

Blood Pressure Machine

Description

A **Blood Pressure Machine**, also known as a **Blood Pressure Monitor**, is a medical device used to measure **systolic pressure**, **diastolic pressure**, and **pulse rate**.

Digital BP machines are widely used in hospitals, clinics, and homes due to their **accuracy**, **ease of use**, and **quick readings**.

They typically include an **inflatable cuff**, a **digital display unit**, and an **automatic inflation system**.

Specification

- **Product Name:** Digital Blood Pressure Machine
- **Category:** Medical Diagnostic Device
- **Measurement Method:** Oscillo metric method (automatic)
- **Display:** Large LCD screen with systolic, diastolic, and pulse readings
- **Power Source:** AA batteries or USB adaptor (model dependent)
- **Cuff Size:**
 - Standard Adult: 22–32 cm
 - Large Adult: 32–42 cm (optional)
- **Accuracy:**
 - Pressure: ± 3 mmHg
 - Pulse: $\pm 5\%$
- **Memory Storage:** 60–200 readings depending on model
- **Indicators:**
 - Irregular heartbeat detection
 - Movement error
 - Battery low indicator
- **Units:** mmHg for pressure, BPM for pulse
- **Auto Shut-Off:** Yes
- **Material:** ABS body with nylon cuff

Types

- **Upper Arm Digital BP Machine:** Most accurate, clinical standard
- **Wrist BP Machine:** Portable and compact (less accurate if used incorrectly)
- **Manual BP Machine (Sphygmomanometer):** For trained professionals
- **Semi-Automatic BP Machine:** Manual inflation + digital reading

Material

- **ABS Plastic Body:** Lightweight, durable
- **Nylon Cuff:** Soft, adjustable, skin-friendly
- **Velcro Fastener:** Secure cuff placement
- **Rubber Tubing:** Flexible and airtight

Sizes & Shapes

- **Machine Shape:** Rectangular digital monitor
- **Cuff Size:**
 - Small
 - Standard adult
 - Large adult
 - Paediatric (optional)
- **Display Size:** 2.5–4.5 inches depending on model

Usage

- Used to measure blood pressure in adults and children
- Suitable for hospitals, clinics, home monitoring, and geriatric care
- Helps in monitoring hypertension, hypotension, and cardiac conditions
- Recommended for daily or routine BP monitoring for chronic patients

Handling

- Sit in a relaxed position before measurement
- Wrap cuff securely around the upper arm at heart level
- Do not speak or move during measurement
- Keep arm supported on a table
- Wait 1–2 minutes before taking repeated readings

Sterilisation & Cleaning

- Wipe machine body with soft damp cloth
- Do not immerse device in water
- Clean cuff with mild disinfectant (non-alcoholic preferred)
- Avoid harsh chemicals that damage the screen

Advantages

- Easy to use for all age groups
- Quick and accurate readings
- Portable and lightweight
- Memory function for tracking readings
- Detects irregular heartbeats
- Auto inflation for convenience

Disadvantages

- Accuracy may reduce if cuff size is incorrect
- Wrist models are more sensitive to position errors
- Battery-dependent unless USB powered
- Movement affects reading accuracy

Precautions

- Always choose correct cuff size
- Sit calmly for 5 minutes before checking
- Avoid caffeine, exercise, or smoking 30 minutes before measuring
- Keep device away from extreme heat or moisture
- Do not use on injured or swollen arms
- Replace batteries regularly for accurate readings

HS & HSN Codes

- **HS Code:** 9018.19 – Blood pressure monitors
- **HSN Code (India):** 9018 90 99 – Other medical diagnostic equipment (commonly used for BP machines)

Frequently Asked Questions

Q1. How accurate is a Digital Blood Pressure Machine (DBPM)?

High-quality models provide accuracy within ± 3 mmHg for pressure and $\pm 5\%$ for pulse.

Q2. Can it be used at home safely?

Yes, digital monitors are designed for easy and safe home use.

Q3. How often should BP be measured?

For hypertensive patients, once or twice daily or as advised by a doctor.

Q4. Does cuff size matter?

Yes, the wrong cuff size can give incorrect readings.

Q5. Can a Digital BP Machine detect irregular heartbeats?

Many models include **Irregular Heartbeat Detection (IHB)** technology.