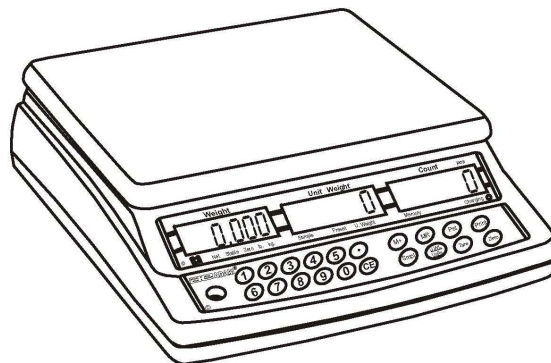## Adam Equipment

CBC&CBC-M SERIES

(P.N. 3026610534, Revision A3, July 2013)

Adam Equipment strives to be more environmentally focused and uses recycled materials and environmentally friendly packaging where possible. As part of this initiative we have developed a short form manual that uses less paper and ink to describe the main functions of your new Adam scale. A complete version is available at www.adamequipment.com. Thank you for your support of Adam Equipment and we hope that you enjoy your new scale.

1.0 CONTENTS

2.0   OPERATION

2.1   SETTING UP AND TURN ON THE SCALE

The CBC, CBC-M series of scales provide an accurate, fast and versatile series of counting and check-weighing scales. For the first time, you should set up your scale as follows:

Gently Place the platform in the locating holes on the top cover. Level the scale by adjusting the four feet. The scale should be adjusted such that the bubble in the spirit level is in the centre of the level and the scale is supported by all four feet.

Attach the power supply cable to the connector on the right side of the scale base. Plug in the power supply module. The power switch is located at the right side of the scale base. The scales have three digital display windows. There are **"Weight"**, **"Unit Weight"** and **"Count"** which show the total weights, unit weight and the numbers of the items.

For CBCa, there are indicators for lb & kg
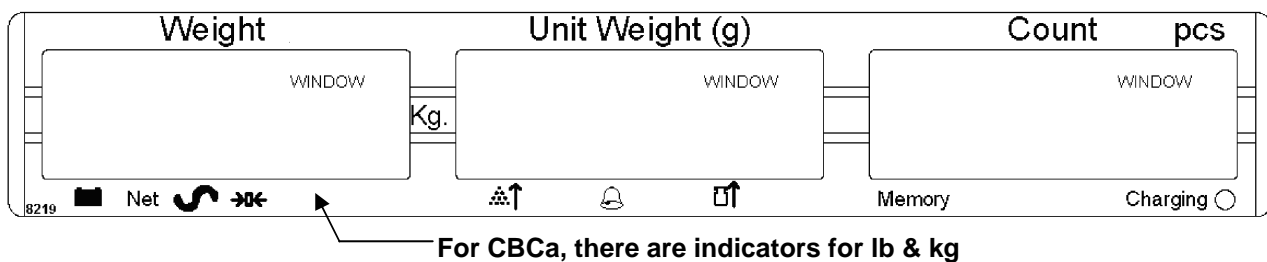
The scale will show the model No in the **"Weight"** display window (e.g: CBC 30- where 30 denotes the maximum capacity of the scale in Kg) and the current hardware and software revision numbers in the **"Unit Weight"** display window .Next a self-test is followed. At the end of the self-test, it will display **"0"** in all three displays, if the zero condition has been achieved.

2.2   ZEROING THE DISPLAY

You can press the **[Zero]** key at any time to set the zero point. When the zero point is obtained the **"Weight"** display will show the indicator for zero. The scale has an automatic re-zeroing function to account for minor drifting or accumulation of material on the platform. However you may need to press **[Zero]** to re-zero the scale if small amounts of weight are still shown when the platform is empty.

2.3   TARING

Steps:

1)   Zero the scale by pressing the **[Zero]** key if necessary. Place a container on the platform, a value for its weight will be displayed.

2)   Press the **[Tare]** key to tare the scale. The display will show the zero and the indicator above **"Net"** will be on. As a product is added only the weight of the product will be shown. The scale could be tared a second time.

3)   When the container is removed a negative value will be shown. The indicator above **"Zero"** will also be on because the platform is back to the same condition as it was when the **[Zero]** key was pressed last.

2.4   SETTING THE WEIGHING UNIT (CBCa Series only)

CBC,CBC-M scales are kilogram only scales but the CBCa scales are changeable from pounds to kilograms. The scale will turn on displaying the last weighing unit selected, either kilograms or pounds. To change the weighing unit press the **[U. Wt./Units]** key when the **"Unit Weight"** display shows zero. If necessary press the **[CE]** key to clear the unit weight before changing.

2.5   PARTS COUNTING

To determine the number of items being weighed, should divided the net weight by the unit weight value. It is necessary to know the average weight of the items to be counted which can be done by weighing a known number of the items or by manually inputting a known unit weight using the keypad.

Weighing a sample to determine the Unit Weight

1) Zero the scale by pressing the **[Zero]** key if necessary. If a container is to be used, place the container on the scale and tare as discussed earlier.

2) Place a known quantity of items on the scale. After the weight display is stable, enter the quantity of items using the numeric keys followed by pressing the **[Smpl]** key.

3) The number of units will be displayed on the **"Count"** display and the computed average weight will be shown on the **"Unit Weight"** display.

Or   Entering a known Unit Weight

1) Enter the value of the unit weight using the numeric keys followed by pressing the **[U. Wt./Units]** key. The **"Unit Weight"** display will show the value as it was entered.

After calculate/enter the unit weight, you should add more items on the pan. As more items are added to the scale, the weight and the quantity will increase. If a quantity which is smaller than the sample is placed, then the scale will automatically enhance the Unit Weight by re-calculating it. To lock the Unit Weight and avoid re-sampling, press **[U. Wt./Units]**.

The scales will automatically update the unit weight when a sample less than the sample already on the platform is added. A beep will be heard when the value is updated. It is wise to check the quantity is correct when the unit weight has been updated automatically. This feature is turned off as soon as the number of items added exceeds the count used as a sample.

2.6   CHECK COUNTING

Check counting is a procedure to cause an alarm to sound when the number of items counted on the scale meets or exceeds a number stored in the memory.

1) Enter the numeric value to be stored using the numeric keys. Then press the **[Pst]** key to store the value.

2) To clear the value from the memory and thereby turn off the check-weighing feature, enter the value **"0"** and press **[Pst].**

2.7   ACCUMULATED TOTALS

Manually accumulated totals

1) The values (weight and count) shown on the display can be added to the values in the accumulator by pressing the **[M+]** key. The total weight, total count and number of times will show in the **"Weight", "Count", "Unit weight"** display separately. The values will be displayed for 2 seconds before returning to normal.

2) More products can then be added and the **[M+]** key to be pressed again. This can continue for up to 99 entries or until the capacity of the **"Weight"** display is exceeded.

3) To observe the total stored value, press the **[MR]** key. The total will be displayed for 2 seconds. To clear the memory- first press **[MR]** to recall the totals from memory and then press the **[CE]** key to clear all values from the memory.

Automatic accumulated totals

The scale can be set to automatically accumulate totals when a weight is placed on the scale. However the **[M+]** key is still active and can be pressed to store the values immediately. In this case the values will not be stored when the scale returns to zero. To enable this function please see the complete manual for details

NOTE: The scale must return to zero or a negative number, before another sample can be added to the memory.

3.0   RS-232 INTERFACE

The CBC and CBC-M Series of scales can be ordered with a bi-directional RS-232 interface. The scale when connected to a printer or computer through the RS-232 interface, outputs the weight with the selected weighing unit.

Specifications:

RS-232 output of weighing data
ASCII code
Adjustable Baud rate: 600, 1200, 2400, 4800, 9600 and 19200 baud
8 data bits
No Parity

Connector:

9 pin d-subminiature socket
Pin 3 Output
Pin 2 Input
Pin 5 Signal Ground

4.0   PARAMETERS

For CBC-M scales, it is necessary to enter a secure menu using a password to set some parameters. The parameters for the RS-232 interface, real time clock and the accumulation function can be set by the user. Please see details in the complete manual.

4.1   AUTO SLEEP FUNCTION

This function may be enabled or disabled by the user. If enabled, when the scale is not used for some time (as pre-set by the user under this function) it automatically switches off. To set this parameter-

During self-checking, press **[Zero]** and release at once. The display shows **"SLEEP nodE"**. Press **[U. Wt./Units]** key to scroll through the auto sleep values.

> **"0"**   Auto sleep mode disabled
> **"1"**   Auto sleep after 1 minute
> **"5"**   Auto sleep after 5 minutes
> **"10"**   Auto sleep after 10 minutes

Press **[Tare**] to set the value. The scale returns to zero.

5.0   CBC PARAMETERS

To enter the parameter menus press **[Tare]** once, during the initial counting of the display after the power is turned on. The **"Weight"** display will show **"PIn   "** requesting the password number to be entered.

The default password is **"0000"** but other numbers can be set using the parameter menus. Press the **[0]** key four times. Press the **[Tare]** key.

The Parameter menu has 2 functions that can be accessed using the **[U. Wt./Units]** key to cycle through the choices. The **"Weight"** display will show the name of the functions. To enter a function, press the **[Tare]** key. At any time you can press the **[Zero]** key to return to weighing.

Weight Display	Description
F1 CAL	See the Calibration section for details.
F2 PIn	Set a new password number. Display will show "PIn 1 " Enter the new password number then press the **[Tare]** key. Display will change to "PIn 2 ", Enter the password again and press **[Tare]** again. The display will show "donE" to show the new password has been accepted. Record the new password number in a secure place.

6.0   CALIBRATION

The CBC-M approved scales are sealed to prevent unauthorised calibration. Contact Adam Equipment or your supplier for more details.

The CBC scales are calibrated using metric weights and the CBCa scales can be calibrated using either metric or pound weights, depending on the unit in use before calibration.

Steps:

1) Press the **[Tare]** key once, during the initial counting of the display after the power is turned on.The **"Weight"** display will show **"PIn   "** requesting the password number to be entered.

2) The default password is **"0000"** but other numbers can be set using the parameter menus. Press the **[0]** key four times and press the **[Tare]** key.

3) The parameter menu shows **"F1 CAL"**. Press **[Tare]** to enter the Calibration section.

4) The display will then show **"unLoAd"** to request all weight be removed from the platform. Press the **[Tare]** key to set the zero point.

5) The displays will then show the calibration weight suggested as a whole number. For example:

"LoAd" "04"   "KiLoS"

Either put this weight on the platform after the stable symbol is on or enter the desired value in whole integer and then press **[Tare]**.

Place the weight on the platform and press **[Tare]** again.

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6) At all times the scale should be stable before pressing the **[Tare]** key to accept a weight. The stability indicator will turn on to show the value is stable.

7) When calibration is done the display will show **"SPAn" "PASS"** and the scale will start counting from 0 to 9 before returning to normal operation.

8) If an error message **"SPAn" "FAIL"** is displayed, then re-check the calibration and repeat the process, if necessary.

Suggested Calibration weights for CBC Series:

CBC 4 / CBC 8a	CBC 8 / CBC 16a	CBC 16 / CBC 35a	CBC 32 / CBC 70a	CBC 48 / CBC 100a
2 kg / 5 lb	4 kg / 10 lb	10 kg / 30 lb	20 kg / 50 lb	30 kg / 100 lb

After calibration, the scale should be checked whether the calibration and linearity is correct. If necessary repeat calibration, ensure that the scale is stable before accepting any weight.

7.0   BATTERY AND BACKLIGHT OPERATION

7.1   BATTERY

The scales can be operated from the battery, if desired. the battery life of the CBC and CBC-M series is 90 hours. When the battery needs charging the arrow above the low battery symbol under the **"Weight"** display will turn on. The scale will still operate for about 10 hours after which it will automatically switch off to protect the battery.

To charge the battery, simply plug the power supply module into the scale and switch the main power ON. The scale does not need to be turned on.
The battery should be charged for 12 hours for full capacity.

7.2   BACKLIGHT FOR LCD

The backlight of the LCD can be set to be ON full time, only when a weight is on the scale or can be turned off.

1) To set the backlight press and hold **[Pst]** key for 4 seconds.The weight display will show **"EL xx"** where xx is the current setting for the backlight.

2) Press **[U. Wt./Units]** to set the parameter.

"EL Au"	Sets the backlight to operate automatically when a weight is placed on the scale or a key is pressed.
"EL OFF"	Sets the backlight to be off.
"EL on"	Sets the backlight to be on at all times.

3) Press the **[Tare]** key to store the value or press the **[Zero]** key to escape from this setting and return to weighing.

8.0 SPECIFICATIONS

Model #	CBC 4	CBC 8	CBC 16	CBC 32	CBC 48
CBC SERIES					
Maximum Capacity	4000 g	8000 g	16kg	32 kg	48 kg
Readability	0.1 g	0.2 g	0.0005 kg	0.001 kg	0.002 kg
Tare Range	-4000 g	-8000 g	-9.9995 kg	-32 kg	-48 kg
Repeatability (Std Dev)	0.1 g	0.2 g	0.0005 kg	0.001 kg	0.002 kg
Linearity ±	0.2 g	0.4 g	0.001 kg	0.002 kg	0.004 kg
Units of Measure	g		kg		

CBCa SERIES

Model: CBC 8a

UNITS OF MEASURE	MAXIMUM CAPACITY	TARE RANGE	READABILITY	REPEATIBILITY	LINEARITY
Grams	4000 g	-4000 g	0.1 g	0.1 g	0.2 g
Pounds	8.0000 lb	-8 lb	0.0002 lb	0.0002 lb	0.0004 lb

Model: CBC 16a

UNITS OF MEASURE	MAXIMUM CAPACITY	TARE RANGE	READABILITY	REPEATIBILITY	LINEARITY
Grams	8000 g	-8000 g	0.2 g	0.2 g	0.4 g
Pounds	16.0000 lb	-9.9995 lb	0.0005 lb	0.0005 lb	0.001 lb

Model: CBC 35a

UNITS OF MEASURE	MAXIMUM CAPACITY	TARE RANGE	READABILITY	REPEATIBILITY	LINEARITY
Kilograms	16.0000 kg	-10 kg	0.0005 kg	0.0005 kg	0.001 kg
Pounds	35.000 lb	-35 lb	0.001 lb	0.001 lb	0.002 lb

Model: CBC 70a

UNITS OF MEASURE	MAXIMUM CAPACITY	TARE RANGE	READABILITY	REPEATIBILITY	LINEARITY
Kilograms	32.000 kg	-32 kg	0.001 kg	0.001 kg	0.002 kg
Pounds	70.000 lb	-70 lb	0.002 lb	0.002 lb	0.004 lb

Model: CBC 100a

UNITS OF MEASURE	MAXIMUM CAPACITY	TARE RANGE	READABILITY	REPEATIBILITY	LINEARITY
Kilograms	48.000 kg	-48 kg	0.002 kg	0.002 kg	0.004 kg
Pounds	100 lb	-99 lb	0.005 lb	0.005 lb	0.01 lb

COMMON SPECIFICATIONS

Stabilisation Time	2 Seconds typical
Operating Temperature	-10°C - 40°C 14°F - 104°F
Power supply	230 VAC 50/60 Hz 120 VAC available
Battery	Internal rechargeable battery (~90 hours operation)
Calibration	Automatic External
Display	3 x 6 digits LCD digital displays
Balance Housing	ABS Plastic, Stainless Steel platform
Pan Size	225 x 275mm 8.9" x 10.8"
Overall Dimensions (wxdxh)	315 x 355 x 110mm 12.4" x 14" x 4.3"
Net Weight	4.4 kg / 9.7lb
Applications	Counting Scales
Functions	Parts counting, check-counting, weighing, accumulating memory, pre-set count with alarm
Interface	RS-232 bi-directional interface English, German, French, Spanish selectable text
Date/Time	Real Time Clock (RTC), To print date and time information (Dates in year/month/day, day/month/year or month/day/year formats- Battery backed)

CBC-M Approved Series

	CBC-M SERIES			
Model	**CBC 3M**	**CBC 6M**	**CBC 15M**	**CBC 30M**
Maximum Capacity	3 kg	6 kg	15 kg	30 kg
d = e =	0.001 kg	0.002 kg	0.005 kg	0.01 kg
Tare Range	-3 kg	-6 kg	-10 kg	-30 kg
Class	III			

Common Specifications of CBC-M	
Stabilisation Time	2 Seconds typical
Operating Temperature	-10°C - 40°C 14°F - 104°F
Power supply	230 VAC 50/60 Hz. 120 VAC available.
Battery	Internal rechargeable battery (~90 hours operation)
Calibration	Only allowed if the seals are broken
Display	3 x 6 digits LCD digital displays
Balance Housing	ABS Plastic, Stainless Steel platform
Pan Size	225 x 275mm 8.9" x 10.8"
Overall Dimensions (wxdxh)	315 x 355 x 110mm 12.4" x 14" x 4.3"
Net Weight	4.1 kg / 9 lb
Applications	Counting Scales
Functions	Parts counting, weighing, accumulating memory, Check-count with alarm
Interface	RS-232 bi-directional interface English, German, French, Spanish selectable text
Date/Time	Real Time Clock (RTC), To print date and time information (Dates in year/month/day, day/month/year or month/day/year formats- Battery backed)

9.0 ERROR CODES

During the initial power-on testing or during operation, the scale may show an error message. The meaning of the error messages is described below.

If an error message is shown, repeat the step that caused the message, turning the balance on, carry out the calibration or other functions. If the error message is still shown contact your dealer for further support.

ERROR CODE	DESCRIPTION	POSSIBLE CAUSES
Err 1	Time input error.	Tried to set an illegal time, i.e. 26hours
Err 2	Date input error	Tried to set an illegal date, i.e. 36th day
Err 4	Initial Zero is greater than allowed (typically 4% of the maximum capacity) when power is turned on or when the **[Zero]** key is pressed	Weight is on the pan when turning the scale on. Excessive weight on the pan when zeroing the scale. Improper calibration of the scale. Damaged load cell. Damaged Electronics.
Err 6	A/D count is not correct when turning the scale on.	Platform is not installed. Damaged Load cell. Damaged Electronics.

10.0 SERVICE INFORMATION

This manual covers the details of operation. If you have a problem with the scale that is not directly addressed by this manual then contact your supplier for assistance. In order to provide further assistance, the supplier will need the following information which should be kept ready:

A. <u>Details of your company</u>
  -Name of your company:
  -Contact person's name:
  -Contact telephone, e-mail,
  fax or any other methods:

B. <u>Details of the unit purchased</u>
  (This part of information should always be available for any future correspondence. We suggest you to fill in this form as soon as the unit is received and keep a print-out in your record for ready reference.)

Model name of the scale:	
Serial number of the unit:	
Software revision number (Displayed when power is first turned on):	
Date of Purchase:	
Name of the supplier and place:	

C. <u>Brief description of the problem</u>
   Include any recent history of the unit. For example:
                -Has it been working since it's delivered
                -Has it been in contact with water
                -Damaged from a fire
                -Electrical Storms in the area
                -Dropped on the floor, etc.

WARRANTY INFORMATION

Adam Equipment offers Limited Warranty (Parts and Labour) for the components failed due to defects in materials or workmanship. Warranty starts from the date of delivery.

During the warranty period, should any repairs be necessary, the purchaser must inform its supplier or Adam Equipment Company. The company or its authorised Technician reserves the right to repair or replace the components at any of its workshops depending on the severity of the problems. However, any freight involved in sending the faulty units or parts to the service centre should be borne by the purchaser.

The warranty will cease to operate if the equipment is not returned in the original packaging and with correct documentation for a claim to be processed. All claims are at the sole discretion of Adam Equipment.

This warranty does not cover equipment where defects or poor performance is due to misuse, accidental damage, exposure to radioactive or corrosive materials, negligence, faulty installation, unauthorised modifications or attempted repair or failure to observe the requirements and recommendations as given in this User Manual.

Repairs carried out under the warranty does not extend the warranty period. Components removed during the warranty repairs become the company property.

The statutory right of the purchaser is not affected by this warranty. The terms of this warranty is governed by the UK law. For complete details on Warranty Information, see the terms and conditions of sale available on our web-site.

$C\mathsf{E}$

Manufacturer's Declaration of Conformity

This product has been manufactured in accordance with the harmonised European standards, following the provisions of the below stated directives:

Restriction of the use of certain hazardous substances
In electrical and electronic equipment 2011/65/EC (RoSH)

Electro Magnetic Compatibility Directive 2004/108/EC

Low Voltage Directive 2006/95/EC

Adam Equipment Co.
Maidstone Road, Kingston
Milton Keynes, MK10 0BD
United Kingdom

FCC COMPLIANCE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. The equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Shielded interconnect cables must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device.

Changes or modifications not expressly approved by Adam Equipment could void the user's authority to operate the equipment.

WEEE COMPLIANCE
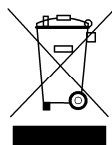
Sealed Lead Acid
Battery
Must be recycled
Properly

PB

Any Electrical or Electronic Equipment (EEE) component or assembly of parts intended to be incorporated into EEE devices as defined by European Directive 2002/95/EEC must be recycled or disposed using techniques that do not introduce hazardous substances harmful to our health or the environment as listed in Directive 2002/95/EC or amending legislation. Battery disposal in Landfill Sites is more regulated since July 2002 by regulation 9 of the Landfill (England and Wales) Regulations 2002 and Hazardous Waste Regulations 2005. Battery recycling has become topical and the Waste Electrical and Electronic Equipment (WEEE) Regulations are set to impose targets for recycling.

ADAM EQUIPMENT is an ISO 9001:2008 certified global company with more than 35 years experience in the production and sale of electronic weighing equipment.

Adam products are predominantly designed for the Laboratory, Educational, Medical, retail and Industrial Segments. The product range can be described as follows:

-Analytical and Precision Balances
-Compact and Portable Balances
-High Capacity Balances
-Moisture analysers / balances
-Mechanical Scales
-Counting Scales
-Digital Weighing/Check-weighing Scales
-High performance Platform Scales
-Crane scales
-Medical Scales
-Retail Scales for Price computing

For a complete listing of all Adam products visit our website at
www.adamequipment.com