

**CL108A (Works with CL112A Handset)**

**V1.2.2**

**HEIGHT-ADJUSTABLE**

**TABLE HAND CONTROL MANUAL**



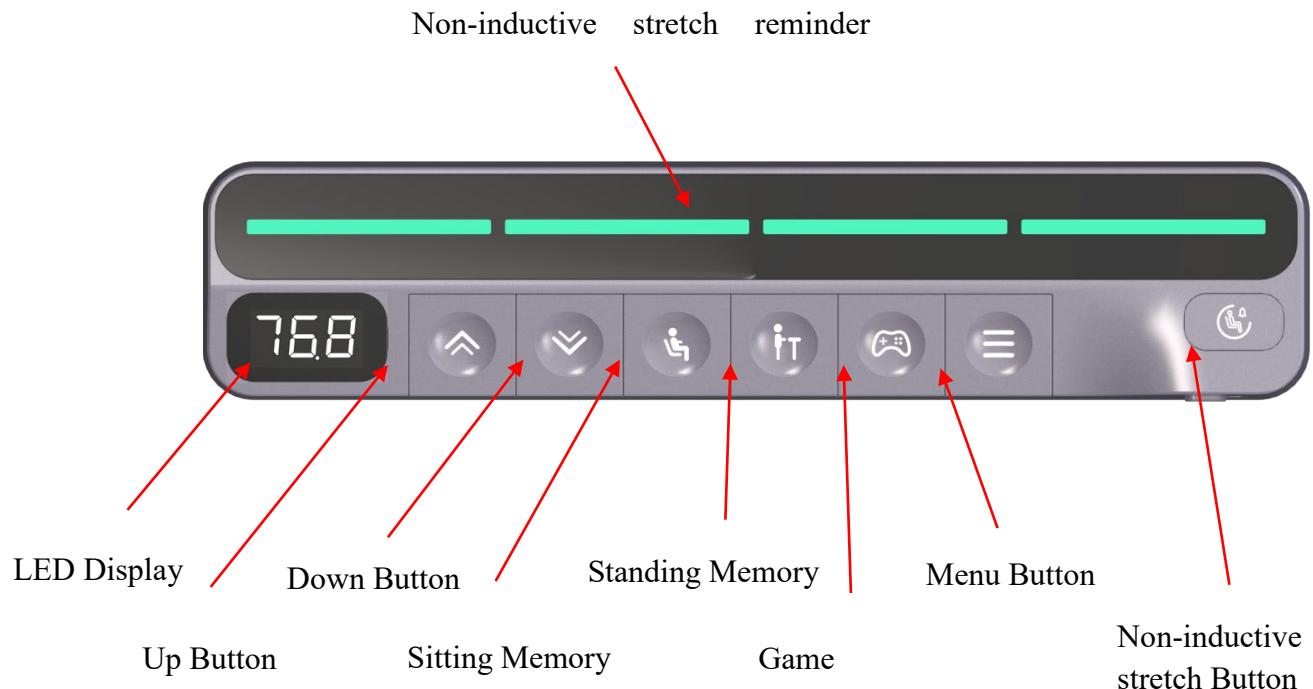
## Change history

Version	Change Detail	Date	Responsible/from
V1.0	First Release	2023-03-21	Musheng Qi
V1.1	Menu added p08	2023-04-21	Musheng Qi
V1.2	Modify the non-inductive stretch operation logic	2023-05-07	Musheng Qi

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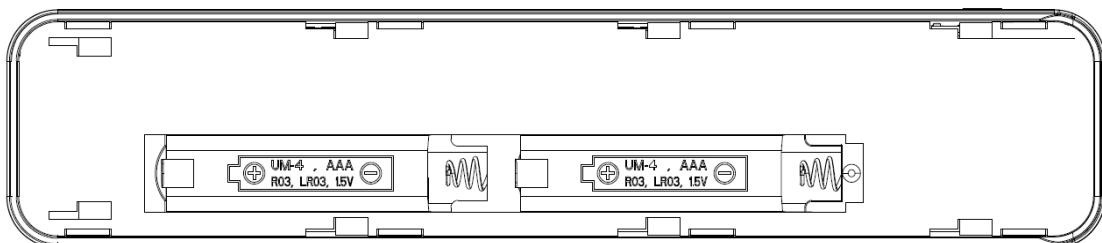
## I. Operation Interface



## II. Operating Instructions

Key								
Default	Up	Down	750mm	1100mm	850mm	Menu	Non-inductive stretch	Child Lock

### 1. Initial Power On



Please open the battery cover at the bottom of the controller, put the two AAA batteries into the battery slot, and pay attention to the positive and negative electrode signs. After it installation, the manual controller will display 8.8.8. Then install the battery cover at the bottom of the controller.

### 2. Manual pairing

The control box is in pairing mode 10 seconds before it is powered on. Press the + key at the same time to pairing, the detailed pairing sequence is as follows:

(1) Power off the control box, and then power on again, hear two "beep", indicating that the control box has been powered on.

(2) Within 5 seconds of hearing the buzzer sound, press the key + for 5 seconds at the same time, and the nixie tube will display "24P", indicating that both sides enter RF code mode.

(3) Wait, and hear the control box ring "beep" two times, which means that the manual controller and the control box are successfully paired;

(4) If "8.8.8." is displayed on the manual controller 10 seconds later, the pairing fails and the pair needs to be paired again. Please repeat step (1) (2) (3) to pair

Note: Repairing automatically removes the last pairing information.

### 3、User Controlled Operation

Key Icon	Function Description
	<p><b>Short press the  key:</b> The desktop raise 3mm</p> <p><b>Long press the  key:</b> The desktop rises continuously</p>
	<p><b>Short press the  key:</b> The Table drops 3mm</p> <p><b>Long press the  Key:</b> The desktop drops continuously.</p> <p><b>Reset operation:</b> When the system moves to the lowest position or the system is faulty, hold down the  key for 5 seconds entering reset mode and RST is displayed. During the reset process, you can release the  key at any time, the table will stop running. Press the  key again to continue the reset. After the reset is complete, the column rebounds 5mm, and the control box makes a "beep" sound, indicating that the reset is complete. The minimum height of the table will be displayed at the manual controller.</p>
	<p><b>Short press the  key:</b> the table will move the height set by the  key.</p> <p><b>Long press the  key:</b> Press and hold for 5 seconds to set the current height as the standing height, set with a beep and save.</p>
	<p><b>Short press the  key:</b> the table will move to the position previously set by the  key.</p> <p><b>Long press the  key:</b> Press and hold for 5 seconds to set the current height as the sitting height, set with a beep and save.</p>
	<p><b>Short press the  key:</b> The table will move to the position set by the  key.</p> <p><b>Long press the  key:</b> Press and hold for 5 seconds, set the current height to the height of the game pose, set with a beep and save.</p>
	<p><b>Short press the  key:</b> To enter or exit the screen for setting menu parameters.</p> <p><b>Long press the  key:</b> Press and hold for 3 seconds to enter or exit the menu.</p>

**Long press the  key:** long press 3 seconds to enter the non-inductive stretching parameter setting: (1) The first step is to enter the starting position setting, short press the  key to increase the starting position, short press the  key to decrease the starting position. (2) After selecting the starting position, press the  key to switch to the number setting, then press the  key to increase the number of times, press the  key to decrease the number of times (range 1~10) (3) After selecting the number of times, press the  key again to switch to the stretching interval setting, then press the  key to increase the interval time, press the  key to decrease the interval time (15/30/45 minutes).

After selecting a parameter, hold down the  key for 3 seconds to save the parameter.

**Non-inductive stretching:** Run to the starting position, wait for the interval time (default 15 minutes), the column at 1mm/s (adjustable by the upper computer), the system running sound  $\leq 39$ dB state increased by 12CM (adjustable by the upper computer) after the stop, wait for the interval time (default 15 minutes), the column at 1mm/s, System running sound  $\leq 39$ dB state slowly reduce 12CM to the starting position, this is a non-inductive stretching. (Required lifting table motor pole number  $\geq 2$ ). When the non-inductive stretching mode is running, the manual end has no display and reminder, and the display is activated only when any key is pressed, and the light will blink once every second. If there is no key operation within 10 seconds, the system will enter the sleep mode and the non-inductive stretching will continue. At the same time, in the non-inductive stretch operation state, the resistance rollback function remains open.

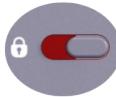


**Short Press the  Key:**

Non-inductive stretch start: In the normal mode stop state, short press the  key to start.

**Non-inductive stretch exit:**

- (1) In the non-inductive stretch state, short press the  key to exit.
- (2) The whole process of non-inductive stretching is finished, and the non-inductive stretching mode is automatically withdrawn.
- (3) In case of failure or resistance, the non-inductive drawing mode will be withdrawn.

	<p><b>Left switch</b>  button: child lock is on, all keys are locked, the manual end displays "LOC"</p> <p><b>Right switch</b>  key: the child lock is off, all keys are restored, and the current height is displayed on the manual terminal</p>
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**The memory parameters are listed below:**

Save Parameter	Range	Reset clear Yes/No
Current altitude	72~118 (cm)	Yes
Sitting position memory height	72~118 (cm)	No
Standing position memory height	72~118 (cm)	No
Game memory height	72~118 (cm)	No

#### 4. System parameter setting screen

Button Icon	Functional description
	<p>Long press the  key 3 seconds to enter the system menu. Short press  key or  key to change the menu number corresponding to the variable. Switching sequence: P00 -&gt; P01 -&gt; P02 -&gt; P04 -&gt; P05 -&gt; P06 -&gt; P07-&gt;P08</p> <p><b>Menu page operation:</b> Under the P0x page, Short press the  key to enter the parameter selection page of the variable, and short press the  key or  key to switch parameters.</p> <p><b>Parameter setting page operation:</b> In the parameter setting page, press the key to confirm the setting, and then return to the menu page. No operation timeout 5 seconds automatically exit the menu mode and set and save the confirmed parameters</p> <p><b>Parameter setting page operation:</b> In the parameter setting page, short press the  key to confirm the setting, and then return to the menu page. No operation timeout 5 seconds automatically exit the menu mode and set and save the confirmed parameters.</p>

The following figure describes the system parameters:

Variable name	Menu Numbe r	Range Value	default	notes
Display unit	P00	0/1	0	0: Metric unit (cm) 1: Imperial unit (inch)
Minimum height	P01	Bottom~(Top-10)	Bottom	range: Bottom~(Top-10) cm, step size 1cm At the same time, the setting value should be at least 10cm smaller than the maximum limit height value
Maximum height	P02	(Bottom+10)~Top	Top	range: (Bottom+10)~Top cm, step size 1cm At the same time, the setting value should be at least 10cm bigger than the minimum limit height value
Foundation height	P03	0~60	0	Reserved item
Ascent resistance sensitivity	P04	0~10	5	Protection against rising obstacle: 0: off; 1~10: The higher the number, the lower the sensitivity.
Descent resistance sensitivity	P05	0~10	5	Protection against descending obstacle: 0: off; 1~10: The higher the number, the lower the sensitivity.
Buzzer control switch	P06	0/1	1	0: Turn off the buzzer (Not turn off the abnormal alarm tone) 1: turn on the buzzer
Gyroscope alarm switch (optional)	P07	0~3	0	0: Turn off; 1: Small dip angle 2: medium dip angle 3: Big dip angle After the gyroscope function is enabled, reset the gyroscope.
Gyroscope distress sensitivity (optional)	P08	0~10	5	Protection function in case of obstacles 0: Turn off; 1~10: The higher the number, the lower the sensitivity.

## 5、Energy-saving mode:

No operation on the key within 10 seconds, the energy saving mode is entered. The manual display is turned off and the controller enters the low power consumption mode. Press any key to exit the energy saving mode. In energy saving mode, the key motion command does not take effect.

## 6、Thermal protection

In order to better protect the motor, the system will run 5 meters in 18 minutes, and the system will enter the thermal protection mode. The thermal protection needs to be detected in the shutdown state, and the display screen will display HOT. At this time, other functions of the manual controller will be turned off and the key cannot be used.

After 18 minutes, the hand controller will automatically exit the thermal protection mode, or exit the thermal protection mode after power failure and restart.

## 7、Automatic test mode

Only the automatic test on the app is turning on the automatic test mode can be started by pressing the button, as shown figure 1. Click the open icon:

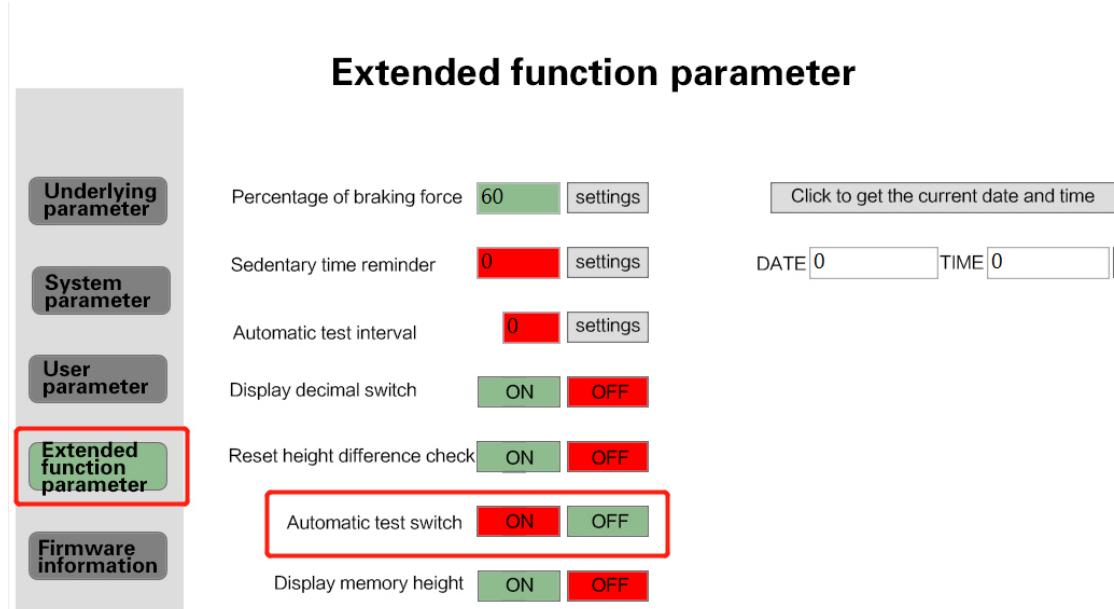


Figure1 Set the Automatic Detection Switch

Button Icon	Functional description
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	<p>Enter automatic test mode: After the extension function switch is enabled on the host, press “” and “” hold down for 5s in user mode to enter automatic test mode, and “TST” is displayed for 2 seconds. Then switch to the downtime setting step.</p> <p>Exit Automatic test mode: In the test mode and stopped state, press “” and “” hold down for 5s to exit automatic test mode and return to user mode.</p>
Short press  	<p>Downtime setting range: 4, 6, 8, 10, 12, 14, 16, 18, 21, 25 minutes (default: 18 minutes)</p> <p>After 20 seconds, automatically leave this step to enter the test (after which the step no longer supports downtime Settings).</p>
Long press  	<p>Display switch: Switch order, height -&gt; Speed -&gt; Run times three digits -&gt; Run times three digits low -&gt; Height.</p> <p>After a round trip, the speed display automatically switches back to the height display.</p>

## 8、Gyroscope function

Before using the gyroscope, start the gyroscope function through the upper computer, as shown in Figure 2:

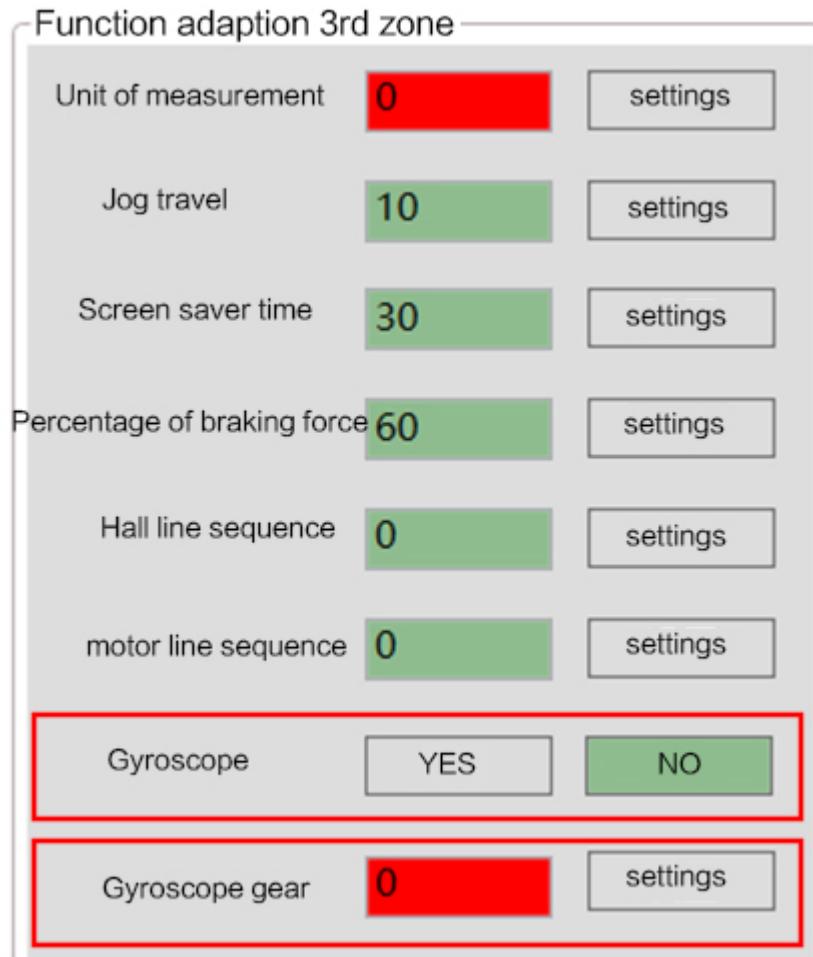


Figure2 Gyroscope switch and gear setting

### 8.1 Unbalance alarm

Gyroscope tilt alarm function, you can use the menu P07 to set 1 ~ 3 alarm deviation height, if it exceeds the set deviation report E09. Note: After the gyroscope function is turned on, please perform a reset operation to calibrate the gyroscope.

### 8.2 Distress Judgment

Distress sensitivity gear adjustment can be set by the upper computer, as shown in Figure 3. The smaller the gear value, the more sensitive it is. Alternatively, it can be set using menu P08 (see Menu Settings).

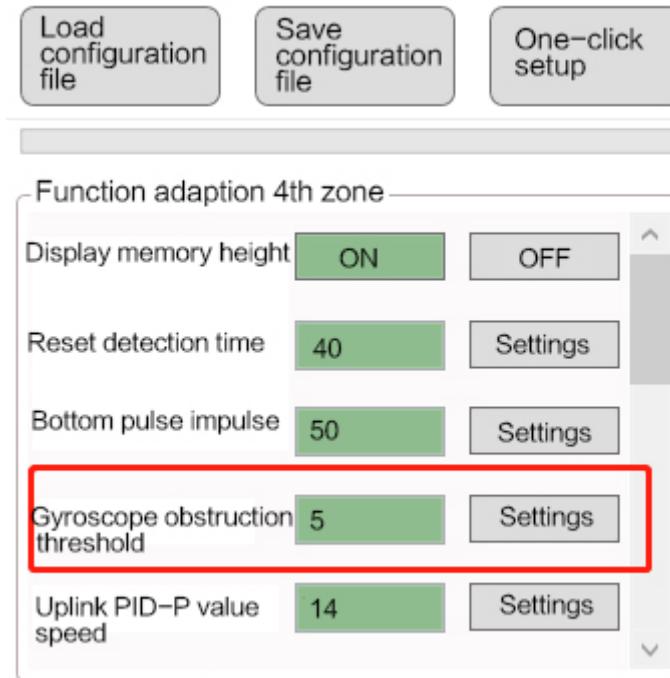


Figure3 Resistance Sensitivity of Gyroscope

#### 9、Low battery alarm, battery replacement

When the system runs for a long time and the battery is low, the low battery alarm will be activated. At this time, the long lamp will flash once every 2s to remind the user to replace the battery. Please open the battery cover at the bottom of the controller to take out the old battery and put it into two new AAA batteries. At this time, the controller Nixie restores the display height, and then install the battery cover to the bottom of the controller. (Note: Replacing the battery will not affect the connection between the controller and the control box)

## Fault codes are list below

When there is a fault, you will hear two Beep sound to remind that the machine is in a fault state and cannot be used. After the fault is completely cleared, you will hear two beep sound to remind that it can be used normally.

Fault code	Description	Solutions
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E01	Motor 1 disconnected	After detecting that there is no problem with the circuit, press and hold the down key for 5s to reset or power off and restart.
E02	Motor 2 disconnected	After detecting that there is no problem with the circuit, press and hold the down key for 5s to reset or power off and restart.
E03	Motor 1 overcurrent	After detecting that there is no problem with the circuit, press and hold the down key for 5s to reset or power off and restart.
E04	Motor 2 overcurrent	After detecting that there is no problem with the circuit, press and hold the down key for 5s to reset or power off and restart.
E05	Hall wire of motor 1 is not inserted	After checking the line is correct, plug in the Hall interface again.
E06	Hall wire of motor 2 is not inserted	After checking the line is correct, plug in the Hall interface again.
E07	Reservation	
E08	Encounter an obstacle	If face abnormal resistance, check whether there is an obstacle. If the sensitivity is not appropriate, please adjust the sensitivity by referring to the menu section.
E09	1、 Large position deviation on the both sides 2、 Gyroscope tilt	If the position deviation on both sides of the table frame alarm, after detecting the line is no problem, long press the down button for 5s to reset or power off and restart. When the gyroscope detects tilt alarm, the controller will automatically eliminate it after leveling. Or reset to eliminate.
E10	High voltage	Check whether the power supply is correct. If there is no problem, press and hold the down key for 5s to reset or power off and restart.
E11	Low voltage	Check whether the power supply is correct. If there is no problem, press and hold the down key for 5s to reset or power off and restart.
E14	Overload protection	Check whether the power supply is correct. If there is no problem, press and hold the down key for 5s to reset or power off and restart.
E15	Communication failure	1、 After the screen is off, press the button to wake up 2、 Controller power off and restart 3、 Repair

## FCC warning

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: 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 or 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.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.