

EN ISO 13485



LX7

User Manual

Indications for safety use This product is intended for use by medical professionals or patients who are under medical supervision.

Caution : Federal law restricts this device to sale by or on the order of a practitioner licensed by the law of the State in which he/she practices to use or order the use of the device.

DS MAREF
DAESUNG MAREF CO.,LTD.



Contents

1. Instruction

Introduction	3
Safety Information	4

2. Product Description

Device	8
Accessories	10

3. How to use

Device	12
Cuffs (Leg, arm and centerbody)	16
Cuffs (Pelvis)	17
Cuffs size and Extension zipper	18

4. Reference

5. Self check before customer use

6. Warranty

1. Instruction | Introduction





Introduction

Thanks for purchasing our product. This product is an Air Compression Therapy System to improve the blood circulation of the human body. Patient can also purchase or use it personally after receiving doctor's indications definitely.

The operating principle is that the air from the controller will be delivered to the cuff with 4 air chambers and the air pressurizes sequentially the chambers from 1st to 4th.

This user's manual contains the information how to use, keep and repair this product. Please, be well informed of this manual to use this product correctly and to prevent the malfunction for the best effect. Please keep this manual with this system always and please carefully read it before using the system properly.

Guidance for indication

 caution	Wound or property-loss can be occurred in case of disregarding the instruction
 warning	Death or serious wound can be occurred if users do not follow the instruction.
 prohibition	Instruction to be prohibited.
 prohibition of disjuncting	Do not disjoint the device.

1. Instruction | Safety Information

Electrical Safety



prohibition

- Please use a suitable AC cord for each country.
(Fire accidents and electric shocks possible)
- Stop using the device in case of smelling during using the device. In this case, turn off the electric power and pull out plug from outlet, and then inform it to service center. (Fire accidents & electric shocks possible)
- Grip the plug, not a power cord with hands when you plug in or out
- Do not plug in or out with wet hands (Electric shocks possible)
- Do not bend or twist the power cord.
(Fire accidents & electric shocks possible)
- Do not touch signal input, signal output or other connectors, and the patient simultaneously.
- External equipment intended for connection to signal input, signal output or other connectors, shall comply with relevant IEC Standard (e.g., IEC60950 for IT equipment and IEC60601-1 series for medical electrical equipment). In addition, all such combination-system shall comply with the standard IEC60601-1 and/or IEC60601-1-1 harmonized national standard or the combination. If, in doubt, contact qualified technician or your local representative.



caution

- Pull out plug when not using or providing against lightning, thunder.

Regarding cuff



prohibition

- Do not use cuffs on undressed body.
Use the cuffs with wearing thin under wears.
(Cuff's endurance can be weakened due to sweat cosmetics and sebum)
- Do not use other tools, except our machines, to blow air into cuffs.
- Do not stain cuffs by oil, benzene, alcohol, gasoline etc.
(Anti-endurance possible)



caution

- Do not use these cuffs together with accessories, watch etc.
(Physical damages, cuff breakage possible)
- Do not keep cuffs near to heating materials such as stove, cigarettes etc. (Air leaking or fire accidents possible)
- Do not keep cuffs near to dangerous keen materials such as needle, scissors. (Cuffs can be damaged and malfunctions possible)

Safety for body



prohibition




- Do not use the device in a drunken state.






warning

- Forbid children to use the device.
Serious injuries can be occurred when the air blows into cuffs.
- Do not use air hose to nose, mouth or ears.(Any injuries possible)
- Prohibit to use the device in case of artificial-heart etc.
- Use the cuffs with wearing thin cloths. Zip up perfectly the cuff as the unzipped zipper can damage the skin during using.
- Prohibit using the device to the patients having any artificial material inserted like artificial-joint, metal-inserting, silicon,etc in their body.
(it can be the cause of inflammation can or otherside effects)
- Use the device after consulting to a doctor definitely before using the device it in case of lymph edema, vein diseases vein, heart diseases, vascular cancer, a patient under cancer therapy, variant, gangrene, recent artificial skin graft, or deep vein thrombosis.
- Use the device after consulting to a doctor definitely before using the device it in case of heart disease, hypertension, malignant tumor, acute inflamed skin disease, high pyrexia, hyposthenia or a patient having any diseases now.
- Stop using the device when you feel any abnormal condition during using, and consult to doctor.
- Use the device according to a doctor's prescription definitely to a patient with any surgical operation, especially, internal organs, nerve or brain surgery or a patient within 1 year after surgery.

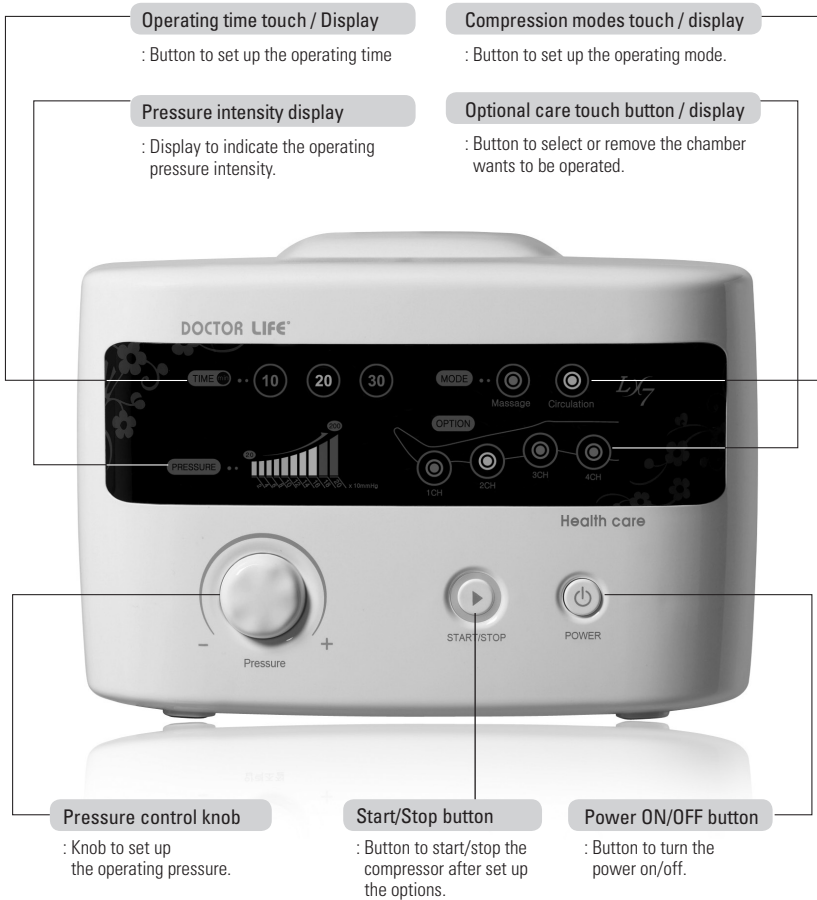
Use and Maintenance

 <p>prohibition</p>	<ul style="list-style-type: none">- Use the device indoors of 0~40°C (If not, any defects or fire accidents possible)- Do not use or keep the device near to heating equipments or a direct ray of the sun. (Defects, fire accidents, or transformations possible)- Forbid children to touch. Disorder can be happened due to children's touch.
 <p>warning</p>	<ul style="list-style-type: none">- Do not use the device in high humidity place(Bathroom and sauna etc). (Fire accidents, electric shocks possible)
 <p>caution</p>	<ul style="list-style-type: none">- Keep the device horizontally. (If leaning, defects or malfunctions possible)

Cleaning and Others

 <p>prohibition</p>	<ul style="list-style-type: none">- Do not use oil, benzene, alcohol, gasoline, chemicals when cleaning the device and cuffs. (Use dry towels)- Do not use oil, benzene, alcohol, gasoline, chemicals when cleaning cuffs. (Use wet dust cloths.)
 <p>warning</p>	<ul style="list-style-type: none">- Be careful to not put clips, staples, needles, metals or food into the device. (Short circuits, heating generations possible) * If happened, inform it to concerned agent.
 <p>caution</p>	<ul style="list-style-type: none">- Do not repair, reproduce or disjoint the device by yourself. (Fire accidents, electric shocks possible)

2. Product description | Device



LX7

Use the device after consulting to a doctor definitely before using the device in case of lymph edema, vein diseases vein, heart diseases, vascular cancer, a patient under cancer therapy, variant, gangrene, recent artificial skin graft, or deep vein thrombosis.

Specifications

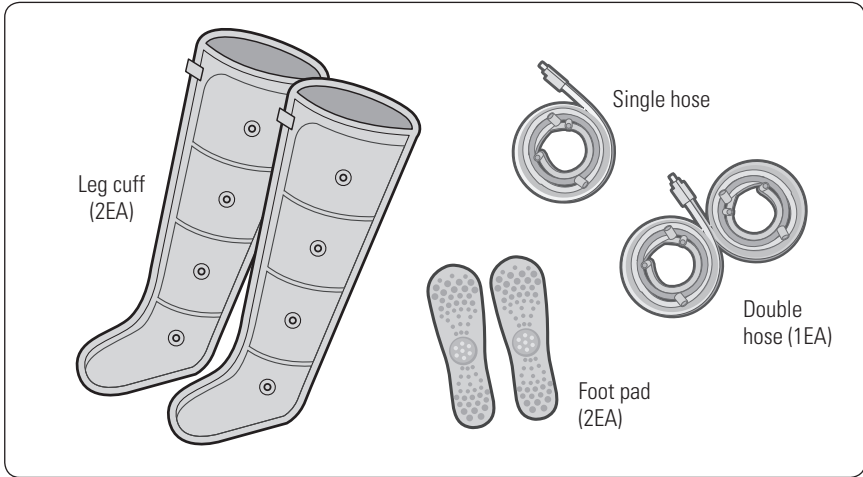
Power	AC 230V, 50/60Hz	Product weight	2kg (package 6.5kg)
Time range	10, 20, 30 min.	Product size	260 × 160 × 120mm
Pressure range	20–200mmHg ± 20mmHg	Power consumption	50VA

Clause 5

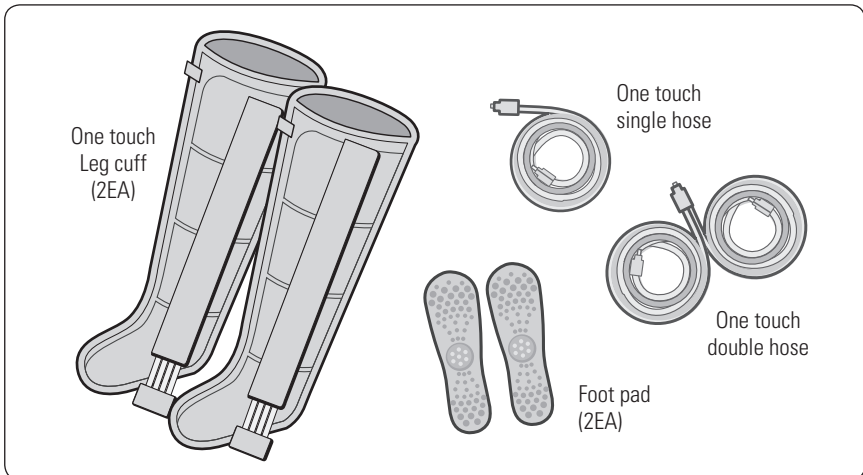
1. Type of protection against electric shock: Class II equipment.
2. Degree of protection against electric shock : Not classified - BF applied parts
3. Classification according to the degree of protection against ingress of water:
IPX0, ordinary equipment.
4. This equipment is not suitable for use in the presence of flammable anesthetics
or oxygen.
5. Mode of operation: continuous operation.

2. Product description | Accessories

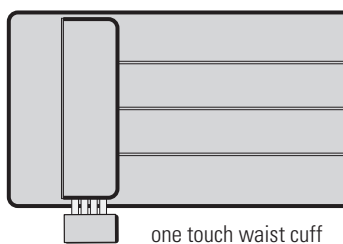
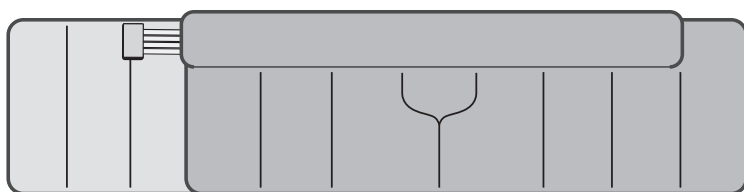
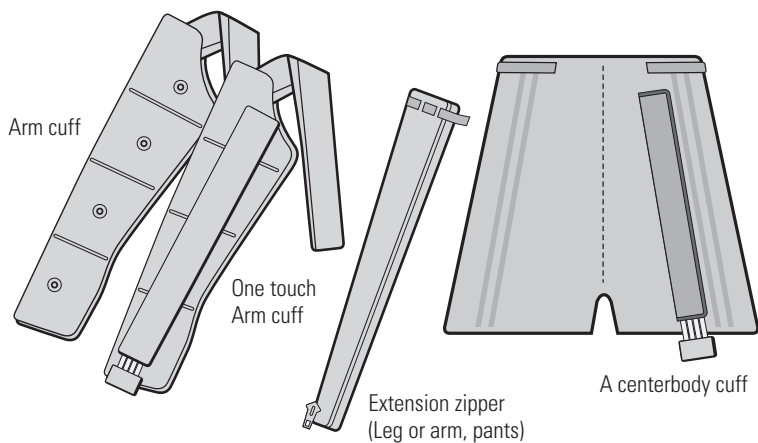
Basic set



One touch basic set



Optional Accessories



3. How to use | Device

Special Features

1. Two selectable modes

There are two operating modes you can select. (Massage mode, Circulation mode)

2. Optional care mode

A user can choose any chamber which the user wants to have the massage or to be skipped for safe treatment on any part with a wound.

3. Touch screen / Setting buttons

A user can set up the operating time, modes and optional care modes by touching screen lightly.

4. Digital pressure sensor

Digital pressure sensor keeps the set pressure equally without reference to any sizes of body.

5. Digital timer

With a digital timer, a user can set the time up accurately and conveniently.

6. Safe function

The air will be discharged automatically in case of power failure.

Notification for first use

1. For a beginner

It may cause a physical damage by using the compressor with the high pressure at the first use. Try the compressor with less than 60mmHg and 10 minutes at the first use, and then increase the pressure and operating time gradually.

2. For leg cuff use

Stretch the leg after cuff wearing. It may cause some pain around knee if not.

3. For waist cuff use

Wrap the cuff properly any part of abdomen, waist, or hips or thigh which you want to care for.

4. For arm cuff use

Use an attachable part of the arm cuff on a shoulder to be tied up.

If not, the cuff slip down during the operating.

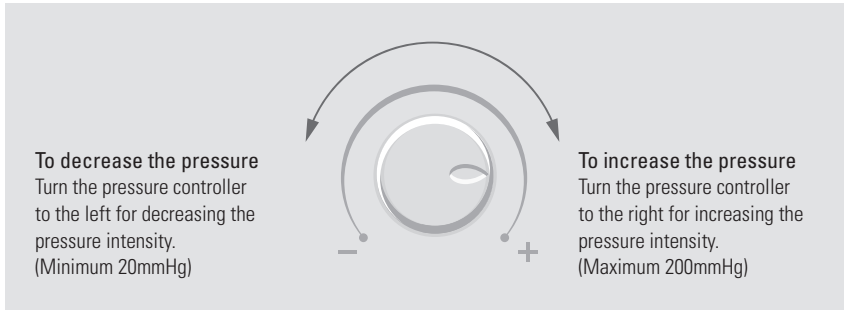
We recommend using only one cuff if there is no any protector like a nurse or therapist near to a user.

5. For air hose use

Use a single hose for one cuff and a double hose for two cuffs use and triple hose for three cuffs use.

To set up the pressure intensity

- Pressure range set up : 20~200mmHg



- The pressure sensor perceives the setting pressure automatically and pressurizes next chamber.

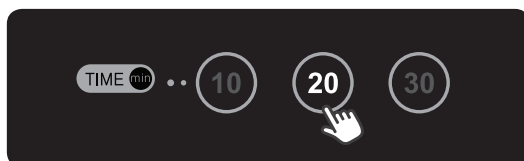
- Check up the air leaking if the pressure is weaker than the setting pressure.

- In case of air leakage from the cuff or disconnection the hose from the cap, the sensor pressurizes about 90 sec., and then progresses to next channel.

※ A beginner must start to use the compressor with the lowest pressure, and then control the pressure according to the body condition.

To set up the operating time

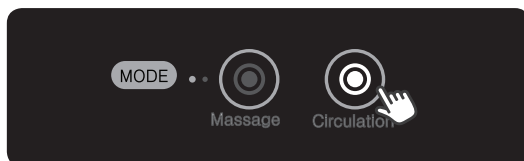
The timer is comprised of 10, 20, 30 min. buttons.



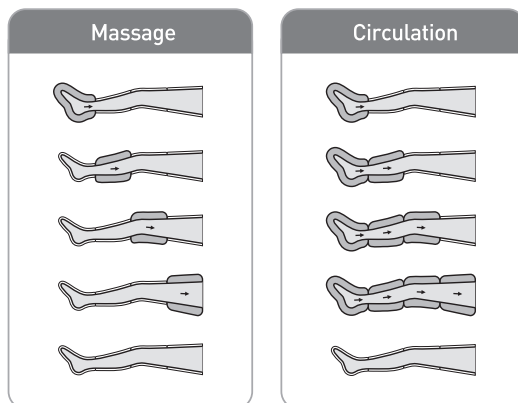
- Press any time button you want to have the operation for.
- It is able to change the time during the operating or pause.

To set up the operating mode

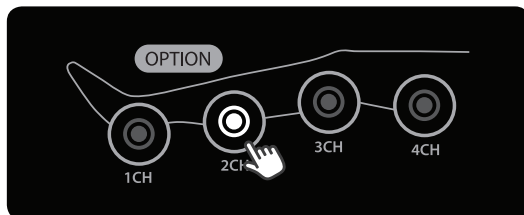
The compressor has two operating modes.



- Press one of the modes you want to operate.



To set up the optional care mode



Optional care mode can choose any chamber you want to have the massage. It is not only able to set up on each massage or circulation mode, but also able to set up during the operating.

To connect hose plug to air socket



- Put a hose plug into the air socket as the picture.
- Plug in completely for prevent air leakage.

To connect hoses to a cuff

Connect hoses to cuff caps among same colors. It not, there may not be any effects because of the change of pressurizing sequence.

*Pressurizing Sequence

- Leg cuff : foot > calf > knee > thigh
- Waist cuff : abdomen > waist > pelvis > hips
- Arm cuff : hand > elbow > forearm > shoulder

3. How to use | Cuffs

How to use cuffs (arm, leg, centerbody)

To use one cuff only

- Put a cuff (Leg, arm or waist) on and plug in a single hose to air socket.
- Plug in completely for prevent air leakage. (Refer to picture).



To use two cuffs simultaneously

- Put each cuff on and plug in a doubled hose to air socket.
- Plug in completely for prevent air leakage.
- Doctor's diagnosis needed for using both side arm simultaneously to prevent the higher blood pressure. (Refer to picture)



To use a centerbody cuff

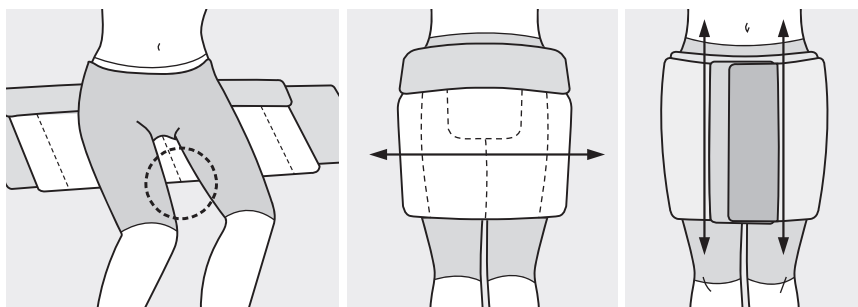
- Put high waist half pants on and plug in a doubled hose to air socket.
- Plug in completely for prevent air leakage.



How to use pelvis cuff

1. Wrapping

- Please place the center of a pelvis cuff to the center of a hip by being symmetrical on the either side of a pelvis for suitable compression of pelvis.



Check the center of a cuff is placed on the center of hip rightly.

Check it is placed rightly to be symmetrical on the either side of a pelvis to improve the effect of it.

2. Connection

- Put a single hose perfectly into air socket of a controller after wrapping the cuff, or air can be leakage.

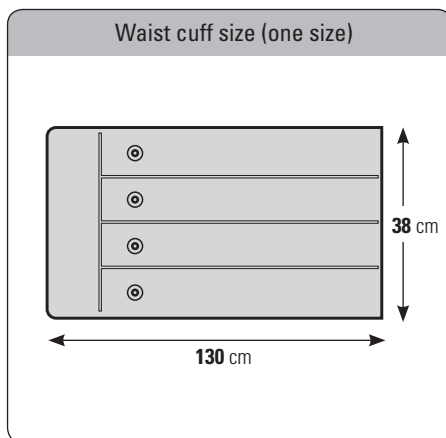
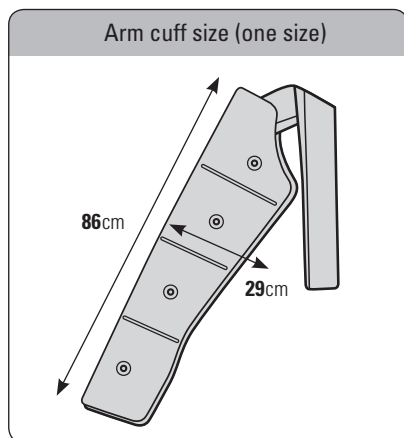
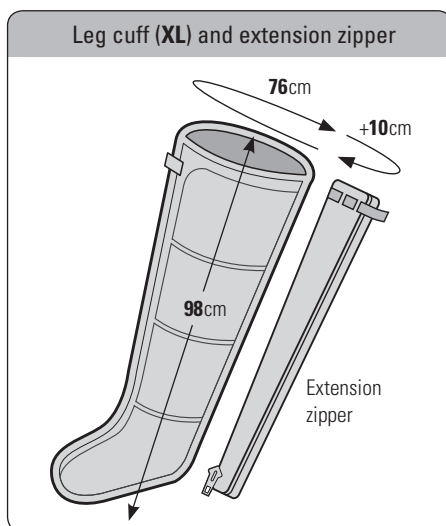
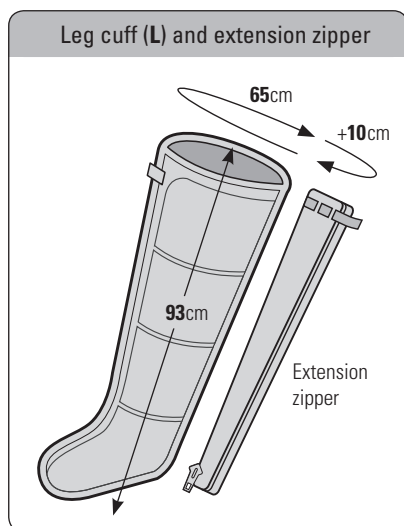
3. Operation

- Set the mode to the circulation mode and pressure to the below 100 mmHg. And then please increase the pressure step by step.

Cuff size and Using extension zipper

Extension cuff (Optional purchase)

- Use an extension zipper if the cuff does not fit you.
- Zip down completely and put the extension zipper between the cuff and zip up.



4. Reference

Information regarding potential electromagnetic or other interference

This equipment has been tested and found to comply with the limits for medical devices in IEC/EN 60601-1-2. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

WEEE marking



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either whether they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the items and conditions of the purchase contract. This product should no be mixed with other commercial waste for disposal.

Environmental conditions for transport and storage

Operating condition	Temperature (°C)	0-40
	Relative humidity (%)	10-90
	Atmospheric Pressure (hPa)	700 – 1060
Transport and storage condition	Temperature (°C)	-20 – 60
	Relative humidity (%)	0-90
	Atmospheric Pressure (hPa)	500 - 1060

Stop the device during operation

※ Stop the operation of a control and follow one's doctor's indications for the below symptoms.

- 1) When feeling difficulty of breathing or giddiness
- 2) When a part of body is felt any so strong compression
- 3) When feeling so serious pain during using a device
- 4) When body is paralyzed temporally or felt any itchy
- 5) When feeling any other strange during using a device

Recommendation

※ As this device is a medical devices for the purpose of the assist therapy, use LX7 personally with easy way under their doctor's indication and guidance. What a patient feels weaker the compression of this system as time is goes is due to accustom oneself to the compression. So, do not use it for long time and use it definitely according to a doctor's indications.

5. Self check before customer use

<i>Operating Condition</i>	<i>Checking Point</i>
No electric power	<ul style="list-style-type: none"> - Plugged in correctly into outlet? - Proper voltage? - Fuse short?
Not operating after power on	<ul style="list-style-type: none"> - Plug out and plug in again.
Noise in progress	<ul style="list-style-type: none"> - Horizontally placed? - Any material or dust inside the compressor?
No air out from hose	<ul style="list-style-type: none"> - Is hose folded? - Did hose plug in correctly into air socket?
Not progressing to next step after operating for 90 sec. during pressurizing into air chamber	<ul style="list-style-type: none"> - Is air chamber damaged? - Is air leaking? - Check up the cuff get damage or air leakage, a compression sensor will recognize it and stop the chamber for 1 minute, then progress next step.

WARRANTY

Much appreciated on using our device. We, Daesung Meref are doing our best to improve the quality of our products. We will do our best effort to be a good companion of users.

※ In case of followings, we can not repair our device gratuitously even though warranty period :

1. Disorder happend by strong impact.
2. In case user repair or reproduce internal part arbitrarily.
3. In case of using the device in prohibited place.
4. In case of against our [HOW TO USE].
5. Cuff is articles of consumption.

NAME	Air compression therapy system
MODEL	LX7
SERIAL NO.	
WARRANTY PERIOD	Controller : 1 year, Cuff : 2 month
BUYING PLACE	
BUYING DATE	

History & Certificates

2011	President Award
2010	Anvisa in Brazil
2007	Authentication of Merit certificate
2006	Innovation management awards
2006	KOTRA B2B e-Trade awards
2006	KFDA awards by Prime minister
2006	KGMP registration
2004	The 34 precious Technique bronze awards
2004	Korean World class products award
2004	Vice president award
2004	SFDA in China
2003	Success Design product
2003	FDA in USA
2002	ISO9001/EN13485
2002	CE marks (DL series, MK series, DL1200, DVT-2600)
1986	DS MAREF is established

Distributed by:

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