

LOAD CELL USER MANUAL

RRI-S | RRI-C | RRI-T



# FRONT COVER

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# INTRODUCTION

Red Rooster Tensile Load Cells are manufactured to the highest standards. Cells from 2-500 tonne are manufactured using high strength, low weight duralloy with a grey anodised finish.

High quality 'micro measurement' strain gauges are used throughout the range; resin bonded to the inner faces in laboratory conditions and sealed.

Larger capacities are available and manufactured to order.

Our range of handsets are designed to be user friendly while at the same time giving the highest degree of accuracy. The 'RRI' range of handsets is based on the proven reliability of our 'SWLD' and 'SWLT' handsets but with many new features and vastly reduced handset size.

Our range includes:

SELF-INDICATING RRI-S

REMOTE INDICATING RRI-C (Cabled) (Standard 10 metres) TELEMETRY RRI-T using 433 MHz and 900 MHz

(The ISM bands defined by the ITU-R are Region 1 comprising of Europe, Africa, the Middle East west of the Persian Gulf including Iraq, the former Soviet Union and Mongolia)



#### SAFETY INSTRUCTIONS

#### INSTRUCTIONS FOR THE SAFE USE OF LOAD CELLS

The information in this leaflet should be passed to the user of the equipment.

The contents of this section are for the guidance of personnel using load links and in no way replace. Health and Safety Regulations or replace the need for the user to carry out risk assessments and method statements required to operate this equipment and meet individual company requirements in respect of their use.

#### LOAD CELL CHECKS:

- Ensure that the load cell rigging gear is of an equal or greater capacity than the load to be applied.
- Ensure that the rigging gear fits correctly into the cell.
- Ensure that the load runs through the centre of the cell.
- Ensure the operator is in a position so that the display can be read clearly.
- Ensure the load cell operates correctly and that the cable cannot be snagged during use.

#### WHEN IN USE

- The load is to be constantly applied in a linear manner with no twisting load applied to the load cell.
- The load cellz should not be dropped.
- No snatch load should be applied to the load cell.
- The load cell should not be immersed and the handset should be protected in severe weather.

## SAFE OPERATION

- Test run the equipment prior to the application of a load and ensure that its control and safety devices are in place and functioning correctly.
- Ensure that only properly trained and authorised personnel operate the equipment.
- Ensure that the load is securely supported by certified and inspected lifting gear with an equal or higher SWL than the load to be applied and that the load cannot "escape" whilst being lifted.
- Stand clear of the load when lifting and lowering.
- Ensure that other personnel cannot enter the immediate area where the lift is taking place.
- Never leave an unattended suspended load.
- If it is not possible to site the operator where the load can be seen at all stages then a "banksman" is to be used and a reliable method of communication established.
- If you suspect that any of the equipment is faulty STOP the lifting operation immediately. Make the area safe, rest the load and seek advice of a superior or safety officer.



### SELF INDICATING LOAD CELL - RRI-S

#### 1.1 **RRI-S SPECIFICATION**

#### **DISPLAY SPECIFICATION**

- Protection Unit is Splash Proof IP65
- $\triangleright$ Display - 6 digit 11mm high LCD Display
- Self Diagnostic
- Auto conversion Tonne to Kilograms or Pounds to US Ton (dependant on calibration mode)
- $\triangle \triangle \triangle$ Non corruptible single point calibration
- Battery Life: Up to 24 hours continuous use
- Functions - On / Off, Tare, Zero, Units, Peak Hold
- **>** Powered by 6 x AA batteries
- Option Rechargeable battery

# RRI-S AVAILABLE RANGE

2T, 5T, 10T & 25T as standard. Other capacities upon request

## OPERATING INSTRUCTIONS - RRI-S

- Ensure that the cell battery is full before use. 1.2
  - Pressing the POWER key, when on, will display the battery condition (9V would be a typically fully charged battery 7.2v would indicate a battery that requires replacing). In conjunction with this facility a "dot" will appear on the left hand side of the screen when the battery is low.

If the display is showing a reading when unloaded then press the ZERO key if key is held for more than 5 seconds display will switch OFF.

- TARE
  - To tare the display after fitting rigging gear or tackle press the TARE key. To un-tare press the TARE key a second time.

For factory programming only

- - When the unit is calibrated WITH a decimal point (usually to 2 digits ) pressing the F2 will alternate between Tonne (te) and Short Ton (TN) THIS SHOULD BE NOTED BY THE USER because if the F2 key is pressed during a lift it will carry out the conversion.
- - When the unit is calibrated WITHOUT a decimal point pressing the F2 will alternate the readings between Kilogramme (Kg) and Pounds (Lbs) THIS SHOULD BE NOTED BY THE USER because if the F2 key is pressed during a lift it will carry out the conversion
- STOP INSTRUCTIONS

Press and Hold the Off / Zero key

CHARGING (if rechargeable)

Using Mascot Smart Chargers.

A small enunciator will flash on the display indicating that unit requires charging. Connect the charger to the unit, connect the charger to the mains supply and switch on.

BE SURE TO REFIT CAP ONTO LOAD LINK AFTER CHARGING

Charger LED Colour Codes

RED = Power on at Charger

YELLOW = Charger Initializing (if light stays YELLOW = not charging / no battery found) ORANGE = Fast Charging ( Low Battery )

YELLOW/GREEN (Intermittent) = Top - Up Charge

GREEN = Charge Complete / Trickle charge continuing

ORANGE/GREEN (Intermittent) = Fault

The charger is fitted with an electronic timer once charging has completed the Mains to the

Charger MUST be switched OFF to reset the timer.

Lithium battery voltage of 8.3v = 100 % of full charge

DO NOT STORE THESE LOAD CELLS EITHER SWITCHED ON. OR WITH A DISCHARGED BATTERY



# **GENERAL NOTES - RRI-S**

1.3 Check voltage and test the unit BEFORE incorporating into a lifting application.

A full battery will give approximately 24 hours continuous use

Always switch the Unit on before applying a load.

Proof Loading: Your load cell will have been proof loaded prior to gauging, once the gauges have been bonded to the cell the proof load should not be applied again.

# PARTS LIST - RRI-S

1.4

ITEM	STOCK NUMBER	DESCRIPTION	QTY	
1	SLB/5/10/25	Load cell body	1	
2	RRI-S-FP	Fron panel for self indicating board	1	
3	DISPLAY/MEM/PANEL	Membrane panel	1	
4	SWL/50T/FP	Perspex screen	1	
5	RRI-ALL-RP	Rear panel	1	
6	UTS14DCGE	Socket cap - F	1	
7	UTSO14E7S	Rear socket (charging)	1	
8	LL/SWL/BASIC	Load cell PCB	1	
9	MGL2807	Lithium-Ion battery	1	
REPLACEABLE BATTERY OPTION				
10	RRI-AA-RP-R	Rear panel	1	
11	RRI-AA-TP-R	Battery cover	1	
12	AA/BATT	Alkaline Batteries	6	

# FAULT FINDING - RRI-S

1.5 Enunciator on display flashes. Battery needs charging / replacing

L-CELL on display means link or gauging is faulty - Return to manufacturer

If the display reads "TOP" the preset load limit on the circuit board has most likely been exceeded and this may have caused damage to the Link strain gauges.

Remove excess load switch the display OFF switch ON and try again (you may have to press "ZERO") Contact Manufacturer

FACTORY "TOP" SETTINGS
Factory set to 10% of load cell capacity.



### REMOTE INDICATING LOAD CELL - RRI-C

#### 21 **RRI-C SPECIFICATION**

#### **DISPLAY SPECIFICATION**

- Display 8 digit 8mm high LCD Display
- Display Enclosure: Splash Proof (IP65 with cap fitted)  $\triangleright$
- Weight 270g, Units Tonne, KG, Ton, and Lbs
- $\triangle \triangle \triangle$ Microprocessor based digital electronics.
- Temperature range -10 to + 40 Deg C
- The IKON-MTX handset is powered by: 3 off 'AA' Alkaline batteries. The IKON-X handset is powered by 4 x 'AA' Alkaline batteries. The batteries should give a minimum 50 hours in continuous use. Battery life is approximate and will depend on type used and

## **FEATURE**

On / Off, Tare, Peak hold, Low battery indicator, Battery level indicator, Zero, 10 mtr cable, and Robust case.

#### **OPTION**

Serial output settings can be configured for PC Output (RS232), Print Output to a standalone printer or computer software, or Auto Turn Off after 5 minutes of non use.

#### **CALIBRATION**

This is accessed using a keypad routine. (refer to manufacturer)

#### RRI-C AVAILABLE RANGE

2T, 5T, 10T, 25T, 50T, 100T, 150T, 200T, 300T, 400T AND 500T

### OPERATING INSTRUCTIONS - RRI-C

#### 2.2 KEYBOARD CONTROLS

BOTTOM KEY (ENTER): It is used as a power on switch, and whilst in weighing mode, will show the battery status. TOP KEY (DATA): In normal operation this key is used to access function changes such as peak hold or unit change. KEY LEFT (TARE): used to tare the display or clear a tare if present. RIGHT KEY (ZERO/OFF): used to zero the weight display. Holding the button will switch off the unit.

- Connect the cable to the remote display (if your load link was supplied with an extension lead then ensure that it is also attached). Ensure correct alignment of plug and socket (this is indicated by a cutaway on the socket and a matching key on the plug) gently push home the plug and firmly screw home. Switch on the power (bottom key) then press and hold to show the battery level. Battery condition is shown as percentage from 100% down in steps, 80%, 60%, 40%, 20%, and 10%. If the battery level is 20% you should consider replacement, at 10% replace immediately.
- **ZERO**

This references the display to a zero reading, press for no longer than 1 second and then release to zero the unit; keep the key pressed until the display prompts off.

TARF

Tare is used to remove the weight of (for example) slings or a spreader beam so the weight displayed is the actual weight of the goods being lifted. If a tare is present the unit symbol will change to 'nt' in order to indicate net weight.

If the indicated weight exceeds the previously set top/overload figure then 'TOP' will be displayed. The unit's symbol will also flash if the battery is low.

PEAK HOLD

In this mode all leading zeros will be shown and the highest weight value will be displayed ie, 500kg will be shown as 00500kg or 12.5T will be 012.500Te

**AUTO OFF** 

Auto Off (if enabled) powers down the unit after 5 minutes of non-use. (Optional)

PRINT MODE / PC OUTPUT

This option will only be available if ordered at time of purchase. Output can be retro-fitted to some existing handsets if required. To enable the printer output, press 'page' key until PRINT is displayed, then press the 'On / Enter' key. If the unit is connected to a printer it will then print the load shown at the time.

To enable PC output, press the 'Page' key until PC ON is displayed, then press the 'On / Enter' key. This will turn on the RS232 output. Ensure the software is installed on the PC following the instructions carefully and once the display is connected to the PC the logging software will show the current load.

Instructions for the data logging software are located on the USB drive supplied with the product.



# **GENERAL NOTES - RRI-C**

- 2.3 Always assemble the load cell cable and handset with care avoiding twisting and kinking of the cable and without applying undue force
  - Check handset voltage and test the assembled system BEFORE incorporating into a lifting application.
  - New AA Alkaline batteries should give a minimum of 50 hours battery life. And approximately 1 month in sleep mode.
  - $\Delta\Delta\Delta\Delta\Delta\Delta\Delta\Delta$ If the system calibration certificate specifies a Cable length then this cable length must be used to retain accuracy of the unit.
  - Always switch the handset on before applying a load.
  - The load cell handset is unique to the Load link and cannot be interchanged. Refer to Calibration Certificate for serial numbers.
  - The handset cannot be tested without being firstly connected to its matching load cell.
  - PROOF LOADING

Your load link will have been proof loaded prior to gauging, once the gauges have been bonded to the link the proof load should not be applied again.

# PARTS LIST - RRI-C

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ITEM	STOCK NUMBER	DESCRIPTION	QTY
1	SLB/5/10/25/50/100/150/200/300/400/500	Load cell body	1
2	RRI-C-FP	Fron panel	1
3	RRI-ALL-RP	Rear panel	1
4	UTS14DCGE	Socket cap - F	1
5	UTSO14E7S	Rear socket (charging)	1
6	IKON-CABLED	Handset	1
7	IKON - 10M CABLE	10 metre cable	1
8A	AA/BATT	AA Alkaline batteries - IKON-MTX	3
8B	AA/BATT	AA Alkaline batteries - IKON-X	4
9	384-1224	Handset Socket	1

# FAULT FINDING - RRI-C

- 2.5 Battery requires replacing
  - $\triangleright$ Connections from load cell to handset
  - Look for corrosion or water ingression in connector plugs
  - Cable integrity

FACTORY "TOP" SETTINGS

Factory set to 10% of load cell capacity.



#### TELEMETRY LOAD CELL - RRI-T

#### 3.1 **RRI-T SPECIFICATION**

#### **DISPLAY SPECIFICATION**

- Display: 8 digit 8mm high LCD Display  $\triangleright$ Display Enclosure: Splash Proof (IP65) Weight 270g, Units - Tonne, KG, Ton, and Lbs
- Microprocessor based digital telemetry electronics, temperature 10 to + 40 Deg C
- Transmitter fitted in load cell and receiver fitted in Handset
- Cell Powered by: 3 x 'AA' Alkaline batteries (rechargeable Lithium-ion battery pack & charger optional)
- $\Delta\Delta\Delta\Delta\Delta\Delta\Delta\Delta\Delta\Delta\Delta$ The IKON-MTX handset is powered by: 3 off 'AA' Alkaline batteries. The IKON-X handset is powered by 4 x 'AA' Alkaline batteries. Battery life: 50 hours continual, stand-by mode greater than one year. Battery life is approximate and depends on type used and
- conditions.
- Display features an auto off function, this will automatically turn off both the display and load cell after a set period of inactivity.
- Charging Time (for rechargeable model only) using Mascot Charger 3 to 4 hours or until light goes Green See charging notes.
- Radio Telemetry Frequency 433 MHz and 900 MHz
- Range between display and load cell is 100 metres using an internal antenna, 200 metres using an external antenna (depending on local conditions) Lower frequency modules are more tolerant to urban use.
- **>** Up to 99 preset channel codes to prevent interference, depending on model.

#### **FEATURE**

On / Off, Tare, Zero, Peak hold and Overload Check.

#### **OPTION**

Serial output with settings for pc output or printer output.  $\triangleright$ 

# CALIBRATION

This is accessed using a keypad routine and calibration tool (refer to manufacturer)

## RRI-T AVAILABLE RANGE

2T, 5T, 10T, 25T, 50T, 100T, 150T, 200T, 300T, 400T AND 500T

# **OPERATING INSTRUCTIONS - RRI-T**

#### 3.2 **>** KEYBOARD CONTROLS

BOTTOM KEY (ENTER/ON): The unit will show 88888 and then briefly show the id number. The display will show 'wait 20s' after this period the weight will be shown. If the message remains or if the display shows 'NO TX' this indicates that the radio link is not operating and you should check the transmitter is switched on and the hand set is not out of range. When the unit is in normal weighing mode press this key to view receiver and transmitter battery condition. First press shows - RX (handset) then release and cell is shown (TX) This is shown as a percentage and it is recommended to change batteries when at 20%

TOP KEY (PAGE): First press prompts units (if enabled), second press prompts print, press enter to accept an option or press page repeatedly to exit.

KEY LEFT (TARE): Auto tares the display, second press clears the tare

RIGHT KEY (ZERO/OFF): This references the display to a zero reading, press for no longer than 1 second and then release, to switch off the unit keep the key pressed until the display prompts off.

- Ensure that both the handset and the cell batteries are full before using ( if using the rechargeable option then ensure cell is charged.
- To switch on the unit firstly switch on the cell by pushing the small black switch (to the inner position)
- When the transmitter (cell) is communicating with the hand set the display will show the current load. If transmission is broken then the display will show 'NO TX'. When transmission returns the display will read the current load on the cell.

#### $\triangleright$ STOP INSTRUCTIONS

Press the black switch on the cell (to the outer position)

Check that the Transmitter is switched OFF by checking that the display shows 'NO TX'

Press and hold the OFF key until the display blanks.

To put the cell in to stand-by mode, press and hold the OFF key on the display, this will firstly place the load cell into stand-by mode then switch itself off.

To start using the equipment again, switch the display on, this will wake the load cell and normal weighing operation can resume. It can take up to 20 seconds to wake up.



#### **OPERATING INSTRUCTIONS - RRI-T**

- Ensure the cell power button is in the out (off) position before attempting to charge. 32
  - $\triangleright$ LOAD CELL CHARGING (applicable only to rechargeable models) Using Mascot Chargers. Connect the charger to the unit, connect the charger to the mains supply and switch on.

# BE SURE TO REFIT CAP ONTO LOAD LINK AFTER CHARGING

Charger LED Colour Codes RED = Power on at Charger YELLOW = Charger Initializing (if light stays YELLOW = not charging / no battery found) ORANGE = Fast Charging (Low Battery) YELLOW/GREEN (Intermittent) = Top - Up Charge GREEN = Charge Complete / Trickle charge continuing ORANGE/GREEN (Intermittent) = Fault

The charger is fitted with an electronic timer once charging has completed the Mains to the Charger MUST be switched OFF to reset the timer.

Lithium battery voltage of 4.2v = 100 % of full charge

Battery condition of the handset and the cell is shown as a percentage from 100% down in steps, 80%, 60%, 40%, 20%, and 10%. The IKON-MTX handset is powered by: 3 off 'AA' Alkaline batteries and the IKON-X handset is powered by 4 x 'AA' Alkaline batteries. which you should consider replacing at a battery level of 20%, at 10% you should replace immediately.

The cell can be powered by 3 x 'AA' batteries which you should consider replacing at a battery level of 20%, at 10% you should replace

If using a rechargeable load cell, the battery will require charging at 10%

(See KEYBOARD CONTROLS) Press 'page' twice followed by enter (On Key)

# GENERAL NOTES - RRI-T

- 3.3 Always check the full operation of the transmitter and receiver before assembling into a lifting application.
  - Always check the battery condition at transmitter and receiver before use.  $\triangle \triangle \triangle \triangle \triangle$
  - A full charge of both units will give approximately 50 hrs continuous use or greater than one year in sleep mode.
  - Always switch the load cell and handset ON before applying a load
  - The load cell handset is unique to the Load cell and cannot be interchanged. Refer to Calibration Certificate
  - The handset cannot be tested without being firstly connected to its matching load cell.

Your load cell will have been proof loaded prior to gauging, once the gauges have been bonded to the cell the proof load should not be applied again.

RECHARGEABLE = LITHIUM-ION BATTERY PACK

The Lithium – ion battery pack type No80052 has passed the UN-T1-T8 tests and may be shipped as excepted from these regulations. Lithium equivalence 1.32g



# PARTS LIST - RRI-T

3.4

ITEM	STOCK NUMBER	DESCRIPTION	QTY
1	SLB/5/10/25/50/100/150/200/300/400/500	Load cell body	1
2	RRI-T-FP	Fron panel	1
3	RRI-ALL-RP	Rear panel	1
4	UTSO14E7S	Rear socket	1
5	UTS14DCGE	Socket cap - F	1
6	MTX-CHARGER	Mascot charger (rechargeable models only)	1
7	AA/BATT	AA Alkaline batteries - IKON-X Handset	4
8	IKON-X	Telemetry handset	1
9	MGL2804	Rechargeable lithium-ion battery (built into cell)	1
10	RRI-AA-RP-R	AA battery back plate	1
11	RRI-AA-TP-R	Battery cover	1

# **FAULT FINDING - RRI-T**

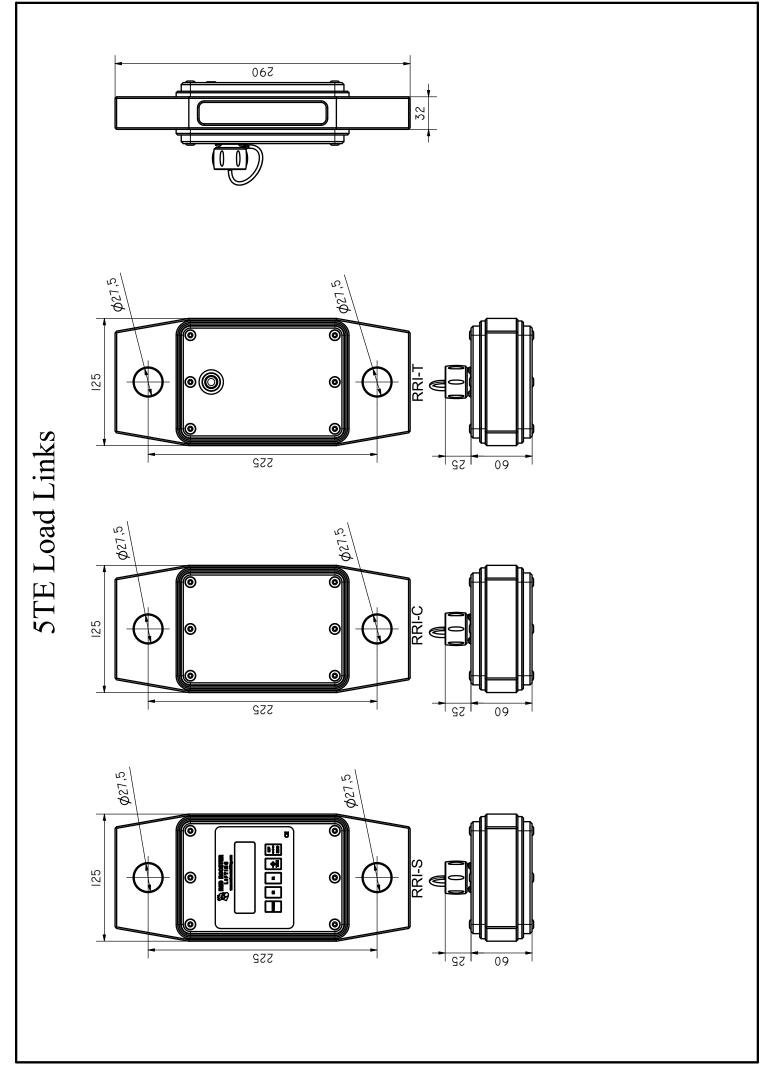
3.5 If the display produces random changes or fails to respond to commands, check that no other transmitter is operating on the same channel ID. If the display box shows 'NO TX' check that the transmitter is on by checking that the power button in the cell is pushed in. If the transmitter is on move the receiver closer to the transmitter. If it does not resolve the problem then contact red rooster.

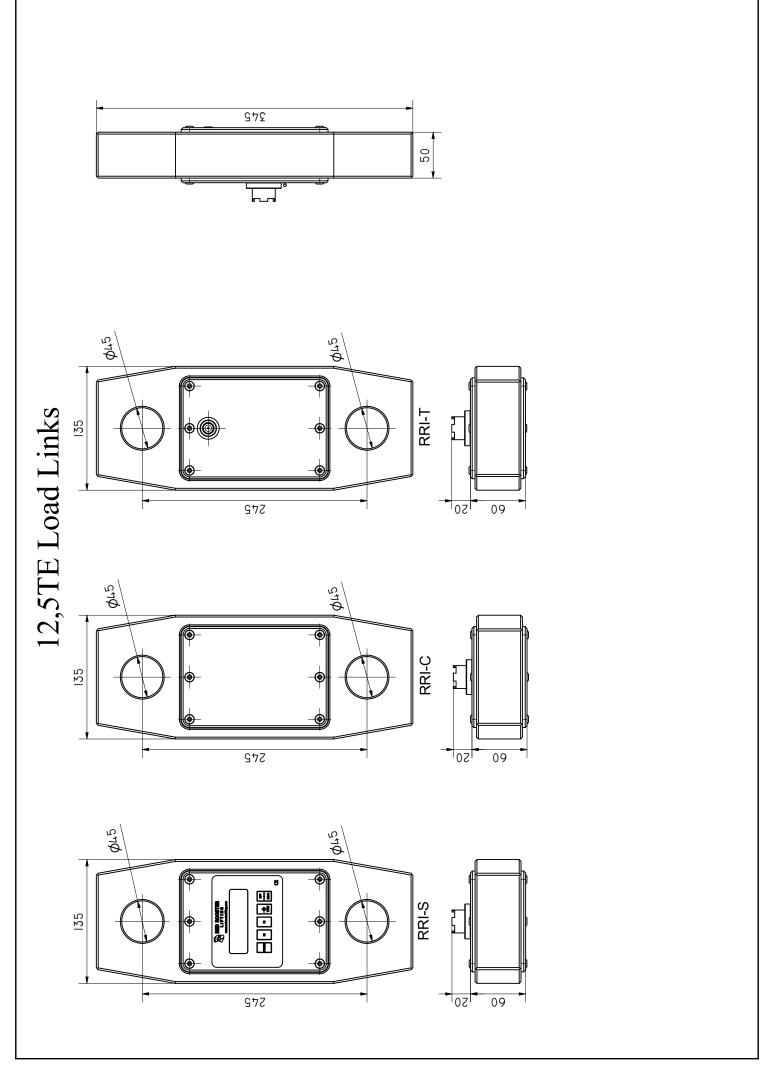
DO NOT STORE THESE LOAD CELLS AND HANDSETS WITH EITHER THE SWITCHES IN THE ON POSITION OR WITH A DISCHARGED BATTERY

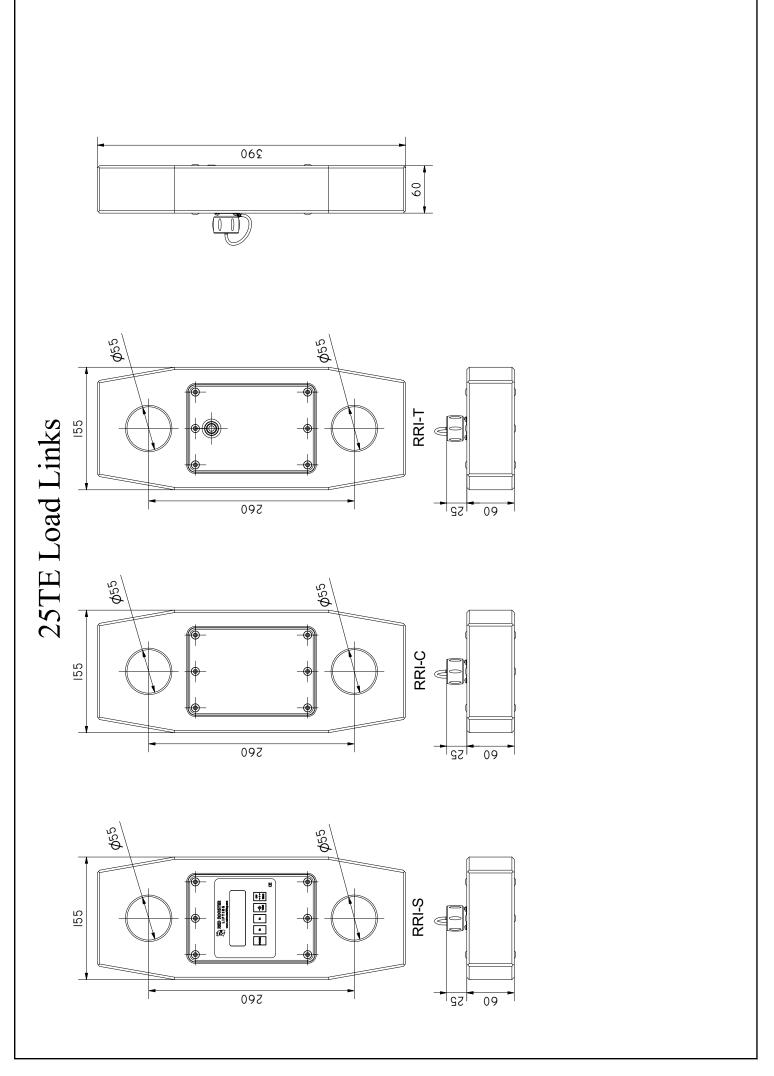
FACTORY "TOP" SETTINGS Factory set to 10% of load cell capacity.

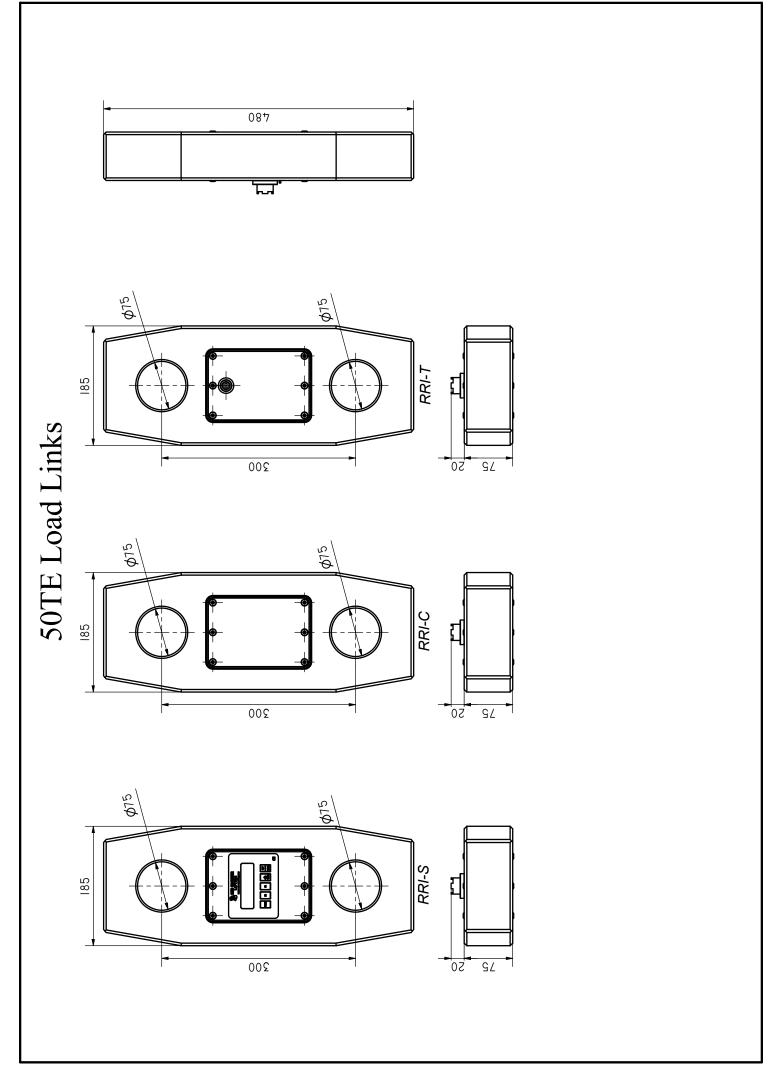


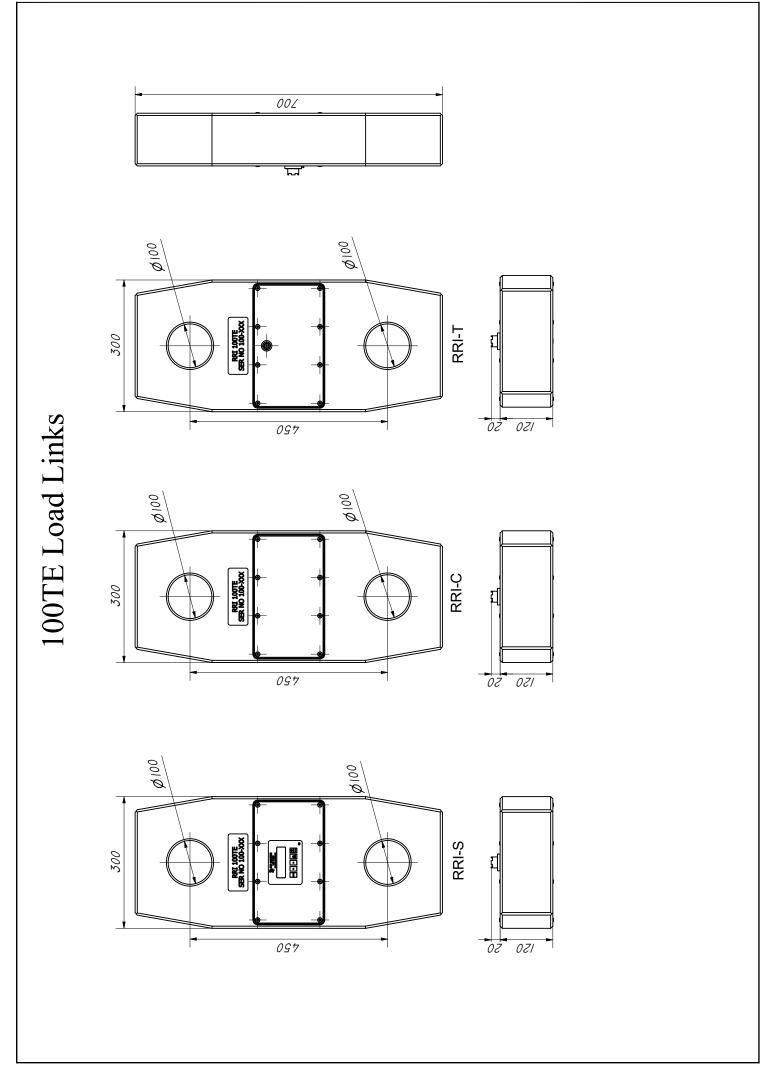
# LOAD CELL DRAWINGS

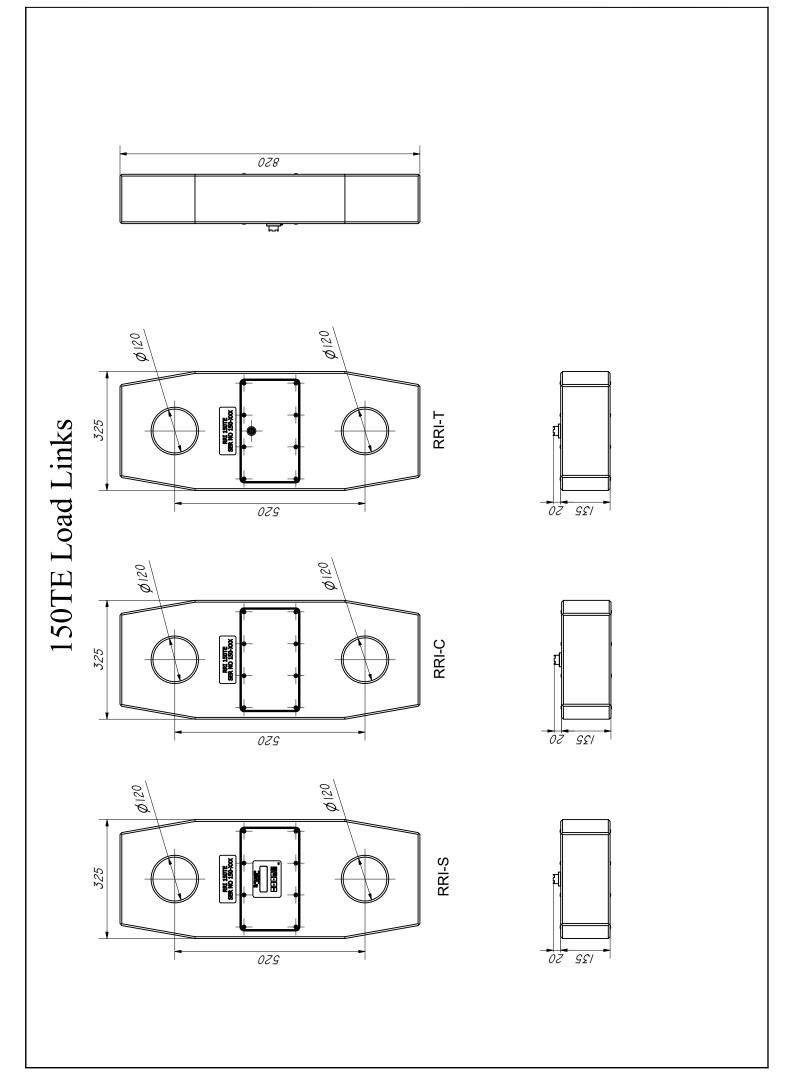


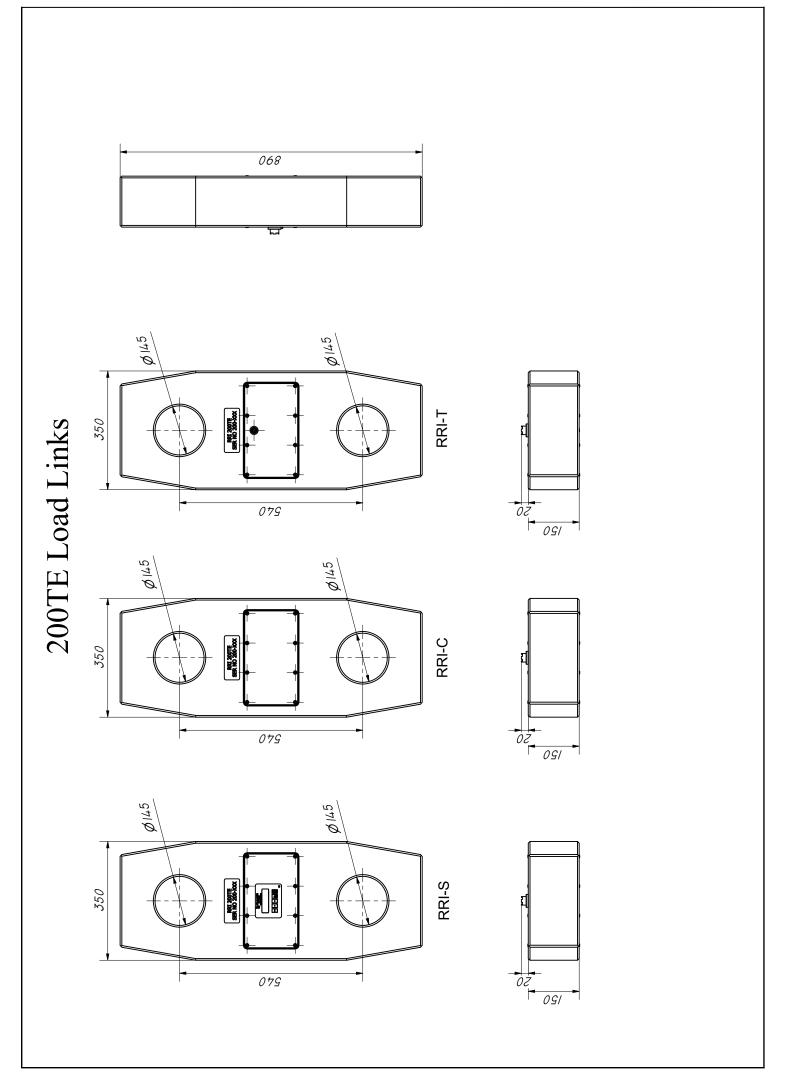


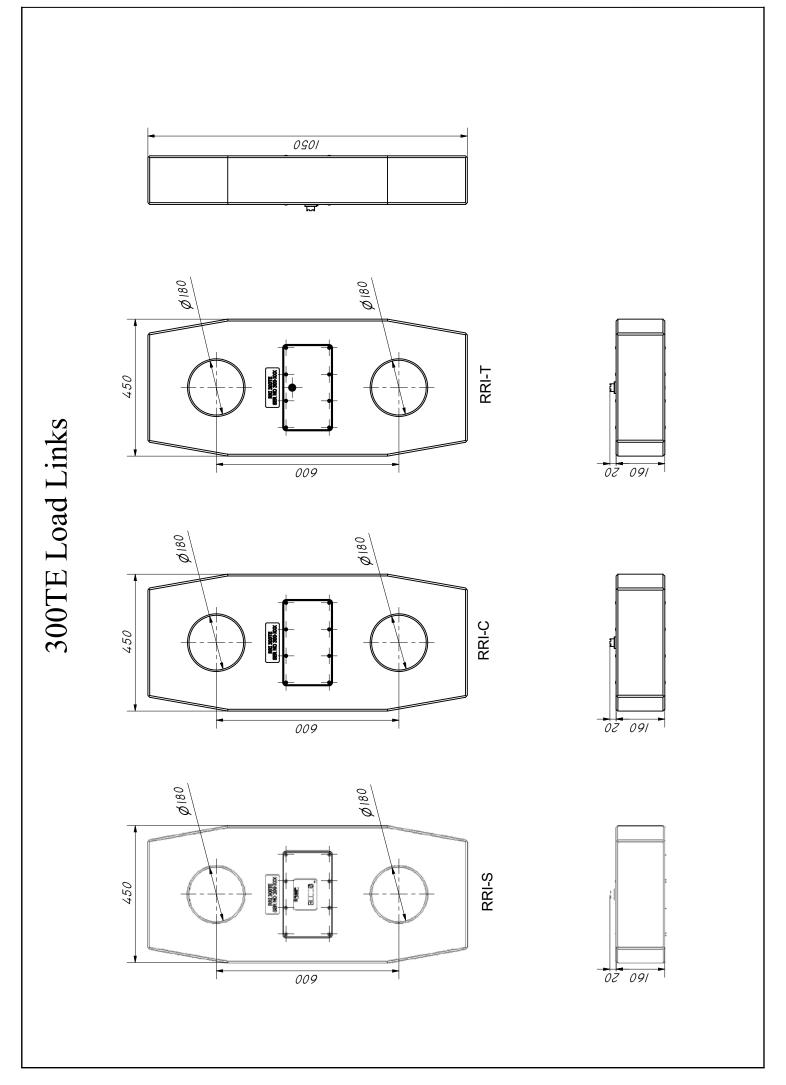


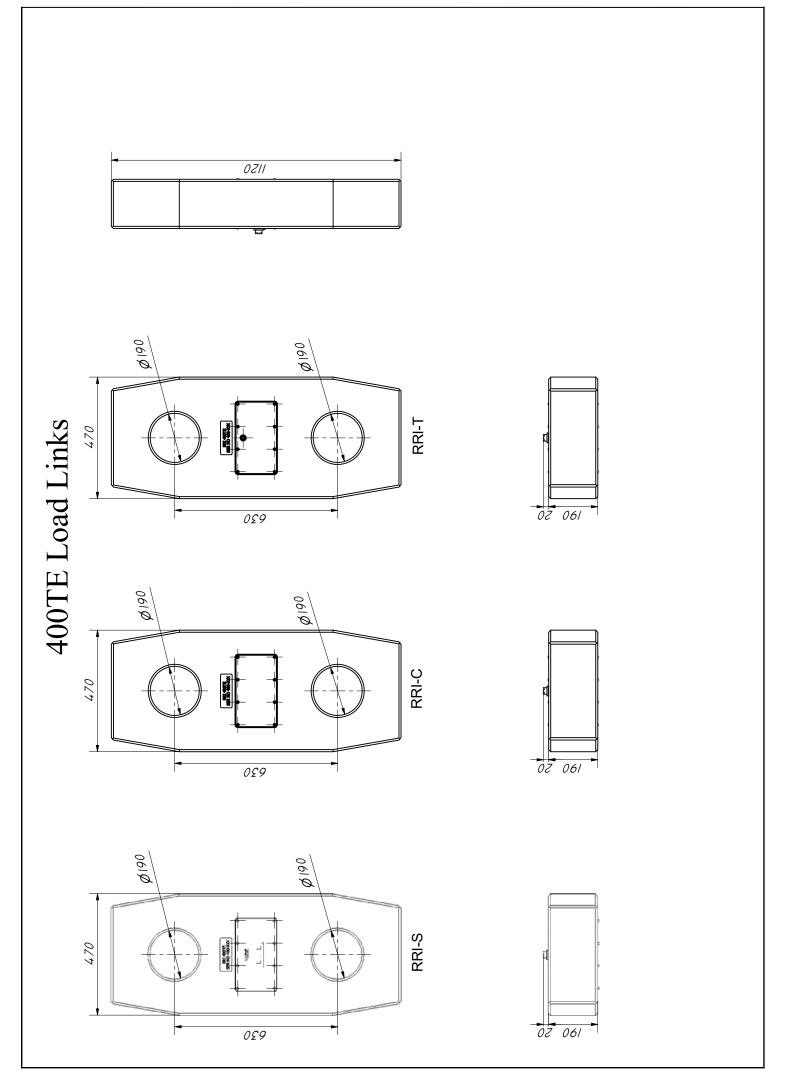


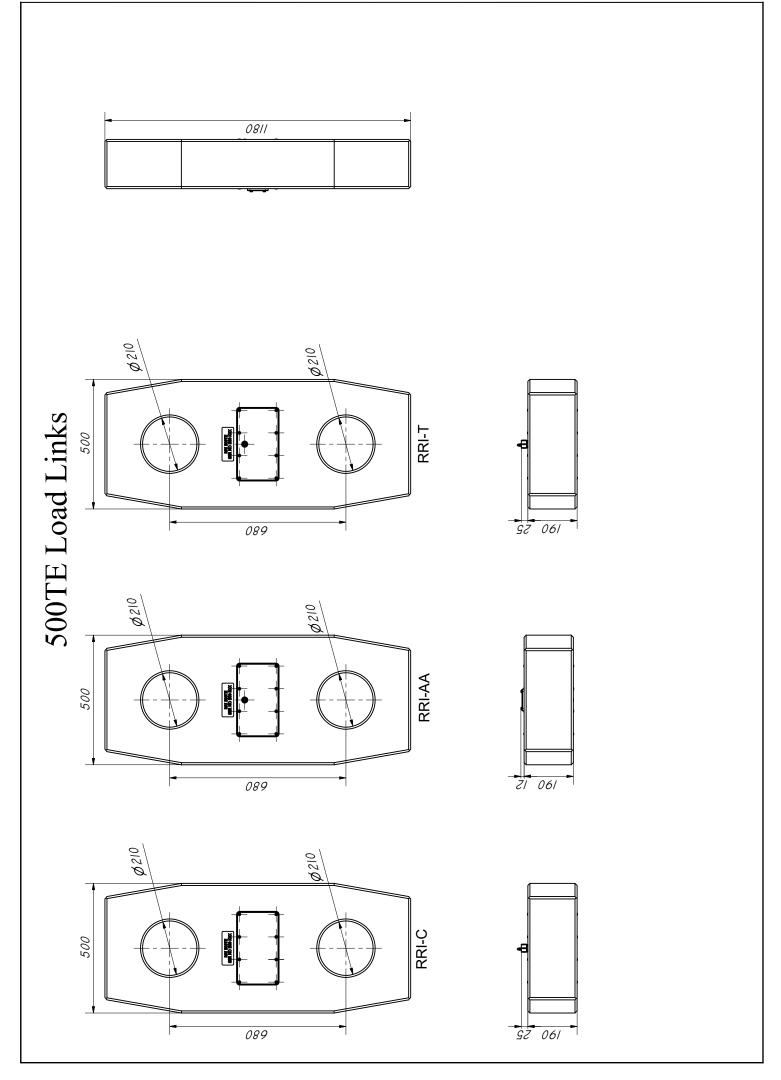


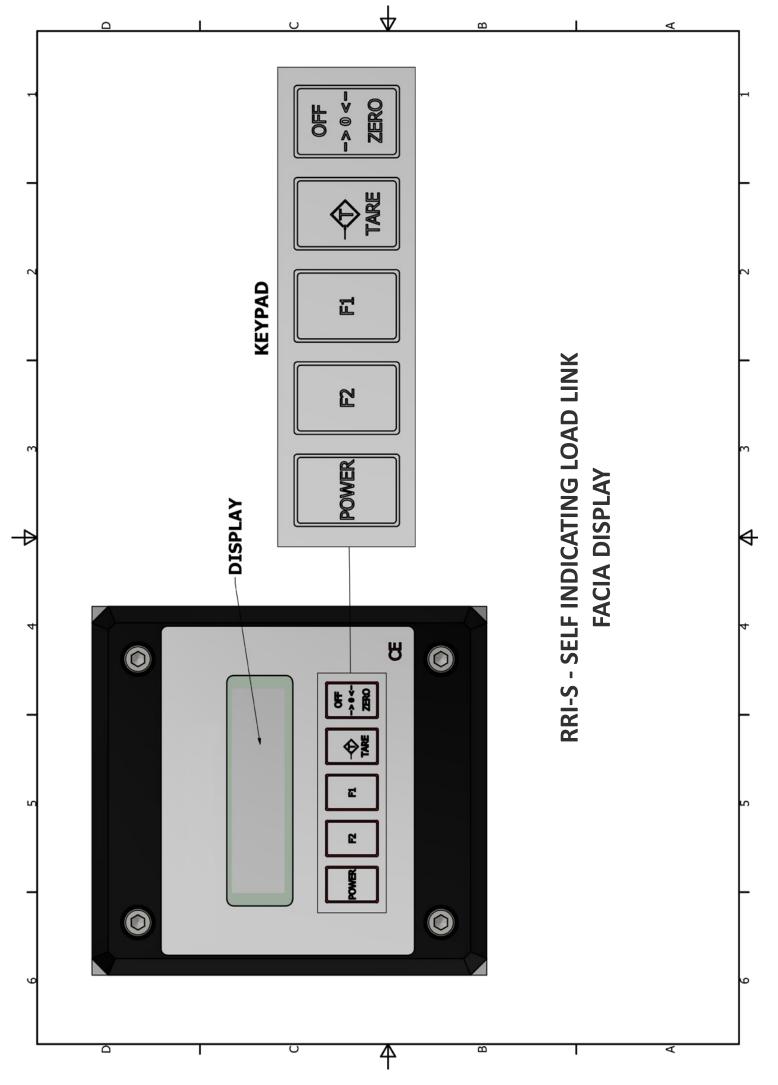


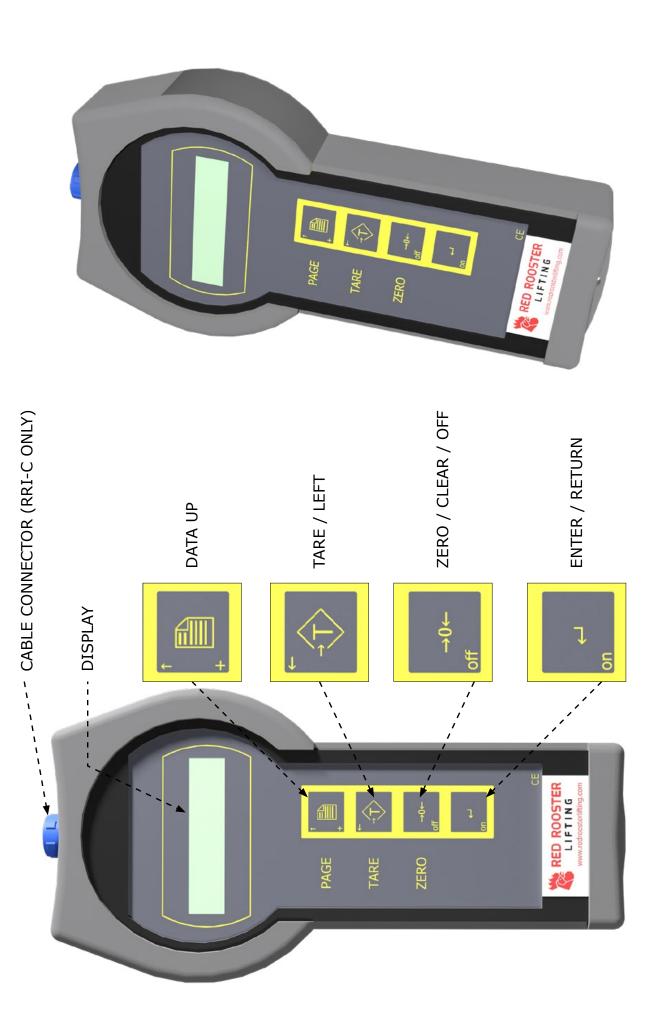














# **CALIBRATION**

7.0 Calibration must be carried out in accordance with BS EN ISO 7500-1:2018 and the procedure is to conform to BS EN ISO 376: 2011. Calibration is accessed using a keypad routine and code (refer to manufacturer); if this is not done correctly it will corrupt the unit. For a fast and efficient calibration or if you are experiencing difficulties with the functions or operation of your load cell please contact Red Rooster on either 01651 872101 or 0121 525 4162 or email us at sales@redroosterlifting.com

#### WASTE ELECTRICAL & ELECTRONIC EQUIPMENT REGULATIONS

8.0 The Waste Electrical and Electronic Equipment Regulations No 3113 as amended by the Waste Electrical and Electronic Equipment (Amendment) Regulations 2013 ("the WEEE Regulations") implement the majority of the provisions of the European Parliament and Council Directive on Waste Electrical and Electronic Equipment 2 ("the WEEE Directive") and the subsequent European Parliament and Council Directive 3 that amended the WEEE Directive.

All Electronic and Electrical Equipment (EEE) placed onto the market from January 2, 2007 must be marked with this symbol to indicate that it is covered by the WEEE Directive, the provisions of which require that producers or manufacturers of EEE become liable to pay for take-back treatment and recycling of end of life equipment (WEEE):



Red Rooster Lifting Ltd is committed to meeting the requirements of the European Union (EU) Waste Electrical and Electronic Equipment (WEEE) Directive. This Directive requires producers of electrical and electronic equipment to finance the recycling of their products placed on the EU market after August 13, 2005.

Red Rooster Lifting Ltd offers a product take back service to its business customers.

This initiative is part of the companies Environmental Policy and as such Red Rooster Lifting Ltd have registered as a small EEE producer at our premises and SEPA for the repair and refurbishment of WEEE at our premises at Oldmeldrum under exempt activity Schedule 3 Paragraph 47

Therefore In compliance with the above regulations you may return this Load Cell to us when it has expired its natural usable life and as such is classed as Waste Electrical and Electronic Equipment.

Our SEPA Producer Registration Number is WEE/CJ1650ZQ



# WARRANTY

9.0 Every effort has been made to ensure that this quality product from the Red Rooster range reaches you in good condition. However in the event that any damage has arisen in transit please notify us immediately.

In the unlikely event that any fault in materials or workmanship should arise within TWELVE MONTHS of purchase, please return the goods together with details of the fault to the Address below:

Carriage Costs incurred (UK and Eire) will be reimbursed on warranty repairs or replacements

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THE MEADOWS
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T: 01651 872101 E: sales@redroosterlifting.com

Ref: Red Rooster Lifting general conditions of sale clauses 5 & 7 The above does not affect your statutory rights



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