

# **BSM170/170B**

## **User's Manual**



Please note the important information below before reading this manual.

 **Warning**

Failure to comply with safety warnings and regulations can cause serious injury or death.

 **Caution**

Failure to comply with safety cautions and regulations can cause injury or property damage.

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## InBody

For any problems with BSM170/170B or any clinical questions, please contact us at the following:

**InBody Co., Ltd. [HEAD OFFICE]**

InBody Bldg., 54, Nonhyeon-ro 2-gil, Gangnam-gu, Seoul 135-960 KOREA

TEL: +82-2-501-3939 FAX: +82-2-578-2716

Website: <http://www.inbody.com>

E-mail: [info@inbody.com](mailto:info@inbody.com)

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Visit our website <http://www.inbody.com> to view and download further information about the functions of the BSM170/170B, the explanation of results output, and more. InBody Co., Ltd reserves the right to modify the appearance, specifications, and etc. of the BSM170/170B to improve the quality of the product, without prior notice for reasons of performance improvement.

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### Customer Service Information

**InBody [USA]**

13850 Cerritos Corporate Dr., Unit C, Cerritos, CA 90703, USA

TEL: +1-323-932-6503 FAX: +1-323-952-5009 Website: <http://www.inbodyusa.com> E-mail: [info@inbodyusa.com](mailto:info@inbodyusa.com)

**InBody Japan Inc. [JAPAN]**

Second Floor Ayabe Bldg., 2-17-3 Sotokanda, Chiyoda-ku, Tokyo JAPAN

TEL: +81-03-5298-7667 FAX: +81-03-5298-7668 Website: <http://www.inbody.co.jp> E-mail: [inbody@inbody.co.jp](mailto:inbody@inbody.co.jp)

**EU Representative. [EUROPE]**

DongBang Acuprime. 1 Forrest Units, Hennock Road East, Marsh Barton, Exeter EX2 8RU, U.K

TEL: +44-1392-829500 FAX: +44-1392-823232 Website: <http://www.inbody.com> E-mail: [info@acuprime.com](mailto:info@acuprime.com)

**Biospace China. [CHINA]**

904, Xing Di Plaza, No. 1698 Yishan Road, Shanghai, 201103, CHINA

TEL: +86-21-64439738, 9739, 9705 FAX: +86-21-64439706 Website: <http://www.biospacechina.com> E-mail: [info@biospacechina.com](mailto:info@biospacechina.com)

**Australian Sponsor. [AUSTRALIA]**

Emergo AUSTRALIA. Level 20, Tower II, Darling Park, 201 Sussex Street, Sydney, NSW 2000, AUSTRALIA

TEL: +61-2-9006-1662 FAX: +61-2-9006-1010 Website: <http://www.emergogroup.com> E-mail: [Sponsor@emergogroup.com](mailto:Sponsor@emergogroup.com)

# BSM170/170B

## User's Manual Contents

### **I. Stadiometer Installation**

A. Product Components	4
B. Operating Environment	5
C. Installation Instructions	5
D. Stadiometer Settings	12
E. Maintenance	18

### **II. Height Measurement**

A. Precautionary Measurements	19
B. Measurement Instructions	20
C. Measurement Posture	21

### **III. Transportation and Storage**

A. Repacking Instructions	22
B. Transportation and Storage Environment	22

### **IV. Frequently Asked Questions** 23

### **V. Others**

A. Exterior and Functions	24
B. Symbols	26
C. Specifications	27

# I. Stadiometer Installation

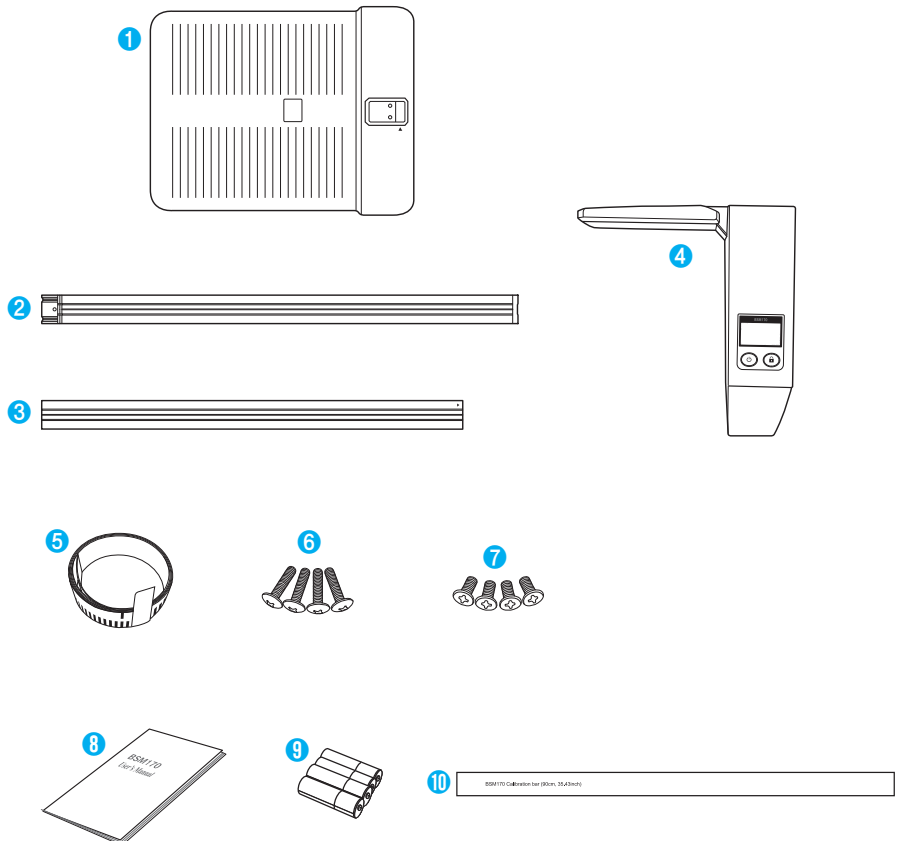
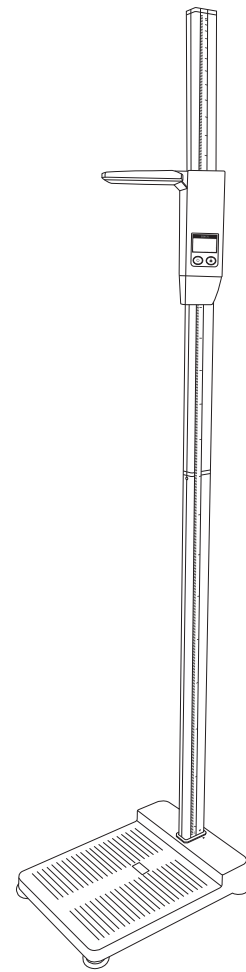
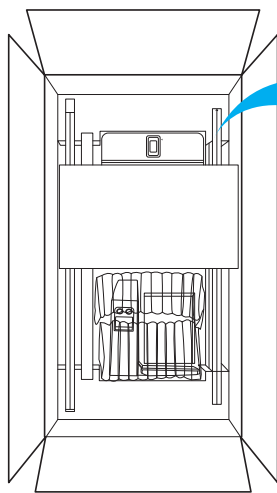
## A. Product Components

The BSM170/170B contains of the following components.

Make sure all of the following components are present.

\* Please inspect each component of the BSM170/170B for damage prior to installation.

- ❶ Footplate 1 EA
- ❷ Stand (upper) 1 EA
- ❸ Stand (lower) 1 EA
- ❹ Measurement unit 1 EA
- ❺ Measurement tape 1 EA
- ❻ Footplate mounting screws 4 EA
- ❼ Stand mounting screws 4 EA
- ❽ User's manual 1 EA
- ❾ AA batteries 4 EA
- ❿ Test Jig 1 EA



## B. Operating Environment

Please make sure that the environment is adequate for the BSM170/170B installation. This equipment is designed for indoor use. If installing outdoors, the following requirements must be fulfilled.

Temperatures range	10 ~ 40°C (50 ~ 104°F)
Relative humidity	30 ~ 75% RH
Atmospheric pressure	70 ~ 106kPa

### Warning

- Before installing BSM170/170B, check that the ceiling is at least 2.3 m high. The maximum height of this equipment is 2.19m. Keep a space of at least 3cm between the ceiling and the top of the BSM170/170B.

## C. Installation Instructions

1. After opening the BSM170/170B box, remove the packaging materials and take all product components out.

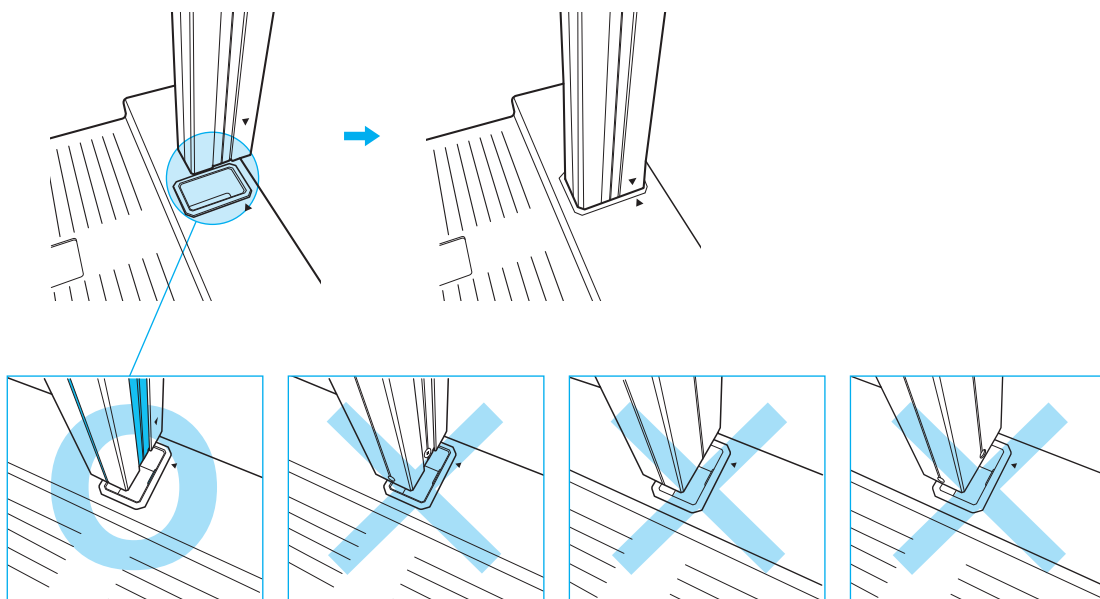
### Warning

- Keep the packaging materials provided for repacking the equipment in the future. Other wastes should be disposed of according to relevant laws and regulations.
- Install the BSM170/170B on a leveled, non-vibrating surface. Installing the equipment on an uneven surface may cause the examinee to fall down. Measurement results may also be inaccurate.
- Never clean the BSM170/170B with liquid spray or detergent directly. The equipment may corrode and/or malfunction if the liquid or detergent leaks inside. Additionally, BSM170/170B measurement tape may be damaged. When cleaning the BSM170/170B, gently wipe it with the cloth.

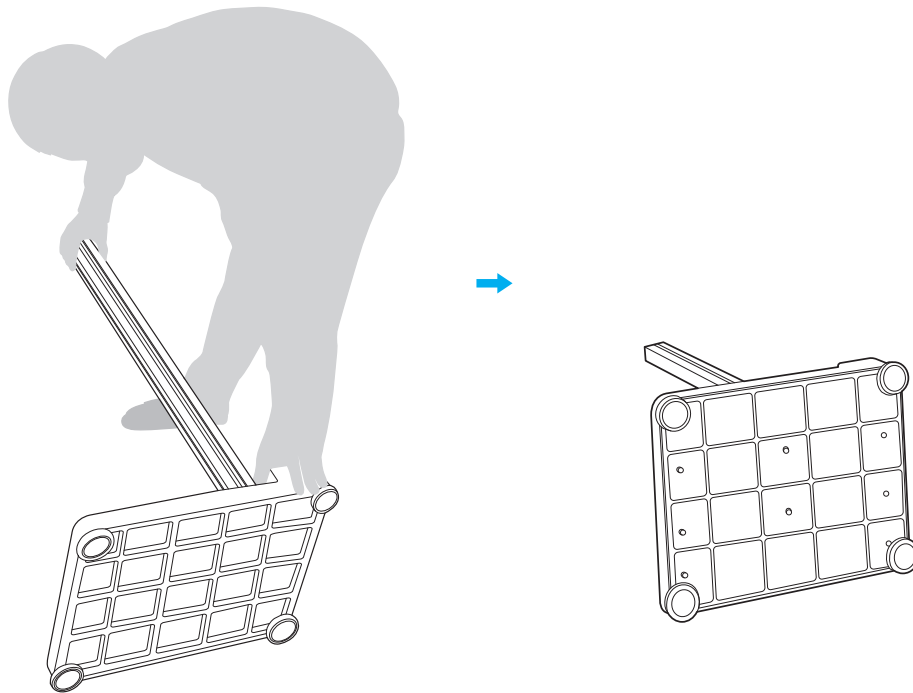
2. Insert the “Stand (lower)” into the footplate, ensuring that the arrow (▼) located on the bottom right of the “Stand (lower)” and the arrow (▲) located on the footplate face one another.

\* When inserting into the “Stand (lower)”, part without screw holes must face downward.

\* The “Stand (lower)” and the footplate are designed to be assembled together in only one particular direction. Forcing the stand to be inserted in other directions could damage the product.

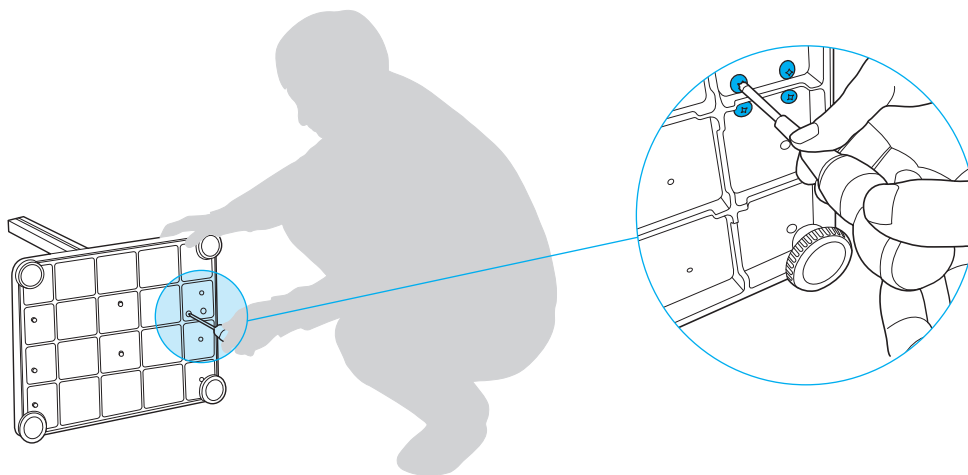


3. Hold the “Stand (lower)” in place to prevent it from sliding out of the insertion hole of the footplate, tilt the equipment sideways towards the floor.

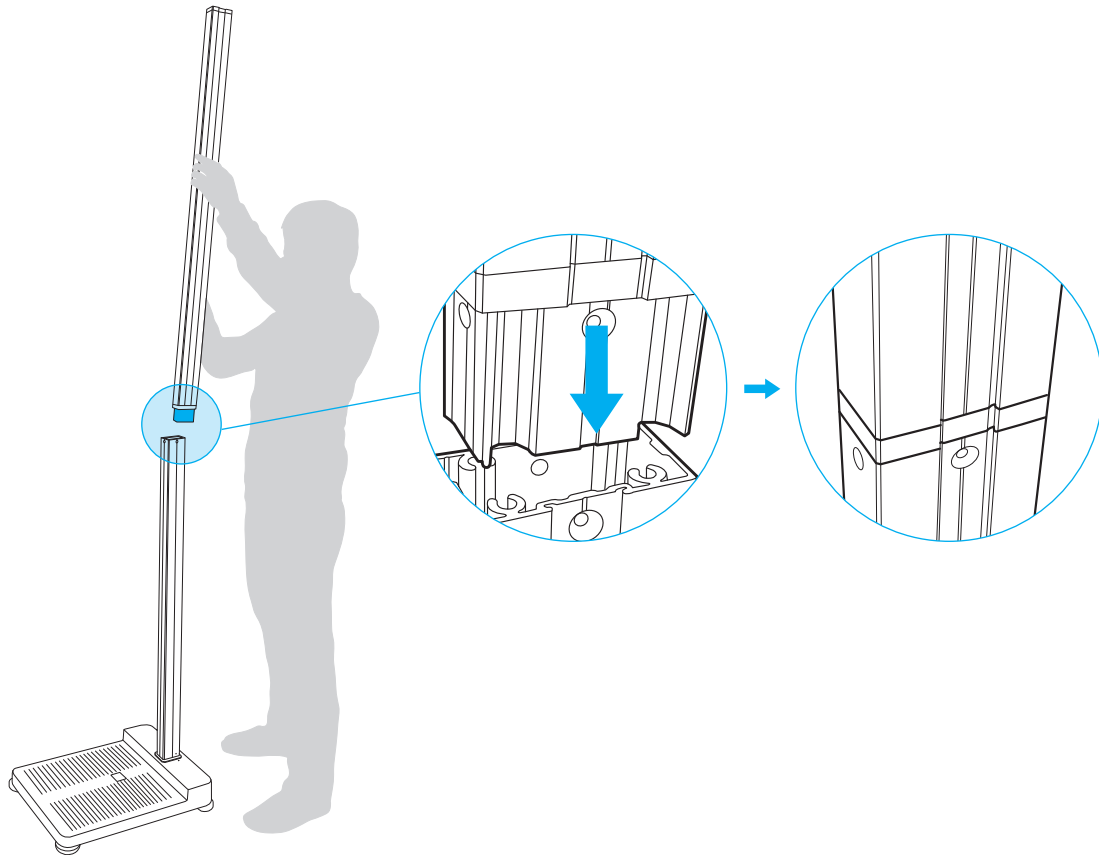


4. Screw each of the 4 footplate mounting screws into the holes located on the opposite side of the stand insertion hole of the footplate.

5. Tighten the Stand mounting screws by turning them clockwise with a Phillips screwdriver.



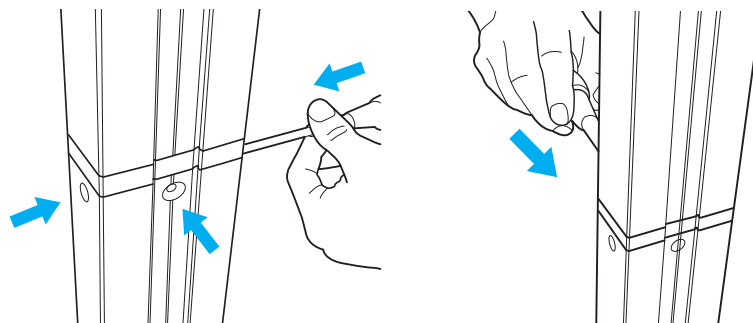
6. Once all four screws are fastened tightly, return the “Stand (lower)” and footplate to an upright position.
7. Insert the black end of “Stand (upper)” into the “Stand (lower)” as illustrated below.



**! Caution**

- Hold the “Stand (upper)” as vertically as possible so that it is not inserted in a slanted position.

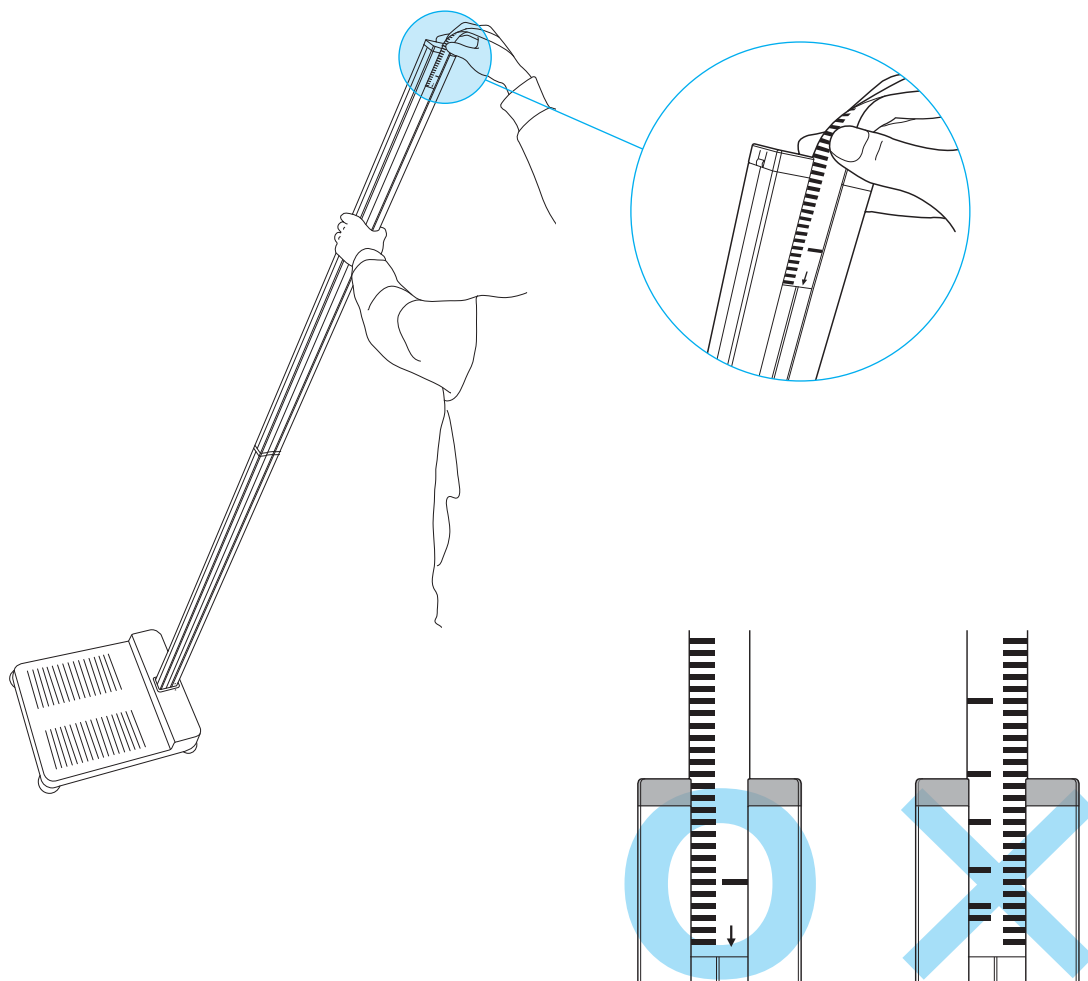
8. After inserting the “Stand (upper)” into “Stand (lower)”, fasten the two stands together using the mounting screws and a Phillips screwdriver.



**! Caution**

- Avoid using excess force to fasten the mounting screws.

9. Insert the measuring tape into the “Stand (upper)” with the ‘↓’ facing down. Refer to the illustration below. After the measurement tape is completed inserted, remove the sticker attached to the end of the measurement tape to affix the tape to the stand.

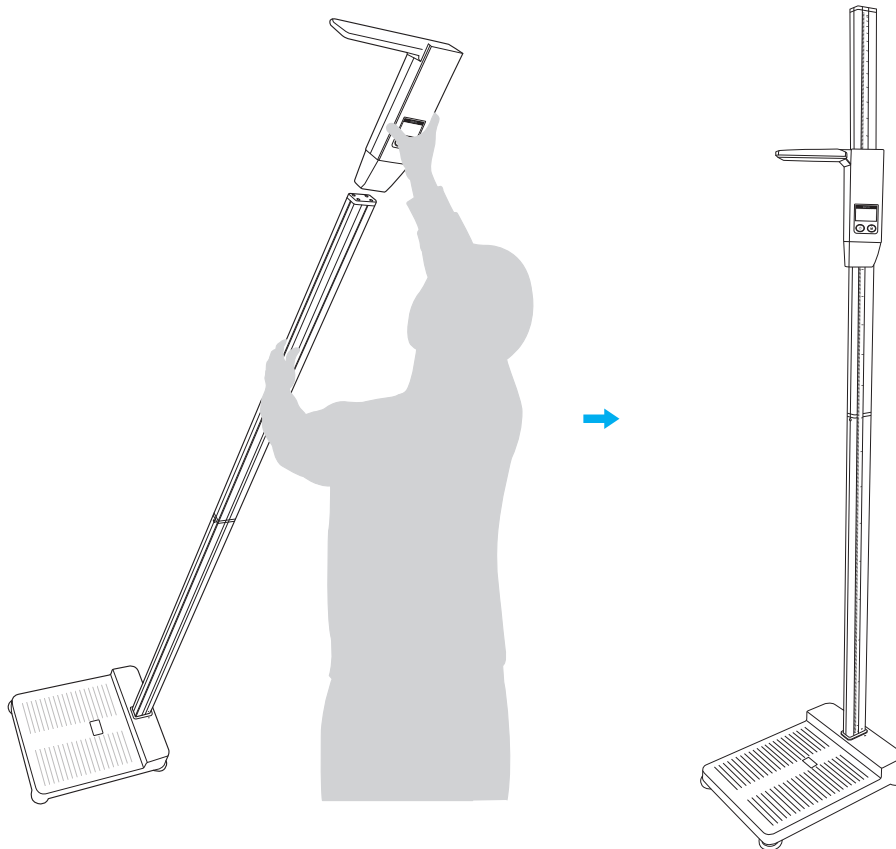


 **Caution**

- The measurement tape must be inserted with the arrow marked ‘↓’ facing down.
- Correct measurements cannot be taken if the measurement tape is inserted reversed.



10. Tilt the Stand to a upright position and insert the measuring unit onto the stand as illustrated below.



 **Caution**

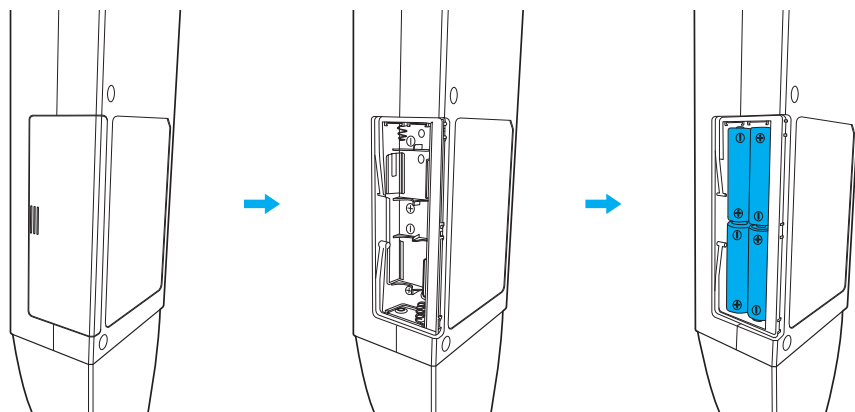
- The LCD on the measurement unit and the measurement tape must be visible on the same side.

11. The BSM170/170B uses batteries as its power source.

\* When the measurement standby time expires, the equipment automatically turns off.

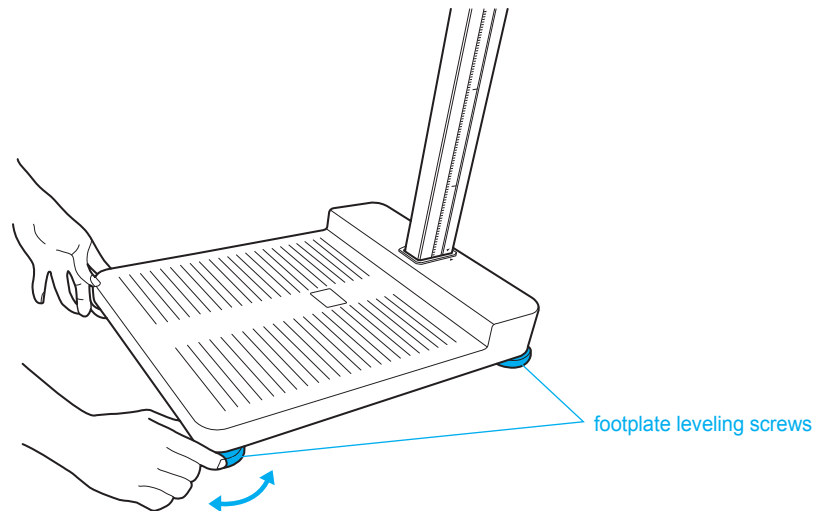
- 1 BSM170 standby time: 10 seconds.
- 2 BSM170B standby time: 2 minutes if it is not connected to the InBody, 10 seconds if it is connected to the InBody.

- 1) Open the battery cover located on the right side of the LCD screen.
- 2) Insert 4 AA batteries.
- 3) Cover the battery socket with the battery socket lid.



12. After placing the BSM170/170B on a flat surface, if the footplate is not level, use the footplate adjustment screws to adjust until level.

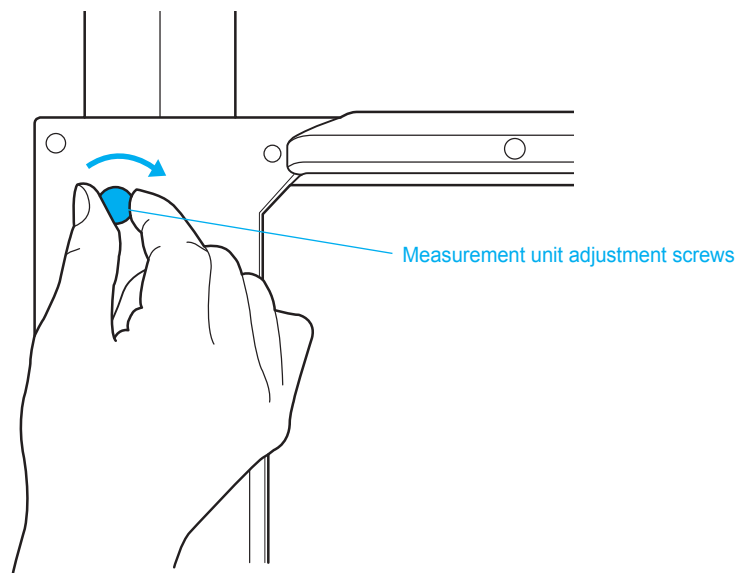
\* Leveling the equipment is necessary for accurate height measurements.



13. When taking measurements with the BSM170/170B, the operator must move the measurement unit up and down manually. By default, the adjustment screw is tight to keep the measurement unit from sliding down too freely. If the screw is too tight, adjust the screw to the preferred tightness.

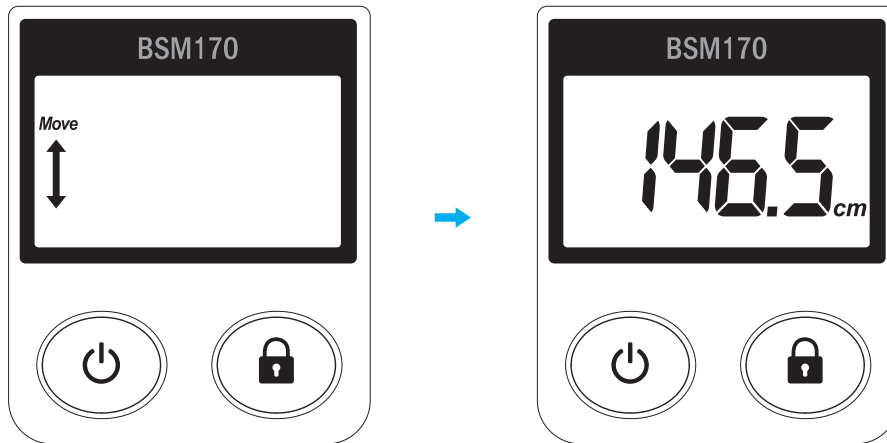
\* By default, the adjustment screw is tight to keep the measurement unit from sliding down too freely. If the screw is too tight, adjust the screw to the preferred tightness.

\* If the screw is tightened too tight, the measurement unit may not move at all.





14. Turn on the BSM170/170B.

15. Move the measurement unit up or down until the 'Move' text disappears. The equipment will enter the measurement standby mode and the display will change as shown below.




## D. Stadiometer Settings




### 1. Required Settings

1. After turning on the BSM170/170B, press and hold the  button and the  button simultaneously for at least 3 seconds to enter the Setup menu.



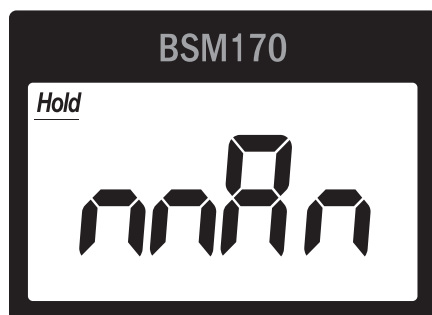
2. In the Setup menu, set the measurement value hold time, beep, screen brightness, units, and offset value.

1) Measurement value hold time: When the  button is pressed after a height measurement is recorded, the value displayed will stay locked on the LCD screen for this amount of time, even if the measurement unit is moved.

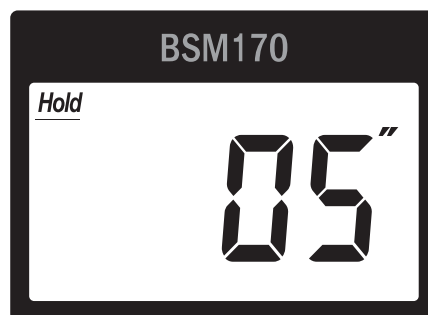
- a. Use the  button to move to 'Hold' and then press the  button to select.
- b. Use the  button to set a hold time for the locked height value.

\* Button mode: You can lock and unlock the measurement value by pressing  button.

\* Time mode: The measured height will display on screen for a set time. Set the lock time between 1 and 10 seconds.



Button mode



Time mode

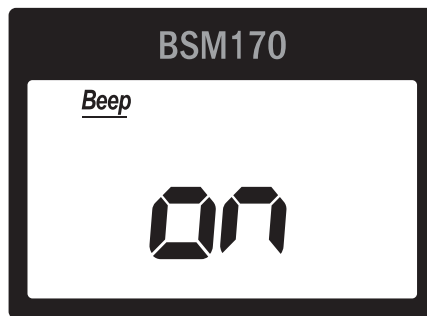
- c. Save changes by pressing the  button.

2) Beep: Enable or disable the beep alert.

a. Use the  button to move to 'Beep' and then press the  button.

b. Use the  button to turn on or off the beep alert.

\* Beep can be set to on or off.



Beep setup

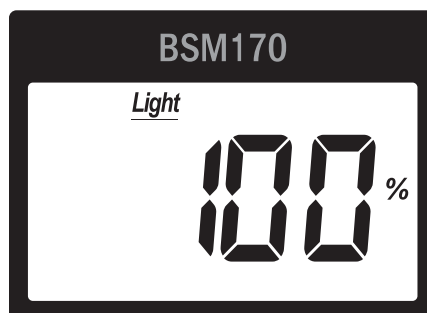
c. Save changes by pressing the  button.

3) Screen brightness: Brightness of the LCD screen.

a. Use the  button to move to 'Light' and then press the  button.

b. Use the  button to set the screen brightness that is appropriate for the test environment.




\* Screen brightness can be set to 100%, 50%, or off.

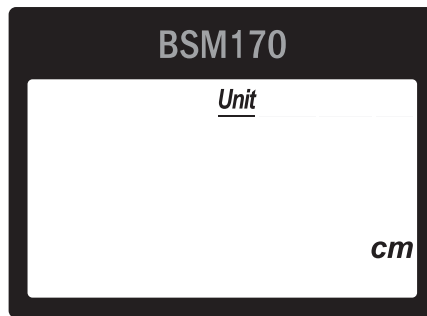


Screen brightness setup

c. Save changes by pressing the  button.

4) Unit: Units used for measurement.




- a. Use the  button to move to 'Unit' and then press the  button.
- b. Use the  button to set the unit appropriate for the test environment.
  - \* Unit can be set to be cm or feet and inches.

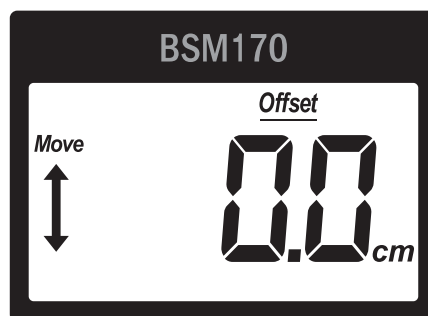


Unit setup

- c. Save changes by pressing the  button.


5) Offset value: Setting an offset value allows height measurements to be adjusted automatically.

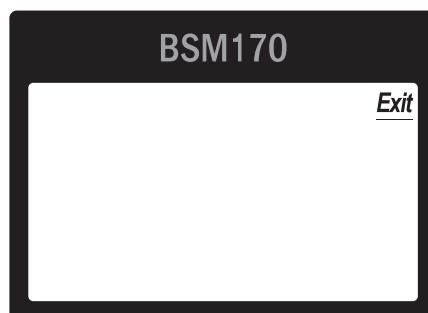
- a. Use the  button to move to 'Offset' and then press the  button.
- b. Move the measurement unit up or down to set an offset value appropriate for your test environment.
  - \* Offset value can be set up to  $\pm 99.9$ cm.
  - \* To reset the offset value to 0.0, press the  button.





Offset value setup

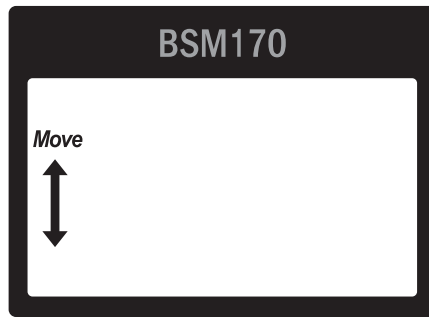
- c. Save changes by pressing the  button.

6) After configuring the BSM170/170B, press the  button to move to 'Exit' and press the  button. BSM170/170B is now ready for use.

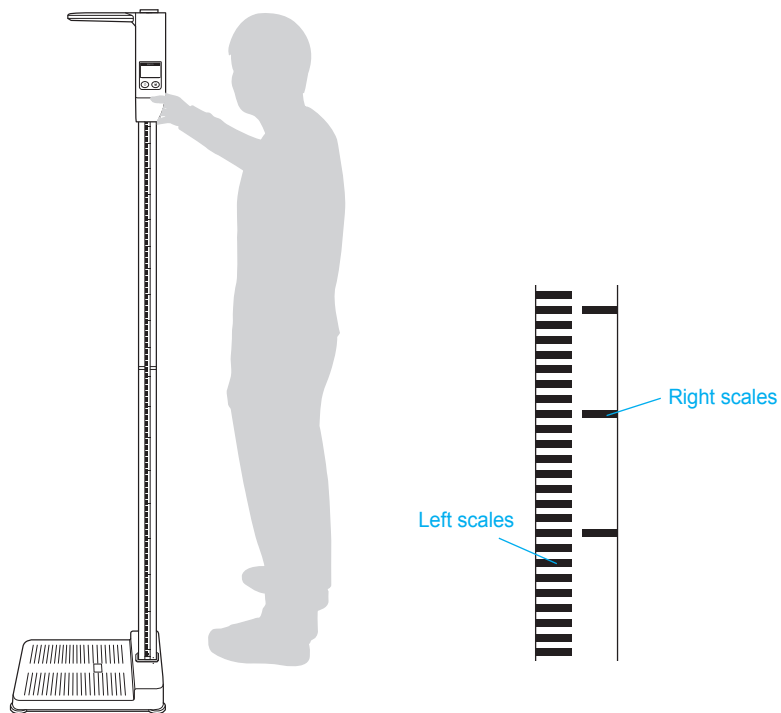


## 2. Optional Settings

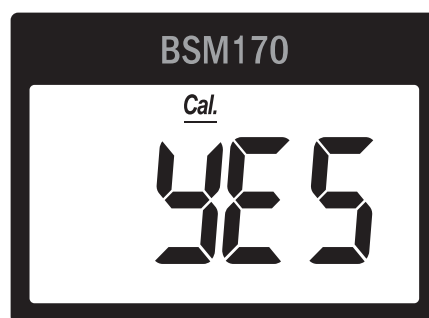
1. After turning on the BSM170/170B, press and hold the  button and the  button on the measurement unit simultaneously for at least 3 seconds to enter the Setup menu.





2. In the Setup menu, you can calibrate the equipment or reset factory default settings.
  - 1) Calibration: The equipment can be calibrated to ensure correct measurement values.
    - a. Raise the measurement unit to the very top of the Stand as illustrated below.

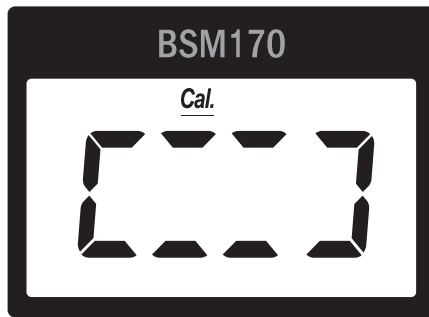



- b. Use the  button to move to 'Cal.' and then press the  button.



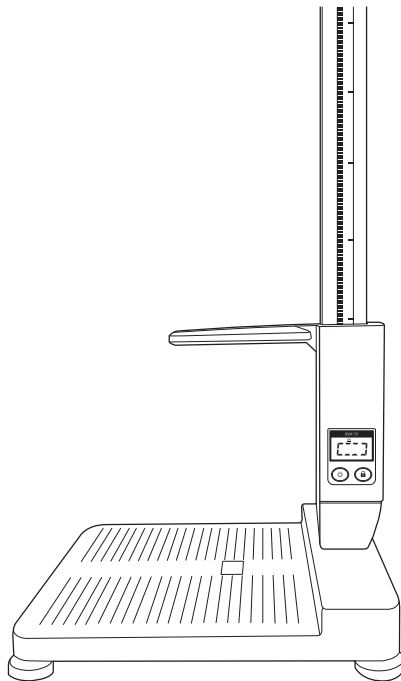
Calibration setup

- c. Use the  button to move to 'Yes' and then press the  button. Calibration will begin.

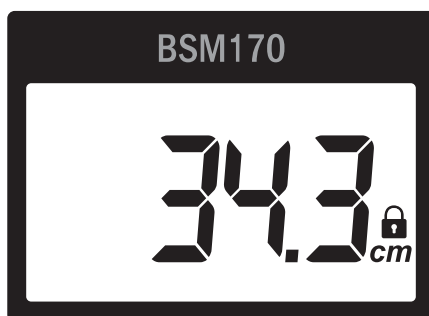


- d. Slowly lower the measurement unit until you reach the bottom of the footplate and press the  button.



\* The measurement unit must be lowered until it is resting against the footplate.

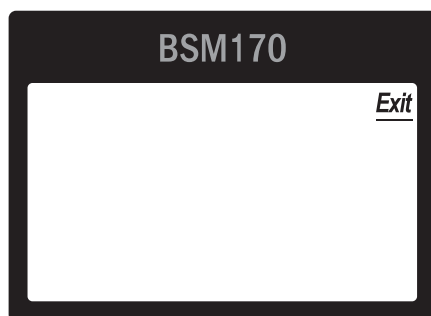


- e. The LCD display should read 34.3cm.

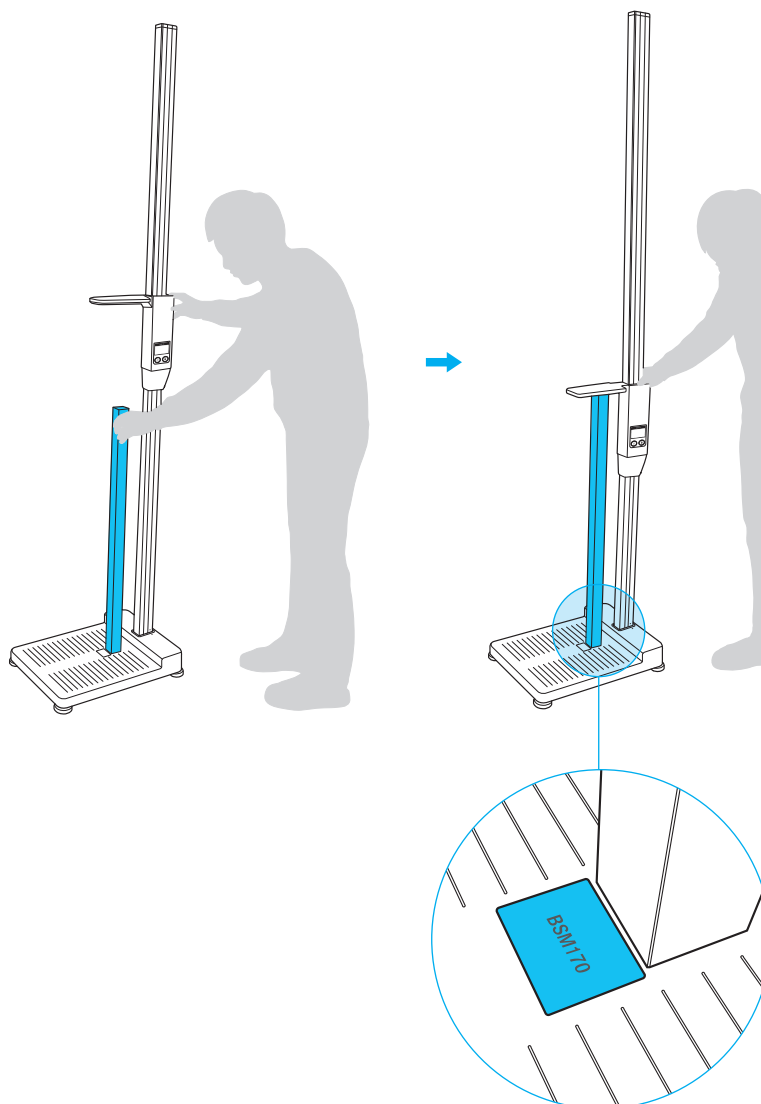




- f. Press the  button to move to 'Exit' and then press the  button. BSM170/170B is now ready for use.

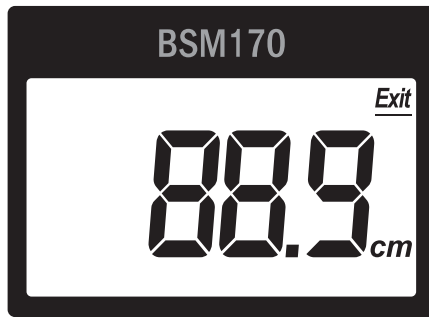


- g. Stand the Test jig provided at the logo on the footplate and lower the measurement unit so that it touches the top of the Test jig as illustrated below.
- \* The Test jig must be positioned perpendicular to the footplate.
  - \* The Test jig must be positioned correctly.







h. Check that the '88.9cm' is shown on LCD screen of the measurement unit.

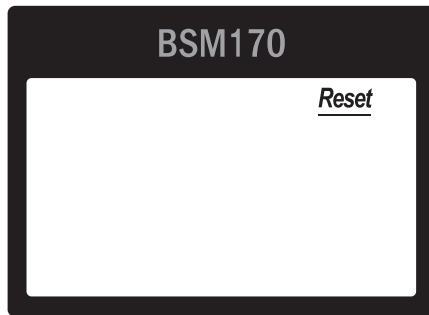
\* If '88.9cm' is not shown on the LCD screen(error range:  $\pm 0.1$ cm), please contact InBody.



2) Reset: Reset all settings to factory settings.

- a. Use the  button to move to 'Reset' and then press the  button.
- b. Use the  button to move to 'Yes' and then press the  button.

All stored settings will be reset.



Reset

## E. Maintenance

### Caution

- It may not be possible to take any measurements if the measuring tape has been damaged or dirtied.
- It may not be possible to take any measurements if there is an excessive amount of shock placed on the measurement unit.
- The screw of the measurement unit along the Stand may be loosened according to environmental changes and usage duration. Use the pressure adjusting screw on the rear of the measurement unit to adjust the pressure appropriately.
- Use batteries made by the same manufacturer.
- Do not lean on the Stand or apply excessive shock to it.
- When storing the BSM170/170B, remove the batteries and repackage.

## II. Height Measurement

### A. Precautionary Measurements

 **Warning/ Caution**

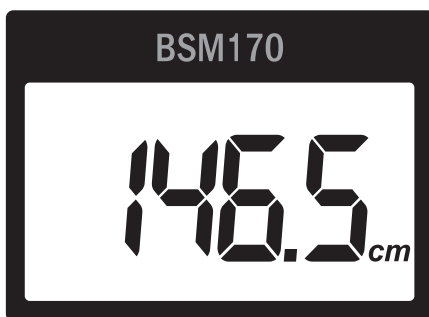
- If the equipment is unstable or unbalanced when you step on the footplate, use the footplate adjustment screws to ensure that the equipment is level before taking measurements.
- Use caution when lowering the measurement unit to not catch your fingers.
- Do not run around run around or play around the footplate. This may result in serious injury.
- Children and people with limited mobility should be supervised or assisted when attempting to measure on the BSM170/170B.



## B. Measurement Instructions

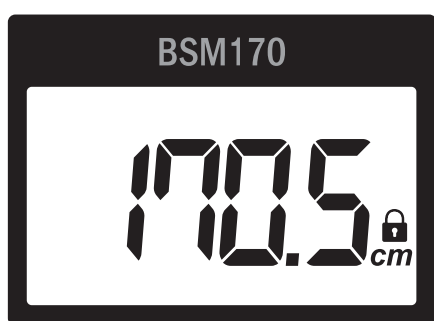
1. Move the measurement unit so that a number is displayed on the screen.



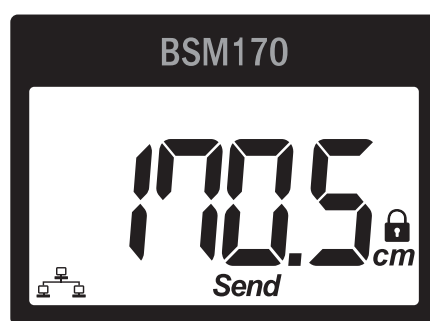
2. Step on the footplate barefeet and lower the measurement unit so that the upper part of the measurement unit touches the examinee's head. The height measurement is shown on the LCD screen, as illustrated below.



- \* If the measurement value hold feature has been enabled in Setup, pressing the  button after desired measurement is displayed on the LCD, locks the measurement for the set hold time.
- \* Only BSM170B can connect to the InBody via its integrated Bluetooth. Please refer to the InBody User's manual about Bluetooth connection guide. If the BSM170B is connected to an InBody, pressing the  button shows the 'send' message on the LCD screen, as illustrated below, and transmits the measured value to the InBody.



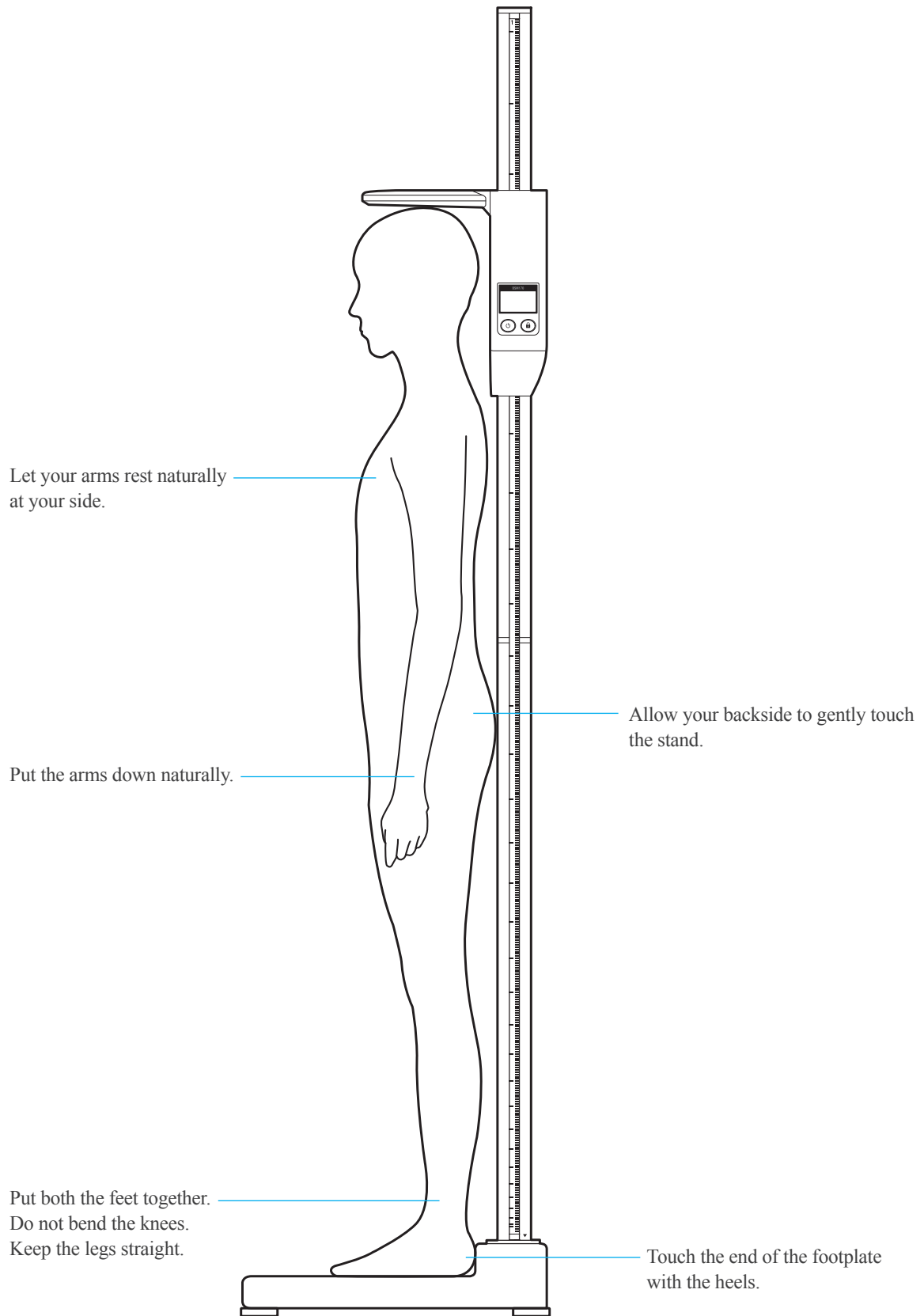
<When not connected to InBody>



<When connected to InBody>

### C. Measurement Posture

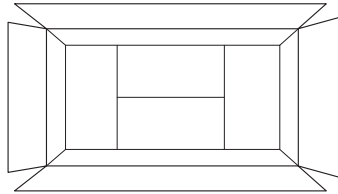
The examinee must maintain proper posture to have accurate measurement results.



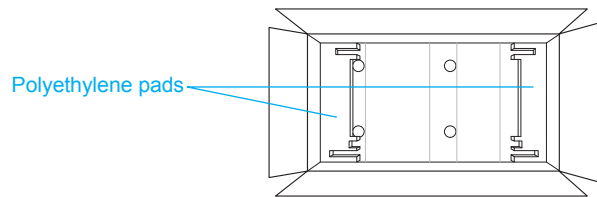
### III. Transportation and Storage

#### A. Repacking Instructions

1. Prepare the BSM170/170B packaging box.

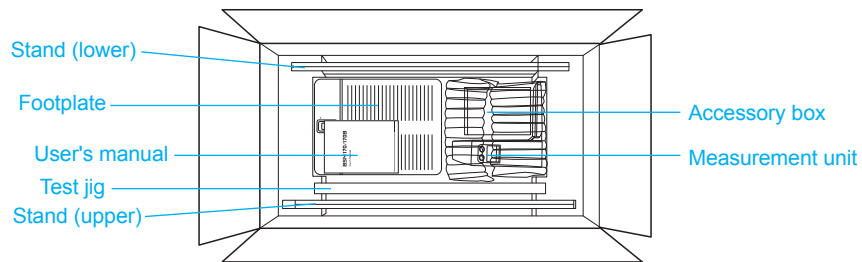


2. Place the paper pad on the bottom and put 2 small polyethylene pads on both sides of the packaging box, as illustrated below.

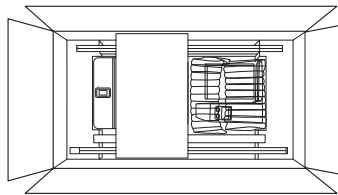


3. Position the disassembled components as illustrated below.

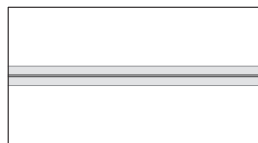
\* Accessory box: measurement tape 1EA, footplate mounting screws 4EA, Stand mounting screws 4EA, AA batteries 4EA



4. Place 1 big polyethylene pad over the footplate.



5. Close the packaging box and seal it with tape.




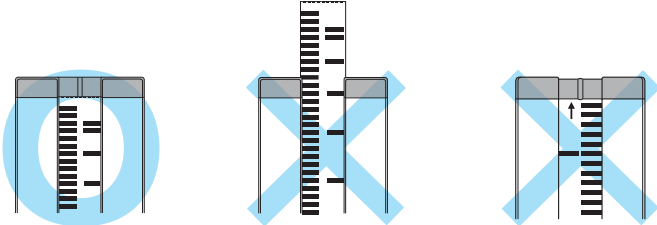
#### B. Transportation and Storage Environment

The BSM170/170B should be transported or stored under the following conditions.

Temperatures range	-10 ~ 70°C
Relative humidity	10 ~ 80% RH (No Condensation)
Atmospheric pressure	50 ~ 106kPa

## IV. Frequently Asked Questions

Even if no problems arise from the equipment, users may still have many questions, especially regarding clinical procedures. A few more of the common questions and answers are listed below. If you encounter problems while using the BSM170/170B or have questions concerning height measurement, please refer to the possible solutions below. If your problem cannot be resolved from the following table, please contact InBody.

Question	Answer
<ul style="list-style-type: none"> <li>• My BSM170/170B does not turn on.</li> </ul>	<ul style="list-style-type: none"> <li>• Batteries may need to be replaced.               <ul style="list-style-type: none"> <li>* If the battery icon (  ) appears on the screen, replace the batteries as soon as possible.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Height measurement seems to be inaccurate.</li> </ul>	<ul style="list-style-type: none"> <li>• Check to see the BSM170/170B is level.</li> <li>• Restart the BSM170.</li> <li>• The measuring tape may be dirty. Wipe the measuring tape with a soft tissue. Do not use cleaning solutions as they may damage the measuring tape.</li> <li>• Check if the measurement tape is protruding above the top of the Stand. The measurement tape must be inserted all the way to the end of the stand.</li> <li>• The arrow mark on the measurement tape must face downward so that, when assembled, the finer gradation is visible on the left-hand side.</li> </ul> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>• The correct measurement position must be maintained. For details on the measurement position, see ‘C. Measurement Position’ under ‘II. Height Measurement’ in this user’s manual.</li> </ul>
<ul style="list-style-type: none"> <li>• The Stand is not secure or stable.</li> </ul>	<ul style="list-style-type: none"> <li>• Check that the bottom and joint mounting bolts are fastened tightly.</li> </ul>
<ul style="list-style-type: none"> <li>• The measurement unit is difficult to lower.</li> </ul>	<ul style="list-style-type: none"> <li>• Turn the adjustment screw on the rear of the measurement unit left or right to adjust the tightness for smooth vertical movement of the measurement unit.               <ul style="list-style-type: none"> <li>* By default, high pressure is applied to keep the measurement unit from slipping down freely. If the pressure weakens and the base begins to slip downward, turn the screw clockwise to increase the pressure.</li> <li>* If the screw is tightened too tightly, the measurement unit may not move at all.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• The measurement unit is moved but the value displayed on the LCD is not changing.</li> </ul>	<ul style="list-style-type: none"> <li>• ‘Auto-lock’ may be enabled. See ‘D. Stadiometer Setup’ under ‘I. Stadiometer Installation’ of this User’s Manual to adjust ‘Auto-lock’.</li> </ul>
<ul style="list-style-type: none"> <li>• An error message is shown on the LCD screen.</li> </ul>	<ul style="list-style-type: none"> <li>• The measurement unit is moved too fast. The BSM170/170B also enters standby mode if the measurement unit is idle for more than 2 seconds.</li> </ul>

## V. Others

\* The BSM170/170B is registered for electromagnetic compatibility in accordance with the Framework Act on Telecommunications and the Radio Waves Act.

\* The BSM170/170B is designed, manufactured, and inspected according to the quality assurance system of InBody. InBody complies with the ISO9001 which are international quality management systems.

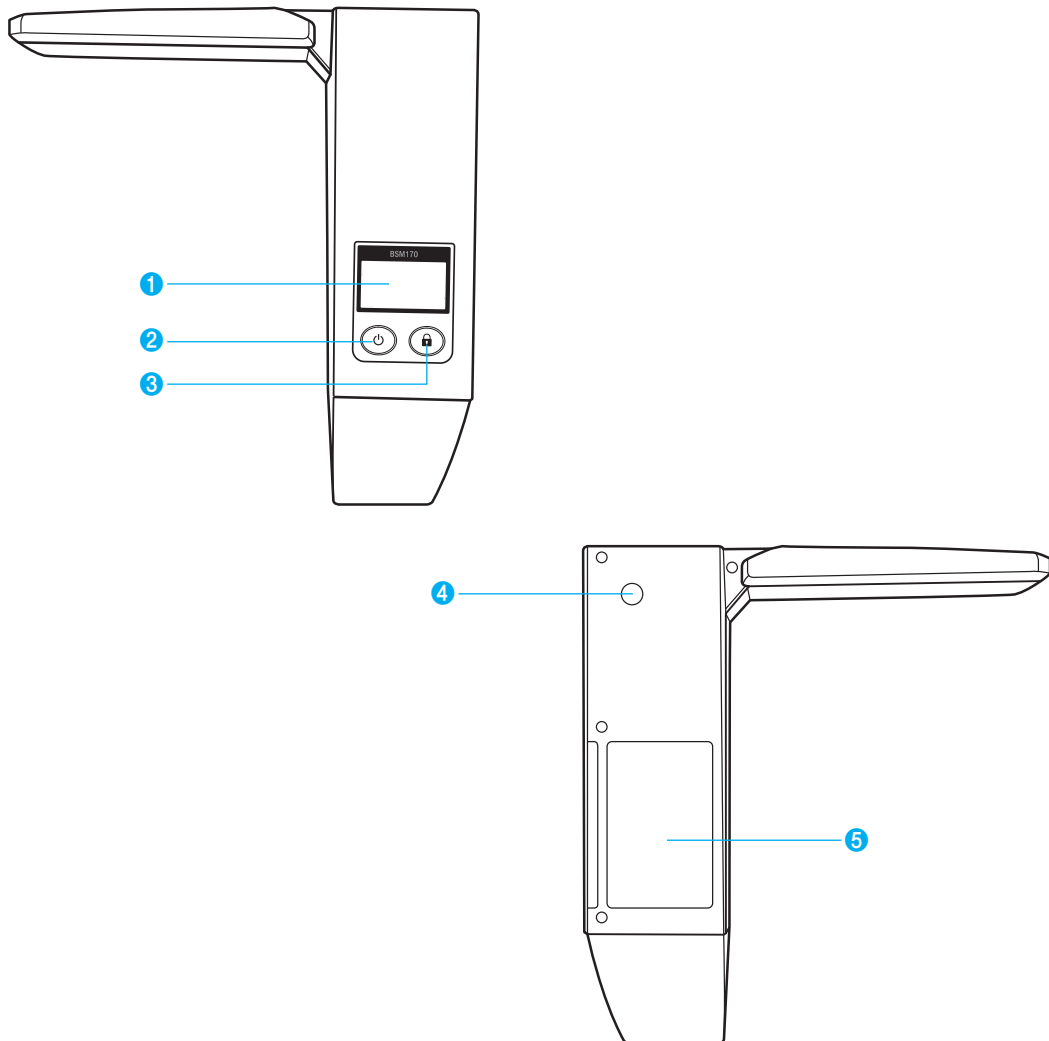
### A. Exterior and Functions

The followings are names and functions of each part of the BSM170/170B.

\* Please inspect each component of the BSM170/170B for damage prior to installation.

#### 1. Measurement unit

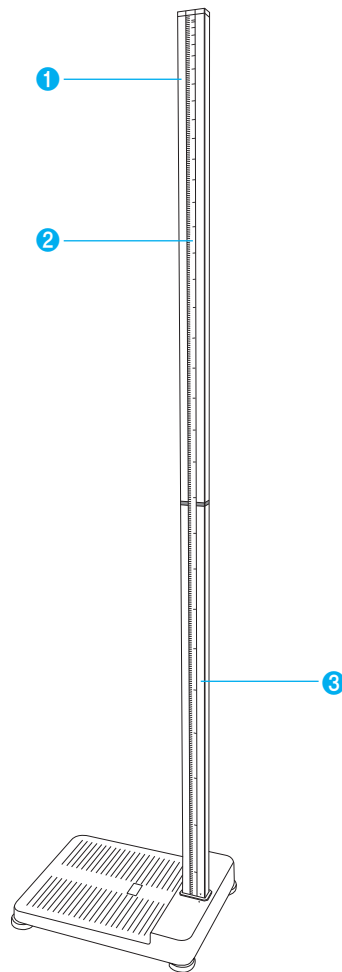
- ① LCD screen: Shows height measurement values, and equipment connection status.
- ② On/Off button: Used for turning on/off the equipment.
- ③ Lock button: Used to lock the measured height on the measurement unit. Allows for the measurement unit to be moved without changing the value displayed on the LCD.
- ④ Pressure adjustment bolt: Used to adjust the ease of movement of the measurement unit.
- ⑤ Battery tray: Insert batteries (AA) here.





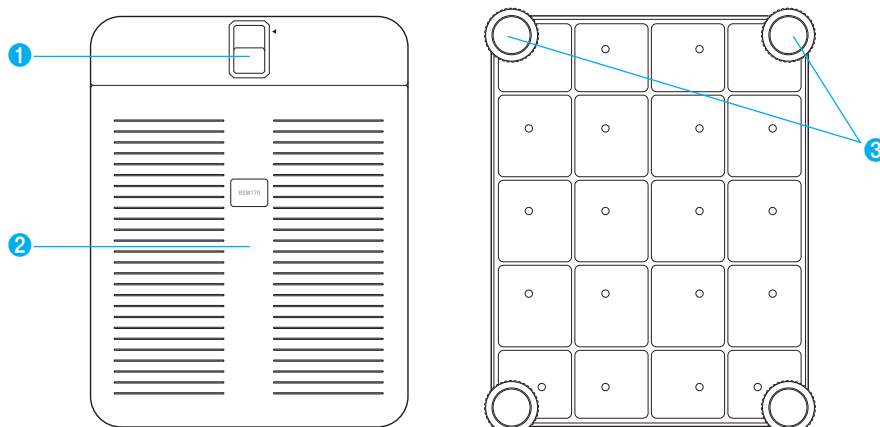
## 2. Upper section

- ❶ Stand (upper): Upper part of the equipment Stand.
- ❷ Measurement tape: Used to adjust the footplate to be level for accurate measurements.
- ❸ Stand (lower): Lower part of the equipment Stand.



## 3. Lower section

- ❶ Stand insertion hole: The Stand is inserted here for assembly with the footplate.
- ❷ Footplate: The examinee steps on the footplate when having height measured.
- ❸ Leveling screws: Consists of absolute and relative coordinates to detect the height values.



## B. Symbols

### Safety Symbol



Warning/Caution

### Other Symbols



Manufacturer



Direct current



European Conformity



Serial number



Authorized representative in the  
EUROPEAN COMMUNITY



Disposal of old Electrical & Electronic Equipment

(Application in the European Union and other European countries with separate collection system.) This symbol indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling this product, please refer to local governing ordinances and recycling plans.



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### WARNING

This equipment may generate or use radio frequency energy. Change or modification to this equipment may cause harmful interface unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

### Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## C. Specifications

Intended use	Hand-operated mechanical stadiometer
Measurement item	Height
Heights measured	350 ~ 2100mm (1 ft. 1.78 in. ~ 6 ft. 10.67 in.)
Height measurement error range	± 1mm (± 0.04 in.)
Result display	Customized LCD
Height measurement	Manual measurement
Measurement unit	Select between 'cm' and 'inch'
Power	DC 6V (4 AA-sized 1.5V batteries)
External interface	Bluetooth *Only for BSM170B
Dimension	15.35 (W) × 19.70 (L) × 86.23(H): inch 390 (W) × 500.6 (L) × 2190.4 (H): mm
Equipment Weight	8.5kg
Operation Environment	10 ~ 40°C(50 ~ 104°F), 30 ~ 75% RH, 70 ~ 106kPa
Storage Environment	-10 ~ 70°C (4 ~ 158°F), 10 ~ 80% RH, 50 ~ 106kPa (No Condensation)

\* Specifications may change without prior notice.

