

# Operation manual of TJ-K electronic scale

## 1. Overview

Manufactured and well-designed by G&G Measurement plant, adopting industrial-class high precision sensors, measurement circuit, a G&G dedicated single-chip computer system, and high-quality electronic balance has been widely used in a variety of purposes of weighing measurement, detection tests, to improve product quality, cost-effectiveness and efficiency have played an important role. Electronic balance has the following characteristics:

1.1 High precision, hypersensitivity and fast reaction time (within 2 seconds).

1.2 Using high precision single point load cell, to overcome the general high-precision electronic scale's defects that can not measure iron, nickel and other magnetic materials.

1.3 Advanced line mode, excellent selection and manufacturing process, thus products with high reliability, anti-interference capability and full lifetime. Good stability for full lifetime using also can be used to adapt to harsh environment and long time working.

1.4 With external calibration, zero tracking, counting, tare, pre-tare, units' conversion, presetting and alarming capable.

1.5 Large easy to read LCD backlight display.

1.6 With RS232C communications port and PRINT key, the scale can be connected directly to the printer or computer to collect and analyze the data. It can even be operated by PC-Telecontrol.

1.7 Runs on AC power or Large Rechargeable Battery. One single charge scale can work for more than 100 hours without backlight; Scale can be used during charging, which can not affect the functions of the scale.

## 2. Specification and Performance index

Model	TJ60KY	TJ150KY	TJ300KY	TJ600KY
Max weights	60kg	150kg	300kg	600kg
Resolution	2g	5g	10g	20g
Calibration value	10d	10d	10d	10d
Tare range	60kg	150kg	300kg	600kg
Calibration weights	50kg	100kg	200kg	500kg
Min. weighing value	40g	100g	200g	400g
Min. sampling value	40g	100g	200g	400g
Min. unit weight value	1g	2.5g	5g	10g
Dimension of Platform	520×420mm			
Power Supply	AC220V±10% 50Hz±1Hz 10W DC6V/4AH/20HR Rechargeable battery			
Use Temperature	0-40°C			
Use Humidity	≤80%R.H			

Model	TJ60KAY	TJ150KAY	TJ300KAY	TJ600KAY
Max weights	60kg	150kg	300kg	600kg
Resolution	5g	10g	20g	50g
Calibration value	10d	10d	10d	10d

Tare range	60kg	150kg	300kg	600kg
Calibration weights	50kg	100kg	200kg	500kg
Min. weighing value	100g	200g	400g	1000g
Min. sampling value	100g	200g	400g	1000g
Min. unit weight value	2.5g	5g	10g	25g
Dimension of Platform	500×400mm			
Power Supply	AC220V±10% 50Hz±1Hz 10W DC6V/4AH/20HR Rechargeable battery			
Use Temperature	0-40°C			
Use Humidity	≤80%R.H			

### 3. Operation method

3.1 On/off switch: The newly bought or long-time not used scales should be connected with power supplier before using. Holding down the “ON/OFF” key till the displaying windows displays “ON”, then displays the battery voltage, scale range, at last, displays from “F----1”to “F-----9” and after a certain time for stabilizing, “0” appears. Holding down the “ON/OFF” key till the displaying windows displays “OFF”, the scale will turn off automatically.

#### 3.2 Tare

3.2.1 With empty scale platform, the displaying deviates from zero, pressing “TARE” key, then the displaying will return to zero.

3.2.2 If the weight of the article for which the packaging is to be removed is unknown, place the packaging container on the weighing platform, wait till the weight display is stable before pressing the “TARE” key. The zero is displayed for the weight. Then place the article to be weighed in the container. Now, the weight window displays the net weight of the article. When the article and its container are removed, the weight display window displays the negative value of the weight of the container. Nevertheless, press the “TARE” key so that zero is displayed for the weight.

3.2.3 If the weight of the article for which the packaging is to be removed is known (pre-tare), key-in the weight (in g) of the container by means of number keys, then press the “TARE” key and the weight display window displays the net weight of the article excluding the weight of the container. Remove the article and container, the display window displays the negative value of the weight of the container. Nevertheless, press the “TARE” key and the Packaging Removal function is canceled and zero is displayed for the weight.

#### 3.3 Calibration

If the scale has not been used for a long time or just newly bought (when the scale does not read accurately), the scale should be calibrated. Firstly, the scale is power on(over15 minutes), calibration need to press “TARE” first, then press “kg/lb”, the weight displaying window shows “XXXXXX” and the unit weight displaying window shows “-CAL-”, the scale enter calibration,( XXXXXX should be the weight of standard weights, for example: when displaying showing “50.000” expressed the need to place a standard weight 50kg), at the same time, only place calibrating weights on the platform, after stability, the weight displaying window shows the weight of the calibrating weights and the unit weight displaying window shows“0”, till now the calibration is completed and the scale can be normally used and count. If the weight displaying shows “C……F”, press “TARE”, then try to calibration again.

#### 3.4 Counting

- 3.4.1 When the unit weight of the article to be weighed is unknown, place the article to be sampled on the weighing platform, key-in the quantity of the article to be sampled, press the “SMPL” key and the unit weight display window displays the unit weight of the article to be sampled, the quantity display window displays the quantity of the article to be sampled, thus ends the sampling and it is in the counting state. The larger the quantity of the article to be sampled, the more accurate the calculated unit weight value is.
- 3.4.2 When the unit weight of the article to be weighed is known, key-in the unit weight value of the article to be weighed, then press the “UNIT W.T.” key, (If no key is pressed for entering after 5s when numbers are keyed in, the entered number in the unit weight window is deemed as the unit weight value of the article to be weighed.) and thus ends the setting and it is in the counting state.

### 3.5 Weight accumulate

Press the “M+” key to enter the accumulation state and the accumulation indicator lights displays. The max. Number of operations for accumulation is 99 and the max. Number to be displayed in the quantity display window is 99999. When weight data display is stable in the weight display window, press the “M+” key and the weight display window displays the total weight with the unit weight window displaying the accumulated number of operations and the quantity display window displaying the total quantity. After about 5s, you are again in the counting state where the weight display window displays the current weight, the unit weight window displays the unit weight and the quantity display window displays the current quantity. When the weight display window displays zero, press the “M+” key and you will view again the accumulated value. Next accumulation must after the weight back to zero.

### 3.6 Presetting of quantity

For counting, the upper limit can be preset. For each of the subsequent counting, alarm is actuated when this limit is exceeded and “--H--” flickers in the unit weight display window. Key-in the upper limit of number to be set, press the “QTY PST” key and thus ends the presetting of the quantity. When the presetting of quantity is “0”, the upper limit can not set. When you press the “QTY PST” key without data entered, the quantity display window displays the current value of preset quantity. It indicates the current value after 5 seconds.

### 3.7 Unit conversation

Press “kg/lb” key and the displayed value for weight display window switches between “kg” (kilogram) and “lb” (pound) and the indicator for relevant unit lights. The unit conversion in the weight window does not affect the unit in the unit weight window (which is always in g).

### 3.8 Data output

This scale have RS232 data output, can connect to the computer and printer, When not in the number-entering state, it is the printing key. press “.” to print counting data.

## 4. Keypad Functions

**0-9** Keys for entering numbers, In the number-entering state, it is a key for decimal.

When not in the number-entering state, it is the printing key.

**Clear** In the number-entering state, it clears the entered numbers.

**Tare** In the number-entering state, it pre-tare the entering data; not in the number-entering state, change the weight data into “0”

**Unit** the units can be changed between kg(g) and lb.

**UNIT W.T.** In the number-entering state, set the current input for single heavy.

**SMPL** In the number-entering state, set the current input for sample count, the presetting of quantity should larger than “0”, otherwise the number is 0.

**Accumulate** the weight display window shows the weight of the data is greater than 0, cumulate weight value and numbers, the unit weight window shows accumulative total pen number and in 5 seconds after the resumption, only Weight back to zero to be the next stack

**Clear accumulation** clear the accumulated value and are out of the accumulation state.

**Presetting** In the number-entering state, press “QTY PST” to set the current input amount of the upper limit value; not in the number-entering state, the presetting data will be showed in quantity displaying window.

**Clear presetting** Clear the alarm of the quantity presetting.

## 5. Display information of counting scale

F----1 Date over display scope

F----2 A/D-switch is defect

F----3 Key is defect

F----5 Sensor signal is defect

F----L Lower zero position of sensor signal

F----H Object weight over capacity

C----F Calibration error, instability or not at zero point during calibrating

C----H Calibration error, items on the pan or at higher zero point during calibrating

E----- Storage calibration data error, re-calibration is necessary.

## 6. Unit weight display window displays the following information

6.1 Unit weight displaying window

-CAL- In the calibration state

≡ X≡ The displayed value is the number of operations for accumulation. The weight field displays the total weight and the number-of-pieces field displays the total weight.

H Meaning the preset quantity is exceeded and an audible warning is given.

6.2 Quantity display window

F·····1 quantity exceed the display range.

## 7.Setting of adjustable parameters

Holding down the “kg/lb”, then press the “ON/OFF”, the scales are in the setting mode , and pressing “kg/lb” can change the parameters; pressing “TARE” can change the values of parameter.

C1---- Sensitivity setting 0 1 2 3 4, the larger number is, the less sensible but the better stable. Default setting is 2

C2---- Filtering strength setting 0 1 2 3, the larger number is, the lower reaction speed but the better stable .Default setting is 1 or 0

C3---- Baud rate setting 2(600) 3(1200) 4(2400) 5(4800) 6(9600), Default setting is 6 .

C4---- Communication setting. “TARE” changes the lower unit. “M+” changes the high unit. This date is the first date during communication. Default setting is 27.

Holding down the “TARE” and power on , all the parameters can be reset to default settings, re-calibration before using.

## 8. Serial communication

8.1 Serial communication protocol: baud rate: 600-9600 can set, the default settings is 9600; data units: 8 units; ending unit: 1 unit; no calibration unit.

8.2 Data format: 41-bit data output (ASCII code)。

WT	space	negative	data	unit	enter
2 unit	1 unit	1 unit	7 unit	3 unit	1 unit
UW	space	data	unit	enter	
2 unit	1 unit	6 unit	2 unit	1 unit	
QT	space	data	unit	enter	linefeed
2 unit	1 unit	5 unit	4 unit	1 unit	1 unit

When data is not negative, the negative unit is space, no showing data is also space.

For example: weight showing 12.345 kg, unit weight showing 12.34, pieces showing 1000 and the output data is WT□□□12.345□kg↓UW□□12.34□g↓QT□□1000□Pcs↓←41 bits。

To display accumulation

MW□□12345.6□kg↓ 15 bits

MN□□□12□□□□↓ 12 bits

MQ□12345□Pcs↓← 14 bits

8.3 Receive order: need to receive the communication, then receive order.

When the communication setting is 27(default statue), in other words Hexadecimal system 1BH, the orders to scale are:

1BH+70H(ACS II code p): print (scale required to send date once) ;

1BH+71H(ACS II code q): calibration;

1BH+72H(ACS II code r): count;

1BH+73H(ACS II code s): unit conversion;

1BH+74H(ACS II code t): tare;

8.4 RS232C output pins content (DB9 socket): 2 pins: RXD; 3 pins: TXD; 5pins: GND.

With computer RS232C socket (DB9 socket) connected:

2 — 3

3 — 2

5 — 5

For example: when setting C3---6 C4—27 (default statue), the communication program of VB is

```
MSComm1.Settings = "9600,n,8,1"
```

```
MSComm1.Output = Chr(&H1B) + Chr(&H70) 'send a print order
```

```
'or MSComm1.Output = Chr(27) + Chr(112)
```

```
'or MSComm1.Output =Chr(27) +"p"
```

```
Do
```

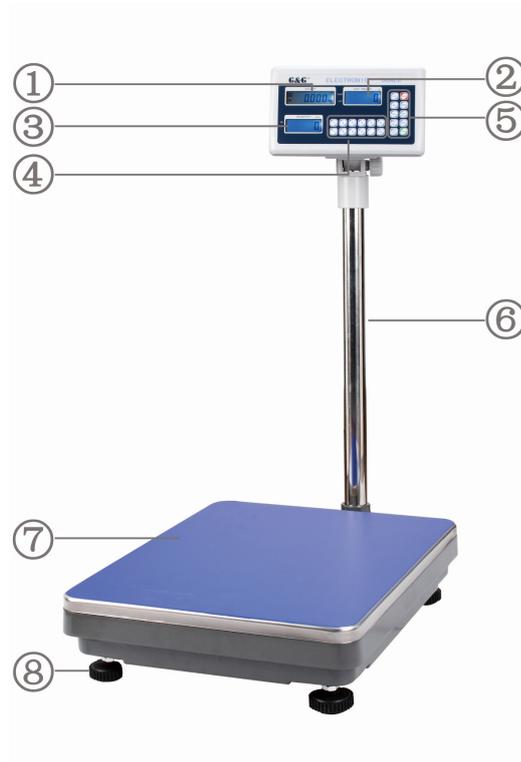
```
    DoEvents
```

```
Loop Unti MSComm1.InBufferCount = 41
```

```
a = MSComm1.Input
```

```
Print a
```

## 9. Shape and Installation of scale



- 1.Weight displaying window    2. Unit weight displaying window    3. Quantity displaying window  
4. Numbers    5. Functions    6. Weigh beam    7. Scale pan    8. Adjustable feet

## 10.Precaution before using the Scale

8.1 Electronic scale is the precision instrument, objects should be handled with great care and avoid exceeding the max. range, any overload or impact may cause permanent damage to electronic scale, even without power.

8.2 15 minutes Power on before using.

8.3 When the battery voltage is low, the LOW POWER indicator will be shown. Please turn the scale off and then fully recharge it, otherwise the scale will automatically turn off to protect the rechargeable battery.

8.4 Because of long-term not using, the scale must be placed in dry-ventilated place and recharge every three months. Charging is necessary before or during re-using.

8.5 Daily use should be careful; it should be cleaned with the cloth that infiltrates the neutral cleaning agent. Prohibit using the solvent with solubility or chemical treatment.

8.6 Warning: before using electronic scale, please carefully read the manual, according to operating correctly. Improper use may cause damage to the scales easily.

## 9. Warranty issues

9.1 G&G MEASUREMENT PLANT produces the G&G balance; the product implements the three bags by our factory.

9.2 Products for sale since the date of one year, under the correct installation and use conditions, the non-human failure is the scope of warranty, please send the balance together with the original

product packing to factory for free repair. Our factory responsible for the receipt of the date of repaired and sent within one week, or be replaced.

9.3 Beyond the Warranty time, the repair fee charged

9.4 The company must provide the detailed address, zip code the recipient and the telephone, so that our factory could send the balance in time after repairing.

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