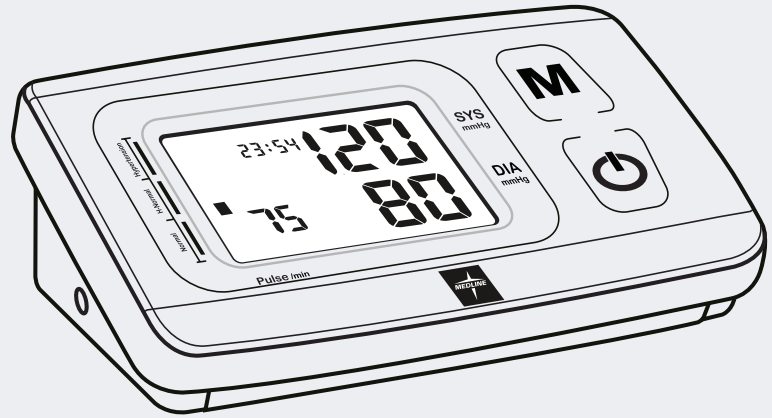
Automatic Blood Pressure Monitor
Tensiomètre automatique
Monitor de presión arterial automático

User's Manual
Guide de l'utilisateur
Manual del usuario



REF MDS1001 REF MDS1001U REF MDS1001UT

Contents

Introduction and Intended Use

This instruction manual provides important information about the automatic digital blood pressure monitor MDS1001 Series. This device is intended to measure the systolic and diastolic blood pressures and pulse rate of an adult individual by using a non-invasive technique, in which an inflatable cuff is wrapped around the upper arm.

Please read all of these instructions carefully, before using the monitor.

IMPORTANT NOTES

- Only a physician is qualified to interpret changes in your blood pressure.
  This device is not intended to replace regular medical examinations.
- It is recommended to have your physician review your procedure for using this monitor.
  Never make adjustments to your medication unless recommended by your physician.
- This Blood Pressure Monitor is intended for use by adults.
  Children should not use this monitor unless it is under the supervision of an adult.
- Only use the cuff(s) included with this device or offered as approved accessories.
  Unapproved cuffs can affect measurement accuracy.

Symbol Identification

The following symbols may appear in this manual, on the blood pressure monitor, or on its accessories.

	Warning
	Type B: Identifies applied part complying with IEC 60601-1.
	Class II
	Refer to instruction manual
	Disposal: Do not dispose this product with household waste.

Important Safety Information

⚠ Warning

- Consult with your physician before using this device on an arm where intravascular access, therapy, or an arteriovenous shunt is present because of temporary interference to blood flow which could result in injury.
- Consult your physician before using this device if you have had a mastectomy.
- Too frequent measurements can cause injury due to blood flow interference.
- Do not apply the cuff over a wound, as it can cause further injury.

- Do not kink the cuff hose, as this may cause the cuff pressure to continuously increase, which can interfere with blood flow and result in injury.
- Do not inflate the cuff on the same limb to which other monitoring medical electrical (ME) equipment is applied. This can cause temporary loss of function of the monitoring ME equipment.
- Make sure that operation of this device does not result in prolonged impairment of blood circulation.

Measurement Accuracy

The quality of the device has been verified and conforms to the provisions of the EC-Council directive 93/42/EEC as well as the EMC directive 89/336/EEC:

EN 1060-1

Non-invasive blood pressure measuring equipment. General requirements

EN 1060-3

Non-invasive blood pressure measuring equipment. Supplementary requirements for electro-mechanical blood pressure measuring system

EN 60601-1

Safety requirements for medical electrical equipment

EN 60601-1-2

Electromagnetic compatibility and safety for medical electrical equipment

EN 14971

Risk analysis for medical devices in accord with requirement in section 21 of CMDR'S

Helpful Information about Blood Pressure

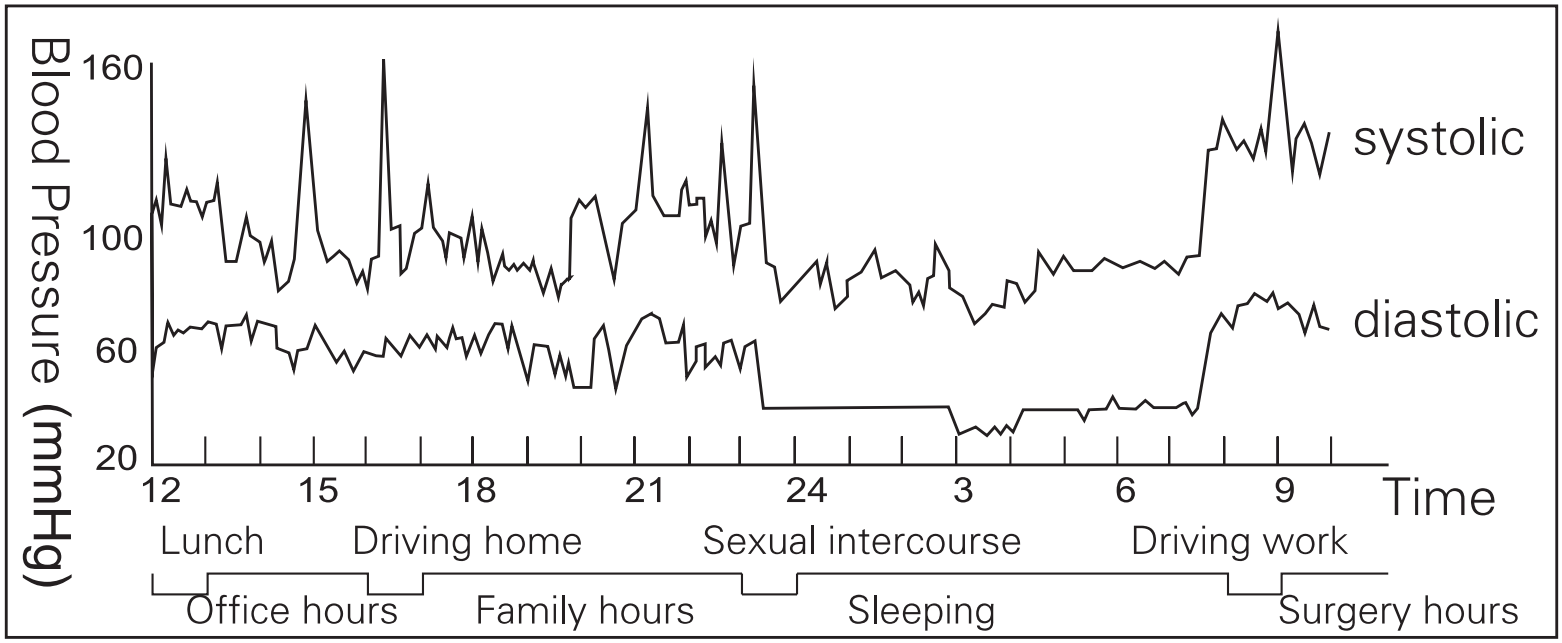
What is Blood Pressure?

Blood pressure is the force that blood exerts on the arteries. This force is constantly changing as the heart beats. When the heart contracts, blood pressure reaches its highest value. This is called systolic blood pressure. When the heart relaxes between beats, the value of blood pressure is lower. This is called the diastolic blood pressure. The unit of measure for blood pressure is millimeters of mercury, abbreviated mmHg. For example, an individual's blood pressure may be measured as 120 mmHg (systolic) and 80 mmHg (diastolic). This would be spoken as "120 over 80" and written as "120/80".

What Affects Blood Pressure?

Blood pressure can be affected by the following factors: eating, drinking alcohol or caffeine, smoking, stress, exercise, physiologic condition, measurement site, body position, temperature, humidity, altitude, and many other factors.
Remember that blood pressure can also vary throughout the day. It is important to take measurements at the same time each day, and under the same conditions.

Typical Daily Blood Pressure Fluctuations



Example: 35-year-old male

What is High Blood Pressure?

Hypertension, or high blood pressure, is a condition where an individual's blood pressure remains high over a long period of time. Consult your physician with any questions or concerns you may have about hypertension.

Blood Pressure Classification

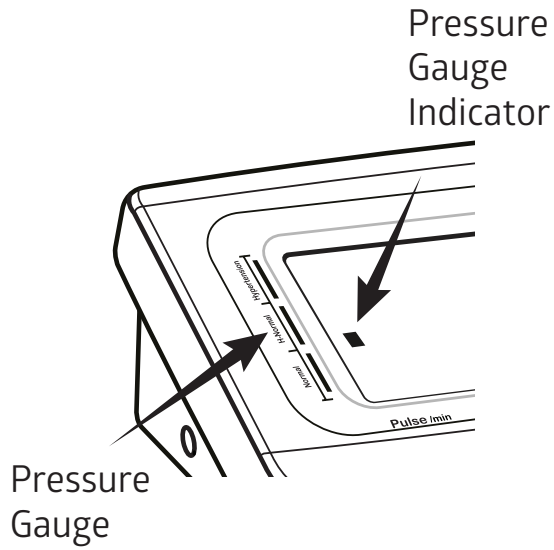
The World Health Organization (WHO) and the International Society of Hypertension (ISH)

Blood Pressure Classification	Systolic (mmHg)	Diastolic (mmHg)
Optimal	Less than 120	Less than 80
Normal	120-129	80-84
High - Normal	130-139	85-89
Hypertension - Stage 1	140-159	90-99
Hypertension - Stage 2	160-179	100-109
Hypertension - Stage 3	180 or Higher	110 or Higher

Monitor Pressure Gauge and Indicator

The pressure gauge allows quick detection of your blood pressure classification. The ▮ indicator displays a segment, based on your measurement, corresponding to the WHO and ISH classification.

Note: The pressure gauge indicator is approximate. Please consult your physician to interpret your blood pressure measurements.



Why is it Important to Measure Your Blood Pressure at Home?

Having your blood pressure taken at the doctor's office may cause you to become nervous, thus artificially raising your reading. Having the ability to take your blood pressure at home makes it easy to record a log of your daily readings. This will help you gain a greater understanding of your blood pressure reading and the factors that affect it. Be sure that you share your information with your physician.

Hints for Accurate Measurement

1. Relax and try to remain still for 5 to 10 minutes before a measurement.
2. Remove any clothing on the upper arm so that the cuff can be placed directly on the skin. Constricting garments may cause an inaccurate reading.
3. Perform measurements on the same arm (preferably the LEFT arm).
4. Refrain from eating, smoking and drinking (especially alcoholic beverages) before a measurement. These activities can affect your blood pressure.
5. Remember that blood pressure varies continuously throughout the day. Try to take your blood pressure at the same time each day.
6. Do not be concerned with the results of one measurement. Many measurements, recorded over an extended period of time, will provide a better indication of your blood pressure.
7. Relax for 5 to 10 minutes before taking another measurement.
8. Because many factors can affect your blood pressure,daily fluctuations of 25 to 50 mmHg are common.

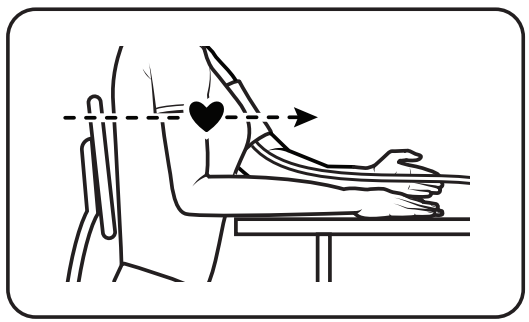
Please Note:
Some individuals with hypertension, diabetes, kidney disorders, arteriosclerosis or poor circulation may see a significant difference in blood pressure readings taken from the wrist as compared to readings from the upper arm. It is recommended that you consult with your physician concerning the use of this monitor.

Correct Method of Measurement

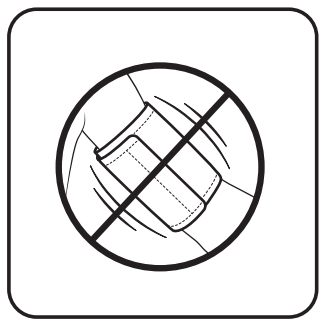
To obtain the most accurate blood pressure measurement, please follow these important directions:

1. Sit comfortably in a chair with your back supported. Place both feet flat on the floor and keep your legs uncrossed.
2. Rest your left arm on a table and position your palm upwards.
   IMPORTANT: The arm cuff must be at the same level as your heart, or accurate measurement will not be possible. (Your heart is located slightly below your left armpit.)
3. Remain still, avoid moving or talking during the measurement.

Feet Flat on Floor



Position Arm at Heart Level



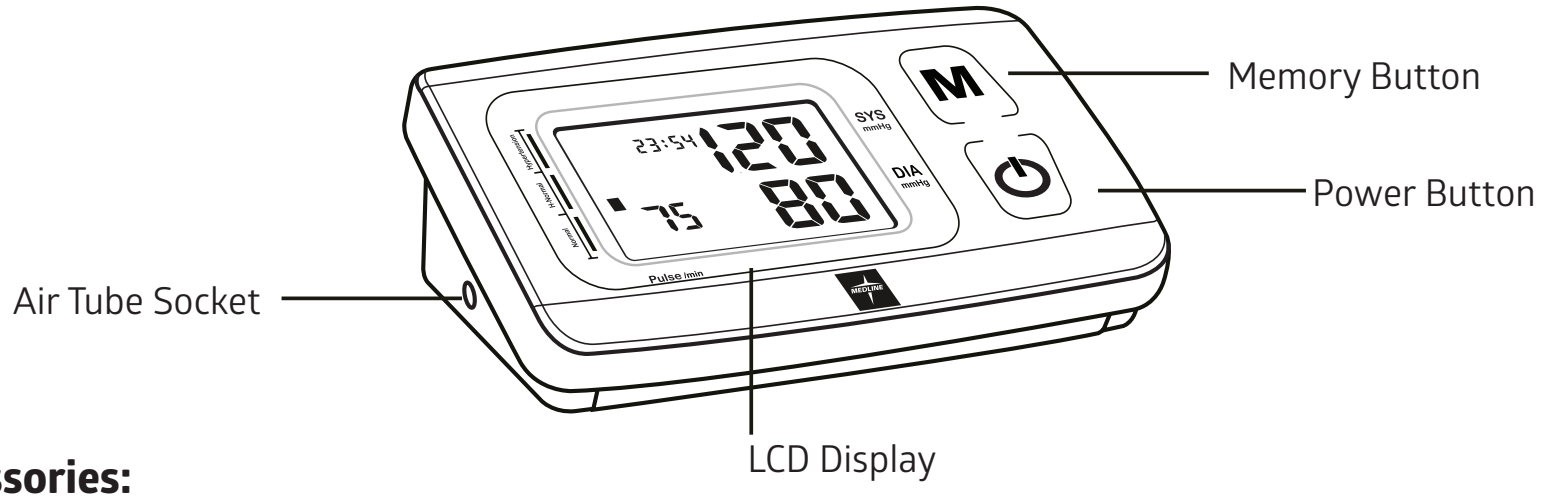
Avoid Moving or Talking

Parts Identification

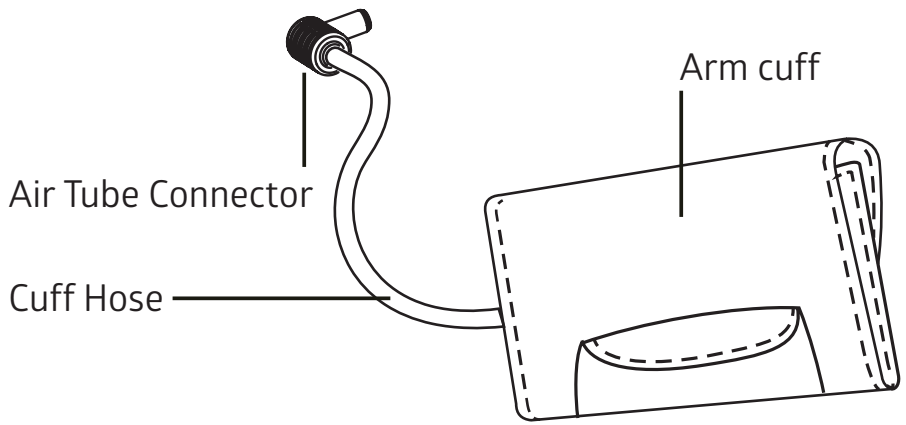
Contents:

Monitor, arm cuff, four (4) “AA” alkaline batteries, instruction manual, quick start guide

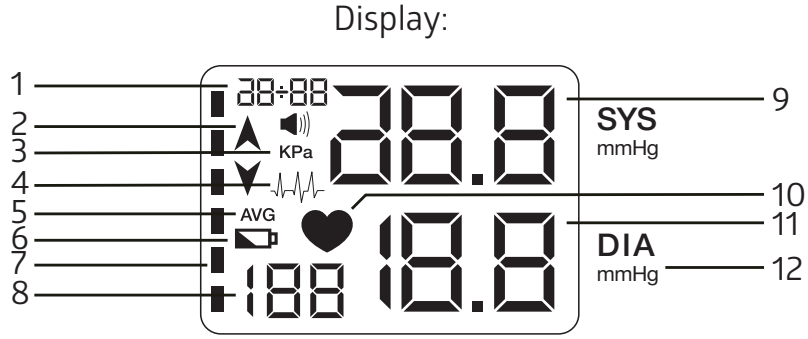
Monitor:



Accessories:



Display Symbols:



1. Date/Time
2. Inflating/Deflating
3. Kilopascal (KPa) Measurement Unit
4. Arrhythmia Detection Function
5. Average (AVG)
6. Battery
7. Pressure Gauge Indicator
8. Pulse Rate
9. Systolic Blood Pressure
10. Measuring Indicator
11. Diastolic Blood Pressure
12. Millimeters of mercury (mmHg) Measurement Unit

Arrhythmia Detection Function

The arrhythmia detection symbol will appear on the display if pulse irregularities were detected during the measurement. This result may deviate from your normal blood pressure, in which case repeat the measurement. It is important to remain still and avoid talking during the measurement.

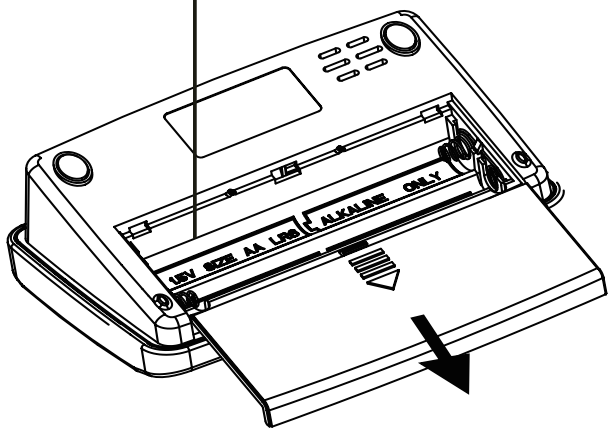
Note: We recommend you consult your physician if you see the arrhythmia detection symbol frequently.

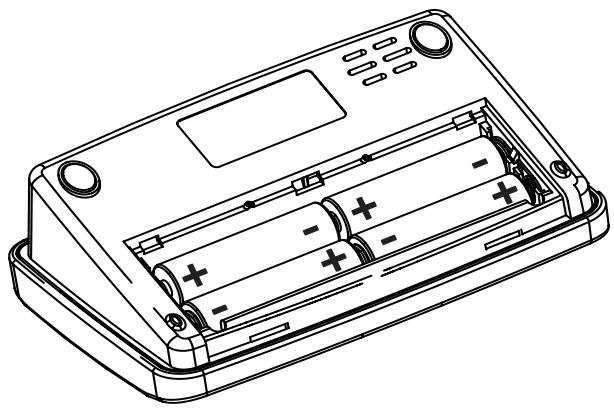
Preparation Before Taking a Measurement

Battery Installation/Replacement

1. Slide the battery cover off in the direction of the arrow.
2. Install or replace the four alkaline “AA” batteries, noting the proper orientation of positive (+) and negative (-) terminals in the battery compartment.
3. Replace the battery cover.

Battery compartment



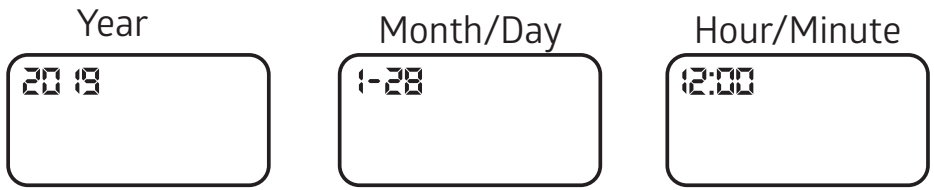


Note:

- Replace all batteries whenever appears on the display or when the unit will not turn on.
- Remove the batteries if the device will not be used for an extended period of time.
- Removing the batteries will erase all readings stored in the memory.
- Batteries are hazardous waste. Do not dispose of them with household garbage.

Setting Date and Time

1. When the display is off, hold **M** (Memory) for 5 seconds, or until the digits on the screen begin to flash.
2. Press the ⏻ (Power Button) to switch between year, month/day, hour/minute.



3. Press the **M** (Memory) button to advance the digit selected by one value at a time.

Memory Button

Power Button

Selecting mmHg or kPa Measurement Units

1. When the display is off, hold ⏻ (Power Button) for 10 seconds, or until the digits on the screen start to flash.
2. Press the **M** (Memory) button to select mmHg or kPa.

Setting Talking Feature

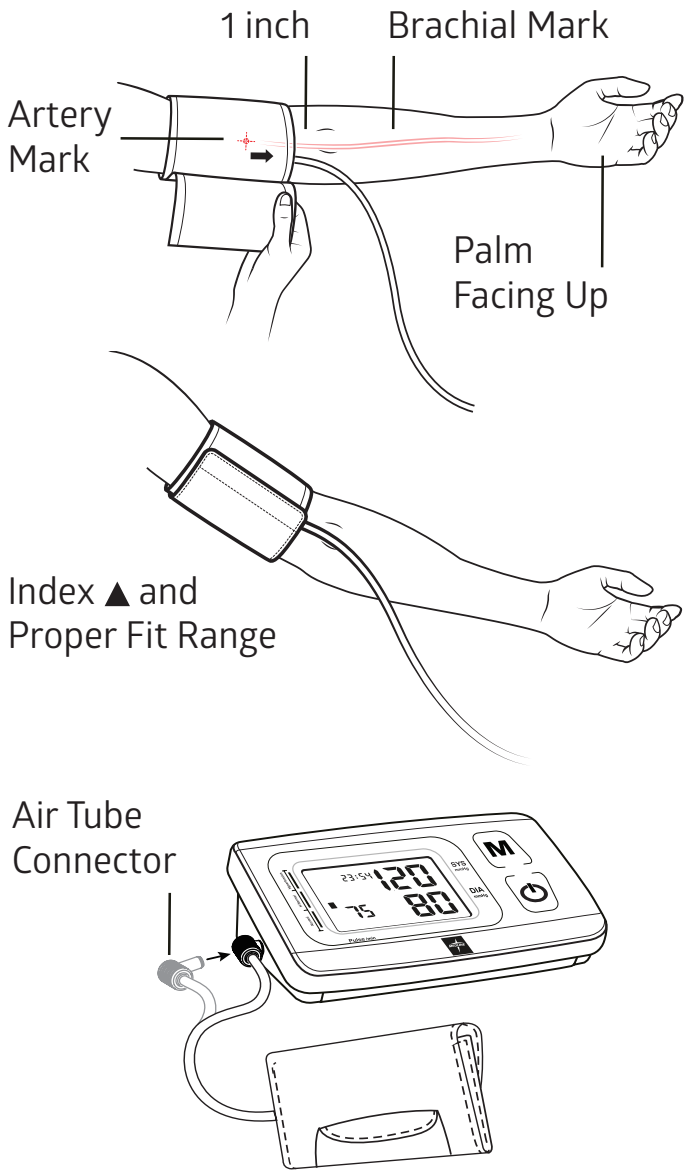
The MDS1001UT Talking Model can be set to announce your measurement results, according to the following method:

1. When the display is off, press and hold the **M** (Memory) button for about 5 seconds, or until the digits on the screen begin to flash.
2. Press the ⏻ (Power Button) repeatedly to move through the date and time settings, until **SP** appears on the screen and begins to flash.
3. Press the **M** (Memory) button to switch between languages: **SP 01** is English, **SP 02** is Spanish, and **SP OF** is off.
4. Press the ⏻ (Power Button) again to confirm the selected language and return the device to the initial display off screen.

How to Apply the Arm Cuff

1. Place the cuff directly on your bare upper arm.
2. Adjust the cuff so that the bottom edge lies about 1 inch above the elbow on the inside of the arm.
3. Align the Artery Mark (⌽) over the brachial artery, which runs down the inner arm. Position the cuff hose straight down your arm, in line with the middle finger.
4. Pull the end of the cuff and secure it snugly with the hook and loop closures. You should be able to fit two fingers between your arm and the cuff.
5. Confirm the ▲ indicator at the top, outer edge of the cuff lies within the fit range (⟷).
6. Plug the air tube connector into the socket on the left side of the monitor.

IMPORTANT: Make sure the cuff hose remains straight along the arm and unkinked during measurement.
Avoid compression and restriction of tubing.



Taking a Measurement

Please read the previous section on proper placement of the cuff and proper arm position.

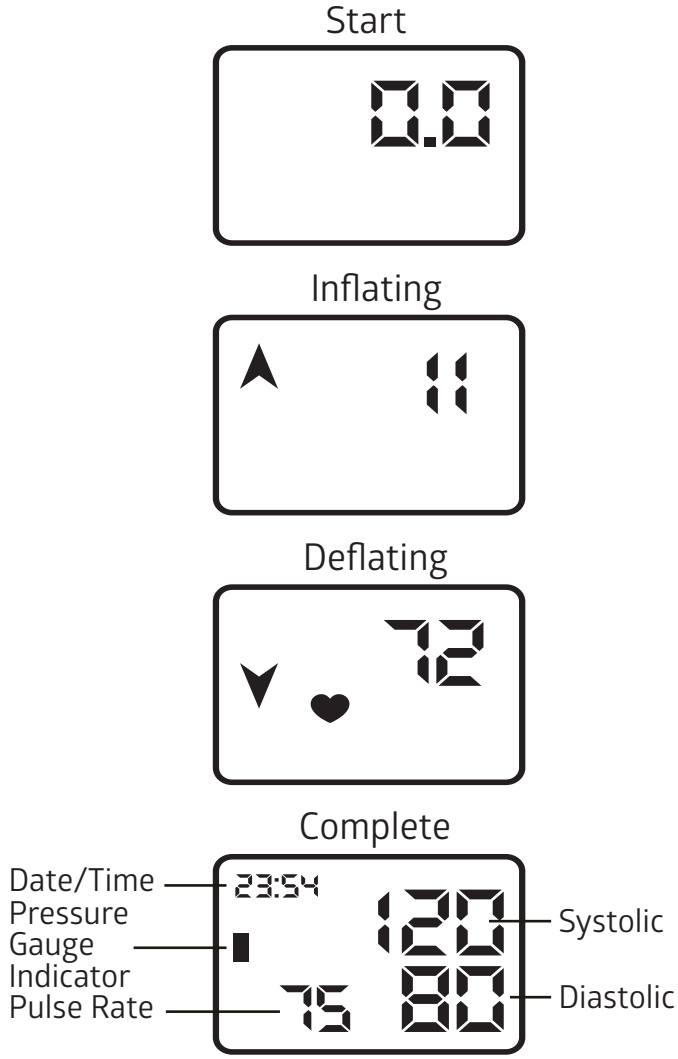
1. Press the ⏻ (Power Button). The arm cuff will begin to inflate automatically. The cuff will be quite snug for a short while, this is normal.

   Note: TO END a measurement for any reason, press the ⏻ (Power Button) again.

2. After the inflation, the cuff will slowly deflate to take the measurement. The ♥ will flash, indicating that the measurement is in process.

   Note: If the device determined that the initial inflation pressure was insufficient, it will reinflate at a higher pressure.

3. The device will completely deflate when the measurement is finished. The systolic and diastolic pressure, pulse rate, and pressure gauge indicator will be displayed.



Note:

- The device will automatically shut off after 1 minute, or it can be powered off by pressing the ⏻ (Power Button).
- If during a measurement the power drops to an insufficient level, the device will end the measurement and “13” (low battery) will be displayed. Please replace the batteries and repeat the measurement.
- If the device cannot detect your pulse, it will end the measurement. Please wait a few minutes, make sure that the cuff is positioned properly, and try again.

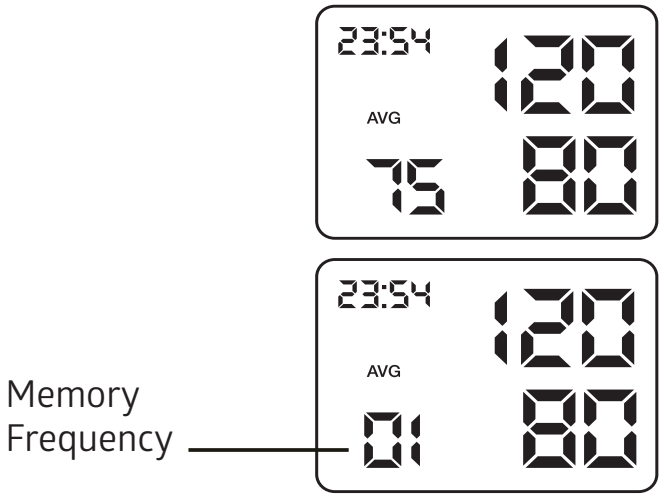
Memory Function

Memory Input

When a valid measurement is made, the result (systolic, diastolic, pulse rate, date and time) will be stored in the memory automatically (as soon as the device is turned off or when another measurement is initiated). The device can store up to 90 readings, and also compute the average of the latest 3 readings. When more than 90 readings are stored, the oldest ones will be replaced.

Memory Recall

1. When the display is off, press the **M** (Memory) button to show the average (AVG) of all recorded results.
2. Press the **M** (Memory) button again and 01 will appear in the lower right hand corner, indicating the latest measurement in the memory.
3. Continue pressing the **M** (Memory) button to display additional past readings, sequentially.



Memory Recall

1. When the display is off, press the **M** (Memory) button.
2. Press the **M** (Memory) button again and hold it down for more than 3 seconds to erase all stored results.

Error Indicators and Troubleshooting

ERROR INDICATORS	CAUSE	CORRECTION
	Incomplete inflation of arm cuff	· Check if the cuff is firmly connected to the device · Make sure the cuff hose remains straight and unkinked during measurement · Reposition the cuff correctly (see pg. 16) and try the measurement again · If the Er message persists, call product support
	Cuff over-inflated and released automatically	· Take a break, remove all clothing from upper arm, reposition the cuff correctly (see pg. 16) and try the measurement again · Make sure the cuff hose remains straight and unkinked during measurement
	Could not obtain the pulse rate	· Reposition the cuff correctly (see pg. 16) and try the measurement again · Please refrain from talking or moving during measurement
	Strong electromagnetic interference (mobile phone or computer)	· Make sure the cuff hose remains straight and unkinked during measurement · Remove sources of interference (mobile phone or computer) · Take a break, reposition the cuff correctly (see pg. 16) and try the measurement again
	Irregular pulse rate or blood pressure	· Take a break, reposition the cuff and your body position correctly (see pg. 16) and try the measurement again · Please refrain from talking or moving during measurement

PROBLEM	CAUSE	CORRECTION
Nothing appears in the display, after the ⏻ (Power Button) is pressed	Batteries are drained	Replace the batteries with new ones
	Batteries are inserted incorrectly	Reinstall the batteries with positive and negative terminals in correct position (see pg. 13)
Cuff does not inflate	Tube connector is not fully inserted into device	Firmly insert connector into air socket on left side of device
	Tube connector is broken	Call product support
	Cuff hose is compressed or restricted	Make sure hose remains straight and unkinked during measurement
	Cuff is not fastened properly	Reposition the cuff correctly (see pg. 16)
	Battery voltage is too low	Replace all batteries with new ones
Blood pressure readings are too high or too low	Cuff is not fastened properly	Reposition the cuff correctly (see pg. 16)
	Body and arm are not positioned properly	Reposition your body and arm correctly (see pg. 10)
	Movement or talking during measurement	Remain seated, and please refrain from moving or talking during measurement
	Repeated measurement on same arm within short time period	Wait 5 to 10 minutes between measurements
Blood pressure readings are variable	Possible factors: time of day, emotional state, daily activities or exercise, smoking, drinking alcohol or caffeine, eating, certain medications (see pg. 6)	Take measurement at same time each day, and under the same conditions

Medline Blood Pressure Cuff Table

If you need a different sized cuff, please consult the table below for information about the different cuff sizes Medline offers for this monitor. Contact Medline Industries, LP at 1-800-MEDLINE or visit www.medline.com if you need to purchase a new cuff. Provide the appropriate item number from the table below.

MEDLINE ITEM NUMBER	SIZE	MEASUREMENT RANGE (cm)
MDS9971	Adult	22-30 cm
MDS9972	Large Adult	30-42 cm
MDS9974	Universal	22-42 cm

BLOOD PRESSURE MONITOR ITEM NUMBER	ARM CUFF ITEM NUMBER	ARM CUFF SIZE	MEASUREMENT RANGE (cm)
MDS1001	MDS9971	Adult	22-30 cm
MDS1001U	MDS9974	Universal	22-42 cm
MDS1001UT	MDS9974	Universal	22-42 cm

Care and Maintenance

- Keep the device away from high temperatures, humidity and direct sunlight.
- Keep sharp objects away from the cuff.
- Do not press the ⏻ (Power Button) without the cuff around your arm to avoid excess pressure build up that may damage the cuff.
- Use the device at a sufficient distance from devices with strong electrical fields, such as television, microwave ovens, X-ray equipment, etc.
- Do not subject the device to strong impact or drop it on the floor.
- Do not disassemble or modify the device or the cuff.
- Remove the batteries when the device is to be stored for extended periods of time.
- Use only a soft dry cloth to clean the unit. Do not use solvents or other petroleum-based cleaners.

Sensor Calibration Mode

The blood pressure device should only be calibrated by the manufacturer.

Specifications

Model:	MDS1001 Series
Measuring Method:	Oscillometric
Memory Function:	Storage and recall 90 measurements with average
Display:	Digital LCD
Measuring Range:	Pressure: 20-280 mmHg Pulse: 40-199/minute
Accuracy:	Cuff Pressure/Sensor**: ± 3 mmHg Pulse Rate: ± 5%
Inflation System:	Electro-pneumatic pump
Arm Size Ranges:	22-42 cm (8.6-16.5 inches), see pg. 22
Batteries:	1.5V alkaline (LR6/A4) x 4
Automatic Power-off:	Approx. 1 minute after measurement
Weight:	Approx. 380g (NO batteries)
Storage and transport condition:	-20°C - +65°C 10%-95%RH
Operating condition:	+5°C - +40°C 10%-90%RH
Standard Cited:	EN 1060-1 EN 60601-1-2 EN 1060-3 EN 14971 EN 60601-1 YY-0670

** Not related to BP measurement accuracy

Blood Pressure Log

DATE		1/1	1/1	1/1					
TIME		7:00	13:30	20:00					
mmHg	240								
	220								
	200								
	180								
	160								
	140								
		128	134						
	120			123					
	100								
			90						
	80	84		76					
	60								
PULSE		70	73	69					
BODY CONDITION									

Warranty

Medline Industries, LP warrants this digital blood pressure monitor against any defects in material and workmanship for a period of one (1) year after the date of purchase. The associated parts, specifically the cuff, are warranted for a period of six (6) months after the date of purchase or for ten thousand (10,000) uses, whichever comes first. These uses include, but are not limited to, inflation of the bladder and attachment of the cuff hook and loop closure. Excluding cases of freight damage, tampering, clear abuse, misuse, or accidents, Medline Industries, LP will, at its discretion, repair or replace this sphygmomanometer and/or its parts during the warranty period without charge. No representative or person is authorized to assume for us any liability in connection with the sale of the products, of Medline Industries, LP. This warranty gives you specific legal rights, and you may also have other rights that may vary from state to state. Prior to shipping any product, please contact either Medline Industries, LP at 1-800-MEDLINE or an authorized Medline sales representative with any warranty concerns.

Garantie

Medline Industries, LP garantit ce tensiomètre numérique contre tout vice de matériel et de fabrication pendant une période d'un (1) an à compter de la date d'achat. Les pièces associées, notamment le brassard, sont garanties pendant une période de six (6) mois à compter de la date d'achat ou pour dix mille (10 000) utilisations, selon la première éventualité. Ces utilisations incluent, sans toutefois s'y limiter, le gonflage du brassard et la fixation de sa fermeture Velcro. À l'exclusion des dommages occasionnés pendant le transport et des cas d'altération, d'abus flagrant, d'utilisation abusive ou d'accidents,