

# Talking blood pressure monitor (DH404)

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Please retain these instructions for future reference. These instructions are also available in other formats.

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## Special warning

The measurements taken on this device are for your information only and are not a substitute for a medical examination. Discuss the measurements with your doctor and never base any medical decisions on them, for example medication and its administration. Before using this product please read the “Safety advice for use” section; if you have any questions, please contact RNIB for more information.

**Please note:** Do not use rechargeable batteries.

## Safety advice for use

* In order to ensure comparable values, always measure your blood pressure at the same time of day.
* Before every measurement, relax for about five minutes.
* If you want to perform several measurements on the same person, wait five minutes between each measurement.
* Do not take a measurement within 30 minutes after eating, drinking, smoking or exercising.
* Repeat the measurement if you are unsure of the measured value.
* The measurements taken by you are for your information only – they are not a substitute for a medical examination. Discuss the measurements with your doctor, and never base any medical decisions on them (e.g. medicines and their administration).
* Do not use the blood pressure monitor on new-borns, pregnant women or patients with pre-eclampsia. We recommend consulting a doctor before using the blood pressure monitor during pregnancy.
* Cardiovascular diseases may lead to incorrect measurements or have a detrimental effect on measurement accuracy. The same also applies to very low blood pressure, diabetes, circulatory disorders and arrhythmias as well as chills or shaking.
* The blood pressure monitor must not be used in connection with a high-frequency surgical unit.
* Only use the device on people who have the specified upper arm measurement for the device.
* Please note that when inflating, the functions of the limb in question may be impaired.
* During the blood pressure measurement, blood circulation must not be stopped for an unnecessarily long time. If the device malfunctions, remove the cuff from the arm.
* Avoid any mechanical restriction, compression or bending of the cuff line.
* Do not allow sustained pressure in the cuff or frequent measurements. The resulting restriction of the blood flow may cause injury
* Ensure that the cuff is not placed on an arm in which the arteries or veins are undergoing medical treatment, e.g. intravascular access or therapy, or an arteriovenous (AV) shunt.
* Do not use the cuff on people who have undergone a mastectomy.
* Do not place the cuff over wounds as this may cause further injury.
* You can either use the blood pressure monitor with batteries or with a mains part. Please note that data transfer and data storage is only possible when your blood pressure monitor is supplied with power. As soon as the batteries are empty or the mains part is disconnected from the power supply, the blood pressure monitor loses the date and time.
* To conserve the batteries, the monitor switches off automatically if no buttons are pressed for one minute.
* The device is only intended for the purpose described in these instructions for use.
* The manufacturer is not liable for damage resulting from improper or careless use.

## General description

This fully-automatic, talking blood pressure monitor for the upper arm speaks in four languages to provide your systolic and diastolic blood pressure and your pulse per minute.

Volume adjustable with the ability to also turn off the speech function, it has a large, easy-to-see display with a blue LCD backlight. It stores the average of all measured morning and evening blood pressure values for the last seven days and includes two x 60 memory spaces for storage of data. With the ability to measure upper arm circumferences between 22cm and 36cm, this blood pressure monitor can detect existing cardiac Arrhythmia. It has an automatic switch off function, a signal in case of application error, battery changing indicator, blood pressure passport and a practical storage pouch included.

## Items supplied with the Talking blood pressure monitor

1 x Control base

1 x Arm cuff with connector

1 x Storage pouch

4 x 1.5V alkaline batteries AA included

## Orientation

### Control base

#### Front

Place the control base in front of you so that the LCD is facing towards you, with the highest point towards the top.

The front of the unit has a large LCD display screen on the front. Here’s a description of the symbols you will see on the display:

* battery symbol (in top left corner): this is the battery replacement symbol
* to the right of the battery symbol are two sets of two arrows pointing up and down: these are inflate and release air
* just below the battery symbol is a square box with the letter ‘M’ above: this is memory space number. To the right of this symbol is the memory display which shows average value (AVG), morning (AM), evening (PM)
* below the memory space number symbol are two outlines of a person with number one or two inside: these are user memory
* in the bottom left corner of the display are the time and date
* to the right of the date is a heart with an electric pulse symbol: this is the cardiac arrhythmia symbol
* running down the right hand side of the display are the blood pressure readings. The top number is systolic pressure, the middle number is diastolic pressure and the bottom number is calculated pulse value.

Just below the LCD display are three narrow, rectangular buttons in a row. The two outer buttons are function buttons, the left one marked with a minus sign and the right hand one marked with a plus sign. The button in the middle is the Memory button and is marked with an M.

Just below this is a large circular button: this is Start/stop.

Either side of the power buttons are a series of small holes which make up the loudspeaker.

#### Back

On the back of the unit you’ll find the battery compartment cover.

#### Left edge

There is a circular socket on the left edge, which is for connecting the cuff via the plastic connector on the end of the rubber tube, which is already attached to the cuff.

#### Right edge

The circular socket on the right edge is used for connecting the mains power supply.

## Getting started

### Inserting the batteries

Open the battery compartment lid which is on the back on the control base. To remove the cover, apply pressure to the raised lines at the top and pull down and away from the base.

Insert four 1.5 V AA (alkaline type LR6) batteries in the following positions:

* top battery: positive to the left and negative to the right
* second battery: negative to the left and positive to the right
* third battery: positive to the left and negative to the right
* fourth (bottom) battery: negative to the left and positive to the right.

Make sure that the batteries are inserted with the correct polarity. Do not use rechargeable batteries. The message “The device is ready for use. You may start measuring.” is displayed.

Replace the battery compartment cover again carefully by sliding it upwards from the bottom until it clicks into place.

With inserted batteries, the unit permanently displays the time and date.

If the low battery indicator and ‘E6’ appear, no further measurements can be performed. The device will announce: “Battery weak.” Please replace all batteries.

Once the batteries have been removed from the unit, the date, time and language must be set again.

If the monitor is being used by battery power the batteries should be changed every 12 months.

## Main menu

The menu allows you to set the following functions, one after another.

Date> Time> Language> Volume

It is essential to set the date and time otherwise, you will not be able to save your measured values correctly with a date and time and access them again later.

The time is displayed in 24-hour format.

In addition, the device has four language settings. The device is set to English when supplied to the customer.

If you press and hold the function buttons, you can set the values more quickly.

Continue to the next section to commence setting the date and time in the menu.

## Setting the date and time

Insert the batteries or press and hold the Memory button for five seconds.

The year flashes on the display.

Set the year with the function plus and minus buttons. Confirm with the Memory button.

Set the month, day, hour and minutes and confirm each setting with the Memory button.

## Setting the language

The language will flash on the display L1. You can select the following languages with the two function buttons:

* L1 English
* L2 Spanish
* L3 Portuguese
* L4 Greek
* L0 Language off.

Confirm your selection with the Memory button.

L0: Language off means that there is no voice output and therefore no acoustic playback.

### Setting the volume

Volume level Vo1 flashes on the display.

You can set the volume of the selected language using the function buttons:

* Vo3 = loud
* Vo2 = medium
* Vo1 = quiet.

Confirm your selection with the Memory button.

## Using the product

### Operation with the mains part

You can also operate this device with a mains part. When doing so, there must not be any batteries in the battery compartment. The mains part can be obtained from RNIB, product code DH404MC.

**Please note:** To prevent possible damage to the device, the blood pressure monitor must only be used with the mains part described here.

Insert the mains part into the connection provided for this purpose on the right-hand side of the blood pressure monitor. The mains part must only be connected to the mains voltage that is specified on the type plate.

Then insert the mains plug of the mains part into the mains socket.

After using the blood pressure monitor, unplug the mains part from the mains socket first and then disconnect it from the blood pressure monitor. As soon as you unplug the mains part, the blood pressure monitor loses the date and time setting but the saved measurements are retained.

## Measuring blood pressure

Please ensure the unit is at room temperature before measuring.

Attach the cuff. Place the cuff on to the bare left upper arm. The circulation of the arm must not be hindered by tight clothing or similar.

The cuff must be placed on the upper arm so that the bottom edge is positioned 2 – 3 cm above the elbow and over the artery. The line points to the centre of the palm.

Now tighten the free end of the cuff, but make sure that it is not too tight around the arm and close the Velcro fastener. The cuff should be fastened so that two fingers fit under the cuff.

Now insert the cuff line into the connection for the cuff connector.

Caution: The unit may only be operated with the original cuff. The cuff is suitable for an arm circumference of 22 to 36 cm.

### Adopt the correct posture

Rest for approx. five minutes before each measurement otherwise there may be divergences.

You can perform the measurement either sitting or lying down. Always make sure that the cuff is on a level with your heart.

If you are wanting to carry out a blood pressure measurement seated, make sure you are sitting comfortably with your arms and back leaning on something. Do not cross your legs and place your feet flat on the ground.

In order not to distort the result, it is important to keep still during the measurement and not talk.

## Selecting memory

### User memory

Switch on the device with the Start/stop button on the front.

When the device is switched off, the time and date are permanently displayed.

Select the desired user memory (person one or person two) by pressing the function buttons.

You have two memories, each with 60 memory spaces to store the measurements of two different people separately.

## Performing the blood pressure measurement

As described before, attach the cuff and adopt the posture in which you want to perform the measurement.

Switch on the device with the Start/stop button.

A display check is performed, during which all display segments light up.

Start the device with the Start/stop button. The memory space that will be used is displayed.

The cuff is inflated to 190 mmHg. The cuff’s air pressure is slowly released. If a tendency for high blood pressure is already recognised, the cuff is re-inflated and the cuff’s pressure is increased again. As soon as a pulse is detected, the heart symbol flashes on the LCD display.

Measuring can be cancelled at any time by pressing the Start/stop button.

Systolic pressure, diastolic pressure and pulse measurements are displayed.

Whilst the message is being displayed, the volume can be adjusted with the function buttons.

* E\_ appears if the measurement could not be performed properly, observe the chapter on error messages/trouble-shooting in these instructions for use and repeat the measurement
* the measurement is automatically stored
* the device switches off automatically after one minute.

Wait at least five minutes before performing another measurement!

### Voice output when voice function is activated

The device is ready for use. You may start measuring.

Systole: mmHg

Diastole: mmHg

Heart rate: beats per minute

According to the World Health Organisation guidelines your blood pressure is:

* optimal
* normal
* high to normal
* shows slight hypertension
* shows medium hypertension
* shows strong hypertension.

## Evaluating results

### Cardiac arrhythmia

This unit can identify potential disruption of the heart rhythm when measuring and if necessary, indicates this after the measurement with the Cardiac arrhythmia symbol. If the voice function is activated, the device will announce: “A possible cardiac arrhythmia was found.”

This can be an indicator for arrhythmia. Arrhythmia is an illness in which the heart rhythm is abnormal because of flaws in the bioelectrical system that regulates the heartbeat. The symptoms (skipped or premature heart beats, pulse being slow or too fast) can be caused by factors such as heart disease, age, physical make-up, excess stimulants, stress or lack of sleep. Arrhythmia can only be determined through an examination by your doctor. If the Cardiac arrhythmia symbol is shown on the display after the measurement has been taken, it should be repeated.

Please ensure that you rest for five minutes beforehand and do not speak or move during the measurement. If the Cardiac arrhythmia symbol appears frequently, please consult your doctor. Self-diagnosis and treatment based on the measurements can be dangerous. Always follow your GP’s instructions.

### Classification of measurements

Setting 3 severe hypertension: Systole (in mmHg) - ≥ 180; Diastole (in mmHg) - ≥ 110; Action - seek medical attention

Setting 2 moderate hypertension: Systole (in mmHg) - 160 – 179; Diastole (in mmHg) - 100 – 109; seek medical attention

Setting 1 mild hypertension: Systole (in mmHg) - 140 – 159; Diastole (in mmHg) - 90 – 99; regular monitoring by doctor

High normal: Systole (in mmHg) - 130 – 139; Diastole (in mmHg) - 85 – 89; regular monitoring by doctor

Normal: Systole (in mmHg) - 120 – 129; Diastole (in mmHg) - 80 – 84; self-monitoring

Optimal: Systole (in mmHg) - < 120; Diastole (in mmHg) - < 80; self-monitoring

The bar chart on the display and the scale on the unit show which category the recorded blood pressure values fall into.

If the values of systole and diastole fall into two different categories (e.g. systole in the High normal category and diastole in the Normal category), the graphical classification on the device always shows the higher category; for the example given this would be High normal.

## Saving, displaying and deleting measurements

Whilst the message is being displayed, the volume can be adjusted with the function buttons.

### User memory

The results of every successful measurement are stored together with the date and time. If there are more than 60 measurements, the oldest measurements are lost.

Switch on the device with the Start/stop button.

Select the desired user memory one or two by pressing the function buttons.

### Average values

Press the Memory button. The average value of all saved measured values in this user memory is displayed first.

If you press the Memory button again, the average value of the morning measurements for the last seven days will be displayed (morning: 5 a.m. – 9 a.m., display AM).

If you press the Memory button again, the average value of the evening measurements for the last seven days will be displayed (evening: 6 p.m. – 8 p.m., display PM).

### Individual measured values

If you continue to press the Memory button, the most recent individual measured values are displayed in turn with the date and time

### Delete measured values

The measured values in the corresponding user memory can be deleted by switching on the device, selecting the desired user memory and pressing the function buttons and simultaneously for five seconds.

The device will go directly into standby mode (clock mode).

### Voice output when voice function is active

The device is ready for use. You may start measuring.

User memory 1

User memory 2

Average count:

Systole ... mmHg

Diastole ... mmHg

Heart rate ... beats per minute

According to the WHO guidelines your blood pressure is...

Memory space...

Systole ... mmHg

Diastole ... mmHg

Heart rate ... beats per minute

According to the WHO guidelines your blood pressure is...

All the counts in the memory have been erased.

## Cleaning and storing the unit

Clean your blood pressure monitor carefully using a slightly damp cloth only.

Do not use any cleaning agents or solvents.

Under no circumstances should you hold the unit under water, as this can cause liquid to enter and damage the unit.

If you store the unit, no heavy objects should be placed on top of it. Remove the batteries. The cuff line should not be bent sharply.

## Storage and Care

* The blood pressure monitor is made up of precision electronic components.
* Accuracy of readings and the instrument’s service life depend on careful handling.
* You should protect the device from impact, moisture, dirt, major temperature fluctuations and direct exposure to the sun’s rays.
* Never drop the device.
* Do not use near strong electromagnetic fields, i.e. keep it away from any radio systems and mobile phones.
* Only ever use the cuffs provided with the monitor or original replacement cuffs. Otherwise erroneous results will be recorded.
* Do not press any buttons until the cuff is in position.
* If the instrument is not used for any length of time, we recommend removing the batteries.

## Notes on handling batteries

* If your skin or eyes come into contact with battery fluid, rinse the affected areas with water and seek medical assistance.
* Choking hazard! Small children may swallow and choke on batteries. Store the batteries out of the reach of small children.
* Observe the plus (+) and minus (-) polarity signs.
* If a battery has leaked, put on protective gloves and clean the battery compartment with a dry cloth.
* Protect batteries from excessive heat.
* Risk of explosion! Never throw batteries into a fire.
* Do not charge or short-circuit batteries.
* If the device is not to be used for a relatively long period, take the batteries out of the battery compartment.
* Use identical or equivalent battery types only.
* Always replace all batteries at the same time.
* Do not use rechargeable batteries.
* Do not disassemble, split or crush the batteries.

## Technical specification

* Measurement method: Oscillometric, non-invasive blood pressure measurement on the upper arm.
* Measurement range: Cuff pressure 0 – 300 mmHg, systolic 50-250 mmHg, diastolic 30-200 mmHg, Pulse 30 –180 beats/minute.
* Display accuracy: Systolic ± 3 mmHg, diastolic ± 3 mmHg, pulse ± 5 % of the value shown.
* Measurement inaccuracy: Max. permissible standard deviation according to clinical testing: systolic 8 mmHg /diastolic 8 mmHg.
* Memory: 2 x 60 memory spaces.
* Dimensions : L 145 mm x W 96 mm x H 60 mm.
* Weight Approx.: 264 g (without batteries).
* Cuff size: 22 to 36 cm.
* Permissible operating conditions: +10 °C to +40 °C, ≤ 85 % relative air humidity (non-condensing).
* Permissible storage conditions: -20 °C to +50 °C, ≤ 85 % relative air humidity, 800 –1050 hPa ambient pressure.
* Power supply: 4 x 1.5 V AA batteries.
* Battery life: For approx. 250 measurements, depending on the blood pressure level and/or pump pressure.
* Accessories: Instruction for use, four x 1.5 V AA batteries, storage pouch.
* Classification: Internal supply, IPX0, no AP or APG, continuous operation, type BF applied part.

## Hints and Tips

In the event of errors, the error message E\_ appears on the display.

Error messages can occur when:

* it was not possible to record the pulse (E1)
* you move or speak during the measurement (E2)
* the cuff is fastened too tightly or loosely (E3)
* errors occur during the measurement (E4)
* the pump pressure is higher than 300 mmHg (E5)
* the batteries are almost empty (E6).

In such cases, repeat the measurement. Ensure that you do not move or speak. If necessary, reinsert or replace the batteries.

## How to contact RNIB

Phone: 0303 123 9999

Email: shop@rnib.org.uk

Address: RNIB, Midgate House, Midgate, Peterborough PE1 1TN

Online Shop: shop.rnib.org.uk

Email for international customers: exports@rnib.org.uk

## Terms and conditions of sale

This product is guaranteed from manufacturing faults for 12 months from the date of purchase. If you have any issues with the product and you did not purchase directly from RNIB then please contact your retailer in the first instance.

For hygiene reasons, this product is only returnable if faulty or within 14 days of receipt, in an “as new”, unused condition in original, undamaged packaging. For all returns and repairs contact RNIB first to get a returns authorisation number to help us deal efficiently with your product return.

You can request full terms and conditions from RNIB or view them online.

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CE logo.

This product is CE marked and fully complies with all applicable EU legislation.



Please do not throw items marked with this symbol in your bin. Recycle your electricals and electronic devices **free** at your local recycling centre. Search for your nearest recycling centre by visiting [www.recyclenow.com](http://www.recyclenow.com).

### Why recycle?

Unwanted electrical equipment is the UK’s fastest growing type of waste.

Many electrical items can be repaired or recycled, saving natural resources and the environment. If you do not recycle, electrical equipment will end up in landfill where hazardous substances will leak out and cause soil and water contamination – harming wildlife and human health.

RNIB are proud to support your local authority in providing local recycling facilities for electrical equipment.

To remind you that old electrical equipment can be recycled, it is now marked with the crossed-out wheeled bin symbol. Please do not throw any electrical equipment (including those marked with this symbol) in your bin.

### What is WEEE?

The Waste Electrical or Electronic Equipment (WEEE) Directive requires countries to maximise separate collection and environmentally friendly processing of these items.

### How are we helping?

In the UK, distributors including retailers must provide a system which allows all customers buying new electrical equipment the opportunity to recycle their old items free of charge. As a responsible retailer, we have met the requirements placed on us by financially supporting the national network of WEEE recycling centres established by local authorities. This is achieved through membership of the national Distributor Take-back scheme (DTS).

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