**VISION**TECH SHOP

## Operation Manual

# TBW
## Bench Scales

# *Contents*

## 1. INTRODUCTION

✓ The TBW series platform scales that amplifies signals from a load cell, converts it to digital data and displays it as a mass value.

✓ It is suitable for general weighing or more specialized applications such as check weighing, animal weighing and accumulation applications.

✓ It can connect the indicator to a printer or a PC.

✓ Large LCD with white LED back light displays

## 2. KEY DESCRIPTIONS

| Keys | Description |
|---|---|
| ON/OFF | Power turn ON/OFF |
| ZERO | Set the Zero Display |
| TARE | To perform a tare function, Subtracts weights. |
| ACC/TTL Print | Accumulator key, current values will store to the memory, To send the data to printer or PC |
| G/N | Shift to Gross / Net Weight. |
| PCS | Counting |
| UNIT | To change the unit |

### 2.1 Second fuctions of the keys

| Function | Keys |
|---|---|
| To confirm the selected menu | ZERO |
| To change the menu and to increase the active digit | TARE |
| To move the active digit to right | ACC/TTL Print |
| To move the active digit to left | G/N |
| To enter the menu | PCS |
| Escape from the menu to normal operation. | UNIT |

## 3. DISPLAY SYMBOLS

| Display | Description |
| --- | --- |
| STABLE | Indicate when the scale is stable |
| ZERO | Indicate when the scale in Zero |
| TARE | Indicate when the scale in Tare |
| NET | Indicate when the scale in Net mode. |
| GROSS | Indicate when the scale in Gross mode |
| kg | Indicate when the scale in Kilogram (kg) unit |
| pcs | Indicate when the scale in counting |
| % | Indicate when the scale in percent |
| ▉ | Indicate when the battery charge is getting low |
| Hold | Indicate when the scale in Hold mode |
| Auto | Indicate when the scale in Auto |

## 4. BASIC OPERATION

### 4.1 Power On/Off:

Switch on the balance by pressing on/ off key.

The display is switched on and the test is started and if want to switch off, press the key again.

### 4.2 Zero

Environmental conditions can lead to the balance exactly zero despite the platform not taking any strain. However, you can set the display of your balance to zero any time by pressing ![ZERO] key and therefore ensure that the weighing starts at zero.

### 4.3 Tare

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

- Load weight on the platform.

- Press ![TARE] key. Zero is displayed, and tare is subtracted.

- Remove weight on the platform. Tared weight is displayed. Itcan set only one tare value. It will be shown with a minus value.

- Press G/N to change between gross weight and net weight.

- To clear the tare value, remove the load and press ![TARE]key.
Zero is displayed, tare weight is cleared.

### 4.4 Select Unit and Sampling operation

Press [UNIT] key, it can change unit and sampling operation.

## 5. CHECK WEIGHING
It can set an upper or lower limit when weighing with limit range.
During the limit controls dividing the unit will indicate whether a value
upper or lower limits with an alarm sound.

### 5.1. Set Limits

* Press [UNIT] and [PCS] key together, display will be show **set h.**

* Press [TARE] key to select **set h** or **set l**

* Press [ZERO] key to confirm, display will show **00000** and will blink the last digit.

* Enter the high limit value by using [G/N] and [ACC/TTL Print] keys to change the active

  digits and press [TARE] key to increase the value.

* Press [ZERO] key to confirm, display will show **set l**

* Enter the high limit value by using [G/N] and [ACC/TTL Print] keys to change the active

  digits and press [TARE] key to increment the value.

* Press [ZERO] key to confirm.

* To escape from the settings press [UNIT] key.

### 5.2. Set Check Weighing

* Press [UNIT] and [PCS] key together, display will show **set h.**

* Press [TARE] key to select display **beep.**

* Press [ZERO] key to confirm, display will show **none** or **ok** or **ng**

* **Check mode none**: No beep sound in the limits. Function turned off.
* **Check mode ok:** When the weight is between the limits. OK will be shown and beeper will be sounded.
* **Check mode ng:** When the weight is out of the limits, the beeper will be sounded, and Ok will be shown.

**Note: Check weighing available only when weight more than 20d.**

## 6. ACCUMULATION

The scale can be set to accumulate manually by pressing  key. For settings, see the parameter **p 1 Com » mode »      pr 2**

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 **acc 1** thenwill be show the total saved value. These displays will be shown only three seconds.
- 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 or 99 items.

### 6.1. Memory Recall

To recall the memory press  key when there is no load on the platform.

Display will show **acc X** (X: Total number of accumulation)thenwill show the total saved value. These displays will only be shown for three seconds.

### 6.2. Memory Clear

To clear the memory, press  and  keys together.

Display will be show **Acc 0**, all accumulation memory cleared from the memory.

### 6.3. Automatically accumulation.

The scale can be set to accumulate automatically. For settings, see the parameter **p 1 Com » mode » auto**

Automatic Accumulation Operation

- Place the load on the platform.
- When display gets STABLE indication, display will show **acc 1,** thenwill be show the total saved value. These displays will be shown only three seconds.
- Remove the weight from the platform.
- When display is zero and stable then place the second weight.
- It can continue until the memory gets full or 99 items.

## 7. PARTS COUNTING

To enter the parts counting, press [PCS] key and select until display shows **p 10**

Press [TARE] to change the parts quantity.

Options: **p10 / p20 / p50 / p100 / p200**

Parts Counting Operation
- Place the load on the platform
- Select the parts quantity as per the option
- Choose from option depending on how many pieces/items are on the scale
- Press [ZERO] 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 [UNIT] key go back to the weighing mode.

## 8. ANIMAL WEIGHING

TBW can use for vibrate loads weigh. This function can use for animal weighing. For settings, see the parameter $P \ 3 \ oEH$ » $Ann$

1   Press [PCS] key during the self checking.

2   Display show PN, in succession press [G/N] , [UNIT] and [TARE] to enter.

**3**   Display will be show    **p 0 chk.**

**4**   Press [TARE] key until display show **p 3 oth.**

5   Press [ZERO] key to confirm.

6   Press [TARE] key to select ON/OFF.

7   Press [ZERO] key to confirm.

8   Press [UNIT]  key twice to back to normal weighing mode and scale will start self-checking.

9   Press [TARE] & [ZERO] key together to enter animal weighing mode ,the HOLD indicator will be on

10  Bring the load on the platform, display will be show the reading

11  It can add or remove loads also update the weighing values.

12  To complete the current weighing,   remove the weight from the platform.

13   To exit animal mode ,Press  &  key together again

14   To disable the animal weighing function, set the parameter $P\ \exists\ o t H\ »\ A n \bar{n}\ »\ o F F$

## 9. KEYBOARD LOCK

It can set lock keyboard, for settings, see the parameter **p 3 oth » lock**

When the keys are not using within 10 minutes, the keys will be lock automatically.
After entering the lock function, when we press the keys display will be show **k-lok.** Then will come to normal display.

If want to unlock and want to use the keys press and hold  ,  and  keys three seconds. Display will be show **u lck** Then will come to normal display

## 10. SET AUTO POWER OFF

It can set auto power of the scale - when scale not in use, scale will turn off after a set time.

- Hold  key three seconds display will show **setbl**

- Press  key to change **Set of** andpress  key to confirm

- Press  key to change the options.

| | | |
|---|---|---|
| **Set of** | **off** | To set auto off function turn off, for scale always on |
| | **Of 5** | Set to turn off five minutes later |
| | **Of 15** | Set to turn off fifteen minutes later |

- After selecting the auto off option press  key to confirm and press  key to escape from the settings.

## 11. SET BACK LIGHT

It can set back light when scale in use.

- Hold  key three seconds display will show **setbl**

- Press  key to confirm

| | | |
|---|---|---|
| **setbl** | **au** | To set auto option. When start to use back light will be on and when stop the operation back light also will off. |
| | **on** | To set always on. After turning on the power, back light also will be on. |
| | **off** | To set back light turn off. No back light in the operations |

- After selecting the backlight option press ⬛ key to confirm and press ⬛ key to escape from the settings.

## 12. SPECIFICATION

| Model | TBW-100 | TBW-200 | TBW-500 |
|---|---|---|---|
| Capacity | 100 lb / 50 kg | 200 lb / 100 kg | 500 lb /250 kg |
| Resolution | 1/5000 | | |
| Readability | 0.02 lb / 0.01 kg | 0.05 lb / 0.02 kg | 0.1 lb / 0.05 kg |
| Housing | ABS plastic | | |
| Weighing units | kg / lb | | |
| Operating Temperature | 14°F - 104°F / -10°C - 40°C | | |
| Display | 2.05inch / 52mm LCD | | |
| Key Pad | 7 Keys | | |
| Power | AC (110V/60Hz)/ Battery (6V/4Ah) | | |
| Calibration | Automatic External | | |
| Interface | RS-232 Output | | |
| Load cell drive Voltage | Max: 5V/150mA | | |
| Load Cells | Up to 4 load cell | | |
| ADC | Sigma Delta | | |
| ADC Update | ≤1/10 second | | |
| Stabilization Time | One seconds typical | | |
| Gross Weight | 40.3 lb (18.3 kg) | | |

## 13. DIMENSIONS (INCH/MM)
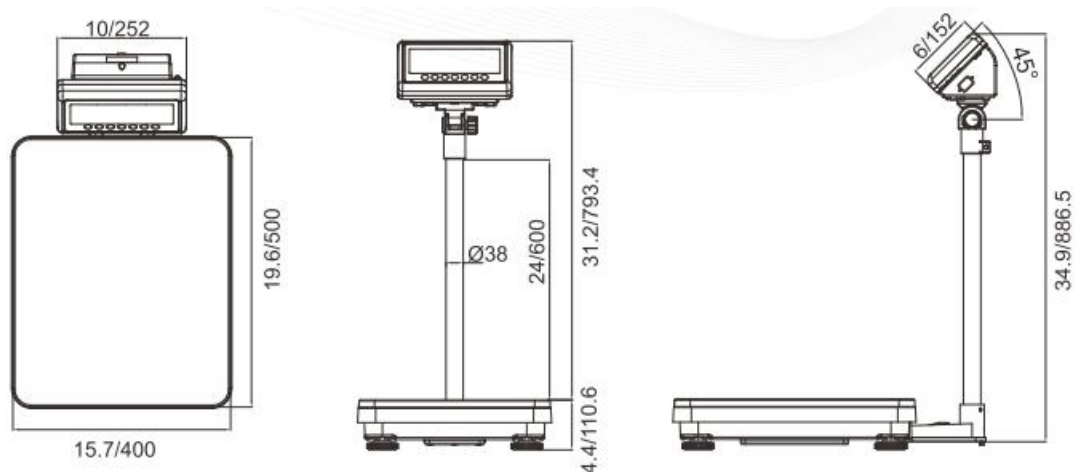
## 14. ERROR MESSAGE

| Error Message | Description | Solution |
|---|---|---|
| ----- | Maximum load exceeded | Unload or reduce weight |
| Err 1 | Incorrect date | Enter the date by using format "yy;mm:dd" |
| Err 2 | Incorrect time | Enter the time by using format "hh:mm:ss" |
| Err 4 | Zero setting error | Zero setting range exceeded due to switching on (4%max) Make sure platform empty. |
| Err 5 | Key board error | Check the keys and connecter. |
| Err 6 | A/D value out of range | Make sure platform empty and check the pan is installed proper. Check the load cell connectors. |
| Err l | Approval setting error | Check the PCB jumper settings. Must be connect jumper pin to K1 (TBW series) |
| --ol-- | Over range | Remove the load. Re calibrate |
| --lo-- | Underload | Minus weight, check the platform and restart or calibrate. |

## 15. RS232 OUT PUT

The TBW series of scales can be ordered with a standard RS-232 output. It can be connected to DEP-50 receipt printer & DLP-50 label printer.
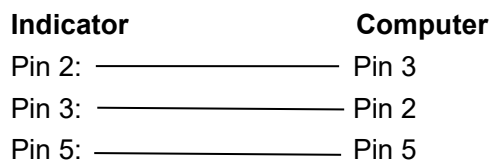
15.1 Print Format



Gross :  0. 500 lb
Tare  :  0. 000 lb
Net   :  0. 500 lb

Gross :  0. 106 lb
Tare  :  0. 000 lb
Net   :  0. 106 lb

Gross :  0. 606 lb
Tare  :  0. 106 lb
Net   :  0. 500 lb

```
------------------------
            1    1.100 lb
            2    1.100 lb
            3    1.105 lb
            4    1.100 lb
            5    1.100 lb
            6    1.100 lb
------------------------

TOTAL  :   6.605 lb
COUNT  :        6
```

------------------------

TOTAL : 1. 106 lb

------------------------

**THANK YOU**

Weight: **1.745 lb**

MAR. 05. 2021      07:42:48

Label Format               Receipt Format # 1               Receipt Format # 2

15.2 Diagram: Serial interface, RS-232 (9pin D type connector)

| Pin　2 | RXD | Input | Receiving data |
|--------|-----|-------|----------------|
| Pin　3 | TXD | Output | Transmission data |
| Pin　5 | GND | — | Signal ground |

**9pin D Connector:**

| **Indicator** | **Computer** |
|---------------|--------------|
| Pin 2: ——————— | Pin 3 |
| Pin 3: ——————— | Pin 2 |
| Pin 5: ——————— | Pin 5 |

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