

User Manual



Please read the manual before installation and operation.

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INSTRUCTION MANUAL

FOR TD/TDD SERIES PRECISION BALANCE

T-D/ TD-D series precision balance work on high precision strain gauge load cell and micro processor which implements high speed stabilization and high reliability.

Specifications,

Model No. (TD)	T1003D	T2003D	T3003D
Max. Capacity (g)	0-100	0-200	0-300
Tare Range (g)	100	200	300
Readability (g)	0.001	0.001	0.001
Repeatability (g)	+/-0.002	+/-0.002	+/-0.002
Non-Linearity (g)	+/-0.002	+/-0.002	+/-0.002
Corner Error (g)	+/-0.002	+/-0.002	+/-0.002
Pan Size (mm)	φ 90mm		
Dimensions (LxWxH)	295x192x280mm		
Power supply	AC 110V/220V/ DC 9V		

Operating Temperature Range: 5-35 Degree Centigrade

Moisture: 50-85%

Model No. (TD-D)	TD30002D	TD50002D	3003
Max. Capacity (g)	0-3000	0-5000	0-300
Tare Range (g)	3000	5000	300
Readability (g)	0.01	0.01	0.001
Repeatability (g)	+/-0.05	+/-0.05	+/-0.002
Non-Linearity (g)	+/-0.05	+/-0.05	+/-0.002
Corner Error (g)	+/-0.05	+/-0.05	+/-0.002
Pan Size (mm)	170mmX170mm		
Dimensions (LxWxH)	290x185x80mm		
Power supply	AC 110V/220V/ DC 9V		

Features,

- High Precision loadcell
- Aluminum Alloy die cast base and mains
- Stainless Steel Platter
- Super Bright LED/LCD display with backlight
- Glass windshield supplied as standard
- Height adjustable feet
- RS232 Interface supplied as standard
- Full Capacity subtraction
- Below Balance hanger supplied as standard
- Stabilization time 1-1.5 seconds typically
- Overload Protection
- Selectable measure units, g, ct,oz, lb, ozt
- Checking Weighing, Piece counting function

Function Keys

ON/OFF, to turn on / off the balance

PCS, for counting

TARE, to tare

UNIT, for unit conversion (g/ct/oz/lb/ozt)

CAL, for calibration

MENU, for print

ASSEMBLING

- Unpack the package, put the platter on the top of the loader.
- Put the balance on a steady flat surface away from vibration, direct sunshine ,air blow or strong magnetic disturbance..

TURN ON THE BALANCE

Connect the balance to power supply, keep the switch in the ON(-) position. Press key ON/OFF to turn on the balance, the balance will in turns display following figures,

8.8.8.8.8.8.

Maximum capacity

Finally the balance stays in a standby state of showing 0.000g in the display

Notice: the lasting time of ----- will be decided by the stability of the loadcell, thus, the balance must not be located in an unstable surface or in the wind blow. When the indicator **●** flashes in the display, it means the environment is not good for the following operations.

CALIBRATION

- The purpose for this operation is to calibrate the balance so as to achieve the best performance in case there is obvious tolerance error in weighing or the balance is located in different gravity due to different latitude.
- it is suggested to warm up the balance over half an hour before calibration.
- Remove all loads from the platter, press key TARE to clear the readings to 0.000g.
- Press and hold key CAL for 3 seconds, release the key CAL when “---CAL---“ is shown in the display, a figure of standard weight will flash in the display, put a standard weight on the platter accordingly, standby state “--- ---“ will be shown in the display for a few seconds before the standard weight figure is shown in the display, remove the weight, “-----“ standby state will remain for a few seconds before the balance enter stable weighing mode, showing 0.000g.
- It is recommended to make the operations twice to achieve the best calibration result.
- **Linearity Calibration**, Press and hold key **CAL** for 3 seconds, release the key **CAL** when “---CAL---“ is shown in the display, after a short presence of “- - - -“, a standard weight figure will flash in the display, press and hold key **PCS** to enter linearity calibration mode, follow the instructions to proceed linearity calibration.

WEIGHING

When the balance is warmed up and calibrated, 0.000g is shown in the display indicating weighing mode, put the object on the platter, when stable, the weight of the object is shown in the display.

Note, symbol **O** is stable indicator, when it stops flash, the balance is stable

TARING

When a loader is put over the platter, its weight is shown in the display, press key TARE, 0.000g will be shown in the display, indicating the weight of the loader is deducted, put the object into the loader, when stable, the figure shown in the display is the weight of the object.

PIECE COUNTING

Remove all loads from the platter, press key **TARE** to clear the readings in the display, press key **PCS** to enter counting mode, “- -COU- -“ “- - - -“ and figure 10(default sampling quantity) will in turns be shown in the display, keep pressing key **PCS** to select sampling quantity from 10,25,50,100 up to 500,release key **PCS** when the desired quantity flashes in the display, put a sample on the platter accordingly, press key **PCS** again to save setting, the counting mode setting is finished, in counting mode, weighing unit will change

from g to PCS.

Notice: In counting mode, the weight of the sampling objects should be even, the weight of the individual sample should not be less than the division of the balance.

Return to Weighing Mode: Press key PCS to return to Weighing mode.

WEIGHING UNIT CONVERSION

Press key UNIT to select desired weighing unit from g, ct, oz, lb, ozt

The default weighing unit of the balance is g.

DATA OUTPUT

Press key PRINT to transfer data to computer, printer or custom display

OVERLOAD

The weight of the objective cannot exceed the rated maximum capacity of the balance, when exceeding, "-----" will be shown in the display, remove the objective immediately from the platter so as to prevent damages to the balance.

INTERFACE

RS232 Connection

Balance (9 pins)		Printer/ PC (9 pins)
RXD(Input) 2		-----3
TXD (Output) 3	-----	2
GND (Ground) 5	-----	5

Boardrate

Default Boardrate, 2400BPS, options 1200, 2400, 4800, 9600, 19200, 115200
Boardrate setting,

Press and hold key **PRT** to show C3-02, indicating boardrate 2400 BPS, keep

When C3-01 shows, indicating 1200BPS

When C3-03 shows, indicating 4800BPS

When C3-04 shows, indicating 9600BPS

When C3-05 shows, indicating 19200BPS

When C3-06 shows, indicating 115200BPS

Release key **PRT** when the desired boardrate shows, press key **CAL** thrice to confirm set.

Data format, 10 bits, 0 as start bit, 1 as stop bit, 8 digits (ASCII code)

Rity bit, No.


Output Data Format

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Type	Space	Space or *	+ /-	data	data	data	data or dot	data or dot	data	data	data	unit	unit	End	Return

TIPS

- Warming up is necessary before any operation is made to the balance.
- In TARE mode, the value of the taring object cannot exceed the rated maximum capacity of the balance
- Calibration is necessary to ensure a reliable weighing.
- Switch off the balance when it is not used.
- It is suggested to turn the round platter clockwise before take it off the balance

Maintenance ----- Trouble shooting and solutions

Phenomenon	Possible Reason	Solution
Upper Line - - - -	Over Load	Re-calibrate the Balance
Under Line _ _ _ _	Overload or loadcell broken	Re-calibrate the Balance
Err-1	Too frequently turn on and off the balance	Turn off the balance, resume it after 3 seconds
Err-2	The balance is not stabilised	Wait for a few seconds for stabilization
	Low Battery	Charge or Replace Battery

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