



***Professional Weighing
Equipment***

LBS Series Bench Scales Intelligent Weighing Scale

**HIGH RESOLUTION BALANCE
WITH COUNTING FUNCTION**



Large Bench Scale

Operation Manual

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Declaration of Conformity

Declaration of conformity for apparatus with CE mark

We hereby declare that the product to which this declaration refers conforms to the following standards.

Electronic scale: LBS - High Resolution Balances

USA Model

LBS 300

LBS 500

LBS 1000

Mark applied	EU Directive	Standards
	2004/108/EC	EN 61326-1: 2006

Signature:



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Date: 14. 11. 2012

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Customer Service

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Introduction

What you should know about these Operating Instructions:
Tree® Professional Weighing Equipment products are simple to operate.

Nevertheless, you should read through these operating instructions in their entirety, so that you can make optimum use of the full potential and the diverse possibilities of the weighing scale in your daily work. These operating instructions contain guidance in the form of pictograms and keyboard diagrams, which should help you in finding the required information:

For the labeling of potential hazards and advice, please see Safety below.

Safety

Representations and symbols

Important instructions, which involve safety, are highlighted with the appropriate mark:



Safety recommendations

When using the weighing equipment in surroundings with increased safety requirements, the corresponding regulations must be observed.

The weighing scale may only be used with the power adapter supplied. Before connecting the power adapter to the scale, the user must ensure that the operating voltage stated on the power adapter is compliant with the mains voltage. If not, please contact Customer Service at the address above.

If the power adapter or its cable is damaged, the weighing scale must immediately be disconnected from the electricity supply (pull out the power adapter).

If there should be any reason to believe that it is no longer safe to operate the scale, it should be immediately unplugged from the electricity supply (pull out power adapter) and secured against inadvertent operation.

In carrying out maintenance work, it is essential to follow the recommendations set out in maintenance and servicing.

The weighing scale must not be operated in an area subject to explosion risks.

Care must be taken when weighing liquids to ensure that no liquid is spilled into the inside of the scale or into connections on the rear of the equipment or the power adapter. If liquid is spilled on the scale, it must immediately be unplugged from the main electricity supply (pull out power adapter).

The weighing scale may be operated after it has first been inspected by a service technician.

These operating instructions must be read by each user and should be easily accessible at the workplace at all times.

Weight Scale

The weighing scale consists of certain parts;

The weighing scale consists of the following parts;

- The indicator (1)
- The rectangular metal support tube (2)
- The platform and base unit (3)
- The adapter (4)
- Operating manual



Functions

The LBS Series are high-quality electronic precision weighing scales with counting function and the following specifications

Model number	Capacity	Graduation	Weighing pan Size
LBS 300	300 lbs	0.02 lb	18 x 24 in
LBS 500	500 lbs	0.05 lb	18 x 24 in
LBS 1000	1000 lbs	0.1 lb	24 x 24 in

Net/gross weight	45 lbs.
Package (Standard carton)	LBS (300,500) 33 x 28 x 7 in
Package (Master carton)	1 unit/carton
Operating Temp.	41-95 °F
Power source	Rechargeable battery or AC/DC Adapter : 120V/500mA

Features

- Auto back light (selectable)
- Auto shut off (selectable)
- Hold function
- Animal weighing mode
- Peak hold function
- RS232
- Auto calibration (AnyCal Software)
- Selectable calibration unit lb or kg
- Three modes: Normal/Setting/Internal Auto calibration
- Works as indicator or display
- Error message indicator



Application & Conformity

The Following are instructions of how to correctly use the weight scale:

The weighing scale may only be used for the weighing of solid-materials and of liquids filled into secure containers.

The maximum capacity load of the weighing scale must never be exceeded, otherwise the weighing scale may be damaged.

In using the weighing scale in combination with other devices as well as with devices produced by other manufacturers, the appropriate regulations for the safe use of the relevant attachments and their application in accordance with instructions must be observed.

The weighing scale has been manufactured and tested in accordance with the standards and recommendations set out in the declaration of conformity.

The power adapter supplied for the weighing scale complies with the appropriate electrical protection class.

The following applies to LBS series

Power supply:

LBS 300, 500, 1000
Input: 120 V 50 to 60Hz
Output: 10v DC 500mA

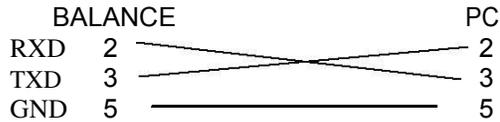
Allowable ambient conditions

Temperature: 5°C - 25°C 41 - 95°F
Relative humidity: 25% - 85%, non-condensing

If you have any questions on the technical data or require detailed technical information on your balance, please contact your technical representative.

RS232 Data interface

1. Connector: DB9



2. Transmissions Settings

Mode: Simplex Asynchronous Serial
 Data Bit: 8
 Stop Bit: 1

Baud Rate: 9600
 Parity Bit: None
 Data Format: ASCII

3. Transmission Information Format : 20 Byte , blank=20H

1~2	3	4~13	14~18	19	20
'W: '	P	DATA	UNIT	CR	LF

W: Start of Data Transmission=57H+3AH

P : Polarity '+' = 2BH = Positive '-' = 2DH =Negative

DATA: ' 12.345' = 20H+20H+20H+20H+31H+32H+2EH+33H+34H+35H

UNIT: 'g' =67H+20H+20H+20H+20H
 'oz' =6FH+7AH+20H+20H+20H
 'lb' =6CH+62H+20H+20H+20H
 'dwt' =64H+77H+74H+20H+20H
 'ozt' =6FH+7AH+74H+20H+20H
 'ct' =63H+74H+20H+20H+20H
 'tl.T' =74H+6CH+2EH+54H+20H
 'tl.H' =74H+6CH+2EH+48H+20H
 'tl.J' =74H+6CH+2EH+4AH+20H
 'GN' =47H+4EH+20H+20H+20H
 'dr' =64H+72H+20H+20H+20H
 'MM' =4DH+4DH+20H+20H+20H
 'tola' =74H+6FH+6CH+61H+20H
 'gsm' =67H+73H+6DH+20H+20H
 'T/A/R' =54H+2FH+41H+2FH+52H
 'T/M/R' =54H+2FH+4DH+2FH+52H
 'pcs' =50H+43H+53H+20H+20H

CR: = 0DH

LF: = 0AH

Getting started

The scale is packaged in an environmentally-friendly carton, which provides optimum protection for the balance during transportation.

We suggest that you keep the original packaging in order to avoid damage if you are shipping or transporting the scale to a different location. It is also the best way to keep it in the best conditions if it will not be used for an extended period of time.

In order to avoid damage, please follow the instructions provided below, when unpacking the scale:

- Unpack the scale carefully.
- When outside temperatures are very low, the scale should be stored for a couple hours and kept in its box in a dry room at normal temperature, so that no condensation settles on the unit when opening the box.
- Check the scale immediately after unpacking for any external visual damage. If there is any damage on scale, contact customer service immediately.
- If the scale is not to be used immediately after purchase, it should be stored in a dry place where fluctuations in temperature are low. (Reference pg.19).
- Read through these operating instruction, before you work with the unit and pay attention to the Safety recommendations (reference Safety pg. 5).

Delivery

Inspect delivery for completeness immediately on unpacking all components.

Checklist for complete delivery

	Component delivered present yes / no
Weighing unit body/platter	
Indicator	
Power adapter	
Operating manual	

Assembly & Installation

The weighing scale is delivered in a partly dismantled condition. Assemble the individual components in the following sequence:

- Place your machine on a level, clean, and dry surface to obtain accurate readings.
- Fix the stainless steel column onto the base with four screws provided.
- Fix the indicator on top of the stainless steel column with the two screws, two washers and two butterfly nuts provided.

Connecting the AC Adapter

The following Safety recommendations must be observed when connecting the scale:



The Scale should only be connected to the mains voltage socket with the power adapter supplied. Check before connecting the power adapter to the mains socket, that the operating voltage stated on the power adapter complies with the local mains voltage. If the operating voltage is not the same as the mains voltage, the power adapter must not be connected to the mains socket and contact customer service.

Placement of Scale

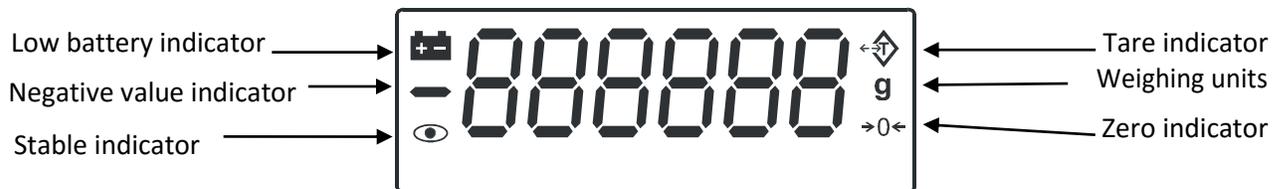
The location in which the scale is placed is very important in order for the scale to work to its full potential. Certain conditions can affect the capabilities of the scale, conditions like: the presence of air flow, variations in temperature, and direct sunlight. Please follow the recommendations given below in choosing a location to place your scale.

- Place the scale on a solid, firm and preferably vibration-proof, horizontal base
- Make sure that the weighing machine cannot be shaken or knocked over
- Protect from direct solar radiation
- Avoid drafts and excessive temperature fluctuations
- Avoid placing the scale near or on any magnetic surfaces.

Choice of a suitable location

The environment in which your weighing scale is used is very important. Air movement, temperature changes, vibrations, direct sunlight, etc. all influence the performance of high precision weighing scales. Place your scale on a solid, sturdy surface that is free of air currents, vibrations and not in any direct sunlight. The surface should not be magnetic and should be located away from doors, windows, heaters, air conditioners, and fans.

Display messages:



Key Functions:

- The On/Off key is to turn the Balance On or Off.
- HOLD key stores the weight value.
- ZERO (for tare) is a ZERO feature if the load is below 10% of full capacity or is a negative value. It is a TARE feature if the load is between 10% and full capacity. It has a multiple tare function, but the total weight before and after TARE must be less than full capacity.
- The Print key is used to send data to external device through RS232 connector.

Program options

Please see our web-site at <http://lwmeasurements.com> for practical demonstrations of application usage.

Interface Settings

- Press and hold the HOLD key, and then press ON-OFF key to turn on the weighing scale; display will show A-ON or A-OFF.
- Press the UNIT key, the display will show “L-ON” or “L-OFF”.
- Press UNIT key again, display will show “P-XX”
- Press ZERO key to select CON, OFF, KEY, STB
 - OFF means the serial data output is disabled
 - KEY means manual mode, press the PRINT key to print
 - STB means data will automatically print when the scale is stable
 - CON means data will continuously print
- Press the ON/OFF key to turn the scale off.

Parameter settings

Setting Auto Shut-off

Press and hold “HOLD” key, then press ON/OFF key to turn on the weighing machine, display will show “A ON” or “A OFF”, press ZERO key to elect Auto shut-off mode “ON” or “OFF”.

Setting backlight

Press and hold “HOLD” key, then press ON/OFF key to turn on the weighing machine, display will show “A ON” or “A OFF”, press UNIT key, display will show “L ON”, “L OFF” or “L AU”, press ZERO key to select back light On, Off or Au (auto).

Setting Power-on Mode

Press and hold "HOLD" key, then press ON/OFF key to turn on the weighing machine, display will show "A ON" or "A OFF", press UNIT key three times, display will show "J ON" or "J OFF", press ZERO key to select "J ON" (means showing zero when machine is turned on) or "J OFF" (means showing the weight placed when the machine is turned on).

Working mode setting

Press the UNIT key, display will show F-Nor or F_PEA or F-Ani. Press the ZERO key to select Nor, PEA or Ani.

- a) Nor means the normal weighing function is activated.
- b) PEA means the peak hold weight function is activated.
- c) Ani means the animal weighing function is activated.

Press the UNIT key, the display will show N-dsp or N-Ind. Press the ZERO key to select dsp or Ind.

- a) dsp means it can display synchronously as a displayer for another indicator through the RS232 socket.
- b) Ind means it is only an indicator for weighing machine.

Press the UNIT key, the display will show Kd 50, Kd 100, Kd 200 or Kd 400. Press the ZERO key to select the animal anti-shock range among 50, 100, 200 or 400.

Press the UNIT key, display will show Fd 0.5, Fd 3, Fd 5 or Fd 10. Press ZERO key to select the animal scale filter range among 0.5, 3, 5, and 10.

Press the UNIT key, the display will show Ft 1, Ft 2, Ft 3 or Ft 4. Press ZERO key to select the animal scale filter time among 1s, 2s, 3s, and 4s.

NOTE: Kd, Fd, Ft work only in the F-Ani mode.

Press the UNIT key, the display will show U-on or U-off. Press the zero key to select.

- a) U-on means you can switch units between.
- b) U-off means that the lb unit will be disabled.

HOLD FUNCTION

Press ON/OFF key to turn on the weighing machine, then place the item on the platform.

Wait for the readings to become stable, press HOLD key, the “ . “ indicator will show.

Remove the item from the platform, the readings will still remain on the display. Now you can select Unit (lbs or kgs) by pressing the UNIT key.

NOTE: lb cannot be selected if lb was disabled in the Function setting.

Press HOLD key to quit hold function mode and return the machine to weigh mode.

Peak Hold Mode

In Working mode settings, choose F-PEA. PEA means that the peak hold weighing function is activated.

Before weighing, press HOLD key.

Calibration

Using an External Calibration Weight

Note: Calibration is required when the weighing scale is initially installed or if the balance is moved to a substantial distance from the original location. The weighing machine should be allowed to warm up for 30 minutes before calibration.

A reminder when operating our larger capacity weighing machines:

Press and hold the ZERO key, and then press the ON/OFF key to turn the weighing machine on. The display will show CAPU=. Press UNIT key to select full capacity unit kg or lb (lb cannot be selected if lb was disabled in the Function setting – Working mode). Press the HOLD key to confirm your selection.

Press the HOLD key again to enter the next menu, the display will show CAP. Press the UNIT key to select full capacity. Press the UNIT key to move the flashing digit to the right, press the ZERO key to increase the flashing digit, and press the hold key to confirm the selection.

Press the hold key again to enter the next menu, the display will show CALU=. Press the UNIT key to select calibration unit kg or lb (lb cannot be selected if lb was disabled in the Function setting – Working mode). Press the hold key to confirm the selection.

Press the HOLD key again to enter the next menu, the display will show CAL. Press the UNIT key to set the calibration weight. Press the UNIT key to move the flashing digit to the right, press the ZERO key to increase the flashing digit. Press the HOLD key to confirm the selection. **NOTE:** *The calibration weight should be more than 2/3 of the full capacity.*

Press the HOLD key again to enter the next menu, the display will show DIV. Press the UNIT key to select division. Press the HOLD key to confirm the selection.

Press the HOLD key again to enter the next menu, the display will show Adb. Press the UNIT key to select (19.20). Press the HOLD key to confirm the selection.

Start the calibration following these steps:

Press the PRINT key, the display will show CAL and then the AD value. Press the UNIT key when the stable indicator light is displayed, it will show the flashing calibration weight.

Place the known test weight on the platform, press the UNIT key after the stable indicator light is displayed, it will show -----, and then the AD value.

Turn off the weighing machine, remove the test weight from the platform.

Press ON/OFF key to turn the machine on to test if the weighing is accurate, if not, repeat above steps.

Maintenance & Service

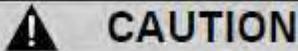
The weighing scale is a precision instrument, it must be treated carefully and cleaned regularly



For maintenance-work, the balance must be disconnected from the power supply (remove power adapter plug from socket). Also ensure that the balance cannot be connected to the power supply during the work by a third party.

Make sure that no liquid spills into the scale while performing maintenance work. If liquid is spilled on the scale, it must be inspected by a service technician.

Regularly perform maintenance to the weighing pan and the weighing pan holder by removing any dirt or dust from under the weighing pan and on the weighing scale housing. Use a soft brush or a soft, lint-free cloth, moistened with a mild soap solution



Never use solvents, acids, alkalis, paint thinners, scouring powders or other aggressive or corrosive chemicals for cleaning; these substances can cause damage to the surfaces of the scale housing.

Transport & Storage

Your weighing machine is a precision instrument, treat it carefully. Avoid shaking, severe impacts and vibration during the transportation. Make sure that there are no marked temperature fluctuations during the transportation and that the weighing machine does not become damp (condensation).

If you would like to take the weighing machine out of service for an extended period, disconnect it from the electricity supply, clean it thoroughly (refer to Maintenance & Service) and store it in a place which meets the following conditions:

- ⌚ No violent shaking, no vibrations
- ⌚ Minimum temperature fluctuations
- ⌚ No direct solar radiation
- ⌚ Minimum moisture

Warranty

LW Measurements products are under warranty against factory defects for a period of two (2) years from the date of shipment for Customers in the continental United States.

LW Measurements will pay for freight both ways within the first 30 days of purchase if technical support is required. (Determined by our certified Technical Support Team) In the event technical support is needed the customer is responsible for shipping the product back to us after the 30 day period has expired. Once the product is received, the technical support team will inspect and as necessary repair or replace the scale. LW Measurements will ship the product back to the customer at our expense.

Any new scales returned for warranty must be properly packaged in the original box. If they are not properly packed in the original box, the customer is responsible for the shipping cost. If we determine there is a factory defect, we will provide a replacement and accept responsibility for shipping back to customer. If we determine that it is not a factory defect, the customer will be responsible for shipping fees incurred.

For Customers outside the lower 48 States, including Mexico, Canada, Puerto Rico, Hawaii, Alaska and all other countries are responsible for all shipping fees incurred.

Our warranty does not cover misuse or neglect including but not limited to battery or water damage, overloading, and chewed or cut wires, keypad damage (punctures), scratched platforms, dented platforms unless caused by shipping (Must report/return within 30 days). If the product is found to have been misused or damaged by the customer, LW measurements is not responsible for the cost of return.

For warranty claims please call your customer service representative.