

- Do not smoke
- Exercise regularly Have regular physical checkups

1999. Vol 17 No.2

mmHa

≌ 110

hypertensive individuals, variations are

18

SYMBOLS ON DISPLAY

:8-88

M88

38:88

88 đ

·····188

RREGULAR HEARTBEAT DETECTION

8 Β Systolic

03 AM

24

06

 Reduce salt and fat intake Maintain proper weight

# 3. Why measure blood pressure at home?

Blood pressure measured at a clinic or doctor's office may cause apprehension and produce an elevated reading, 25 to 30 mmHg higher than that measured at home, Home measurement reduces the effects of outside influences on blood pressure readings, supplements the doctor's readings and provides a more accurate, complete blood pressure history.

## 4. WHO blood pressure classification

Standards for assessment of high blood pressure, without regard to age, have been established by the World Health Organization (WHO), and shown in chart below.

5. Blood pressure variations An individual's blood pressure varies greatly on a daily and seasonal basis. It may vary by 30 to 50 mmHg due to various conditions during the day. In

90 85 80

105 Grade 2 hypertension (moderate) 8 100 95 Grade 1 hypertension (mild) Diastolic blood High-normal Norma Optimal 120 130 140 150 160 170 180 Systolic blood pressure mmHq

Reference Material: Journal of Hypertension

Grade 3 hypertension (severe)

even more pronounced.

Normally, the blood pressure rises while at work or play and falls to its lowest levels during sleep. So, do not be overly concerned by the results of one measurement.

Blood Take measurements at the same time every day using the procedure described in this manual, and know your normal blood pressure.

3. WHO blood pressure classification display.

5. Automatically turns off (within 1 minute) to save power.

120 80

Manual

values and measurement time.

Battery Cove

Accessory

Many readings give a more comprehensive blood pressure history.

Be sure to note date and time when recording your blood pressure. Consult your doctor to interpret your blood pressure data.

## PRECAUTIONS BEFORE USE

mmHg

J Pressur 110 2

150

50

12 15 PM

1. If you are taking medication, consult with your doctor to determine the most appropriate time to measure your blood pressure. NEVER change a prescribed medication without first consulting with your doctor.

4. Easy to use, Press a button to automatically measure, record the measurement

PARTS IDENTIFICATION

Memory Buttor

ON/OFF Butto

WHO blood pres

SET Butto

LCD Display Date and Time Systolic Blood pressure Diastolic Blood pressure 8

10

Sleep

09 Time

2. For people with irregular or unstable peripheral circulation problems due to diabetes, liver disease, hardening of the arteries, etc., there may be fluctuation in blood pressure values measured at the upper arm versus at the wrist

3. Measurements may be impaired if this device is used near televisions, microwave ovens, X-ray, mobile phone equipment or other devices with strong electrical fields. To prevent such interference, use the monitor at a sufficient distance from such devices or turn them off.

4. Before using, should wash your hands.

5. Do not measure on the arm which simultaneously used monitoring ME Equipment, otherwise it could cause loss of function.

6.Consult your doctor if the unexpected readings are obtained, also please refer to "Trouble shooting" of the manual.

7. The reading is probably a little lower than measured in the hospital due to the steady mood at home.

#### 8.Cuff pressure range 0-299mmHg

# FEATURES OF THE PRODUCT

1. Memory can store 90 measurements.

- 2. Large and clear LCD display
- 9

7

# **INSERT OR REPLACE BATTERIES**

- 1. Remove the battery cover.
- 2. Insert new batteries into the battery compartment as shown, taking care that the polarities(+) and (-)are correct.
- 3. Close the battery cover, Use only LR03, AAA batteries.



Disposal of empty battery to the authorized collecting party subject to the regulation of each individual territory.

#### CAUTION

- Insert the batteries as shown in the battery compartment. If not, the device will not work. • When 1 (LOW BATTERY mark) blinks in the display, replace all batteries with new ones. Do not mix old and new batteries. It may shorten the battery life, or cause the device to malfunction.
- LOW BATTERY mark) does not appear when the batteries run out.
- Please ensure to distinguish positive polar "+" and negative polar "-" of batteries when replacing batteries.

11

- Batteries, which have fluid on surface or be modified, can not be inserted into the products. Battery short circuit must be prevented.
- · Battery life varies with the ambient temperature and may be shorten at low

CASE

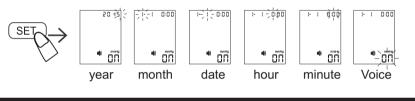
- temperatures.
- The batteries may leak and cause a malfunction.
- · Use the specified batteries only. The batteries provided with the device are for testing monitor performance and may have a shorter life. Used batteries may leak and damage the main unit. Pleases observe the following
- points. \* If you are not going to use the unit for a long period of time (approximately three
- months or more), remove the batteries. \* Replace worn batteries with their polarities in the correct direction.
  - TIME AND VOICE ON/OFF OF SYSTEM SETUP

1. Press "SET" key to Time display. 2. In the off state, Press and hold "SET" key until the year number displays and flashes on LCD to enter setting mode.



3. Press "MEM" key to adjust the year, then press "SET" key again to save your setting and enter the month setting mode.

4. Press "MEM" key to adjust the month. Following the same steps to adjust date/hour/ minute/Voice (on/off) until setting completed (" III" is the On, " IF" is the Off) Non-talking model does not have this function



#### UNIT CONVERSION mmHg/kPa DISPLAY

The goods have mm Hg(mmHg), kPa (kPa) two kinds of blood pressure display units(mmHg factory to express).

Press "ON / OFF" button for 10 seconds to display unit switching interface, then press "MEM" key to select mmHg / KPa, press "ON / OFF" button to exit.

13

# ATTACHING THE WRIST CUFF

- 1. Fastening the wrist cuff
- 1) Wrap the wrist cuff around your wrist about (1-2)cm above your hand as shown in the figure at the right.
- 2) Fasten the wrist cuff tightly by using the Velcro Strip. For proper measurements, fasten the wrist cuff tightly and measure on a bare wrist.
- 2. How to take proper measurements
- For best accuracy in blood pressure measurement:
- Sit comfortably at a table. Rest your wrist on the table.

## HOW TO MEASURE BLOOD PRESSURE

- 1. Fasten the wrist cuff according to the instructions in "ATTACHING THE WRIST CUFF." 2. Press the "ON/OFF" button. All icons appear two seconds on DISPLAY, then switch to measurement, and display "0" or last measurement record.







2211	IC/	41	IO	NI	וכ	5P	Lŀ	٩Y	
0									

- Grade 3 hypertension (severe)
- Grade 2 hypertension (moderate) Grade 1 hypertension (mild)

Optimal

High-normal

Normal

88

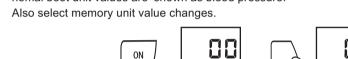
14

The units will be chosen by the above shows mmHg/kPa after decontrol, After the

nomal boot unit values are shown as blood pressure.

Also select memory unit value changes.

0FI



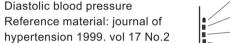












- Relax for about 5 to 10 minutes before measurement.
- Raise your hand so that the wrist cuff is at the same level as your heart.
- Remain still and keep quiet during measurement.
- Do not measure left after physical exercise or a bath. • Measure your blood pressure at about the same time every day.
- 15

# **READ MEMORY**

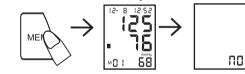
Press " MEM " button to inquire memory average values " RUS "Average Value Display: the latest 3 groups of memory average values (Memory values are displayed regardless of period).

Press "MEM" button, a memory reading out the latest measurements ,"MEM" for the buttons(UP). "SET" button for the memory (DOWN)

Power Measurement closure or after the end of the state .can press the "MEM" button read out the latest measurement of memory.

#### DELETE MEMORY

The state read out the memory press the (memory) button five seconds, the LCD display "



## **CLEAN AND MAINTENANCE**

## 1.Keep this device in the case provided with the device when you do not use it.

- 2.Do not fold the arm cuff too tightly.
- 17

Measuring Method	Oscillometric Measurement
Indication	Digital LCD display
Measuring Range:	Pressure:(30~280)mmHg Pulse:(40~199)Beat/min
Accuracy:	Static Pressure: ±3mmHg Pulse: ±5%
Memory:	90 Memories
Power supply:	2x1.5V Batteries(LR03or AAA) use alkaline battery, measure above 200 times.
Operating condition:	+5°C~+40°C. 15%RH~93%RH Atmospheric pressure: 70kPa~106kPa
Storage condition:	-20°C~+55°C. 0%RH~93%RH Atmospheric pressure:50kPa~106kPa
Dimensions:	Approx: 75(W)X68(H)X31(D)mm
Weight:	Approx: 105g, excluding batteries
Classification	Type BF
Wrist circumference	(13.5~19.5)cm

\* Specifications may be changed without notice in the event of improvement being made. 19

Measuring Method	Oscillometric Measurement
Indication	Digital LCD display
Measuring Range:	Pressure:(30~280)mmHg Pulse:(40~199)Beat/min
Accuracy:	Static Pressure: $\pm$ 3mmHg Pulse: $\pm$ 5%
Memory:	90 Memories
Power supply:	2x1.5V Batteries(LR03 or AAA) use alkaline battery, measure above 200 times
Operating condition:	+5°C~+40°C. 15%RH~93%RH Atmospheric pressure: 70kPa~106kPa
Storage condition:	-20°C~+55°C. 0%RH~93%RH Atmospheric pressure:50kPa~106kPa
Dimensions:	Approx: 75(W)X68(H)X31(D)mm
Weight:	Approx: 105g, excluding batteries
Classification	Type BF
Wrist circumference	(13.5~19.5)cm

E1:can't normally Increase pressure	Check your wrist cuff if any air leakage	Replace wrist cuff with new one	
E3 inflate pressure too high	Pressure value of more than 299mmHg	Re-measurement or send back dealer for re-calibrate pressure	
E2E4:have shaking while measurement	Hand or body shaking while measurement	keeping static and correct gesture to measure again	
Battery icon on	Battery low power	Replace battery and measure again	
The systolic pressure Value or diastolic	1.The wrist cuff was held lower than your heart	keeping correct position and gesture to measure again	
Pressure value too high	2.The wrist cuff was not attached properly		
too nign	3. You moved your body or spoke during measurement		
The systolic pressure Value or diastolic	1.The wrist cuff was held higher than your heart	-	
Pressure value too low	2.you moved your body or Spoke during measurement		

#### 3. Start measurement, the cuff in the strap will automatically inflate.

The mark( $\heartsuit$ )will flash on LCD. When complete, the results will be displayed. 68



16

- 3.Clean the monitor with a soft dry cloth. Do not use any cleaning solution.
  - 4.Do not submerge the device or any components in water. 5.Store the device and the components in a clean and safe location.
  - 6. The clean steps for the cuff is provided as following.
  - \* Completely wipe the inner side (the side that

contacts skin) of the cuff with a soft cloth lightly moistened with 75% Ethyl alcohol 3 times.

Replace the soft cloth after each wipe.

\* Then air dry the cuff.



### CAUTION

(1~2)cm

- \* Do not submerge the device or any of the components in water. Do not subject the monitor to extreme hot or cold temperatures, humidity or direct sunlight.
- \* Store the device and the components in a clean, safe location.
- \* Do not subject the monitor to strong shocks, such as dropping the unit on the floor. \* Remove the batteries if the unit will not be used for three months or longer. Always replace all the batteries with new ones at the same time.
- This product is designed for use over an extended period of time; however, it is generally recommended that it be inspected and calibrated every two years to ensure proper function and performance. \* See the Calibration Method for more details. 18

1. Type of protection against electric shock: INTERNALLY POWERED EQUIPMENT. 2.Degree or protection against electric shock: TYPE BF APPLIED PART.

- 3.Mode of operation: CONTINUOUS OPERATION
- 4.Equipment not suitable for categoryAP&APG equipment use in presence. STATEMENT

the system might not meet its performance specifications if stored or used outside the temperature and humidity as mentioned below: Operating conditions: +5°C~+40°C. 15%RH~93%RH 70kPa~106kPa

Storage conditions: -20°C~+55°C. 0%RH~93%RH

TROUBLE SHOOTING					
If you have trouble in using the unit please check the following points first.					
ERROR DISPLAY	POSSIBLE CAUSE	HOW TO CORRECT			
Nothing is displayed	No battery installation	Insert batteries			
When you push the	Battery worn out	Replace new batteries			
POWER button or Battery icon flash	The polarities of batteries placed wrongly	Insert battery in the correct polarities			

20

- 1. Type of protection against electric shock: INTERNALLY POWERED EQUIPMENT. 2.Degree or protection against electric shock: TYPE BF APPLIED PART.
- 3.Mode of operation: CONTINUOUS OPERATION.
- 4.Equipment not suitable for categoryAP&APG equipment use in presence.
- STATEMENT

the system might not meet its performance specifications if stored or used outside the temperature and humidity as mentioned below: Operating conditions: +5°C~+40°C. 15%RH~93%RH 70kPa~106kPa Storage conditions: -20°C~+55°C. 0%RH~93%RH

TROUBLESHOOTING						
If you have trouble in using the unit please check the following points first.						
ERROR DISPLAY	HOW TO CORRECT					
Nothing is displayed	No battery installation	Insert batteries				
When you push the	Battery worn out	Replace new batteries				
POWER button or Battery icon flash	The polarities of batteries placed wrongly	Insert battery in the correct polarities				

## 20

22

# **Appendix 1 Guidance and Manufacturer Declaration Tables**

Guidance and manufacturer's declaration – electromagnetic emissions The Model PG-800A7 Series Electronic Blood Pressure Monitor is intended for use in the electromagnetic environment specified below. The customer or the user of the Model PG-800A7 Series Electronic Blood Pressure Monitor should assure that it is used in such an environment. Electromagnetic environment-guidance Emissions Compliance The Model PG-800A7 Series Electronic Blood **RF** emissions Group 1 Pressure Monitor uses RF energy only for its internal function. Therefore, its RF emissions CISPR 11 are very low and are not likely to cause any interference in nearby electronic equipment. **RF** emissions Class B The Model PG-800A7 Series Electronic Blood CISPR 11 Pressure Monitor is used in home and it's Harmonic powered by DC 3V N. A. emissions IEC 61000-3-2 Voltage N. A. fluctuations/flicker emissions IEC 61000-3-3

The Model PG use in the elecuser of the Mc	-800A7 Series E ctromagnetic en	Electronic Blood vironment speci Series Electronic	electromagnetic immunity Pressure Monitor is intended for fied below. The customer or the Blood Pressure Monitor should	use in the ele of the Model	ctromagnetic env	vironment sp s Electronic	Blood Pressure Monitor is intended for ecified below. The customer or the user Blood Pressure Monitor should assure
Immunity test	IEC 60601 test level	Compliance	Electromagnetic environment- guidance	Immunity test	IEC 60601 test level	level	Electromagnetic environment - guidance
Electrostatic discharge (ESD)IEC 61000-4-2	$\pm$ 8 kV contact $\pm$ 2 kV, $\pm$ 4 kV, $\pm$ 8 kV, $\pm$ 15KV air	±2 kV, ±4 kV,	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.	Conducted RF IEC 61000-4-6	6 Vrms		Portable and mobile RF communications equipment should be used no closer to any part of the Model PG-800A7 Series Electronic Blood Pressure Monitor, including cables, than the recommended separation distance calculated from the
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m, 50/60Hz		Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.				equation applicable to the frequency of the transmitter. <b>Recommended separation distance</b> $d = \left[\frac{3.5}{V}\right] \sqrt{P}$
NOTE $U_{\tau}$ is the	ne a.c. mains volta	age prior to applic	ation of the test level				$d = \left\lfloor \frac{1}{V_1} \right\rfloor \sqrt{P}$

Radiated RF	10 V/m			NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.
IEC 61000-4-3 80 MHz to 2.7 GHz	z 10 V/m	$d = \left\lfloor \frac{3.5}{E_1} \right\rfloor \sqrt{P}  \text{80MHz to 800MHz}$	NOTE 2 These guidelines may not apply in all situations. Electromagnetic propaga is affected by absorption and reflection from structures, objects and people.	
			$d = \left[\frac{7}{E_1}\right] \sqrt{P}  800 \text{MHz to } 2.7 \text{GHz}$ 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 metres(m). Field strengths from fixed RF transmitters,	a The ISM (industrial, scientific and medical) bands between 0,15 MHz and 80 M are 6,765 MHz to 6,795 MHz; 13,553 MHz to 13,567 MHz; 26,957 MHz to 27,2 MHz; and 40,66 MHz to 40,70 MHz. The amateur radio bands between 0,15 M and 80 MHz are 1,8 MHz to 2,0 MHz, 3,5 MHz to 4,0 MHz, 5,3 MHz to 5,4 MHz MHz to 7,3 MHz, 10,1 MHz to 10,15 MHz, 14 MHz to 14,2 MHz, 18,07 MHz to 18 MHZ, 21,0 MHz to 21,4 MHz, 24,89 MHz to 24,99 MHz, 28,0 MHz to 29,7 MHz a 50,0 MHz to 54,0 MHz.
			as determined by an electromagnetic site survey, <sup>a</sup> should be less than the compliance level in each frequency range <sup>b</sup> Interference may occur in the vicinity of equipment marked with the following symbol: $((\bullet))$	b The compliance levels in the ISM frequency bands between 150 kHz and MHz and in the frequency range 80 MHz to 2,7 GHz are intended to decreat the likelihood that mobile/portable communications equipment could cau interference if it is inadvertently brought into patient areas. For this reason, additional factor of 10/3 has been incorporated into the formulae used calculating the recommended separation distance for transmitters in the frequency ranges.
5				

c Field strengths from fixed transmitters, such as base stations for radio (cellular/ cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Model PG-800A7 Series Electronic Blood Pressure Monitor is used exceeds the applicable RF compliance level above, the Model PG-800A7 Series Electronic Blood Pressure Monitor should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Model PG-800A7 Series Electronic Blood Pressure Monitor.

d Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

**Recommended separation distances between** portable and mobile RF communications equipment and the Model PG-800A7 Series Electronic Blood Pressure Monitor

27

For transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (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 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

#### **CALIBRATION METHOD**

1. Press and hold the "ON/OFF, MEM" button at the same time, load the battery, enter the static air pressure calibration mode after the LCD screen is fully displayed, and then release the button. 2. Press ON/OFF to close the internal air valve.

3. Connect the external standard barometric interface and the digital barometer interface to the cuff interface.

29

The Model PG-800A7 Series Electronic Blood Pressure Monitor is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Model PG-800A7 Series Electronic Blood Pressure Monitor can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Model PG-800A7 Series Electronic Blood Pressure Monitor as recommended below, according to the maximum output power of the communications equipment. 

Rated maximum output of	Separation distance according to frequency of transmitter m				
transmitter	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.7 GHz		
w	$d = \left[\frac{3.5}{V_1}\right] \sqrt{P}$	$d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$	$d = [\frac{7}{E_1}]\sqrt{P}$		
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		

4. External input 50mmHg and 200mmHg standard static air pressure, and observe the air pressure value displayed at the position of the LCD systolic pressure (SYS) and the value of the digital pressure gauge should be in the range of +/-3mmHg.

# ▲ Caution

1. ME devices can be used in exposed environments, including electromagnetic interference environment to ensure basic safety and basic performance unchanged. 2.In the event of any serious event related to this product, such as serious adverse event, significant alteration of the product resulting in change of intended use, etc., it will be reported to the manufacturer and the competent authorities of the user and/or the member states where the patient is located.

# Notes:

Essential performance: Limits of the error of the manometer, ±3mmHg.Reproducibility of the blood pressure determination, ±3mmHg.

Clinical benefits: Accurate measurement of SBP and DBP, clinical performance meets the requirements of ISO 81060-2:2018.