

Service Manual for EC-II counting scale

I . Phenomena of trouble

1) Trouble of part

The trouble phenomena are as following:

- a) Buzzer-----buzzer doesn't make sound, or sometimes make sound and sometimes doesn't make sound.
- b) LCD-----The display is faultily.
- c) Backlight-----The backlight doesn't lighten, or sometimes it lighten and sometimes doesn't lighten:
- d) Key -----The key don't work.

2) Trouble of load cell

The trouble phenomena are as following:

- a) The display data is drifting.
- b) The display data doesn't change, or the internal resolution value is not in the natural range.
- c) The internal resolution data drift badly.
- d) The initial resolution is drifting.

3) Trouble of power supply

The phenomenon is as following:

The scale doesn't work or the "low voltage" symbol comes out after turning on.

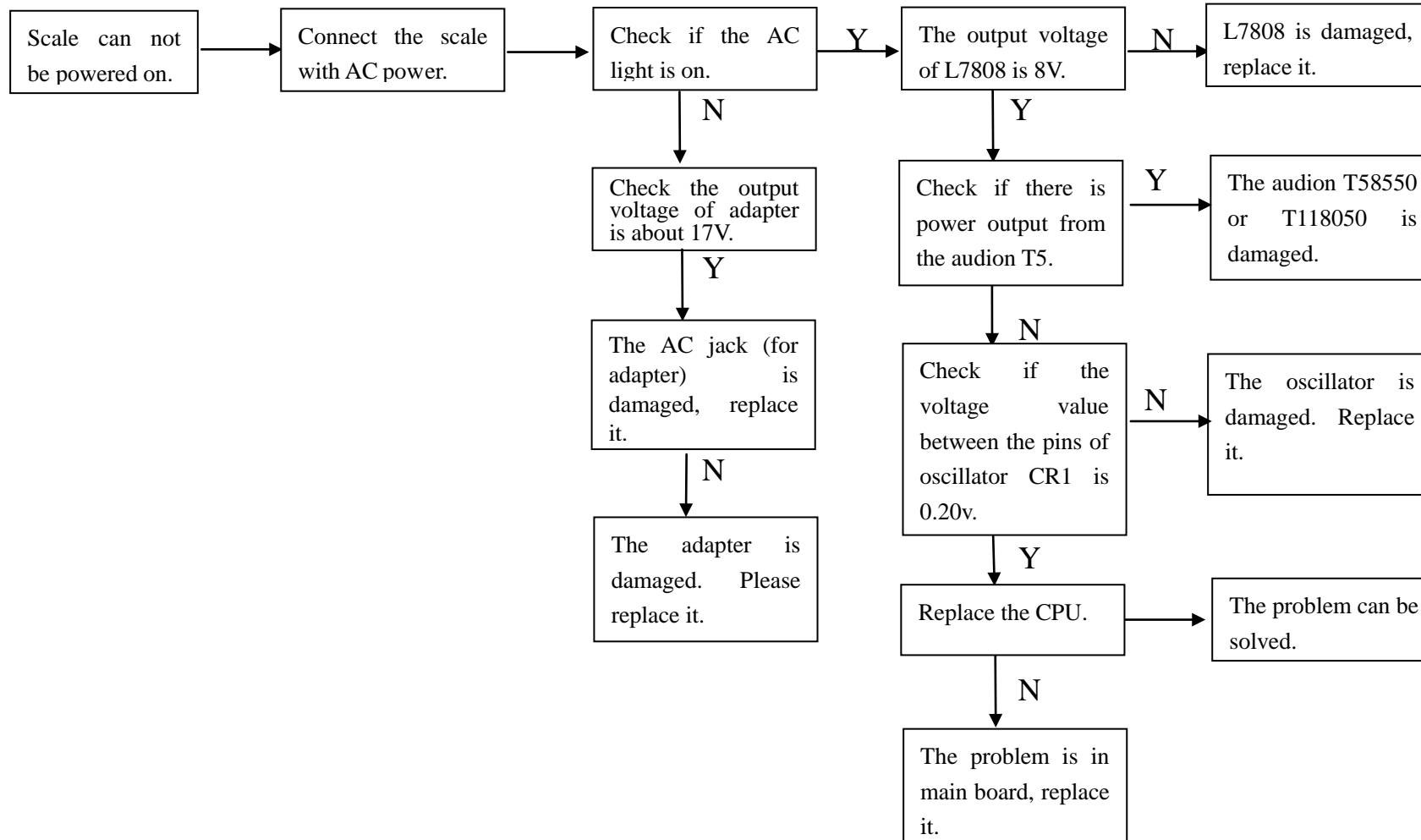
4) Trouble of the PCB

The phenomena are as following:

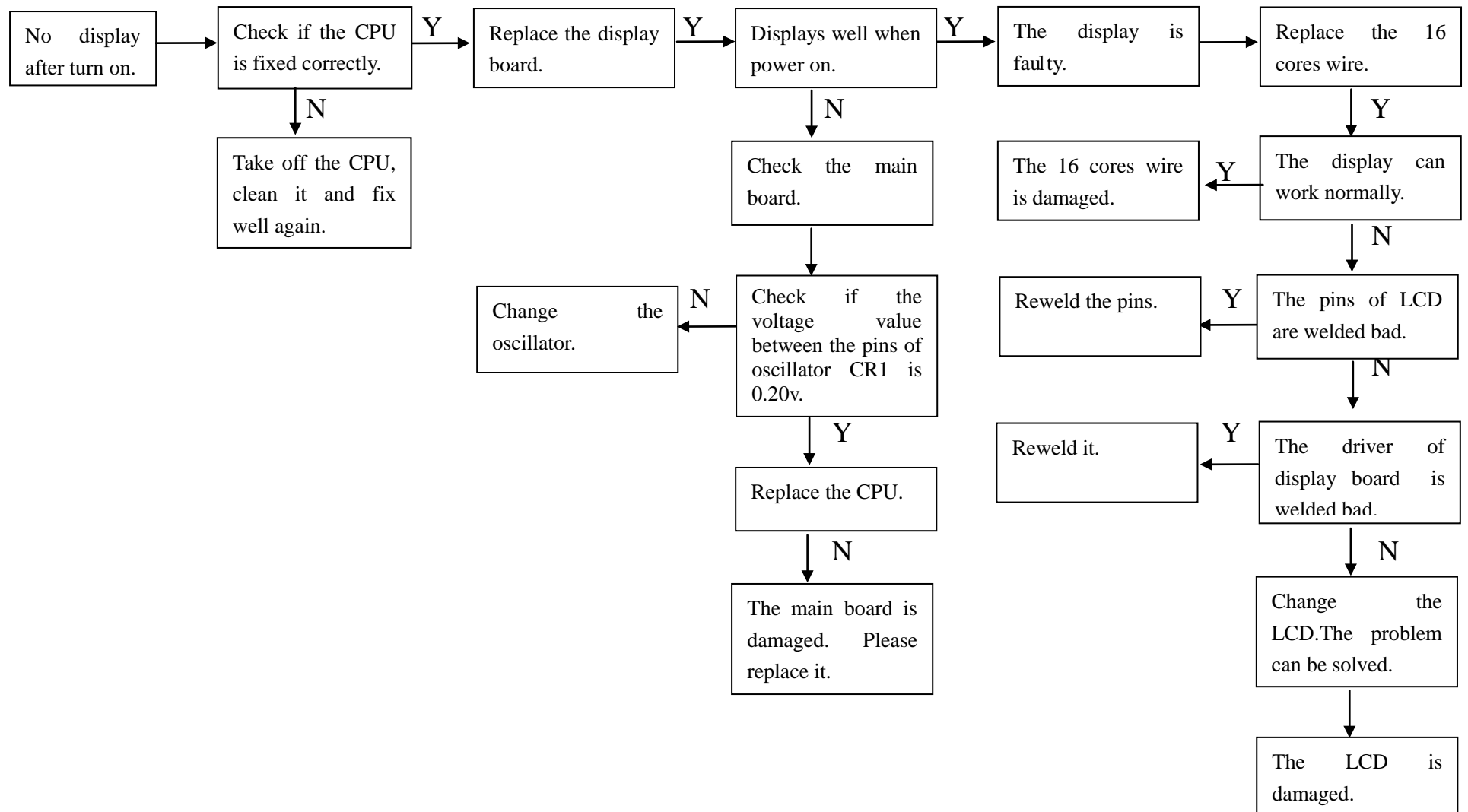
- a) Trouble of display board-----the display is abnormal, or shows nothing.
- b) Trouble of main board
 - There is nothing in the display when turn on the scale.
 - The scale can not be powered on.
 - The weighing is unstable.
 - The internal resolution is out of the normal range.
- c) Trouble of RS-232 board-----The scale doesn't transmit any data.

II. To solve the trouble

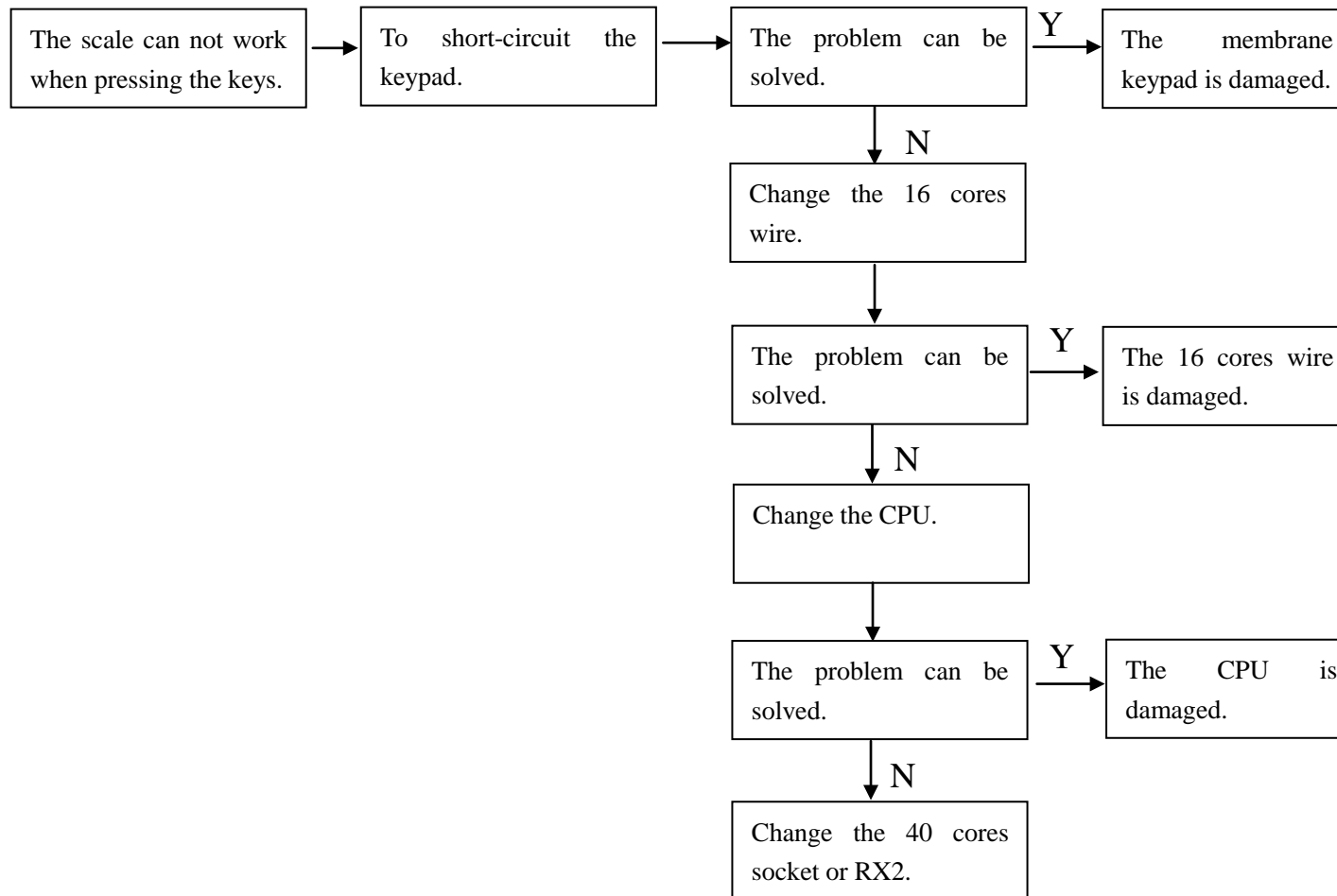
1. The scale can not be powered on



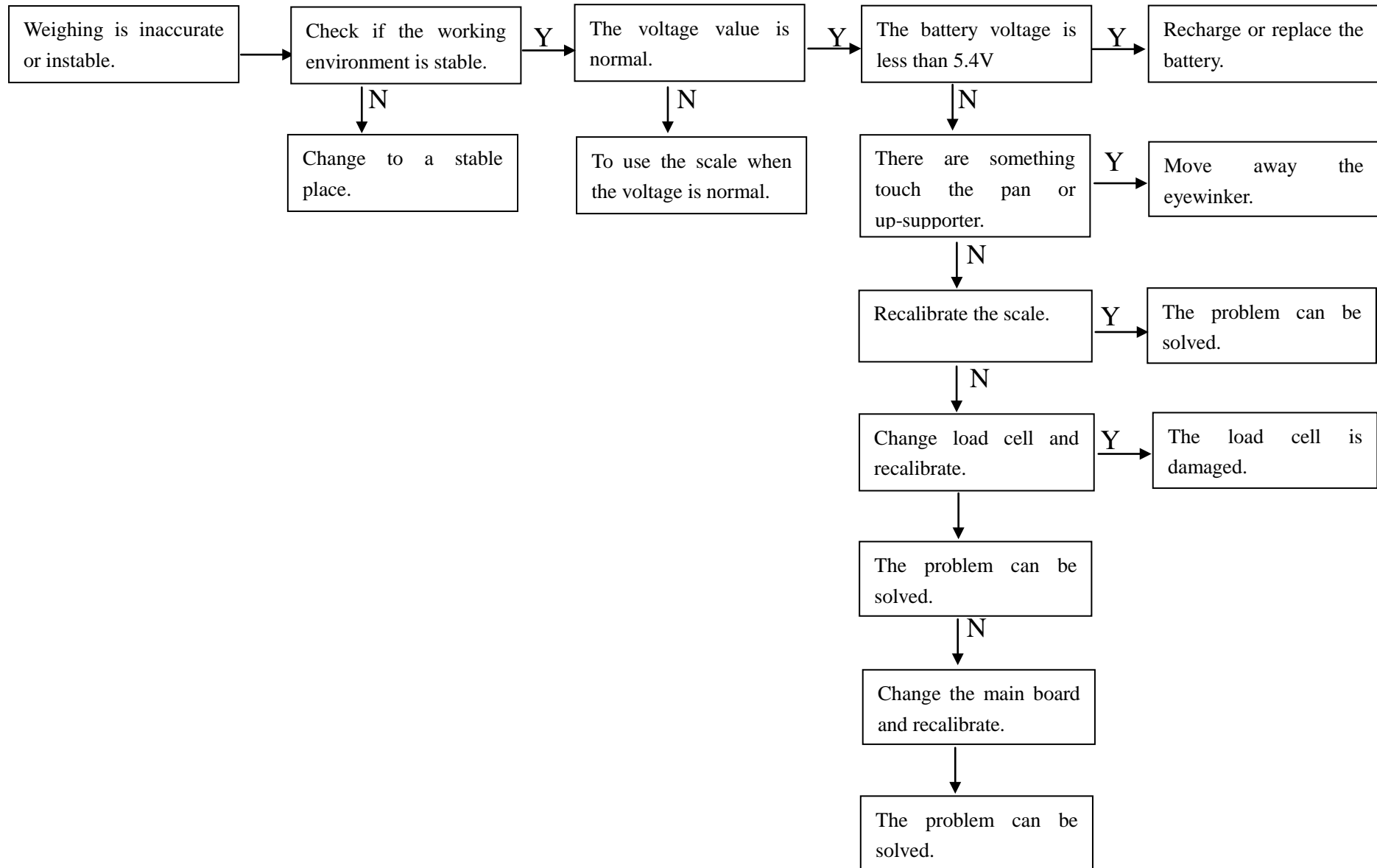
2. No display after turning on:



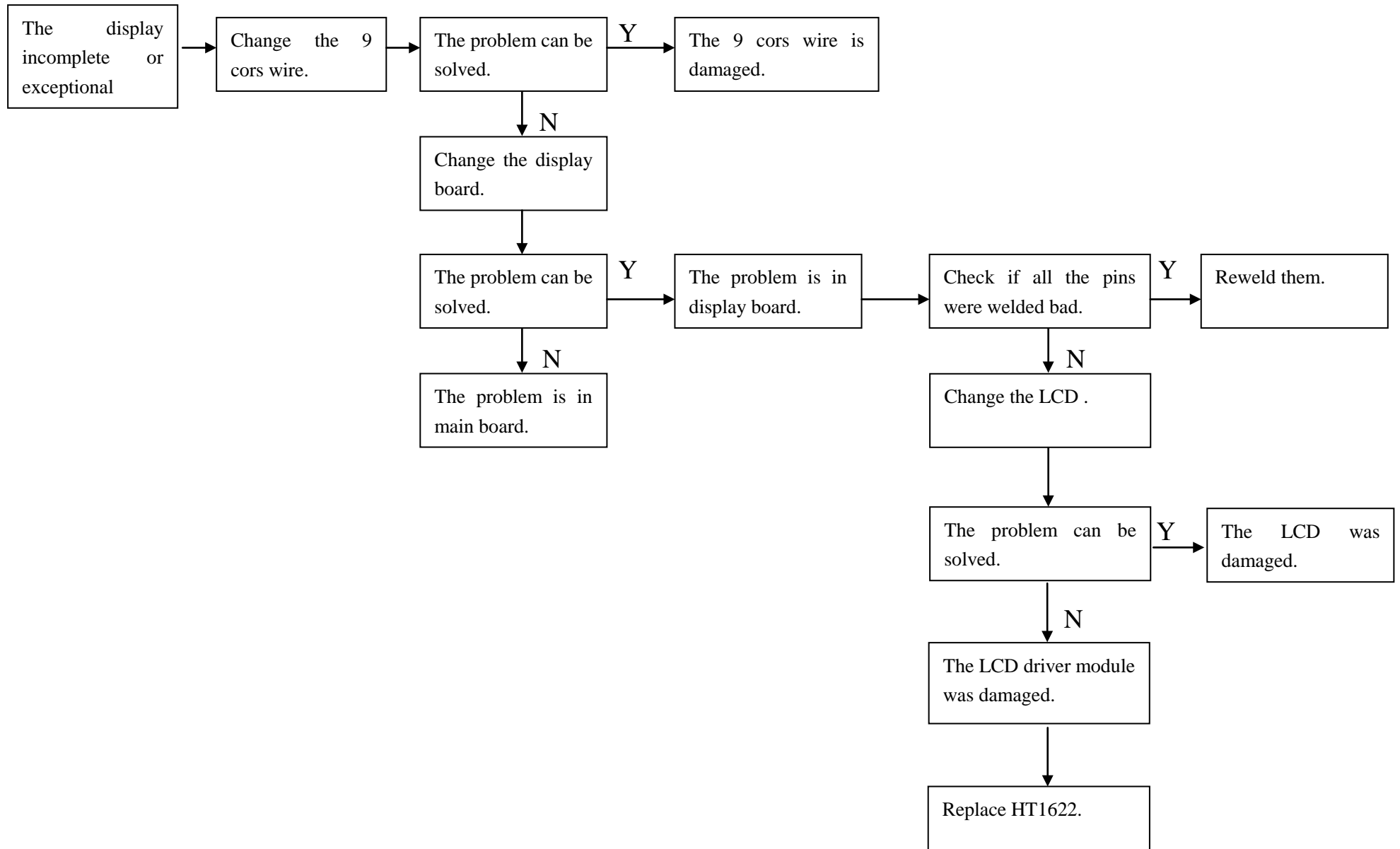
3. Press the keypad the scale can not work:



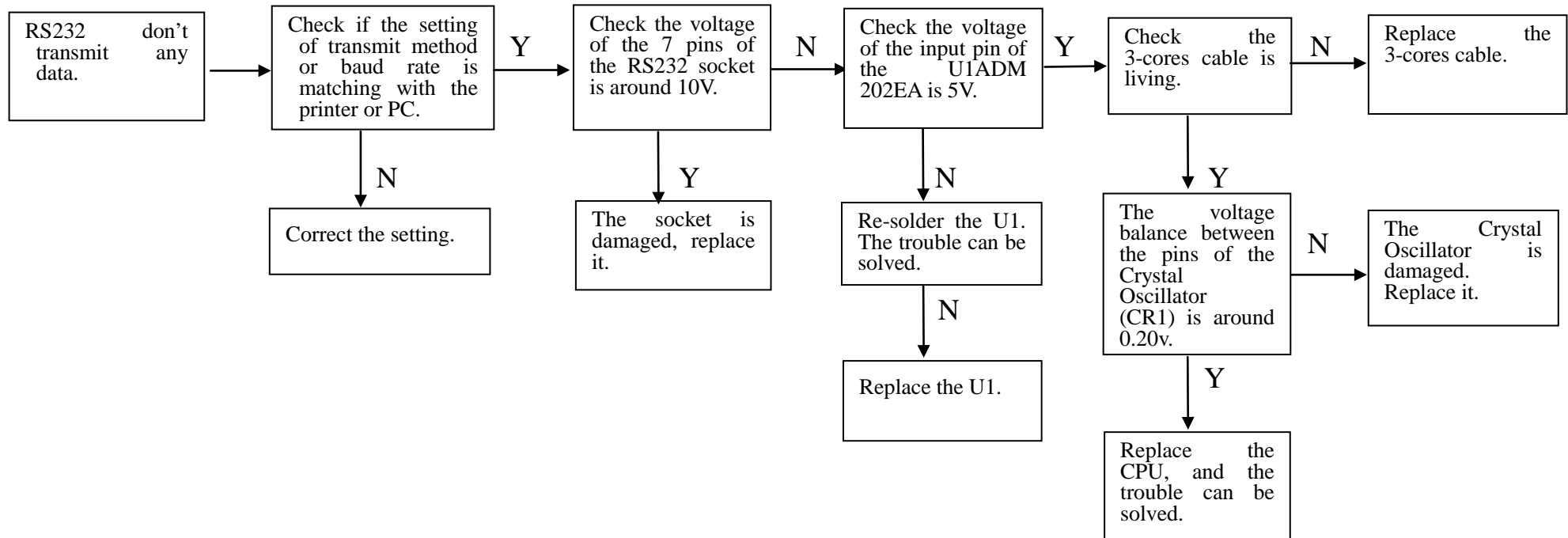
4. Weighing is inaccurate or instable:



5. The display is incomplete or exceptional:



6. RS232 don't transmit any data



Note: Since this series of balance is with high precision, it is very easy to be affected by climate and temperature. Sometimes the scale has the following phenomena:

1) Weighing is inaccurate.

The problem can be solved by re-calibration.

2) After self-check, the display shows error messages.

E1: Re-calibrate the scale to solve it.

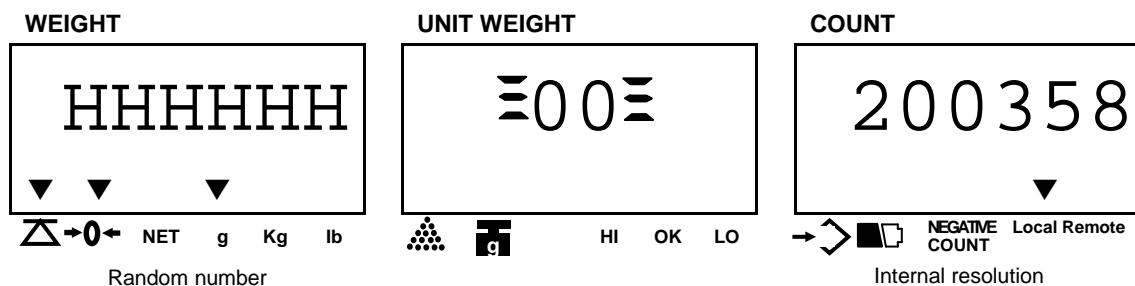
E3: Re-calibrate the scale or replace the load cell to solve it.

3) If any one of main board and load cell is changed, the scale must be recalibrated.

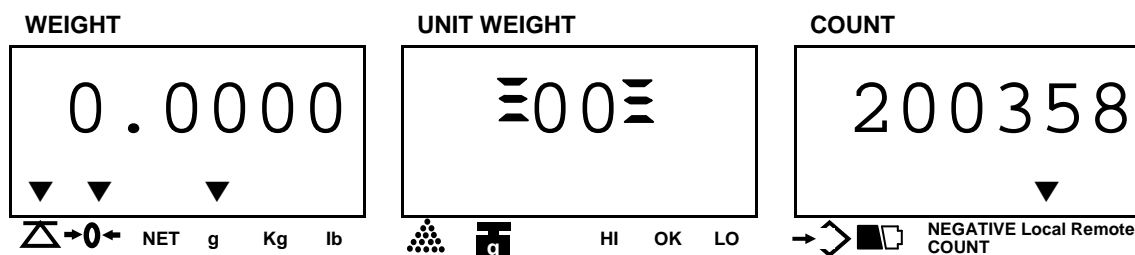
III. Calibration procedure

1. Switch on. Press “83419” to enter into Calibration mode during self-checking.

If the display shows as below, it means the scale hasn't be calibrated or data lost. Then press “ENTER” key to enter into calibration value setting.



1.2 If display shows as below, it means the scale has been calibrated before.



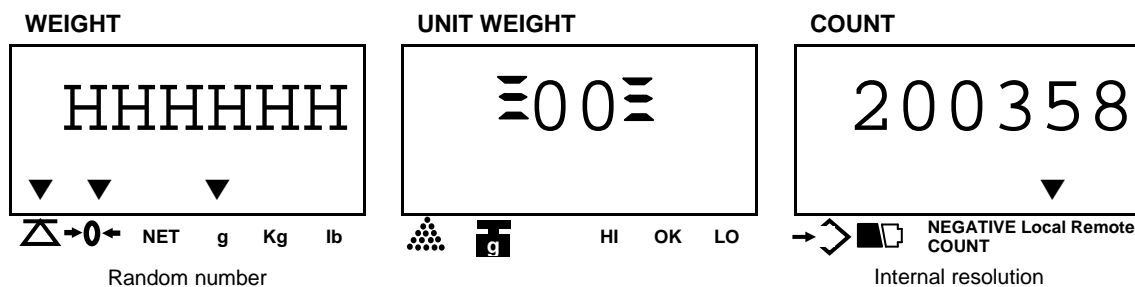
1.2.1 If you want to change the calibration setting values, please “ENTER” key.

1.2.2 If there is no need to change them, press “SMPL” key to do the calibration directly.

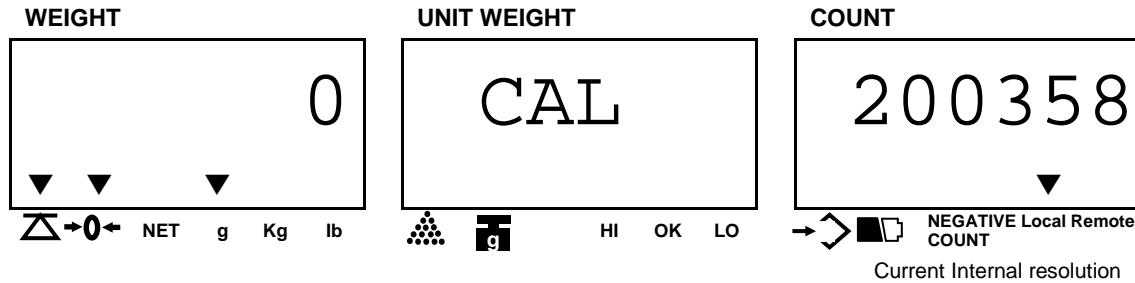
Note: If the remote platform is required to be calibrated, press **REMOTE** key to enter into remote platform calibration. REMOTE indicator will be on. (Default one: Local platform)

2. Check Internal Resolution

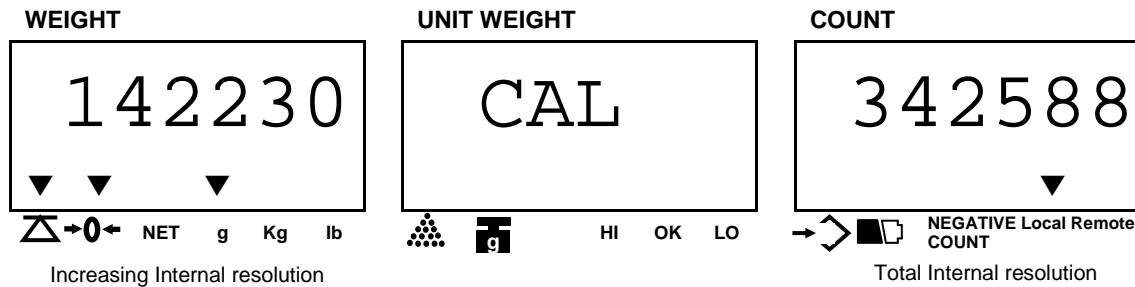
When display shows as below:



Press SET key to check the current internal resolution. Display shows as below:



Put on more weight.



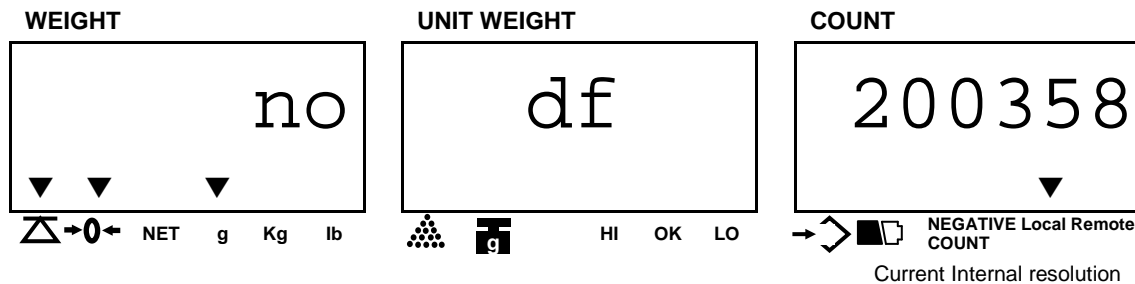
Weight window shows the increasing internal resolution, Count display window shows the total internal resolution which equals to original one and the increasing value.

Press SET key again to back to calibration mode.

3. Change and choose the unit, resolution, accuracy, capacity and weight value for calibration by pressing the “MOVE” key and the “ENTER” key. The steps are as following:

3.1 Default setting value (User setting and Calibration setting value): * “df no”: Defaulting setting is released, * “df Yes” : Every setting is setup in default.

3.1.1 The display shows:

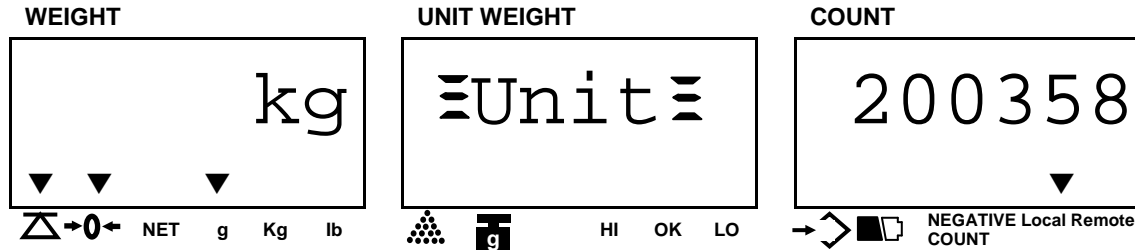


3.1.2 Press “MOVE” key to change the value. (yes, no)

3.1.3 Press “ENTER” key to confirm and enter into next setting.

3.2 Choose unit value(USA version):

3.2.1 The display shows:

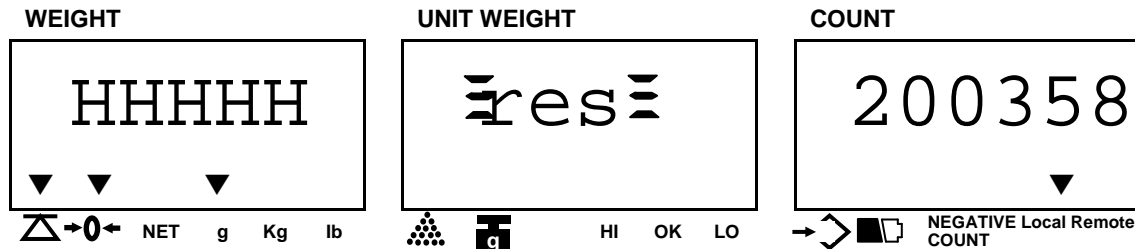


3.2.2 Press the “MOVE” key to change the value. (kg, lb)

3.2.3 Press the “ENTER” key to confirm and enter into next step (Choose Resolution).

3.3 Choose Resolution value:

3.3.1 The display shows:

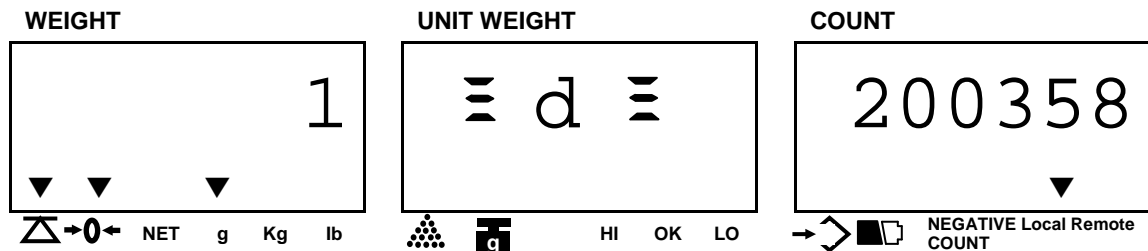


3.3.2 Use the numerical keys to enter the resolution value. (Resolution range: 3000~75000)

3.3.3 Press the “ENTER” key to confirm and enter into next step (Choose accuracy).

3.4 Choose accuracy value:

3.4.1 The display shows:

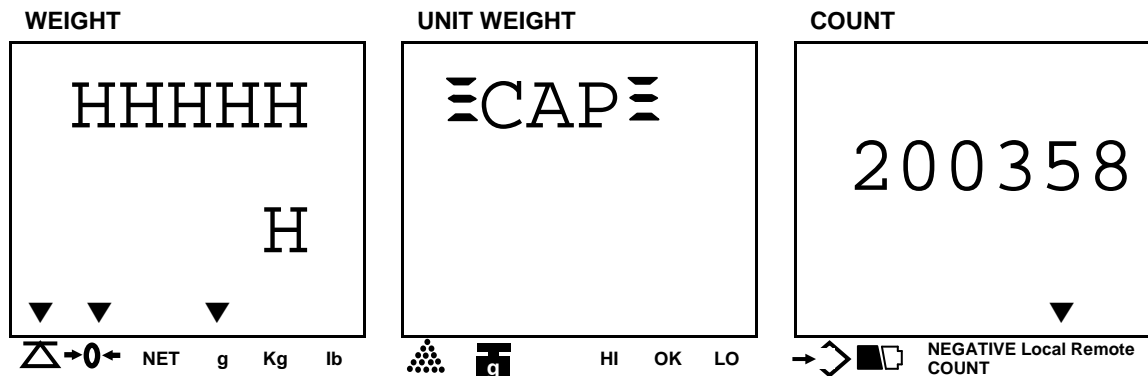


3.4.2 Press the "MOVE" key to change the value. (1,2,5)

3.4.3 Press the "ENTER" key to confirm and enter into next step (Choose capacity).

3.5 Choose capacity:

3.5.1 The display shows:

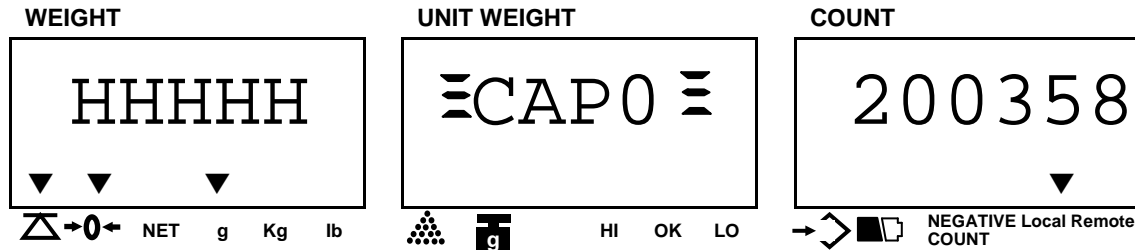


3.5.2 Press the "MOVE" key to change the value(move the dot position).

3.5.3 Press the "ENTER" key to confirm and enter into next step (Enter zero point).

3.6 Enter zero point:

3.6.1 The display shows:

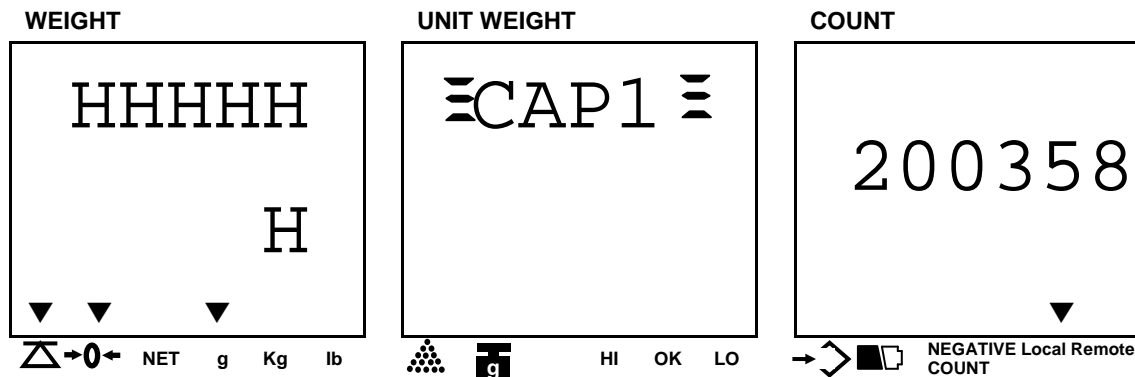


3.6.2 Use the numerical keys to key in the zero point(0).

3.6.3 Press the “ENTER” key to confirm and enter into next step (Enter the first calibration value).

3.7 Enter the first calibration value:

3.7.1 The display shows:

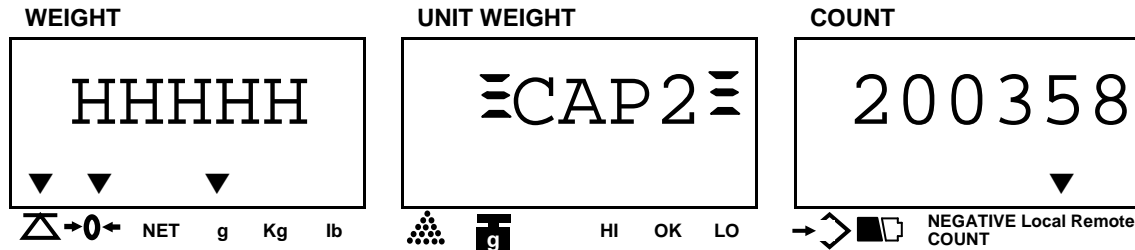


3.7.2 Use the numerical keys to key in the first calibration value.

3.7.3 Press the “ENTER” key to confirm and enter into next step (Enter the second calibration value)

3.8 Enter the second calibration value:

3.8.1 The display shows:



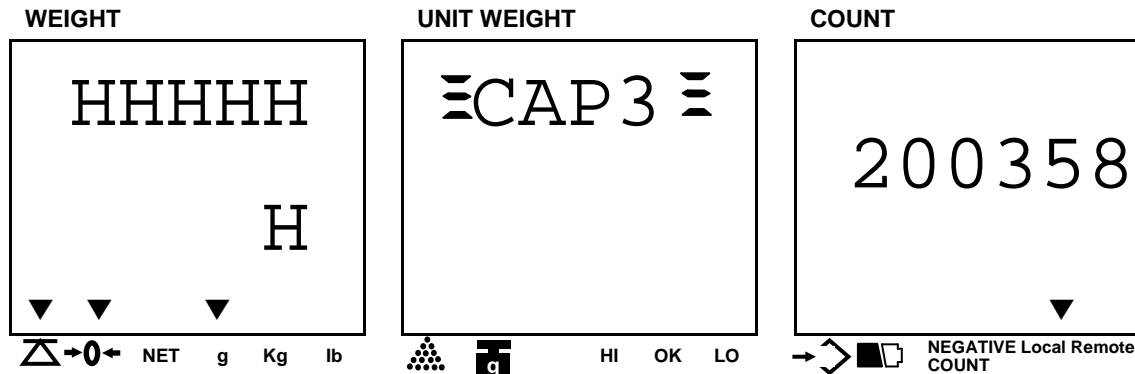
3.8.2 Use the numerical keys to key in the second value for calibration.

3.8.3 Press the “ENTER” key to confirm and enter into next step (Enter the third calibration value).

Note: If only one weight value for calibration is needed, Press “SET” key, the WEIGHT display window will show “End”.Then press” ENTER” key to back to 1.2 of step1 without saving the second calibration value.

3.9 Enter the third calibration value:

3.9.1 The display shows:



3.9.2 Use the numerical keys to key in the first calibration value.

3.9.3 Press the “ENTER” key to confirm and back to 1.2 of step1.

If only two weight values for calibration are needed , Press “SET” key, the WEIGHT display window will show “End”. Then press” ENTER” key to back to 1.2 of step1 without saving the third calibration value.

4. Calibration Mode:

- Press “**SMPL**” key to do the calibration. The unit weight window shows “00”, and the value “HHHHHH” in weight window blinks.
- Several seconds later, the unit weight window shows “ 01 “, and the weight window shows the weight value (the first calibration value). Put on the weight refer to the display. Press “**SMPL**” key to confirm.
If “**SET**” key is pressed in step 3.8, press “**SMPL**” key, calibration is finished and back to normal mode.
- Several seconds later, the unit weight window shows “02”, and the weight window shows the weight value (the second calibration value). Put on the weight refer to the display. Press “**SMPL**” key for determination.
If “**SET**” key is pressed in step 3.9, press “**SMPL**” key, calibration is finished and back to normal mode.
- Several seconds later, the unit weight window shows “ 03” , and the weight window shows the weight value (the third calibration value). Put on the weight refer to the display. Press “**SMPL**” key to confirm.
- Several seconds later, the scale return to counting mode. Then the calibration procedure is finished.
- Switch off, and take off all the weight, then switch on, the scale can be used.

Note: If the scale hasn't be calibrated yet, value in weight display window is random data except unit and accuracy. On the contrary, value in weight window should be calibration data or last keyed in ones.

Simple calibration without weight

- Turn on the scale, and key in "000419" during counting down (self-check) to zero to enter into Simple Calibration mode.
The displays will indicate as below.

Press **MOVE** key to choose the target platform(local or remote).



Then press **ENTER** key for determination and enter into calibration mode.

- The default detting is 1/3 capacity(Take 6kg scale for instance)



Note: The weighing unit for Local platform is g, while the unit for Remote platform is kg.

- Put a weight on the pan same as what exactly shown in the UNIT WEIGHT window, then press the **ENTER** key to confirm the operation.
The displayed reading in the UNIT WEIGHT window starts blinking.The scale will stop blinking and return to normal counting mode.
Calibration is now completed.

Note:

★ Press **CLEAR** key to escape from calibration mode at any time.

★ **Change calibration value**

After entering the third step, press **MOVE** key. Use numeric keys to input a calibration value r(0.80000~ 1.20000). Press **ENTER** key to confirm, then the calibration is finished.

When the scale was calibrated in Country A, and it is used in Country B, the error coefficient (R) should be:

$$R = \text{gravity value in Country A} / \text{gravity value in Country B}$$