

SMART WEIGHING SOLUTIONS



Operator Manual (US)

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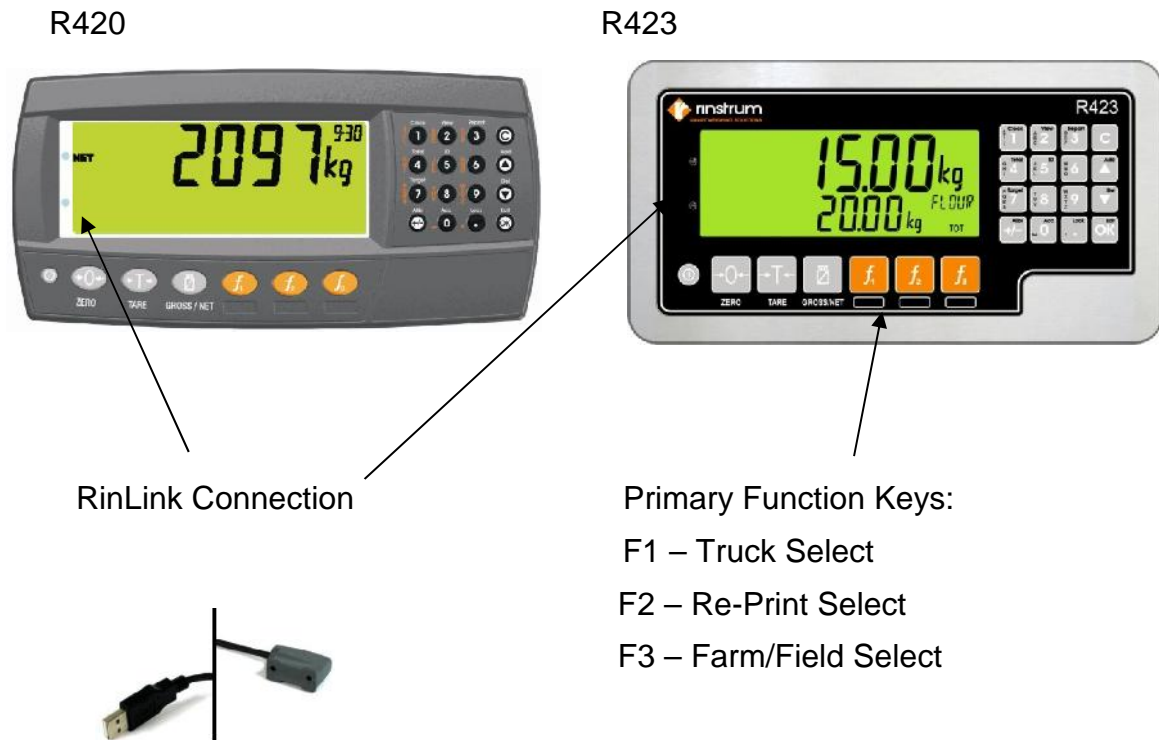
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Overview and Interface

1.1 Overview

This precision digital indicator uses advanced firmware and LUA programming to perform axle weighing and the calculation of the gross vehicle weight. The Lua program records truck weights to a database for later recovery using a USB drive. Truck ID can be entered at the controller or using the remote key fob with RF system.

1.2 User Interface and Display



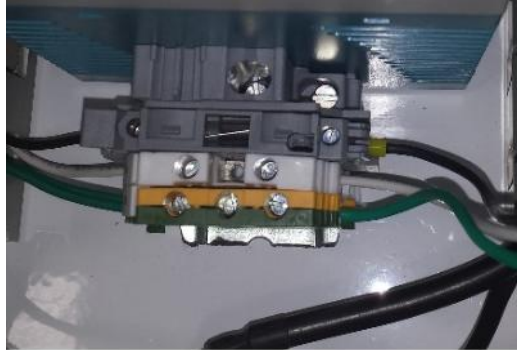
Wiring & Connections

1.3 Wiring & Connections

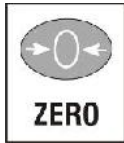
Make connections using the supplied AC Power cord terminating the Black, White and Green wires as shown below.

AC POWER:

Line	Grey/Black
Neutral	White
Ground	Green/Yellow



1.4 Initial Power up



Upon initial power the scale will go through a display test and then display "PLEASE WAIT" for 20 seconds.* Next the scale will display the primary weight screen. There may be a weight reading on the upper display. Press the [C] Cancel Key and then press the [ZERO] key to set "ZERO" for the first time.

BEFORE ZERO:



ZERO SET - READY TO GO:



**Directly after PLEASE WAIT: The current version and application name will be displayed on the lower display for about 1 second.*

Setting Dynamic Scale Factor

1.5 Dynamic Scale

With the scale at zero the dynamic scale factor can now be set. The reference weight of a fully loaded truck should be obtained at a nearby certified truck scale. Simply drive across the axleWEIGHr to capture a truck's total weight.

CAPTURED TOTAL ON BOTTOM:



Divide the average of 4 to 5 weighments using this formula:

$$K/R=D$$

K = Known weight of truck (reference)

R = Average reading of 5 weighments from axleWEIGHr axle scale

D = Dynamic Scale Adjustment

1. Press and hold [F2] for 2 seconds to enter the configuration menu.
2. The lower display will show: "DISCARD".
3. Use the [UP] [DOWN] arrow keys to scroll to "DYN.SCL". Press [OK] to show current value: 1.000000.
4. Enter your Dynamic factor up to 6 decimal places. X.XXXXXX and press [OK].
5. Use the [UP] [DOWN] arrow keys until "QUIT" then press [OK] to exit.

1.6 Setting the Time and Date

Clock

A long press of the **#1 key** (Clock) allows the system date & time to be viewed and changed. Use the number pad and the [OK] key to set selections.

RF System

1.7 RF System

Setting up RF Antenna

To setup the clicker system plug in the 8 pin M12 connector cable to the controller and RF antenna box. There are a few things to note:

The RF receiver box should be mounted in such a way that the front door of the antenna enclosure is facing oncoming traffic.

The 9 foot RF cable should not be coiled up as this can reduce the range of the key fob operation.

The remote clicker has a small red LED that lights when pressed. When pressing the key fob you should be somewhere in the range of 75-150 feet from the antennae system. If the "GREEN" traffic light does not illuminate on the controller than check to see if the small red light on the key fob lights.



Traffic Lights

1.8 Traffic Lights

While at Zero & stable weight the traffic lights should both be off. There are various conditions that will activate the lights. If there are errors the RED light will activate. See table below.



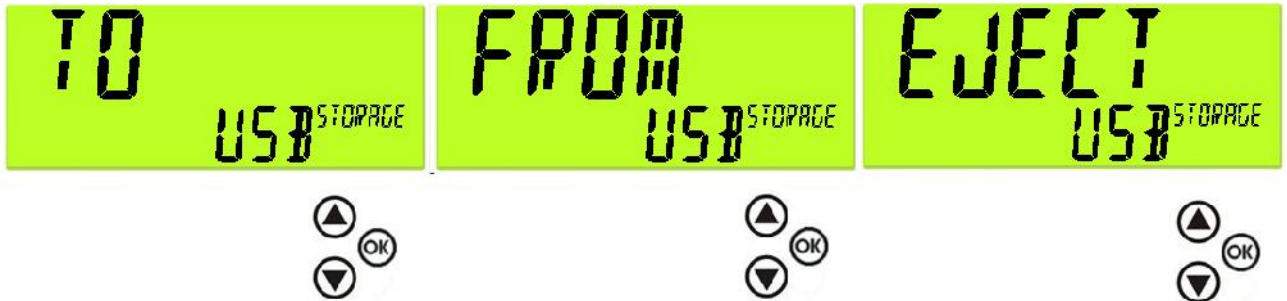
TRAFFIC LIGHT STATUS

Code	Description	Possible cause
RED	SOLID ON	ERROR – CHECK SCALE DISPLAY FOR ERROR CODE
RED	5 SEC THEN OFF	NORMAL OPERATION (TICKET PRINTS)
GREEN	SOLID ON	CLICKER PRESS DETECTED/ TRUCK IN PROCESS OF WEIGHING/ WEIGHT DETECTED OVER 1000 LBS
BOTH OFF	GREEN & RED ARE BOTH OFF	SCALE IS IN IDLE MODE/ NO POWER TO SCALE

USB Operation

1.9 USB Operation

When using the USB drive provided by Rinstrum you will want to copy 2 files from the folder named "Data Store". (See setting up Farm database for the first time) The harvest.csv & trucks.csv need to be moved to the ROOT directory of the USB drive. * Note: The USB stick is not meant to be left in the USB port.



There are 3 options to select once the USB drive has been detected by the console. (Make sure you start at the idle screen to read USB)

TO USB

This means you will send the log.csv file to the USB drive. (This creates a copy only – the original log file will remain on the console)

FROM USB

This means you will duplicate the files from the USB drive. If you have modified the truck.csv file or the harvest.csv file then they will overwrite your truck configuration and your farm & field configuration.

EJECT USB

This will prepare the console for the USB drive to be removed.

Selecting Trucks

2.0 Selecting Trucks

Select a Truck ID - Short Press of [F1] (TRUCK KEY)

A short press of the [F1] key will allow the user to select the desired truck from the truck list. The <UP> and <DOWN> keys will then step through the list of trucks in the truck database. Press [OK] to select that truck.

The second option is to use a remote key fob. If using the key fob make sure that your pre-set data is configured. (ONE PASS or TWO PASS - see below.)

Press the button on your key fob once or until the GREEN Lights illuminate and then proceed across the scale at a steady 3 m.p.h.



These are the 3 types of screens you will see on the display when the key fob has been activated.

ONE.PASS: Empty weight of truck is specified. Truck is weighed full for each weighing.

TWO.PASS: Weight of truck is not specified requiring truck to be weighed twice. In & then out.

Editing Trucks

2.2 Editing Truck Data

First select the truck to be edited. (See above)

PRESS & HOLD [TRUCK] key.

Select ONE.PASS or TWO.PASS using [ARROW KEY].

Enter TARE weight using keypad & press [OK].

Press the [C]ancel key to return to IDLE mode.



2.2 Selecting Farm & Field

Pressing [F3] short will allow Farm & Field configuration. (All trucks)

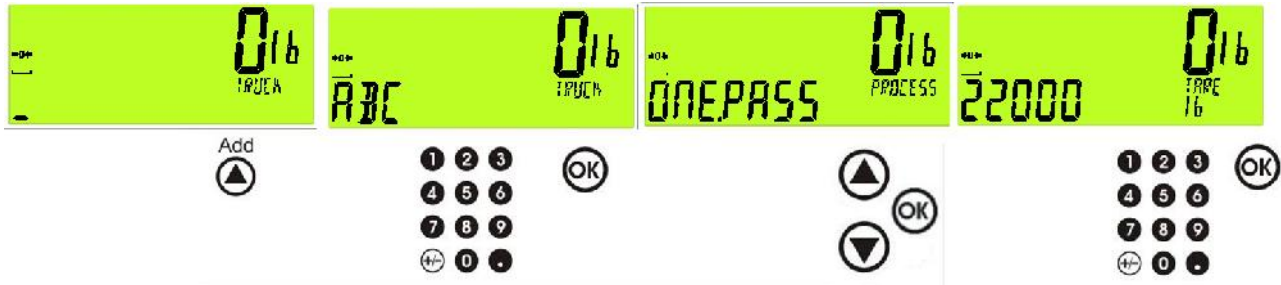


The [C]ancel key is used to return to the IDLE screen.

Creating a Truck

2.3 Creating a new truck

Press & Hold the [UP] arrow key.



1. Enter name using number pad. Press [OK].
2. Use [UP] Arrow key to Select 1 or 2 pass. Press [OK].
3. Enter tare weight if one pass. Press [OK].

2.4 Printing

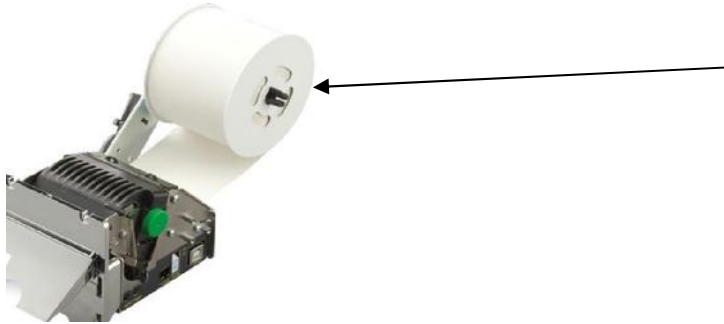
Printing will occur automatically if the truck is selected using key fob or [F1] key. If the truck has not been selected then printing will not occur and the Database will not be updated.

RE-PRINT

Pressing [F2] will reprint a copy of the last truck that weighed. This is a single print that occurs from the most recent truck that has weighed.

2.5 Loading paper

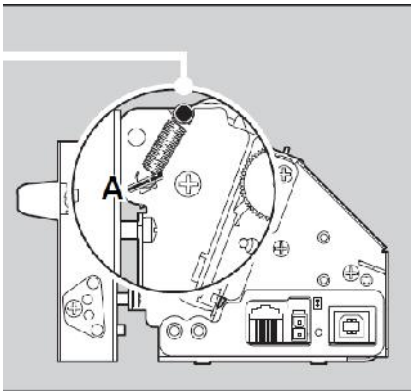
The TG2460 receipt printer uses *thermal paper* (PN# A10066) which can be loaded by removing the outer white paper ring.



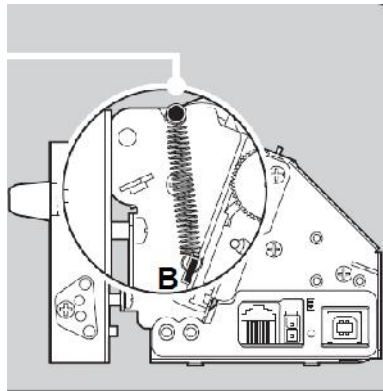
2.6 Adjusting the printer

To ensure optimal operation you will want to make sure the cover spring is adjusted for maximum tension. See below.

NO TENSION



MAX TENSION



To prevent paper jamming and printer faults move the spring to the MAX TENSION.

The spring can be moved using a small pair of needlenose or a small screwdriver.

Harvest CSV File Configuration

3.1 Harvest Configuration

Select and open the harvest.csv file. An example of the harvest file is shown below. Do not change the data in the header (data inside the yellow box). To setup your farm & field data change the names to suit your farm names. If you only have 1 farm then the farm names in the #1 farm column will all be the same. The field names however MUST all be different.

farm	field	Descriptic Map	acres	TotalAcre:	Crop	Variety
FARM 1	FIELD 1				Corn	P104
FARM 1	FIELD 2				Corn	P104
FARM 2	FIELD 1				Corn	P104
FARM 2	FIELD 2				Corn	P104
FARM 3	FIELD 1				Corn	P104

EXAMPLE PRINT OUT

```

04/17/15 09:03:31 000000168
FARM: FARM 1:FIELD 2 MAP:
CROP: Corn VARIETY: P104
TRUCK: TRUCK 1

AXLE 1: 22320 lb
AXLE 2: 22320 lb

TARE: 22000 lb
GROSS: 44640 lb
NET: 22640 lb

OUTBOUND TICKET W/PRE-SET TARE
    
```

Farm & Field Column

This information should be setup and edited as new farms/ fields are added or removed. These should all be typed in capital letters. The R423 display is optimal with upper case lettering.

Description, Map, Acres Column

This information will not print on the ticket but will be stored in the database and pulled out when using thumb drive.

Continued on next page.

Crop & Variety Column

This information will print out on the ticket and will need to be updated yearly based on crop data.

Once you have completed updating your files on the USB drive you will need to take it out to the console and plug it into the LUA module to complete the uploading process. (Note – this only needs to be done once a year)

Create a Farm called "NONE" for non-harvest weighing

Truck CSV File Configuration

3.2 Truck Configuration (USB)

The truck file allows for editing/ adding trucks. You can create custom names instead of the default “Truck 1”, “Truck 2” etc. The header should not be altered (The label “id”, “truck”, “pass”, “tare”) but the data below it is configurable.

EXAMPLE PRINT OUT

id	truck	pass	tare
1	PETE 87	1	36400
2	MACK 02	1	24040
3	VOLVO 94	1	35000
4	VOLVO 96	1	35700
5	FREIGHT 0	2	0
6	TERRY	2	0
7	VOLVO 99	2	0
8	LOW BOY	1	565

```

04/17/15 09:03:31 000000168
FARM: FARM 1:FIELD 2 MAP:
CROP: Corn VARIETY: P104
TRUCK: TRUCK 1

AXLE 1: 22320 lb
AXLE 2: 22320 lb

TARE: 22000 lb
GROSS: 44640 lb
NET: 22640 lb

OUTBOUND TICKET W/PRE-SET TARE
    
```

Id & Truck Columns

Id and truck columns need to be unique and will display to the R423 screen & print on the ticket. The id number should be sequential and in order. (Example: 1,2,3,4 etc.)

The labels in the truck column will print out to the ticket.

Pass & Tare Column

If pass equals 1 pass then you must enter in the tare weight. If pass equals 2 then tare will equal zero lbs. Pass must be equal to “1” or a “2”.

The tare value will print to the ticket. The tare value is typically the empty weight of the truck/ wagon.

Log File Database

3.3 Data Log Output

The log.csv file contains all of the weight data for each truck including the farm and field configuration.

date	time	printid	truck.id	Truck	gross	Net	farm	farm.field	farm.varie	moisture
4/13/2015	9:50:34	120	1	TRUCK 1	44640	0	FARM 1	FIELD 1	P104	1
4/13/2015	9:51:08	121	2	TRUCK 2	44640	43990	FARM 3	FIELD 1	P104	99
4/13/2015	9:52:27	123	1	TRUCK 1	44640	0	FARM 2	FIELD 2	P104	15
4/13/2015	9:52:48	124	2	TRUCK 2	44640	43990	FARM 3	FIELD 1	P104	99
4/13/2015	9:54:34	127	1	TRUCK 1	44640	0	FARM 2	FIELD 2	P104	15
4/13/2015	9:54:49	128	2	TRUCK 2	44640	43990	FARM 3	FIELD 1	P104	99
4/13/2015	10:17:09	130	1	TRUCK 1	44640	22640	FARM 1	FIELD 1	P104	15
4/13/2015	10:17:37	131	2	TRUCK 2	44640	43990	FARM 2	FIELD 2	P104	22
4/13/2015	10:22:19	137	1	TRUCK 1	44640	22640	FARM 1	FIELD 1	P104	15
4/13/2015	10:22:49	139	2	TRUCK 2	44640	43990	?	?	?	0
4/13/2015	10:23:21	141	4	TRUCK 4	66960	22320	?	?	?	0
4/13/2015	10:24:03	142	1	TRUCK 1	44640	22640	FARM 1	FIELD 1	P104	15
4/13/2015	10:28:01	143	9	AARON	44640	44005	FARM 3	FIELD 1	P104	66
4/13/2015	10:33:07	144	2	TRUCK 2	44640	43990	?	?	?	0
4/13/2015	10:33:25	145	9	AARON	44640	44005	FARM 3	FIELD 1	P104	66
4/13/2015	10:33:53	146	1	TRUCK 1	44640	22640	?	?	?	0
4/13/2015	10:34:51	147	1	TRUCK 1	44640	22640	FARM 1	FIELD 1	P104	1
4/13/2015	10:35:51	149	3	TRUCK 3	44640	0	FARM 1	FIELD 2	P104	66

- farm & farm.field cells with empty data details are due to the farm & field not being configured.

Appendix

4.1 Overview

A number of error messages may be displayed to warn of operation outside of the acceptable limits. These messages may appear on either the primary or the secondary display. Short messages (XXXXXX) will appear as a single message. Longer messages (XXXXXX) (YYYYYY) will appear on the display in two parts, first the (XXXXXX) part, then the (YYYYYY) part.

4.2 Weighing Errors

These messages show status messages or errors that may occur during normal weighing operation.

Error	Description	Resolution
(U.LOAD)	The weight is below the minimum allowable weight reading.	Increase the weight or decrease the minimum allowable weight reading.
(O.LOAD)	The weight is above the maximum allowable weight reading. Warning - overloading may damage mechanical scale elements.	Check the condition of load cell connections. Check for damaged load cell.
(ERROR) (RANGE)	The weight reading is beyond the limit set for Zero operation. The operation of the <ZERO> key is limited in the setup during installation. The indicator cannot be Zeroed at this weight.	Increase the Zero Range (Z.RANGE) or use the <TARE> key instead.
(ERROR) (MOTION)	Scale motion has prevented a <ZERO> or <TARE> operation from occurring on command.	Try the operation again once the scale is stable.
(ERROR) (ADC)	An error with the ADC has prevented a <ZERO> or <TARE> operation from occurring	Ensure load cell cabling is correct.
(E2000)	Cable error – 4/6 mode not selected	Check for broken wires & check 4 way
(NOT FOUND)	No truck data has been found in database.	Create truck using up arrow or USB drive.

Table 1: Errors

4.3 Recommended Spare Parts:

<u>Item</u>	<u>PN#</u>
Thermal Paper Roll	A10066
10T Load cell	LSB2-B01-010T
Key Fob	290094
R423 Main board	780207

Service Kit:

A service kit will be included with your controller.

The items will include a:

RinDriver - screwdriver for making terminations

RinLink Cable – Magnetic USB cable for interface to R423 via laptop

Simulator Cap – 1.1 Millivolt Simulator cap

2G USB Drive – Contains manuals and software for axleWEIGHr



1 Millivolt simulator cap

Function Key Navigation

F1 Short – TRUCK SELECT (see page 10)

F1 Long – TRUCK CONFIGURE (see page 11)

F2 Short – REPRINT (see page 12)

F2 Long – CONFIG MENU (see below)

F3 Short – FARM SELECT (see page 11)

F3 Long – CLEAR SELECT

4.4 F2 Configuration Menu:

DISCARD: Time allowing for Truck ID after weighment has taken place. (default 10 sec)

The Discard option holds the weight data to allow selection of truck after weighing. This can be useful for applications where the truck reaches the controller after weighing across the axleWEIGHr scale.

TIMEOUT: Time in between axles before controller times out and completes axle captures. (default 20 sec)

DYN.SCL: Dynamic scaling factor for “in-motion” calibration adjust. (see page 6)

ZERO: Zero calibration capture. (do not use)

SPAN: Span calibration capture. (do not use)

MVV: Raw millivolt reading from scale base. (example .2234 +/- .0001)

VERSION: Menu to display app name and version of application

(Note: to exit the configuration menu either press the clear key or scroll to quit and press the "OK" key)

Definitions

IDLE: Idle screen where no selections are being made.

Console: This can include the R423 instrument and up to the entire axleWEIGHr box including kiosk printer

R423: This is the stainless indicator mounted on the front of the axleWEIGHr

LUA: The lua module is located on the back of the stainless indicator nearest the green 2 pin power connector

Arrow Keys: The up and down arrows are located on the number pad keypad

Clicker: Small black key fob used for remote id of trucks

Power Supply: 120 VAC/ 24VDC Power supply located inside the enclosure

Power Antennae Box: RF antennae box used for RF clicker system

Home Run Cable: M12 Scale cable that runs from scale base to console

Load Cell: Stainless steel transducer used to measure axle weights

4-WAY/ Summing Block: 5 connector junction used to join 4 load cells