



*Professional Weighing  
Equipment*

## **MCT SERIES intelligent weighing machine**

**MID COUNTING SCALE  
WITH CHECK-WEIGHING FUNCTION**



## **Operating Manual**

# 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: MCT Mid Counting Scales

Imperial version

MCT-3  
MCT-7  
MCT-16  
MCT-33  
MCT-66

Metric version

MCT-1500  
MCT-3000  
MCT-7500  
MCT-15000  
MCT-30000

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

Date: 14. 11. 2012

Signature:



Boon Lim, R & D Manager

LW Measurements LLC, 3510 Industrial Drive, Unit H Santa Rosa, CA 95403

## Identification

## Customer Service

### USA

LW Measurements LLC, 3510 Industrial Drive,  
Unit H Santa Rosa, CA 95403  
USA

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

### 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

### ASIA

LW Measurements PTY Ltd  
Block 1004, Toa Payoh North  
#03-16 Singapore 318995

Tel: (65) 6458 3438  
HP: (65) 8119 3401

<http://lwmeasurements.com>

Refer to our website for information about local customer service centers and details of their addresses.

# 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 machine 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 labelling of potential hazards and advice, please see Safety below.

# Contents

| <b>Section</b> | <b>Heading</b>   |
|----------------|--|
| <b>1</b>       | <b>Safety</b>  |
|                | <ul style="list-style-type: none"> <li>1.1 Representation and symbols</li> <li>1.2 Safety recommendations</li> </ul>   |
| <b>2</b>       | <b>Your weighing machine</b>   |
|                | <ul style="list-style-type: none"> <li>2.1 Construction and functions                             <ul style="list-style-type: none"> <li>2.1.1 Construction of the weighing machine</li> <li>2.1.2 Functions of the weighing machine</li> </ul> </li> <li>2.2 Application, conformity                             <ul style="list-style-type: none"> <li>2.2.1 Correct use of the weighing machine</li> <li>2.2.2 Conformity</li> </ul> </li> <li>2.3 Data and parameters                             <ul style="list-style-type: none"> <li>2.3.1 Technical data</li> </ul> </li> </ul> |
| <b>3</b>       | <b>Getting started with your weighing machine</b>  |
|                | <ul style="list-style-type: none"> <li>3.1 Unpacking the equipment</li> <li>3.2 Scope of delivery</li> <li>3.3 Assembling your weighing machine</li> <li>3.4 Choice of a suitable location</li> <li>3.5 Checking the mains voltage</li> <li>3.6 Leveling the weighing machine</li> <li>3.7 Calibration of the weighing machine</li> </ul>  |
| <b>4</b>       | <b>Working with the application menu using the intelligent keypad</b>  |
|                | <ul style="list-style-type: none"> <li><b>4.1 Display messages and key functions</b> <ul style="list-style-type: none"> <li>4.1.1 Display messages</li> <li>4.1.2 Key functions</li> </ul> </li> <li><b>4.2 Program options</b> <ul style="list-style-type: none"> <li>4.2.1 Pieces counting</li> <li>4.2.2 Selectable auto shut off</li> <li>4.2.3 Selectable auto backlight</li> </ul> </li> </ul>   |
| <b>5</b>       | <b>Calibration - using an external calibration weight</b>  |
| <b>6</b>       | <b>Maintenance and service</b>   |
| <b>7</b>       | <b>Transport and storage</b>   |
|                | <ul style="list-style-type: none"> <li>7.1 Transportation and shipping</li> <li>7.2 Storage</li> </ul>   |

# 1 Safety

## 1.1 Representations and symbols

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



## 1.2 Safety recommendations

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

The weighing machine may only be used with the power adapter supplied exclusively for use with the weighing machine.

Before inserting the power adapter, the user must ensure that the operating voltage stated on the power adapter agrees 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 machine must immediately be disconnected from the electricity supply (pull out the power adapter).

The weighing machine may only be operated from mains electricity supply with a power adapter which is in perfect condition.

If there should be any reason to believe that it is no longer possible to operate the weighing machine without danger, the weighing machine is to 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 in Chapter 6 Maintenance and service.

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

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

The weighing machine may only be operated again after it has first been re-checked by a service technician.

These operating instructions must be read by each operator of the equipment and must be available at the workplace at all times.

## 2 Your weighing machine

### 2.1 Construction and functions

#### 2.1.1 Construction of the weighing machine

The weighing machine consists of the weighing machine body (1), the scale-pan (2), the adapter (3) and this operating manual.

Figure 2.1 Your weighing machine



## 2.1.2 Functions of the weighing machine

The MCT Series are high-quality electronic precision weighing machines designed to function as counting scales and check-weighers with the following specifications

### 1. Imperial weight unit version

| <b>Model number</b>          | <b>Capacity</b>                                      | <b>Division</b> | <b>Weighing pan Size</b> |
|------------------------------|--|-----------------|--------------------------|
| MCT-3                        | 3 lb   | 0.0001 lb       | 185 x 255mm              |
| MCT-7                        | 7 lb   | 0.0002 lb       | 185 x 255mm              |
| MCT-16                       | 16 lb  | 0.0005 lb       | 185 x 255mm              |
| MCT-33                       | 33 lb  | 0.001 lb        | 185 x 255mm              |
| MCT-66                       | 66 lb  | 0.002 lb        | 185 x 255mm              |
| Package<br>(Standard carton) | 27.5×19×21(cm <sup>3</sup> )                         |                 |                          |
| Package<br>(Master carton)   | 4 Units in one box: 64.5×38×36(cm <sup>3</sup> )     |                 |                          |
| Operating<br>Temperature     | 0-40°C(32-104°F)                                     |                 |                          |
| Power source                 | Rechargeable batteries or AC/DC<br>Adapter 10V/500mA |                 |                          |

## 2. Metric weight unit version

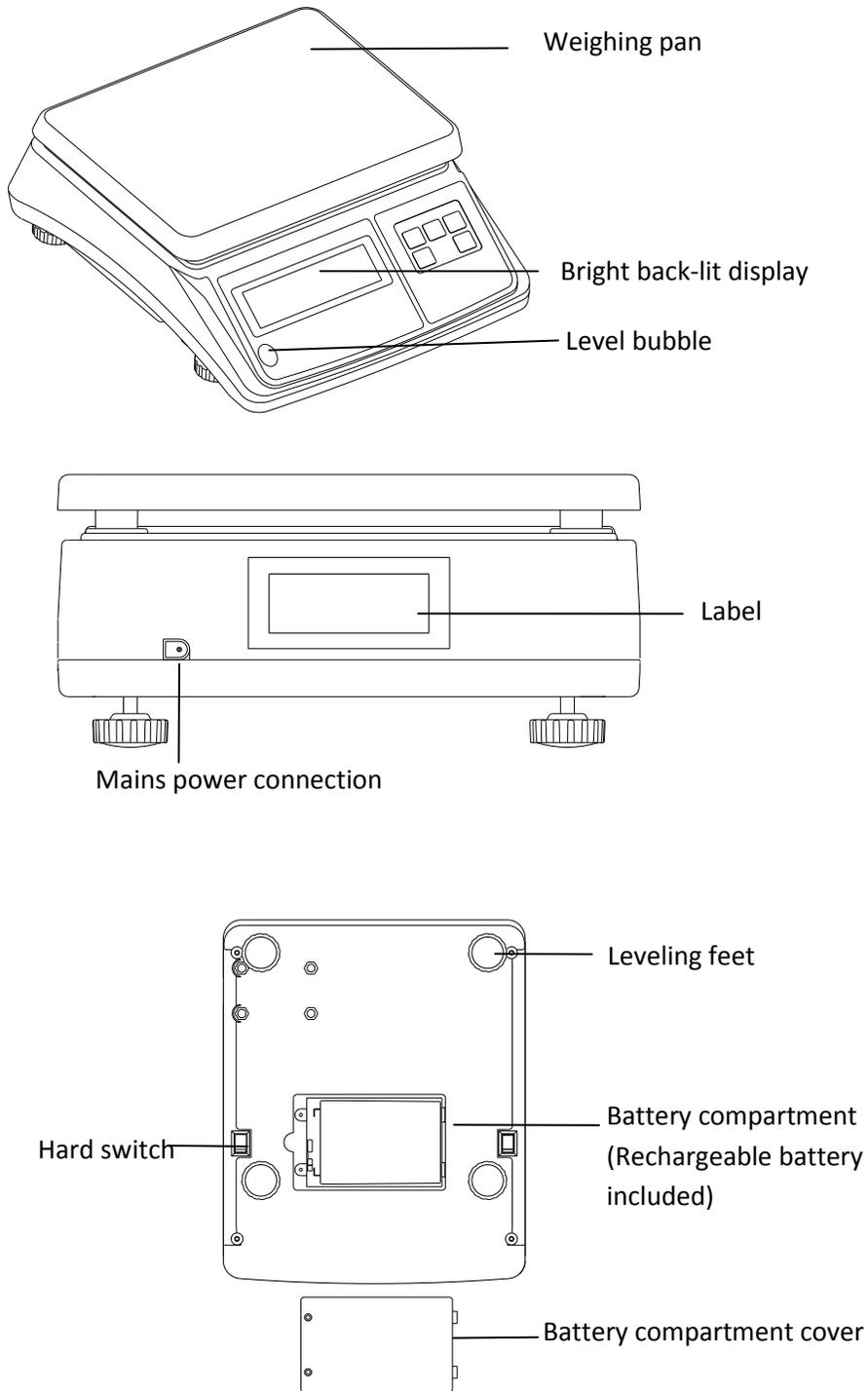
| Model number                 | Capacity   | Division  | Weighing pan Size |
|------------------------------|--|-----------|-------------------|
| MCT-1500                     | 1500 g   | 0.05 g    | 185 x 255mm       |
| MCT-3000                     | 3000 g   | 0.1 g     | 185 x 255mm       |
| MCT-7500                     | 7500 g   | 0.2 g     | 185 x 255mm       |
| MCT-15k                      | 15 kg  | 0.0005 kg | 185 x 255mm       |
| MCT-30k                      | 30 kg  | 0.001 kg  | 185 x 255mm       |
| Package<br>(Standard carton) | 27.5×19×21(cm <sup>3</sup> )                         |           |                   |
| Package<br>(Master carton)   | 4 Units in one box: 64.5×38×36(cm <sup>3</sup> )     |           |                   |
| Operating<br>Temperature     | 0-40°C(32-104°F)                                     |           |                   |
| Power source                 | Rechargeable batteries or AC/DC<br>Adapter 10V/500mA |           |                   |

The built-in versatile weighing programs allow you to use the MCT-Series weighing machines not only for accurate weighing but also for components counting.

### FEATURES

- Auto zero tracking
- Intelligent applications: weight unit conversion, parts counting
- Low battery indication
- Large bright backlit LCD
- Large heavy gauge stainless steel square pan
- Stability indication
- Auto calibration
- Selectable auto back light
- Selectable auto shut off
- Unit switching kg ,g, lb, oz, lb:oz
- Variable kg or lb reference weight calibration software
- Pieces counting
- 1.3 million internal resolution
- 30,000 display resolution
- 24 bit A/D processor
- Highest quality sensor used

Figure 2.2 Details of your weighing machine



## 2.2 Application, conformity

### 2.2.1 Correct use of the weighing machine

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

The maximum allowable load of the weighing machine must never be exceeded, otherwise the weighing machine may be damaged.

In using the weighing machine in combination with other appliances as well as with appliances 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.

### 2.2.2 Conformity

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

The power adapter produced for the operation of the weighing machine and intended exclusively for this application, complies with the appropriate electrical protection class.

## 2.3 Data and parameters

### 2.3.1 Technical data

The following applies to all LCT series weighing machines

Power supply:

- . Input: 110 or 230V AC (+/-15-20%); 50 to 60Hz
- . Output: 10v DC 500mA

Allowable ambient conditions

Temperature: 0°C - 40°C

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.

## 3 Getting started with your weighing machine

### 3.1 Unpacking the equipment

The machine is delivered in an environmentally-friendly carton, specifically developed for this precision instrument, which provides optimum protection for the balance during transportation.

We suggest that you retain the original packaging in order to avoid transportation damage if re-shipping or transporting the balance and to allow the unit to be stored in the best conditions if it is out of operation for an extended period.

In order to avoid damage, attention must be given to the following points when unpacking the balance:

Unpack the weighing machine carefully. It is a precision instrument.

When outside temperatures are very low, the balance should first be stored for some hours in the unopened transport package in a dry room at normal temperature, so that no condensation settles on the unit when unpacking.

Check the weighing machine immediately after unpacking for externally visible damage. If you should find transport damage, please inform your service representative immediately.

If the unit is not to be used immediately after purchase but only at a later time, it should be stored in a dry place where fluctuations in temperature are as small as possible (see Chapter 7 .Transport, storage.).

Read through these operating instructions, even if you already have prior experience with weighing equipment, before you work with the unit and pay attention to the Safety recommendations (see Chapter 1 .Safety).

### 3.2 Scope of delivery

Inspect delivery for completeness immediately on unpacking all components.

#### Checklist for complete delivery

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

### 3.3 Assembling your weighing machine

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

- Place the unit holder in position and add the weighing pan
- Insert the power adapter cable plug into the socket at the rear of the balance.

### 3.4 Choice of a suitable location

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

To summarize:

- Put the weighing machine 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

### 3.5 Checking the mains voltage

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



The balance may only be operated with the power adapter supplied.

Check before connecting the power adapter to the mains supply, that the operating voltage stated on the power adapter agrees with the local mains voltage.

If the operating voltage is not the same as the mains voltage, the power adapter must on no account be connected to the mains supply. Contact customer service.

### 3.6 Leveling the weighing machine

To function properly, the balance must be precisely horizontal. The balance is fitted with one bubble level and adjustable feet for level-control, with the aid of which it is possible to compensate for small height differences and / or any unevenness in the surface on which the balance is positioned.

The screw feet must be adjusted so that the air bubble is precisely in the center of the sight glass of the bubble level (see Fig. 1)

Place the scale horizontally and keep the bubble inside the bubble level aligned with the red circle (See Fig.1). In order to get exact measurements, the balance must again be carefully leveled after each relocation.

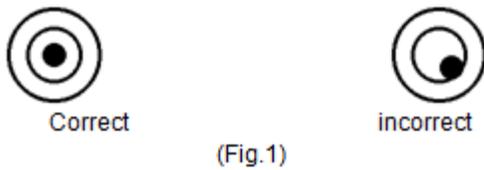


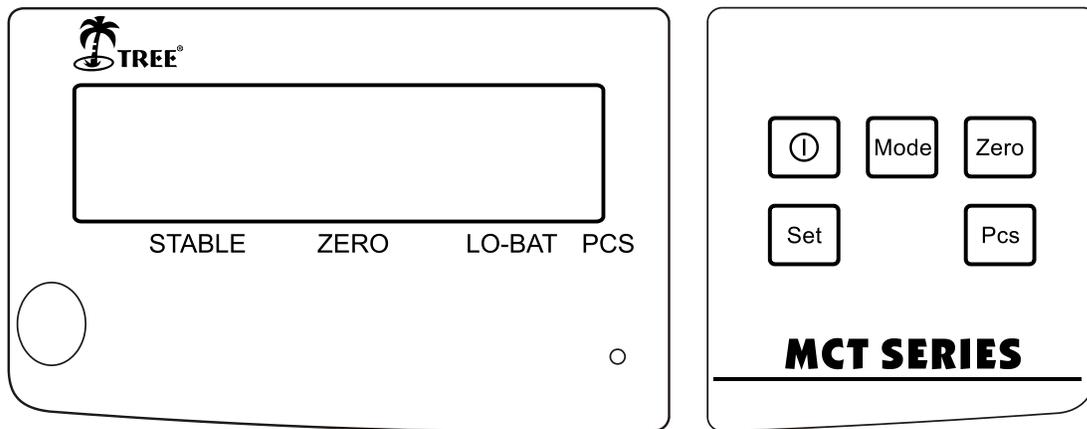
Fig. 1 Correct leveling with the aid of the bubble level and adjusting feet.

### 3.7 Calibration of the weighing machine

Since the Earth's gravity is not the same everywhere, each balance must be adjusted to compensate for the gravity differences at each location in accordance with the underlying physical weighing principles. This adjustment process, known as calibration and must be carried out on initial installation and after each subsequent relocation.

In order to ensure exact measurements, it is recommended that the balance should be calibrated regularly using a known external calibration weight (see Section 5 below).

## 4 Working with the application menu using the Intelligent Key-Pad



### 4.1 Display messages and key functions

#### 4.1.1 Display messages

1. The STABLE icon indicates when the readings stabled.
2. The ZERO icon indicates when the weights tared to zero.
3. The LO-BAT icon indicates when running out of battery.
4. The PCS icon indicates when pieces counting function applied.

#### 4.1.2 key functions

1. On/Off (icon) key turns the weighing machine on or off
2. MODE key changes the weight units, kg, g, lb, oz, lb:oz
3. ZERO key sets display to zero or subtract the container weight
4. SET key for function settings
5. PCS key for pieces counting function

## 4.2 Program options

Besides performing accurate simple weighing, your versatile weighing machine can also perform pieces counting

### 4.2.1 Pieces counting

- Press ON/OFF (icon) to turn on the scale
- Wait for "0" to appear on the display.
- If necessary, press ZERO key to set the display to "0"
- Press PCS key to enter PCS mode, the display will show P=X X
- Press MODE key to select XX value (10, 20, 50, and 100)
- Place a given number of samples on the pan (Samples should be 10, 20, 50 or 100 pieces).
- Press PCS key to confirm sample quantity.
- Start counting by adding weight on the scale
- Press MODE key to return to the weighing mode.

### 4.2.2 Selectable auto shut off

Press and hold MODE key, and then press ON/OFF (icon) key to turn on the scale, the display will show A\_ON or A\_OFF. Press ZERO key to select A\_ON (activate the auto shut off function) or A\_OFF (inactivate the auto shut off function)

### 4.2.3 Selectable auto backlight

Press and hold MODE key, and then press ON/OFF (icon) key to turn on the scale, the display will show A\_ON or A\_OFF. Press MODE key, the display will show L\_ON or L\_OFF, press ZERO key to select L\_ON, L\_OFF or L\_AU (auto)

## 5 Calibration - Using an External Calibration Weight:

Calibration is required when the weighing machine is initially installed or if the scale is moved to a substantial distance from the original location. 10 minutes warm up of scale is always needed before calibration.

- Turn the scale on and then turn it off
- Press and hold SET key, and then press ON/OFF (icon) key to turn on the scale, the display will show CAPu=
- Press SET key, display will show CAP, press SET key again, display will show CALu=, press MODE key to choose the calibration unit kg or lb
- Press SET key to confirm and display will show CALu= again
- Press SET key, display will show CAL, press MODE key to set the calibration weight, display will show xx with a flashing digit
- Press MODE key to move flashing digit to right, press ZERO key to increase the digit number. (We suggest the calibration weight to be at least 50% or more within the scale capacity to get an accurate weighing )
- Press SET key to confirm the setting, display will show CAL
- Press PCS key to start calibration, the display will show the AD value, and wait for stable indicator displayed, then press MODE key, display will show ----- and then the flashing calibration weight
- Place the test weight onto the center of the weighing pan, and wait for stable indicator displayed, press MODE key, after stable indicator displayed again, it will show the AD value, and now the calibration is completed
- Remove the test weight and press ON/OFF (icon) key turn off the scale. Turn it on again to see if the weighing is accurate, if not, repeat above steps .

## 6 Maintenance and service

The weighing machine must be treated carefully and cleaned regularly. It is a precision instrument.

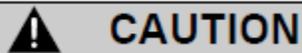


For maintenance-work, the balance must be separated from the power supply (remove power adapter plug from socket). Also ensure that the balance cannot be reconnected to the power supply during the work by a third party.

Take care during cleaning that no liquid penetrates into the appliance. If liquid is spilt on the balance, the latter must immediately be disconnected from the electricity supply. The balance may only be used again after it has first been checked by a service engineer.

The connections on the rear of the appliance and the power adapter may not come into contact with liquids.

Regularly dismantle the weighing pan and the weighing pan holder and remove any dirt or dust from under the weighing pan and on the weighing machine housing with a soft brush or a soft, lint-free cloth, moistened with a mild soap solution. The scale and the holder can be cleaned under running water. Take care that both parts are completely dry before they are re-installed on the scale.



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

## 7 Transport, storage

### 7.1 Transportation and shipping of the weighing machine

Your weighing machine is a precision instrument. Treat it carefully. Avoid shaking, severe impacts and vibration during the transportation.

Take care that there are no marked temperature fluctuations during the transportation and that the weighing machine does not become damp (condensation).

### 7.2 Storage of the weighing machine

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 (see Section 6.Maintenance and servicing.) 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

The weighing machine should preferably be dispatched and transported in the original packaging to avoid transportation damage.

The weighing machine should preferably be stored in the original packaging, since this provides optimal protection for the weighing machine.