

# *Farmatek L-1*

Continuous passive motion (CPM) for lower limb



## **USER'S MANUAL**



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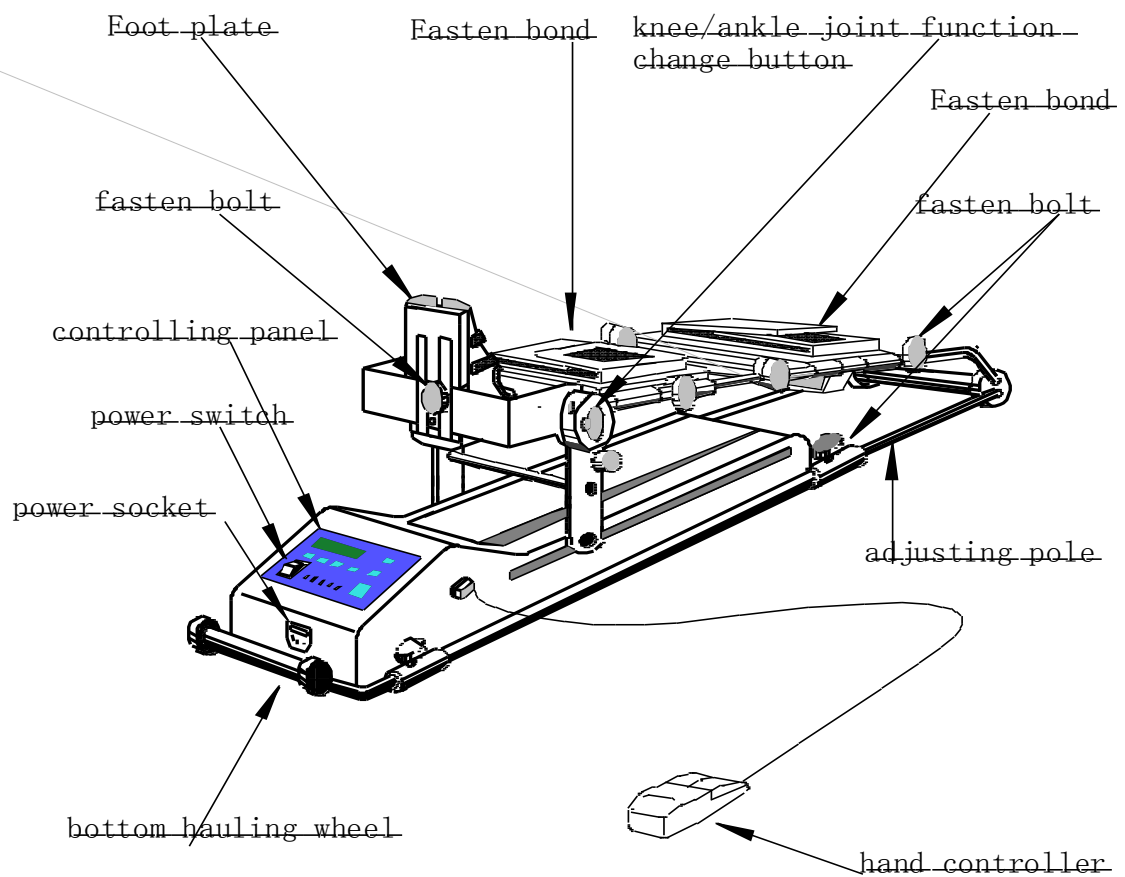
## Technical feature of the product

**Farmatek L-1** is the newly-designed medical equipment for CPM (Continuous Passive Motion) for rehabilitation of ankle and knee joint.

- *Speed traction, angle, extension and time can be set according to patient's needs.*
- *Endowed with a remote controller, it allows to safely stop and restart the therapy and to reverse traction direction.*
- *Memory function: saves each selected parameter for the following session.*
- *Large, easy-to-read-LCD screen.*
- *Simple, user-friendly control panel.*
- *Special designed motor drive, steady, low noise, and long span life.*
- *Microcomputer digital control design, intelligent program design, over-load protection function.*
- *Wide motion range for ankle and knee.*
- *Optimized structure design.*

## Main structure

This machine is made up of host computer, supporting pole, leather cushion and remote control.



## Sketch map of lower limb CPM

The main capability parameters are as follows:

Angle motion range of knee joint:  $-5^{\circ}$ — $120^{\circ}$ ;

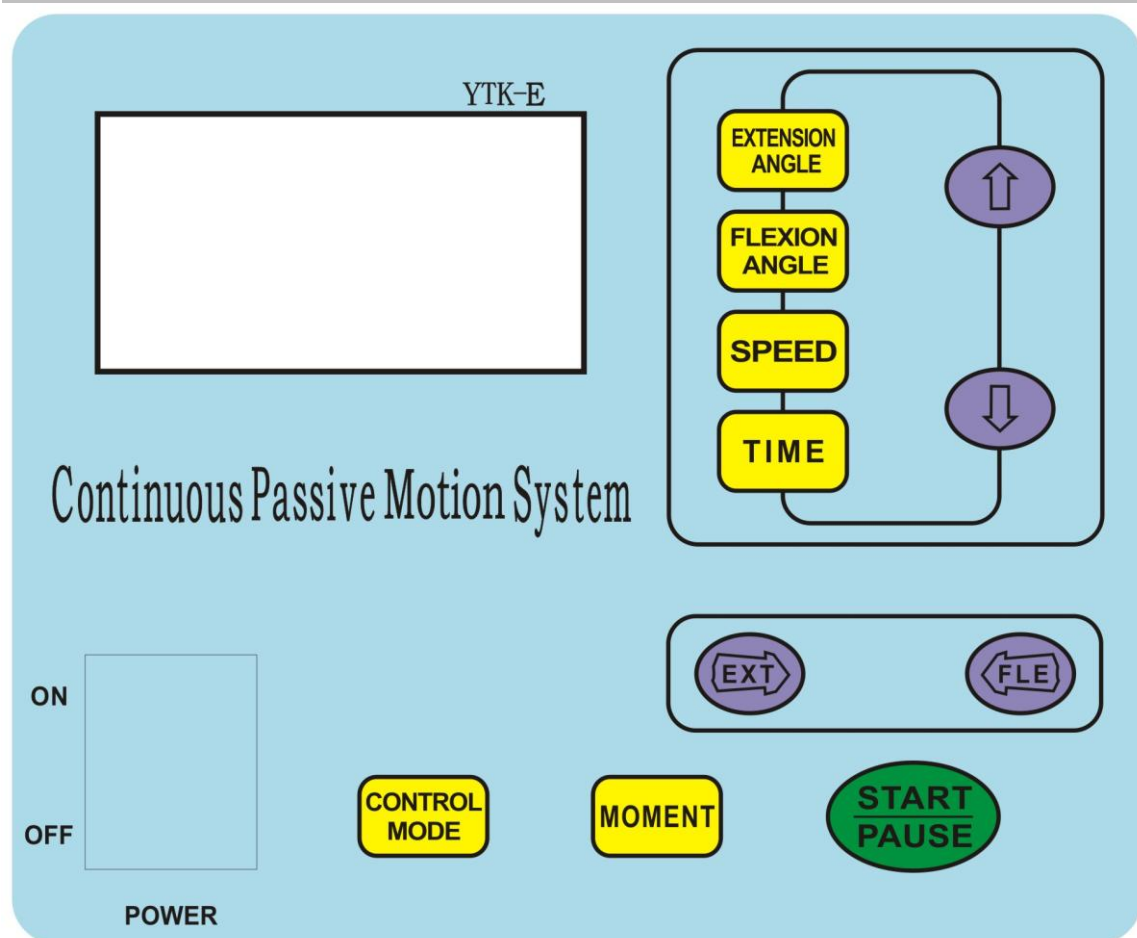
Coax angle activity range:  $5^{\circ}$ — $90^{\circ}$

Angle motion speed range of ankle joint:  $-30^{\circ}$ — $0^{\circ}$ — $45^{\circ}$

Angle motion speed range:  $1^{\circ}$ — $5^{\circ}/s$ ; (variable speed control without step)

Power supply: 220Vac, 50Hz

Power:  $\leq 80W$



**On/Off** power on off

**Start/Pause** press to start and pause the operation.

**Extension Angle, Flexion Angle, Speed, Time:** press each to select the parameter, adjust with the arrow up and down and press again to confirm the setting.

**Ext/Fle** press Ext to have extension motion, press Fle to have flexion motion

### Function “Moment”

It means power output. The machine has the function of torque control: the torque “*big*” on display shows the motor work is 100% of the power output. Torque “*middle*” shows the motor work is 65% of power output; torque “*small*” shows motor work for 35% power output.

### Function “Control Mode”



The control mode has three types: *normal, angle and speed mode*; the normal mode shows that the machine runs according to the setting data. The angle mode shows that the flex angle can increase 3°, after each 15 minutes run time; the speed mode shows that the speed adds one level each 15 minutes.

## Operation method of knee joint motion

1. Turn on the power, open the power switch, then the machine runs to the initial position. The buzzer will make one sound. Press the “start” key and the display will show the parameters and the joint preset during the previous session. To select Knee joint for the first time, press key 5 (knee joint and ankle joint change key), see fig. 2. The display shows “To knee joint”. To confirm press key 5, otherwise key 7 (angle). After confirmation, the following screen will ask “Confirm?” To confirm again press key 5, to clear press key 7. After confirmation the display will show extension and flexion parameters for the selected joint. The parameters chosen will be saved for next sessions.

2. According to the sketch map, fig.3, pull the supporting pole to make it fit for the patient’s leg, and fix the pole’s middle joint in the position of  $0^{\circ}$ — $10^{\circ}$ , then tighten up the bolt. Make sure that the length of adjusting pole is about 25 cm.

The equipment has angle memory function, the therapy will start from the last angle setting ranges saved.

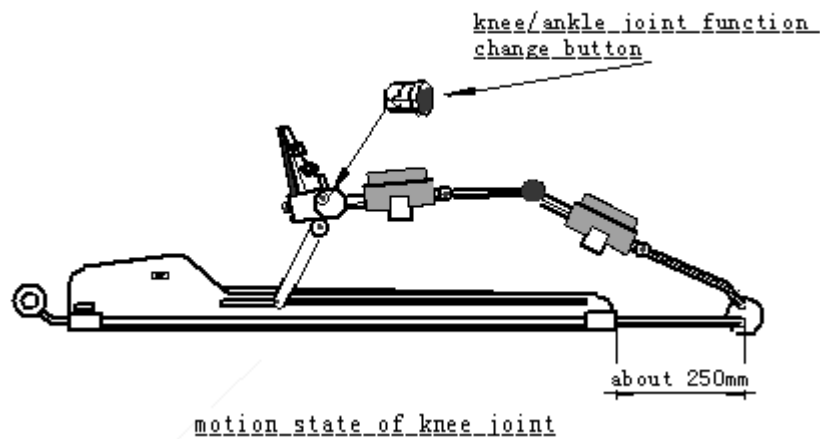
3. Set extension range **START**, flexion angle **END**, speed **RUN**, and time **TIMER** according to the state of patient. Press the correspondant keys. To adjust the values, press and  

4. Confirm if the parameter on the display is correct. Press **start/pause** to start the machine. It indicates “RUN” and the immediate motion angle. Watch the machine running for more than two times, and if it runs in normal state, press the **start/pause** to pause it, then fix the patient’s arm and palm.

After the above operation the machine can be started. We suggest that you run in low speed and range and that you increase the speed and motion range gradually according to patient’s condition.

In case of continuous work, “Time” light is off and the display shows nothing or “000”. In case you need to set the time, press the key of time “^” and “v” to adjust when the machine is off. When the exercise is over, the buzzer will make three short sounds to remind that, and then the machine will stop.

5. The main function of the hand control is safety. The **start/pause** key can stop the machine, allowing to restart the therapy when needed; the **back** key restores the extension position of the device and reverses the traction direction.



## Operation method of ankle joint motion

1. Turn on the power, open the power switch, then the machine runs to the initial position. The buzzer will make one sound. Press the “start” key and the display will show the parameters and the joint preset during the previous session. To select Knee joint for the first time, press key 5 (knee joint and ankle joint change key), see fig. 2. The display shows “To malleous”. To confirm press key 5, otherwise key 7 (angle). After confirmation, the following screen will ask “Confirm?” To confirm again press key 5, to clear press key 7. After confirmation the display will show extension and flexion parameters for the selected joint. The parameters chosen will be saved for next sessions.

2. According to the sketch map, pull the pole and fix it to the minimum.

**The follow steps are the same as kneel joint motion’s operation, but make sure not to exceed the motion angle of ankle joint, which is  $\leq 45^\circ$ .**

3. Angle adjust: press “start/pause”, after the buzzer makes one sound, LCD shows the largest running scope from  $-30^\circ \sim 45^\circ$ . In case you need to adjust the present angle, refer the adjustment way of knee joint.

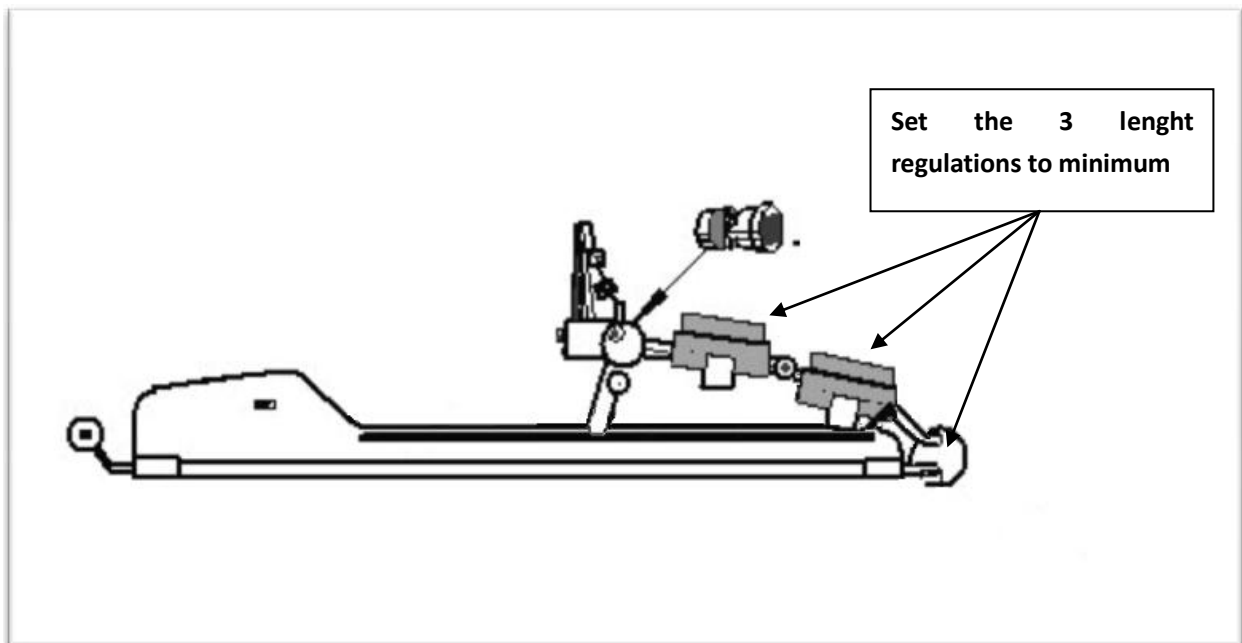
4. Pull out the kneel/ankle joint function change bolt ( the left and right each has one), and confirm them( if it is hard to pull out the button, lift the thigh and shank pole lightly).

#### Process from ankle to knee

- 1) Press key 5 of the control panel (knee/ankle joint change key), The device will show “revert to knee”; press key 5 again to confirm, press “angle” to give up.
- 2) Pull out the kneel/ankle joint function change bolt, lift the thigh and shank pole lightly, till the button come back to the initial position.

#### Process from knee to ankle

- 1) Press key 5 of the control panel (knee/ankle joint change key), the machine shows “revert to ankle”, press key 5 again to confirm, press “angle” to give up.
- 2) Pull out the kneel/ankle joint function change bolt, lift the thigh and shank pole lightly, till the button come back to the initial position.



## Maintenance

The shell of the unit should be cleaned using dry detergent and a soft cloth.



## Troubleshooting

No.	Problem	Analyze	Solution
1	Power lights wrong	Socket connection bad	Check and replace the socket
2	Power lights wrong	Fuse disconnect	Replace fuse
3	Could not start	Angle setting error	Adjust angle
4	Could not start	Time error	Adjust time
5	Could not start	Timing finish(show off)	restart
6	LCD digital disorder	Restart too fast	Restart 3 seconds after shut down
7	Equipment metal parts with electrostatic induction	Socket grounding bad	Grid electricity sockets with a good grounding

## Commitment for after service

### Assistance:

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CONFORMITY DECLARATION

New Age Italia srl  
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in the person of its legal representative, Mr. Barnabè Manuel declares that the following class IIa device:

**Brand Name: New Age Italia**

**Model: Farmatek L-1**

is up-to the requisites prescribed in EEC Directive 93/42CEE modified by Directive 2007/47CE concerning health regulations and absorbed by Legislative Decree no. 37 dated 25/01/2010;

that the procedure for the evaluation of conformity described in Annex II to the above-mentioned Directive has been duly performed; and that the following harmonized standards have been applied:

EN 60601-1: 2007  
EN 60601-1/EC: 2010  
EN 60601-1/A11: 2012  
EN 60601-1-2: 2007  
EN980:2003

The notified authority no. 0476 has, in virtue of the certificate MED9904, issued a permission to apply a CE conformity mark to the above-mentioned regulations prescribed in EEC Directive 93/42CEE and modified by Directive 2007/47CE absorbed by Legislative Decree no. 37 dated 25/01/2010

Lugo 02/10/2012

The company's legal representative

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Registro A.E.E. Iscrizione N. IT08020000002663