.

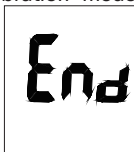
### The Cobra Calibration:

1. Switch on the meter.
2. Place the electrode into a 7pH buffer solution (afterwards place the electrode into a 4pH or a 10pH buffer solution for better accuracy).
3. Press " CAL " to enter pH calibration mode. The icon " CAL " will appear on the LCD screen for one second and then pH value (4, 7 or 10) will be displayed on the LCD screen.



4. If the probe or buffer display an error:
  - the buffer is incorrectly inserted;
  - the probe is damaged
  - the probe can not detect the buffer in below voltage range.

The meter will exit calibration mode automatically after 10 seconds. " END " will appear on the LCD screen in one second and then will go back to normal status.

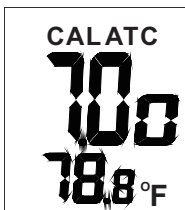


Acceptable voltage range of each point:  
pH 4.00 : 97mV ... 250mV  
pH 7.00 : - 60mV ... 60mV  
pH 10.00 : - 250mV ... -97mV

5. If the probe recognizes the buffer:  
If the probe successfully recognizes the



buffer, the buffer pH value (4, 7 or 10) will appear on the display in 2 seconds.



If the calibration buffer is not 4,7 or 10, but another value, such as 7.01, just press " HOLD " to change the value.

6. The adjustable cal. point range for 4.0pH is from 3.50 to 4.50. For 7.0pH is from 6.50 to 7.50. For 10.0pH is from 9.50 to 10.50.

7. To save the calibration value:

When the electrode reads a stable value and the user is not pressing any key, the meter will automatically save the value and then exit the calibration mode.



8. Rinse the probe with de-ionised water or a rinse solution (e.g. tap water) after each measurement to prolong the meter's life.

9. Repeat the steps above until the point calibration is finished.

## X. MAINTENANCE

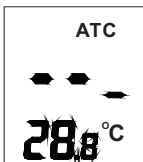
- Always keep the pH glass bulb wet by using the storage bottle to protect and store the electrode.
- Always rinse the pH electrode in de-ionised water or rinse solution (e.g. tap water) before the next use.
- Never touch or rub the glass bulb in order to prolong the pH electrode's life.
- Make sure the electrode is clean. Between measurements, rinse the electrode with de-ionised water. If the electrode has been exposed to a solvent immiscible with water, clean it with a solvent miscible with water (e.g. ethanol or acetone) and rinse carefully with water.
- Store the electrode carefully.

## XI. TROUBLESHOOTING

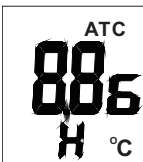
- **Power on but no display**
  1. Make sure you press the power key more than 100 mS.
  2. Check for whether the batteries are in place, they make contact and that the polarity is correct.
  3. Replace the batteries and try again.
  4. Remove the batteries for one minute and then put them back in again.
- **Slow response**

Clean the probe by immersing the electrode in tap water for 10-15 minutes, then rinse thoroughly with distilled water or use a general purpose electrode cleaner.

- **LCD display “ - - - ”**  
Out of pH range, too acidic/or too alkaline.

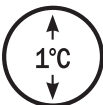
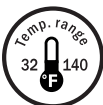
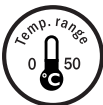


- **“ H ” or “ L ”**  
Out of temp. range, too cold or too hot.



- **pH value fluctuate quickly**  
This is normal when the electrode is not immersed in water, but exposed to air.

## XII. SPECIFICATIONS



- Operating Temp.: 0°~50°C (32~122°F)
- Operating Humidity: 0~80% RH
- pH calibration buffer suggested:

- Standard USA buffers
- Standard NIST buffers
- Standard DIN buffers
- Battery Life: >100 hrs continuous use

### **XIII. WARRANTY**

The meter is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation but does not cover battery, misuse, abuse, alteration, tampering, neglect, improper maintenance, or damage resulting from leaking batteries. Proof of purchase is required for warranty repairs. Warranty is void if the meter used has been taken apart.

### **XIV. RETURN AUTHORIZATION**

Authorization must be obtained from the supplier before returning items for any reason. When requiring an RA (Return Authorization), please include data regarding the defective reason. The meters must be returned properly packaged to prevent any damage in shipment and be insured against possible damage or loss.



ATC

4.73  
28.1°C

BREW FERM.



COBRA  
pH PEN