

**OAC/OEC/OVC SERIES**  
**DIGITAL COUNTING AND CHECKING**  
**SCALE**

**OPERATION MANUAL**

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

AUGUST 1999

*Specifications subject to change without prior notice*

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## **1. INSTALLATION**

**1.1 Check** and make sure that the following accessories are included:

- a. This operation manual
- b. Scale x 1
- c. Platter x 1
- d. Power adaptor or Power Cord x 1
- e. Dust cover x 1

Contact your dealer if any items are missed.

**1.2 Insert** the platter into the scale carefully. No excessive force is required.

### **1.3 POWER THE SCALE**

- a. Before plugging the power adaptor (or power cord) into an electricity outlet, check and make sure that the input voltage of power adaptor matches with the output voltage of the outlet. If not, do not plug in the adaptor, contact your dealer immediately.
- b. Before first time use, plug the main adaptor (or power cord) into the wall outlet and charge the scale for at least 8 hours.

**1.4 Retain** the packing materials for future transportation purposes.

### **CAUTION:**


In some countries, this unit is required by law to be sealed (or stamped) and bearing a serial number. Do not break or remove the seal (or stamp) or serial affixed to this scale. Such actions may be an offend in law and void warranty. Contact your dealer for more information or after sales service.

For most accurate result, do not use this scale when environment condition fall beyond those as listed on **SPECIFICATIONS**.

Do not attempt to open this unit or any trouble shooting other than those listed on **TROUBLE SHOOTING**.

## 2. SPECIFICATIONS

### 2.1 GENERAL SPECIFICATIONS

Model No.	Capacity	Division
OAC-1.2	1200g	0.1g
OAC-2.4	2400g	0.2g
OAC-6	6000g	0.5g
OAC-12	12kg	1g
OAC-24	24kg	2g
OEC-1.2	1200g	0.2g
OEC-3	3000g	0.5g
OEC-6	6000g	1g
OEC-12	12kg	2g
OEC-30	30kg	5g
OVC-1.2	1200g	0.1g
OVC-2.4	2400g	0.2g
OVC-6	6000g	0.5g
OVC-12	12kg	1g
OVC-24	24kg	2g
Tare Range	FULL RANGE (SUBTRACTIVE)	
Zero Range	Maximum = 2% of Rated Capacity	
Auto Pieces Weight Enhancement Range:		
Min. = 4 pieces		
Max. = Max. count previously achieved		
Operation Environment	0°~40°C (32°~104°F), Non-condensed. R.H. 	
Power source	OAC & OEC: By Built-in Rechargeable Battery or Power Adaptor (or Power Cord) OVC: By Built-in Power Pack or Power Adaptor	

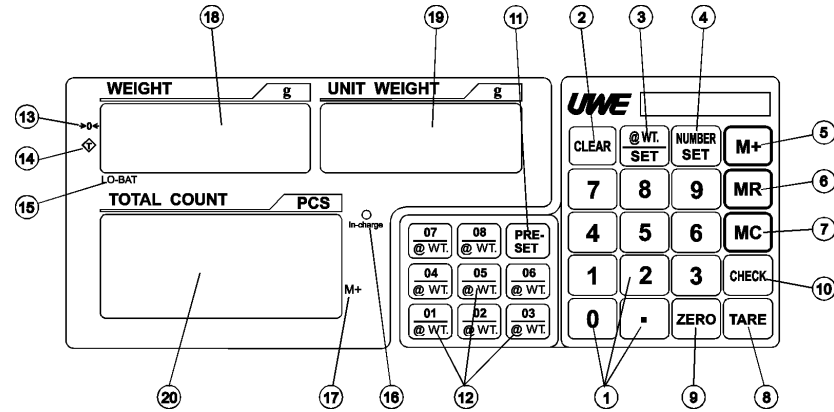
Specifications subject to change without notice

### 2.2 MINIMUM PIECES, WEIGHT APPLIED & SAMPLE SIZE SPECIFICATIONS

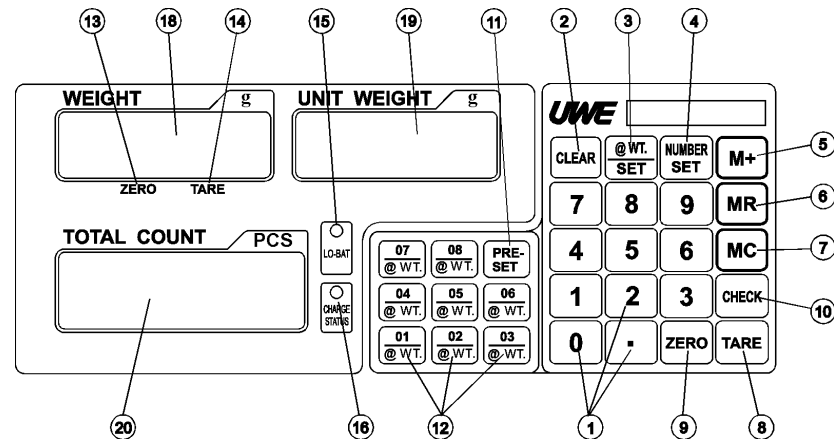
Model No.	Recommended Minimum		
	Piece Weight	Weight Applied	Sample Size
OAC-1.2	0.1g	2g	400g
OAC-2.4	0.2g	4g	800g
OAC-6	0.5g	10g	2000g
OAC-12	1g	20g	4kg
OAC-24	2g	40g	8kg
OEC-1.2	0.2g	4g	400g
OEC-3	0.5g	10g	1000g
OEC-6	1g	20g	2000g
OEC-12	2g	40g	4kg
OEC-30	5g	100g	10kg
OVC-1.2	0.1g	2g	400g
OVC-2.4	0.2g	4g	800g
OVC-6	0.5g	10g	2000g
OVC-12	1g	20g	4kg
OVC-24	2g	40g	8kg

### 3. KEYBOARD & PANEL LAYOUT AND DESCRIPTION

#### KEYBOARD & PANEL LAYOUT (OAC & OEC)



#### KEYBOARD & PANEL LAYOUT (OVC)



#### DESCRIPTION

##### 1. NUMERIC AND DECIMAL KEYS

Press these keys to attain the desired numeric value.

##### 2. CLEAR KEY

Press this key to clear the numeric figure entered.

##### 3. UNIT PIECE WEIGHT SET KEY

Press this key to enter a unit piece weight.

##### 4. NUMBER SET KEY

Press this key to enter the number of pieces on platter.

##### 5. M+ KEY

Press this key to add current total count to memory.

##### 6. MR KEY

Press this key to recall individual counting result and accumulated total counts.

#### **7. MC KEY**

Press this key to clear all data kept in memory.

#### **8. TARE KEY**

Press this key to tare off the weight of a container. Refer to **SPECIFICATIONS** for maximum tare range.

#### **9. ZERO KEY**

Press this key to set weight to zero. Refer to **SPECIFICATIONS** for maximum zero range.

#### **10. CHECK KEY**

Press this key to set upper weight and count check limit.

#### **11. PLU PRESET SET KEY**

Press this key to set a unit piece weight to PLU.

#### **12. PLU RECALL KEYS**

Press these keys to recall the unit piece weight stored in the corresponding PLU

location.

#### **13. ZERO INDICATOR**

When a zero weight is detected, an arrow will appear and point at this indicator.

#### **14. TARE INDICATOR**

When the tare function is in operation, an arrow will appear and point at this indicator. The weight being displayed on the **WEIGHT PANEL** is the net weight.

#### **15. LO-BAT INDICATOR**

When the battery inside scale is low, this indicator would light on (keep flushing for OVC). Recharge the scale immediately. Failure to do so may cause unrecoverable damage to the battery.

(OVC) This indicator would remain light on when the unit is under standby status.

#### **16. CHARGING INDICATOR**

This indicator shows the recharging status of the battery. Red color: Recharging battery; Green color: Charging completed

#### **17. M+ INDICATOR (OAC & OEC)**

This indicator will appear when memory is containing accumulated transaction data.

#### **18. WEIGHT PANEL**

The current weight detected is shown here.

#### **19. UNIT PIECE WEIGHT PANEL**

The current unit piece weight entered is shown here.

#### **20. TOTAL COUNT PANEL**

Total count of the current or accumulated transactions is shown here.

#### **POWER KEY**

The power key is located at the left-hand bottom side of the lower housing. Press this key forward to turn scale on or backward to turn scale off.

## **4. INTERNAL SETTINGS**

### **4.1 PLACE THE SCALE**

Place this unit on a hard and strong surface, where is free from RF interference, vibration, fire, direct sunlight and excessive moisture.

For most accurate weighing result, always place this unit on a level surface. If necessary, adjust the adjustable feet underneath the scale to obtain a level condition.

### **4.2 POWER ON/OFF THE SCALE**

Press **ON/OFF** forward/backward to turn scale on/off.

### **4.3 INTERNAL SETTINGS**

#### **4.3.1 (OAC & OEC) Set Backlight (Option)**

##### **Status**

##### **4.3.1.1 Turn backlight on: - Power Saving Mode**

- a. Turn scale on.
- b. Press **1** then press **ZERO**.
- c. Backlight is turned on.

**NOTE:** Under the Power Saving Mode, backlight will be automatically turned off after weight displayed is unchanged for about 20 seconds. Backlight will be turned on again by pressing any key or when a new weight is detected.

#### **4.3.1.2 Turn backlight on: - Without Power Saving Mode**

- a. Turn scale on.
- b. Press **2** then press **ZERO**
- c. Backlight is turned on.

**NOTE:** Backlight under this mode will remain lit on until manually turned off.

#### **4.3.1.3 Turn backlight off**

- a. Turn scale on.
- b. Press **0** then press **ZERO**
- c. Backlight is turned off.

#### **4.3.2 (OVC) Set Standby Status**

##### **4.3.2.1 Employ standby function: - Power Saving Mode**

- d. Turn scale on.
- e. Press **1** then press **ZERO**.
- f. Power Saving Mode is now employed.

**NOTE:** Under the Power Saving Mode, the unit will automatically enter standby mode after weight displayed is unchanged for about 20 seconds. When the unit is under standby status, the **LO-BAT INDICATOR** will light on.

The unit will return to normal operating mode by pressing any key or when a new weight (  $\frac{1}{10}$  divisions) is detected.

##### **4.3.2.2 disable standby function**

- a. Turn scale on.
- b. Press **2** then press **ZERO**
- c. Power Saving Mode is now disabled

##### **4.3.3 Set AUTO POWER OFF Status**

This unit is equipped with **AUTO POWER OFF** function. Default setting = auto off after 4 minutes unused. Follow the below steps to disable/employ the **AUTO POWER OFF** function.

- a. Turn scale off
- b. Press and hold **NUMBER SET**, then turn scale on. Scale displays "**F.1**"
- c. Press **NUMBER SET** for three times. Scale displays "**F.4**"

- d. Press **@WT/SET** to select:
- \* To disable the **AUTO POWER OFF** function select "**0-OFF**"
  - \* To employ the **AUTO POWER OFF** function select "**4-OFF**"
- e. Press **ZERO** to confirm and return to normal operation status.

## **5. INSTRUCTIONS FOR USE**

### **5.1 ZERO THE WEIGHT DISPLAYED WHEN UNLOADED**

If **ZERO INDICATOR** does not appear when the unit is not loaded, press **ZERO** to set weight displayed to zero. Refer to **SPECIFICATIONS** for maximum zero range.

### **5.2 ENTER/CLEAR THE WEIGHT OF A CONTAINER**

#### **5.2.1 Enter Weight of a Container**

Place a container onto the platter, and then press **TARE** to tare off the weight of this container. After **TARE** is pressed, zero weight will be displayed and the **TARE INDICATOR** appears.

#### **5.2.2 Clear Weight of a Container from Memory**

To clear the weight of the container, remove the container and all loads from platter and press **TARE**, then **TARE INDICATOR** would disappear.

### **5.3 PLACE A LOAD**

Always place a load onto the platter gently. Sudden shock/excessive force may cause irrecoverable damage to the weight sensor

inside. It is a good practice to remove all loads from platter immediately after weighed. This would prolong the lifetime of the weight sensor.

#### **5.4 WEIGHING APPLICATIONS**

Before weighing, make sure that the **ZERO INDICATOR** is on. Should a container have to be used, refer **5.2.1** to tare off the weight of the container.

Place subject matter on platter and the weight of it is displayed on **WEIGHT PANEL**.

For best weighing result, refer to **SPECIFICATIONS** for recommended minimum weight to be applied.

#### **5.5 COUNTING APPLICATIONS: -**

##### **UNIT PIECE WEIGHT IS KNOWN AND FIXED**

- a. Refer to **5.1** and **5.2** for zero and tare
- b. Enter the unit piece weight and confirm by pressing **@WT/SET**. The unit piece weight is now displayed on the **UNIT WEIGHT PANEL**.
- c. Place load on the platter. The weight of the load is displayed on the **WEIGHT PANEL**

and the quantity is displayed on the **TOTAL COUNT PANEL**.

**NOTE 1:** For best counting result, refer to **MINIMUM PIECES, WEIGHT APPLIED & SAMPLE SIZE SPECIFICATIONS** for recommended minimum piece weight and weight applied.

**NOTE 2:** When the individual unit piece weight is not standardized, it is strongly recommended that counting procedures as described in **5.6** should be employed.

**NOTE 3:** Under this method, the **AUTO PIECE WEIGHT ENHANCEMENT** function will be disabled for same subsequent counting.

#### **5.6 COUNTING APPLICATIONS: - UNIT PIECE WEIGHT IS NOT KNOWN**

- a. Refer to **5.1** and **5.2** for zero and tare
- b. Go through sampling procedures. (Refer to **5.7 SAMPLING** for more details).
- c. Step by step add more load onto the platter (or remove part of the load from the platter). The latest Weight, unit piece weight and total quantity would be

displayed on the corresponding panel.

**NOTE 1:** In case of adding, do not empty load from platter until the transaction is completed.

**NOTE 2:** Also refer to **5.8.1 HOW AUTO UNIT PIECE WEIGHT ENHANCEMENT FUNCTION WORKS** for more details

### **5.7 SAMPLING**

Should the unit piece weight is unknown, follow the below procedures to get the unit piece weight.

- a. Place a sample with known quantity on platter
- b. Enter the quantity of the sample through the numeric keypad and confirm by pressing **NUMBER SET**.
- c. The scale will automatically determine the unit piece weight. The unit piece weight will then be displayed on the **UNIT WEIGHT PANEL**.
- d. Sampling process is now completed.

**NOTE:** For best counting result, refer to **MINIMUM PIECES, WEIGHT APPLIED & SAMPLE SIZE SPECIFICATIONS** for recommended minimum piece weight and sample size

### **5.8 AUTO PIECE WEIGHT ENHANCEMENT FUNCTION**

In order to obtain the best counting result and to avoid and minimize sampling error, this scale is equipped with the **AUTO UNIT PIECE WEIGHT ENHANCEMENT** function.

This function will automatically be employed when the unit piece weight is obtained through the sampling method as described in 5.7.

#### **5.8.1 How AUTO UNIT PIECE WEIGHT ENHANCEMENT FUNCTION Works**

After a unit piece weight is obtained by methods as described in 5.7, then place more loads onto the platter. The new quantity will be shown on the **TOTAL COUNT PANEL**.

The **AUTO UNIT PIECE WEIGHT ENHANCEMENT** function will update the unit piece weight if both requirements of below are met:

- a. The quantity added to platter is more than 4 pieces of previous maximum counts previously attained from the same transaction.
- b. The quantity added to platter is less than 100% of previous maximum counts previously attained from the same transaction.

If the above requirements are met, a new unit piece weight will be displayed on the **UNIT WEIGHT PANEL** and confirmed by an audio "beep".

*AUTO UNIT PIECE WEIGHT ENHANCEMENT function will be terminated when a zero weight is detected during the transaction process.*

It is strongly recommended that this function should be employed when the unit piece weight is unknown or when the individual unit piece weight is not standardized.

#### **5.9 ACCUMULATED COUNTING TRANSACTION**

- a. Obtain a transaction result 5.5 and 5.6
- b. Press **M+** to save weight and total count to memory.

- c. Scale displays "**TOT 1**" on the **WEIGHT PANEL**, **1** donates this is the first memory entered. The weight and total count of current transaction are saved to memory.
- d. The **M+ INDICATOR** (OEC & OAC) appears to indicate that memory is now containing data.
- e. Repeat above steps for subsequent counting transactions.

**NOTE 1:** If no unit piece weight is applied, only weight data will be saved to memory.

**NOTE 2:** A quantity value could be manually added to memory by entering the quantity and then press **M+**.

#### **5.10 RECALL ACCUMULATED DATA FROM MEMORY**

- a. Press **MR**
- b. Scale displays "**TOT #**" on the **WEIGHT PANEL**. **#** donates the total number of entries saved to memory. Then, the total accumulated weight and total count are displayed on the **WEIGHT** and **TOTAL COUNT PANEL** respectively.
- c. The scale will return to normal operating

status 2 seconds after the accumulated data is displayed.

**NOTE:** Data stored will be erased when the scale is turned off.

#### **5.11 TO CLEAR ACCUMULATED DATA FROM MEMORY**

- a. Press **MC**
- b. Scale displays "**TOT 0**" on the **WEIGHT PANEL**. **0** denotes no entry is saved to memory. Then, zero weight and zero count are displayed on the **WEIGHT** and **TOTAL COUNT PANEL** respectively. The arrow pointing at the **M+ INDICATOR** (OEC & OAC) will disappear.
- c. All data is cleared now.
- d. The scale will return to normal operating status 2 seconds after the accumulated data is erased.

#### **5.12 CHECK FUNCTIONS**

This scale is equipped with Check Function to monitor upper weight limit or upper count limit.

##### **5.12.1 Monitoring the Upper Weight Limit**

Follow the below steps to monitor the upper weight limit.

- a. Press **CHECK**, scale displays **CH.\_C** on the **UNIT WEIGHT PANEL**.
- b. Key in the upper weight limit through the numeric keypad and confirm by **@WT/SET**, or press **CLEAR** to quit.
- c. When **@WT/SET** is pressed, scale displays **CH.\_A** and upper weight limit entered on the **UNIT WEIGHT** and **WEIGHT PANEL** respectively.
- d. Wait until the scale return to normal operating status.
- e. The upper weight limit is now stored in memory.

**NOTE:** The upper weight limit stored in memory will be erased when scale is powered off.

- f. Start counting transaction. When the upper weight limit is reached or exceeded, a continuous audio beep alarm will be generated.

##### **5.12.2 Monitoring the Upper Count Limit**

Follow the below steps to monitor the upper count limit.

- a. Press **CHECK**, scale displays **CH.\_C** on the **UNIT WEIGHT PANEL**.

- b. Key in the upper count limit through the numeric keypad and confirm by **NUMBER SET**, or press **CLEAR** to quit.
- c. When **NUMBER SET** is pressed, scale displays **CH.\_C** and upper count limit entered on **UNIT WEIGHT** and **TOTAL COUNT PANEL** respectively.
- d. Wait until the scale return to normal operating status.
- e. The upper weight limit is now stored in memory.

**NOTE:** The upper count limit stored in memory will be erased when scale is powered off.

- f. Start counting transaction. When the upper count limit is reached or exceeded, continuous audio beep alarm will be generated and the count value shown on **TOTAL COUNT PANEL** will start flashing.

#### **5.12.3 Clear Upper Weight Limit**

- a. Press **CHECK**
- b. Press **0**
- c. Press **@WT/SET**
- d. Wait until the scale return to normal operating status.
- e. The upper weight limit is now erased from memory.

#### **5.12.4 Clear Upper Count Limit**

- a. Press **CHECK**
- b. Press **0**
- c. Press **NUMBER SET**
- d. Wait until the scale return to normal operating status.
- e. The upper count limit is now erased from memory.

#### **5.13 UNIT PIECE WEIGHT PLU MEMORY**

##### **5.13.1 Saving a Unit Piece Weight to PLU Memory**

This scale is equipped with 8 unit piece weight PLU memories. Save a unit piece weight to memory by one of the following methods.

##### **5.13.1.1 Direct entry method**

- a. Key in the unit piece weight through keypad. Make sure the unit piece weight does not exceed 5 figures disregarding decimal location.
- b. Press **PRESET**.
- c. Press the preferred PLU location to store, or press **PRESET** again to quit.

#### 5.13.1.2 Current unit piece weight method

a. When a unit piece weight is displayed on the **UNIT WEIGHT PANEL**, press **PRESET**.

Press the preferred PLU location to store, or press **PRESET** again to quit.

**NOTE:** Data stored in Unit Piece Weight PLU will not be erased when scale is powered off.

#### 5.13.2 Recall Unit Piece Weight from Memory

To recall unit piece weight stored in memory, simply press the corresponding Unit Piece Weight PLU.

After the PLU is pressed, the unit piece weight will be displayed on the **UNIT WEIGHT PANEL**.

**NOTE:** The **AUTO PIECE WEIGHT ENHANCEMENT** function will be disabled for same subsequent counting if the unit piece weight is recalled from memory.

#### 5.13.3 Clear Unit Piece Weight PLU

- a. Press **0**
- b. Press **PRESET**
- c. Press preferred PLU location to clear, or press **PRESET** again to quit.

#### 5.14 COMPUTER DATA RS232C OUTPUT (Option)

##### 5.14.1 Create a Program File

a. Create BASIC computer program file as below to enable the computer to receive data sent by scale.

```
10 OPEN "COM*:2400, N,8,2,CS,DS,CD" AS#1
   *: Input 1 if the input port of computer
   is COM 1, or input 2 for COM 2 ...etc.
20 LINE INPUT #1, A$
30 PRINT A$
40 GOTO 20
50 END
```

b. Save the above program file.

##### 5.14.2 Connect the Scale with a Computer

Follow the below steps to connect the scale with a computer.

- a. Turn scale off
- b. Turn computer off
- c. Connect the RS232C output of scale to computer by a appropriate data cable
- d. Turn scale on
- e. Turn computer on

f. Load and run the BASCIA program file

### 5.15 PRINTER OUT (OPTION)

By pressing the **M+** and **MC**, the follow data will be transmitted to computer.

<u>S/N</u>	<u>WT</u>	<u>UW</u>	<u>CT/N</u>	<u>(NOTE 1)</u>
01.	78	1.0000	78	
02.	580	2.0000	290	(NOTE 2)
0.3	+++		100	(NOTE 3)
<hr/>				
03/	658		468	(NOTE 4)

#### NOTE 1:

S/N = Serial Number, WT = Weight, UW= Unit Piece Weight, CT/N = Count Number. An underlined heading will be transmitted if **M+** is pressed for the first time.

#### NOTE 2:

By pressing **M+** again, the data of 2<sup>nd</sup> transaction is transmitted.

#### NOTE 3:

+++ donates that the count number is added to memory by manual entry.

#### NOTE 4:

By pressing **MC**, the total number of transaction, total accumulated weight and count number are transmitted.

A consecutive dot line sent before the accumulated result donates the total accumulated value.

### 5.16 RECHARGE THE SCALE

When the **LO-BAT INDICATOR** appears, recharge the scale immediately. Fail to do so will damage the rechargeable battery inside.

Recharging is possible during operation. The charge status is indicated by the In-Charge indicator as below:

RED: Rechargeable battery is being recharged.  
GREEN: Rechargeable battery is completely charged.

**NOTE:** (OVC) The power pack can be taken out from the scale and recharged with the power adaptor. Should additional recharged power pack is available, use it to replace the faded one within the scale immediately.

The power pack is also equipped with the charge status indicator. Refer to the above for charging status color code.

## 6. TROUBLE SHOOTING

**Syndrome** Scale cannot be turned on

**Check:** Is the scale charged?

**Action:** Recharge the scale for at least 8 hours before first time use or plug in the power adaptor before power on the scale.

**Check** Is the power adaptor inserted properly into both the electricity outlet and the DC inlet of scale?

**Action:** Secure both ends of the power adaptor and try again.

**Syndrome** Scale turned off automatically

**Check** Is the **AUTO POWER OFF** function employed?

**Action** Refer to 4.3.3 to disable the **AUTO POWER OFF** function.

**Check** Is the **LO-BAT INDICATOR** on?

**Action** Apply the power adaptor.

**Syndrome** Rated capacity cannot be reached

**Check** Is the **TARE INDICATOR** on?

**Action:** Turn the scale off. Remove all loads from platter and turn on again.

**Check** Is there anything obstructing the platter?

**Action** Remove all obstacles.

**Syndrome** **When turning on scale, all display PANEL blank out but only the Zero and TARE INDICATOR appear**

**Check** Is any load applied to platter when turning scale on?

**Action:** Turn scale off. Remove all loads from platter and turn scale on again.

**Check** Is the platter inserted properly?

**Action:** Turn scale off. Insert platter properly and turn scale on again.

**Syndrome** **Weight and TOTAL COUNT PANEL blank out during operation**

**Check** Does the load applied to platter exceed the rated capacity of scale?

**Action** Remove all loads from platter and try again.

**Syndrome** **Weighing result is not accurate**

**Check** Is the scale placed in a level condition?

**Action** Adjust the adjustable feet to a level condition.

**Check** Is the scale affected by airflow, vibration or RFI?

**Action:** Place the scale away from all disturbances.

**Check** Is the scale calibrated correctly?

**Action** Contact your dealer.

## 7. DAILY CARE AND MAINTENANCE

- a. Clean the scale with a soft and damp cloth.  
If necessary, apply a mild detergent.
- b. Do not use any harsh, abrasive material, acetone, volatile solvent, thinner or alcohol for cleaning.
- c. Verify the accuracy of scale periodically.  
**NOTE:** In some countries, calibration is restricted to be done by an authorized/qualified agent only. Contact your dealer for more information.
- d. It is a good practice to apply the dust cover when operating the scale.
- e. The scale must be placed horizontally during transportation or long time storage.
- f. Remove platter from scale before transportation or long time storage.
- g. Store scale in a dry and clean place.