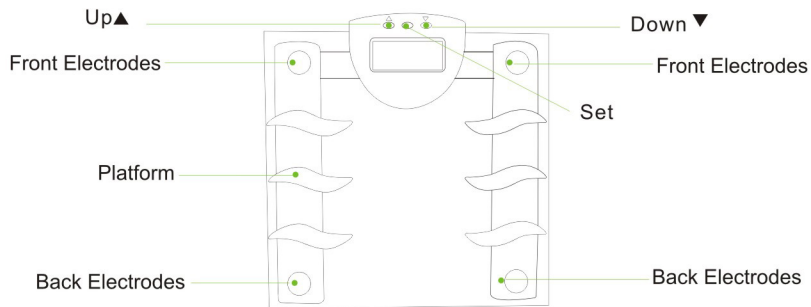


## Electronic Body Fat and Water Scale

### 1.SCALE DRAFT



### 2.TECHNICAL SPECIFICATION

- Max weight: 150 kg/330lb/24 st
- Min effective: 2kg/4.4lb
- Weight division: 0.1kg/0.2lb
- Weight unit: kg-lb-st
- Body fat/water division: 0.1%
- Age range for body fat: 10-80 years old
- Height range: 100-220cm/ 3ft 3.5in-7ft 2.5in
- Fat range:0-80%
- Water range:20-80%
- Height Unit: cm/ft-in
- Memory: 10 person
- Recommended working environment: T 0-40 degree, RH<85%
- Power:  1X9V Alkaline Battery (6F22M)  
 2X3V CR2032 Li-battery  
 1X3V CR2032 Li-battery

### 3.WORKING PRINCIPLE

#### ■ What is body fat percentage?

Body fat percentage derived from the ratio between the body weight and body fat. It proved that if body fat is too high, it increases a person's risk of high blood pressure, heart-disease, diabetes, and some form of cancer.

$$\text{BMI}(\text{Body mass index})=\text{weight}(\text{kg})/(\text{height})^2(\text{m}^2)\%$$

Body	Underfat	Standard	Overfat	Obese
BMI	<16.5%	16.5-25%	25-30%	>30%

#### Body fat percentage(%)

Age	Female				Male			
	Underfat(-)	Healthy(0)	Overfat(+)	Obese(++)	Underfat(-)	Healthy(0)	Overfat(+)	Obese
20-39	<21	21-33	33-39	>39	< 8	8-19	19-25	>25
40-59	<23	23-35	35-40	>40	<11	11-22	22-28	>28
60-79	<24	24-36	36-42	>42	<13	13-25	25-30	>30

#### Body Water(Hydration) percentage(%)

Age	Female			Male		
	Low(-)	Normal(0)	High(+)	Low(-)	Normal(0)	High(+)
10-15	<57	57-67	>67	<58	58-72	>72
15-30	<47	47-57	>57	<53	53-67	>67
30-60	<42	42-52	>52	<47	47-61	>61
60-80	<37	37-47	>47	<42	42-56	>56

#### ■ ORIGINAL MEASURE METHOD:

Body fat percentage used to be measured in several ways:

**CALIPER:** Using hand-held caliper that exert a standard pressure, the skin fold thickness is measured at various body location.

**DEXA:** Use a whole body scanner that has x-rays, the scanner passed a person's reclining body with data collected.

**UNDERWATER WEIGHING:** This method measures whole body density by determining body volume. There is variety of equipment available to do underwater weighing. It first requires weighing a person outside a tank, and then immersing them totally in water and weigh them again. The densities of bone and muscles are higher than water, and fat is less dense than water. So a person with more bone and muscle will weigh more in water than a person with less bone and muscle. Above method have some shortcomings as skillful requested, time-taking, negative effect on person and variation on fat reading.

#### ■ OUR METHOD :

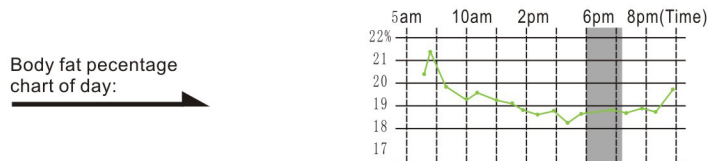
**BIA** We design our method of body fat percentage measuring as BIA( electric impedance analysis). Body impedance is measured when a small and safe electric signal is passing through the body, impedance is greatest in fat issue, while fat-free mass allows the signal to pass much more easily. By using the impedance measurements along with a person's height, weight, age and gender, it will be possible to calculate the percentage of body fat and water.



## ■ FACTOR AFFECTED BODY FAT PERCENTAGE

Body fat percentage is affected by body hydration, in several hours after getting up, bodyfat percentage will be changed by body water hydration. To ensure the accuracy of body fat percentage, we advise to have your body fat percentage measured at night. And there will be a little difference on the reading of body fat percentage when you weigh yourself at different time of the day. Measuring under consistent conditions (proper same time of day and same condition) will yield best results with this method.

Besides above, body fat percentage is also affected by following factor: diet style, drinking too much alcohol, heavy exercise, certain prescription drugs or diuretics, illness, or woman's menstrual cycle.



## 4. MANUAL

### ■ Button Definition

- Press once to start the scale
- During setting, press to change the parameter press once to confirm the data input
- During setting, press to change the parameter

### ■ Preparation before weighing:

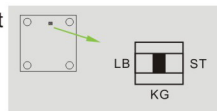
#### 1) Battery furnishment:

- i turn around the scale, battery box is on the back of scale, open the battery box and insert the battery into battery box.
- ii If the scale is lithium battery powered, please pull the insulation tape out before first using.
- iii When the LCD indicate "Lo", open the battery door and replace the battery with a new one.



▲ **Attention:** please furnish the battery with correct polarity, otherwise the battery will be discharged.

2) Units option: The scale is furnished with imperial and metric unit system. Please choose unit system in your country before use. Unit transfer switch is on the back of scale as to picture beside.



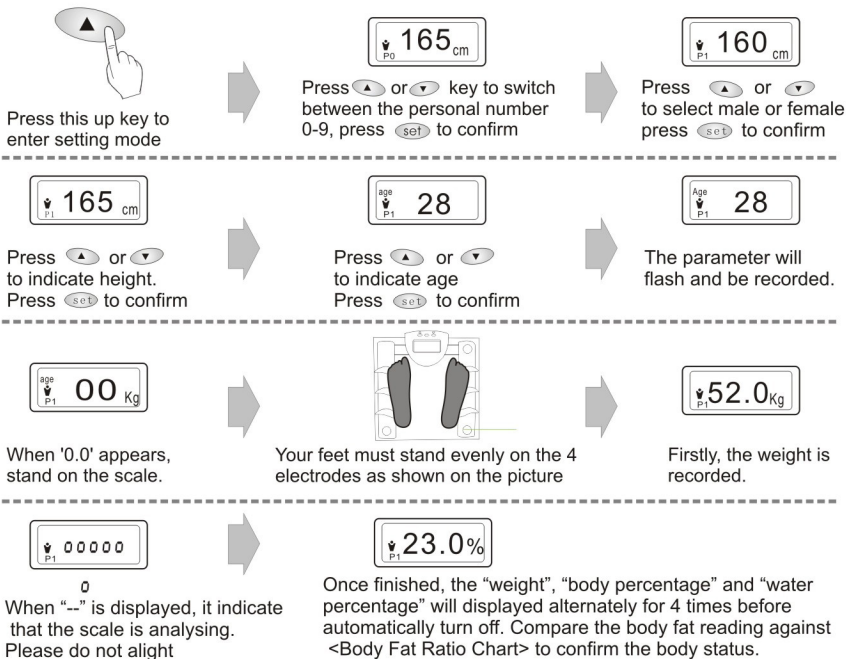
3) Scale position: please put he scale on hard and flat surface, no shaking to ensure the accuracy.

▲ **Attention:** Please do not put your foot on the edge of scale to avoid any failing.

## ■ To measure the weight, body fat and water percentage

Note:





- Please select one personal number (P0-P9) and input your body parameter (gender, height, age) before standing on the scale, otherwise, it can only measure your weight but can't measure the correct fat & water percentage.
- You only need to input the parameter once, the scale will store your parameter. Take your personal number in mind, then you just need to find your number next time.



Due to the difference in race and region, this chart is for reference purpose only.

▲ **Attention:** In order to have more accurate reading, please stand on the scale with bare feet. And keep your feet clean and dry, get in good touch with the metal sheet. There are flashing lines under your body fat percentage stands for the condition of your body health. Underfat (-), Healthy (0), overfat (+), obese (++)

## DISPLAY

	Display to indicate the battery is low, please change the battery.
	Display to indicate that the maximum weight is exceeded.
	Display to indicate the wrong procedure made.
	Display to indicate measure wrong about the body fat percentage.

## 5.ATTENTION FOR SAFETY

- ▲ The scale could not be used for the person have a pacemaker inside or with any other medical transplanting. The impedance passed through our body will have disturbance of the normal working of medical equipment.
- ▲ This scale is for family use only, could not do the medical job with any other medical equipment, we do not advise to use it as a medical equipment.
- ▲ Do not use it on the wet and slippery floor, do not stand on at the edge of scale to avoid any falling down.
- ▲ Advise disable person, pregnant woman, old person to use the scale with help.

### Attention for operation:

The body fat reading will be varied with the amount of body water and following factor will affected body fat percentage reading. diet style, drinking too much alcohol, heavy exercise, certain prescription drugs or diuretics, illness, or woman's menstrual cycle.

- Please take off your socks and keep your bare foot clean and dry.
- Advice to use the scale without any wearing, your wearing will influence the accuracy of the reading.
- Over diet or water losing will have negative effect on the reading.
- Heavy exercise will have negative effect on the reading.
- Unstable or incorrect reading is aroused by not good connect with the metal sheet, Please clean the dirt on the scale and step on scale as to instruction.
- Keep stable when weighing, any shaking will lead to the unaccuracy of scale weighing
- The scale could not be applied to following groups:
  1. People with age below 10 years old or above 80 years old.
  2. Athletic or muscular body type (body builder)
  3. Pregnant woman, person with dropsy.

For above group, the reading of scale is only for reference.

## 6.MAINTENANCE

- Please place the scale on a clean and level surface.
- Please do not use the scale in extreme high or low temperature environment.
- Please do not jump or stamp on the scale and avoid dropping it, as the scale is a highly precise electronic instrument.
- To prevent scratches on glass panel, it is advised not to wear any footwear while taking any measurements.
- When cleaning the scale, please use only normal cloth and no chemical cleaners should be added to avoid any damage to the scale.
- This scale is only designed for home use and should not be used commercially for any reason at all. The < Body Fat Ratio Chart > is for reference purpose only.
- Please remove battery from the scale if it is not used frequently.

## 7.FREQUENCY ASKING QUESTIONS:

- Why the scale is power off after a few seconds?  
Check the battery and ensure the battery is new and equipped in correct polarity. and be sure your foot is with good contact with the metal sheet.
- Is there anything wrong with "----" displayed on the screen?
  - a. The scale is auto zero setting, please wait for a second, "0" will be displayed.
  - b. No parameter was found in scale, please input your personal parameter.
- The scale is only weight displayed, no any body fat percentage is found?  
Shaking will disturb the body fat percentage measuring, please keep your body straight when weighing, and be sure that your foot bare and keep in good contact with the metal sheet on scale.
- The body fat percentage is much higher than normal?  
Please double-check your personal parameter covering gender, height and age. make sure your bare foot is clear and dry, have a good contact with metal sheet. and big loss of water, quite exciting condition or callus on foot will affect the reading of body fat scale.