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or visit **www.trister.com**

Catalog No.: TS 305BM EIM 21/04

trister®

DIGITAL BLOOD PRESSURE MONITOR

Model: **TS 305BM**



Please read this instruction manual thoroughly before using the device.
Kindly retain this document for future reference.

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Thank you for buying the Trister TS 305BM Digital Blood Pressure Monitor. The unit has been constructed siding reliable circuit and durable materials. Used properly, this unit will provide
years of satisfactory use.

This device is intended for non - invasive measuring an adult individual's systolic, diastolic blood pressure and heart rate using the oscillometric method. The device is not intended for use on infants and children. The device is designed for home or clinical use. All values can be read out in one LCD DISPLAY.
Measurement position is on adult upper arm only.

Please read this manual thoroughly before using the unit. Please retain this manual for future reference. For specific information about your blood pressure please CONSULT YOUR DOCTOR.

To avoid risk and damage follow all warning precautions.
Operate unit only as intended. Read all instructions prior to use.

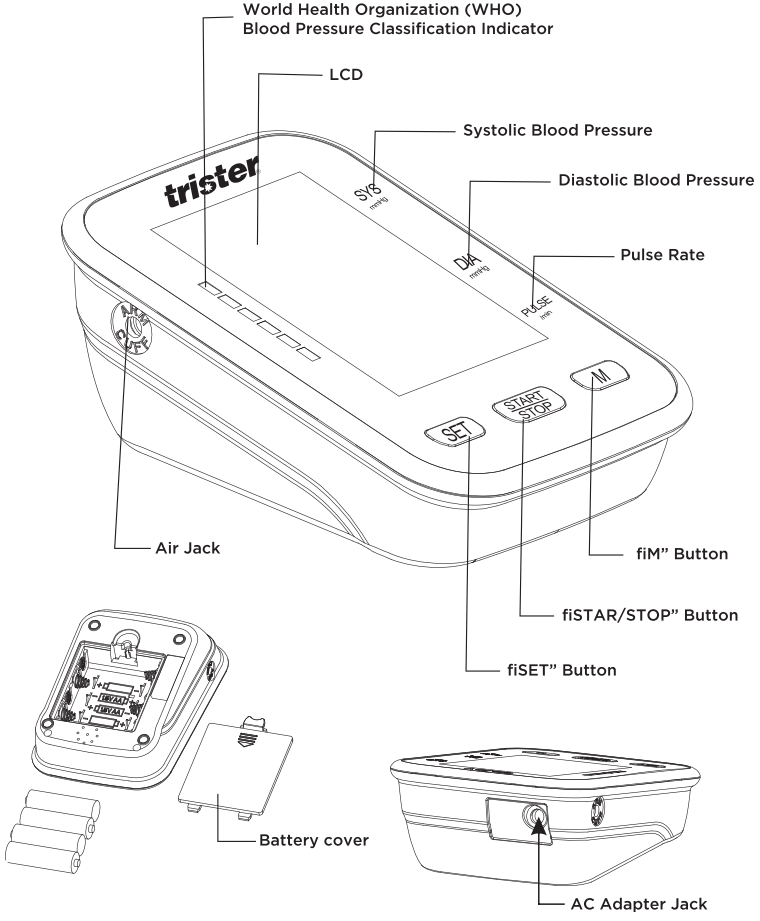
WARNING SIGNS AND SYMBOLS USED	
	Caution
	Mandatory
	Prohibited
	Type BF Equipment
	Consult Instruction for Use
SN	Serial Number
	Discard the used product to the recycling collection point According local regulations

Caution	
Individuals with serious circulation problems may experience discomfort. Consult your physician prior ti use.	
Contact your Physician if test results regularly indicate abnormal readings. Do not attempt to self-treat these symptoms without consulting your physician first.	
Product is designed for its intended use only. Do not misuse in any way.	
Product is not intended for infants or individuals who cannot express their intentions.	
Do not disassemble or attempt to repair.	
Do not use cell phones and other devices, which generate strong electrical or electromagnetic fields, near the device, as they may cause incorrect readings and interference or become interference source to device.	
Only use a recommended AC adapter complying with EN 60601-1 and En 60601-1-2 (see page6). An unauthorized adapter may cause fire and electric stock.	

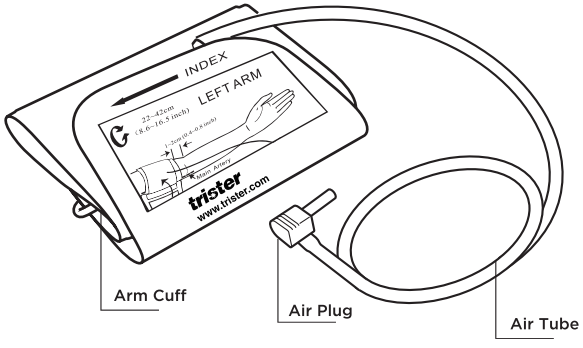
Battery Precautions
Do not mix new and old batteries simultaneously.
Replace batteries when Low Battery Indicator ""appears on screen.
Be sure battery polarity is correct.
Do not mix battery types. Long - life alkaline batteries are recommended.
Remove batteries from device when not in operation for more then 3 months.
Dispose batteries properly; observe local laws and regulations.

Unit illustration

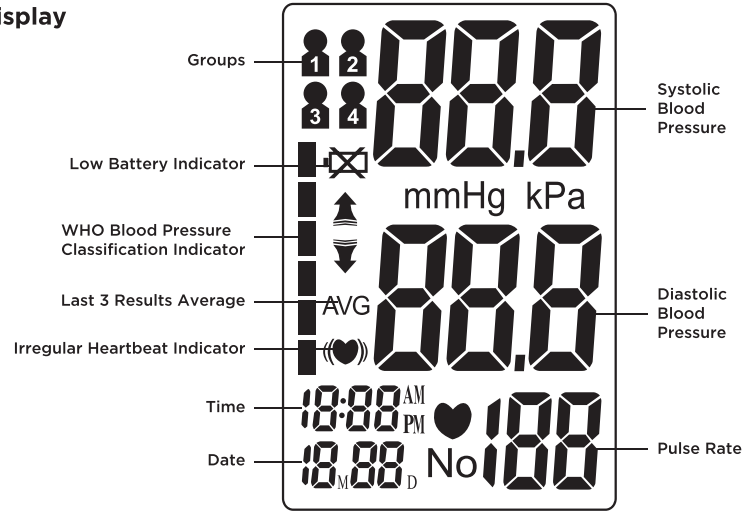
Monitor Unit



Arm Cuff

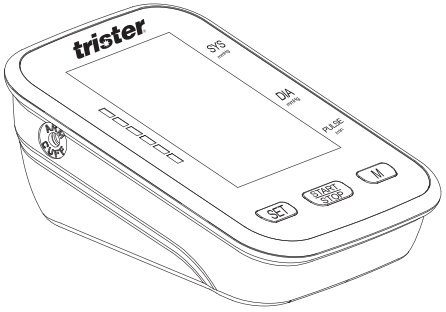


Display

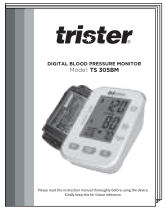


Unit illustration

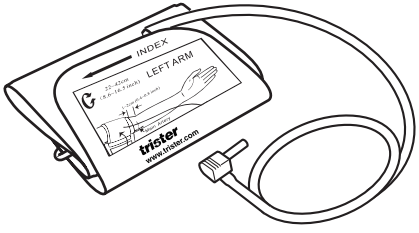
Contents



1. Monitor Unit



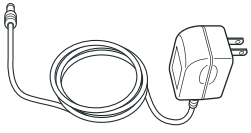
2. Owner“s Manual



3. Arm Cuff



4. Storage Bag



5. Medical AC Adapter (DC6.0 V,600mA)
(recommended, not provided)

Important Testing Guidelines

1. Avoid eating, exercising, and bathing for 30 minutes prior to testing.
2. Sit in a calm environments for at least 5 minutes prior to testing.
3. Do not stand while testing. Sit in a relaxed position while keeping your arm level with your heart.
4. Avoid speaking or moving body parts while testing.
5. While testing, avoid strong electromagnetic interference such as microwave ovens and cell phones.
6. Wait 3 minutes or longer before re-testing.
7. Try to measure your blood pressure at the same time each day for consistency.
8. Test comparisons should only be made when monitor is used in the same arm, in the same position, and at the same time of day.
9. This blood pressure monitor is not recommended for people with severe arrhythmia.
10. Do not use this blood pressure monitor if the device is damaged.

Quick Start

1. Install batteries. (See Figure A)
2. Insert cuff air plug into the left side of monitor unit. (See Figure B)

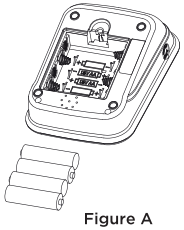


Figure A

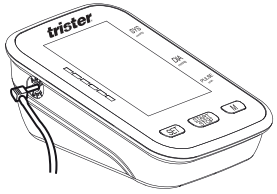


Figure B

3. Remove thick clothing from the arm area.
4. Rest for several minutes prior to testing. Sit down in a quiet place, preferably at a desk or table, with your arm resting on firm surface and your feet flat on the floor. (See Figure C)

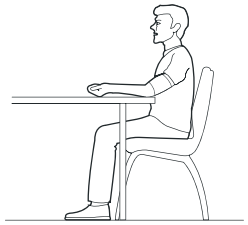


Figure C

5. Apply suff yo your left arm and keep level with your heart. Bottom of cuff should be placed approximately 1-2cm (0.4-0.8") above elbow joint. (See figures D&E)

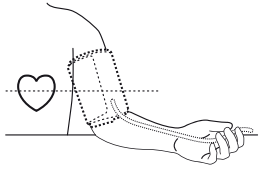


Figure D

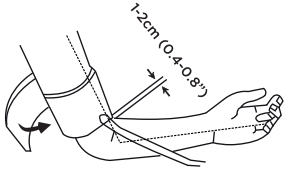


Figure E

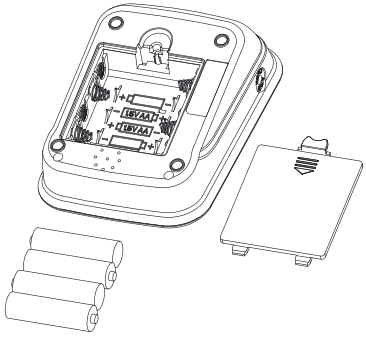
6. Press "START/STOP" Button to start testing.

Unit Operation

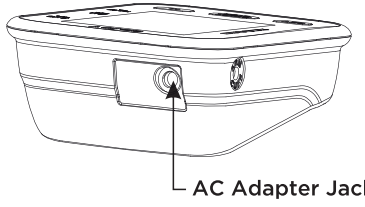
Battery Installation

Slide battery cover off as indicated by arrow.
Install 4 new AA alkaline batteries according to polarity.

Close battery cover.



AC adapter jack is on the black side of the monitor.
Medical AC adapter (DC 6.0 V,600mA) can be used with the device (recommended, not provided) The adapter connect pin should be positive inside and negative outside with a 2.1mm coaxial joint.
Do not use another type of AC adapter as it may harm the unit.

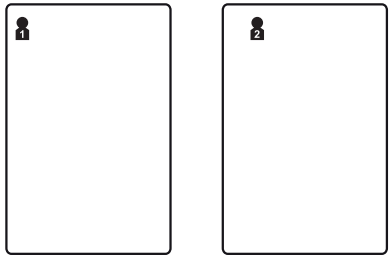


System Settings

1. Select Memory group

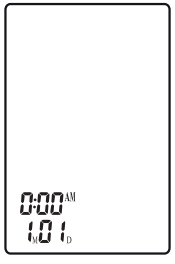
   While in the System setting mode, you may accumulate test results into 2 different group. This allows multiple user to save individual test result into 2 different groups. This allows multiple users to save individual test result (up to 60 memories per group.) Press “M” button to choose a group setting.

   Test results will automatically store in each selected group.



2. Time/Date setting

   Press “SET” button again to set the Time/Date mode. Set the month first by adjusting the “M” button. Press “SET” button again to confirm current month. Continue setting the day hour and minute in the same way. Every time “SET” button is Pressed, it will lock in your selection and continue in succession (month, day, hour, minute.)



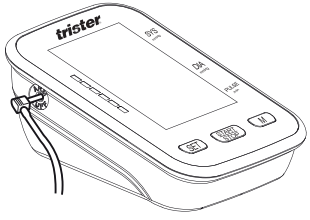
3. Saved Settings
   While in any setting mode, press “START/STOP” button to turn the unit off. All information will be saved.

Note: if unit is left on and not in use for 3 minutes, it will automatically save all information and shut off.

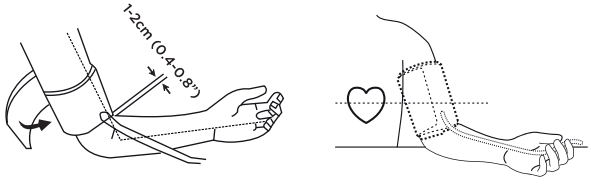
3. Remove think clothing from the arm area.
4. Rest for several minutes prior to testing. Sit down in a quiet place, preferably at a desk or table, with your arm resting on a firm surface and your feet flat on the floor. (See Figure C)

Applying the Arm Cuff

1. Firmly insert air plug into opening located on left side of monitor unit.



2. With sticky nylon section facing outward, insert if Underneath metal ring of cuff
3. Fasten cuff about 1-2cm (0.4-0.8”) above the elbow joint. For best results apply cuff to bare arm and keep level with heart while testing.

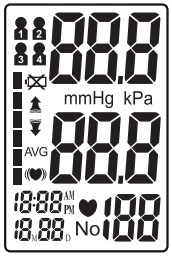


Note: Do not insert air plug into opening located on right side of monitor unit. This opening is designed for on an optional power supply only.

Testing

1. Power On

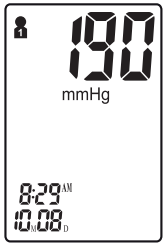
   Press and hold " STAR/STOP" button unit a beep sounds. the LED screen will appear for one second as unit performs a quick diagnosis. A long tone indicates device is ready for testing.



Note: Unit will not function if residual air from previous testing is present in cuff. The LCD will Flash " " unit pressure is stabilized.

2. Pressurization

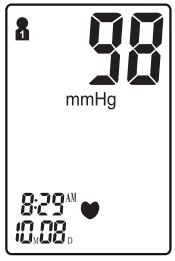
   Initial pressure is first pumped to 190mmHg. If the current user's systolic blood pressure is over 19mmHg, the unit will automatically re-inflate to the proper shelf.



Note: Pressurization will gradually subside and ultimately stop when cuff is not properly applied to the arm. If this occurs, press " START/Stop" button to turn the unit off.

3. Testing

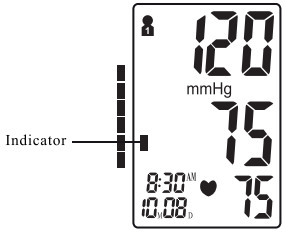
   After cuff inflation, air will slowly subside as indicated by the correspondind cuff pressure value. A flashing " " will appear simultaneously on screen signaling heart beat detection.



Note: keep relaxed during testing. Avoid speaking or moving body parts.

4. Result Display

   Three short beeps sound when testing is complete. The screen will display measurements for systolic and diastolic blood pressure. An indicator representing the current measurement will appear next to the corresponding WHO Classification.



Note: Refer to page 23-24 for detail WHO Blood pressure Classification Information

Irregular Heartbeat Indicator

If the monitor Detects an irregular heart rhythm two or more times during the measuring process, the Irregular heartbeat symbol " ((♥)) " appears on screen along with measurement results. Irregular heartbeat rhythm is defined as rhythm that is either 25% slower or faster than the average rhythm detected while measuring systolic blood pressure and diastolic blood pressure. Consult your physician if the irregular Heartbeat symbol " ((♥))" frequently appears with your test result.

5. Deleting/Storing Test Results

User may delete their current test result due to unfavorable testing conditions or for any other reason. To delete the last test result, press the "SET" Button After result is displayed if result is not deleted, it will automatically store by date within the previously configured Memory Group.

Note: Be sure the appropriate Memory Group selection is made prior to testing.

If the number of tests surpasses the allotted to memories per group, the most recent tests will appear first, thus eliminating the oldest readings.

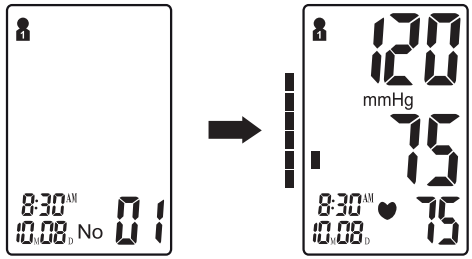
Power OFF

The " START/STOP" button can be pressed to turn off the unit in any mode. The unit can turn off the power itself about 3 minutes no operation in any mode.

Safety Precaution: If pressure in arm cuff becomes to extreme while testing, press the " START/STOP" button to turn power off. The cuff pressure will rapidly dissipate once the unit is off.

Memory Check

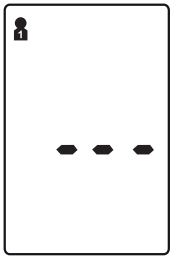
With power off, you may check past test results by using the "M" button. The most recent test and oldest test result in memory can be viewed by pressing and holding the "M" button upon activating test results you can press the " M" button to scroll through all test results stored in memory.



Note: Previous test results will only be displayed form the most recently used memory group. To check previous test results in other memory group, you must first select the desired group and the turn monitor off.
(See "Select Memory Group"on Page 10.

Memory Deletion

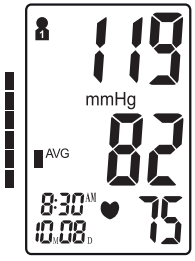
Memory for a selected group may be deleted while in Memory check mode. Press and hold the “SET” button for approximately 3 seconds to delete all memory records from the selected group. The monitor will beep indicating successful deletion and then transfer into testing mode. Press the “ START/STOP” button to turn the unit off.



Note: Memory cannot be recovered once it has been deleted.

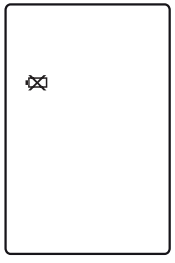
Last 3 Tests Average

With power off, press the “M” button to activate screen display. After the unit performs a self diagnosis, the screen with display the average test results form the last 3 reading of the last group used. The “ AVG” symbol will appear along with the corresponding WHO blood Pressure Indicator. The Memory check mode can be accessed by pressing the “M” button to check the average results from other groups, select the desired group first prior to activating the “M” button in the off position. (See “ Select Memory Group” on page 10.)



Low battery Indicator

4 short warning beeps sound when battery life is depleting and unable to inflate cuff for testing. The “ ” appears simultaneously for approximately 5 seconds prior to shutting off. replace batteries at this time. No memory loss will occur throughout this process.



Troubleshooting

Problem	Possible Cause	Solution
Blood Pressure results are not within typical range	Cuff is too tight or not properly positioned on the arm	Firmly reposition cuff approximately 1-2cm(1/2") above the elbow joint (See Page 12)
	Inaccurate test results due to body movement or monitor movement	Sit in a relaxed position with arm placed near heard. Avoid speaking or moving body parts while testing. Make sure the monitor unit is placed in a stationary position throughout the testing period (See page 7)
"Err"displayed	Cuff fails to inflate properly	Make sure hose is properly fastened to cuff and monitor unit
	Improper operation	Read user manual carefully and re-test properly.
	Pressurization is over 300mmHg	Read user manual carefully and re-test properly.

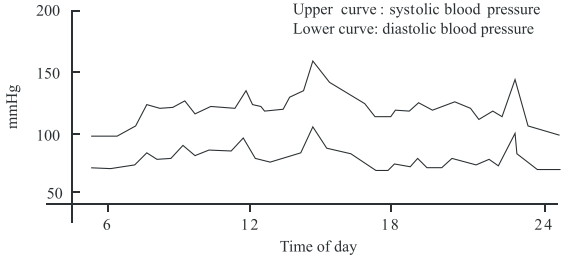
Blood Pressure

Blood pressure is the force of blood pushing against the walls of arteries. It is typically measured in millimeters of mercury(mmHg). Systolic blood pressure is the maximum force exerted against blood vessel walls each time the heart beats. Diastolic blood pressure is the force exerted on blood vessels when the heart is resting between beats.

An individual's blood pressure frequently changes throughout the course of a day. Excitement and tension can cause blood pressure to rise, while drinking alcohol and bathing can lower blood pressure. Certain hormones like adrenaline (which your body releases under stress) can cause blood vessels when the heart is resting between beats.

An individual's blood pressure frequently changes throughout the course of a day. Excitement and tension can cause blood vessels to constrict, leading to a rise in blood pressure. Certain hormones like adrenaline (which your body releases under stress) can cause blood vessels to constrict, leading to a rise in blood pressure.

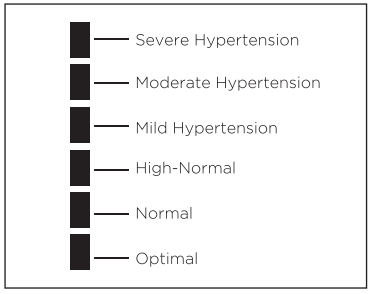
If these measuring numbers become too high, it means the heart is working heards than it should.

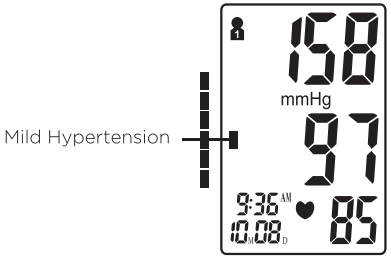


Example: fluctuation within a day (male, 35 years old)

WHO Blood Pressure Classification indicator

The ts 305BM is equipped with a classification indicator based on established guidelines form the world Health Organization. The chart below (color coded on monitor unit) indicates test results.

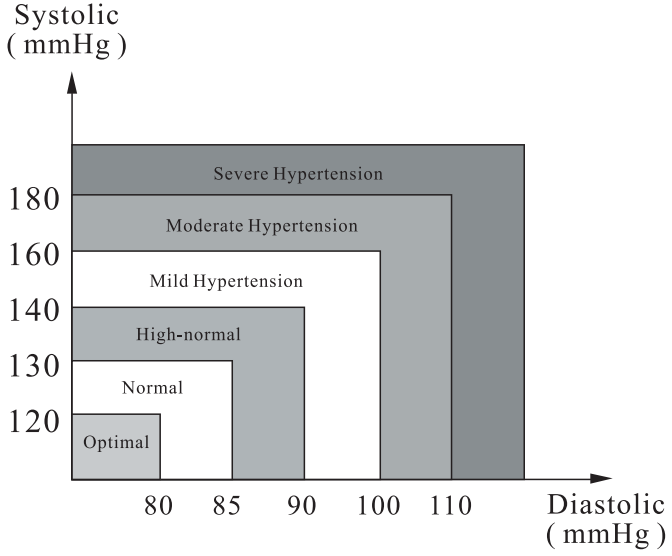




▮: Blood Pressure Classification Indicator

Health Reminder

Hypertension is a dangerous disease that can affect the quality of life. It can lead to a lot of problems including heart failure, kidney failure, and cerebral hemorrhaging. By maintaining a healthy lifestyle and visiting your physician on a regular basis, hypertension and relative diseases are much easier to control when diagnosed in their early stages.



Note : Do not be alarmed if an abnormal reading occurs. A better indication of an individual's blood pressure occurs after 2-3 reading are taken at the same time each day over an extended period of time. consult your physician if test results remain abnormal.

Blood Pressure Q&A

Q : What is the difference between measuring blood pressure at home or at a professional healthcare clinic?

A: Blood pressure readings taken at home are now seen to give a more accurate account as they better reflect your daily life. Readings can be elevated when taken in a clinical or medical environment. This is known as white Coat Hypertension and may be caused by feeling anxious or nervous.

Note : Abnormal test result may be caused by:

1. Improper cuff placement
   Make sure cuff is snug-not too tight or too loose.
   Make sure bottom of the cuff is approximately 1-2cm(1/2") above the elbow joint.
2. Improper body position
   Make sure to keep your body in an upright position.
3. Feeling anxious or nervous
   Take 2-3 deep breaths, wait a few minutes and resume testing.

Q : What causes different readings?

A : Blood pressure varies throughout the course of day. Many factors including diet, stress, cuff placement, etc. may affect an individual's blood pressure.

Q : Should I apply the cuff to the left or right arm? What is the difference?

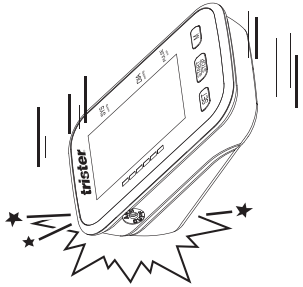
A : Either arm can be used when testing, however, when comparing result, the same arm should be used. Testing on your left arm may provide more accurate result as it is located closer to your heart.

Q : What is the best time of day for testing?

A : Morning time or any time you feel relaxed and stress free.

Maintenance

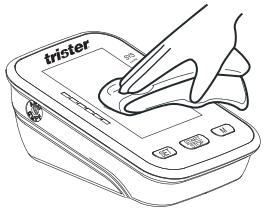
1. Avoid dropping, slamming, or throwing the unit.



2. Avoid extreme temperatures. Do not expose unit directly under sunshine.



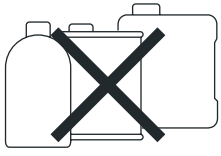
3. When cleaning the unit, use a soft fabric and lightly wipe with mild detergent.
   Use a damp cloth to remove dirt and excess detergent.



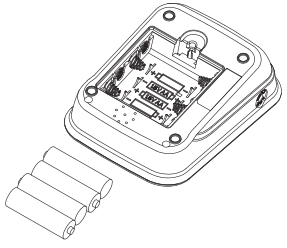
Maintenance

4. Cuff cleaning: Do not soak cuff in water! Apply a small amount of rubbing alcohol to a soft cloth to clean cuff's surface. Use a damp cloth (water-based) to wipe clean. Allow cuff dry naturally at room temperature

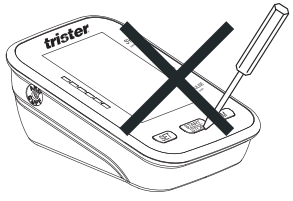
4. Do not use petrol, thinners or similar solvents.



6. Remove batteries when not in operation for an extended period of time.



7. Do not disassemble product.



8. It is recommended the performance should be checked every 2 years.
9. Executed service life: Approximately three your at 10 tests per day.

Specifications

Product Description	Arm-type Fully Automatic Digital Blood Pressure Monitor	
Model	TS 305BM	
Display	LCD Digital Display Size: 84.1mm x 55.1mm(3.31"x2.17")	
Measurement Method	Oscillometric Method	
Measurement Range	Pressure	0mmHg~300mmHg
	Pulse	30 to 180 Beats/Minute
Measurement Range	Pressure	± 3mmHg or ±2% of the reading above 200mmHG
	Pulse	± 5%
Pressurization	Automatic Pressurization	
Memory	120 Memories in Two Groups with Date and time	
Function	Irregular Classification Indicator	
	WHO Classification Indicator	
	Last 3 Result Average	
	Low Battery Detection	
	Automatic Power-Off	
Power Source	4AA batteries or Medical AC Adapter(DC6.0V, 600mA) (recommended, not provided)	
Battery Life	Approximately 2 months at 3 tests per day	
Unit Dimensions	Approx.148x100x56mm(5.83"x3.94"x2.21") (LxWxH)	
Cuff Circumference	Universal Cuff (22cmx42)	
Operating Environment	Temperature	10°C~40°C (50°F~104°F)
	Humidity	15%~90%RH
	Pressure	Atmospheric Pressure

Specifications

Storage Environment	Temperature:	-20°C~55°C (-4°F~131°F)
	Humidity	15% ~90% RH
Ingress Protection Rating.	IP20	
Classification:	Internal Powered Equipment, Type BF .Cuff Applied Part	

Specification are subject to change without notice.

This Blood Pressure Monitor copies with the European regulations
This blood pressure monitor also complies with mainly following standards
Following standards 9 (included but not limited):
Safety standard:
EN 60601-1 Medical electrical equipments part 1: General requirements for safer
EMC standard:
En 60601-1-2 Medical electrical equipment part 1-2: general requirements for safety-Collateral standard: electromagnetic compatibility- Requirements and tests
Performance standards:
EN 1060-1 Non-invasive sphygmomanometer-General requirements
EN 1060-3 Non-invasive sphygmomanometer-Supplementary requirements for electromechanical blood pressure measuring systems.
EN 1060-4 Non-invasive sphygmomanometer- Test procedures to determine the overall system accuracy if automated non-invasive sphygmomanometer.

Correct Disposal of this Product
(Waste Electrical & Electronic Equipment)



This Marking shown on the product indicates that it should not be disposed with other household waste at the end of its life. To prevent potential harm to the environment or to human health, please separate this product from other types of wastes and recycle it responsibly.
When disposing this type of product, contact the retailer where product was purchased or contact your local governments office for details regarding how this item can be disposed in an environmentally safe recycling center.
Business users should contact their supplier and check the terms and conditions of the purchasing agreement. This priduct should not be mixed other commercial wastes for disposal.
This Product is free of hazardous materials.

Warranty

To ensure continued measurement precision, all digital blood pressure monitors require recalibration regularly. After 6 years from the manufacturing date, we recommend you have your monitor recalibrated at the local distributor or importer. Please contact your Retailer, distributor/importer for further service.

Note