

Service Manual for EC 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.

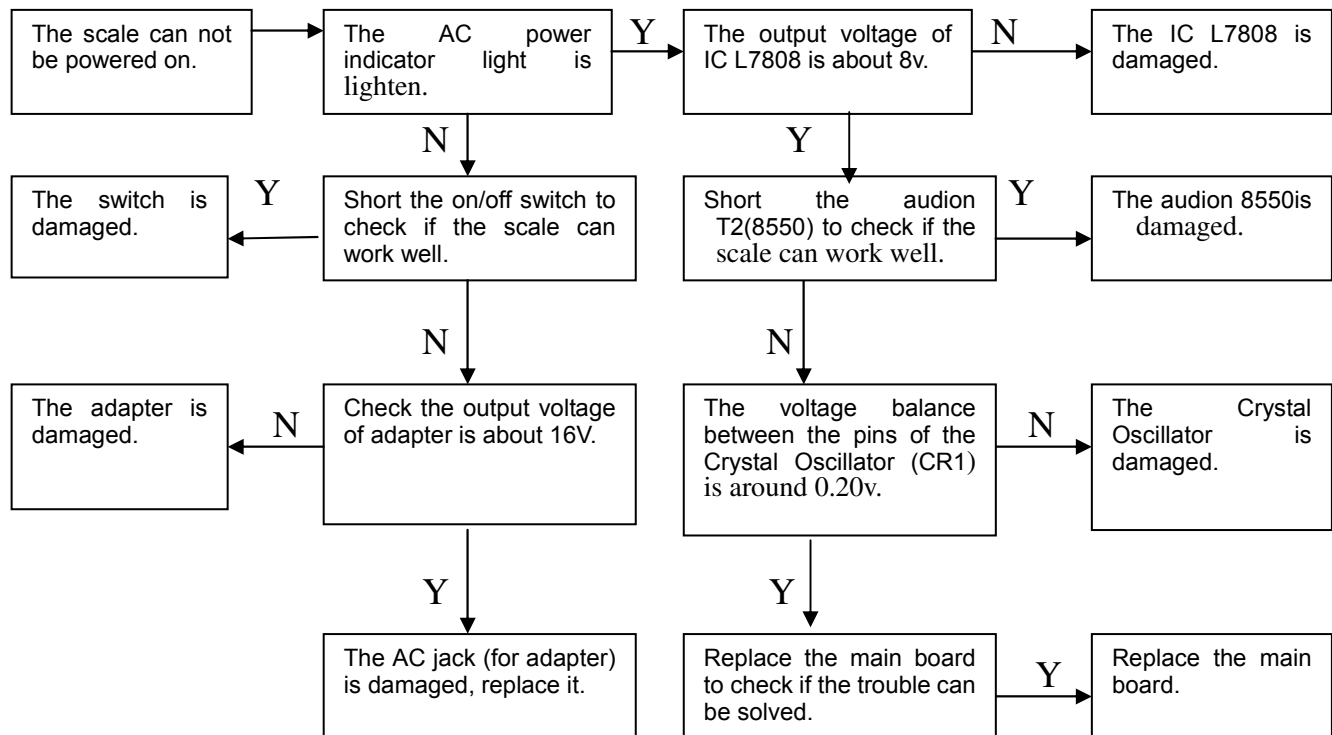
4) Trouble of the PCB

The phenomena are as following:

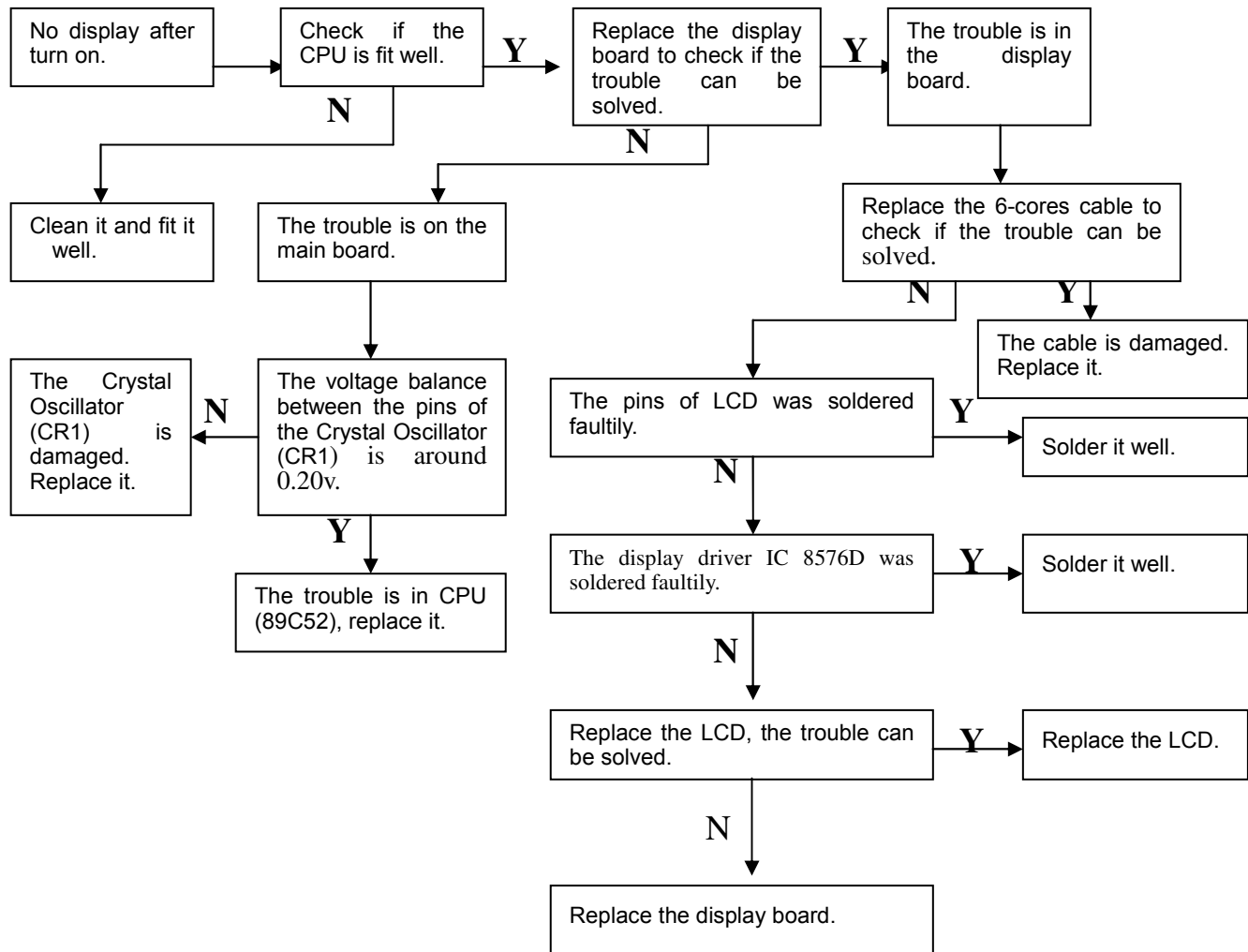
- a) Trouble of display board-----the display is abnormal, or shows nothing.
- b) Trouble of main board
 - There is nothing in the display when turn on the scale.
 - The scale can not be powered on.
 - The weighing is unstable.
 - The internal resolution is out of the normal range.
- c) Trouble of RS-232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

II. To solve the trouble

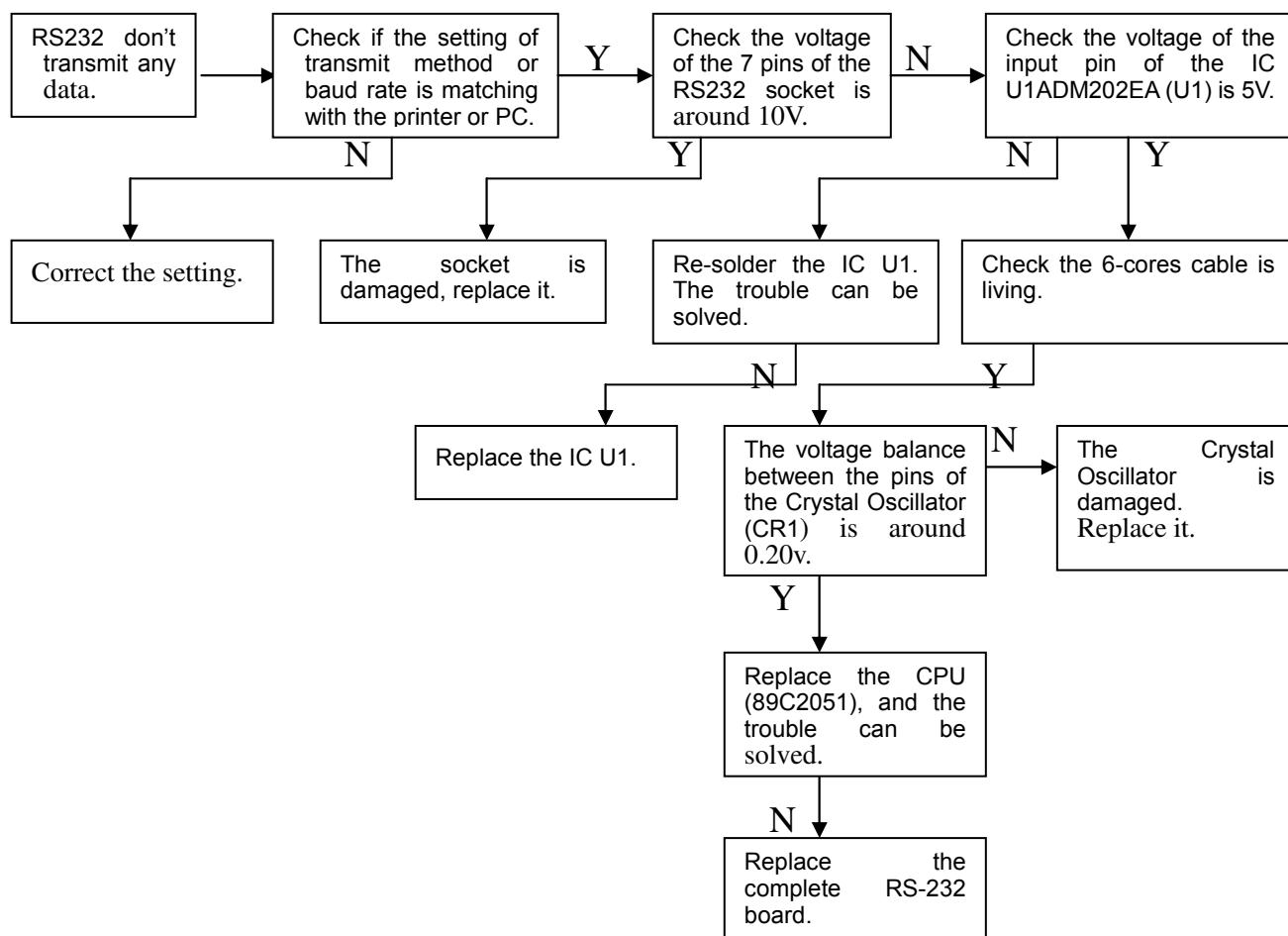
1. The scale can not be powered on



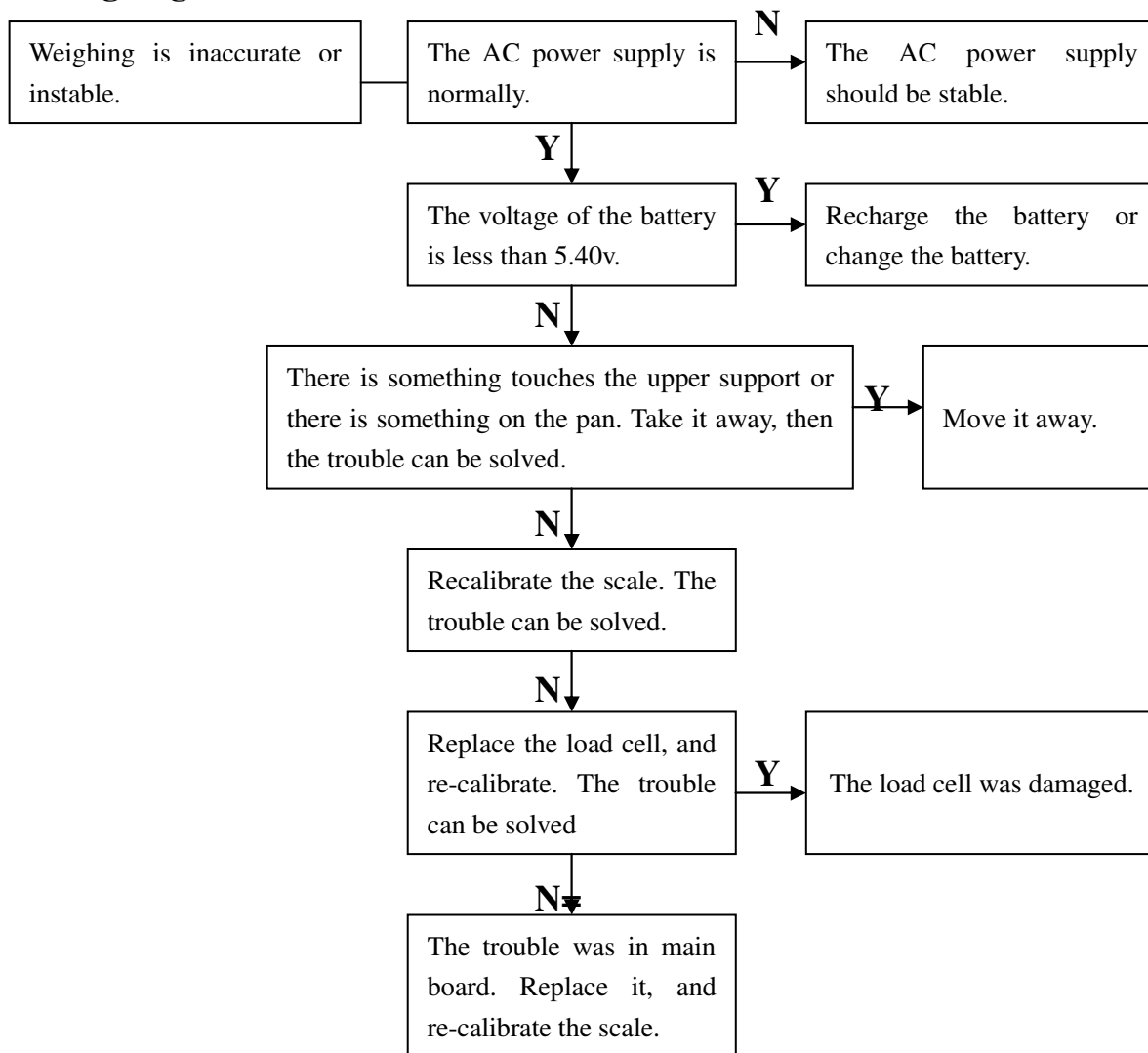
2. No display after turn on:



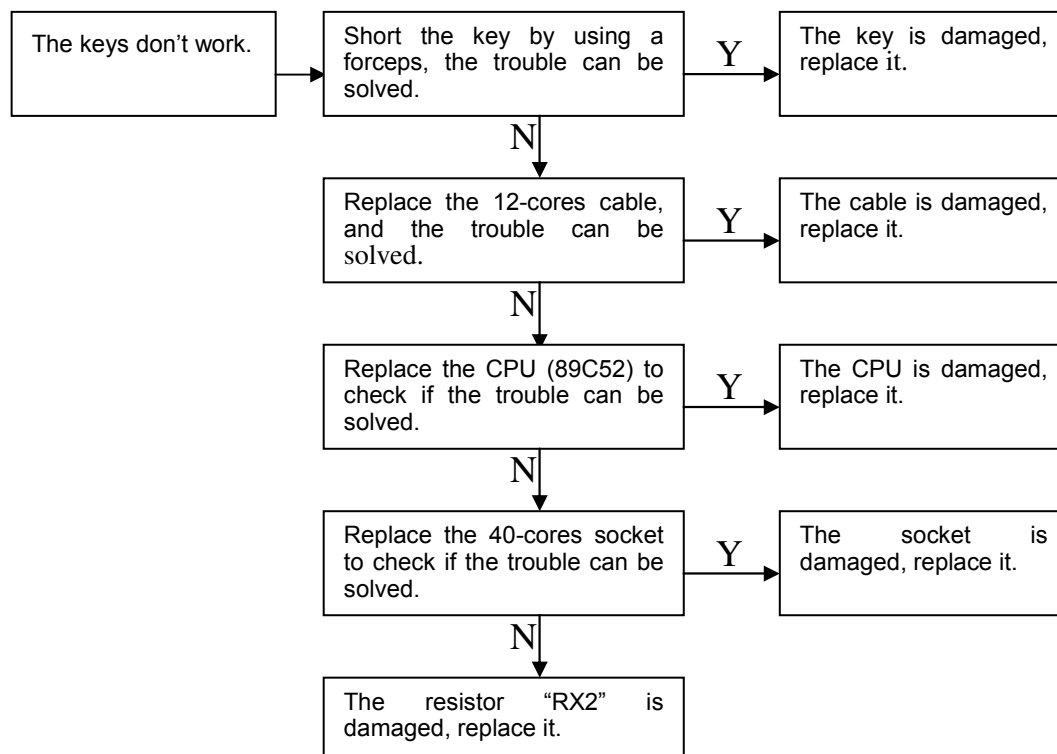
3. RS232 don't transmit any data



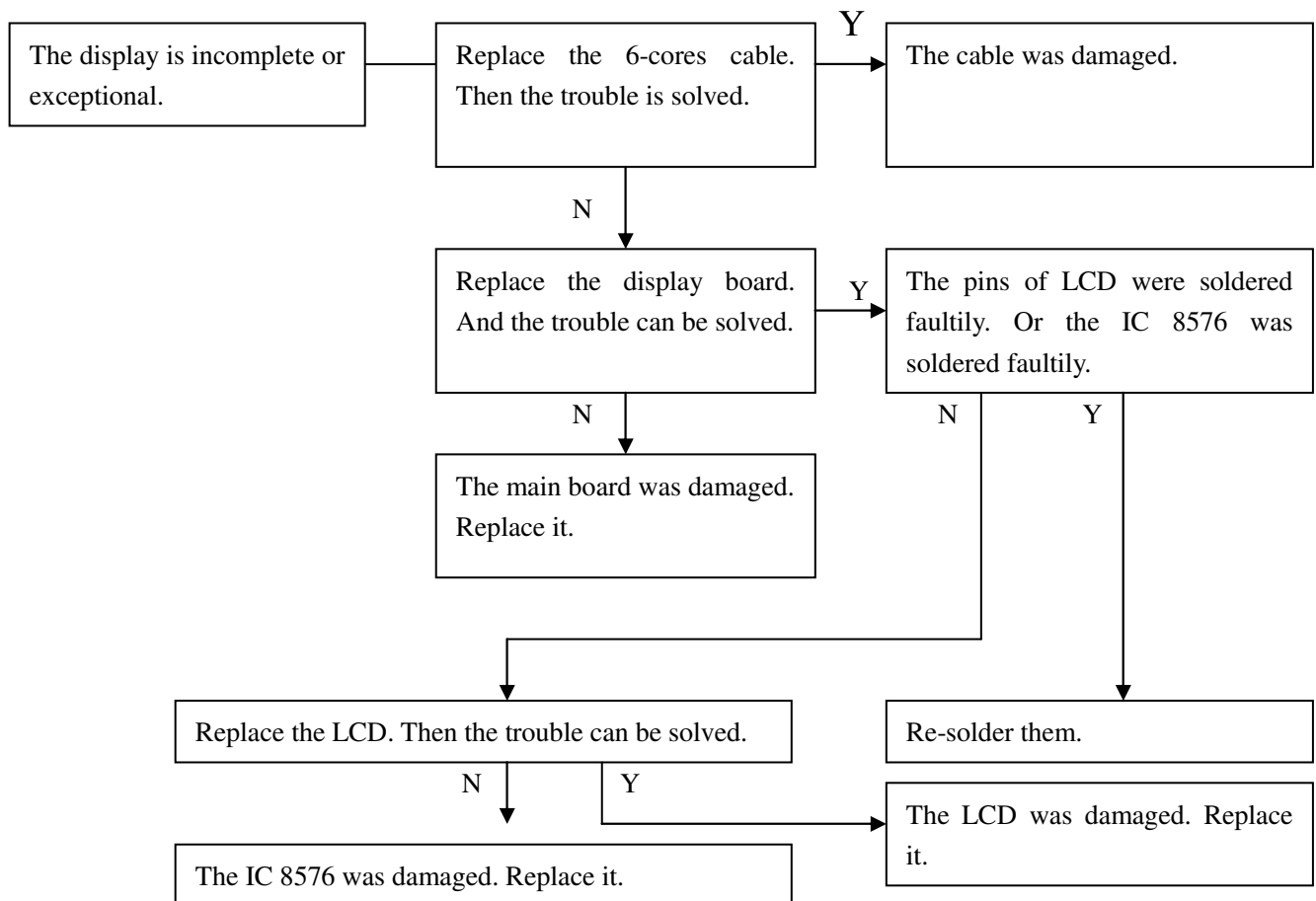
4. Weighing is inaccurate or instable:



5. The keys don't work



6. The display is incomplete or exceptional.



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.

- Sealing Method

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MODEL NO.	PART NO.	REV	SYM	CONTENTS		DRAWN	CHECKED	APPROVED																																																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>PARTS NAME</th> <th>SPECIFICATION</th> <th>Q'TY</th> <th>REMARK</th> </tr> </thead> <tbody> <tr> <td colspan="2">TOLERANCES .UNLESS OTHERWISE SPECIFIED</td> <td colspan="2">NAME OR TITLE</td> <td rowspan="2" style="text-align: center;"> CAS CORPORATION #19 KANAP-RI KWANGJEOK-MYON YANGJU-KUN KYUNGKI-DO, KOREA </td> </tr> <tr> <td colspan="2">ANGULAR \pm N/A</td> <td colspan="2">SEALING METHOD</td> </tr> <tr> <td>E</td> <td>DECIMAL \pm N/A</td> <td>FIRST USED IN ASSEMBLY</td> <td>SHOPPING SCALE</td> <td>MATERIAL N/A</td> </tr> <tr> <td rowspan="2" style="text-align: center;"> </td> <td rowspan="2" style="text-align: center;"> Q'TY/SET 1/1 </td> <td colspan="2">FIRST MADE FOR</td> <td>END FINISH</td> </tr> <tr> <td colspan="2">ED</td> <td>SEE NOTES</td> </tr> <tr> <td rowspan="2" style="text-align: center;"> </td> <td rowspan="2" style="text-align: center;"> 1/1 </td> <td colspan="2">CONTRACT OR CUSTOMER NO</td> <td>DO NOT SCALE DRAWING</td> </tr> <tr> <td colspan="2">WORLD WIDE</td> <td>DIMENSIONS ARE IN MM. INCH</td> </tr> <tr> <td colspan="2">DRAWN</td> <td>CHECKED</td> <td>CHECKED</td> <td>APPROVED</td> <td>SCALE</td> <td>DRAWING.PART NO.</td> <td>REV</td> </tr> <tr> <td colspan="2"></td> <td></td> <td></td> <td></td> <td>N/A</td> <td></td> <td>0</td> </tr> <tr> <td colspan="2">. .20</td> <td>. .20</td> <td>. .20</td> <td>. .20</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									NO	PARTS NAME	SPECIFICATION	Q'TY	REMARK	TOLERANCES .UNLESS OTHERWISE SPECIFIED		NAME OR TITLE		 CAS CORPORATION #19 KANAP-RI KWANGJEOK-MYON YANGJU-KUN KYUNGKI-DO, KOREA	ANGULAR \pm N/A		SEALING METHOD		E	DECIMAL \pm N/A	FIRST USED IN ASSEMBLY	SHOPPING SCALE	MATERIAL N/A		Q'TY/SET 1/1	FIRST MADE FOR		END FINISH	ED		SEE NOTES		1/1	CONTRACT OR CUSTOMER NO		DO NOT SCALE DRAWING	WORLD WIDE		DIMENSIONS ARE IN MM. INCH	DRAWN		CHECKED	CHECKED	APPROVED	SCALE	DRAWING.PART NO.	REV						N/A		0	. .20		. .20	. .20	. .20			
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		Q'TY/SET <i>1</i>			FIRST MADE FOR <i>ED</i>			
		CONTRACT OR CUSTOMER NO <i>WORLD WIDE</i>			END FINISH <i>SEE NOTES</i>			
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					<i>N/A</i>			<i>0</i>
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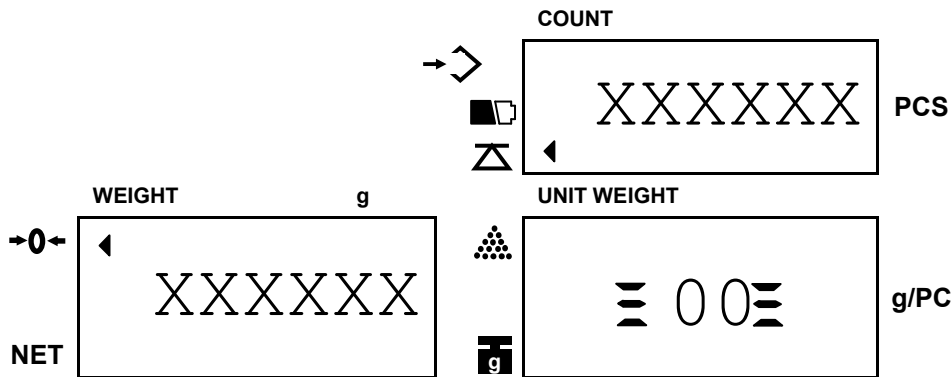
CAS FORM A4 (210mmx297mm)

III. Calibration procedure

- 1) Type1: Switch on, Press "83419" to enter into Calibration mode during self-checking. .

The windows show as follow

- 2) Type2: After pressing "On/Off", the scale will start to count down. Press and hold the "Calibration Switch" during the count down. Release the button when the count down stops for one or two seconds.**(Only Weighing Calibration Type2)**

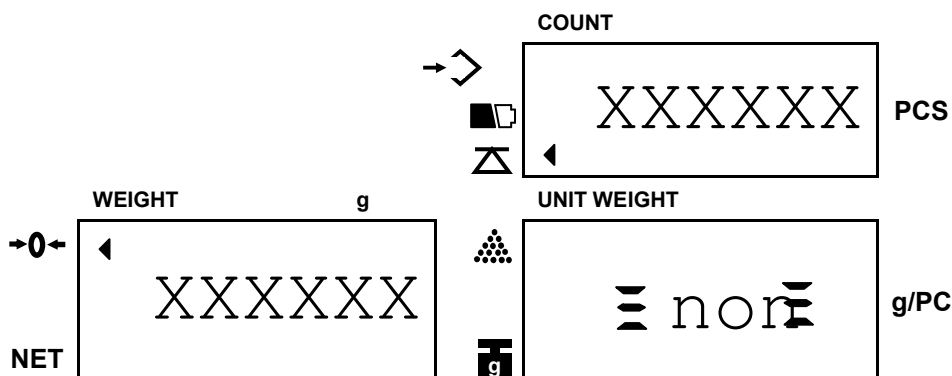


- 3) Change and choose the weight units, accuracy and capacity by using the "ENTER" and the "MOVE" key.

The steps are as below:

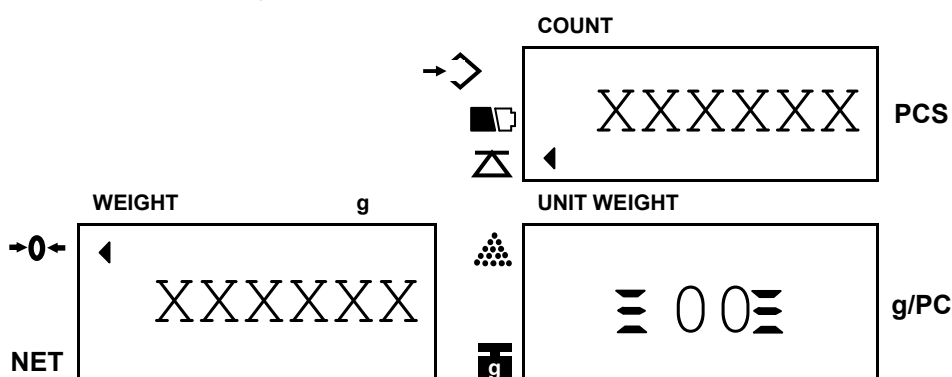
Choose weight units:

- A. After the scale finish self- checking, press the "ENTER" key to enter into selecting weight units setting, and the display shows:



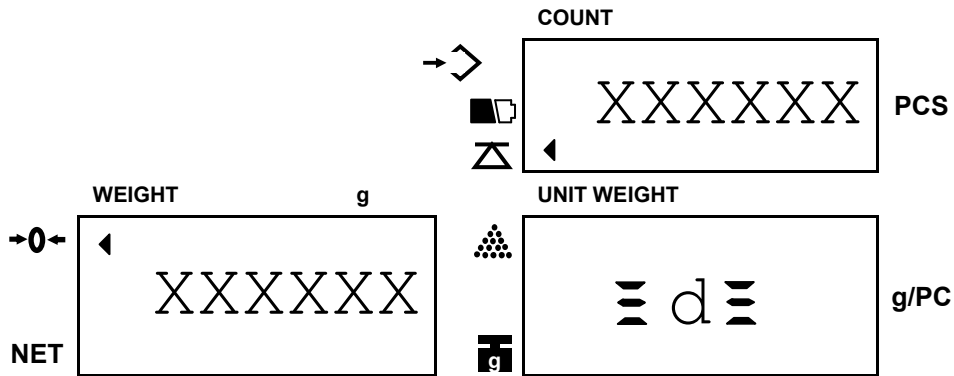
- B. Press the "MOVE" key to change the value (1-kg,0-g).
- C. Press the "ENTER" key to confirm and enter into next step (Choose accuracy value).

Note: If only the unit should be changed, then keeping press the "ENTER" key until the display shows as below, and press "CLEAR" key to exit calibration model.



Choose accuracy value:

a) The display shows:

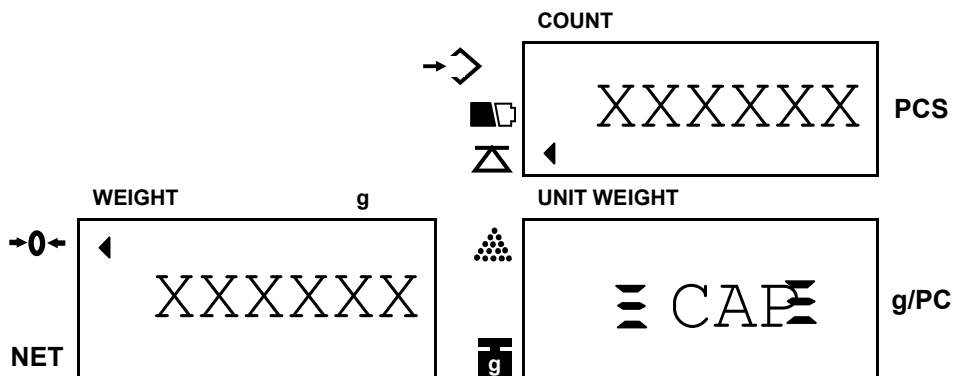


b) Press the “MOVE” key to change the value. There are three system-preset (1,2,5) can be chosen.

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

Choose capacity:

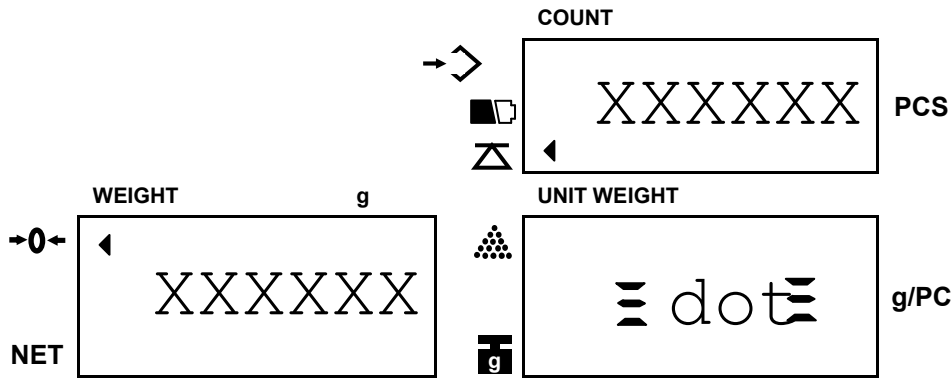
a) The display shows:



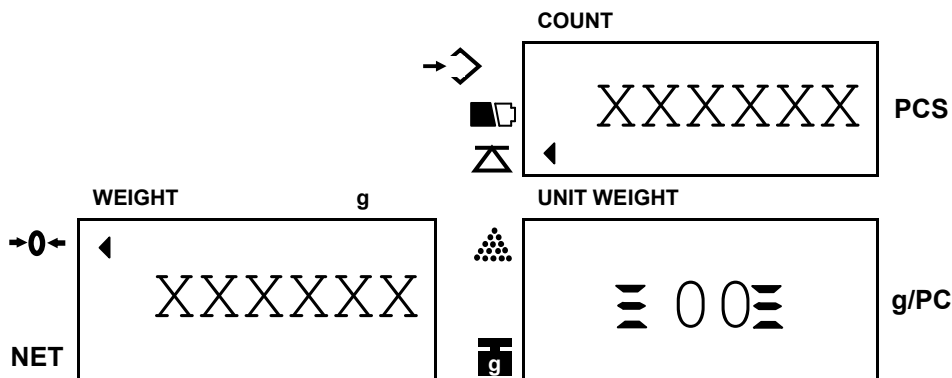
b) Press the “MOVE” key to select the capacity value.PL refer to the below list:

Capacity	The value should be choosen
1.5kg×0.05g	150000
3kg×0.1g	30000
6kg×0.2g	60000
15kg×0.5g	150000
30kg×1g	30000
3kg×0.05g	300000
6kg×0.1g	60000
15kg×0.2g	150000
30kg×0.5g	300000

C) Press the “ENTER” key to confirm, at the same time enters into “Choosing Dot Position” model, and the display shows:



d) Press the “ MOVE” key to move the Dot Position. Then Press the “ENTER” key to confirm and enter into Calibration Mode, the display shows as below:



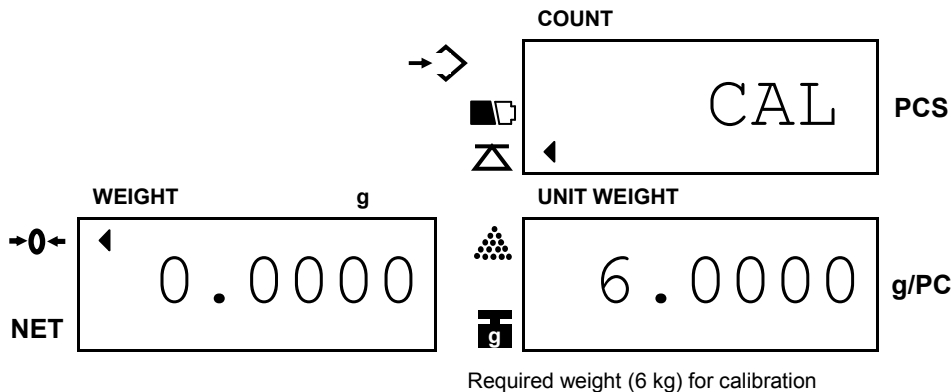
Calibration Mode:

- Touch the pan by hand lightly, several seconds later, the unit weight window shows “01 “,and the weight window shows the weight value (1/3 Max of full capacity) which should be put on for the first time. Put on the weight refer to the display.
- Several seconds later, the unit weight window shows “02”, and the weight window shows the weight value (2/3 Max. of full capacity) which should be put on for the second time. Put on the weight refer to the display.
- Several seconds later, the unit weight window shows “03”, and the weight window shows the weight value (3/3 Max. of full capacity) which should be put on for the third time. Put on the weight refer to the display.
- Several seconds later, the scale returns 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.

Simple calibration without weight(Gravity Value calibration)

1. 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 eventually. (Take 6kg scale for instance)

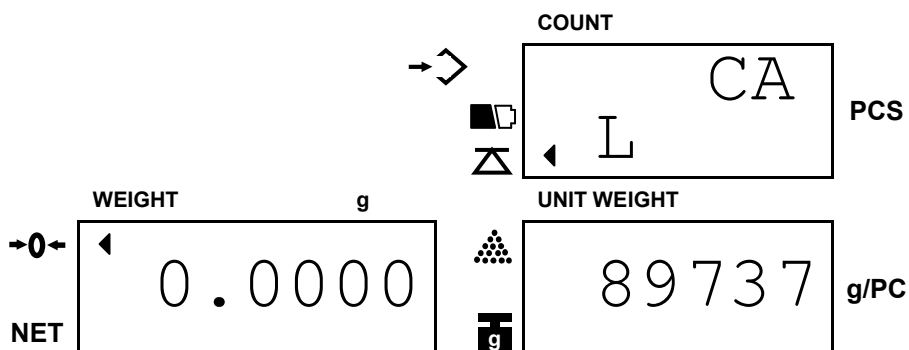


2. Keying in an error coefficient "R" ($R = A/B$, A=the correct value, B=the error value), then press the **ENTER** key, then the scale will be calibrated and return to normal counting mode.

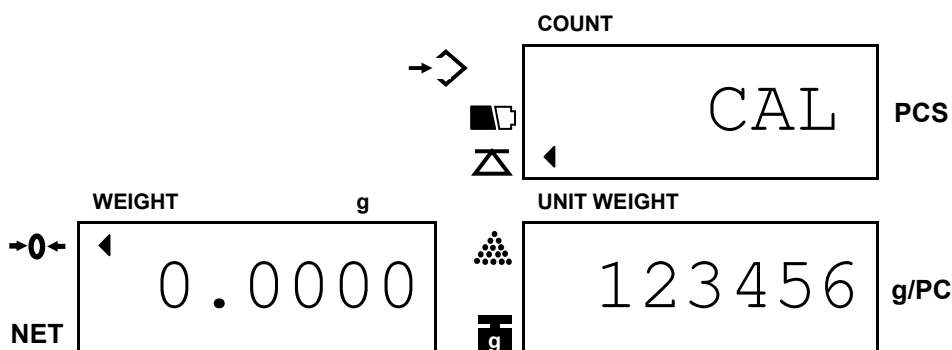
- ★ Press **CLEAR** key to escape from calibration mode at any time.
- ★ The error coefficient is shown in "UNIT WEIGHT" window, and the decimal dot is fixed after the first digit, and it is hidden. So it is no need to key in the decimal dot.

For example:

- a) If the error coefficient is "0.89737", then the display will be as:



- b) If the error coefficient is "1.23456", then the display will be as:



Note: When the scale was calibrated in Country A, and it is used in Country B, the error coefficient (R) should be: (CHINA Gravity value: 9.79134)

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