EHB-M SERIES

TECHNICAL MANUAL v1.06

T-Scale

CONTENTS

1. PRECAUTIONS

WARNING

DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, CLEANING, OR SERVICING. FAILURE TO DO SO COULD RESULT IN BODILY HARM OR DAMAGE THE UNIT.

CAUTION

- **Permit only qualified persons to service the instrument**
- **Before connecting or disconnecting any components, remove the power.**
- **Failure to observe these precautions bodily harm or damage to or destruction of the equipment.**

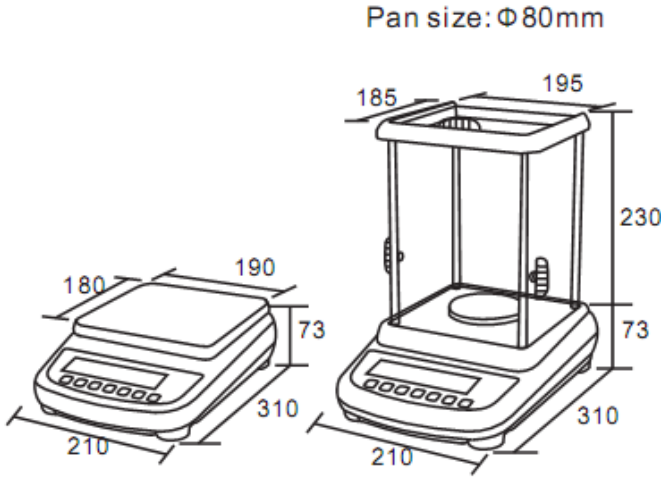
- The weighing scale is a precision electronic instrument, handle it carefully.
- Do not install the scale in direct sunlight.
- Verify the local voltage and receptacle type are correct for the scale.
- Only use original adaptor, other could cause damage to the scale.
- Pluggable equipment must be installed near an easily accessible socket outlet.
- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.
- Avoid sudden temperature changes, vibration, wind and water.
- Avoid heavy RF noise.
- Keep the scale clean

2. INTRODUCTION

- The EHB-M series balance, that amplifies signals from a load cell, converts it to digital data and displays it as a mass value.
- It is accurate, fast and versatile series of general purpose balances with counting, % weighing functions and accumulation
- 16.5 mm LCD with white LED back light display
- All the keypads are light touch switches
- Battery provide up to 40 hours of continues use (with out backlight)
- Capacity 150g to 6000g.
- All units include automatic zero tracking, automatic tare, and an accumulation facility that allows the count to be stored and recalled as an accumulated total

3. SPECIFICATION

3.1 Dimension



3.2 Specifications

Model	EHB150	EHB300	EHB600	EHB1500	EHB3000	EHB6000
Maximum Capacity	150g	300g	600g	1500g	3000g	6000g
Readability (d)	0.002	0.005g	0.01g	0.02g	0.05g	0.1g
Readability (e)	0.02	0.05g	0.1g	0.2g	0.5g	1g
Resolution	1/60,000	1/60,000	1/60,000	1/60,000	1/60,000	1/60,000
Tare range	-149.998g	-299.995g	-599.99g	-1499.98g	-2999.95g	-5999.9g
Minimum Capacity	0.04g	0.1g	0.2g	0.4g	1g	2g
Linearity ±	0.004g	0.01g	0.02g	0.04g	0.1g	0.2g
Platter	Φ 80mm	Φ 120mm		Φ 135mm		180x190mm
Wind shield	Yes			No		

Common Specifications	
Interface	RS-232 Output Optional
Stabilisation Time	2 Seconds typical
Operating Temperature	+5°C - 40°C / 41°F - 104°F
Power supply (external)	12V/500mA or built-in rechargeable battery 6V/1.2Ah
Calibration	Automatic External
ADC	Σ-Δ
Display	16.5 mm high 6 digits LCD with auto backlight and loading bar graph
Balance Housing	ABS Plastic, Stainless Steel platform
Pan Size	Φ80mm / Φ120mm / / Φ135mm / 180×190mm
Overall Dimensions (wxdxh)	210mm x 310mm x 73mm
Other Features and Specs	accuracy enhancement for parts counting and percentage weight function

4. INSTALLATION

Unpacking

Carefully take the balance out of its package, make it sure its not damaged and all accessories are included.

- Remove the weighing scale from the carton.
- Remove the protective covering. Store the packaging and to use if you need to transport the scale later.
- Inspect the scale and terminal for damage.
- Make sure all components are included

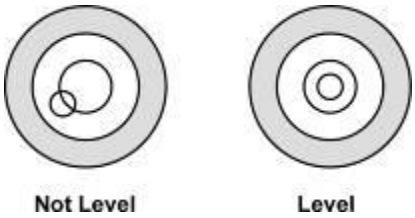
Accessories,

1. Balance
2. Adaptor
3. Pan
4. Product manual

Level Adjusting

Place the scale on a table.

Check the water mark. If, bubble is not centre adjust the leveling feet until reach centre. Check the level when you change the location.



Charging Battery

- To charge the battery insert the adaptor pin to jack, jack is locating rear side of the scale. Adaptor simply plug into the mains power. The scale no needs to be turned on.
- The battery should be charged for 12 hours for full capacity.
- Left side of the display there is an LED to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be recharged. If the LED is green, the battery has a full charge. If it is red, the battery is nearly discharged and if yellow, the battery is being charged.
- Do not use any other type of power adaptor than the one supplied with the scale.
- Verify that the AC power socket outlet is properly protected.

Note: Please charge the battery before using the scale for the first time

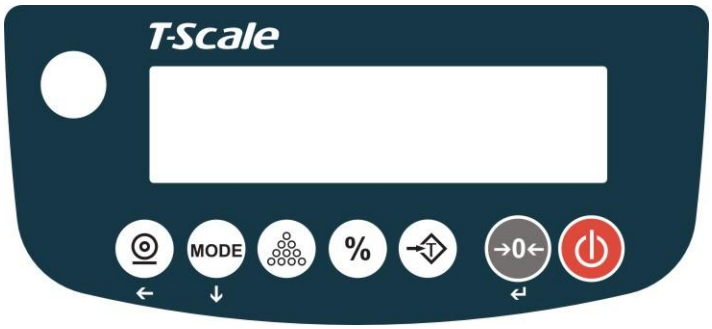
Installation

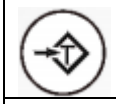
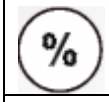
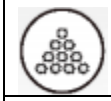
- Place the scale on a table..
- Connect the adaptor pin in to the scale adaptor jack. Adaptor jack is locating, rear side of the scale.
- Adaptor connects into your AC power socket. Pluggable equipment must be installed near an easily accessible socket outlet with a protective ground/ earth contact.
- Turn on the On/Off key. If you want to turn off, press the key again.
- Display will be show the version number and will be starting self checking.
- After self checking, display will be come to normal weighing mode.
- **Warm-up time of 15 minutes stabilizes the measured values after switching on.**
- Calibrate with exact calibration weights, minimum 1/3 of the scale capacity want to use for calibration. For calibration see details in parameter.

Then you can start your operation

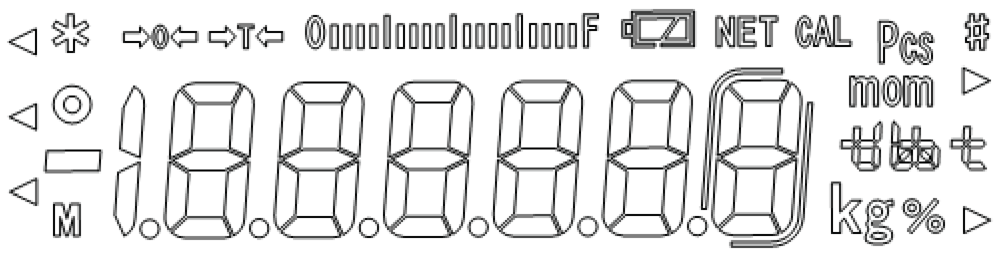
5. DESCRIPTION

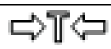
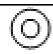
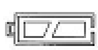
Key Board



	Turns the scale power On / Off
	Sets display to Zero
	Subtracts weight of container
	Set percentage weighing function
	Set to counting mode
	Set to weighing units
	Set to print the results

Display



DISPLAY	FUNCTION
	Indicator for Zero display
	Indicator for Tare display
	Indicator for weighing capacity graph
NET	Indicator for Net weight
	Indicator for Display stability
Pcs	Indicator for piece counting
	Indicator for units
%	Indicator for Percent weighing
  	Indicator for Charging status of battery Voltage has dropped Low Voltage Fully Charged

6. OPERATION

Initial Start-up

Warm-up time of 15 minutes stabilizes the measured values after switching on.

6.1 Power ON/OFF

Switch on the scale by pressing  . The display is switched on and the self test is started.
If you want to switch off press the key again.

6.2 Zero

Environmental conditions can lead to the balance exactly zero in spite of the pan not taking any strain. However, you can set the display of your balance to zero any time by pressing  key and therefore ensure that the weighing starts at zero.

6.3 Tare

The weight of any container can be tared by pressing  button so that with subsequent weighing the net weight of the object being weighed is always displayed.

- Load weight on the pan.
- Press  key. Zero is displayed, and tare is subtracted.
- Remove weight from the platform. Tared weight is displayed. It can set only one tare value. It can display with a minus value.
- Press  key. Zero is displayed, tare weight is cleared.

6.4 Percent Weighing

The scale can set a sample weight to be shown as 100%. Then any other weights place on the scale, it will be displayed as a percentage of the original sample.

For example:

- 350g weight place on the scale and follow by press the  key is pressed the display will show 100.00%.

- Remove the weight, and ensure display is zero
- Place 300g weight on the platform, display will be show 85.71 % as per the percentage of 350g (100%)
- The weighing may be amended on the basis of greater numbers of samples, improves the accuracy of percentage large quantities.

6.5 Parts Counting

Parts Counting

Press  key enter the parts counting mode and select the counting options by pressing  .
Display will be shown

SP 10	For 10 pieces
SP 20	For 20 pieces
SP 50	For 50 pieces
SP 100	For 100 pieces
SP 200	For 200 pieces

Select the counting option and press  to confirm.
Then can add more weight display will be show the number of parts.

Parts Counting Operation

If necessary place a container on the platform and press  to make zero.

- Select the parts quantity as per the option
- Place the load on the platform
- Press  key to confirm, display will be shown ---- then will show the quantity
- Then can add goods on the platform, display will update the parts quantity automatically

Press  key to change normal mode, when in counting mode.

6.6 Accumulation

The scale can be set to accumulate manually by pressing  key.
Before operation scale should be stable and return to zero, accumulation available only when weight more than 20d

Accumulation Operation

- Place the load on the platform.
- Press  key, when displayed STABLE indication.
- Display will be show 

  then will be show the total saved value. These displays will be shown only three seconds. If the optional RS-232 interface is installed the weight data will be send to printer.
- Remove the weight from the pan.
- When display get zero and stable then place the second weight.
- It can continue until the memory gets fully.

6.7.1 Memory Recall

To recall the memory press  key.

Display will be show 

(X: Total number of accumulation) then will be show the total saved value. These displays will be shown only three seconds.

6.7.2. Memory Clear

To clear the memory, press  key to view and press  **key** during the accumulation displayed.Display will be show normal display , all accumulation memory cleared from the memory

7. PARAMETERS

Enter the Menu

- Turn on the scale. Press MODE during that start up until display will be shown

F 1 Unt

Choose the Menu

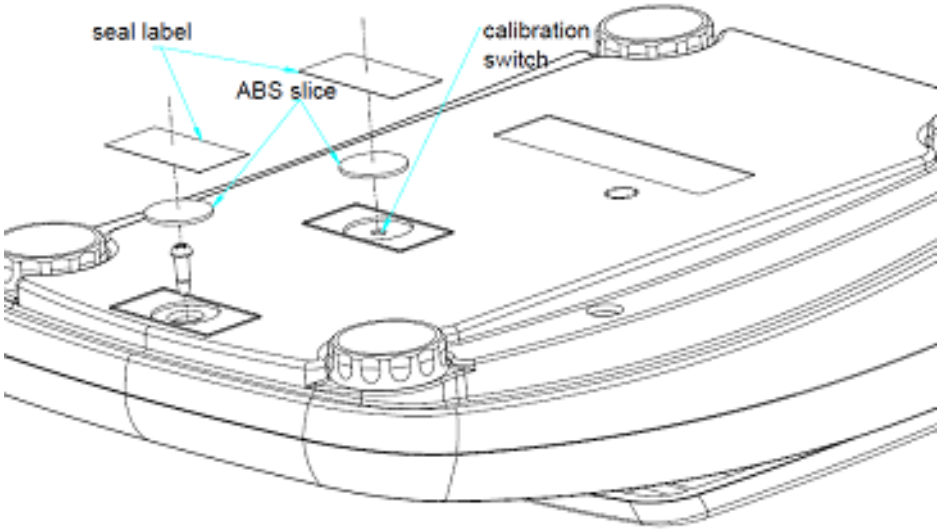
- Press MODE, it can choose menu block or options one by one.

Enter the Selected Menu

- Press →0←, it can confirm which will be shown displayed.

Enter in to TECH

Note: Before enter the tech menu, press calibration switch, which is locating below the scale



- When display showed P , n , press  and  keys to enter the function

Escape from the Menu

- Press  key, it can escape from the menu to weighing mode.

Parameter Block

Menu	Sub Menu		Description
F 1 Unt	N.A		
F 2 bL	EL AU	on	To set back light automatic on
		oFF	
	EL on	on	To set back light always on
		oFF	
	EL oFF	on	To set back light always off
		oFF	
F3 Con	S 232	Select first RS 232 or USB	
		P Prt	By pressing Print key , weighing value will be added to the memory and print the print out
	S USb	P Cont	Send data continuous
		P AUto	Automatic accumulation. Individual weighing values are automatically added
		P ASk	ASK mode Command R: read data Command T: Tare Command Z: Zero
		U irELE	Wireless (optional)
	Set BAUD rate After setting the RS 232 mode, display will be shown current baud rate b **XXX**. Baud rate Options: b600, b 1200, b2400, b4800 and b9600		
	Set Printer type After setting BAUD rate display will be show the printer type		
	LP SO		Label Printer
	tP		Ticket Printer

	CH ı	Select language(English/Chinese)
tECH	P in	Enter the password
P 1 L in		Linear Calibration
P 2 CAL		Normal Calibration
P 3 Cnt	xxxx	This display will show XXXXX for indicating the internal counts
P 4 A 2n	N.A	
P 5 GrA	**XXXXX**	To set local gravity
P6 CAP	150G / 300G / 600G / 1500G / 3 000 G / 6000 G	To set Capacity

8. CALIBRATION

- Turn on the scale.
- Press MODE key during self checking, display will be show F 1 Unt
- Press MODE key until display will be show tECH
- **Note: Before enter the tech menu, press calibration switch, which is locating below the scale**
- Press  keys, display will be show P 1 L in

8.1. Linear Calibration L i nEAr

- Press →0← key to enter calibration, display will be shown P i n
- Press  and % keys, display will be
- Display will be shown LoAd 0
- Ensure the platform is empty
- After stable and zero indicator on, display will be shown LoAd 1
- Place the first calibration weight on the platform.
- After stable display will be shown LoAd 2
- Remove all the weight from the platform, after display stable place the second calibration weight on the platform.
- After stable display will be shown LoAd 3
- Remove all the weight from the platform, after display stable place the third calibration weight on the platform.
- After stable display will be shown LoAd 4
- Remove all the weight from the platform, after display stable place the fourth calibration (full capacity) weight on the platform.
- After stable display will be shown LoAd 0
- Remove all the weight from the platform.
- After stable and zero indicator on, display will be shown LoAd 4
- Remove all the weight from the platform, place the fourth calibration (full capacity) weight on the platform.
- After stable display will be shown LoAd 3
- Remove all the weight from the platform, place the third calibration weight on the platform.
- After stable display will be shown LoAd 2

- Remove all the weight from the platform, place the second calibration weight on the platform.
- After stable display will be shown LoAd 1
- Remove all the weight from the platform, place the first calibration weight on the platform.
- After stable display will be shown LoAd 0
- Remove all the weight from the platform.

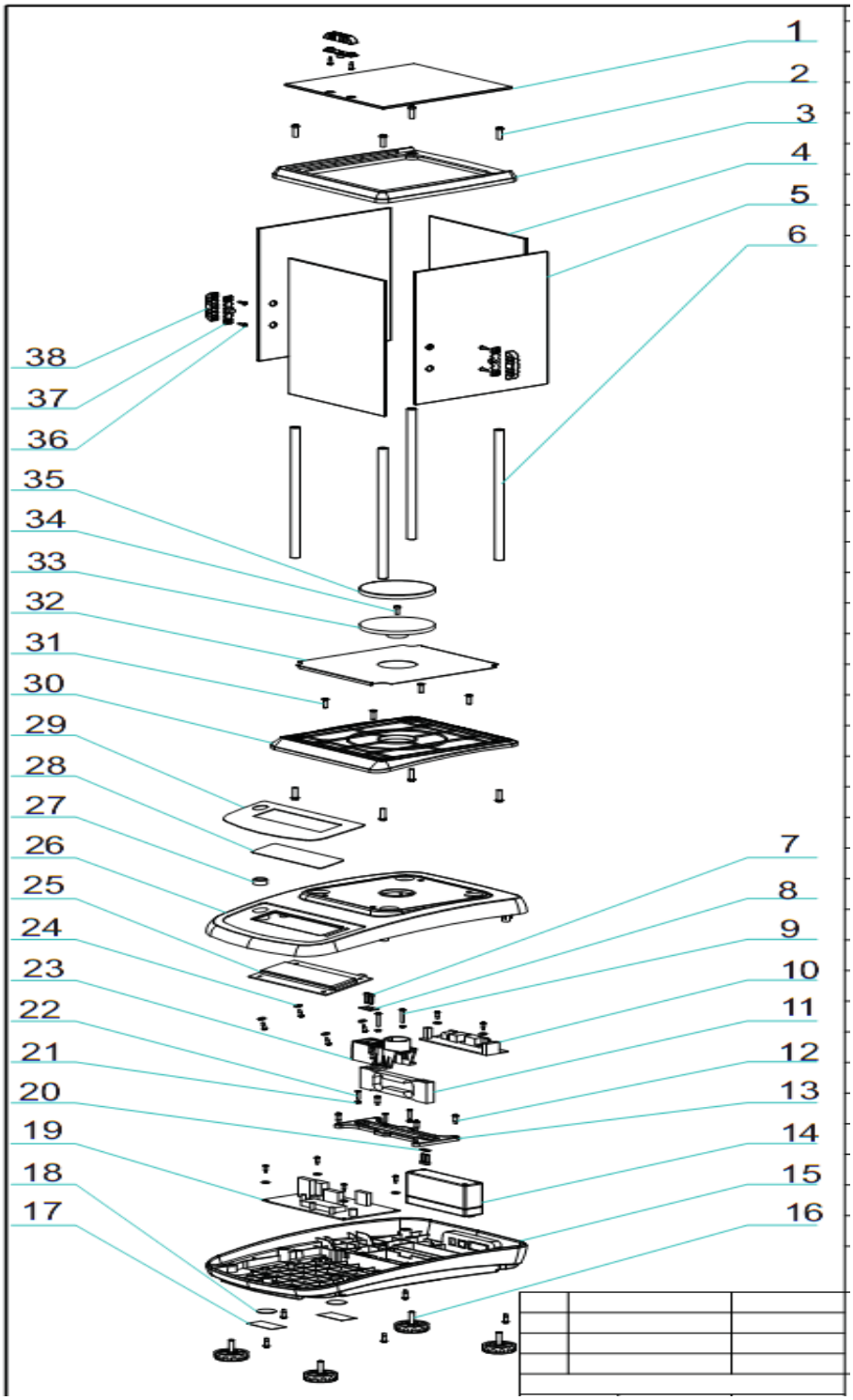
After stable and zero indicator on, display will come to normal weighing mode.

8.2. Normal calibration P2 CAL

- Press MODE key 3 seconds on the weighing mode to enter calibration or enter the "P2 CAL" press →0← key , display will be show UnLoAd
- Remove all the weight from the platform.
- When scale get stable, display will be show LoAd
- Place the calibration weight (1/5 of the capacity) on the platform.
- After stable, scale will be calibrate automatically and will start self test.

Note: Incase display will show any error message or incorrect measurement, repeat the calibration again.

9. DRAWING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No	Parts Name	Qty
1	Wind Shield Top Cover	1
2	Star Screw	4
3	Frame	1
4	Side Glass I	2
5	Side Glass II	2
6	Pole	4
7	Internal Allen key	4
8	Load cell spacer	2
9	Star Screw	2
10	RS232 PCB	1
11	Load Cell	1
12	Star Screw	4
13	Load cell lower bracket	1
14	Battery	1
15	Bottom Cover	1
16	Foot	4
17	Sealing Label	2
18	Seal	1
19	Main PCB	1
20	Washer	2
21	Star Screw	1
22	Nut	1
23	Load cell upper bracket	1
24	Washer	4
25	Display Board	1
26	Top Cover	1
27	Level Bubble	1
28	Display protection Plate	1
29	Key board	1
30	Wind shield bottom Cover	1
31	Star Screw	4
32	Pan base cover	1
33	Pan PVC	1
34	Allen Key	1
35	Pan SS	1
36	Star Screw	6
37	Knob base	3
38	Knob	3

T-Scale

The company was founded in Taiwan in 1967 as Taiwan Scale Mfg Co., Ltd in order to produce Mechanical Weighing Instrument. Today, this privately owned company is recognized worldwide as a leading Electronic Weighing Scale Manufacturer. The core business of TSCALE is the development, manufacture, worldwide sales/marketing and service of electronic weighing instruments.

The TSCALE products

- Medical Scale
- Counting Scale
- Tabletop Scale
- Retail Scale
- Precision Scale
- Platform Scale
- Weighing Indicator
- Crane Scale
- Floor and Pallet Scale
- Accessory
- Software

TSCALE has its manufacturing unit in Kunshan, China, ISO 9001 certified company, **OEM/ODM** partner,more than 20 products have **OIML** certifications from Holland's NMI and Denmark's Delta.

TScale Electronics Mfg. (Kunshan) Co., Ltd.
268, Zhujiawan Road, Kunshan, Jiangsu,
China
Tel : +86 512 57067900 / 57669080
Fax: +86 512 57669508 / 57669100

Taiwan Scale Mfg. Co., Ltd
282, Sec.3, Hoping W.Rd., Taipei,
Taiwan
Tel : +886 2 23068203
Fax: +886 2 23044354