Operation Manual

TBWS
Washdown Bench Scales

Contents

1. INTRODUCTION

✓ The TBWS series Bench 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 in to the menu	PCS
Escape from the menu to normal operation.	UNIT

3. DISPLAY SYMBOLS

Display	Description
STABLE	Indicate when the scale get 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, Lb, Oz	Indicate when the scale in kg, lb, oz 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 switched off, press again the key.

4.2 Zero

Environmental conditions can lead to the balance exactly zero in spite of the Bench 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.

4.3 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 Bench.
- Press key. Zero is displayed, and tare is subtracted.
- Remove weight on the Bench. Tared weight is displayed. It can 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 key. Zero is displayed, tare weight is cleared.

4.4 Select Unit and Sampling operation

Press key, it can change unit and sampling operation.

5. CHECK WEIGHING

It can set an upper or lower limit when weighing with the limits 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 increment 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 be show   *SEt H*

- Press [TARE] key to select display *bEEP.*

- Press [ZERO] key to confirm, display will be shown   *nonE* or *ot* or *nG*

- **Check mode *nonE***: No beep sound in the limits. Function turned off.
- **Check mode *ot* :** When the weight is between the limits. OK will 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 shown.

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

6. ACCUMULATION

The scale can be set to accumulate manually by pressing [ACC/TTL Print] key. For settings, see the

parameter P I Con » $nodE$ » 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 Bench.

- Press ![ACC/TTL Print] key, when displayed STABLE indication.

- Display will be show ACC I 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 ![G/N] key.

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

6.2. Memory Clear

To clear the memory, press ![G/N] and ![ACC/TTL Print] keys together.

Display will be show $ACC0$, 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 I Con » $nodE$ » $AUto$

Automatic Accumulation Operation

- Place the load on the Bench.
- When display gets STABLE indication, display will be show ACC I 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.

7. PARTS COUNTING

To enter the parts counting, press ![PCS SET] key and select until display will be show P $I0$

Press ![TARE] to change the parts quantity.

Options: $P\ 10$ / $P\ 20$ / $P\ 50$ / $P\ 100$ / $P\ 200$

Parts Counting Operation
- Place the load on the Bench
- 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 Bench, display will update the parts quantity automatically

Press ![UNIT] key back to the weighing mode..

8. ANIMAL WEIGHING

TBWS can use for vibrate loads weigh. This function can use for animal weighing. For settings, see the parameter $P\ 3\ otH$ » Anm

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 ![TARE] & ![ZERO] key together again

14 To disable the animal weighing function, set the parameter $P\ 3\ otH$ » Anm » oFF

9. KEYBOARD LOCK

It can set lock key board, for settings, see the parameter P $3obH$ » $LoCh$

When the keys are not using with in 10 minutes, the keys will be lock automatically.
After entering into the lock function, when we press the keys display will be show h-Loh.
Then will come to normal display.

If want to unlock and want to use the keys press and hold [PCS] , [ACC/TTL Print] and [ZERO] keys three seconds. Display will be show U LCh 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 the setting time.

- Hold [ZERO] key three seconds display will show $SEbbL$

- Press [TARE] key to change SEb oF and press [ZERO] key to confirm

- Press [TARE] key to change the options.

SEb oF	oFF	To set auto off function turn off, for scale always on
	oF 5	Set to turn off five minutes later
	oF $I5$	Set to turn off fifteen minutes later

- After select the auto off option press [ZERO] key to confirm and press [UNIT] key to escape from the settings.

11. SET BACK LIGHT

It can set back light when scale in use.

- Hold [ZERO] key three seconds display will show $SEbbL$

- Press [ZERO] key to confirm

$SEbbL$	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 turn 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 [ZERO] key to confirm and press [UNIT] key to escape from the settings.

12. SPECIFICATION

Model	TBWS-100	TBWS-200	TBWS-500
Capacity	100lb / 50kg / 1600oz	200lb / 100kg / 3200oz	500lb/250kg / 8000oz
Display	2.05inch / 52mm LCD		
Housing	Stainless steel		
Operating Temperature	-10°C - 40°C / 14°F - 104°F		
Resolution	1/5000		
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	46.3 lb (21.0 kg)		

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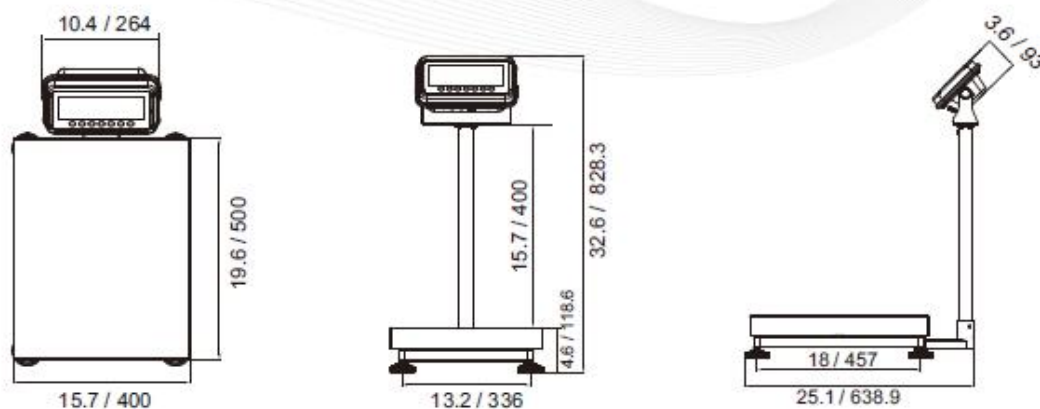
14.ERROR MESSAGE

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 Bench empty.
Err 5	Key board error	Check the keys and connecter.
Err 6	A/D value out of range	Make sure Bench 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 (BW series)
_--oL--_	Over range	Remove the load. Re calibrate
_--Lo--_	Underload	Minus weight, check the Bench and restart or calibrate.

15.RS232 OUT PUT

The TBWS 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.
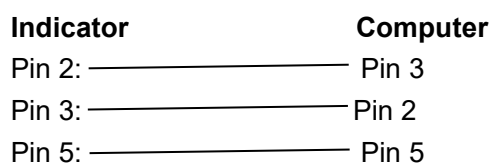
15.1 Print Format

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

                    ----------------------     Gross :   0. 106 lb
                        1    1.100 lb          Tare  :   0. 000 lb
                        2    1. 100 lb         Net   :   0. 106 lb
                        3    1.105 lb
                        4    1.100 lb          Gross :   0. 606 lb
                        5    1.100 lb          Tare  :   0. 106 lb
                        6    1.100 lb          Net   :   0. 500 lb

      THANK YOU     ----------------------    ----------------------
   Weight: 1.745 lb
                    TOTAL  :   6. 605 lb
 MAR. 05. 2021   07:42:48   COUNT :        6  TOTAL :  1. 106 lb
                    ----------------------    ----------------------
```

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