HZY/HZT
Economic Electrical Balance

INSTRUCTION MANUAL

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Read this manual carefully before using this instrument to avoid the damage to the balance.

1. The function of keys
[ON/OFF] key -- Turn on/off the balance.
[UNIT SW] key -- Change the weighing unit.
[TARE] key -- Tare the balance.
[MODE] key -- Switch between different modes
[CAL] key -- Enter span calibration.

2. Installation.
Installs the balance in a firm weighing site and avoid vibration, air flow from air-conditioner, open window, or ventilator, and electromagnetic waves.(Before installation and use: please make sure to loosen the red screw which is use to protect the transducer. And please keep the red screw properly in order to use it when the balance need to transport.

3. Turning ON the Power.
Insert the plug of the AC adapter into the DC IN connector on the rear of the balance or dry batteries of 12v into the battery compartment. Turn on the [ON/OFF]key, and it will display "XXXX" which stands for the maximum weighing value, and wait for seconds(depending on the working environment) to display "0--0.0--0.00--0.000" weighing mode.

4. Span Calibration.
4.1. Please allow the balance to warm up for 10~30 minutes (depending on the different type of balances) when first time turn on power in order to make the balance adapt the environment.

4.2. Calibration:
1）Verify that the pan is empty, press and hold [CAL]key about 5 seconds, when the display shows "-CAL-", release the [CAL]key.
2）Load the indicated weight which's number is blinking on the LCD, wait the number stop blinking, Unload the weight.
3）"---" is displayed briefly to indicate completion of span calibration and soon the balance returns to waiting mode.
4）Repeat calibration several times, Do it as slowly as possible or operate linear calibration after first calibration.

4.3. Linear Calibration.
1）Verify that the pan is empty, press and hold [CAL]key about 5 seconds, when the display shows "-CAL-", release the [CAL]key.
2）Press and hold [MODE] key about 5 seconds, the display starts to show the every session of linear calibration values, the blinking number indicates which weight should be placed on the pan.
3）Load the indicated weight, and wait for the display number stops blinking, it means the balance has record this linear value. Unload the weight.
4）Wait for the next blinking number, repeat step "c" to calibrate the next value.
5）When the display briefly shows "0.000", it means the linear calibration is completed.

5. Balance counting operation
5.1. Balance counting:
1）Verify the balance is on the waiting mode (tare) which the display shows "0.000", and shortly press [MODE] key, the display will show "10" and blink. The "g" on the right-bottom will change to "pcs".

2） Press the [CAL] key to select a sample size which will change sequentially as following 10-20-50-100-150-200-250-500.

3）Place the same number of samples you selected on the pan then press [MODE] key into the counting operation.

5.2. User can press [MODE] key again to exit the counting function and return to the waiting mode.

6. Change the Unit display

Press the [UNIT]key to changes it as following sequence "CT"(carat), "OZ"（ounce), "1b"(pound), "g"(gram). The default unit is "g".

7. RS232 communication operation (optional).

7.1 DATA COMMUNICATIONS FORMAT

1）**Hardware**

The data interface adopts standard 9-core RS232 socket. This balance is equipped with universal standard serial interface output and can be connected to computers and printers. The serial baud rate of the balance is 9600. The format of the data is eight-bit, in which there is one start bit(0),eight data bits(ASCII code, low bit stands before) and one stop bit(1).

2）**Order format**

The format is composed of balance No and order. The balance No of binary digit is one byte. The order of ASCII code is one byte. Following is the detail of the order:

7.2 Data format

1）Balance output data format: All data should be transferred in ASCII format, one byte of XON (11H), one bit of sign, seven bits of weigh data, three bits of unit, one bit of XOFF (13H).

		action	order
1		Sample	S
2		Tare	T
3		Count	C
4		Calibration	V
5		Unit	u

Eg: 16H+s means to sample from the balance of No.16 in one time

2）Data format of feedback

When the balance received the order, if accept the order, the data turn back is XON (11H, ACK) (06H), XOFF (13H); IF Unaccepted, the data turn back is thirteen bits, in which there is one byte of XON (11H), one bit of sign, seven bits of weigh data, three bits of unit, one bit of XOFF(13H).

7.3 OPERATE ENTRUSTMENT

1) Install the software

2) Connect the balance and computer

3) Set the No of balance.

Hold the "unit" and "count" at the same time until "No-XXX" display. Choose the No by "CAL", finish it by "count"

4) Open the application; Choose the communication port and the No of balance.

5) Set the interval of auto sample

6) "print" button is for printing the current result of sample

7) You can save the current result by "save" button and save the continuous result by "auto save" button. The file will be txt or doc. Please open it by notepad or word-office. If you open it by WordPad, the file may be not in order.

8. Specification
8.1 HZY, HZQ
Note: The type of balance whose minimum display is 0.1g or 1g does not contain calibrating weight.

Parameters	Capacity	Tare range	Minimum display	Repeatability	Linearity	Response time	Ambient temperature	Pan size	Weight	Warm-up time
HZY-A 100	100		0.001g	±0.002g	±0.002g	2-3s	20℃±7℃	Φ80mm	50g	23-30m
HZY-A 200	200				±0.002g	2-3s	20℃±7℃	Φ80mm	100g	23-30m
HZY-B 100	110				±0.02g	2S	5℃-35℃	Φ128mm	50g	5-10m
HZY-B 200	210			±0.01g	±0.02g	2S	5℃-35℃	Φ128mm	100g	5-10m
HZY-B 300	310	Whole Range			±0.02g	2S	5℃-35℃	Φ128mm	150g	5-10m
HZY-B 500	510		0.01g		±0.02g	2S	5℃-35℃	Φ128mm	250g	5-10m
HZY-B 600	610				±0.02g	2S	5℃-35℃	Φ128mm	300g	5-10m
HZY-B 1000	1100			±0.02g	±0.02g	2S	5℃-35℃	Φ138mm	500g	5-10m
HZY-B 2000	2100			±0.02g	±0.03g	2S	5℃-35℃	Φ138mm	1000g	5-10m

8.2 HZT
Note: The type of balance whose minimum display is 0.1g or 1g does not contain calibrating weight

9. Standard Accessories.
In addition to a balance, this package includes the following items:

AC adapter	**1**
Pan	**1**
Weight	**0- 1-2**
Printed documentation	**1**
Warranty document	**1**
Qualification	**1**

（*Optional: CD-ROM and data cable for RS232 communication function*）*.*

10. Warranty Range
Our company guarantee 1 year of Limited Warranty Period. The Limited warranty Period starts on the date of purchase. If there appears quality problem in the product during Limited Warranty Period, User can deliver the product back to company or authorized agency for repair or replacement according to your Warranty documents or proof of purchase.

This Limited Warranty does not include the following situations:

1）Warranty Period is expired.

2）Damage by misusing, collision or other external causes.

3）Damage by exposing the balance to a original, high concentration of acid, corrodible radioactive environment.

4）De-assemble the balance without authorization.

11. Safety Precautions
Allow the balance to Warm up and calibrate before starting to use the balance. Use the calibration

weight to calibrate the balance with a weighing error. Do not use the balance in hazardous areas. This includes areas where the balance is exposed to dust or flammable gases and liquids.

12. Troubleshooting

Symptom	Probable cause(s)	Countermeasure
"---"is displayed on top	The load is too heavy	Use balance within its capacity or re-calibration
Display fluctuates	Affected by vibration or air flow	Install the balance in a proper site
	you don't loosen the red screw	loosen the red screw
	Windbreak glass window isn't closed	Close the window
	The Pan touches the shell or some unexpected item is on the pan.	Check the pan and clean it
The weighed result is not accurate	The weighing item is fluctuates	Fix the item
	Span calibration has not been done	Calibrate it properly
	Tare has not been done	Tare before weighing
	The balance is not in the level	Level the balance