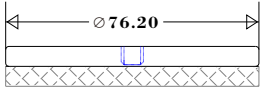
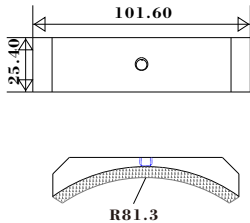


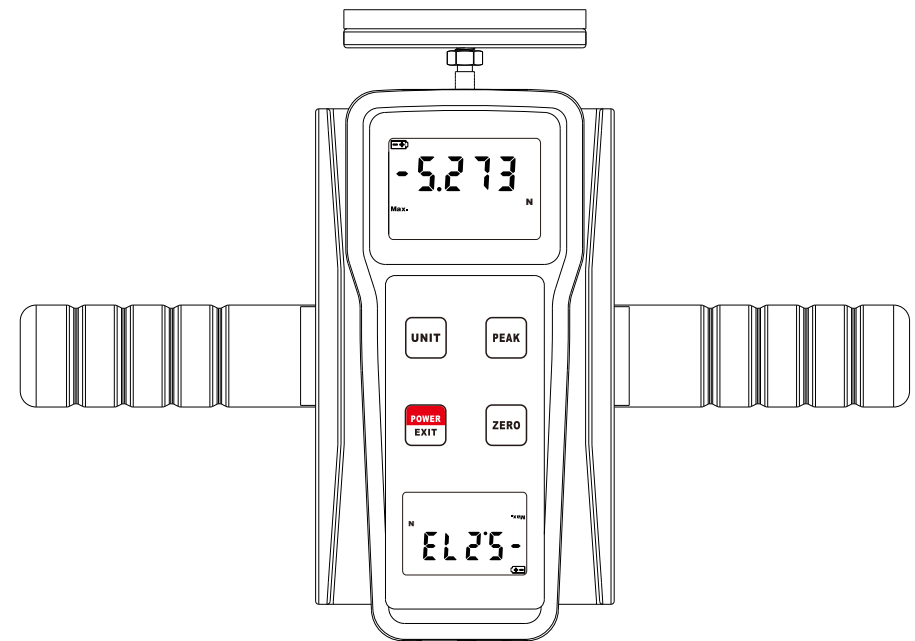


Name	structural diagram	Attachment purpose
<p>           padded attachment,            circular(standard)         </p>		<p>           For physical therapy and ergonomics,            Muscle strength tests, work assignments            Requirement etc.         </p>
<p>           padded attachment,            curved(Optional)         </p>		

Standard Accessories	Manual
	Carrying Case
	Instrument stents
	4 M3*18 screws
	 E-1005
Optional Accessories	External USB power supply cable
	 E-1004

## Test Muscle Strength

### FG-104M



Dear customer, Thank you for purchasing this  
 product, in order to ensure that  
 Please read the information in this manual carefully.  
 And operate in accordance with the information

# CONTENT

1. INTRODUCTIONS.....	1
2. FUNCTIONS AND FEATURES.....	1
3. TECHNICAL PARAMETERS.....	2
4. STRUCTURE DESCRIPTION.....	3
4.1 Overall Structure .....	3
4.2 Display .....	5
4.3 Operation Key .....	6
5. POWER ON & POWER OFF.....	6
5.1 Power On .....	7
5.2 Power Off .....	7
6. CALIBRATION.....	7
7. REAL TIME MEASUREMENT MODE & PEAK HOLD MODE.....	7
8. UNIT CONVERSION FUNCTION.....	7
9. SETTING OF AUTO POWER OFF.....	7
10. INSTALLATION & MEASUREMENT.....	8
11. BATTERY REPLACEMENT.....	9
12. SECURITY AND CAUTIONS	

T matters to prevent accidents and the method of using the instrument. Please read this manual carefully before using it, and keep it properly after reading it for re-reading.

B. If it is to test the impact load, please select the model with the maximum load twice that of the impact load to be tested.

## 11.2 Warning:

A. During destructive testing, protective masks and gloves should be worn to prevent human body from being injured by splashing substances during testing.

B. Do not use fixtures that have been damaged or severely bent. Self-made jig please refer to the relevant parameters in this manual (the company has all kinds of jig, customers can purchase according to need).

C. Do not use the instrument beyond the maximum range. Otherwise, sensor damage or even accidents may occur.

D. When the test value exceeds 110% of the range, the buzzer will beep continuously. At this time, please remove the added load quickly or reduce the load.

## 11.3 Safety Matters:

A. When using the power adapter, do not use A power supply other than the rated voltage. Otherwise, electric shock or fire may occur.

B. Do not pull out or insert the plug with wet hands, otherwise it may cause electric shock.

C. Do not pull the power cord of the power adapter to remove the plug. Otherwise, the cable may be torn and electric shock may occur.

D. Please clean the machine with a soft cloth. Soak the cloth in water soaked with detergent and wring it out before removing dust and dirt. Note: Do not use volatile chemicals to clean the unit (such as volatile agents, thinners, alcohol, etc.)

E. Do not operate the device in the following environments

① Humid environment ② dusty environment

③ Where oil or chemicals are used ④ Where there is a seismic source

F. After use, please put the tension gauge in the equipped portable case to protect the test shaft from external impact force.

G. The product is a liquid crystal display, high-precision integrated electronic product, do not hit, squeeze, after use, please put the product in the equipped portable box.

H. Do not disassemble, repair or modify the unit, which may cause permanent failure of the instrument.

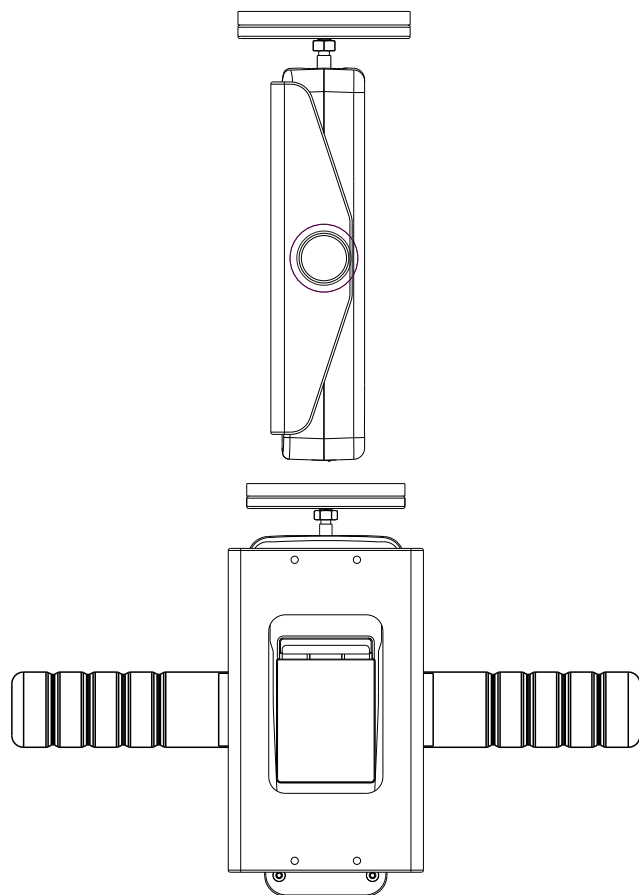


FIG. 6

## 10. Replace the battery

- 10.1 When the battery voltage is too low, a battery symbol will be displayed on the monitor. The battery needs to be replaced.
- 10.2 Open the battery cover and take out the battery.
- 10.3 Install the battery correctly according to the label on the battery box.
- 10.4 If the meter is not used for a long period of time, remove the battery to prevent battery damage Rot and damage the meter.

## 11. Safety precautions

### 11.1 Precautions:

Improper operation may damage the instrument or result in serious accidents. This manual points out the important

## 1. Introduction

FG-104M series muscle strength tester is the latest design and development of our company a digital explicit push and pull meter. It has the advantages of high precision, easy operation and convenient carrying. With a variety of test bench and fixture combination can constitute a different use of testing machine. Muscle strength tester has many specifications for users to choose, users can be tested according to the required product force value size, select the corresponding specifications of the instrument. Scientific use of the test range is 10% to 100% of the full range, the metrology department recommended not to use less than 1% of the full range. At the same time, after the instrument and the object to be tested are in place before the test, press the ZERO(ZERO) key to clear the ZERO to eliminate the weight of the fixture.

Muscle strength tester is a small, simple, multi-functional, high-precision thrust, testing instrument ergonomic analysis simple and accurate, is the ideal choice for workplace design, strength evaluation and ergonomic research.

## 2. Functional features

- \* High precision and high resolution.
- \* Digital display, ignore the difference.
- \* N(Newton), kg(kg), LB (pound), g(gram) four measuring units for choice, mutual conversion.
- \* Peak hold function. Maintain peak display until manually reset.
- \* Green environmental protection, 10 minutes no operation automatic shutdown; It can also be manually shut down.
- \* Can be powered by alkaline batteries; It can also be connected to 5V DC power supply.

### 3. 技术参数

Model	FG-104M
Force Rang	±50kgf
	±490N
	±110Lbf
Resolution	0.01kgf
	0.1N
	0.1Lbf
Accuracy	±0.5%FS ± 1Digit
Unit	kgf, gf, N, Lbf
Measurement State	Peak Value Measurement, Real Time Measurement
Display	2 Reversed 4 Digit LCD
Power Off	10 Minutes Auto Power Off, Manual Power Off
Backlight	Backlight
Safe Load	150%FS (Buzzer Alarm Over 110%FS)
Power Supply	2x1.5 AA(UM-3) Battery or 5VDC Power Supply
Operating	0° C~40° C
Conditions	< 80%
Surrounding	No Vibration Source or Corrosive Medium Around
Weight	705 g
Size	host machine: 170mm*72mm*35mm handspike: 315mm*Φ 30mm Instrument stents: 155mm*95mm*35mm

### 7. Real-time measurement mode and peak holding mode

The instrument can be set up in two measurement modes, real-time measurement mode and peak holding mode. When there is no peak indicator "MAX" on the display, it is in real-time measurement mode, and the test value follows the load changes and changes; Press the peak value key (PEAK) to display the peak value indicator "MAX" is the peak holding mode, and the test value shown is the maximum value in the test.

### 8. Unit conversion function

In real-time measurement mode or peak hold mode, press the UNIT key

Now the conversion of units of measurement.

### 9. Installation and testing

After startup, use factory default Settings to test or press the operation button as required

Test after selecting the test mode.

A. Select the appropriate test joint fixture and install it on the muscle tester (please make your own fixture

Refer to the relevant data in "Outline and installation Dimensions Drawing" below).

B. Please hold the muscle tester firmly or install the muscle tester on an appropriate tester

Test on the table, please make the test force and the push-pull rod of the push-pull meter into one

Straight line so that you can measure the exact load.

C. After the test is completed, unload the load, turn off the power, remove the fixture, and clean each object

Put it back in the tool box for next use.

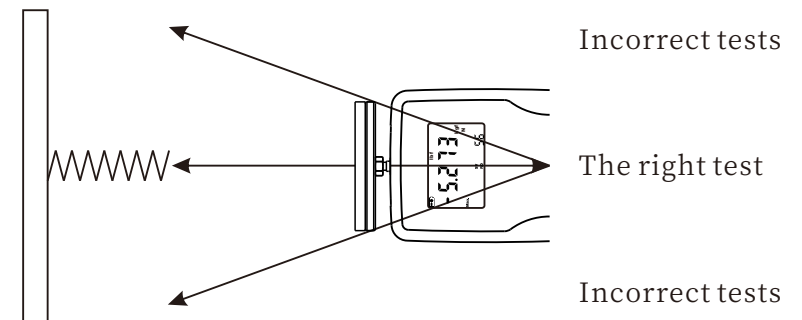


FIG. 5 Correct direction of measurement



### 4.3 Operating Buttons

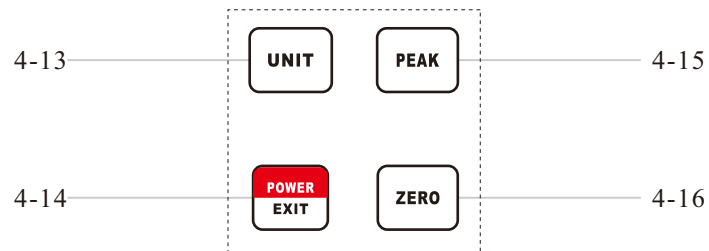


Figure 4 Operating keys

Function description of key operation

4-13 UNIT Key

It is a unit conversion key for unit conversion operations.

4-14 POWER/ Return button (POWER/EXIT)

It is the power switch.

PEAK Key (PEAK)

It is a switch button between peak holding mode and real-time measurement mode.

4-16 Adjusting the ZERO Key (ZERO)

Instrument zero operation button.

5. Startup and shutdown of the instrument

5.1 Startup of the instrument

After installing the battery or connecting the external POWER supply, press the POWER/ Return key (POWER/EXIT) to start the battery.

5.2 Instrument shutdown

5.2.1 Manual shutdown

In the startup state, press and hold the POWER/EXIT key (POWER/EXIT) for about 2 seconds, release the key when "OFF" appears on the monitor, and the instrument will shut down.

5.2.2 Automatic shutdown

The instrument can be set to automatically shut down after 10 minutes of keyless operation. For specific Settings, see 9 Setting automatic shutdown

6. Instrument zero calibration

According to the requirements, after the instrument is installed at the measuring position, press the ZERO key (ZERO) to adjust the ZERO, the display shows the value of 0.

\* When the weight of the fixture used exceeds 20% of the range or the load of the machine exceeds 20% of the range exists, press the zero key can not clear, at this time, you need to choose a lighter fixture or remove the added load, and clear again.

7. Real-time measurement mode and peak holding mode

### 4. Structure description

#### 4.1 Overall Structure

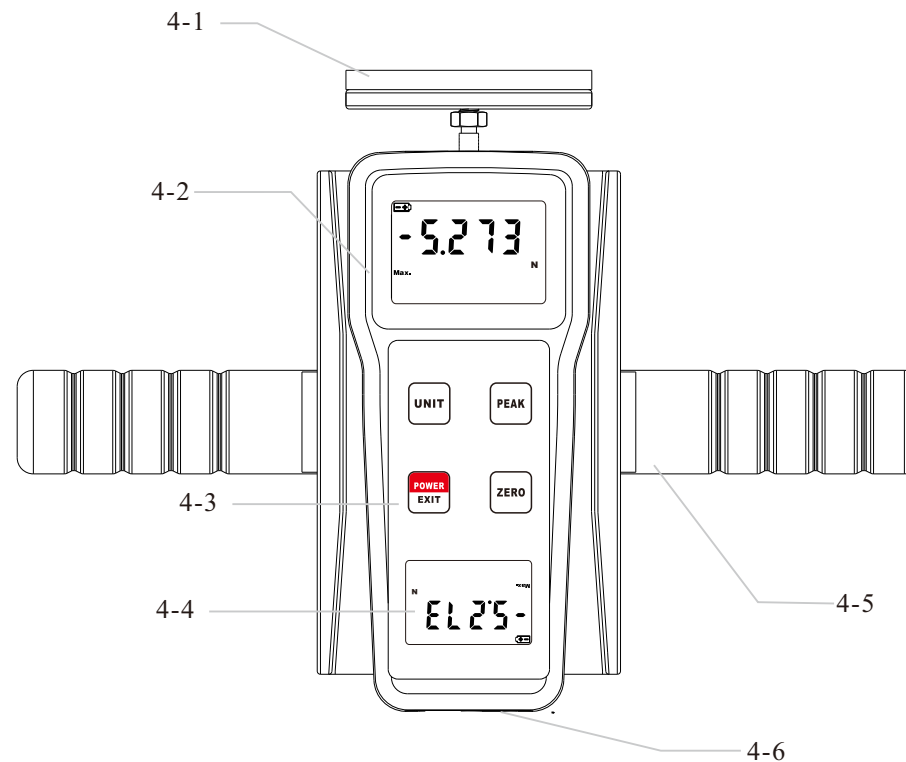


FIG. 1 Overall structure (front)

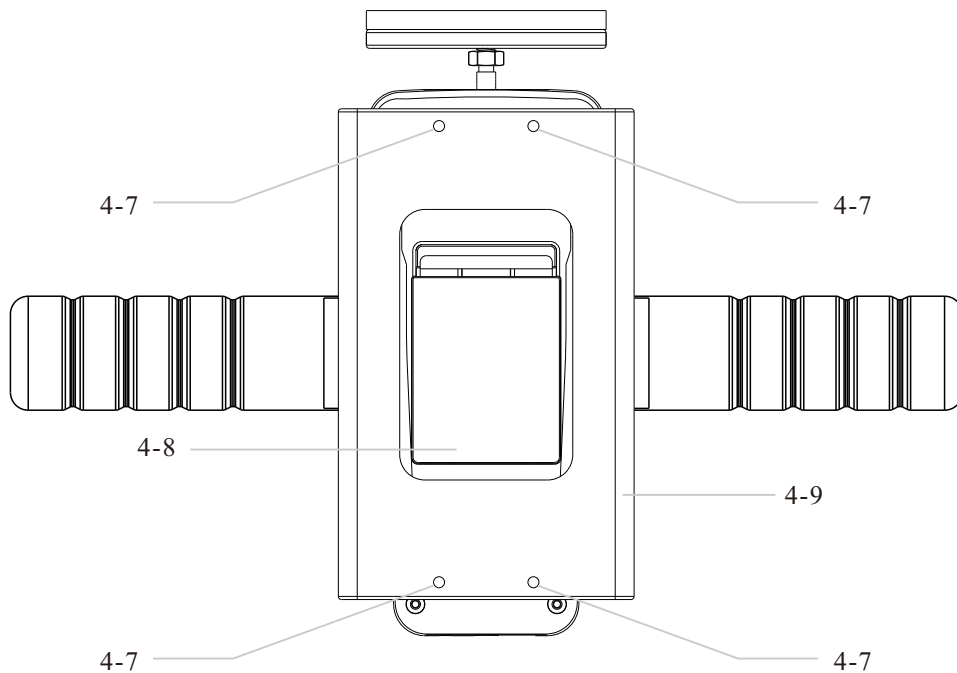


FIG. 2 Overall structure (back)

#### Structure and Function description

##### 4-1 Sensing screw

The screw is the force sensing structure component of the whole instrument, and its function is to conduct muscle strength test. It can be connected with rubber pad square head, rubber pad rectangular head, rubber pad arc head. Please refer to page 10 for the attached description.

##### 4-2 display A

It is used to display the measurement reading, measurement unit, prompt information during operation, etc.

##### 4-3 Operate the key area

All the operation keys are distributed, and the whole instrument's key operation is done here.

##### 4-4 monitor B

It is used to display the measurement reading, measurement unit, prompt information during operation, etc. Its main function is to facilitate reading in multiple directions.

##### 4-5 Fix the handle rod

It is a fixed structural part of the instrument.

##### 4-6 Power port

Can be connected to 5V DC power supply to achieve DC power supply.

##### 4-7 Secure screw holes

It is also a fixed structural part of the instrument, which can be fixed with other components.

##### 4-8 Rear battery case

The place where the battery is installed is powered by the battery.

##### 4-9 Instrument stents

Steady point instrument

#### 4.2 the display

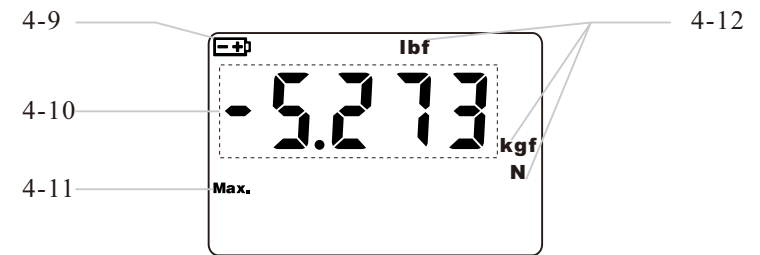



Figure 3 Display

#### Display function Description

##### 4-9 Battery indicator " "

When the battery voltage is too low, "  " appears in the upper left corner of the screen, indicating that the battery voltage is not Yes, the battery needs to be replaced.

##### 4-10 Measurement values

On the unit, the thrust (pressure) defaults to a positive value ("+" is not displayed); Pull the default Is negative (displays "-").

##### 4-11 Peak indicator MAX.

When "M A X." When displayed, the peak value retaining mode is shown in the table, and the peak is displayed on the display screen Value; If MAX. Is not displayed, it indicates the number displayed on the screen in real-time measurement mode The value varies with the load.

##### 4-12 Units of measurement

Indicates the current measurement unit, including KGF, GF, N, and LBF. Only one of these units is displayed.