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# Operating Manual

## High Precision Balance

### CT-H Series

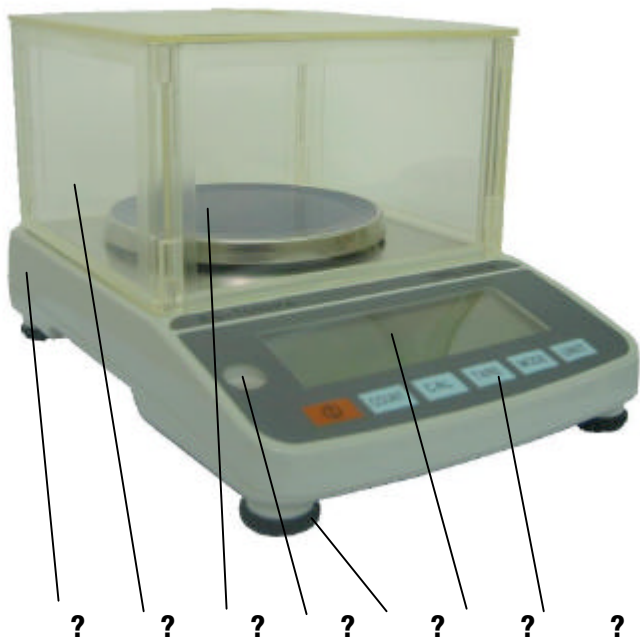
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**1. Description**

CT-H series electronic balances do weighing and measuring with high precision loadcell, microcomputer and big liquid crystal display screen. It has the advantage of simple operation, speedy weighing, accuracy, stability, and so on.. It is widely used in factories, mines, institutions, agricultures, traffic, building, water conservancy, medicine, food, and so on. It's more applicable in business for weighing precious products.

**2. Construction and installation**



- |                     |                  |
|---------------------|------------------|
| ? Body              | ? Wind Cover     |
| ? Weighing Platform | ? Lever          |
| ? Adjust Foot       | ? Display Window |
| ? Push Button       |                  |

**3. Packing list**

- |                           |        |                |       |
|---------------------------|--------|----------------|-------|
| (1) Electronic balance    | 1 pc.  | (2) AC adapter | 1 pc. |
| (3) Operation Instruction | 1 copy |                |       |

(4) Balance (Its division is 0.01g or higher) with one weight and a wind cover.

## 4. Operation

### 4.1 Turn on

Put the round plug of AC adapter into the square hole at the back of the balance, then put AC adapter into an alternating outlet with two holes. Or install **6** alkaline batteries **AA SIZE** in the battery holder at the bottom of the balance (pay attention to the Plus(+) and minus(-) ends).

With no load on the platform, press “**ON**”. All the segments of the will be shown, then the software version is displayed. When “**0**” is displayed, weighing can be done.

### 4.2 Turn off

To turn off the balance, press “**OFF**” while the balance is at work.

### 4.3 Weighing method

Press “**TARE**” to set the display to zero. Put the object to be weighted on the platform. Wait until the unit “g” appears and the reading is stable, then the weight can be read.

### 4.4 Balance calibration

When precision weighing is done, calibrate the balance as follows:

First take away the object from the platform, then press “**TARE**” to set the display to zero.

Press “**CAL**”, displaying “**SCALE**” or “**LINE**”. “**SCALE**” means calibrating the balance sensitivity; “**LINE**” means calibrating the balance linear. Press “**TARE**” to make sure (If press “**FUN**”, the two kinds of calibration can be interchangeable.)

#### 4.4.1 Sensitivity calibration

When calibrating the balance sensitivity, two different weight values can be used. According to the shown calibrating weight value, press “**FUN**”, the two calibrating weight values can be interchangeable, press “**TARE**” to make sure. After that, the balance will display “**0**”. In a few seconds, the balance will display the calibrating weight value. At this time, put the corresponding calibrating weight on the center of the platform according to the shown weight value. In a few seconds, the display will stop, and meanwhile the calibrating weight value will be shown, indicating that calibration is over. Normal weighing can be done.

#### 4.4.2 Linear calibration

Being in the state of “**LINE**”, press “**TARE**”, the balance will display “**0**”. In a few seconds, the balance will display  $\frac{1}{2}$  weight value of full capacity; according to the shown weight value, put the corresponding calibrating weight on the center of the platform.

In a few seconds, the balance will display the full capacity weight value, according to the shown weight value, put the corresponding calibrating weight on the center of the platform. In a few seconds, the display will stop, and meanwhile the

calibrating weight value will be shown, indicating that calibration is over. Normal weighing can be done.

**NOTE:** The balance linear has been calibrated in the factory, unless the users need to change the loadcell or have the right weight.

Mode	CT-302H	CT-402H	CT-602H	CT-1202H	CT-1201H	CT-3000H	CT-4000H	CT-6000H
Cal. Weight	100/300g	200/400g	200/500g	500/1000g	500/1000g	500/1000g	1000/3000 g	2000/5000 g

**NOTE:** Two kinds of weight value in the table can be used as the selected calibrating weight value when calibration is done.

#### 4.5 Counting Function

The balance will count parts based on the weight of a reference sample: **5, 10, 20, 30, 40, or 50** parts. To get more accurate counting result, the weight of the parts should be equal, meaning the less the error of the single part is, the better.

(1) Press “**COUNT**”, the balance will display “**pc CON**”.

(2) Place a container on the platform, then press “**TARE**” the balance displays “**pc ADD 5**” which is the preset reference quantity. “**5**” shows the quantity of the eference sample.

(3) To change the reference quantity, press “**FUN**” repeatedly until the desired quantity is displayed. Press “**TARE**” to make sure the quantity of the reference sample.

**NOTE:** If you want to restart parts counting, repeat the operation steps above. If “**PC E rr**” is displayed, it means the sample is too light to provide accurate results within the error range set by the balance.

(4) Add parts to the container as desired and read the quantity on the display. At this time, only “**pc**” counting signal is displayed (“**g**” is not displayed.).

(5) Press “**UNIT**” to switch between parts counting and weight.

#### 4.6 Unit Selection

This balance has the function to select these units: **g, oz, ozt, dwt, lb, ct**. Press “**UNIT**” to switch.

#### 4.7 Backlight Function

Press “**FUN**” to turn the backlight on or off.

#### 4.8 RS232C Communication

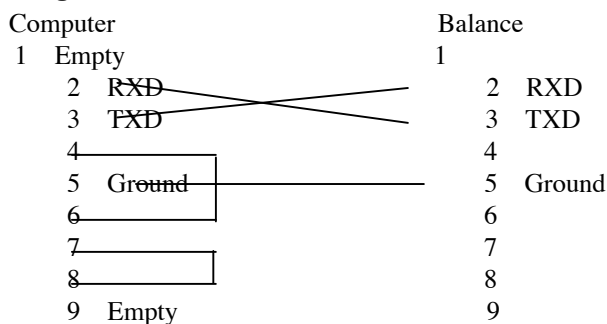
##### 4.8.1 Baud rate =9600

##### 4.8.2 Data form output by CT series electronic balances

+ (-) XXX. XX UNIT< CR>

All the segments above belong to **ASC ?**. Of these, the unit can be set by CT-H series electronic balances.

### 4.8.3 Wiring method



### 4.8.4 Demonstrating communication software (BASIC)

```

10 CLS
20 OPEN "COM2: 9600, N, 8, 1" FOR RANDOM A$ 1#
30 Z$=INKEY $
40 INPUT #1,A$
50 PRINT A$
60 INPUT #1, A$
70 PRINT A$
80 I=I+1
90 IF I<10 THEN GOTO 60
100 PRINT "TIME="; I
110 END

```

### 5. Care and maintenance

To keep the balance operating properly, the housing and platform should be kept clean and free from foreign material. If necessary, a cloth dampened with a mild detergent may be used. Keep calibration masses in a safe dry place.

Unplug the AC Adapter when not in use. For long term storage, remove the batteries.

### 6. Error Codes

The following list describes the various errors which may appear on the display and the suggested remedy. Display description

**Err 0** With the platform on, this signal indicates the platform is too light. Make it heavier properly. If this error still occurs, the sensor or the circuit board may be destroyed. The balance must be sent to the manufacturer to be serviced.

**Err 1** The sample being weighed exceeds the capacity of the balance. If the error occurs when the sample is within the balance capacity, maybe the balance is not correctly calibrated.

**Err 2** This indicates there is no platform or the platform is too light when turning the balance on. Please put the platform on before turning on the balance. Or calibrate the balance once again.

**Err 3** This indicates there has been weight on the platform when turning on the balance. Remove the weight from the platform before turning on the balance.

Breakdown due to mal-operation, erosion from corrosive or radioactive substances and penetration of foreign matter; damage of loadcell and battery; breakdown resulting from improper maintenance from any unauthorized personnel.

## 7. Troubleshooting

SYMPTOM	PROBABLE CAUSE	REMEDY
No Display	Power Adapter not connected. Batteries are dead.	Connect power Adapter. Replace batteries
Low Battery Indicator	Batteries are weak	Replace batteries
Incorrect Weight Reading	Balance was not set to zero. Balance has not been correctly calibrated.	With no load on the platform, press "TARE". Then weighing can be done. Recalibrate the balance.
Calibration Procedure does not work	Incorrect weights being used	Use correct weights.

## 8. Guaranty

This product is guaranteed from the date of manufacture on for one year. The guaranty includes check, maintenance and parts replacing for free charge. The following circumstances are excluded from the guaranty:

## 9. Specifications

MODEL	CT-202H	CT-302H	CT-402H	CT-602H	CT-1202H	CT-1201H
Weighing capacity and readability (g)	200 × 0.01	300 × 0.01	400 × 0.01	600 × 0.01	1200 × 0.01	1200 × 0.1
Standard deviation (e)	1	1	1	1	1	1
Linearity (e)	1	1	1	1	1	1
Corner deviation (e)	1	1	1	1	1	1
Taring range	0-200g	0-300g	0-400g	0-600g	0-1200g	0-1000g
Overload capacity	Maximum capacity+9e					
Time of stabilizing (s)	3					
Applicable temperature rang	10-35?					
Power source	AC adapter(supplied with balance); or 6 AA Batteries (not included)					
Pan size (mm)	f 120					
Housing dimension (mm)	251 (L) × 172 (W) × 58 (H)					
Net weight	1.05kg					

