# OMRON



English

Español

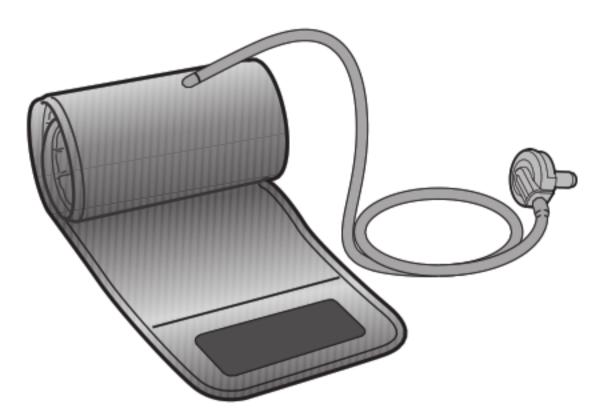
HEM-7321T-Z\_A\_M04\_131217.pdf

# **Product includes:**

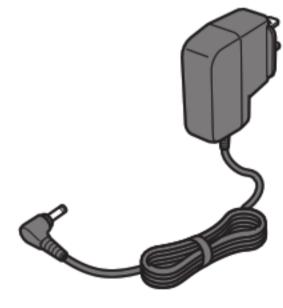
# El producto incluye:



Monitor Monitor



ComFit™ Cuff Brazalete ComFit™



AC Adapter Adaptador de CA



# Contents

Thank you for purchasing the OMRON® BP786 Blood Pressure Monitor.

Your new blood pressure monitor uses the oscillometric method of blood pressure measurement. This means the monitor detects your blood movement through your brachial artery and converts the movements into a digital reading. An oscillometric monitor does not need a stethoscope so the monitor is simple to use.

#### **Intended Use**

This device is a digital monitor intended for use in measuring blood pressure and pulse rate in adult patient population. The device detects the appearance of irregular heartbeats during measurement and gives a warning signal with the measurement result.

<b>Import</b>	ant Safety Information′	1	3.4	Using the Memory Function	18
1. Kn	ow Your Device4	4.	Erro	or Messages and Troubleshooting	. 25
1.1	Display Symbols	5	4.1	Error Messages	. 25
	Before Taking a Measurement			Troubleshooting	
2. Pre	paration			ntenance and Storage	
	Battery Installation			Maintenance	
2.2	Using the AC adapter	3	5.2	Storage	. 29

# Important Safety Information

A Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

#### (General Usage)

- ADO NOT adjust medication based on measurement results from this blood pressure monitor. Take medication as prescribed by your physician. Only a physician is qualified to diagnose and treat High Blood Pressure.
- ⚠ The monitor is not intended to be a diagnostic device.
- ⚠ Consult your physician before using the device for any of the following conditions: common arrhythmias such as atrial or ventricular premature beats or atrial fibrillation, arterial sclerosis, poor perfusion, diabetes, age, pregnancy, pre-eclampsia, renal diseases.
  - Note that PATIENT motion, trembling, shivering may affect the measurement reading.
- ⚠Do not use the device on the injured arm or the arm under medical treatment.
- ⚠ Do not apply the arm cuff on the arm while on an intravenous drip or blood transfusion.
- ⚠ Consult your physician before using the device on the arm with an arterio-venous (A-V) shunt.
- ⚠ Do not use the device with other medical electrical (ME) equipment simultaneously.
- ⚠Do not use the device in the area of HF surgical equipment, MRI, or CT scanner, or in an oxygen rich environment.
- ⚠ The air tube or the AC adapter cable may cause accidental strangulation in infants.
- Contains small parts that may cause a choking hazard if swallowed by infants.

(Data Transmission)

# Important Safety Information

⚠ Caution: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or damage to the equipment or other property.

#### (General Usage)

- $\Delta$ Always consult your physician. Self-diagnosis of measurement results and self-treatment are dangerous.
- ⚠Consult your physician before using the device for any of the following conditions:
  - If you have had a mastectomy.
  - Do not take measurements more than necessary. It may cause bruising due to blood flow interference.
  - People with severe blood flow problems or blood disorders as cuff inflation can cause bruising.
- ARemove the arm cuff if it does not start deflating during the measurement.
- ⚠Do not use the device for any purpose other than measuring blood pressure.
- ⚠Use only the approved arm cuff for this device. Use of other arm cuffs may result in incorrect measurement results.
- ⚠Do not use a mobile phone or other devices that emit electromagnetic fields near the device except when in use for wireless communications. This may result in incorrect operation of the device.
- $\triangle$ Do not disassemble the monitor or arm cuff. This may cause an inaccurate reading.
- ⚠Do not use in a location with moisture, or a location where water may splash on the device. This may damage the device.
- ⚠Do not use the device in a moving vehicle (car, airplane).
- ARead "If your systolic pressure is more than 210 mmHg" (page14) of this instruction manual, if your systolic

### Important Safety Information

 ⚠Wipe the dust off from the power plug.

⚠Unplug monitor when not in use.

⚠ Disconnect the power plug before cleaning.

⚠Use only an OMRON AC adapter designed for this device. Use of unsupported adapters may damage and/or may be hazardous to the device.

#### (Battery Usage)

⚠Do not insert the batteries with their polarities incorrectly aligned.

⚠Use only 4 "AA" alkaline or manganese batteries with this device. Do not use other types of batteries. Do not use new and used batteries together.

ARemove the batteries if the device will not be used for three months or more.

#### **General Precautions**

- Do not forcibly crease the arm cuff or the air tube excessively.
- Do not press the air tube while taking a measurement.
- To unplug the air plug, pull on the air plug at the connection with the monitor, not the tube itself.
- Do not drop the monitor or subject device to strong shocks or vibrations.
- Do not inflate the arm cuff when it is not wrapped around your arm.



# 1. Know Your Device



# Open the rear cover page to read the following:

The letter identifiers on the rear cover page correspond to those in the body of this page.

## **Monitor**

- A)Air jack
- Blood pressure color indicator
- © Date/Time setting button
- ©USER ID selection switch
- E Display
- F Memory button
- ©START/STOP button
- (H) Up/Down buttons
- Battery compartment

# Display

- N Memory symbol
- **OUSER ID symbol**
- PAverage value symbol
- R Diastolic blood pressure
- S Transfer indicator
- TMemory full symbol
- **(U)**OK symbol
- WHeartbeat symbol

### 1. Know Your Device

# 1.1 Display Symbols

## Irregular Heartbeat Symbol (💯)

When the monitor detects an irregular rhythm two or more times during the measurement, the irregular heartbeat symbol will appear on the display with the measurement values.

An irregular heartbeat rhythm is defined as a rhythm that is 25% less or 25% more than the average rhythm detected while the monitor is measuring the systolic and diastolic blood pressure.

If the irregular heartbeat symbol displays with your measurement results, we recommend you consult your physician. Follow the directions of your physician.

# Pulse Blood pressure Irregular Heartbeat Short Long Pulse Blood pressure

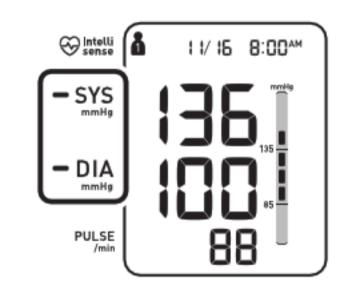
Movement Error Symbol (1801)

The movement error symbol is displayed if you move your body during the measurement. Please remove the arm cuff, and wait 2-3 minutes. Take another measurement, remain still during measurement.

### 1. Know Your Device

#### **Blood Pressure Color Indicator**

If your Systolic Blood Pressure is 135 mmHg or above and/or the Diastolic Blood Pressure is 85 mmHg or above, the blood pressure color indicator will light in "orange" when the measurement result is displayed. If the measurements are within the standard range, the blood pressure color indicator will light in "green".



### 2013 ESH/ESC Guidelines for the management of arterial hypertension

Definitions of hypertension by office and home blood pressure levels

	Office	Home
Systolic Blood Pressure	≥ 140 mmHg	≥ 135 mmHg
Diastolic Blood Pressure	≥ 90 mmHg	≥ 85 mmHg

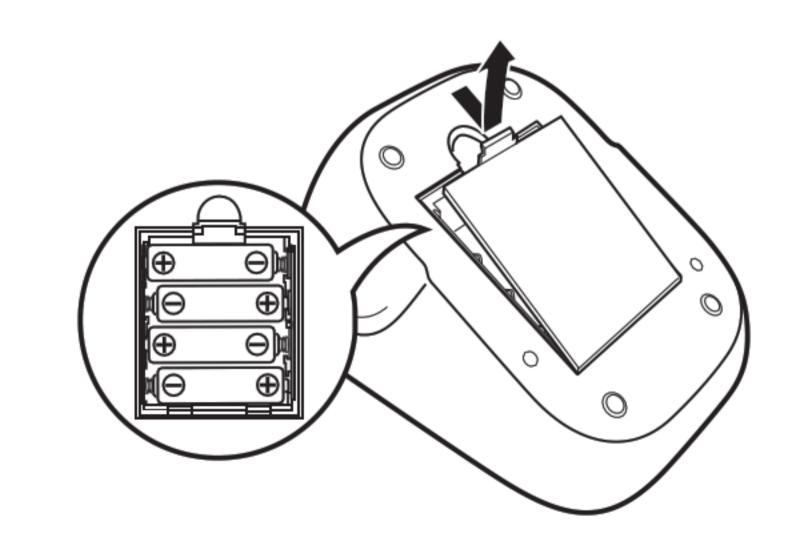
These are from statistical values for blood pressure.

# 1.2 Before Taking a Measurement

To help ensure an accurate reading, follow these directions:

# 2.1 Battery Installation

- 1. Remove the battery cover.
- 2. Insert 4 "AA" batteries as indicated in the battery compartment.



3. Replace the battery cover.

ΕN

Notes:

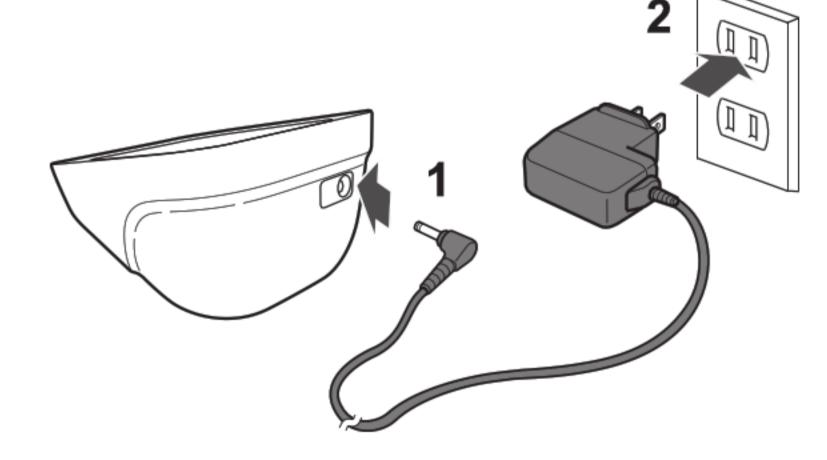
# 2.2 Using the AC adapter

# IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

- DANGER TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
CAREFULLY FOLLOW THESE INSTRUCTIONS.

⚠ The power unit (AC Adapter) is intended to be correctly oriented in a vertical or floor mount

- 1. Insert the AC adapter plug into the AC adapter jack on the rear side of the monitor.
- 2. Plug the AC adapter into an electrical outlet.



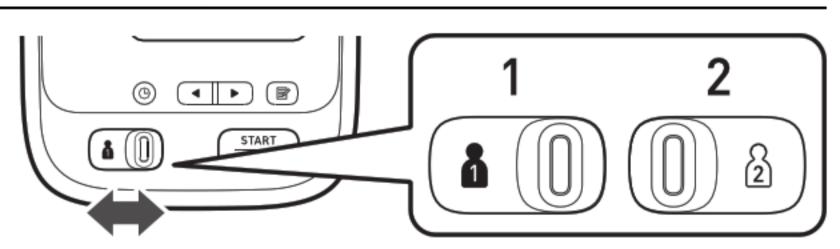
ΕN

To disconnect the AC adapter, unplug the AC adapter from the electrical outlet first and then remove the AC adapter plug from the monitor.

# 2.3 Setting the TruRead<sup>™</sup> Mode

The TruRead<sup>™</sup> Mode takes 3 consecutive measurements. The monitor will inflate, take a measurement, and deflate - 3 times, separated by a short interval between each measurement. The TruRead<sup>™</sup> Mode is set "oFF" by default.

1. Select your USER ID (1 or 2).



2. Press the 🕒 button twice.

The TruRead<sup>™</sup> symbol (▶▶▶₃) appears on the display.

Press or buttons to select "on" or "oFF".





# Open the rear cover page to read the following:

The letter identifiers on the rear cover page correspond to those in the body of this page.

# 2.4 Setting the Date and Time

Set the monitor to the correct date and time before taking a measurement for the first time.

1. Press the © Date/Time setting ( ( ) button.

Press  $\odot$  button until the year flashes on the  $\mathbf{W}_{\mathsf{Date}/\mathsf{Time}}$  display.

2. Push ◀ or ▶ button to change the year.

Push (b) button to confirm the year and then the month flashes. Repeat the same steps to change the month, day, hour, and minute.

Year▼

20 K

Month



# 3.1 Applying the Arm Cuff

Remove tight-fitting clothing or tight rolled up sleeve from your left upper arm. Do not place the arm cuff over thick clothes.

- 1. Insert © the air plug into A the air jack securely.
- 2. Apply the arm cuff to your left upper arm.

The bottom edge of the arm cuff should be a 1/2 inch (1 to 2 cm) above the elbow.

M Air tube is on the inside of your arm and aligned with your middle finger.

3. Secure closed with the fabric fastener.

# 3.2 How to Sit Correctly

To take a measurement, you need to be relaxed and comfortably seated, under comfortable room temperature. Avoid bathing, drinking alcohol or caffeine, smoking, exercising or eating 30 minutes before taking a measurement.

- Sit on a chair with your feet flat on the floor.
- Sit upright with your back straight. --- C
- Sit with your back and arm being supported.
- The arm cuff should be placed on your arm at the same level as your heart. --- d

# 3.3 Taking a Measurement

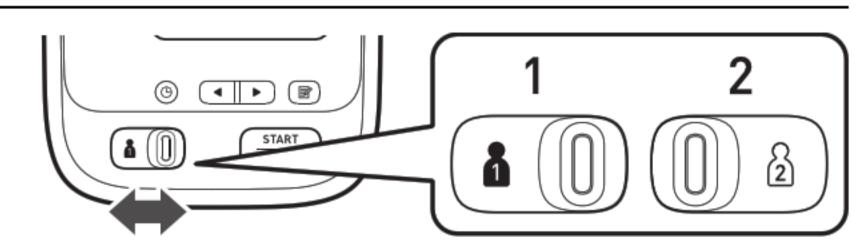
#### **Notes:**

- To stop a measurement, press the START/STOP button once to deflate the arm cuff.
- Remain still and quiet while taking a measurement.

The monitor is designed to take measurements and store the measurement values in the memory for 2 people using USER ID 1 and USER ID 2.

### Using the Single Mode

1. Select your USER ID (1 or 2).



2. Press the START/STOP button.

The arm cuff starts to inflate automatically.

VINFLATE. VDEFLATE VCOMPLETE (If vour systolic pressure is

- 3. Remove the arm cuff.
- 4. Press the START/STOP button to turn the monitor off.

The monitor automatically stores the measurement result in its memory. It will automatically turn off after 2 minutes.

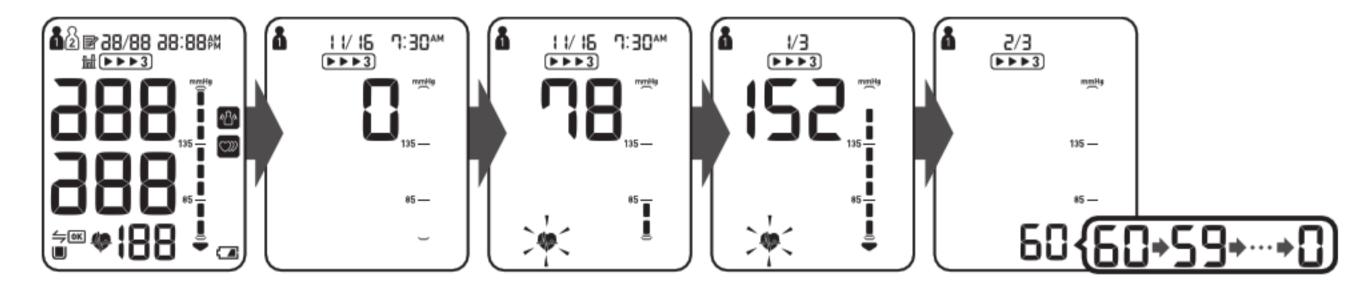
Note: Wait 2-3 minutes before taking another measurement. Waiting between measurements allows the arteries to return to the condition prior to taking a measurement.

# Using the TruRead<sup>™</sup> Mode

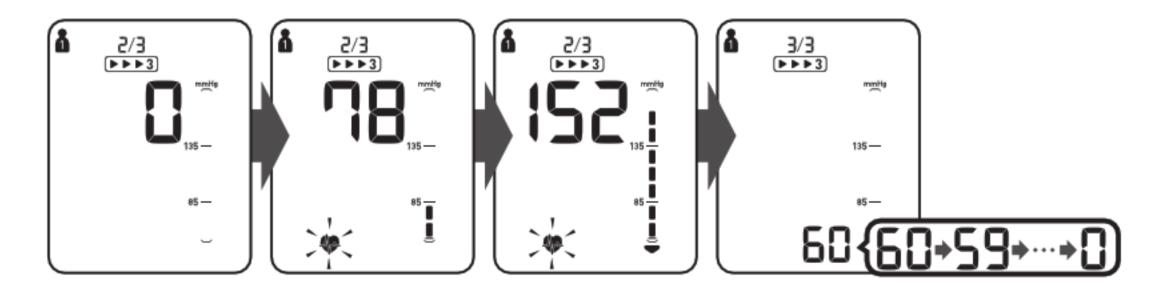
1. Select your USER ID (1 or 2).



The first measurement is complete, waiting to start the next measurement. The interval will appear on the display.



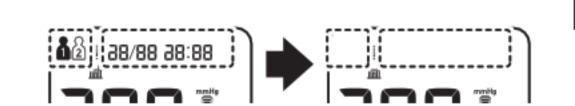
The second measurement is complete, waiting to start the next measurement. The interval will appear on the display.



### Using the Guest Mode

The monitor stores measurement values for 2 users in the memory. The guest mode can be used to take a single measurement for another user. No measurement values are stored in the memory, and the TruRead<sup>TM</sup> mode is not available when the guest mode is selected.

1. Press and hold the START/STOP button for more than 3 seconds.



The USER ID symbol and the Date/Time display will disappear.

2. Release the START/STOP button when the Date/Time display turns off.

The arm cuff will start to inflate automatically.

# 3.4 Using the Memory Function

The monitor automatically stores the results up to 100 sets for each user (1 and 2). It can also calculate an average value based on the last 3 measurement values taken within 10 minutes.

#### **Notes:**

- If there are only 2 measurement values in the memory for that period, the average will be based on these 2 values.
- If there is 1 measurement value in the memory for that period, this is displayed as the average.
- If the memory is full, the monitor will delete the oldest value.
- When viewing the measurement value taken without setting the date and time, "-/ -:--" is displayed instead of the date and time.

### To View the Measurement Values Stored in Memory

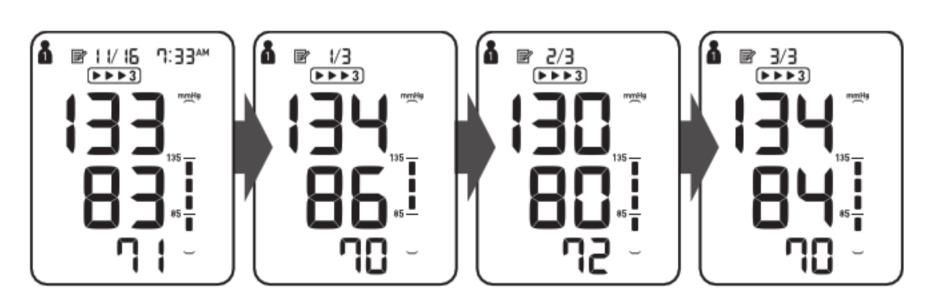
1. Select your USER ID (1 or 2).

# 3. Press the ◀ or ▶ button to view the values stored in the memory.

: To view the older values

To view the more recent values

**Note:** The value with the TruRead<sup>TM</sup> symbol is the average for the consecutive 3 measurements. To display the individual measurement values, press the  $\bigcirc$  button while the average is displayed.

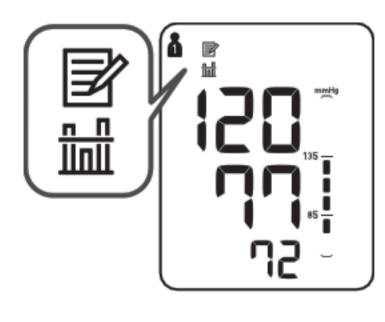


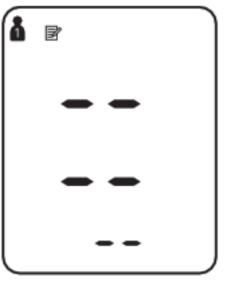
# To View the Average Value

- 1. Select your USER ID (1 or 2).
- 2. Press and hold the 
  button for more than 3 seconds.

#### Notes:

- If the previous measurement was taken without setting the date and time, the average value is not calculated.
- If there are no measurement values stored in the memory, the screen to the right is displayed.





### To Pair This Device With a Smartphone

To begin using the OMRON Wellness software for the first time, please visit www.omronwellness.com for the initial set-up instructions.

1. Download and install onto your smartphone, the free "Omron Wellness" APP.





2. Open the App on your smartphone and follow set-up and pairing instructions.

4. Open the App on your smartphone and follow the device pairing instructions shown on your smartphone, while the transfer indicator is flashing on the display.

The OK symbol and "" will flash when pairing is completed.

Any readings currently saved in the blood pressure monitor's memory will automatically be transferred to the Omron Wellness App after successful completion of the pairing process.

#### Notes:

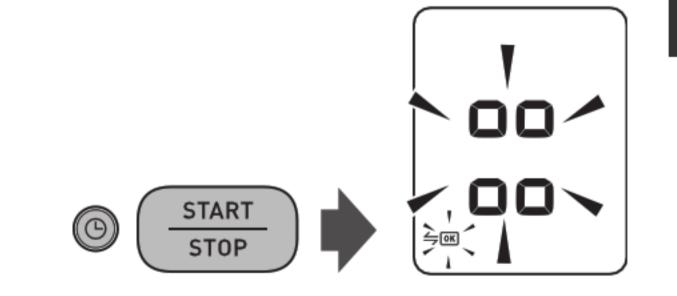
- If the pairing has failed, the screen to the right is displayed.
- You can pair up to 2 destination devices with the monitor

# To Unpair Your Device

1. Press the Date/Time setting ( 🕒 ) button.

The transfer indicator  $(\Leftarrow)$  will appear on the display.

2. While holding the 🕒 button down, press the START/STOP button for more than 2 seconds.



The OK symbol and 👵 will flash if your device has been unpaired.

#### Notes:

• Unpairing your device will not delete the information in the phone app.

### To Delete All the Values Stored in Memory

The values stored in the memory are deleted by USER ID.

- 1. Select your USER ID (1 or 2).
- 2. Press the Memory button, while the memory symbol () appears.
- 3. While holding the 

  button down, press the START/STOP button for more than 3 seconds.



# 4. Error Messages and Troubleshooting

# 4.1 Error Messages

Display	Cause	Solution	
	Irregular heartbeats are detected.	Remove the arm cuff. Wait 2-3 minutes and then take another measurement. Repeat the steps in section 3.3. If this error continues to appear, contact your physician.	
	Movement during measurement.	Carefully read and repeat the steps in section 3.3.	
The batteries are low.		You should replace the batteries with new ones ahead of time.  Refer to section 2.1.	
	The batteries are exhausted.	You should replace the batteries with new ones at once.	

# 4. Error Messages and Troubleshooting

Display	Cause	Solution
	Air plug disconnected.	Insert the air plug securely. Refer to section 3.1.
El	Arm cuff is applied too loosely.	Apply the arm cuff tighter. Refer to section 3.1.
	Air is leaking from the arm cuff.	Replace the arm cuff with a new one.  Refer to section 5.3.
	Movement during measurement and the arm	Repeat measurement. Remain still and do not talk during measurement.  Refer to section 3.3.
E2	Movement during measurement and the arm cuff has not been inflated sufficiently.	If "E2" appears repeatedly, inflate the arm cuff manually until it is 30 to 40 mmHg above your previous measurement result.  Refer to section 3.3.
	The arm cuff was inflated exceeding the maximum allowable pressure, and then	Do not touch the arm cuff and/or bend the air tube while taking a measurement. Do not

# 4. Error Messages and Troubleshooting

# 4.2 Troubleshooting

Problem	Cause and Solution	
No power. No display appears on the monitor.	Replace all batteries with new ones.  Check the battery installation for proper placement of the battery polarities. Refer to section 2.1.	
Measurement values appear too high or too low.	Blood pressure varies constantly. Many factors including stress, time of day, and how you wrap the cuff, may affect your blood pressure. Review the section 1.2 and section 3.3.	
	The destination device is too far away from the monitor. After checking that there are no sources of interference nearby, move the device to a distance within 16 ft. (5 m) of the monitor.	
	The Bluetooth function on the destination device is turned off. Turn the on the Bluetooth function and try sending the data again.	

# 5. Maintenance and Storage

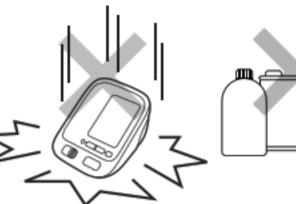
# 5.1 Maintenance

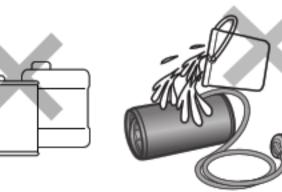
To protect your device from damage, please observe the following:

- Store the device and the components in a clean, safe location.
- Do not use any abrasive or volatile cleaners.
- Do not wash the device and any components or immerse them in water.
- · Do not use gasoline, thinners or similar solvents to clean the device.











- Use a soft and dry cloth, or a soft and moistened cloth and neutral soap to clean on the monitor and the arm cuff.
- Changes or modification not approved by the manufacturer will void the user warranty. Do not disassemble or attempt to repair the device or components. Consult Customer Service.

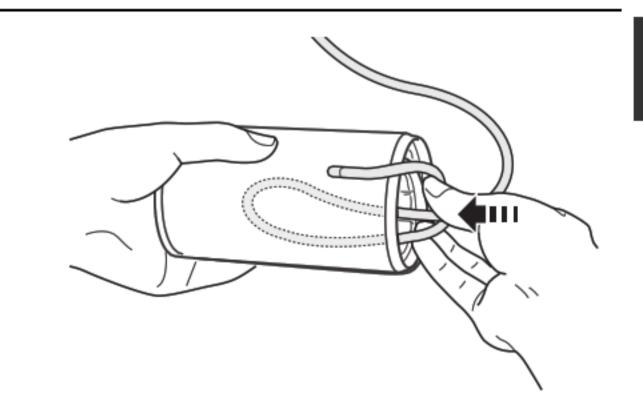
# 5. Maintenance and Storage

# 5.2 Storage

1. Unplug the air plug from the air jack.

# 2. Gently fold the air tube into the arm cuff.

**Note:** Do not bend or crease the air tube excessively.



Do not store the device in the following situations:

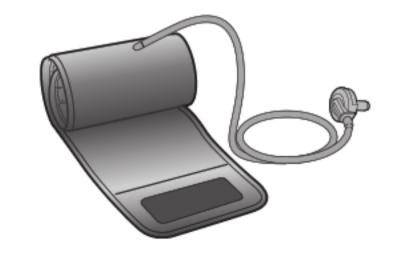
- If the device is wet.
- Locations exposed to extreme temperatures, humidity, direct sunlight, dust or corrosive vapors such as

# 5. Maintenance and Storage

# 5.3 Optional Medical Accessories

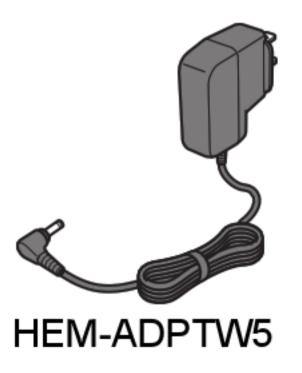
**Arm Cuff** 

Arm circumference 9" - 17" (22 - 42 cm)



ComFit<sup>™</sup> Cuff (CFX-WR17) (Model: HEM-FL31)

# **AC Adapter**



# 6. Specifications

Model

**Display** 

Measurement range

**Accuracy** 

Inflation

Deflation

Measurement method

IP classification Power source

Battery life

Operating temperature / humidity

Storage temperature / humidity / air pressure

Weight

**Dimensions** 

BP786 **REF** HEM-7321T-Z

LCD digital display

Pressure: 0 to 299 mmHg Pulse: 40 to 180 beats / min.

Pressure: ±3 mmHg or 2% of reading

Pulse: ± 5% of display reading

Fuzzy-logic controlled by electric pump

Automatic pressure release valve

Oscillometric method

IP 20

4 "AA" batteries 1.5V or AC adapter (INPUT AC100-240V 50/60Hz 0.12A)

Approximately 1000 measurements (using new alkaline batteries)

50°F to 104°F (10°C to 40°C) / 15 to 90% RH

-4°F to 140°F (-20°C to 60°C) / 10 to 95% RH / 700 to 1060 hPa

Monitor: Approximately 14 1/8 oz. (400 g) not including batteries

Arm cuff: Approximately 5 3/4 oz. (163 g)

Monitor: Approximately 4 7/8" (w)  $\times$  3 1/2" (h)  $\times$  6 3/8" (l)

 $(124 \text{ mm} \times 90 \text{ mm} \times 161 \text{ mm})$ 

Arm cuff: Approximately 5 3/4" × 21" (air tube: 29 1/2")

(145 mm × 532 mm (air tube: 750 mm))

# 7. FCC/IC Statement and Trademarks

#### **FCC CAUTION**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### 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.

### 7. FCC/IC Statement and Trademarks



This Product operates in the unlicensed ISM band at 2.4GHz. In case this Product is used around the other wireless devices including microwave and wireless LAN, which operate same frequency band of this Product, there is a possibility that interference occurs between this Product and such other devices. If such interference occurs, please stop the operation of other devices or relocate this Product before using this Product or do not use this Product around the other wireless devices.



The *Bluetooth*<sup>®</sup> *Smart* word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by OMRON HEALTHCARE Co.,Ltd. is under license. Other trademarks and trade names are those of their respective owners.

Apple, the Apple logo, iPad, and iPhone are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc.

Android and Google Play are both trademarks of Google Inc.

Samsung and Galaxy S are both registered trademarks of Samsung Electronics Co., Ltd.

# 8. Limited Warranty

Your BP786 Automatic Blood Pressure Monitor, excluding the arm cuff and battery, is warranted to be free from defects in materials and workmanship appearing within 5 years from the date of purchase, when used in accordance with the instructions provided with the monitor. The arm cuff is warranted to be free from defects in materials and workmanship appearing within 1 year from the date of purchase when the monitor is used in accordance with the instructions provided with the monitor. The above warranty extends only to the original retail purchaser. We will, at our option, replace without charge any monitor or arm cuff covered by the above warranty. Replacement is our only responsibility and your only remedy under the above warranty.

To obtain warranty service contact Customer Service by calling 1-800-634-4350 for the address of the inspection center and the return shipping and handling fee.

Enclose the original printed receipt. Include a letter, with your name, address, phone number, and description of the specific problem. Pack the product carefully to prevent damage in transit. Because of possible loss in transit, we recommend insuring the product with return receipt requested.

THE FOREGOING IS THE SOLE WARRANTY PROVIDED BY OMRON IN CONNECTION WITH THIS PRODUCT, AND OMRON HEREBY DISCLAIMS ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IMPLIED WARRANTIES AND OTHER TERMS THAT MAY BE IMPOSED BY LAW, IF ANY, ARE LIMITED IN DURATION TO THE PERIOD OF THE ABOVE EXPRESS WARRANTY.

OMRON Automatic Blood Pressure Monitor

Information for accompanying documents in the scope of IEC60601-1-2:2007

Model: BP786 including AC-adapter

#### Important information regarding Electro Magnetic Compatibility (EMC)

With the increased number of electronic devices such as PC's and mobile (cellular) telephones, medical devices in use may be susceptible to electromagnetic interference from other devices. Electromagnetic interference may result in incorrect operation of the medical device and create a potentially unsafe situation. Medical devices should also not interfere with other devices.

In order to regulate the requirements for EMC (Electro Magnetic Compatibility) with the aim to prevent unsafe product situations, the IEC60601-1-2 standard has been implemented. This standard defines the levels of immunity to electromagnetic interferences as well as maximum levels of electromagnetic emissions for medical devices.

Medical devices manufactured by OMRON Healthcare conform to this IEC60601-1-2:2007 standard for both immunity and emissions. Nevertheless, special precautions need to be observed:

- The use of accessories and cables other than those specified by OMRON, with the exception of cables sold by OMRON as replacement
  parts for internal components, may result in increased emission or decreased immunity of the device.
- The medical devices should not be used adjacent to or stacked with other equipment.
   In case adjacent or stacked use is necessary, the medical device should be observed to verify normal operation in the configuration in which it will be used.
- · Refer to further guidance below regarding the EMC environment in which the device should be used.
- The MEDICAL ELECTRICAL EQUIPMENT BP786 including AC-adapter needs special precautions regarding EMC and needs to be installed
  and put into service according to the EMC information provided in this documentations.
- The Essential Performance of the BP786 including AC-adapter is to measure a blood pressure and a pulse rate and using the memory function.

The BP786 including AC-adapter may be interfered with by other equipment, even if that other equipment complies with CISPR EMISSION requirements.

Guidance and manufacturer's declaration - electromagnetic immunity					
OMRON BP786 including AC-adapter is intended for use in the electromagnetic environment specified below. The customer or the user of this OMRON BP786 including AC-adapter should assure that it is used in such environment.					
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance		
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floor should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.		
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial and/or hospital environment.		
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Mains power quality should be that of a typical commercial and/or hospital environment.		
	<5 % $U_T$ (>95 % dip in $U_T$ ) for 0.5 cycle	<5 % $U_T$ (>95 % dip in $U_T$ ) for 0.5 cycle	Mains power quality should be that of a typical commercial and/or hospital environment. If the		
Voltage dips, short interruptions and voltage variations on power	40 % $U_{\text{T}}$ (60 % dip in $U_{\text{T}}$ ) for 5 cycles	40 % $U_{\text{T}}$ (60 % dip in $U_{\text{T}}$ ) for 5 cycles	user of the OMRON BP786 including AC- adapter requires continued operation during		
supply inputlines IEC 61000-4-11	70 % $U_{\text{T}}$ (30 % dip in $U_{\text{T}}$ ) for 25 cycles	70 % $U_{\text{T}}$ (30 % dip in $U_{\text{T}}$ ) for 25 cycles	power mains interruption, it is recommended that the OMRON BP786 including AC-adapter be powered from an uninterruptible power		
	<5 % $U_{T}$ (95 % dip in $U_{T}$ ) for 5 sec.	<5 % $U_{\text{T}}$ (95 % dip in $U_{\text{T}}$ ) for 5 sec.	supply.		

Guidance and manufacturer's declaration - electromagnetic immunity			
OMRON BP786 including AC-adapter is intended for use in the electromagnetic environment specified below. The customer or the user of this OMRON BP786 including AC-adapter should assure that it is used in such environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the OMRON BP786 including AC-adapter including cables, than the recommended separation distance calculated from the equation appropriate to the frequency of the transmitter.
			Recommend separation distance
Conducted RF IEC 61000-4-6	3 V rms 150 kHz to 80 MHz	3 V rms	$d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	d = $1.2\sqrt{P}$ 80 MHz to 800 MHz d = $2.3\sqrt{P}$ 800 MHz to 2.5 GHz
			where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).  Field strengths from fixed RF transmitters as determined by an electromagnetic site survey a should be less than the compliance level in each frequency range.

# Recommended separation distance between portable and mobile RF communications equipment and the OMRON BP786 including AC-adapter

OMRON BP786 including AC-adapter is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of this OMRON BP786 including AC-adapter can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the OMRON BP786 including AC-adapter as recommended below, according to the maximum output power of the communications equipment.

		• •		
	Separation distance according to frequency of transmitter in meter			
Output Power of Transmitter in Watt	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.5GHz $d = 2.3\sqrt{P}$	
0.01	0.12	0.12	0.23	
0.1	0.38	0.38	0.73	
1	1.2	1.2	2.3	
10	3.8	3.8	7.3	
100	12	12	23	

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

Note: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures,

