EC SERIES

ELECTRONIC COUNTING SCALE

OPERATION MANUAL

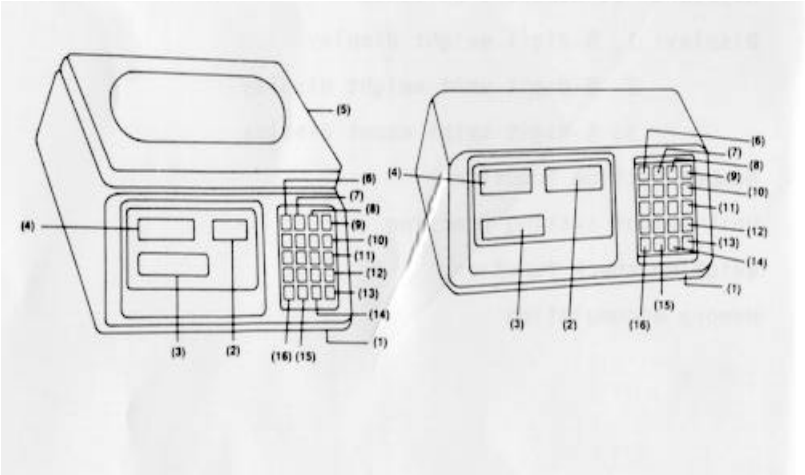
PLEASE READ THIS MANUAL VERY CAREFULLY BEFORE ATTEMPT TO OPERATE THE SCALE

AUGUST 1999 REV 2

Specifications subject to change without prior notice

CONTENTS

1. Desk and Floor Models



(1) Power switch
(2) Unit weight display
(3) Total count display
(4) Total weight display
(5) Weighing tray
(6) ¡¥CE¡¦ key (clear erro
(7) ¡¥WS¡¦ key (unit Wt. Settin
(8) ¡¥NS¡¨ key (Number Settin
(9) ¡¥M+¡¦ key (Accumulatio
(10)¡¥MC¡¦ key (Memory Clea
(11) ¡¥MR¡¦ key (Memory Recal
(12) ¡¥CH¡¦ key (weighing Chec
(13) ¡¥Tare¡¦ k
(14) ¡¥Zeo¡¦ ke
(15) Decimal Point
(16) Numeric keypad

2 SPECIFICATIONS

2.1 SPECIFICATIONS: (kg)

Model	EC-1000	EC-2500	EC-5000	EC-10K	EC-25K
Capacity	1 kg	2.5 kg	5 kg	10 kg	25 kg
Graduation	0.2 kg	0.5 g	1 g	2 g	5 g
Precision	¡Ó1: 500				
Resolution	1:25000 max				
Scale Weight	6.5 Rg (net)				
Power	220/110 V AC¡Ó10%, 5-60 Hz				
Operating Temperature	0 to 45^{0}C (32 to 113^{0}F)				

Model	EC-50K	EC-100K	EC-250K
Capacity	50 kg	100 kg	250 kg
Graduation	10 kg	20g	50g
Precision	¡Ó1: 500		
Resolution	1/25000		
Scale Weight	33.5 kg (net)		
Power	220/110 V AC¡Ó10%, 5-60 Hz		
Operating Temperature	0 to 45^{0}C (32 to 113 F)		

2.2 SPECIFICATIONS: (1b)

Model	EC-1000	EC-2500	EC-5000	EC-10K	EC-25K
Capacity	2.5 Ib	5 Ib	10 Ib	25 Ib	50 Ib
Graduation	0.0005 Ib	0.001 Ib	0.002 Ib	0.005 Ib	0.01Ib
Precision	¡Ó1: 500				
Resolution	1:25000 max				
Scale Weight	14.3 Ib (net)				
Power	220/110 V AC¡Ó10%, 5-60 Hz				
Operating Temperature	0 to 45^{0}C (32 to 113^{0}F)				

Model	EC-50K	EC-100K	EC-250K
Capacity	100 Ib	200 Ib	500 Ib
Graduation	0.02 Ib	0.05 Ib	0.1 Ib
Precision	¡Ó1:500		
Resolution	1/25000		
Scale Weight	73.7 Ib (net)		
Power	220/110 V AC¡Ó10%, 5-60 Hz		
Operating Temperature	0 to 45^{0}C (32 to 113 F)		

3. Keyboard Functions

a. CE ¡ Clear last keyboard entry
b. WS ¡ Set the unit weight
c. NS ¡ Set sampling number
d. M+ - Add to value in memory
e. MC ¡ Clear memory
f. MR ¡ Recall memory
g. CH ¡ Input/output key for weight checking function
h. T ¡ Tare; subtract the weight of the container
i. Z ¡ Reset the displayed weight to zero
j. . ¡ Decimal point
k. 0-9 ¡ Numeric keypad

4 OPERATION NOTES

a. Turn on the scale ¡ The display will countdown 9¡¦s through 0¡¦s, simultaneousl with beeps and the triangle symbol flashing. This is a segment check for the display; please verify that all parts of the display are functioning properly before initial use.

b. Component warm-up-Leave the scale on for at least fifteen minutes to ensure that your initial weight measurement is reliable.

c. Counting units by sampling * :
i) Press ¡**Z**¡¨
ii) Place a container on the tray and press ¡**T**¡¨
iii) Place a number of samples in the container and key in the correct number of units being sampled.
iv) Press ¡**NS**¡¨ to obtain the unit weight. The unit weight will be automatically updated with imp roved accuracy by adding up to twice the sampling number of units to the container. At this point the unit weight

is accurate enough for most purposes, and is not updated after counting further.
*The larger the sample set the more reliable the counting.

d. Counting units by keying in known unit weight:

i) Press ¡**Z**¡¨

ii) Key in the known unit weight.

iii) Press ¡**WS**¡¨

iv) Tare the container and begin counting.

e. Setting quantity alarm:

i) Press ¡**CH**¡¨ after preparing for counting

ii) Key in the desired quantity.

iii) Press ¡**WS**¡¨ (not ¡§NS

iv) Press ¡**CH**¡¨ again and begin sampling any number of units.
When the set quantity has been exceeded a steady beep will sound.

f. Memory functions:

i) Press ¡**M+**¡¨ to increment an accumulated quantity.

ii) Press ¡**MR**¡¨ to recal the total quantity accumulated.

iii) Press ¡**MC**¡¨ to reset the value in memory to zero; then press ¡**MR**¡¨ to resume normal operation.

g. Precision for entering tare weight:

i) Be sure to key in a full figure including the least significant digit. For example, the EC-50 is graduated down to 0.01 kg, so simply keying in ¡§21.5¡¨ as the tare weigh would not be acceptable, but keying in ¡§21.50¡¨, would b

h. Example operations:

i) ¡§Z¡ weigh 100 units key in ¡§100¡¨ ¡§NS

ii) ¡§Z¡ key in ¡§1.02¡¨ as the unit weigh ¡§WS

iii) ¡§CH ¡§101 ¡§WS ¡§CH¡¨(quantity alarm

iv) ¡§CH ¡§CE ¡§WS ¡§CH¡¨(clear alar

5 INSTALLATION

There are many external factors which will influence the effectiveness of the scale, such as vibration, static electricity, air turbulence, scale leveling, humidity and poor calibration.

Vibration:
Vibrations will affect the stability of the scale¡¦s readings, resulting in an incorrect of unreadable measurement. If this is the case, the scale should be moved to a vibration-free area. Otherwise, dampen the effect of the vibrations by placing a thin cork or rubber pad under the instrument.

Electrical static:
Because the scale is microprocessor-controlled, interference from nearby electrical sources or equipment may prevent the scale from operating properly.

Air Draughts:
The weighing tray is sensitive to air currents which may cause any measurements to fluctuate. Over time, continuous air turbulence directed from air vents and air conditioning, or open doors and window, will result in instrument drift and inaccurate readings.

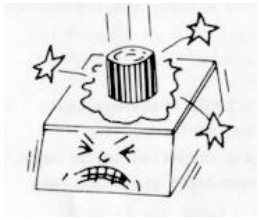
Scale leveling and stability:
The two leveling feet under the scale should both rest firmly on a stable surface, and be carefully adjusted to ensure that the scale is level.

Humidity:
Extreme humidity can cause both short- and long-term problems, in the form of electronic components shorting out and mechanical components humid climes and when a scale has been left unused in storage over a period of time during which considerable condensation could have collected internally. In this is the situation, it is best to desiccate the scale in a drying oven before and after operating it. Be sure to allow the scale to cool to room temperature once it is removed from the oven.

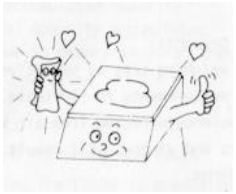
High temperature, direct sunlight and excessive dust:
All of these factors have a gradual detrimental effect on the scale, especially on the load cell and electronic components. Avoid such damage b not operating the scale in a less hostile environment, if possible.

MAINTENANCE

1) Avoid dropping heavy objects on the weighing tray.

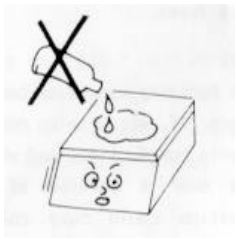


2) Clean the cover and tray with a soft, damp cloth and a mild detergent. Never use an abrasive



3) Avoid pouring or spraying Water directly on the scale. Never submerge the scale in water.

4) Do not use acetone or other Volatile solvents for cleaning.



7 TROUBLESHOOTING GUIDE

Problem:	Possible Cause:	Solution:
1. Display is bland and beeper is quiet.	a) no power from source b) plug disconnected c) fuse blown d) loose fuse holder e) faulty switch or electronic circuit board	*verify power loss *check power cord *locate and replace *tighten clockwise *seek authorized servicing
2. Display reading fluctuates.	a) blowing fan or air Conditioner b) surface vibration c) low voltage from power source d) faulty circuit board	*redirect airflow or re-install *dampen vibration or re-install *replace source *seek servicing
3. Display does not function properly and beeping constant.	a) loose fuse holder b) power interruption c) faulty circuit board	*tighten clockwise *verify and switch off when on again *seek servicing
4. Display reading	a) electronic components initially unstable b) tray not yet fitted on scale c) faulty internal connection d) faulty circuit board	*wait 15 minutes while scale warms *place tray on scale *re-connect & seal faulty connection *seek servicing

5. Keyboard does not function properly	a) poor keyboard assembly b) faulty circuit board	*seek servicing *seek servicing

8 TARE

Setting and clearing the tare:

The weight of a container can be tarred either by weighing the container and pressing ¡§T¡¨ Whe the reading has stabilized, or by keying an acceptable tare weight and then pressing ¡§T¡¨ The display should show zero and the LED indicator for Tare light up.

Once the container is removed from the tray, the display should register the weight of the container with a minus sign. To clear this value and exit Tare mode, press ¡§T¡¨, anthe display will be reset to zero and the LED indicator will go dark.

Acceptable range and values for tare weights:

All the EC-model scales have ¡¥full tare¡ capability; that is, if necessary, a container with a weight up to the capacity of the scale itself may be used. Similarly, the minimum weight that can be tarred is the graduation increment. As mentioned above, and acceptable

tare weight entry will be a multiple of the graduation value, and must be evenly divisible by this value. While keying in a tare weight, the display will flash until the setting is complete. Use the chart below to help determine acceptable container weight values.

Model	Max Tare	Min Tare	Format	Last Digits
EC-1000	1 kg	0.2 g		0,2,4,6,8
EC-2500	2 kg	0.5 g		0,5
EC-5000	5 kg	1 g		Any
EC-10K	10 kg	2 g		0,2,4,6,8
EC-25K	25 kg	5 g		0,5
EC-50K	50 kg	10 g		Any
EC-100K	100 kg	20 g		0,2,4,6,8
EC-250K	250 kg	50 g		0,5

Model	Max Tare	Max Tare	Format	Last Digits
EC-1000	2.5 Ib	0.0005 Ib		0,5
EC-2500	5 Ib	0.001 Ib		Any
EC-5000	10 Ib	0.002 Ib		0,2,4,6,8
EC-10K	25 Ib	0.005 Ib		0,5
EC-25K	50 Ib	0.01 Ib		Any
EC-50K	100 Ib	0.02 Ib		0,2,4,6,8
EC-100K	250 Ib	0.05 Ib		0,5
EC-250K	500 Ib	0.1 Ib		Any