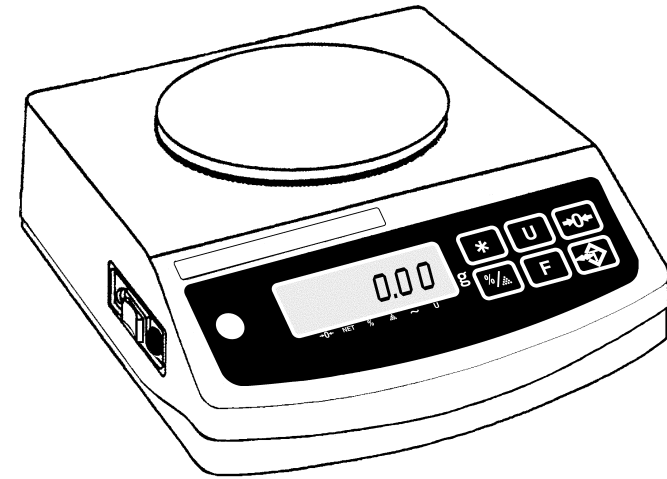


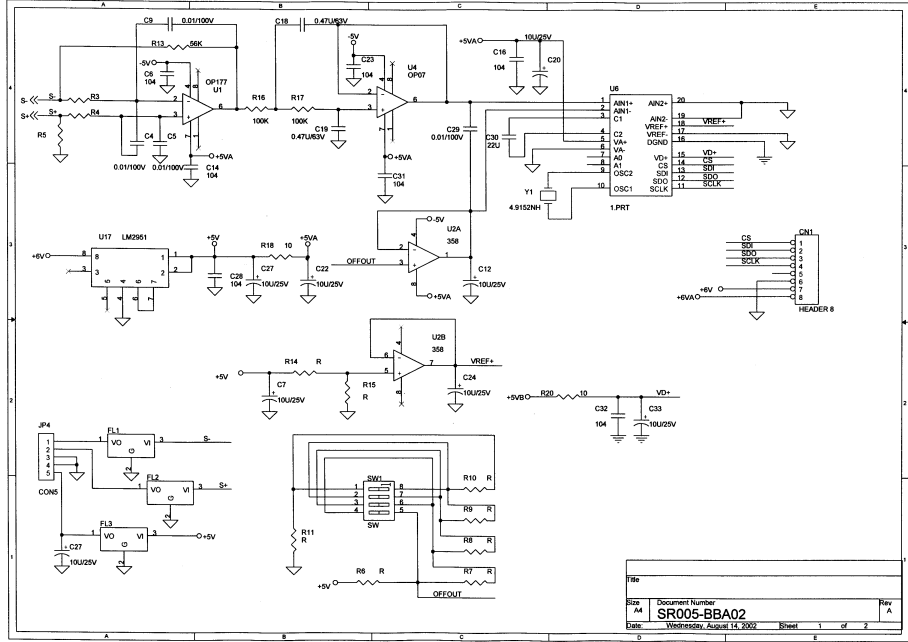
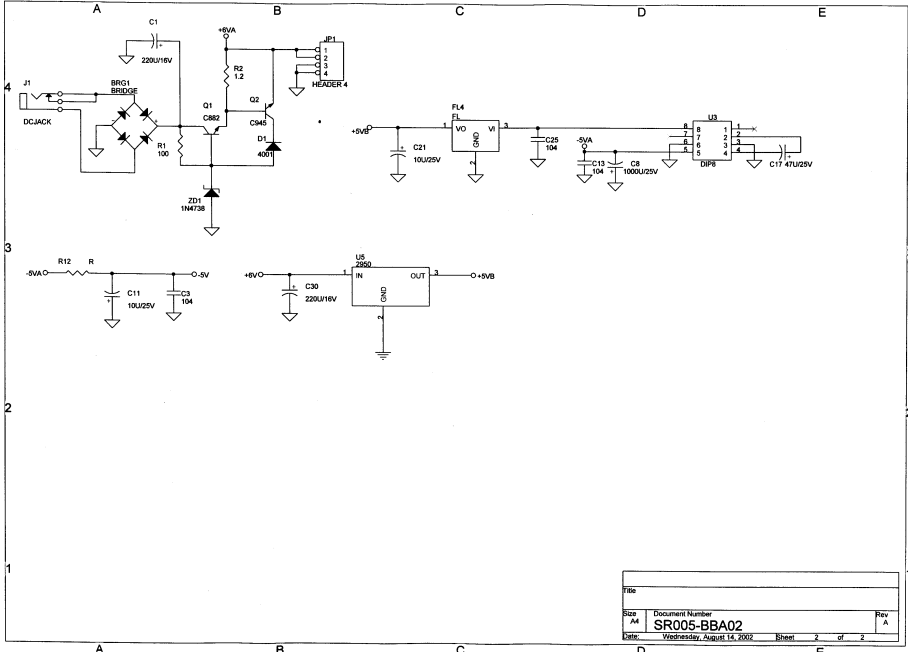
BBA-Series Precision Balances

BBA-600/BBA-1200






Service Manual

Schematic



Troubleshooting

Trouble	Possible Causes	Corrective Active
No display on the display unit	* Faulty AC adapter * Faulty main board assembly	> Replace the AC adapter > Replace the main board assembly
There are missing figures/marks on the display unit	* Faulty main board assembly	> Replace the main board assembly > Check LCD soldering well
Zero drift or span drift is excessive	* It is exposed to direct sunlight or located close to air conditioner or heater	> Change the installation site
Poor repeatability of measured values Large fluctuation of the displayed values	* Effect of wind and vibration * L/C is touching something * Dirt or dust is adhered L/C * Faulty main board assembly	> Change the installation site > Adjust the wire lead assembly > Remove the attached dirt or dust > Replace the main board assembly
Key input is not possible	* Poor connection of key lug * Main board assembly is damage	> Make key lug connection well > Replace the main board assembly
 Is displayed	* Weighing range exceed	> Unload scale or reduce preload
 Is displayed	* Weighing pan not in place * Weighing range zero below * Contact between weighing	> Ensure the weighing pan is correctly installed and surrounding parts are not touching > Set scale to zero > Apply pre-load
 Is displayed	* Zeroing outside the zero setting range	> Ensure that zeroing is performed in the admissible range (20% of Cap.)

You have purchased a quality precision weighing instrument that requires handling with care.

Read entire contents of this **Operation Manual** prior to operating your new instrument.

Disclaimer Notice

Calibrate your instrument using reference weights of the appropriate tolerance (class). An instrument can be no more accurate than the standard to which it has been compared. For assistance in the selection of reference weights, please contact the factory.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Introduction

Thank you for choosing one of our instruments. Your instrument is designed and manufactured to the most rigorous standards in order to give you years of service. First, check the contents of the shipping carton. You should find the following :

* **Manual** * **Instrument** * **AC Adapter**

Next, follow the instructions for installing your instrument.

Now you are ready to begin using your instrument. To take advantage of its many features, carefully read your operating manual.

It contains step-by-step procedures, examples, and other vital information.

Warning: Use of this product in a manner not specified by the manufacturer may impair any safety protection provided by the equipment!

Specifications

Model	BBA-600	BBA-1200
Range	600g	1200g
Readability	0.01g	0.02g
Linearity	+/-0.01g	+/-0.02g
Pan size	φ120	φ120
Permissible	200g	500g
Calibration	400g	1000g
Weights	600g	1200g

Common Specifications : Unit dimensions (L x W x H) 213 x 193 x 66mm.

Net Weight : 1.9 kg.

Electrical Requirements : 9V/500mA, AC adapter included.

Preparation

This product is intended for indoor use.

- * Select a suitable work area.
- * Work area should be relatively free from drafts and vibrations.
- * Work surface should be level and rigid.
- * Do not locate near magnetic materials or equipment/instruments which use magnets in their design.
- * Avoid areas which have variations in room temperatures or have excessive room temperatures. Room temperatures above 40 °C or 15 °C could affect instrument operation and accuracy.

Installation

Remove balance and accessories from the carton.

Save packing material for transportation purposes.

- * If using the AC adapter, insert power cord into the receptacle located on the side panel of the balance (behind On/Off switch). Firmly push in the plug.
- * Allow the balance to warm up for 30 minutes prior to use.
- * Your balance features a numeric display that continuously shows your weighing results.

RS232C Specifications & connections

A. Specification :

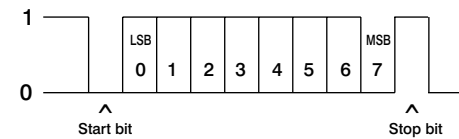
Baud rate : 2400 /9600

Parity : none

Data bit : 8

Stop bit : 1

B. Data Stream :



C. RS232C Format :

no. 1 2 3 4 5 6 7 8 9 10

SP/- X X X X X X X CR LF

D. Connections : DB-09 Male

pin no. 2 5 others

TXD GND NC

Programme

5. Print out Mode

Ex: $Pr \ 0$ (OFF), $Pr \ 1$ (Manual print),
 $Pr \ 2$ (Auto print), $Pr \ 3$ (Continuously)

While turn on press the **U** key. *The window display:* CAL

Press the **U** key and **F**, **F**, **F**, **F**, **F**.

You can press the **U** key what you want 0~3 and press the **F** key and press the \leftarrow key 3 times, the setup to be done.

6. Baud rate

Ex: $br2400$, $br9600$

While turn on press the **U** key. *The window display:* CAL

Press the **U** key and **F**, **F**, **F**, **F**, **F**, **F**.

You can press the **U** key what you want, and press the **F** key and press the \leftarrow key 3 times, the setup to be done.

Calibration

1. While turn on press the **U** key. *The window display:* CAL

2. Then press the \leftarrow key.
 The sum of 10000 ~ 40000 will display. If the number displayed is not within this rang, initial zero-setting adjustment is needed.

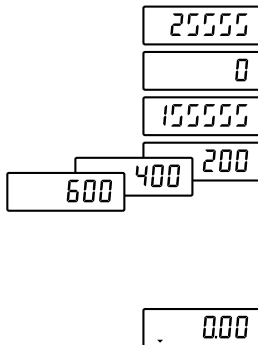
3. Remove the rubber stopper to access the switch and adjust.

4. When the display is stable, press the $\rightarrow 0 \leftarrow$ key to obtain the zero balance.

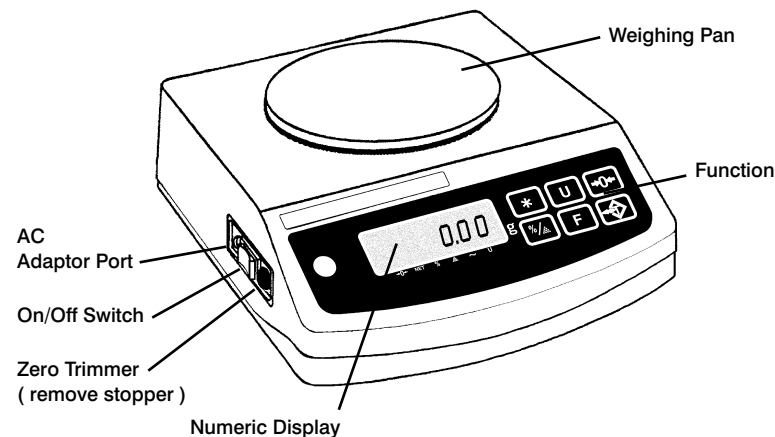
5. Place the calibration weight on the pan.
 When the display is stable, press the $\frac{\%}{\Delta}$ key to cycled through a List of permissible weight.

When the weight on pan is displayed, press the $\frac{\%}{\Delta}$ key again.

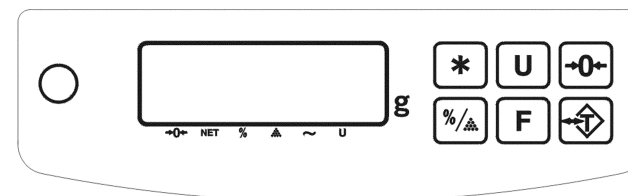
Remove the calibration weight from the pan and press $\rightarrow 0 \leftarrow$ key. Now the balance can be weigh.



Outline descriptions



Function keys




On/Off Switch	Turns balance On or Off.
$\rightarrow 0 \leftarrow$	Captures a new center of zero.
\leftarrow	Reduce gross weight on pan as tare weight.
U	For selecting various units of weight.
$\frac{\%}{\Delta}$	For parts counting and percentage weighing.
F	Display total weight, quantity or percentage.
*	Print out.

Operation





Your new balance weighs in different units and can perform parts counting and percent of weight functions.

A. Taring (Zeroing)




All models have taring (zeroing) capabilities up to their total weight capacity. To weigh a sample in it's container with the display showing the weight of the sample use the following Zero (tare) procedure.

1. Place sample container on pan and then press the .
2. Now place sample in it's container.
3. When the balance is stable, the display shows the weight of the sample.


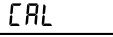



B. Counting Function

1. Count the desired amount sample pieces (10, 20, 50, 100, or 200 total pieces) and place on the pan.
2. Press the  to display total count numbers of 10, 20, 50, 100, or 200. This number will cycle, press the  again to select sample size once it is displayed. The arrow at the bottom of the display will point to "  ".
3. You are now ready to perform parts counting of those specific pieces. Press the  for the total weight. Repeat step 1 through 3 for each type of piece to be counted.










C. Percentage Function




1. Count the desired sample pieces and place on the pan, press the .
2. When the display shows " 100.0 ", with the arrow icon selecting the " % ",
3. Press the  If you want to know total weight, press the .

Programme




Press and hold  key while powering **ON**. *The window display:* 
 Press  key repeatedly to cycle through different weigh modes available.
 Press  key for **parameter selecting** when desired mode appears.
 Press  key for **setting and goes to next step**. The programme sequence as follows:


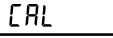


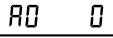



1. Re-set weighing unit

 Grams	 Pennyweight	 Taiwan Tael
 Ounces	 Carats	 Hong Kohg Tael
 Troy Ounces <i>(U.S./Europe Only)</i>	 Grains	 Singapore Tael

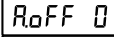
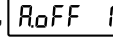
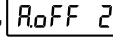

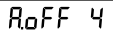
There are various units for your selectable. If you want to change other unit, press  key. when desired units appears, press the  key and press the  key 3 times, the setup to be done.


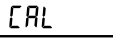







2. Auto Zero

Ex:  (0 d),  (1 d),  (2 d)

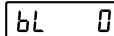
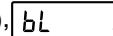
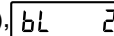
While turn on press the  key. *The window display:* 
 Press the  key and  . 
 You can press the  key what you want 0d,1d,2d. and press the  key and press the  key 3 times, the setup to be done.


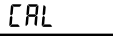








3. Sleep Mode

Ex:  (OFF),  (5 Minutes after),  (10 Minutes after),
 (20 Minutes after),  (30 Minutes after)

While turn on press the  key. *The window display:* 
 Press the  key and  ,  . 
 You can press the  key what you want 0~4. and press the  key and press the  key 3 times, the setup to be done.
 You are now ready to weigh in the selected mode.

4. Backlighting Mode

Ex:  (OFF),  (Active),  (Auto lighting while loading),

While turn on press the  key. *The window display:* 
 Press the  key and  ,  ,  . 
 You can press the  what you want 0~2. and press the  key and press the  key 3 times, the setup to be done.