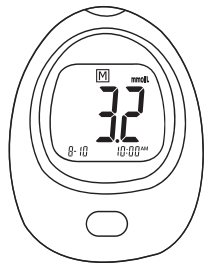


Part no.	311-4207100-044
Product name	機器說明書/BHB Check Plus/4207A/英文/PortaCheck
Spec	L250*W432mm/雜誌紙/65P/雙面/黑/5折
Designer	Sam
Color	■ K:100    ■ K:40

# BHBCheck™ Plus

## Blood Ketone & Glucose Test System

Use only BHBCheck™ blood ketone and glucose test strips with BHBCheck™ Plus meter



### OPERATING INSTRUCTIONS

#### INTENDED USE

The BHBCheck™ Plus blood ketone & glucose test system consists of two main components: the meter and test strips. These components have been designed, tested, and proven to work together as a system to produce accurate blood ketone or glucose test results. Only BHBCheck™ blood ketone and glucose test strips can be used with the BHBCheck™ Plus meter. It allows animal's blood glucose and blood ketone levels to be measured by the animal owners at home and by veterinarian professionals in clinical settings as an aid to monitoring the effectiveness of diabetes control in animals. The system should not be used for the diagnosis or screening of diabetes mellitus.

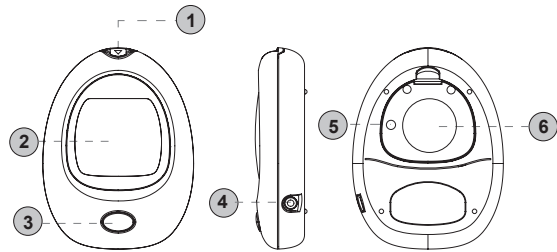
#### BHBCheck™ Plus blood ketone test strips

The BHBCheck™ Plus blood ketone test strips are thin strips printed with a star pattern. They contain a chemical reagent system for use with the BHBCheck™ Plus Meter to measure the beta-hydroxybutyrate (BHB) ketone concentration in bovine fresh venous whole blood. Fresh venous blood is applied to the end tip of the test strip, then automatically absorbed into the reaction cell where the reaction takes place. A transient electrical current is formed during the reaction and the blood BHB concentration is calculated based on the electrical current detected by the meter. The meter display provides plasma equivalent results in millimoles BHB per liter of blood (mmol/L).

#### BHBCheck™ blood glucose test strips

The BHBCheck™ blood glucose test strips are thin strips with a chemical reagent system for use with the BHBCheck™ Plus Meter to measure the glucose concentration in bovine fresh venous whole blood. The system is limited to fresh venous blood samples only. Fresh venous blood is applied to the end tip of the test strip, then automatically absorbed into the reaction cell where the reaction takes place. A transient electrical current is formed during the reaction and the blood glucose concentration is calculated based on the electrical current detected by the meter. The meter display provides plasma equivalent results in milligrams glucose per deciliter of blood (mg/dL).

### APPEARANCE AND KEY FUNCTIONS OF THE METER

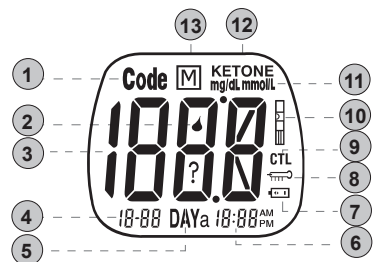


1. Test slot  
Insert test strip here to turn the meter on for testing.
2. Display Screen
3. M Button (M)
4. Data Port
5. Set Button (S) – (located under battery compartment cover)  
Enter and confirm the meter settings.
6. Battery Compartment

#### NOTE

With a test strip inserted, the meter will turn off automatically after 180 seconds without any action, or you can press and hold the "M" for 3 seconds to turn off the meter. If there is no strip in the meter, it automatically shuts down after 60 seconds without any action.

### METER DISPLAY



1. Code
2. Blood Drop Symbol
3. Test Result
4. Date
5. Day Average (not applicable)
6. Time
7. Low Battery Symbol
8. Temperature Display Symbol
9. Control Solution Mode
10. Test Strip Indicator
11. Measurement Unit
12. Ketone Indicator (There is no Glucose Indicator)
13. Memory Symbol

### SETTING THE METER AND RESETING THE MEMORY

Perform before using your meter for the first time.

#### TO ENTER SETTING MODE

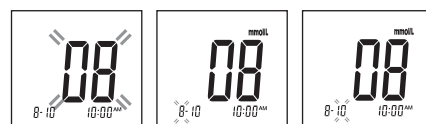
Start with the meter off (no test strip inserted). Press "S" button.

#### STEP 1. SET THE DATE

With the year flashing, press "M" button until the correct year appears. Press "S" button.

With the month flashing, press "M" button until the correct month appears. Press "S" button.

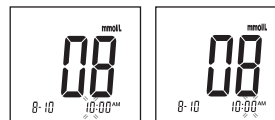
With the day flashing, press "M" button until the correct day appears. Press "S" button.



#### STEP 2. SET THE TIME

With the hour flashing, press "M" button until the correct hour appears. Press "S" button.

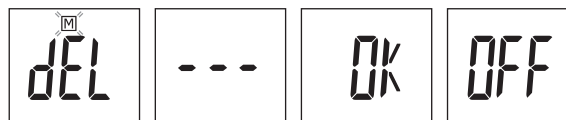
With the minute flashing, press "M" button until the correct minute appears. Press "S" button.



#### STEP 3. DELETE THE MEMORY

With "dEL" and a flashing "M" button on the display, press "S" button to keep the results in memory, to skip results, and to turn off the meter.

To delete all results, press "M" button, then press "S" button to turn off the meter.



### FOR BLOOD GLUCOSE TESTING

To measure blood glucose in fresh venous whole blood, the meter provides you with two modes: Gen and CTL.

MODES	USE WHEN
General (not to display)	Any time of day without regard to time since last meal
Control solution mode (CTL)	Testing with the control solution

You can switch between each mode by:

1. Start with the meter switched off. Insert a test strip to turn on the meter. The screen will display the ambient temperature value, code number and then a flashing "M".
2. Press "M" to switch to "Control solution mode".

### FOR BLOOD KETONE TESTING

The meter provides you with one mode for measuring, Gen. You can start with the meter switched off. Insert a test strip to turn on the meter. The screen will display a flashing "M" and "KETONE".

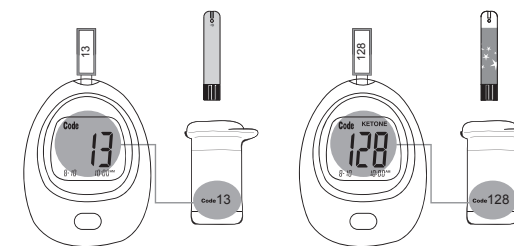
### BEFORE TESTING

#### CALIBRATION

You must calibrate the meter every time you begin to use a new lot or switching between ketone and glucose test strips by setting the meter with the correct code. Test results may be inaccurate if the code number displayed on the monitor does not match the number printed on the strip vial.

#### HOW TO CODE YOUR METER

1. Insert the code strip when the monitor is off. Wait until the code number appears on the display.
2. Remove the code strip, the display will show "OK". This tells you that the meter has finished coding and is ready for testings.



FOR GLUCOSE

FOR KETONE

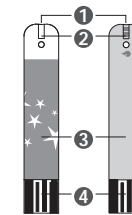
#### WARNING

- It is important to make sure that the LCD displayed code is the same as the code on the test strip vial before testing. Failure to do so will result in inaccurate results.
- The code number for blood glucose strip is two-digits and that for the blood ketone strip is three-digits or four-digits; please ensure you are using the correct code strip for calibration.
- The code number on the display is only for your reference; it may not be actual code for this meter.

### TEST STRIPS

Your system measures the amount of ketone (BHB) or glucose in fresh venous whole blood.

**NOTE:** Test strips are specific to either ketone or glucose. One test strip cannot provide results for both ketone and glucose.



#### 1 Absorbent Hole

Apply a drop of blood here. The blood will be automatically absorbed.

#### 2 Confirmation Window

This is where you confirm if enough blood has been applied to the absorbent hole in the strip.

#### 3 Test Strip Handle

Hold this part to insert the test strip into the meter.

#### 4 Contact Bars

Insert this end of the test strip into the meter. Push it firmly until it will go no further

#### ATTENTION:

The front side of test strip should face up when inserting test strip. Test results might be wrong if the contact bar is not fully inserted into the test slot.

### LIMITATIONS

- Hematocrit: The hematocrit level is limited to between 20% to 40%.
- This test strip is used for testing fresh venous blood.
- Altitude effects: Altitudes up to 10,742 feet (3,275m) do not affect test results.
- Use only heparin for anticoagulation of fresh venous whole blood.

### STORAGE & HANDLING OF TEST STRIPS

- Write the first opening date on the vial label. Test strips expire 6 months after that date. Do NOT use expired test strips.
- Store the test strips in a cool, dry place between 4°C to 40°C (39.2°F to 104°F) and 10% to 85% relative humidity for the glucose test strip; that for the blood ketone test strip is between 2°C to 30°C (35.6°F to 86°F) and 10% to 85% relative humidity.

- Keep the test strips away from direct sunlight. Do not store the test strips in high humidity.
- Store the test strips in their original vial containers.
- Do not touch the test strips with wet hands.
- Use each test strip immediately after taking it out of the vial. Close the vial immediately after taking out a strip.
- Keep the vial closed at all times.
- Do not bend, cut, or alter the test strip.

### TESTING WITH BLOOD SAMPLE

BHBCheck™ blood ketone and glucose test strips use the same procedure.

#### STEP 1. Apply the code strip to set the meter for that specific blood measurement

To perform a blood glucose test, insert the glucose code strip first to set the meter ready for the blood glucose test; insert the blood ketone code strip instead for a blood ketone test. Do not use the glucose test strip while the meter is set to measure the blood ketone and vice versa.

#### STEP 2. Insert the test strip to start the measurement.

Wait for the meter to display ambient temperature value, code number and then a flashing blood drop symbol.

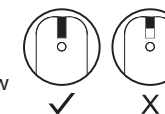
#### STEP 3. Select the appropriate measuring mode by pressing M (for the blood glucose test only)

Press M to select "Gen" or "CTL".

#### STEP 4 Obtain a blood sample.

a) Obtain a drop of blood that is at least 0.7 µL of volume for a blood glucose or a blood ketone test.

b) Gently apply the drop of blood to the absorbent hole at the very tip of the test strip at a tilted angle. Confirmation window should be completely filled if enough blood sample has been applied.

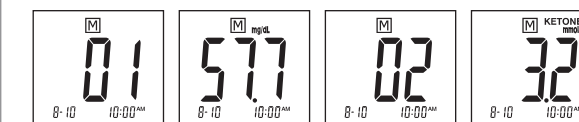


c) If the confirmation window is not filled completely before the meter begins to count down, do not add more blood to the test strip. Discard the test strip and start again. If you have trouble filling the test strip, please contact your veterinarian or your local customer service representative for assistance.

#### STEP 5. RESULTS WILL APPEAR AFTER THE METER COUNTS DOWN TO 0.

#### STEP 6. GET RESULTS.

The test results will be stored in meter memory automatically.



#### WARNING

- Strips are for single use only.
- Please do not change your treatment of animals based on the results without first consulting your veterinarian.
- Turn the meter off by removing the test strip. Discard the used test strip and syringes / lancets carefully according to your local regulations.
- Keep test strips away from small children. If swallowed, contact a doctor immediately for advice.

## VIEWING THE METER MEMORY

### Viewing Results

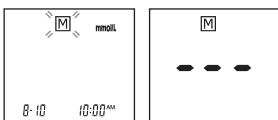
Your meter stores the 450 most recent test results with date and time in its memory. Ketone (BHB) results are in mmol/L units and glucose results are in mg/dL units.

### TO REVIEW TEST RESULTS

#### STEP 1. ENTER THE MEMORY MODE.

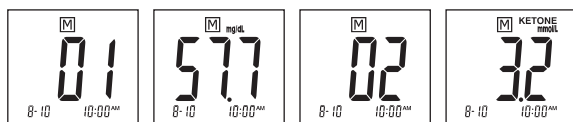
With the meter turned off, press "M" button twice. The first result will appear, indicating that you are in the memory mode.

When using the meter for the first time or if the results have been deleted (cleared), "----" will appear indicating that there are no test results in the memory.



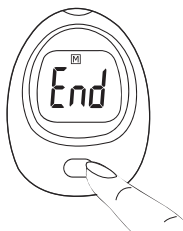
#### STEP 2. RECALL RESULTS.

If you continue to press "M", you can then review the last 450 results in the memory.



#### STEP 3. EXIT MEMORY MODE.

After displaying the last result in the memory, press the "M" button again. The meter displays "End" and then turns off.



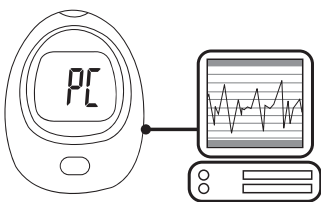
### NOTE

- If you wish to exit memory mode before the last result is displayed, press the "M" button for 3 seconds; or leave it without any action for 3 minutes. The meter will switch off automatically
- When the memory is full, the oldest test results will be replaced by the newest test result.

## DOWNLOADING RESULTS ONTO COMPUTER

You can use the meter with an interface cable (optional) and the BHBCheck software system to view test results on your personal computer.

To learn more about the BHBCheck software system or to obtain the interface cable separately, please contact the local customer service or place of purchase for assistance.



## BATTERY

Your meter comes with one 3V CR2032 lithium battery. If the battery symbol "battery" appears on the screen indicating that the battery is low, it is time to change the battery. If the "battery" appears with an E-b error; there is not enough power to complete a test. Please change the battery immediately.

### REPLACE THE BATTERY

#### TO REPLACE THE BATTERY, MAKE SURE THAT THE METER IS TURNED OFF.

- Press the edge of the battery cover and lift it up to remove.
- Remove the old battery and replace with one 3V CR2032 lithium battery.
- Close the battery cover. If the battery is inserted correctly, you will hear a "beep" afterwards.

### NOTE

- Replacing the battery does not affect the results stored in memory.
- As with all small batteries, these batteries should be kept away from children. If swallowed, promptly seek medical assistance.
- Battery might leak chemicals if unused for a long time. Remove the battery if you are not going to use the device for an extended period of time (i.e., 3 months or more).
- Properly dispose of the battery according to your local environmental regulations.

## MAINTENANCE

### CARING FOR YOUR METER

#### CLEANING

- To clean the meter exterior, wipe it with a cloth moistened with tap water or a mild cleaning agent, then dry the device with a soft dry cloth. Do NOT rinse with water.
- Do NOT use organic solvents to clean the meter.

#### METER STORAGE

- Storage conditions: -20°C to 60°C (-4°F to 140°F), 10% to 95% relative humidity.
- Always store or transport the meter in its original storage case.
- Avoid dropping and heavy impact.
- Avoid direct sunlight.

#### METER DISPOSAL

The used meter should be treated as contaminated since it may carry a risk of infection due to exposure to blood during measurement. The battery from a used meter should be removed and the meter (and battery) should be disposed in accordance with local regulations.

The meter falls outside the scope of European Directive 2002/96/EC - Directive on waste electrical and electronic equipment (WEEE).

### CARING FOR YOUR TEST STRIPS

- Storage conditions: Do NOT freeze.
- Blood glucose test strip:** 39.2°F to 104.0°F (4°C to 40°C) and 10% to 85% relative humidity for vial.

### Blood ketone test strip:

35.6°F to 86°F (2°C to 30°C) and 10% to 85% relative humidity

- Store your test strips in their original vial only. Do not transfer to another container.
- Store test strip packages in a cool dry place. Keep away from direct sunlight and heat.
- After removing a test strip from the vial, immediately close the vial cap tightly.
- Touch the test strip with clean and dry hands.
- Use each test strip immediately after removing it from the vial.
- Write the opening date on the vial label when you first opened it. Discard remaining blood glucose or blood ketone test strips after 6 months
- Do not use test strips after the expiration date. This may cause inaccurate results.
- Do not bend, cut, or alter a test strip in any way.
- Keep the strip vial away from children since the cap and the test strip may be a choking hazard. If swallowed, promptly see a doctor for help.

**For further information, please refer to the test strip package insert.**

## MEASUREMENT RESULT READINGS

### For Blood Glucose Test

MESSAGE	WHAT IT MEANS
Lo	< 20 mg/dL (1.1 mmol/L)
SB	20 mg/dL to 600 mg/dL (1.1 mmol/L to 33.3 mmol/L)
Hi	>600 mg/dL (33.3 mmol/L)

### For Blood Ketone Test

MESSAGE	WHAT IT MEANS
Lo	< 0.1 mmol/L
SB	0.1 mmol/L to 8.0 mmol/L
Hi	> 8.0 mmol/L

## SYMBOL INFORMATION

Symbol	Referent
	Consult instructions for use
	Temperature limitation
	Use by
	Batch code
	Serial number
	Humidity Limitation
	Collection for electrical and electronic equipment
	CE mark
	Manufacturer
	Caution, consult accompanying documents

## DISPLAY MESSAGES AND TROUBLESHOOTING

The following is a summary of display messages. If your meter displays an error message, please follow the actions for the error message as described in the table below. If the problem persists, contact your local customer service agent for help.

### ERROR MESSAGES

MESSAGE	WHAT IT MEANS	WHAT TO DO
E-b	Appears when the battery is too low.	Replace the battery immediately.
E-U	Appears when a used test strip is inserted.	Repeat with a new test strip.
E-t	Appears when ambient temperature is above or below system operation range.	System operation range is 10°C to 40°C (50°F to 104°F). Repeat the test after the meter and test strip are in the above temperature range.
E-C	Appears when the wrong code strip is inserted or other coding errors.	Make sure to insert the correct code strip. If the problem persists, please contact local customer service for help.
E-0 E-A E-E	Problem with the meter.	Repeat the test with a new test strip. If the meter still does not work, please contact customer service for assistance.
E-9	Appears when the test strip is removed while counting down.	Review the instructions and repeat with a new test strip. If the problem persists, contact customer service for help.

## SPECIFICATIONS

**Model No.:** Plus

**Meter Dimension & Weight:** 80 (L) x 60 (W) x 20 (H) mm, 48.5 g (excluding battery)

**Power Source:** One 3V CR2032 lithium battery  
**Memory:** 450 measurement results with respective date and time

**Display:** LCD

**External Output:** Strip port communication

Auto electrode insertion detection

Auto reaction time count-down

Auto switch-off after 3 minutes without action

Temperature Warning

### Operating Condition:

10°C to 40°C (50°F to 104°F), 10% to 85% R.H. (non-condensing)

### Meter Storage/Transportation Conditions:

-20°C to 60°C (-4°F to 140°F), 10% to 95% R.H. (non-condensing)

### Strip Storage/Transportation Conditions:

Blood glucose test strip:

39.2°F to 104.0°F (4°C to 40°C) and 10% to 85% R.H. for the vial (non-condensing)

Blood ketone test strip:

35.6°F to 86°F (2°C to 30°C) and 10 to 85% RH. (non-condensing)

### Measurement Unit:

Glucose Test: Fixed mg/dL

Ketone Test: Fixed mmol/L

### Measurement Range:

Glucose Test: 20 to 600 mg/dL (1.1 to 33.3 mmol/L)

Ketone Test: 0.1 to 8.0 mmol/L

**Ambient Temperature Unit:** Fixed °F

**Expected Service Life:** 5 years

This device has been tested to meet the electrical and safety requirements of: IEC/EN 61010-1, IEC/EN 61010-2-101, EN 61326-1, IEC/EN 61326-2-6.

Manufactured by TaiDoc Technology corporation for PortaCheck, Inc. Moorestown, NJ 08057

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