BCS

Digital Crane Scale

USER INSTRUCTIONS

Original Instructions

AWT 35-501402
Issue AE

Table of Contents

1 General Information and Warnings

1.1 About this Manual

This manual is divided into chapters by the chapter number and the large text at the top of a page. Subsections are labeled as shown by the 1 and 1.1 headings shown above. The names of the chapter and the next subsection level appear at the top of alternating pages of the manual to remind you of where you are in the manual. The manual name and page numbers appear at the bottom of the pages.

1.1.1 Text Conventions

Key names are shown in **bold** and reflect the case of the key being described. This applies to hard keys and onscreen or soft keys.

Displayed messages appear in ***bold italic*** type and reflect the case of the displayed message.

1.1.2 Special Messages

Examples of special messages you will see in this manual are defined below. The signal words have specific meanings to alert you to additional information or the relative level of hazard.

CAUTION!
This is a Caution symbol.
Cautions give information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

NOTE: This is a Note symbol. Notes give additional and important information, hints and tips that help you to use your product.

1.2 Safe Handling of Equipment with Batteries

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to local regulations.

Check the battery frequently. When the scale display flashes, charge the battery with its dedicated charger. See section for "battery maintenance" instructions.

1.3 Intended Use and Limits of Use

This crane scale is intended for the determination of mass by suspending a load from the scale's load receptor when used in conjunction with suitable lifting equipment (e.g., cranes, hoists) in industrial or commercial environments.

- The scale is for static weighing only.
- Operate only within the rated capacity and Safe Working Load (SWL) stated on the rating plate and in this manual. Overloading the scale will damage the loadcell and void the warranty.
- Personnel must remain clear of suspended loads at all times.

Do not use this crane scale for:

- Lifting or weighing loads that exceed the stated SWL.
- Dynamic weighing of swinging, vibrating, or impact-prone loads.
- Use in explosive or hazardous atmospheres.

Do not use the scale during thunder storms.

This crane scale has been structurally tested to 1.5 × SWL in accordance with Machinery Directive requirements for lifting accessories.

Any third party accessory must have an SWL equal to or greater than that of the crane scale.

Despite built-in safety measures, the following risks may remain:

- Falling loads if SWL is exceeded or attachment is incorrect.
- Swinging or rotating loads during lifting.
- Pinch points at shackle and hook interfaces.

If an accident, breakdown, or blockage occurs:

- Lower the load to a safe, stable position before intervention.
- Rotate the load rather than the scale if binding occurs.
- Do not attempt to free a jammed load while suspended.
- Refer to Section 6.2 (Troubleshooting) for error codes and safe recovery.- Do not attempt to repair the scale yourself. Contact your local representative.

1.4 Installation, Operation, and Maintenance Guide

The BCS crane scale shall be assembled, installed and operated in accordance with the manufacturer's instructions.

The crane scale meets stability requirements when:

- Operated within rated capacity and SWL.
- Suspended from an appropriate lifting device.
- Stored in a stable, dry location when out of service.

During assembly, dismantling, testing, or foreseeable breakdown, secure the load path and ensure no personnel are positioned beneath the scale or suspended load.

Before first use:

- Verify that the crane scale is correctly mounted and secure
- Inspect the shackle and hook. Check clips, pins and screws regularly.
- Charge the battery using the power supply provided in the product box.
- See section 5 for installation and correct loading.

Transport and Storage

- Use lifting eyes or handles for manual handling to avoid injury or damage.
- Do not leave a load on the scale when not in use. This will decrease the scale's accuracy and shorten the loadcell life.
- Store in a clean, dry, vibration-free environment
- Hang scale while in storage in dry and well-ventilated room.

Adjustment and Maintenance

- Only trained personnel should perform adjustments or calibration.
- Preventive maintenance includes visual inspection of load-bearing components before each use, cleaning of the housing, and periodic calibration checks.

When maintaining the crane scale:

- Disconnect power (if applicable).
- Remove from lifting equipment and place on a stable surface.
- Wear appropriate PPE.

Only manufacturer-approved spare parts shall be used, as these directly affect safety and performance.

Use of non-approved parts invalidate warranty.

IMPORTANT: This equipment must be routinely checked for proper operation and calibration.
Application and usage will determine the frequency of calibration required for safe operation.

1.5 Training and Protective Measures

Operation, maintenance, and calibration must be carried out by competent, trained personnel in accordance with the manufacturer's instructions and applicable regulations.

Operators must be trained in:

- Safe rigging and lifting practices.
- Scale operation, including tare and zero functions.
- SWL limitations and static weighing requirements.

To avoid the risk of RSI (Repetitive Strain Injury), place the machine on a surface which is ergonomically satisfactory to the user. Take frequent breaks during prolonged usage.

The operator shall:

- Wear suitable PPE (safety helmet, steel-toe footwear, gloves, high-visibility clothing).
- Keep the work area clear of unnecessary personnel.
- Use tag lines to control suspended loads where appropriate.

1.6 FCC and EMC Declarations of Compliance

This is a Class B device.

1.7 Declaration of Conformity

2 Introduction

2.1 Features

The Brecknell BCS crane scale, featuring Dual Range technology, is a robust, high-capacity weighing instrument designed for accurate measurement of suspended loads in industrial and commercial environments. Built with a durable load-bearing structure and easy-to-read display, the BCS delivers reliable performance for static weighing applications. Suitable for use with cranes, hoists, and other lifting devices, the scale is engineered to meet strict safety and quality standards, combining precision, strength, and operator-friendly controls in a compact design.

2.2 Specifications

Tare Range	100% F.S.
Zero Range	4% F.S.
Stable Time	≤10sec
Overload	100% F.S. + 9e
Safety Load	150% F.S.
Ultimate Load	400% F.S.
Battery	6V/4.0Ah lead acid rechargeable battery
Charger	9VDC/1000mA output (part number AWT05-100561)
Display	35mm (1.4inch) LED module
Operating Temp.	-10°C ~ +40°C
Operating Humidity	20°C ≤90%

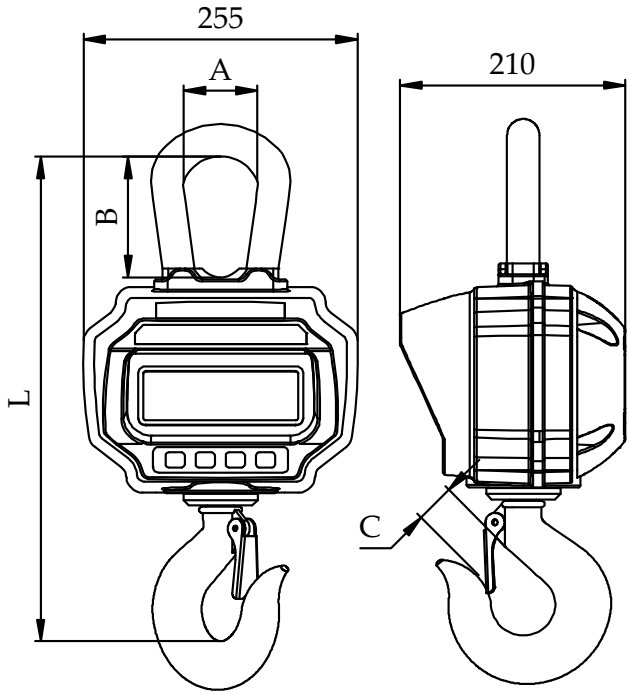
2.3 Capacity

Model	Dual Range Capacity x Resolution	Minimum Load	Maximum Capacity	SWL
BCS-3000	0-1000 kg x 0.5 kg / 1000-3000kg x 1 kg 0- 2000 lb x 1lb / 2000 - 6000lb x 2lb	20kg (40 lb)	3,000 kg (6,000 lb)	3,600 kg
BCS-5000	0-3000 kg x 1 kg / 3000-5000kg x 2 kg 0- 6000 lb x 2lb / 6000 - 10000lb x 5lb	40kg (80 lb)	5,000 kg (10,000 lb)	6,000 kg

Low-Capacity Range Accuracy: +/-6d

High-Capacity Range Accuracy: +/-3d

2.4 Dimensions and Weight



Model	A	B	C	L	Net Weight
BCS-3000	68mm (2.67”)	112mm (4.41”)	40mm (1.60”)	420mm (16.54”)	11.0kg (24.25 lb)
BCS-5000	68mm (2.67”)	112mm (4.41”)	45mm (1.77”)	450mm (17.71”)	12.5kg (27.56 lb)

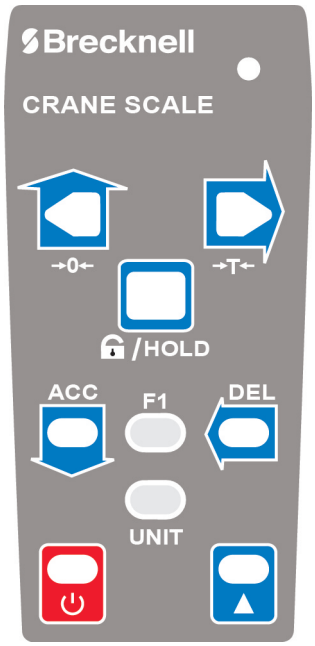
2.5 Operation Keys and Display

2.5.1 Scale Keys

Keys	Key Name	Function
	On/Off	Press 1s to power on/off scale Return to weighing mode
	Zero	Manual Zero Increase flashing digit
	Tare	Tare in/out Right scroll flashing digit
	Hold	Lock/unlock reading Confirm

IMPORTANT! Do not use sharp objects such as screwdrivers or long fingernails to operate the keys.

2.5.2 Remote Keys



Keys	Key Name	Function
	Zero	Same as →0← ZERO
	Tare	Same as →T← TARE
	Hold	Same as HOLD
	Accumulate	Accumulate weight Decrease flashing digit
DEL	Delete	Delete last weight Clear all weight Left scroll flashing digit
F1	F1	View Input decimal point
UNIT	Unit	Unit switching
	Off	Press 1s to power off Return to weighing mode
	2nd	2nd function.

2.5.3 Display Annunciators

Annunciator	Name	Note
STB.	Stable	lit when weight is stable
ZERO	Zero	lit when weight is at zero
TARE	Tared	lit when scale is tared
HOLD	Hold	lit when scale weight is locked
lb	lb	lit when unit is lb
kg	kg	lit when unit is kg

2.5.4 Displayed Messages

Message	Description	Note
-----	detect weight	
||||?	in Idle Mode	
Setup	SETUP	User Setup Menu
Bat??	BATtery	battery life percentage
P0000	Password	in Password Mode
|end|	END	save and exit
|off|	OFF	power off
|over	OVERload	overloading
|2nd|	2ND	2nd function
|err|	ERRor	invalid operation
|acc|	ACCumulate	accumulate weight
|del|	DELete	delete last weight
|Clr|	CLeaR	delete all weight

3 Operation

The BCS crane scale is designed for the weighing of suspended loads in industrial, commercial, and logistics environments. It is intended to be used in conjunction with appropriate lifting equipment (e.g., cranes, hoists) to measure the mass of goods or materials while suspended. The scale should only be used by trained personnel and within its rated capacity and environmental specifications. It is not intended for use in hazardous environments, or in applications requiring legal-for-trade certification.

3.1 Power On/Off

1. Press ON/OFF for 1 second to power-on scale.

   Scale performs initialization and power-on test, ***** shows twice. Next the display shows the capacity, battery life percentage, weight detection, and then auto zero.

NOTE: For information about Auto-Zero, refer to Scale Configuration in Technical Manual.

2. Press ON/OFF or  for 1 second to power-off scale.

   Battery life percentage ***bat90*** is displayed, off message **|*off*|** is displayed, and then the power turns off.

3.2 Zero

Press ZERO or  to zero. The ZERO light will turn on.

If load is in motion, tared, or out of Manual-Zero Range, **|*err*|** is displayed.

NOTE: For information about Manual-Zero Range, refer to Scale Configuration in Technical Manual.

3.3 Tare In/Out

1. In gross mode, press TARE or → to tare in. TARE light will turn on.

   If load is in motion, negative value, or out of Tare Range; **|*err*|** is displayed.

*NOTE: Tare will reduce the apparent overload range of scale. For example, if a 5000*2kg scale has a 1000kg container as its tare, the scale will overload at a new weight of 4018kg (5000 - 1000 + additional 9 divisions).*

2. In net mode, press TARE or → to tare out. TARE light will turn off.

3.4 Lock / Unlock

1. Press HOLD or ▢ to lock screen. HOLD light will turn on.

2. Press HOLD or ▢ to unlock screen. HOLD light will turn off.

3.5 Accumulate

Press M to accumulate current weight.

|*acc*| is displayed, indicating weight is accumulated. Scale uses displayed weight, so gross or net weight is added into the same accumulator.

If load is in motion, or negative, or does not return to zero before, **|*err*|** is displayed.

3.6 View

1. Press M to enter View mode.

   Display flashes accumulated weight.

2. Press HOLD or ▢ to view high 5-digit or low 5-digit.

3. Press ON/OFF or ⏻ to exit View mode.

3.7 Delete Last Weight

Press  to delete last accumulated weight.

|*del*| is displayed, indicating last accumulated weight is deleted. The Delete function will only delete the last weight.

If last accumulated weight has been deleted, **|*err*|** is displayed.

3.8 Clear All Weight

Press  first and then press  to clear all accumulated weight.

|*clr*| is displayed, indicating all weight is cleared.

3.9 Unit Switching

Press  to switch unit in between kg, lb, and User Unit.

When unit is kg, kg LED light on. When unit is lb, lb LED light on. When unit is User Unit, kg and lb all lights are off.

NOTE: For more information about User Unit, refer to Scale Configuration in Technical Manual.

4 User Menu

4.1 Access User Setup Menu

Press ⏻ first and then press HOLD or ▢ to enter User Setup menu. ***Setup*** is displayed.

4.2 Parameters

4.2.1 Auto-Off Timing

1. Press HOLD or ▢ to enter Auto-Off Timing. ***off??*** is displayed.
2. Press ZERO or ⌂ and ▭ to change timing value.

   Auto-Off Timing can be set to: 0(disabled), 5(5min), 10(10min), 15(15min), 30(30min), 60(60min). It is disabled by default.

NOTE: Auto-Off function maximizes scale's battery life. Auto-Off starts countdown timer when there's no action or load is stable. Any key pressing or motion in load restarts countdown timer.

4.2.2 Display Brightness

1. Press HOLD or ▢ to enter Display Brightness. ***br||?*** is displayed.
2. Press ZERO or ⌂ and ▭ to change brightness value.

   Display Brightness can be set to:1(dim), 2(normal), 3(bright).

NOTE: Dim LED brightness saves battery power dramatically.

4.2.3 Idle Mode Timing

1. Press 

or  to enter Idle Mode Timing. ***idl??*** is displayed.

2. Press 

or  and  to change timing value.

   Idle Mode Timing can be set to: 0(disabled), 5(5sec), 10(10sec), 15(15sec), 30(30sec), 60 (60sec). It is 30sec by default.

   To maximize battery life, scale automatically enters Idle Mode, when there's no action or the load is stable. In Idle Mode, scale works in low-power consumption status. Any key pressing or motion in load wakes up scale from Idle Mode.

3. Press 

or  to exit User Setup.

5 Connection and Installation Instructions

5.1 Correct Loading

The following drawings illustrate how to load and how not to load the crane scale.

Use hardware that creates single point attachments. Refer to Figure 5.1.

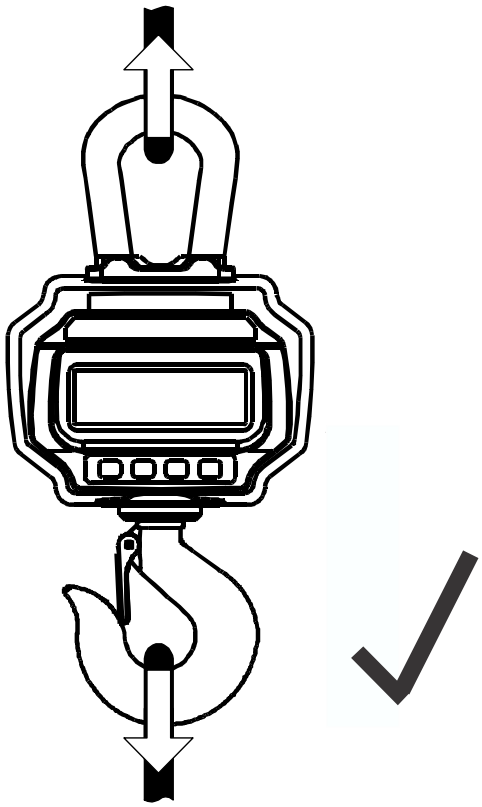


Figure 5.1 Correct Crane Scale Loading

5.2 Incorrect Loading

The following drawings demonstrate incorrect crane scale loading.

- DO NOT attach oversized interface! Refer to Figure 5.2.

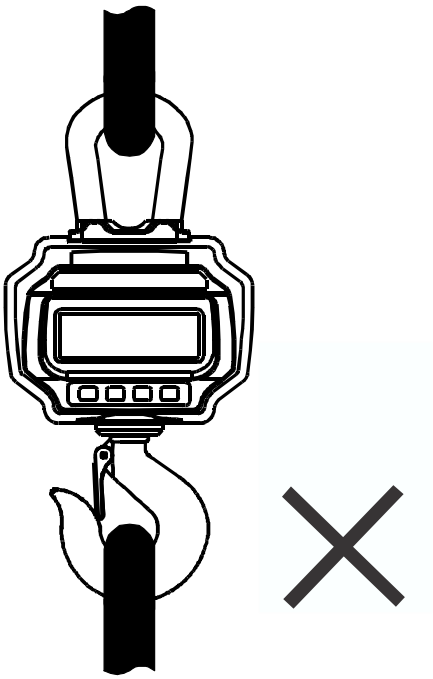


Figure 5.2 Oversized Interface Attachment

- DO NOT push/pull on loaded scale or directly on hook! Refer to Figure 5.3

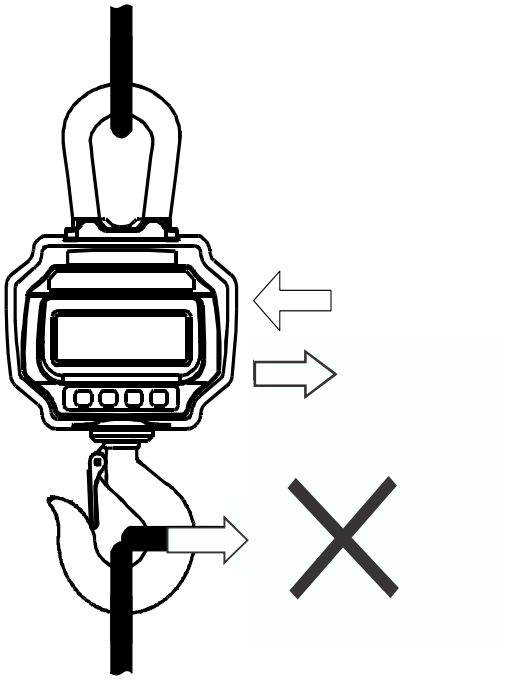


Figure 5.3 Side Stress on Hook

- DO NOT use multiple attachments! Refer to Figure 5.4.

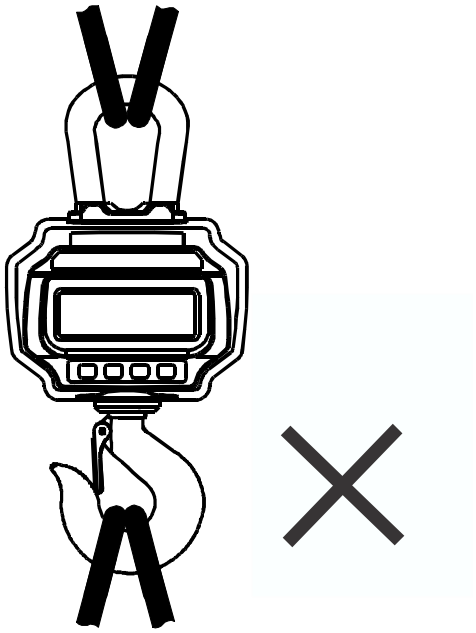


Figure 5.4 Multiple Attachments

6 Maintenance and Troubleshooting

6.1 Battery Maintenance

To maximize battery life, please note the following battery maintenance guide.

- This scale is powered by a 6V4.0Ah rechargeable lead-acid battery.
- The battery is permanently fixed inside battery housing.
- Depending on LED brightness and idle mode settings, the battery works from 60 hours to 200 hours.
- In order to conserve battery life, enable Auto-Off and Idle Mode, dim LED brightness.
- Charging time for a completely discharged battery is approximately 12 hours.
- To obtain maximum service life, battery should be stored between -20° (-4°F) and +50° (122°F). Stored batteries should be recharged every three months.
- While charging, the red LED indicates charging in progress, while the green LED indicates fully charged.

6.2 BCS Battery Replacement

The battery of the Brecknell BCS crane scale series can be replaced by following the instructions below.

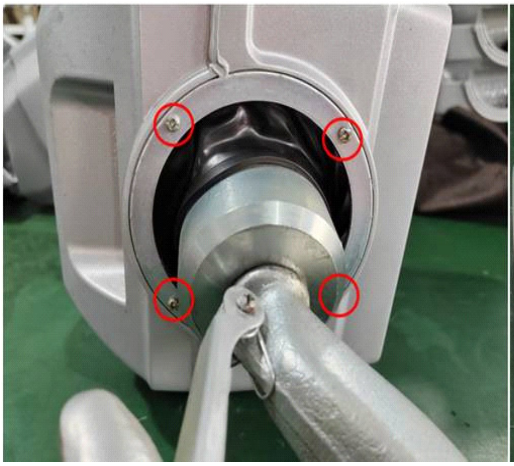
Before starting:

Disconnect the device from the mains

Have on hand a fully charged 6V 4Ah rechargeable lead acid battery.

Note: Always replace batteries with new ones of the same type to prevent electrical hazards. Dispose of used batteries responsibly in accordance with local regulations.

1. Remove the four screw from the bottom of the case and the six on the rear of the housing.



2. Carefully open the housing, and disconnect the black and red wires that are attached to the display/PCB board.

3. Unfasten the battery and carefully disconnect the black and red wires that are attached to the battery

4. Replace the battery and connect it.

5. Secure the to the housing, attach the display/PCB board and reassemble the housing.

6.3 Troubleshooting

Refer to the table below for possible symptoms and solutions. If problems still exist, please contact your local representative.

Symptom	Possible Cause	Suggested Solution
will not power-on after On/Off is pressed	discharged / defective battery	check battery and charge
	defective On/Off key	press harder and keep pressing 2s
	defective power cable	open front panel, check power cable
	defective mainboard	contact representative
display flashes	discharged battery	charge battery
no action taken after key pressed	defective key	contact representative
weight reading not stable	load in motion	keep load stable
	weak Anti-Motion	change Anti-Motion level
	damp loadcell or mainboard	dry loadcell or mainboard
	defective mainboard	contact representative
weight reading not zero when no load	discharged battery	charge battery
	loadcell stressed too long	hang scale in storage
	discharged battery	charge battery
large error in weight reading	scale not zeroed before applying load	manual Zero scale before loading
	wrong weigh unit	switch to correct unit
	scale requires calibration	calibrate scale
	defective loadcell or mainboard	contact representative
battery can not be recharged	defective charger board	contact representative
	defective battery	contact representative
short remote control distance	discharged / defective remote battery	replace remote control batteries

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