LD-100

Little Doctor®

ENG

Blood Pressure Monitor
Instruction Manual

POL

Ciśnieniomierz mechaniczny LD
do pomiaru ciśnienia tętniczego krwi
Instrukcja obsługi

ENG

GENERAL INFORMATION

This Instruction Manual is designed to assist the user with safe and effective operation of the Device for measurement of blood pressure LD, model LD-100 (hereinafter – the "Device"). Use this Device according to the rules described in this Manual. Operate the Device only as intended. Do not use the Device for any other purposes. Read and understand the whole Instruction Manual, in particular «RECOMMENDATIONS ON CORRECT MEASUREMENT».

INDICATIONS FOR USE

The device is designed to measure arterial pressure of human according to Korotkov method. The device is recommended for use under conditions of clinics and hospitals, as well as in household conditions as supplement to medical observation. Pressure is measured by means of auscultation of Korotkov's tones by stethoscope and by taking readings on manometer.

RECOMMENDATIONS ON CORRECT MEASUREMENTS

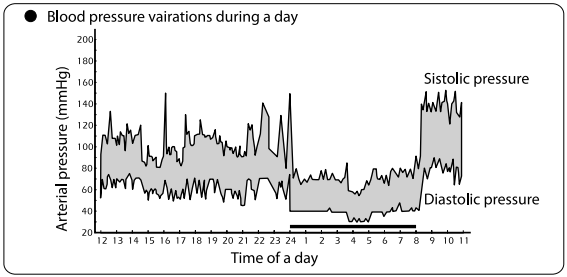
1 Do not use the device without preliminary consultation with Your doctor, if You undergo treatment by hemodialysis or by anticoagulants, antithrombocytes or steroids. Use of device in these cases may cause internal hemorrhage.

2 For correct measurement you should know that THE BLOOD PRESSURE IS SUBJECT TO SHARP VARIATIONS EVEN WITHIN THE SHORT TIME INTERVALS. The blood pressure depends on many factors. It is usually lower in summer and higher in winter. The blood pressure varies together with the atmospheric pressure, depends on physical loads, emotional excitement, stresses and dietary regime. Drugs, drinking alcohol and smoking produce significant effect. Even the very procedure of blood pressure measurement in a polyclinic sends the blood pressure high in many people, thus, the blood pressure measured at home often differs from the values received in a polyclinic. As the blood pressure tends to rise at low temperatures, make measurements at an indoor temperature (approximately 20°C). If this Device stayed under a low temperature, keep it for at least 1 hour at an indoor temperature before use, otherwise the measurement result may be incorrect.

During a day the difference in readings for healthy people may be 30-50 mmHg of systolic pressure and to 10 mmHg of diastolic pressure. The dependence of the blood pressure on various factors is individual for each person. Accordingly, it is recommended to keep a special book with blood pressure records. ONLY A CERTIFIED DOCTOR USING YOUR RECORDS IS CAPABLE TO ANALYZE THE TENDENCY OF YOUR BLOOD PRESSURE VARIATIONS.

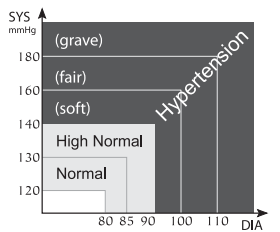
3 At cardiovascular and some other diseases requiring blood pressure monitoring make measurements in the hours fixed by your attending doctor. REMEMBER THAT THE DIAGNOSTIC AND ANY TREATMENT OF HYPERTENSION MAY BE CONDUCTED ONLY BY A CERTIFIED DOCTOR ON THE BASIS OF BLOOD PRESSURE VALUES OBTAINED BY THIS DOCTOR. TAKING OF DRUGS AND THEIR DOSES SHOULD BE PRESCRIBED ONLY BY YOUR ATTENDING DOCTOR.

4. KEEP QUIET DURING A MEASUREMENT TO OBTAIN THE ACCURATE VALUES OF YOUR BLOOD PRESSURE WITH THE ELECTRONIC DEVICE. Measure your blood pressure in the calm and comfortable conditions at the indoor temperature. No eating an hour before measurement; no smoking, taking tonic agents, alcohol 1.5-2 hours before measurement.

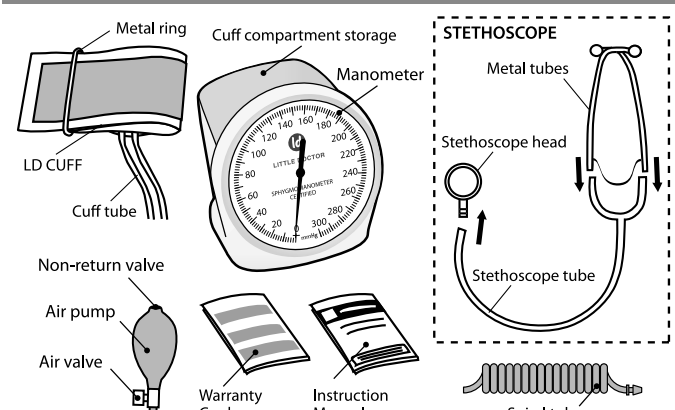


5. The accuracy of blood pressure measurement depends on whether the cuff matches the size of your arm. THE CUFF SHOULD NOT BE TOO SMALL OR TOO LARGE.

6. Wait 5 minutes between measurements for the blood to restore its circulation. However, the persons with prominent atherosclerosis due to considerable loss of vascular elasticity may need to increase the wait time between measurements (10-15 minutes). This also refers to the patients suffering for long from diabetes. For more accurate determination of blood pressure it is recommended to make a series of 3 consecutive measurements and to use the average value.

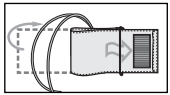


PARTS AND COMPONENTS

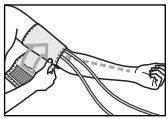


CUFF PREPARATION

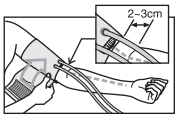
1. Insert the cuff end for about 5 cm into a metal ring



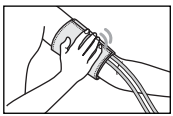
2. Apply the cuff to your left upper arm so that the air tube is directed to your palm. If the measurement on your left arm is difficult, you may use your right arm. In this case remember that the readings may differ by 5-10 mmHg and even more.



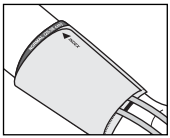
3. Wrap the cuff around your upper arm so that the bottom of the cuff is approximately 2-3 cm above your elbow. The sign "ARTERY" should be over the arm artery.



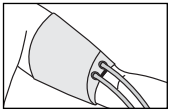
4. Fix the cuff so that it fits tightly to the arm, but see that it is not overtight. Too tight or too free placement of the cuff may give inaccurate readings.



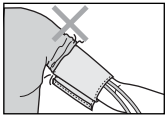
5. On the fixed cuff the sign «INDEX» should point to the area «NORMAL» (fig 7). It means that the cuff is chosen correctly and fits the size of your upper arm. If the sign points to the area marked « ◀▮▮▮» or to the left, the cuff is too small and the readings will be higher. If the sign points to the area marked « ▮▮▶» or to the right, the cuff is too large and the readings will be lower.



6. If the arm has a conic form, the cuff should be put on with a spiral movement .



7. If the rolled-up sleeve squeezes the arm interfering with free blood flow the Device may give inaccurate figures not corresponding to your actual blood pressure.



8. Place stethoscope head so that it was located in depression, somewhat higher than elbow bend.

9. Pressure shall be measured in sitting or lying position of human. IN SITTING POSITION WATCH THAT PART OF HAND WITH CUFF WOULD BE LOCATED AT THE LEVEL OF HEART, AND HAND WOULD BE FREELY LOCATED ON THE TABLE AND WOULD NOT MOVE.

MEASUREMENT PROCEDURE

1. Insert metal tubes of stethoscope into ears. Close air valve on air pump, having turned it clockwise. Squeezing air pump, pump up the cuff, listening to pulse by stethoscope. After You stopped to listen to pulse, pump up the cuff by 30 mm Hg more.
2. Slowly opening air valve, turning it counterclockwise, bleed down pressure in the cuff. Watch that pressure in the cuff would fall down at speed 2-4 mm Hg per second. This is necessary to get accurate result.
3. As soon as You hear weak pulse beats, memorize manometer reading. This is Your systolic (upper) arterial pressure.
4. Pressure in the cuff is continuing falling down at the same speed (2-4 mm Hg per second). You are continuing to listen to pulse. Sounds which You hear will change. Unlike the first beats, they will become softer, resembling rustling. At the moment when You practically stop seize pulse, memorize manometer reading. This is Your diastolic (lower) arterial pressure.
5. To fully release air from cuff, open air valve.

If the manometer is relatively far from the patient, it is possible to lengthen the connecting tube from the cuff to the pressure manometer, using additional spiral tube.

CARE, STORAGE, REPAIR AND DISPOSAL

1. Keep this Device from exposure to higher humidity, direct sunlight, shocks.
2. Do not keep and use this Device near heating installations and open fire.
3. Keep the Device clean and protect it from dust.
4. Contact of device with aggressive solutions is not allowed.
5. Protect the arm cuff and air tubes from contacting on sharp things.
6. This Device does not contain special controls to adjust the measurement accuracy. Independent opening of manometer is prohibited. Repair the Device only in authorized organizations.
7. Service life of device is indicated in section TECHNICAL SPECIFICATIONS. Service life is determined from the moment of commodity delivery to the customer. On expiration of the warranted service life apply from time to time to authorized repair organizations to check the technical condition of the Device.
8. Dispose of the Device and its components according to the application local regulations. No special requirements to disposal of this Device are defined by the manufacturer.
9. The arm cuff may withstand multiple sanitary treatments. The internal tissue surface of the arm cuff (contacting on arm) may be cleaned with cotton ball soaked in 3%-solution of hydrogen peroxide. At long use the partial color fading of the tissue coating of the arm cuff is possible. Washing and ironing of the arm cuff are not allowed.

WARRANTY

1. The following LD product is covered by warranty for the period specified in the warranty card.
2. The warranty liabilities are contained in the warranty card given at the sale of this Device to a purchaser.
3. The addresses of organizations for warranty maintenance are given in the warranty card.

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TECHNICAL SPECIFICATIONS

Pressure measurement range, mmHg	from 0 to 300 (pressure in an arm cuff)
Pressure indication range, mmHg	from 0 to 300
Range of admissible absolute error at measurement of air pressure in an arm cuff, mmHg	±3
Operation conditions: Temperature, °C Relative humidity, % Rh	 from 10 to 40 85 and lower
Storage and transportation conditions: Temperature, °C Relative humidity, % Rh	 from minus 34 to 65 85 and lower
Cuff size	for adults (upper arm circumference 25-36 cm)
Weight (without package, case)	464
Dimensions (package), mm	173 x 135 x 140
Service life of device (without taking into account pneumatic chamber and air pump), years from the moment of its delivery to the customer	7
Service life of pneumatic chamber and air pump, years from delivery to the customer	3
Year of manufacture	Year the manufacture is given in the bottom of the Device body in a serial number after symbols "AA".
Country of manufacture	PRC

COMPLETENESS

№	Name of part	Model	Quantity
1	Manometer	LD-S048	1
2	Cuff LD-Cuff	Cuff N2AR (Pneumatic chamber LD-S02A*)	1
3	Stethoscope	LD Prof-Plus	1
4	Air pump	LD-S014	1
5	Air, needle valve	LD-S015	1
6	Non-return valve	LD-S016	1
7	Instruction Manual		1
8	Warranty Card		1
9	Spiral tube		1
10	Package		1

* Reinforced pneumatic chamber is made of hypoallergic material.

CERTIFICATION AND STATE REGISTRATION

This Device manufacturing is certified according to international standard ISO 13485:2003.

✉ **Complaints and requests should be addressed to:**
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Service phone: +48 12 2684748, 2684749

Manufactured under control and for Little Doctor International (S) Pte. Ltd., 35 Selegie Road #09-02 Parklane Shopping Mall, Singapore 188307, Singapore. Postal address: Yishun Central P.O. Box 9293 Singapore 917699.

Manufacturer:
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ADDITIONAL ACCESSORIES

Cuffs "LD-Cuff" of the following sizes may be acquired in addition to available cuffs:

Name / Size	Upper arm circle, cm	Material	Pneumatic chamber	
C2N / for newborn infants	7-12	cotton, TPU*	LD-S02N	without ring
C2I / for infants	11-19	cotton, TPU*	LD-S02I	
C2C / child's N2C / child's	18-26	cotton, TPU* nylon, TPU*	LD-S02C	
C2A / adult's N2A / adult's	25-40	cotton, TPU* nylon, TPU*	LD-S02A	
C2L / big adult's N2L / big adult's	34-51	cotton, TPU* nylon, TPU*	LD-S02L	
C2T /for upper leg	40-66	cotton, TPU*	LD-S02T	
N2AR / adult's	25-36	nylon, TPU*	LD-S02A	with ring**
N2LR / big adult's	33-46	nylon, TPU*	LD-S02L	

* TPU – Thermoplastic polyurethane.
** Metal fixing ring on cuff for convenient independent putting on of cuff.

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