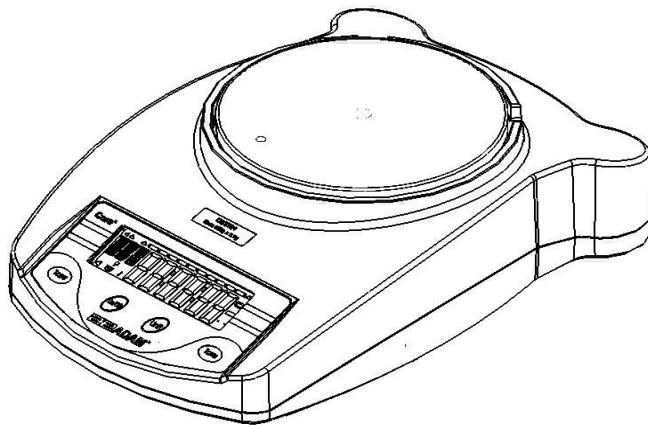


**Grain Scale
Model: CQT1751GR**

pn. 9757 rev B



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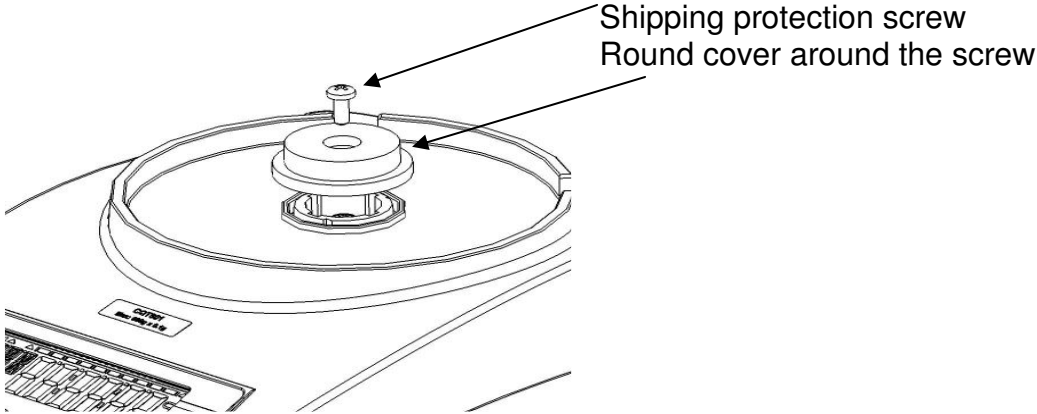
2.0 INTRODUCTION

Thank you for purchasing your new grain scale which is based upon the Core series of Balances. The CQT1751GR model has been specifically developed and designed to be used to assist in the grading of grain to assess the quality of the grain as well as to give an indication of the Kilograms per hectolitre (kg/Hl).

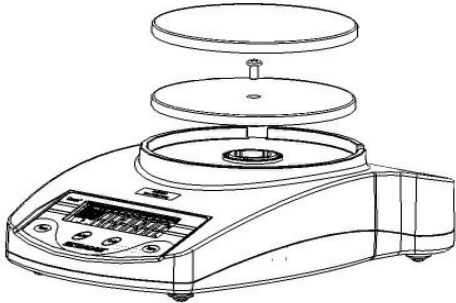
3.0 SET UP

3.1 UNPACKING AND SETTING UP YOUR SCALE

- 1) Remove the shipping protection screw and round cover as shown below using the Allen key supplied in the box. (It is advisable to keep the shipping protection screw and the round cover along with the packing box for using during shipping to another location in future).



- 2) Place the pan (which comes separately packed) in the receptacles on the top cover.



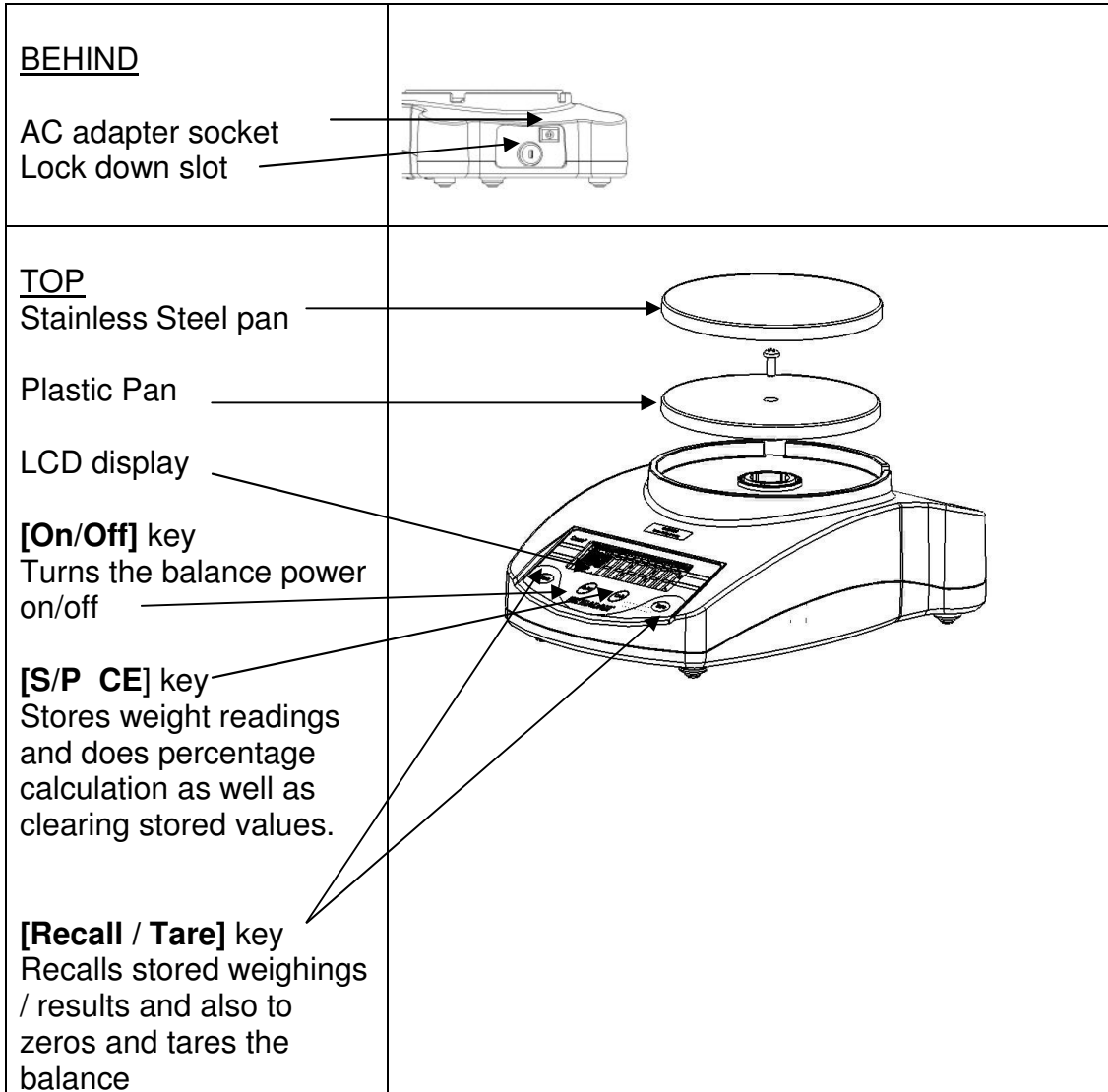
Use the screw that you removed to screw the plastic pan into place. Be careful when putting the screw in that you do not use too much force as it can damage the loadcell. You should just be able to use light force to secure the screw.

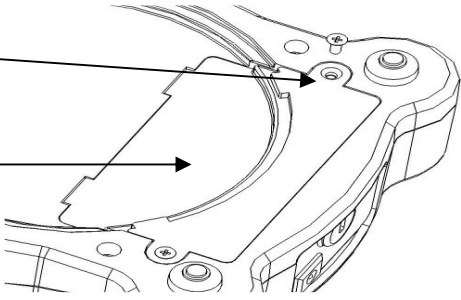
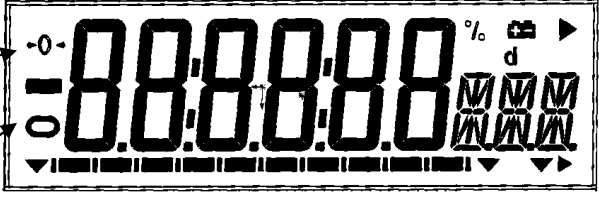
- 3) Place the stainless steel pan on top of the plastic pan.
- 4) Place the balance on a firm and flat surface for accurate weighing.

3.2 INSTALLING BATTERIES

Remove the battery compartment cover and insert six batteries (R6P/LR6 /AA size) into the battery compartment.

3.3 OVERVIEW - DISPLAY / KEY BOARD



<p><u>BOTTOM</u></p> <p>Battery compartment screws</p> <p>Battery compartment cover</p> <p>Batteries are not included</p>	
<p><u>DISPLAY</u></p> <p>ZERO indicator Indicates when the scale is at zero.</p> <p>STABLE indicator Indicates when the reading is stable.</p>	

3.4 LOCATING AND PROTECTING YOUR SCALE

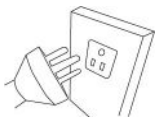
In order to keep your scale functioning at its best we suggest that you do the following:



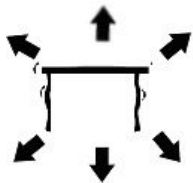
Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.



Make sure the scale is located on a strong table and free from vibration.



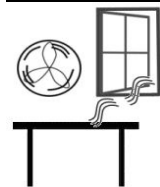
Avoid unstable power sources. Do not operate near large users of electricity such as welding equipment or large motors. Do not leave the batteries inside the scale – if you are using the scale with the AA batteries and are not using it for a long time.



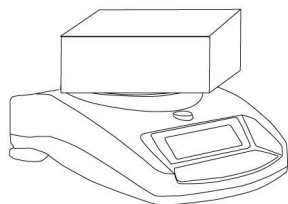
Keep free from vibration. Do not place near heavy or vibrating machinery.



Avoid high humidity that might cause condensation, and keep away from direct contact with water.



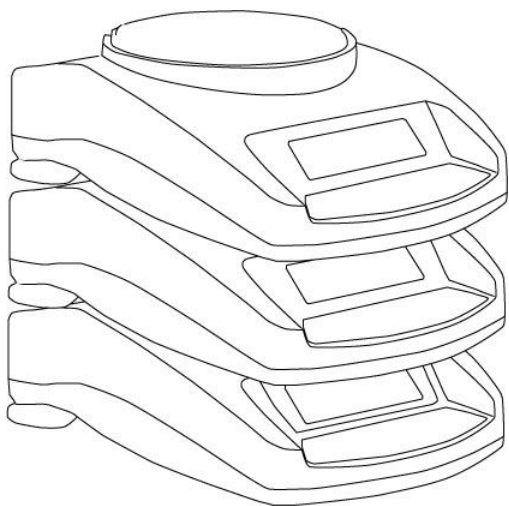
Do not place near open windows, air-conditioning vents or fans that may cause a draught and unstable readings.



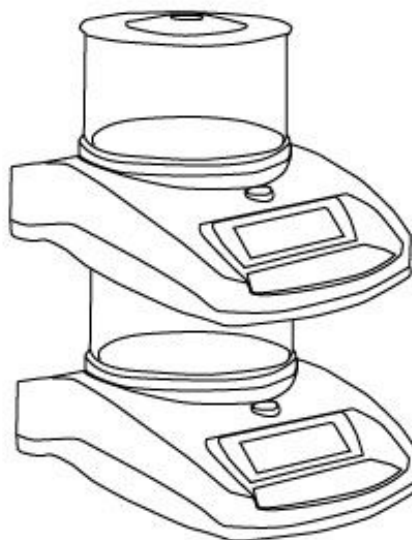
Keep the scale clean, and do not stack material on the scale when it is not in use. The CQT1751GR has a stacking feature allowing more than one unit to be stacked on top of each other. For more details on this see the section on storing.

3.5 **STORING WHEN NOT IN USE**

If you have any of the Highland™ series or Core™ or Grain Scale product lines you can store them easily on top of each other. To save space and protect them from damage.



Without Shield



With Shield

4.0 BASIC OPERATION

4.1 TURNING ON THE SCALE

Plug in the unit using the AC adapter or power from the batteries and press the **[on/off]** key.

- 1) The scale will show automatically **grn- X.X**, "XX" meaning software revision number "grn" meaning it has grain scale software and then show the voltage **X.X Vol** where "X.X" is the voltage of the batteries if being used on battery power or the AC adapter after that the scale will then count from 0 to 9 for a few seconds. Finally it will display "0.0g" with the Stable symbol and Zero symbols being lit up.
- 2) The scale is now ready to be used.
- 3) To turn the scale off after use press the **[on/off]** key again. There is an auto power-off function that will automatically turn the unit off, this can be set in the parameters section.

4.2 ZEROING / TARE

You can press the **[Recall / Tare]** key to set a new zero point. Zero will be set if the reading on the scale is less than 70g. This may be necessary if the weight is not reading zero with no weight on the pan. The zero indicator will show in the top left corner of the LCD.

If you are using a container to weigh then you can place this on the platform and press the **[Recall / Tare]** key, the display will show zero and NET on the display.

You can then weigh any material added to the container. Taring weight subtracts from the scale's total capacity.

Note: When the container is removed a negative value will be shown. If the **[Recall / Tare]** is pressed when the container has been removed it will again zero the scale.

4.3 WEIGHING

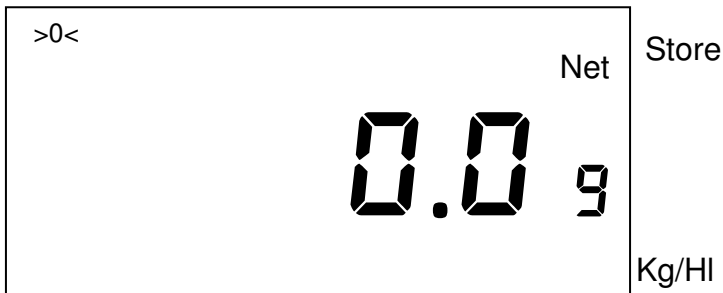
To determine the weight of a sample, first tare an empty container, then place the sample in the container. The display will show the weight and the unit of weight currently in use. The stable indicator will light up when the reading is stable.

4.4 WEIGHING UNITS

Two units are available: grams (g) and Kilograms per Hectolitre (Kg/Hl).

4.5 GRAIN DETERMINING

- 1) Turn on the scale and wait for the scale to come to zero. Then put on an empty 500ml container and press the **[Recall / Tare]** key.



- 2) Load the 500ml container with the grain. The screen shows the net weight (the first net weight) of the grain (in this example lets say the total weight was 400g).



- 3) Press the **[S/P CE]** key, it calculates the relation between g and Kg / HI and saves the value. The balance will show Store 1 for 2 seconds and then "xx.x Kg / HI". In this example it will show 80.00 Kg / HI.

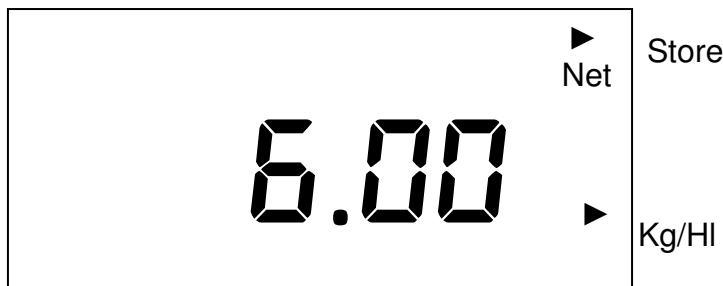


The Store symbol (▶) lights up when the first net weight is stored and the Kg/HI symbol (▶) also lights up.

- 4) Now remove the container and perform the screening operation.
- 5) Then put the same 500ml container back on to the scale. The scale will show 0.0g on the display.
- 6) Add the screenings to the container, the display shows the weight of the screenings. For this example say 30.0g

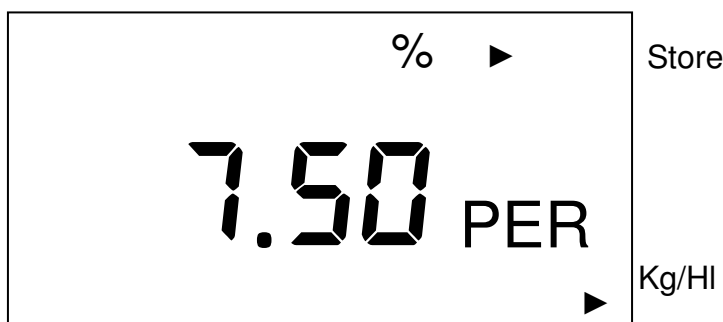


- 7) Once the stable light has shown on the display press the **[S/P CE]**. The balance will show Store 2 for 2 seconds and then "xx.x Kg / HI". If the screenings were 30.0g then in this example it would show 6.00 Kg/HI.



The Store symbol (▶) lights up when the second net weight is stored and the Kg/HI symbol (▶) also lights up.

- 8) To determine the percentage of screenings to the initial grain press the **[S/P CE]** key again. The balance will show "Per - -" on the display for approximately 2 seconds and then "XX.X PER". In the example the 1st weight was 400g (calculated as 80.00Kg/HI), the 2nd weight was 30g (calculated as 6.00Kg/HI). Therefore the percentage value would be 7.50%.



- 9) To review the 1st and 2nd stored weight and percentage values that have been stored into the memory simply press the **[Recall / Tare]** key to scroll through the various weights. These are stored in the memory even if the scale has been switched off so you can tell if only one stored weight is in the memory that you need to complete the weighing of the screened grain, if 2 stored weights are in the memory but it does not show percentage if you press the **[S/P CE]** key it will calculate the percentage.
- 10) After completing the test you must clear the memory. This is done by pressing and holding down the **[S/P CE]** key for 2 seconds until "Clear" is displayed on the scale and then release the **[S/P CE]** key.
- 11) If the balance is turned off during the weighing process when it is turned on again it will have kept the stored information in the memory so that you could then complete the tests without having to start again due to a loss of power.

5.0 PARAMETERS

The scale has 2 parameters that can be set by the user.

FUNCTION	SECTION	DESCRIPTION
Auto Off	See section 5.2	Sets the auto power off function
Backlight	See section 5.3	Sets the backlight OFF BL backlight is off 1 BL backlight is automatic 2 BL backlight is always on

5.1 PARAMETER SETTING

- Press **[On/Off]** to turn the balance off.
- Press and Hold the **[Recall/Tare]** key and press the **[On/Off]** key to switch the scale on, the scale will show “grn-1.0 GRN” and then enter the parameter setting. The display will show "OFF PWR".

5.2 AUTO POWER OFF

The auto power off function helps conserve power, when using the batteries or AC adapter. The Auto switch-off time may be set up by the user and is the time after a period of inactivity i.e. no weight movement or key presses.

- 1) To set this parameter turn the power off press and hold the **[Recall/Tare]** key then press the **[on/off]** key once, then release the **[Recall/Tare]** key.
- 2) After a few seconds, the display will show the first function PWR
- 3) Press the **[S/P/CE]** key until you the display shows you XX PWR where XX is last setting
- 4) Press **[Recall/Tare]**to select the settings as follows:

Off PWR	Auto power off
10 PWR	10 seconds before the power will switch off
20 PWR	20 seconds before the power will switch off
30 PWR	30 seconds before the power will switch off
40 PWR	40 seconds before the power will switch off
50 PWR	50 seconds before the power will switch off
60 PWR	60 seconds before the power will switch off
70 PWR	70 seconds before the power will switch off
80 PWR	80 seconds before the power will switch off
90 PWR	90 seconds before the power will switch off

- 5) Press the **[S/P/CE]**key to confirm the setting
- 6) To exit turn the scale off and back on again

5.3 SETTING THE BACKLIGHT

The backlight may be enabled or disabled by the user. If the backlight is disabled, the battery life will be longer.

The following settings are available:

1 BL	Sets the backlight to operate automatically when a weight is placed on the scale or a key is pressed.
2 BL	Sets the backlight to be on at all times.
OFF BL	Sets the backlight to be off.

- 1) To set this parameter turn the power off press and hold the **[Recall/Tare]** key then press the **[On/Off]** key once, then release the **[Recall/Tare]** key.
- 2) After a few seconds, the display will show the first function PWR
- 3) Press the **[S/P/CE]** key until you the display shows you XX BL where XX is last setting
- 4) Press **[Recall/Tare]** to select the settings as follows 1 BL - 2 BL – OFF BL
- 5) Press the **[S/P/CE]**key to confirm the setting
- 6) To exit turn the balance off and back on again

6.0 CALIBRATION

Calibration may be required when the scale is initially installed or moved to a new location. Over time and use, mechanical deviations may occur so it is recommended that you calibrate your scale regularly.

Before calibrating you should make sure you have a suitable weight. The weights should be known to an accuracy that is appropriate for the balance being calibrated, for example, OIML Class M1 type or ASTM E617 Class 4. If you do not have proper weights do not attempt calibration.


Calibration weight: 500g, 1000g or 1500g.

- 1) To enter into the calibration parameter turn the power off and press **[S/P/CE]** and **[Recall/Tare]** keys together once during the self check sequence.
- 2) The display will show UnLOAD, remove any weight from the pan.
- 3) Press the **[Recall/Tare]** key to enter a zero value.
- 4) The value last used for calibration will be displayed. To select a different calibration weight, press the **[S/P/CE]** key. You can use either a 500g, 1000g or 1500g calibration weight.
- 5) Once you have selected the weight to use press the **[Recall/Tare]** key.
- 6) LOAD will be displayed, place the weight on the pan.
- 7) Once the stable sign is shown press the **[Recall/Tare]** key.
- 8) If the weight is within 5% of the last calibration the display will show PASS and exit the calibration routine. If the calibration is not successful the display will show FAIL and exit the routine, if the calibration fails try again.

7.0 TROUBLE SHOOTING

7.1 ERROR MESSAGES

If an error message is shown, repeat the step that caused the message. If the error message is still shown then contact your Adam Equipment dealer for support.

ERROR CODE	DESCRIPTION	POSSIBLE CAUSES	Solutions
ADO	A/D Value too high.	Weight on the pan when turning on. Improper calibration of the scale. Damaged load cell. Damaged Electronics.	Remove any weight from the stainless steel pan. Recalibrate.
ADL	A/D Value too low.	Pan is not installed when turning on. Calibration not correct. Damaged load cell.	Install pan and try power on. Recalibrate.
-----	A/D count is not correct when turning the scale on.	Load cell damaged. Electronics damaged.	Remove any weight from the stainless steel pan and try rebooting. Try calibrating the machine.
Unit-E	Unit error.		
	Low battery indicator.	Batteries may be flat.	Change the batteries.
FAIL	Calibration failure.	Incorrect mass used to calibrate. The user calibration is not within 5% of factory calibration. Possible damaged to loadcell.	Try to recalibrate, check that the weight used to calibrate matches that of the value of the scale.
	Unstable – machine cannot get a stable reading.	Possible damage to the mechanics / Loadcell. Possible poor and drafty location caused by airconditioner or next to open windows or doors.	Replace load cell by Adam Equipment dealer. Make sure the balance is on a flat surface and away from vibration and air movement.
	No Power when turning on.	Battery may be flat. AC adapter may not be working.	Change the batteries. Or use the AC adapter

7.2 REPLACEMENT PARTS AND ACCESSORIES

If you need to order any spare parts and accessories, contact your supplier or Adam Equipment. A partial list of the more common items follows:

Part Number	Description
4178	AC adapter USA plug 12VAC 150mA
9541	AC adapter UK plug 12VAC 150mA
9542	AC adapter Euro plug 12VAC 150mA
9543	AC adapter SA plug 12VAC 150mA
5099	AC adapter Australian plug 12VAC 150mA
9502	120 mm Stainless steel pan
9511	Draft shield lid
9510	Draft shield (without lid)
9306	In-use wet cover
8030	Security lock and cable

8.0 SPECIFICATIONS

Model #	CQT1751GR
Maximum Capacity	1750g
Readability	0.1g
Repeatability (Std Dev)	0.2g
Linearity ±	0.2g
Units of Measure	Grams and Kilograms per hectolitre
Stabilisation Time	2-3 seconds
Operating Temperature	0°C to 40°C 32°F to 104°F
Power Supply	12VAC @ 150mA adapter or 6x AA batteries
Calibration	Push button calibration using external mass
Calibration Mass	500g, 1000g or 1500g user selectable
Display	6 digit LCD, 18mm digits, with backlight
Draft shield (diameter x h)	132mm ø x 82mm (5.2" ø x 3.2")
Balance Housing	ABS Plastic
Pan Size	120mm ø (5.1" ø)
Overall Dimensions (w x d x h)	173 x 255 x 86mm (6.8" x 10" x 3.3") Without draft shield
Net Weight	820g (1.8lb)



Certificate of Calibration

This is to certify that the Core Balance™ series manufactured and distributed by Adam Equipment at the time of manufacturing passed calibration tests to the tolerances as outlined in the specifications section of this manual. Outside influences that may affect the calibration since that time may cause a change in the calibration data. We therefore recommend that a calibration is performed onsite and that regular calibration is undertaken.

Calibration Weights: The weights used to calibrate by the factory met ASTM / OIML standards and were accurate to OIML Class M1 / ASTM Class 4

Calibration Standards: Factory calibration was performed as described in the calibration section of this manual

9.0 WARRANTY STATEMENT

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 customer must inform the supplier or Adam Equipment. The company or its authorised Technician reserves the right to repair or replace any components at its own discretion. Any shipping costs involved in sending the faulty units to a service centre is the customers responsibility.

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 Laws of England and Wales. For complete details on Warranty Information, see the terms and conditions of sale available on our web-site.

Manufacturer's Declaration of Conformity

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

Electro Magnetic Compatibility Directive 2004/108/EC

Low Voltage Directive 2006/95/EC

Adam Equipment Co. Ltd.
Bond Avenue, Denbigh East
Milton Keynes, MK1 1SW
United Kingdom



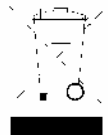
FCC COMPLIANCE

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 his 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

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 9001:2000 certified global company with more than 35 years experience in the production and sale of electronic weighing equipment.

For a complete listing of all Adam balances and balances visit our website at:

www.adamequipment.com

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All information contained within this publication is to the best of our knowledge timely, complete and accurate when issued. However, we are not responsible for misinterpretations which may result from the reading of this material.

The latest version of this publication can be found on our Website.

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