TREE®

LW MEASUREMENTS, LLC

Professional Weighing Equipment

Wheelchair Scale

Operation Manual

LWC Series

Table of Contents

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: LWC Series

Metric version: Imperial version:

400 Kg. 800 lbs.

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

Signature:

Boon Lim, R & D Manager

May 20, 2013

LW Measurements LLC, 620 Carlson Court, Rohnert Park, CA 94928

Customer Service

USA

LW Measurements LLC,
620 Carlson Court
Rohnert Park, CA 94928
USA

Tel: (707) 542-2185
Fax: (707) 542-3285

http://lwmeasurements.com

EUROPE

LW Measurements Europe Ltd
Chalkwell Park House 700 London Road
Westcliff-on-Sea Essex SS0 9HQ
United Kingdom

Tel: 01702-476700
Fax: 01702-477380

http://lwmeasurements.com

Introduction

What you should know about this Operation Manual:

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 of the weighing scale in your daily work activities.

These operating instructions contain guidance in the form of pictograms and keyboard diagrams, which should help in finding the required information:

For the labeling of potential hazards, please refer to the Safety proportion of this operation manual.

Safety

Representations & Symbols

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

⚠ DANGER

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

Construction & Functions

The weighing scale consists of the following parts;

- Weighing scale
- Indicator
- Wall mount bracket
- Screws with butterfly nuts
- A/C adapter
- Operating manual.

Figure 2.1 weighing scale

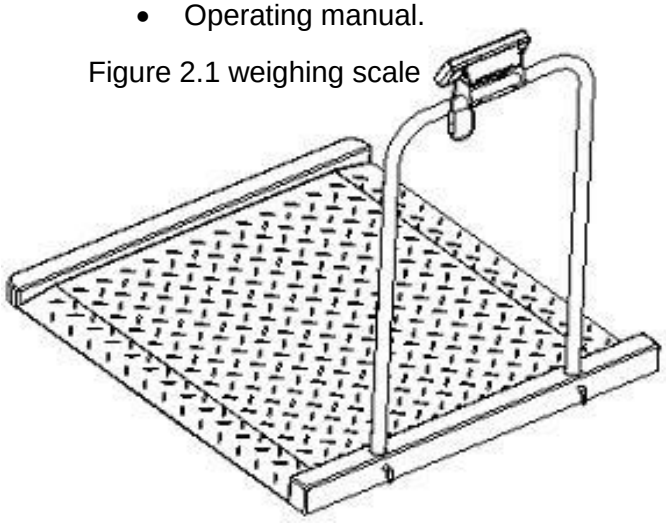


Figure 2.4 -4 screws with butterfly nuts

Figure 2.2 Indicator

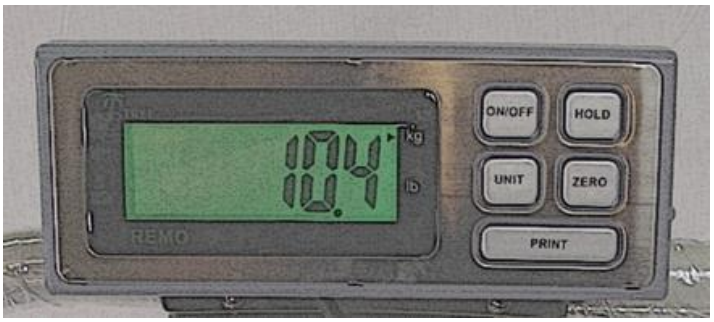


Figure 2.3 Wall mount bracket

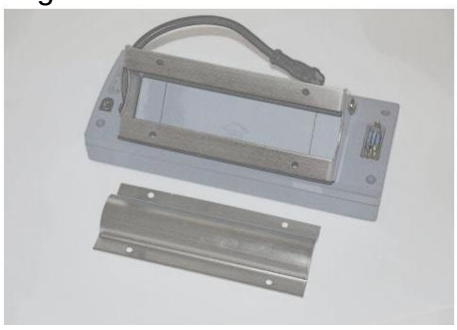


Figure 2.5 A/C adapter

Functions

The Large Wheelchair Scale is a high-quality electronic precision weighing machine with the following specifications

Metric Specifications

Model number	Capacity	Graduation	Platter Size
LWC 800	400 kg	0.1kg	96.01 x 100.08 cm
Shipping weight	40.82 kg		
Package (Standard carton)	132.08 x 114.3 x 12.7 cm		
Operating Temp.	5 – 35 Cº		
Power source	AC/DC Adapter 9V DC / 100mA		

Imperial Specifications

Model number	Capacity	Graduation	Platter Size
LWC 800	800 lb	0.2 lb	37.8 x 39.4 in
Shipping weight	90 lbs		
Package (Standard carton)	52 x 45 x 5 in		
Operating Temp.	40-95 ºF		
Power source	AC/DC Adapter 9V DC / 100mA		

FEATURES

- Display options: 5 digital LCD
- Power : AC adapter 9V / 100mA
- Auto back light (selectable)
- Auto shut off (selectable)
- Operating temperature: 5-35 ºC
- Operating humidity: 25% - 95% RH
- Zero Range (0 to 4% of full capacity)
- Tare Range (4% to full capacity
- Two calibration weight units: kg, lb.
- Open calibration capacity
- Power on zero-setting range: +10%
- Two modes: Normal mode / Setting mode
- RS232 function

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 the LWC series

Power supply:

Input: 120 V or 230V AC (+/-15-20%); 60Hz

Output: 9V DC 100mA

Allowable ambient conditions:

Temperature: 5°C - 35°C, 41°F - 95°F

Relative humidity: 25% - 95%, non-condensing

RS232 Data interface

Connector: DB9	
SCALE	PC
2	3
3	2
5	5
Transmissions Settings	
Mode: Simplex Asynchronous Serial	Baud Rate: 9600
Data Bit: 8	Parity Bit: None
Stop Bit: 1	Data Format: ASCII

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:	‘lb’=6CH+62H+20H+20H+20H ‘kg’=6BH+67H+20H+20H+20H				
CR:	= 0DH				
LF:	= 0AH				

M= overload mode

W= normal weighing mode: = weight information

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
W/M		±																CR	LF

Weight information ***Unit formation***

Example: *50kg*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
W/M		±							5	0	.	0	k	g				CR	LF

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.).
- 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 upon unpacking all components.

Checklist for complete delivery

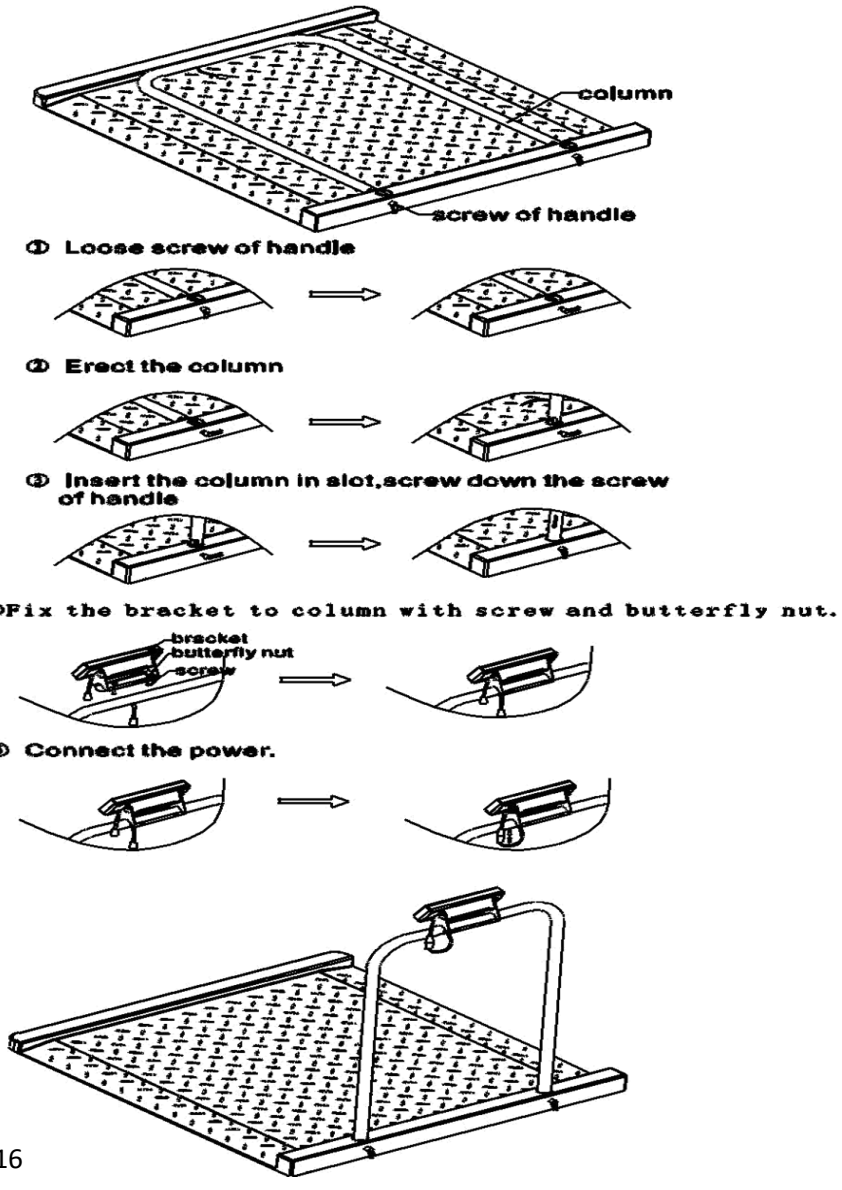
	Component delivered present yes / no
Weighing unit body	
Weighing pan	
Power adapter	
Operating manual	

Assembly & Installation

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

- Place your machine on a level, stable, clean, dry surface to obtain accurate readings.
- Loosen the screw on the handle.
- Pull the column upward to a 90 degree angle.
- Insert the column into the slot and screw into place.
- Fix the indicator bracket to the column with screw and nut.
- Connect the power cord to the indicator

NOTE: the AC input requirement could be 110, 120, 220, 230 or 240 Volts (50/60 Hz) depending on the area where used, so please verify that the adapter is correct



Connecting the AC Adapter

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

⚠ DANGER

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.

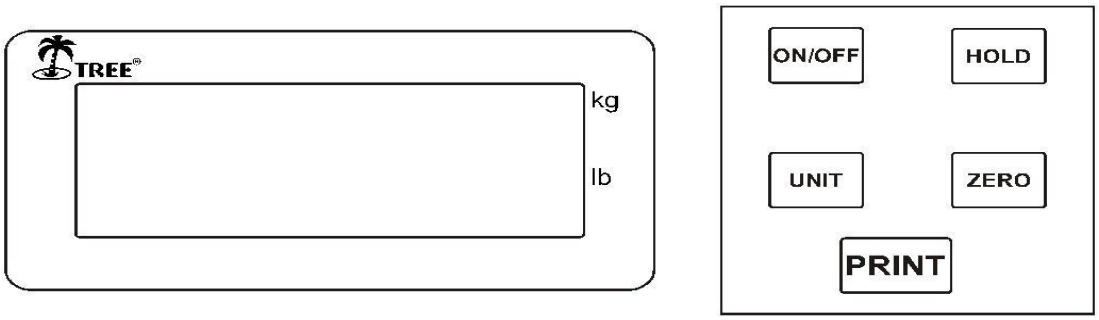
If the operating voltage is not the same as the mains voltage, the power adapter must not be connected to the mains socket and contact customer service.

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.

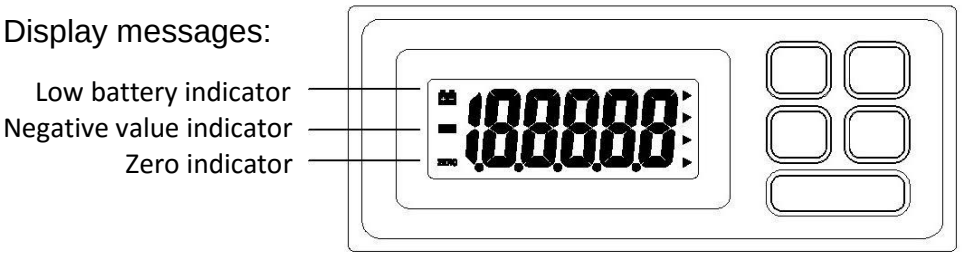
- Place the scale on a solid, firm and preferably vibration-proof, horizontal base
- Make sure that the weighing machine cannot be shaken or knocked over
- Protect from direct solar radiation
- Avoid drafts and excessive temperature fluctuations
- Avoid placing the scale near or on any magnetic surfaces.

Application Menu



Display messages & Key functions

Display messages:



Key Functions:

- The ON/OFF key is to turn the Scale On or Off
- The HOLD key is to store the weight value.
- The UNIT key is to toggle different weighing units.
- The ZERO key: Zero feature if load weight below 4% of full capacity; TARE feature if load weight is between 4 to 100% of capacity.
- The PRINT key is to send data to external device through RS232 connector.

Program Options

Interface Settings

- Press and hold the HOLD key, and then press ON/OFF key to turn on the scale, display will show A-ON or A-OFF
- Press UNIT key, display will show “L-ON” or “L-OFF” or “L-Au”
- Press UNIT key again, display will show “P-XX”
- Press ZERO key to select CON,OFF, KEY, STB
  - OFF stands for serial data output disabled
  - KEY stands for manual mode by pressing [PRINT]
  - STB stands for automatic print when scale is stable
  - CON stands for continuous print
- Press ON/OFF key to turn off the Scale

Setting Auto Shut off

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

Setting Backlight

Press and hold the HOLD key, then press ON/OFF key to turn on the Scale, 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 the HOLD key, then press ON/OFF key to turn on the Scale, 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 scale is turned on) or “J OFF” (means showing the weight placed when the scale is turned on).

Working mode settings

- Press & hold UNIT and HOLD keys, then press ON/OFF key to turn on the scale
- The display will show Ani. Su, press UNIT key to enter, press ZERO key to select ON (means animal weighing mode) or OFF (means normal weighing mode), press HOLD key to confirm.

- Press HOLD key again, display will show Ani. Kd, press UNIT key to enter, press ZERO key to select anti-shock range between 50, 100, 200 and 400, press HOLD key to confirm.

*** This is the anti-shock range 50d, 100d, 200d or 400d. The smaller division range is suitable for smaller people/animals, the larger division range for larger people/animals.

- Press HOLD key again, display will show Ani. Fd, press UNIT key to enter, press ZERO key to select filter range between 0.5, 3, 5 and 10, press HOLD key to confirm.

*** This is the filter range, 0.5d, 3d, 5d or 10d that the scale displays, for example, if we use LWC 800lb x 0.2lb for weighing a 300lb person, if we set it to be 0.5d, then the scale will show 299.8lb, 300lb, 300.2lb..., if we set it to be 3d, then the scale will show 299.4lb, 300lb, 300.6lb... 0.5d can get a much more accurate weighing, but it won't be as stable; 10d will not obtain such an accurate weighing result, but it will be much more stable.

- Press HOLD key again, the display will show Ani. Ft, press UNIT key to enter, press ZERO key to select filter time between 1, 2, 3 and 4, press HOLD key to confirm.

*** This is the filter time, 1s, 2s, 3s or 4s that will take to display the weighing. Weighing will be more accurate if the user chooses 4 second (longer displaying time), but not so accurate if 1 second (faster displaying time) is chosen.

Press ON/OFF key to turn the scale off.

Hold function

- Press ON/OFF key to turn on the scale, place the item on the platform.
- Wait for the readings stable, press HOLD key, the " **.** " indicator will show
- Remove the item from the platform, the readings will still remain on the display
- Press HOLD key to quit hold function mode

Calibration

A reminder when operating our larger capacity scales:

The scales of the LWC series are calibrated at the factory. Usually no recalibration is necessary unless major inaccuracies are observed. If calibration is deemed necessary, an appropriate test weight of at least 2/3 of the full capacity of the scale should be used to obtain accurate weighing.

Calibration procedure:

- Press and hold ZERO key and then press ON/OFF key to turn on the scale, the display will show CAPu=
- Press HOLD key, display will show CAP, press HOLD key again, display shows CALu=, press UNIT key to select calibration unit KG or LB, a triangle icon will display to indicate KG or LB, press HOLD key to confirm, it will show CALu= again.

- Press HOLD key again, the display will show CAL, press UNIT key to set calibration weight, display will show XXXXX with a flashing digit, press UNIT key to move the flashing digit to right, press ZERO key to increase the value of the flashing digit, press HOLD key to confirm, it will show CAL again. (We recommend a calibration weight at least 2/3 of the full capacity to get an accurate weighing).
- Press PRINT key, display will show CAL and then the AD value, press UNIT key when the stable indicator displayed, it will show the flashing calibration weight,
- Place the known test weight on the platform, press UNIT key after stable indicator displayed, it will show ------, and then the AD value, now the calibration is finished.
- Turn off the scale, remove the test weight from the platform.
- Press ON/OFF key to turn the scale on to test if the weighing is accurate, if not, repeat above steps.

Maintenance & Service

⚠ DANGER

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.

⚠ CAUTION

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.

Transportation & 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

The products are under warranty against factory defects for a period of two (2) years from the date of shipment.

For Customers within the lower 48 states of the continental United States. LW Measurements will pay for fright both ways for the first 30 days after purchase. After 30 days expire the customer is responsible for shipping the product back to us. After the product is received we will inspect it and as necessary we will repair or replace and 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 an in the original box, the customer pays for shipping cost. If we determine there is a factory defect, we will pay for the shipping back. If we determine that it is not a factory defect, the customer will pay shipping.

For Customers outside the lower 48 States, including Mexico, Canada, Puerto Rico, Hawaii, Alaska and all other countries, customers must pay for shipping.

Our warranty does not cover misuse or neglect including but not limited to battery or water damage, overloading, and chewed or cut wires. 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 go online to lwmeasurements.com and fill out the warranty submission form or call your customer service representative.