

HARTMANN



Veroval[®]

BPW 26

compact +

EN Wrist blood pressure monitor
Instructions for use

2-35

connect 



Dear customer,

Thank you for choosing a HARTMANN blood pressure monitor. The Veroyal® BPW 26 is a quality product intended for the fully automatic, non-invasive measurement of arterial blood pressure and pulse values on the wrists of adults and is suitable for clinical and domestic use. Requiring no preliminary settings, this device easily and automatically inflates for simple, quick and reliable systolic and diastolic blood pressure and pulse rate measurement.

The monitor also indicates if it detects an irregular heartbeat.

The blood pressure monitor can be connected to a smartphone or tablet via *Bluetooth*®. On the smartphone/tablet you can evaluate the measured values using the Veroyal® medi.connect app.

We wish you the best of health.



Please read these instructions for use carefully before handling the device for the first time. Correctly measuring your blood pressure depends on an appropriate handling of the device. These instructions for use are designed to teach you each step in taking your own blood pressure measurements using the Veroyal® BPW 26. You will be given important and useful hints to ensure that you obtain reliable results for your personal blood pressure profile. Use the monitor in accordance with the information provided in the instructions for use. Please store these instructions carefully and ensure other users can access them. Check the packaging for any damage and that the contents are complete.

Package contents:

- Blood pressure monitor
- 2 x 1.5 V AAA batteries
- Storage box
- Instructions for use with warranty certificate

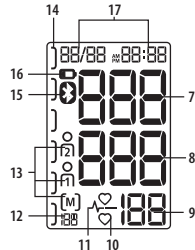
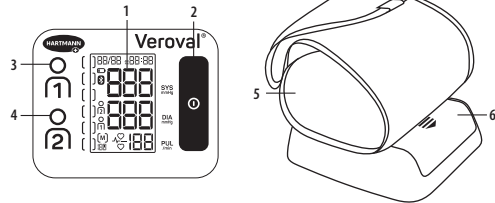
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1. Device and display description

Blood pressure monitor

1. Extra large LCD display
2. START/STOP button
3. Memory button for User 1
4. Memory button for User 2
5. Wrist cuff
6. Battery compartment










Display

7. Systolic blood pressure
8. Diastolic blood pressure
9. Pulse rate
10. Flashes when the device is measuring and the pulse rate is detected
11. Irregular heartbeat symbol
12. Average value (A), morning (AM), evening (PM)/memory space number
13. User memory
14. Traffic light system for your values/progress bar
15. *Bluetooth*® symbol
16. Battery symbol
17. Date and time display

4


2. Important information

Signs and symbols

-  Follow instructions for use
-  Medical Device
-  European conformity
-  Manufacturer
-  Date of manufacture
-  Batch code
-  Catalogue number

 Serial number

 Type number

 **Caution**
Safety note indicating possible damage to the device/accessory or a risk of injury or damage to health

 Temperature limit

 Humidity limitation

 Protection against electric shock (type BF)

5



Unique Device Identifier



Keep dry



Keep away from sunlight



Distributor



Authorised representative in the European Community (EC)



Authorised representative in Switzerland



Importer



Direct current

IP22

Protected against penetration by solid objects with a diameter ≥ 12.5 mm
Protected against water drops falling at an angle of up to 15° to the monitor



Symbol for the marking of electrical and electronic equipment



Cardboard recycling code



Dispose of packaging in an environmentally responsible way



Dispose of packaging in an environmentally responsible way

**Important instructions for use****Intended use:**

The Veroyal® BPW 26 is intended for the fully automatic, non-invasive measurement of arterial blood pressure and pulse values on the wrists of adults and can be used by laypersons and healthcare professionals in clinical and domestic settings.

- Only use the monitor to take blood pressure measurements on the wrist. Do not place the cuff on other areas of the body.
- Only use the monitor on persons whose wrist circumference is within the range indicated for the monitor.
- If measured values are questionable, repeat the measurement.



- Do not leave the monitor unattended near small children or persons who cannot operate it themselves. Swallowing small parts that have detached from the monitor can also result in suffocation.
- Do not under any circumstances carry out blood pressure measurements on newborns, babies or toddlers.
- Do not use the monitor for diagnosis in clinical situations where the patient is in immediate danger.
- Please note that the pressure build-up in the cuff can lead to temporary disruption of medical devices being used at the same time on the same arm.
- The function of the arm on which the cuff is placed may become impaired during inflation.
- If you are carrying out the measurement on another person, please ensure that using the blood pressure monitor does not have a lasting negative effect on the blood circulation.
- People with restricted physical, sensory or mental skills should be supervised by a person responsible for their safety and receive instructions from this person on how to use the device.

- Taking measurements too often within a short time period as well as maintaining continuous cuff pressure can disrupt the blood circulation and cause injuries. Please take a break between measurements. If the monitor malfunctions, remove the cuff from the wrist.
- Always consult your doctor about if and when the blood pressure monitor can be used by pre-eclampsia patients during pregnancy.
- Always consult your doctor about if and when the blood pressure monitor can be used by persons who have had a mastectomy or lymph node clearance.
- If a possible allergic skin reaction occurs on the arm where the cuff is used, discontinue its use and consult a physician.
- Do not use the blood pressure monitor together with a high frequency surgical device.
- The device is not intended for use in vehicles (e.g. ambulances) or helicopters.



Contraindications

- Please do not place the cuff over a wound as this may cause further injuries.
- If an intravenous treatment is being carried out or a venous catheter is inserted in the arm, blood pressure measurements can lead to injury. Never use the cuff on the arm to which these conditions apply.
- If you are prone to hematoma, do not put on a cuff nor carry out a blood pressure measurement.




Important instructions for self-measurement

- Even minor changes in internal and external factors (e.g. deep breathing, stimulants, talking, excitement, environmental factors) can cause fluctuations in blood pressure. This explains why anomalous values are often measured by a doctor or pharmacist.
- Measurement results fundamentally depend on the measurement location and the position of the patient (sitting, standing, reclining). They are also influenced by e.g. physical activity and physiological preconditions of the patient. For comparable values, carry out the measurement in the same location and in the same position.
- Cardiovascular disease can result in erroneous readings or lower the accuracy of the measurement. The accuracy may also be affected if you have very low blood pressure, diabetes, circulatory disorders and arrhythmias, and chills or tremors.



Consult your doctor before measuring your own blood pressure if...

- you are pregnant. Blood pressure may vary during pregnancy. Regular blood pressure monitoring is particularly important if you have high blood pressure, because elevated values may affect foetal development. Always check with your doctor if and when you should measure your own blood pressure, especially if you suffer from pre-eclampsia.
- you have diabetes, liver function disorders or narrowing of blood vessels (e.g. atherosclerosis, peripheral arterial disease) as these may cause anomalous values.
- you have certain blood disorders (e.g. haemophilia) or severe circulatory disorders or are taking blood-thinning medication.
- you are on dialysis or taking anticoagulant medication (anticoagulants), platelet aggregation inhibitors or steroids.
- you wear a pacemaker, which may cause anomalous values. The blood pressure monitor itself does not affect a pacemaker. Please note that the pulse rate displayed is not suitable for checking the frequency of pacemakers.
- you tend to bruise easily and/or are sensitive to pressure pain.
- you suffer from severe heart rhythm disorders or cardiac arrhythmias. Due to the oscillometric measurement method used, incorrect measured values may be obtained in some cases or it may not be possible to measure blood pressure.


- this symbol  appears often, it may indicate heart rhythm disorders. Please consult your doctor in that case. Severe heart rhythm disorders may sometimes produce lead to measurements or reduce the measurement accuracy. Please discuss with your doctor whether taking your own blood pressure is appropriate for you.
- the readings taken by you are for your information only – they are not a substitute for a medical examination. Discuss your measured values with your doctor and never make a medical decision based on these measurements (e.g. medication and their dosages).
- taking your own blood pressure is not a substitute for medical treatment. Do not interpret your measured values yourself and do not use them to self-prescribed treatment. Take readings based on the instructions of your doctor and trust his or her diagnosis. Take medication only as prescribed by your doctor and do not alter the dose on your own accord. Discuss with your doctor the appropriate times to measure your blood pressure.

i An irregular heartbeat is present when the heart rhythm deviates by more than 25 % from the median heart rhythm. The contraction of the heart muscle is stimulated by electrical signals. A disorder of these electrical signals is called an arrhythmia. This may be due to a genetic predisposition, stress, age, lack of sleep, exhaustion or similar factors. A doctor can establish whether an irregular heartbeat is the result of an arrhythmia.

Heart rhythm disorders are disturbances of the normal rate or rhythm of the heartbeat. A distinction should be made between mild and severe heart rhythm disorders. This can only be determined by a special examination carried out by a doctor.

! Power supply (batteries)

- Observe the polarity labels plus (+) and minus (-).
- Only use high-quality batteries (see specification in Chapter 12 'Technical data'). If you use low-quality batteries, we can no longer guarantee the specified number of measurements.
- Never mix old and new batteries or batteries from different manufacturers.
- Remove flat batteries immediately.

- Replace batteries if the battery symbol  remains illuminated.
- Always replace all the batteries at the same time.
- If you do not intend to use the monitor for a longer period of time, you should remove the batteries to prevent possible leakage.

! Information about batteries

- **Choking hazard**
Small children could swallow batteries and suffocate on them. Keep the packaging, batteries and the monitor out of the reach of children.

- **Risk of explosion**
Do not throw batteries into a fire.
- Batteries must not be charged or short-circuited.
- If a battery has leaked, wear protective gloves and clean the battery compartment with a dry cloth. If liquid from a battery cell comes into contact with skin or eyes, clean the affected area with water and seek medical attention if necessary.
- Protect batteries from excessive heat.
- Do not disassemble, open or crush batteries.

! Safety information concerning the device

- This blood pressure monitor is not waterproof.
- This blood pressure monitor is made of high-quality electronic precision components. The accuracy of the measured values and the lifetime of the device depend on careful handling.
- Protect the device from violent shaking, hitting or vibrations and do not let it drop on the ground.
- Do not bend or fold the cuff excessively.
- Never open the device. The device must not be modified or dismantled, and must not be repaired by the user. Repairs may only be carried out by an authorised specialist.
- Do not inflate the cuff when it is not properly applied to the wrist.
- Do not expose the device to extreme temperatures, humidity, dust or direct sunlight as this may cause it to malfunction.
- Keep the packaging, batteries and the device out of reach of children.
- Protect the device and cuff against contact with pets and pests in order to avoid damage.
- Please comply with the storage and operating conditions defined in Chapter 12 'Technical data'. Storing or using the device outside of the specified temperature and humidity range can affect measurement accuracy or the function of the device.

- If the device was not stored within the minimum/maximum permissible storage conditions, a waiting period of at least 2 hours must be observed before using it under the specified operating conditions (Chapter 12 'Technical data') or an ambient temperature of approx. 20 °C.
- Do not use the device in explosive environments with inflammable gases or concentrated oxygen.

! Instructions regarding electromagnetic compatibility

- The device is suitable for use in all environments listed in these instructions for use, including domestic environments.
- It may only be possible to use the device to a limited extent in the presence of electromagnetic disturbances. This could result in issues such as error messages or the failure of the display/device.
- Avoid using this device directly next to other devices or stacked on top of other devices, as this could lead to faulty operation. However, if it is necessary to use the device in the manner described above, this device and the other devices must be monitored to ensure that they are working properly.
- The use of accessories other than those specified or provided by the manufacturer of this device may result in increased electromagnetic emissions or a decrease in the device's electromagnetic immunity and lead to faulty operation.

- Failure to comply with the above can impair the performance characteristics of the device.
- Do not use the device near strong electromagnetic fields and keep it away from radio equipment and mobile phones. Portable and mobile high-frequency and communication devices, such as telephones and mobile phones, can impair the functionality of this electronic medical device. Therefore keep a minimum distance of 30 cm.
- Further documentation in accordance with the electromagnetic compatibility standard can be requested from the manufacturer or [found on our website \(www.veroval.info\)](http://www.veroval.info)



Instructions for the measurement function check

Every Veroval® device has been carefully tested by HARTMANN for measurement accuracy and has been developed with a view to a long service life. We recommend carrying out a metrological check every 2 years for **devices in professional use**, for example, in pharmacies, medical practices or hospitals. Please also observe the national regulations specified by the legislator. Metrological checks may only be carried out by the competent authorities or authorised maintenance providers against cost reimbursement.

Instructions for calibration mode

A functional check of the device can be carried out on a person or using a suitable simulator. A metrological check involves testing for leaks in the pressure system and potential deviations in the pressure reading. Remove at least one battery to switch to calibration mode. Now hold the START/STOP button down and re-insert the battery. Release the button after a few seconds and, after a few moments, 'FAC' will appear on the display. 'PS-' and 'i' will then appear. Press the START/STOP button briefly. 'i' and 'i' will appear on the display. Instructions on the metrological check will be supplied by HARTMANN upon request to the competent authorities or authorised maintenance providers.

Disposal information

- This product (monitor and cuff) is subject to the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment and is marked accordingly. Never dispose of electronic equipment in your household waste. Please obtain information about your local regulations on the proper disposal of electrical and electronic products. This protects the environment and human health. 
- To protect our environment, empty batteries must not be disposed of in household waste. Please comply with the relevant waste disposal regulations or use public collection points, recycling points or electronic retailers. 

3. Blood pressure information

Two values must be measured to determine blood pressure:

- Systolic (upper) blood pressure, which is produced when the heart contracts and pumps blood into the blood vessels.
- Diastolic (lower) blood pressure, which is produced when the heart is expanded and fills with blood again.
- Blood pressure values are displayed in mmHg.

For improved assessment of the results, a traffic light system is located on the left side of the Veroval® BPW 26 which is a direct result indicator, making it easier to categorise the measured value. The World Health Organization (WHO) and the European Society of Cardiology (ESC) & European Society of Hypertension (ESH) have developed the following summary for classifying blood pressure values:

Results indicator	Evaluation	Systolic pressure		Diastolic pressure
Red	Grade 3 hypertension	above 179 mmHg	and/or	above 109 mmHg
Orange	Grade 2 hypertension	160–179 mmHg	and/or	100–109 mmHg
Yellow	Grade 1 hypertension	140–159 mmHg	and/or	90–99 mmHg
Green	High normal	130–139 mmHg	and/or	85–89 mmHg
Green	Normal	120–129 mmHg	and/or	80–84 mmHg
Green	Optimal	up to 119 mmHg	and	up to 79 mmHg

Classification of blood pressure taken in practice and definition of hypertension grade (source: 2018 ESC/ESH guidelines)

- Established hypertension (high blood pressure) is defined as having a systolic value of at least 140 mmHg and/or a diastolic value of at least 90 mmHg.
- In general, low blood pressure (hypotension) is defined as a systolic value below 105 mmHg and a diastolic value of 60 mmHg. However, the threshold between normal and low blood pressure (hypotension) is not as accurately specified as the threshold for high blood pressure (hypertension). Hypotension may be associated with symptoms such as dizziness, fatigue, tendency to faint, visual disturbances or high pulse rate. In order to ensure that hypotension or the corresponding symptoms are not attendant symptoms of serious illness, a doctor should be consulted in case of doubt.



Constantly elevated blood pressure significantly increases the risk of developing other disorders. Physical consequences of high blood pressure, e.g. heart attack, stroke and organ damage, are the most common causes of death worldwide. Daily blood pressure monitoring is therefore an important measure that can help to protect you from these risks. You should discuss this with your doctor, especially if you have frequently elevated or borderline blood pressure values (see Chapter 3 'Blood pressure information'). The Veroval[®] medi. connect app lets you share your readings easily with your doctor by email or as a print-out (see chapter 7 'Transferring measured values via Bluetooth[®] to the Veroval[®] medi.connect app'). Your doctor will initiate appropriate measures.

4. Preparing the measurement

Inserting/changing the batteries

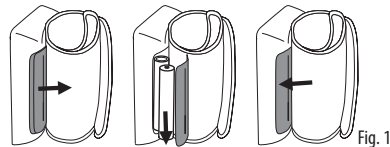




Fig. 1

- Open the battery cover on the bottom of the device (see Fig. 1). Insert the batteries (see Chapter 12 - 'Technical data'). Ensure correct polarity (+ and -) when inserting the batteries. Close the battery lid. 12 h or 24 h flash on the display. Set the date and time as described below.
- If the 'Change battery' symbol  and  are permanently illuminated, blood pressure can no longer be measured and you need to replace all the batteries.

Setting the date, time and Bluetooth[®]






It is very important that you set the date and time correctly. This is the only way to save your measured values correctly, with the date and time, for subsequent retrieval. This is also important for correctly using all the memory and analysis functions.

We recommend activating automatic Bluetooth[®] data transfer if you want to use the Veroval[®] medi.connect app.

- To switch to settings, reinsert the batteries or press the START/STOP button  for 5 seconds. Proceed as follows:

Hours




The hour format flashes on the display.


- Select the desired hour format using the Save buttons  /  and confirm using the START / STOP button .



Date

The display shows the year (a), the month (b) and the day (c).

- Depending on the display, use the Save buttons  /  to select the year, the month or the day and confirm using the START/STOP button .

 If the 12-hour format is selected, the month is displayed before the day.



(a)



(b)



(c)






(d)



(e)


Bluetooth®

The Bluetooth® symbol  and **bt** is shown in the display.

- Use the memory button  or  to select whether automatic Bluetooth® data transfer is activated (Bluetooth® symbol and **bt** is displayed, **ON** is flashing) or deactivated (Bluetooth® symbol and **bt** is displayed, **OFF** is flashing) and confirm with the START/STOP button .



The device switches off automatically once all data have been set.

 The measured values will remain in the memory when the batteries are changed. The date and time settings will also be saved.

5. Measuring your blood pressure**The 10 golden rules of blood pressure measurement**

Many factors play a role in blood pressure measurement. These ten general rules help you to correctly carry out the measurement.



- Rest for about 5 minutes before measuring your blood pressure. Even working at your desk increases blood pressure by an average of about 6 mmHg systolic and 5 mmHg diastolic.



- Do not consume any nicotine or caffeine up to one hour before measurement.



- Do not measure when you have a strong urge to urinate. A full bladder can increase blood pressure by about 10 mmHg.



- Measure your blood pressure on a completely bare wrist and in a comfortable upright seated position. The blood circulation must not be constricted by a rolled-up sleeve, for example.



- If you are using a wrist monitor, hold the cuff at heart height during measurement. The cuff of an upper arm monitor is naturally positioned at the correct height.



- Please do not talk or move when measuring your blood pressure. Talking increases values by about 6–7 mmHg.



7. Wait for at least one minute between each measurement so that the blood vessels are ready, by removing the pressure applied to them.



8. The date and time are conveniently and easily recorded with the measured values as well as any medications you have taken, with the Veroyal® medi.connect app.



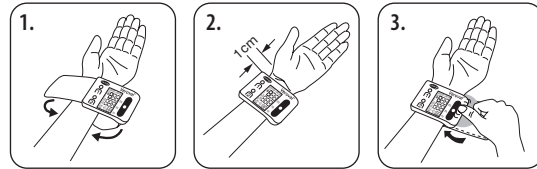
9. Take measurements regularly. Even if your values have improved, you should continue to check them for monitoring purposes.



10. Always take measurements at the same time of day. Because a person has about 100,000 different blood pressure values every day, individual measurements are not meaningful. Only regular measurements taken at the same time each day over a longer period of time give a meaningful assessment of blood pressure values.

Applying the blood pressure monitor

- Blood pressure must be measured on a bare wrist. The cuff should not be positioned over protruding wrist bones as it will not fit evenly around the wrist.
- The monitor has a fixed connection to the cuff and the cuff must not be detached from the monitor.
- Now pull the cuff over the wrist. The blood pressure monitor is positioned centrally on the inside of the wrist approx. 1–1.5 cm from the crease (carpus) of the wrist.



The cuff should fit firmly, but not tightly. Please note that incorrect positioning of the cuff may produce an incorrect measurement. Use the Veroyal® BPW 26 only with the specially approved cuff supplied. It has a cuff circumference of 12.5–21 cm. Using a Veroyal® upper arm blood pressure monitor is recommended for wrist circumferences larger than that, because the accuracy of the blood pressure readings cannot be guaranteed otherwise.



This innovative Veroyal® device with Comfort Air Technology ensures comfortable measurement. Inflation to 190 mmHg is required for the first measurement. For subsequent measurements, inflation pressure is adjusted individually based on the blood pressure values recorded previously. This allows for more comfortable measurements.

Carrying out the measurement

- You should take your blood pressure in a quiet place, in a relaxed and comfortable seated position.
- Measurement can be taken on the right or left wrist. We recommend performing the measurement on the left wrist. Over the long term, the wrist giving higher readings should be used for blood pressure monitoring. However, if there is a very clear difference between readings on either wrist, you need to check with your doctor which wrist you should use for the measurement.

- Always take measurements on the same wrist.
- We recommend that you measure your blood pressure while sitting with your back against the back of the chair. Place both feet flat on the floor next to each other. Do not cross your legs. Be sure to support your arm and bend it. Always ensure that the cuff is positioned at the level of the heart. If not, measurements may vary considerably. Relax your arm and the palm of your hand.
- Take measurements on a bare wrist and while sitting upright.
- Do not measure your blood pressure after taking a bath or playing sports.
- Do not eat, drink or exercise for at least 30 minutes before the measurement.
- Please wait for at least one minute between two measurements.





Starting the measurement

i The Veraval® BPW 26 offers you two measurement methods. Depending on the situation and your preference, you can choose between regular single measurement (standard mode) or fully automatic multiple measurement (expert mode).





Standard mode (Single measurement)

- Do not start a measurement until you have put the device on.
- To start a single measurement, press the START/STOP button **1** once. The appearance of all display segments, followed by the time and date, indicates that the device is carrying out an automated check and is ready for use.
- Check the display segments for completion (see Chapter 1 'Device and display description').
- After about 0.5 seconds, the cuff inflates automatically. If this inflation pressure is insufficient or if interference is experienced during measurement, the device will increase pressure to the appropriate higher pressure value in increments of 40 mmHg. During inflation, the results indicator on the left of the display also increases at the same time.

! Do not speak or move for the duration of the measurement.

- As the cuff pressure is released, the heart symbol  flashes and the the dropping pressure in the cuff is shown on the display.
- After the measurement is complete, the systolic and diastolic blood pressure as well as the pulse rate (see Fig. 1) are shown simultaneously.
- If this symbol  is shown in the display, the device has detected an irregular heartbeat during the measurement. However, the measurement may also have been disrupted by body movement or speaking. It is best to repeat the

measurement. If you see this symbol regularly when measuring your blood pressure, we recommend that your doctor checks your heart rhythm.

- In addition to the measured values, the time, date, associated user memory  or  are shown. While the result of the measurement is displayed, you can assign the values to the corresponding user memory by pressing the  or  button. This assignment can be made for 10 seconds if *Bluetooth*® transfer is activated in the device settings. After this time the device starts the *Bluetooth*® data transfer automatically. If you do not assign the values to the corresponding user memory, the measured values are automatically stored in the user memory shown on the display.
- You can use the result indicator on the left in the display to classify your measurement result (see table in Chapter 3 'Blood pressure information').

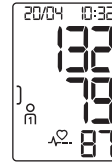



Fig. 1

Expert mode (Multiple Measurement)

- In expert mode, three blood pressure measurements are automatically taken in succession and the average value of the three measurements is displayed at the end.
- To start the fully automatic multiple measurement, press and hold the START/STOP button **1** for 2 seconds until '-3-' appears in the display.
- The time interval between the measurements is 60 seconds and is shown in the display as a countdown.




While the countdown is running, keep the cuff attached and remain seated at rest.


- The info at the top left of the display shows you which of the measurements is currently running. The results of the individual measurements are not displayed.
- In addition to the final result, the  symbol and the date are displayed alternately at the top in expert mode. This indicates that the value is calculated from the average of three measurements.





The expert mode was developed in accordance with the recommendations of the international hypertension societies and the latest scientific findings. With regular use, it provides even better and more reliable blood pressure values for your personal health care and individual blood pressure monitoring.

Automatic Bluetooth® data transfer after measurement

- If automatic *Bluetooth*® data transfer is activated, the *Bluetooth*® symbol  flashes on the display. The blood pressure monitor now attempts to connect to the Veroval® *medi.connect* app for approx. 2 minutes. The Veroval® *medi.connect* app must be active to allow data transfers.

As soon as a connection is established, all measurement data is automatically transferred to the app. During transmission the *Bluetooth*® symbol  is displayed permanently and the results indicator on the left of the display runs from bottom to top (see Fig. 2).

If you press the START/STOP button  in the meantime, the transfer is cancelled and the device turns off. Once all data has been transferred successfully, the result indicators are displayed permanently (see Fig. 3) and the device switches off. If a connection to the app cannot be established after 2 minutes, the *Bluetooth*® symbol  goes off and the blood pressure monitor switches off automatically after 5 seconds.


- To switch off the device, press the START/STOP button , otherwise the device switches off automatically after 2 minutes.



Fig. 2

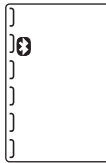









Fig. 3

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If you wish to stop the measurement for any reason, simply press the START/STOP button . The inflation or measurement process is interrupted and cuff pressure is automatically released.

6. Memory function**User memory**

- The Veroval® BPW 26 stores up to 100 measurements in each user memory. The most recent measurement is always saved together with the date and time in memory slot no. 1 and all older saved values are moved up one memory slot. Once all memory slots are occupied, the oldest value is deleted.
- The device has two memory buttons,  and , that are used to record the measurement results for two separate users.  represents the measured values for the first user,  represents the measured values for the second user. After the measurement is finished, you can assign the measured value to the respective person by pressing  and . This assignment can be made for 10 seconds. If you do not assign them, the measured value is automatically stored in the user memory that is currently displayed.
- The time of the measurement is also saved, along with each of the blood pressure values, to enable the morning and evening averages to be determined. The time saved in the device must therefore be set correctly to the actual time (see Chapter 4, section 'Setting the date, time and *Bluetooth*®').










Veroval® BPW 26 features the following measurement data storage functions (corresponding to the guidelines of the European Society of Hypertension (ESH)):

- Individual measured value memory
- Average value of all measured blood pressure values per user
- Average value of the morning values
- Average value of the evening values



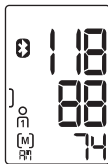
Veroval® BPW 26 follows the recommendations of the European Society of Hypertension (ESH) and differentiates between measurements taken in the morning and those taken in the evening. This distinction is medically relevant because blood pressure changes over the course of the day. With this information, your doctor is more likely to identify the right treatment for you if you should need medicinal treatment for high blood pressure.

23

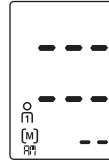
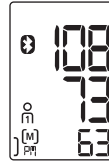
- The memory recall is activated by pressing the  or  button with the device switched off. For values saved in the first user memory, press the  button, for the second user memory press the  memory button.
- If automatic data transfer is activated, the *Bluetooth*® symbol  flashes on the display. The blood pressure monitor now attempts to connect to the Veroval® *medi.connect* app for approx. 2 minutes. The Veroval® *medi.connect* app must be active to allow data transfers. As soon as a connection is established, all measurement data is automatically transferred to the app.
- During transmission the *Bluetooth*® symbol  is displayed permanently and the results indicator on the left of the display runs from bottom to top. If you press the START/STOP button  in the meantime, the transfer is cancelled and the device turns off.
- Once all data has been transferred successfully, the result indicators are displayed permanently and the device automatically switches off after 30 seconds.

Average values

- After selecting the respective user memory, the corresponding symbol M or M and an 'A' appear on the display. The average value of all the data stored for that particular user memory is displayed.
- By pressing the M button again (or the M button if you are in user memory 2), the average values for all morning measurements 'AM' (00:00 to 11:59) for the past 7 days (including the current day) appear.

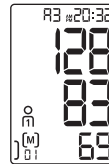
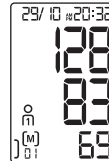


- By pressing the M button again (or the M button if you are in user memory 2) the average values for all evening measurements 'PM' (12:00 to 23:59) for the past 7 days (including the current day) appear.
- If there is no morning or evening value for the past 7 days in the memory, dashes will be shown on the display instead of the morning or evening average values. If no values at all are stored in the memory, then dashes will also be displayed instead of the overall average value.



Individual measured values

- By pressing the M button again (or the M button if you are in user memory 2), all memory values can be retrieved one after the other, starting with the most recently measured value.
- In order to distinguish a single measurement from a multiple measurement, the 'R3' symbol and the date are displayed alternately for a value that was measured in expert mode.



- If an irregular heartbeat was detected during measurement, that information A is also stored and displayed when the measured value is retrieved from the device's memory along with the systolic and diastolic blood pressure readings, pulse rate, time, date and year.
- You can cancel memory recall at any time by pressing the START/STOP button M . Otherwise, the device will switch off automatically after a few seconds.
- Even if the power supply is interrupted, e.g. when changing the batteries, the stored values will still be available.

Deleting saved readings

All data saved for each user can be deleted separately for user memory M and user memory M . To do so, press the button of the corresponding user memory (M or M). The average value 'A' is then shown on the display.

Press and hold the user memory button for 5 seconds. 'CL 00' appears on the display. All data in the selected user memory are now deleted. If you release the button early, no data will be deleted.

7. Transferring measured values via *Bluetooth*® to the Veroval® medi.connect app

You can use the Veroval® BPW 26 with your smartphone or tablet. You can transfer your data to your smartphone/tablet quickly and easily via *Bluetooth*® using the Veroval® medi.connect app.

Within the app, you can select different time periods and automatically receive perfectly prepared charts of your values. With a few clicks, all results can be printed or sent to the doctor via email.

Compatible devices

The Veroval® medi.connect app is designed and optimized for iOS and Android smartphones and tablets that support *Bluetooth*® 4.0 and run the following operating systems:

- Apple iOS 10 and higher
- Android 5.0 and higher



Android and iOS devices have subtle differences in their electronic components which can affect functionality, such as *Bluetooth*® connectivity. Due to the variation between device manufacturers, HARTMANN cannot guarantee optimal performance of the Veroval® medi.connect app across all available devices.

A detailed list of compatible devices is available on our website at www.veroval.info

Download and install the Veroval® medi.connect app

- To be able to use the Veroval® BPW 26 with the app, you must download the app and install it on your smartphone or tablet.
- Download the Veroval® medi.connect app from the Apple App Store or Google Play Store. You can also download the app from our website www.veroval.info. To avoid lengthy download times and any associated costs, it is recommended to use a WiFi connection for the download.
- Install the app by following the step-by-step instructions in the Veroval® medi.connect app.

Connect the Veroval® BPW 26 to the app

Step 1: Make sure that you activated *Bluetooth*® on the blood pressure monitor (see Chapter 4, section '*Bluetooth*®').

Step 2: Make sure that you activated *Bluetooth*® on your smartphone/tablet and that you have installed the Veroval® medi.connect app.

Step 3: Perform a blood pressure measurement (see Chapter 5 'Measuring your blood pressure'). The result is shown in the display and the *Bluetooth*® symbol flashes. Do not switch off the blood pressure monitor.

or **Step 3:** Data transfer at a later point: Go to memory mode (see Chapter 6, section 'User memory'). Select the desired user memory.

Step 4: Open your Veroval® medi.connect app on your smartphone/tablet while the values on the blood pressure monitor are still displayed.

Step 5: The *Bluetooth*® transfer starts automatically.



When connecting for the first time, a randomly-generated six-digit PIN code is displayed on the device, and at the same time an input field appears on the smartphone/tablet in which you must enter this six-digit PIN code. After successfully entering the code, the device will be connected to your smartphone/tablet.




If your smartphone or tablet has a protective cover, remove this to ensure that there is no interference during the transfer.

The Veroval® medi.connect app is not intended for medical or commercial use and is not a medical device in accordance with Regulation (EU) 2017/745.

The values displayed are purely for visualisation purposes and must not be used as a basis for therapeutic treatments. The software is not part of a diagnostic-medical system.

8. Explanation of error messages

Error	Possible causes	Remedy
Monitor cannot be switched on	Batteries are missing, positioned incorrectly or flat.	Check the batteries. If necessary, replace with two new identical batteries.
E1	The measuring signals could not be detected at all or read correctly. This can be caused by applying the cuff incorrectly, by moving or talking, or by a very weak pulse.	Check that the cuff has been positioned correctly. Do not talk or move during measurement.
E2	Incorrect measurement due to movement.	Do not talk or move during measurement.
E3	The cuff was not applied correctly.	Check that the cuff has been positioned correctly.
	Air is released too fast or too slowly during the measuring procedure. The cuff could have become detached or loosened. Movement during the measuring procedure could also be the reason. Error during air release or unusual reduction in pressure.	Check whether the cuff has been positioned correctly. Do not move during the measurement.
E4	Error during measurement.	Contact customer service if this error message appears (see Chapter 11).

Error	Possible causes	Remedy
E5	The inflation pressure is higher than 300 mmHg. The pressure is released automatically.	Please rest for at least 1 minute, then take the measurement again (see Chapter 5 'Measuring your blood pressure').
E6	A system error has occurred.	Contact customer service if this error message appears.
E7	The data could not be sent via <i>Bluetooth</i> ®.	Proceed as described in Chapter 7 'Transferring measured values via <i>Bluetooth</i> ® to Veroval® medi.connect app'.
	If the battery symbol is permanently displayed, the batteries are empty and must be replaced.	Insert new batteries of the same type (AAA/LR03). Then check the date/time and, if necessary, reset them (see Chapter 4 'Preparing the measurement').
Implausible measurements	Implausible measurements often occur if the device is handled incorrectly or if mistakes were made during the measurement process.	Please refer to Chapter 5 'Measuring your blood pressure' as well as the safety information. Then repeat the measurement. If implausible values still occur: please contact your doctor!

- Switch the monitor off if an error message appears.
- Check for all possible causes and follow the 10 golden rules (Chapter 5 'Measuring your blood pressure') as well as the instructions for self-measurement from Chapter 2 'Important information'.
- Relax for 1 minute and then repeat the measurement.

9. Monitor maintenance

- Only use a soft, damp cloth to clean the monitor. Please do not use thinner, alcohol, detergents or solvents.
- The cuff can be cleaned carefully using a slightly damp cloth and mild soap solution. Do not completely immerse the cuff in water.
- It is recommended to clean and disinfect the cuff regularly or after each use, especially when used by several users, to prevent infection. The cuff should be disinfected, particularly on the inside, by wiping with a disinfectant. Use a disinfectant that is compatible with the cuff materials, e.g. 75 % ethanol or isopropyl alcohol. Other suitable specific disinfectants are listed on our website (Chapter 11).
- Keep the monitor in the storage box to protect it from external influences.

10. Warranty conditions

- We offer a 3-year warranty on this high-quality blood pressure monitor from the purchase date and in accordance with the conditions listed below.
- Warranty claims must be made during the warranty period. The purchase date must be documented by an appropriately completed and stamped warranty certificate or proof of purchase.
- Within the warranty period, HARTMANN will replace or repair free of charge any faulty device components caused by material faults or manufacturing errors. This does not extend the warranty period.
- For local warranty conditions, please consult the local warranty certificate.
- This device is solely intended for the purpose stated in these instructions for use.
- The manufacturer is not liable for damage or injuries resulting from improper handling, use or unauthorized interference. Accessory parts that are subject to wear and tear (batteries, cuffs, etc.) are excluded from the warranty. Claims for compensation are limited to the value of the product; compensation for consequential damage or injuries is expressly excluded.

12. Technical data

Model	Veroval® BPW 26
Type	BPM27B
Measuring method	Oscillometric
Cuff range	0 - 300 mmHg
Measuring range	Systolic (SYS): 50 - 280 mmHg Diastolic (DIA): 30 - 200 mmHg Pulse: 40 - 199 pulse beats per minute Displaying of correct values outside the measuring range cannot be guaranteed.
Display unit	1 mmHg
Technical measurement accuracy	Cuff pressure: ± 3 mmHg Pulse: ± 4 % of the displayed pulse rate

- In warranty cases, please send the monitor with cuff and, if applicable, the power supply unit, together with the fully completed and stamped warranty certificate or purchase receipt directly or via your dealer to the Customer Services department of your country.

11. Contact information for customer enquiries

ZA – HARTMANN South Africa Epsom Avenue, Northriding,
2169 Johannesburg
www.veroval.info
Tel. +27 860 4278 6266
phzahelpdesk@hartmann.info

If necessary, please contact us at the relevant address listed at the end of the instructions for any questions regarding initial startup, use and maintenance of the device, or to report an unexpected operating malfunction or incident.
For a patient/user/third party in the European Union and in countries with identical regulatory regime (Regulation (EU) 2017/745 on Medical Devices); if, during the use of this device or as a result of its use, a serious incident has occurred, please report it to the manufacturer and/or its authorized representative and to your national authority.

Clinical measuring accuracy	Complies with the requirements of EN ISO 81060-2 and IEC 80601-2-30; Korotkoff validation method: Phase I (SYS), Phase V (DIA)
Operating mode	Continuous mode
Nominal voltage	DC 3V
Expected service life	10,000 measurements
Power supply	2 x 1.5 V alkaline manganese (AAA/LR03) batteries
Battery capacity	Approx. 800 measurements
Protection against electric shock	Internally powered ME device Application part: Type BF
Protection against harmful ingress of water or solid materials	IP22
Inflation pressure	About 190 mmHg for first measurement
Automatic switch-off	2 minutes after measurement/otherwise 30 sec.

Cuff	For wrist diameters of 12.5 - 21 cm
Memory capacity	2 x 100 measurements with average value of all measurements and morning/evening average value of the last 7 days
Operating conditions	Ambient temperature: +10 °C to +40 °C Relative humidity: ≤85 %, non-condensing Air pressure: 700-1060 hPa
Storage / transport conditions	Ambient temperature: -20 °C to +50 °C Relative humidity: ≤85 %, non-condensing Air pressure: 700-1060 hPa
Serial number	On the rating label
Reference to standards	IEC 60601-1; IEC 60601-1-2 (In accordance with CISPR 11, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-8)
Weight	Approx. 115 g (without batteries)

Dimensions	Approx. 70(L) x 85(W) x 24(H) mm
Data transfer	2402 MHz – 2480 MHz frequency band Transmission power max. +3 dBm The blood pressure monitor uses <i>Bluetooth</i> ® low energy technology Compatible with <i>Bluetooth</i> ® ≥ 4.0 smartphones/ tablets

Legal requirements and guidelines

- The Veroval® BPW 26 conforms with the Regulation (EU) 2017/745 of the European Parliament and of the Council on medical devices, as well as the respective national provisions, and bears the CE mark.
- The device complies, for example, with the European standard EN IEC 80601-2-30.
- This product is subject to special precautionary measures with regard to electromagnetic compatibility.
- Clinical testing of measuring accuracy was performed in accordance with the European Standard EN 81060-2.
- Beyond the statutory requirements, the device has been clinically validated by the ESH-IP2 Protocol of the European Society of Hypertension (ESH).
- We hereby confirm that this product complies with the European RED Directive 2014/53/EU. The CE Declaration of Conformity for this product can be found under: www.veroval.info



Warranty certificate

Veroval[®] BPW 26

compact +

Wrist blood pressure monitor

Purchase date

Serial number (see rating label)

Reason for complaint



Dealer's stamp

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