



**LW MEASUREMENTS, LLC**

*Professional Weighing Equipment*

## **MRW SERIES intelligent weighing scale**

**WASHDOWN WEIGHING SCALE - Dust and Waterproof Scale IP65**

**WITH PIECE COUNTING FUNCTION**



## **Operation Manual**

## Table of Contents

<u>Section</u>	<u>Page</u>
Declaration of Conformity	3
Customer Service	4
Introduction	5
Safety	6
IP65 Protection	7
Weight Scale	8
Functions	9-10
Features	10-11
Application & Conformity	12
Getting Started	13
Delivery	13
Assembly & Installation	14
Application Menu	15
Program Options	15
Calibration	16
Maintenance & Service	17
Transport & Storage	17
Warranty	18

## 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: MRW Washdown Scales

Imperial version

MRW-3  
MRW-7  
MRW-15  
MRW-33

Metric version

MRW-1500  
MRW-3000  
MRW-7500  
MRW-15k

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

Signature:

*Boon*

Boon Lim, R & D Manager

Date: 14. 11. 2012

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 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 labelling 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 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

## IP65 protection

Your MRW weighing scale is rated to IP65.

The IP rating system

- IP stands for Ingress Protection
- The rating's first digit e.g. IP65 relates to the ingress protection against dust (6 means dust tight, see the table below)
- The second digit e.g. IP65 relates to the ingress protection against water (5 means protected against water jets, see the table below)

### Protection against solid objects

1st Digit	Description	Definition
0	Non-protected	No special protection
1	Protected against solid objects greater than 50 mm	A large surface of the body such as the hand (no protection against deliberate access). Solid objects exceeding 50mm diameter
2	Protected against solid objects greater than 12 mm	Fingers or other objects not exceeding 80 mm in length. Solid objects exceeding 12 mm diameter
3	Protected against solid objects greater than 2.5 mm	Tools, wires, etc. of diameter or thickness greater than 2.5 mm. Solid objects exceeding 2.5 mm diameter.
4	Protected against solid objects greater than 1.0 mm	Wires or strips of thickness greater than 1.0 mm. Solid objects exceeding 1.0 mm
5	Dust protected	Ingress of dust is not totally prevented but dust does not enter in sufficient quantity to interfere with satisfactory operation of the equipment
6	Dust-tight	No ingress of dust

### Protection against liquids

2nd Digit	Description	Definition
0	Non-protected	No special protection
1	Protected against dripping water	Dripping water (vertically falling drops)
2	Protected against dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the enclosure is tilted at any angle up to 15° from its normal position
3	Protected against spraying water	Water falling as spray at an angle up to 60° from the vertical shall have no harmful effect
4	Protected against splashing water	Water splashed against the enclosure from any direction shall have no harmful effect
5	Protected against water jets	Water projected from a nozzle against the enclosure from any direction shall have no harmful effect
6	Protected against heavy seas	Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities
7	Protected against the effects of immersion	Ingress of water in a harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time
8	Protected against submersion	The equipment is suitable for continuous submersion in water under conditions, which shall be specified by the manufacturer

# Weight Scale

## Construction & Functions

The weighing scale consists of the following parts;

- The scale body (1)
- The scale-pan (2)
- The adapter (3)
- Operation Manual.

Figure 2.1 Your weighing machine



3





## Functions

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

### Imperial weight unit version

<b>Model number</b>	<b>Capacity</b>	<b>Division</b>	<b>Weighing pan Size</b>
MRW-3	3 lb.	0.0001 lb.	165 x 175mm
MRW-7	7 lb.	0.0002 lb.	165 x 175mm
MRW-15	15 lb.	0.0005 lb.	165 x 175mm
MRW-33	33 lb.	0.001 lb.	165 x 175mm
Package (Standard carton)	30.5×24×14.5(cm <sup>3</sup> )		
Package (Master carton)	4 Units in one box: 48.5 x 33 x 31(cm <sup>3</sup> )		
Operating Temperature	0-40°C(32-104°F)		
Power source	6 x AA dry cells or AC/DC  Adapter 9V DC /100mA		

**Metric weight unit version**

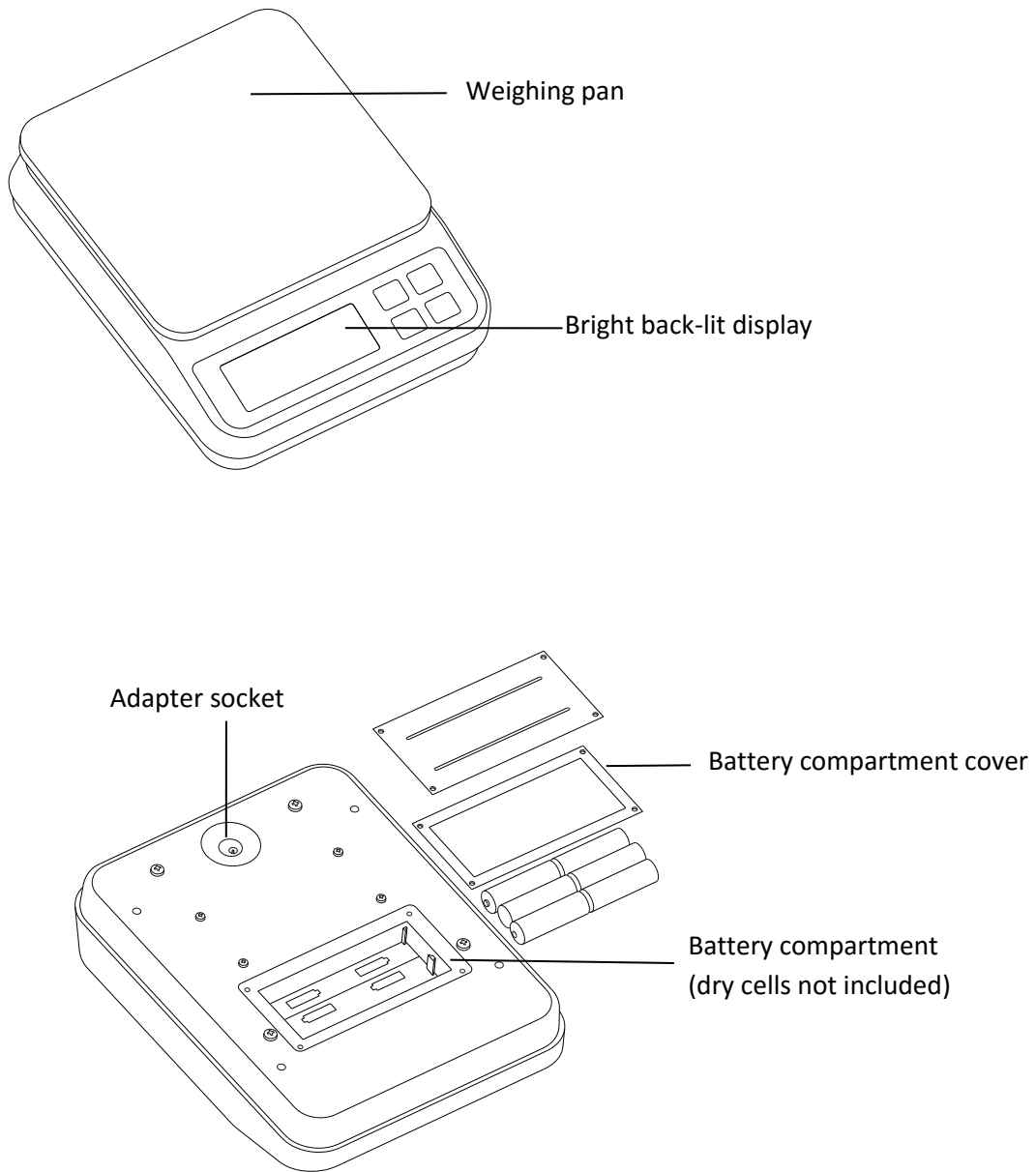
Model number	Capacity	Division	Weighing pan Size
MRW-1500	1500 g	0.05 g	165 x 175mm
MRW-3000	3000 g	0.1 g	165 x 175mm
MRW-7500	7500 g	0.2 g	165 x 175mm
MRW-15k	15 kg	0.0005 kg	165 x 175mm
Package (Standard carton)	30.5x24x14.5(cm <sup>3</sup> )		
Package (Master carton)	4 Units in one box: 48.5 x 33 x 31(cm <sup>3</sup> )		
Operating Temperature	0-40°C(32-104°F)		
Power source	6 x AA dry cells or AC/DC Adapter 9V DC /100mA		

The built-in versatile weighing programs allow the user to use the MRW-Series weighing scales not only for accurate weighing but also for the counting of components.

**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
- Washdown model

Figure 2.2 Details of your weighing machine



## 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 all MRW series weighing scales

Power supply:

Input: 110V or 230V AC (+/-15-20%); 50Hz to 60Hz

Output: 9V DC 100mA

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.

## 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)

## Delivery

Inspect delivery for completeness immediately on unpacking all components.

### **Checklist for complete delivery**

	<b>Component delivered present yes / no</b>
Weighing unit body	
Weighing pan	
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.
- Place the plastic platter on top of the scale, flat side facing up so the platter sits firmly on the machine with the four “legs” inserted into the corresponding four receptacles.
- Place the stainless steel platter on top of the plastic platter with the flat side facing up.
- Unwrap and place the clear plastic bowl, open side facing up, on top of the stainless platter.

### Connecting the AC Adapter

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



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.

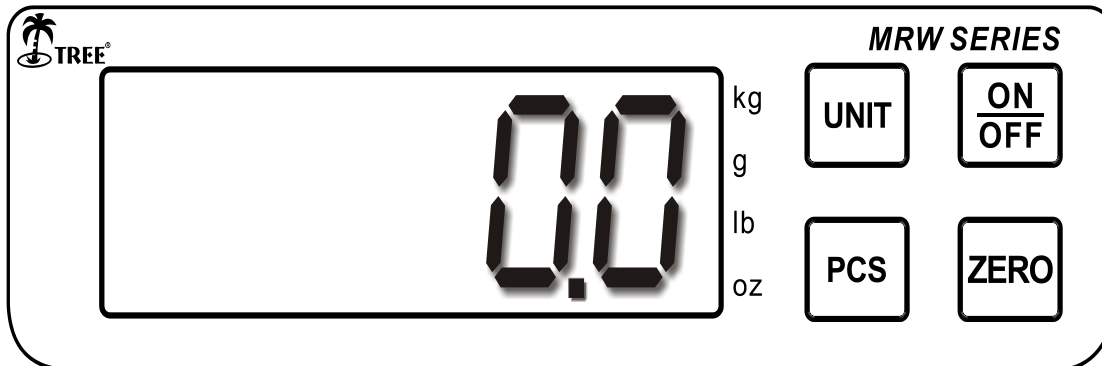
### Placement of Scale

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

- The STABLE icon indicates when the readings stabled.
- The ZERO icon indicates when the weights tared to zero.
- The LO-BAT icon indicates when running out of battery.

#### Key functions

- ON/OFF key turns the weighing scale on or off
- UNIT key changes the weight units, kg, g, lb., oz, lb:oz
- ZERO key sets display to zero or subtract the container weight
- PCS key for pieces counting function

## Program Options

### Pieces Counting

- Press ON/OFF key to turn on the scale
- Wait for "0" to appear on the display (If necessary, press "Zero" key to set the display to "0").
- Take the item sample you will be counting and place them on the platform. Press the "PCS" key and enter the number of units you place on the platform. Press "Unit" key to select XX value (10, 20, 50, or 100).
- Wait for stable indicator showed on display
- Press PCS key to confirm, display will show "PASS" and then the confirmed sample value.
- Start counting by adding more samples on the scale
- Press UNIT key to return to the weighing mode.

## Auto shut off setting

Press and hold the “PCS” key, and then press the “On/Off” key to turn on the scale, the display will show A\_ON or A\_OFF. Press the “Zero” key to select A\_ON (this will activate the auto shut off function) or A\_OFF (this will deactivate the auto shut off function). Turn off the scale to confirm the function.

## Auto backlight setting

Press and hold the “PCS” key, and then press the “On/Off” key to turn on the scale, the display will show A\_ON or A\_OFF. Press the “PCS” key, and the display will show L\_ON, L\_OFF or L\_Au, press the “Zero” key to select L\_ON, L\_OFF or L\_AU (auto). Turn off the scale to confirm the function.

# Calibration

## Using an External Calibration Weight:

Calibration is required when the weighing scale is initially installed or if the scale is moved to a substantial distance from the original location.

- Turn the scale on and let it warm up for about 10 minute and then turn it off.
- Press and hold the “Zero” key, and the “On/Off” key to turn on the scale and bring up the calibration menu, the display will show “CAPu=”.
- Select a unit of measure (kg. or lb.) by pressing the “Unit” key and then confirm by pressing the “PCS” key. Press the “PCS” key again to move on to the next menu
- Press the “PCS” key, the display will show “CAL”, press UNIT key to set the calibration weight, display will show xx.x with a flashing digit. Press “Unit” key to move flashing digit to right, press the “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 “PCS” to confirm the setting, display will show “CAL”
- Press “Zero” key to start calibration, the display will show the AD value, and wait for stable indicator displayed, then press UNIT 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 UNIT key, after stable indicator displayed again, it will show ----- and then the AD value, and now the calibration is completed
- Remove the test weight and press ON/OFF key to turn off the scale. Turn it on again to see if the weighing is accurate, if not, repeat the steps above.



## Maintenance and service

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

### **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.

See Section 1.3 above regarding IP65. The scale may be washed down.

### **CAUTION**

Never use solvents, acids, alkalis, paint thinners, scouring powders or other aggressive or corrosive chemicals for cleaning, these substances 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

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 freight 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](http://lwmeasurements.com) and fill out the warranty submission form or call your customer service representative.