

# **Adjustable Bed Controller (ABC-2 Series)**

## **User's Manual**

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**LABELLING REQUIREMENTS (FCC Part 15.19 (a)(3))**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.

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**INFORMATION TO THE USER (Part 15.105(b))**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential 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 radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**WARNING (Part 15.21)**

The manufacturer is not responsible for any Radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

## DOCUMENT HISTORY

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## **1. Introduction**

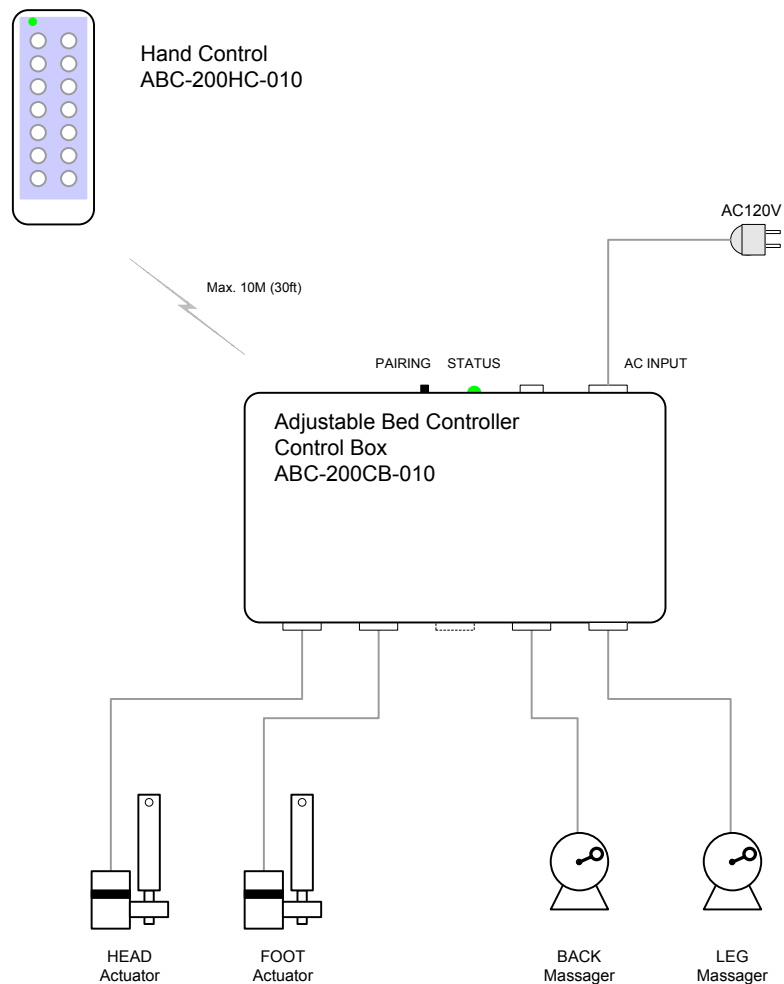
### **1.1 Features**

ABC-2 series adjustable bed controller is for adjust the bed to fit any position you like. With wireless hand control, you can raise your head and/or your feet to a position that most comfortable to you.

It controls the vibration motors for massage as well as the head and foot actuators. Various massage operation such as single massage, dual massage, and wave massage can be achieved with wireless hand control.

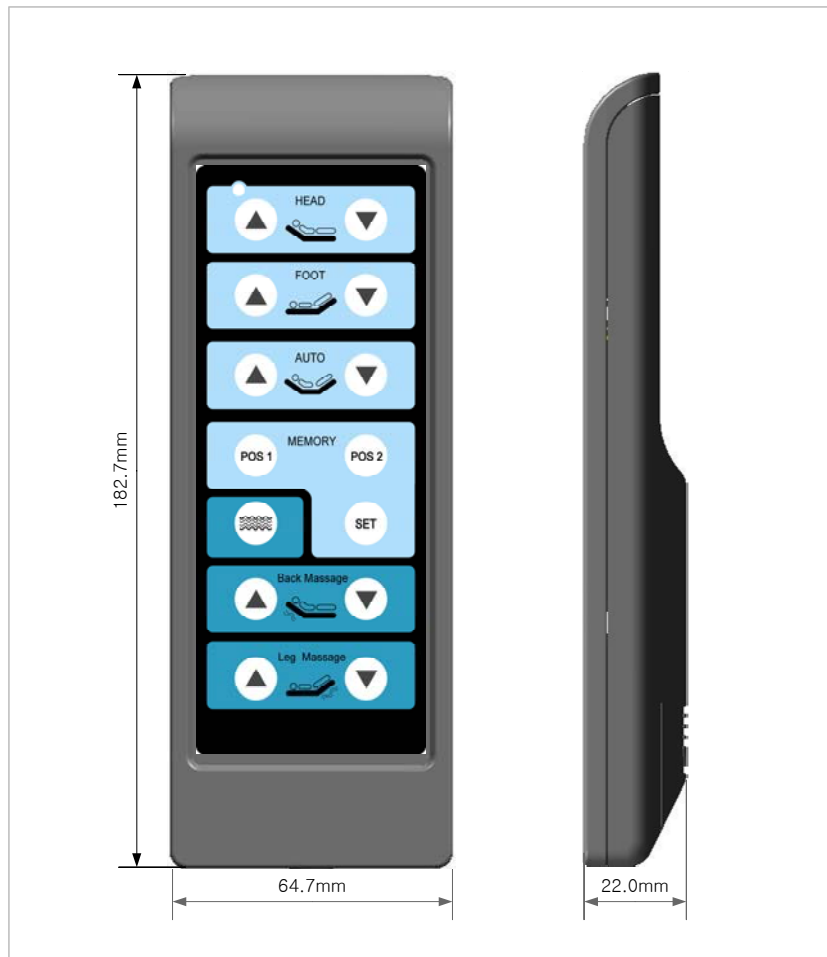


## 1.2 Systems Configuration





## 2.3 Dimension





### 3. Control Box

#### 3.1 Specification

Item	Specification
Model	ABC-200CB-010
No. of Control Output	2 Actuators: Head, Foot 2 Massage Motors: Back, Leg
Massage Function	Massage Mode: Manual / Wave Massage Intensity: 5 steps Timer: 30min
Radio Frequency	315MHz (FCC Part C 15.231)
AC Power Input	AC120V, 1Phase, 60Hz
Dimension	215mm(W) x 140mm(D) x 40mm(H)
Weight	460g
Operating Condition	Temperature: -10~60℃ Humidity: ≤ 85% RH

\* Model for 3 actuators(Head/Foot/Bed) version: ABC-200CB-020

#### 3.2 Photos

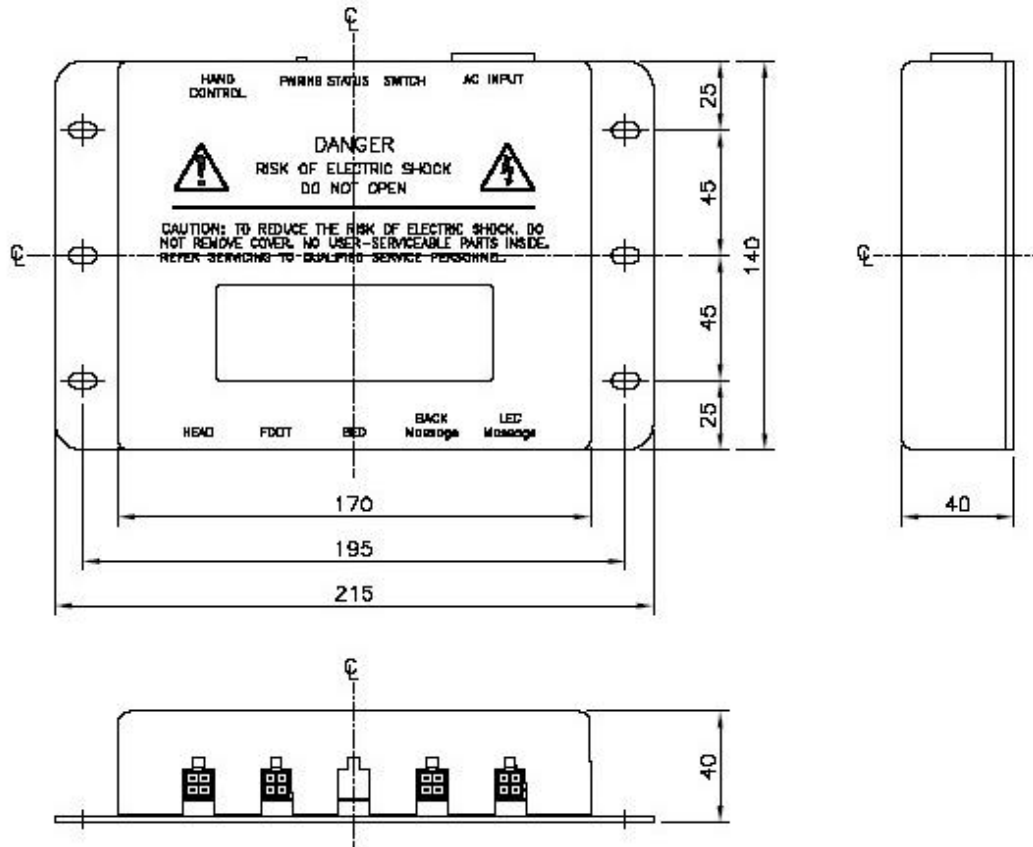


[Front View]



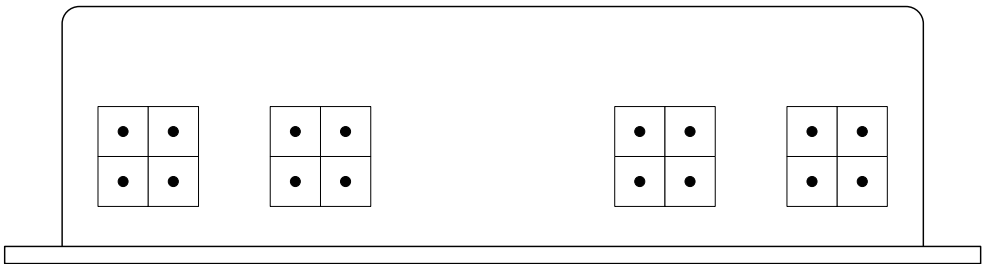
[Rear View]

### 3.3 Dimension

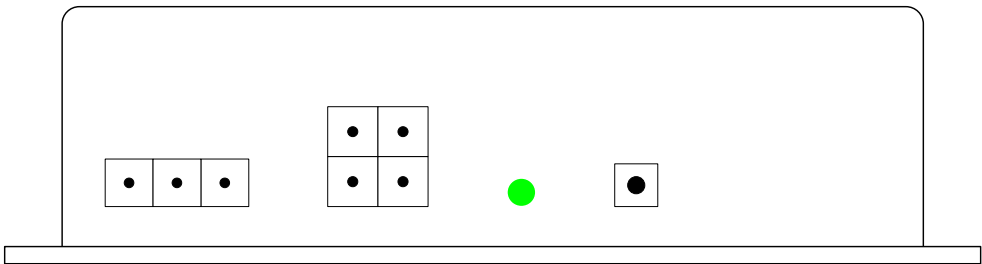


4. Control Box - Details

4.1 Front View Layout



4.2 Rear View Layout



4.3 ACTUATOR Connectors

- **PCB Header**
  - MOLEX 5569-4pins, Right Angle/Dual Row
- **Cable Receptacle**
  - MOLEX 5557-4pins, Dual Row
- **PIN Assignment**
  - Pin 1: UP
  - Pin 2: GND
  - Pin 3: NEUTRAL
  - Pin 4: DOWN

**HEAD**

#### 4.4 MESSAGE MOTOR Connectors

- **PCB Header**
  - MOLEX 5569-4pins, Right Angle/Dual Row
- **Cable Receptacle**
  - MOLEX 5557-4pins, Dual Row
- **PIN Assignment**
  - Pin 1: MASSAGER
  - Pin 2: GND
  - Pin 3: NEUTRAL
  - Pin 4: N/C

#### 4.5 AC INPUT Connector

- **PCB Header**
  - Hanlim LAB1143-03, Right Angle
- **Cable Receptacle**
  - Hanlim CHB1143-03
- **PIN Assignment**
  - Pin 1: NEUTRAL
  - Pin 2: GND
  - Pin 3: HOT(LINE)

#### 4.6 Safety SWITCH (Optional)

- **PCB Header**
  - MOLEX 5569-2pins, Right Angle/Single Row
- **Cable Receptacle**
  - MOLEX 5557-2pins, Single Row
- **PIN Assignment**
  - Pin 1: N/C
  - Pin 2: DC5V
  - Pin 3: Hand Control
  - Pin 4: N/C
- **Ignoring Safety Switch**
  - Safety switch is ignored by inserting jumper into JP1 header on PCB.

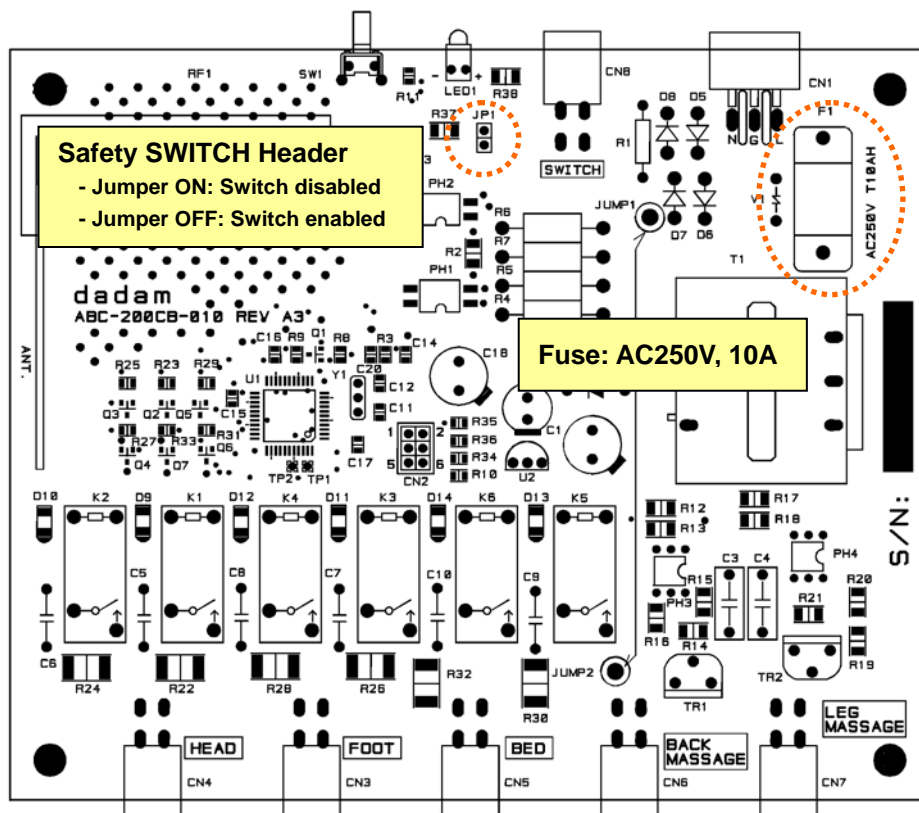
## 4.7 STATUS LED

- **GREEN LED**
  - Power Status, Wireless Pairing Status

## 4.8 PAIRING Button

- For pairing between Hand Control and Control Box.

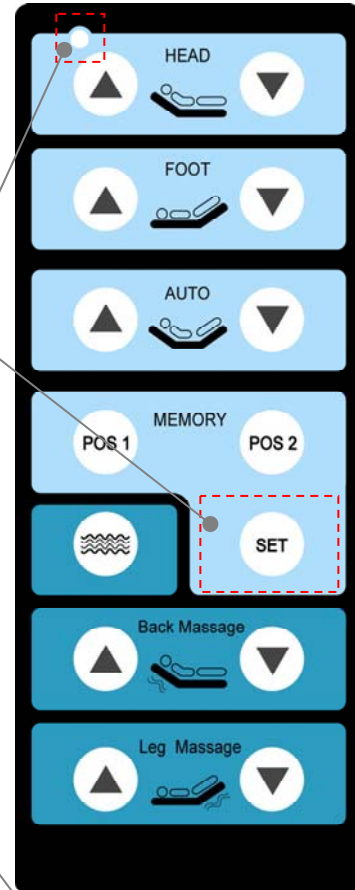
## 4.9 PCB Layout (Fuse, Header)



## 5. System Setup Method

### 5.1 Wireless PAIRING Setup

- 1) In control box, press and release the PAIRING button to go into pairing mode. The GREEN INDICATOR light will begin to flash in 0.2 second interval.  
The pairing mode continues 10 seconds. After 10 seconds, control box exits from pairing mode automatically.
- 2) In hand control, press and hold the SET button for 3 seconds to go into pairing mode. The GREEN INDICATOR light will begin to flash in 1 second interval. In pairing mode, hand control continuously transmits its unique ID.  
The pairing mode continues 10 seconds. After 10 seconds, hand control exits from pairing mode automatically. Pressing the SET button also stops the GREEN INDICATOR flashing.
- 3) Control box tries to find available ID transmitted from hand control. The pairing process will go on until control box finds any available ID. If it finds the ID, pairing will be completed and the GREEN INDICATOR light turns on again.

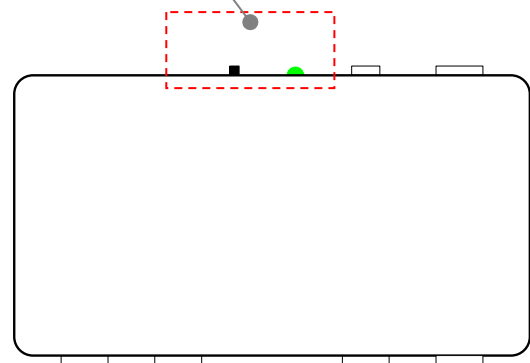


#### ❖ **Electronic ID**

*Each hand control has unique, factory-lasered 16-bit registration ID number that provides an absolutely unique identity, which guaranteed no two hand control alike.*

#### ❖ **RECOVERY FROM PAIRING FAIL**

*Due to electrical writing timing problem, the PAIRING information saved on EEPROM of CPU may be erased in some cases.  
If it happens, please retry of PAIRING process again.*



## 6. Hand Control Operation

### 6.1 Bed Position

- **HEAD UP/DOWN Button**

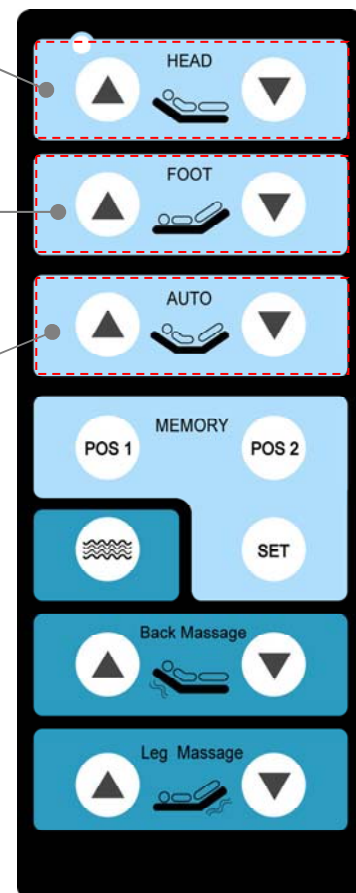
- ✓ To raise the head of the bed, press and hold the HEAD-UP button. Release the button when you achieve the desired bed position.
- ✓ To lower the head of the bed, press and hold the HEAD-DOWN button. Release the button when you achieve the desired bed position.

- **FOOT UP/DOWN Button**

- ✓ To raise the foot of the bed, press and hold the FOOT-UP button. Release the button when you achieve the desired bed position.
- ✓ To lower the foot of the bed, press and hold the FOOT-DOWN button. Release the button when you achieve the desired bed position.

- **AUTO UP/DOWN Button**

- ✓ To make the bed its maximum position, press the AUTO-UP button. The head and foot position of the bed move automatically until the bed become maximum position.
- ✓ To make the bed flat, press the AUTO-DOWN button. The head and foot position of the bed move automatically until the bed become flat.
- ✓ If any button on the hand control excluding AUTO-UP or AUTO-DOWN button is momentarily pressed while the bed is moving, the bed is stop and the pressed button's function is not engaged.



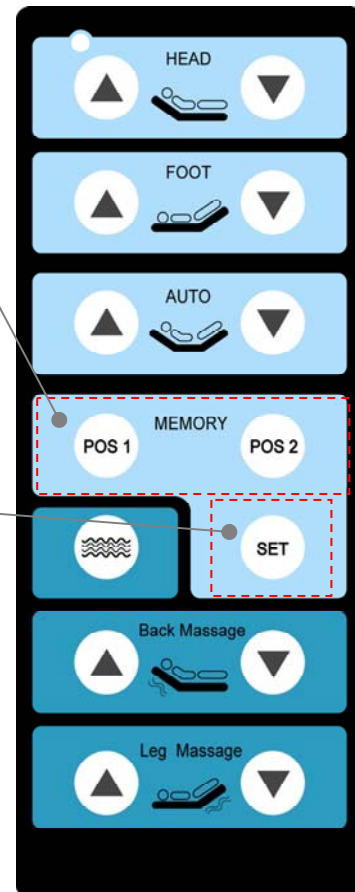
## 6.2 Bed Position Save & Recall

- **POS1 & POS2 Button (Position Recall)**
  - ✓ Press the POS1 button to recall the programmed bed position 1. The bed moves automatically until the head and foot position reached to the programmed Position 1 saved.
  - ✓ Press the POS2 button to recall the programmed bed position 2. The bed moves automatically until the head and foot position reached to the programmed Position 2 saved.
  - ✓ If any button on the hand control excluding POS1 or POS2 button is momentarily pressed while the bed is moving, the bed is stop and the pressed button's function is not engaged.

- **SET Button (Position Memory)**
  - ✓ To save the current bed position as Position 1, press SET and POS1 button in sequence. The current bed position is saved as Position 1.
  - ✓ To save the current bed position as Position 2, press SET and POS2 button in sequence. The current bed position is saved as Position 2.

### ❖ **Position data in Memory**

*Bed position data is saved in RAM of control box and is kept until the power is supplied.  
When the power of control box is turned of, position data are cleared to zero.*





## 6.3 Massage Mode

### ● **WAVE Button**

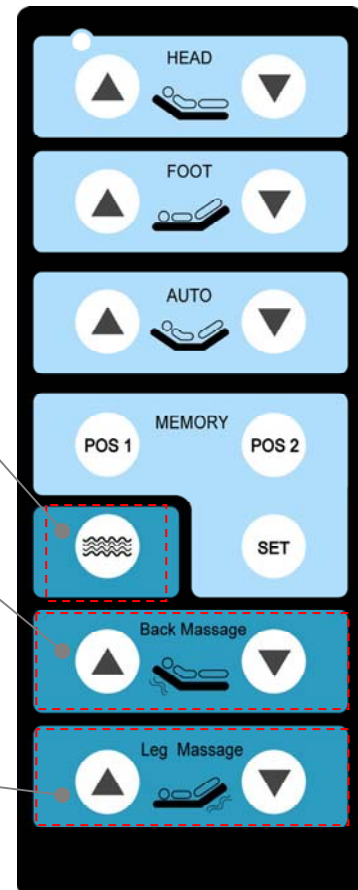
- ✓ Press the WAVE button to activate the 'Wave Program 1' with 30 minutes timer.
- ✓ Press the WAVE button 2<sup>nd</sup> time to activate the 'Wave Program 2'.
- ✓ Press the WAVE button to toggle between Program 1 and Program 2 repeatedly.
- ✓ Press the WAVE button for 2 seconds to stop both massage motors. At the end of 30 minutes, both massage motors are automatically turned off.

### ● **Back Massage Buttons**

- ✓ Press the UP or DOWN button to activate back massage motor with 30 minutes timer.
- ✓ The back massage motor starts with intensity level 5 for 1 second and then drops to last intensity level used.
- ✓ Whenever UP button is pressed, the back massage intensity level is increased to 1 level higher. Whenever DOWN button is pressed, the back massage intensity level is decreased to 1 level lower.
- ✓ If the UP or DOWN button is pressed for 2 seconds, back massage motor stops. At the end of 30 minutes, back massage motor is automatically turned off.

### ● **Leg Massage Buttons**

- ✓ Press the UP or DOWN button to activate leg massage motor with 30 minutes timer.
- ✓ The leg massage motor starts with intensity level 5 for 1 second and then drops to last intensity level used.
- ✓ Whenever UP button is pressed, the leg massage intensity level is increased to 1 level higher. Whenever DOWN button is pressed, the leg massage intensity level is decreased to 1 level lower.
- ✓ If the UP or DOWN button is pressed for 2 seconds, leg massage motor stops. At the end of 30 minutes, leg massage motor is automatically turned off.



### ❖ **Wave Program 1**

*Both massage motors start and change intensity simultaneously. Back massage starts on speed 1,2,3,4,3,2, repeatedly. Leg massage starts 4,3,2,1,2,3.*

### ❖ **Wave Program 2**

*Both massage motors start and change intensity simultaneously. Back massage starts on speed 2,4,2,4 repeatedly. Leg massage starts 4,2,4,2 repeatedly.*