R-30

Price Computing Retail Scale

Version 2

Installation and Service Manual

RICE LAKE WEIGHING SYSTEMS

Industrial Solutions on a Global Scale®

ISO 9001 REGISTERED

64041

Contents

Version 2, February 2000

About This Manual

This manual contains operating procedures for the R-30 price computing retail scale scale and provides the user with all the information necessary for set up and operation.

This manual is organized based on the procedures you will likely follow when setting up and using your counting scale.

When using this manual, keypad keys are shown in bold characters.

Warning *Some procedures described in this manual require work inside the scale enclosure. These procedures are to be performed by qualified service personnel only.*

Authorized distributors and their employees can view or download this manual from the Rice Lake Weighing Systems distributor site at www.rlws.com.

1.0 Introduction

The R-30 retail scale offers practical solutions for a full range of point of sale weighing and price computing applications. Its compact design makes it easy to transport and the customer display on the rear of the R-30 offers extra convenience.

Standard features of the R-30 include:

- NTEP certified, legal-for-trade
- Customer display on rear of unit
- Operates on 12 Vdc adapter or 6 “D” size alkaline batteries
- Configurable for lb or kg

1.1 Start-up Self Check

When the operator turns on the scale with the ON button, the main program provides the following checks:

- Display check. The display turns on all the segments (display scrolls through various figures) for a few seconds.
- Calibration parameters check. The R-30 stores calibration values in the EPROM along with a checksum value for verification of the stored value. When the operator turns on the scale, the scale calculates a new checksum from the EPROM and compares it to the stored checksum. If the two checksums are not equal, the scale displays an error message. If the two checksums are equal, the display shows all zeros.

1.2 Power Supply

The R-30 can use power supplied by either a plug-in 120 VAC to 12 Vdc wall transformer unit, or 6 “D” size batteries.

- Use alkaline batteries for longer life.
- If AC power is available, use the plug-in transformer unit.
- When using the plug-in transformer, the batteries are automatically disconnected.

In battery mode, the R-30 automatically shuts itself off after 5 minutes of inactivity (no weight changes or keyboard activity). To restart, press ON. When using the plug-in transformer, the scale automatically disables the shut off feature.

To turn on the scale, press the ON button.

To turn off the scale, press and hold >0< for three seconds.

1.3 Battery Replacement

To replace batteries, open the battery compartment cover at the bottom of the scale by removing the two locking screw. Insert six “D” size alkaline batteries according to the diagram in the compartment.

Caution *Installing batteries with wrong polarity will damage the scale.*

2.0 Setup and Calibration

Setup defines the functional parameters that can be set by the user in the field. These parameters include full scale limit, zero tracking, and tare modes.

Setup is managed by four keys as shown in Table 2-1.

Key	Function	Description
+	Next	Scroll to next menu/submenu/option
T	Previous	Scroll to previous menu/submenu/option
✶	Enter/Select	Select menu/option
C	Continuous	Enter setup mode

Table 2-1. Setup Key Functions

To enter the setup mode, press C continuously until the display shows SEL 9

The setup and calibration process is composed of six submenus, shown in Table 2-2. The submenus allow the user to perform various functions of the R-30. They can be accessed by scrolling using the + key or the T key, then pressing ✶ to enter into the submenu.

Sub-Menu	Function
SEL 1	Weighing function parameters
SEL 2	Display and software filter parameters
SEL 3	Calibration
SEL 6	Euro currency handling, tare options, weight unit and gravity parameters
SEL 8	Communication parameters
SEL 9	Save configuration data

Table 2-2. Sub Menu Functions

2.1 SEL 1 Menu

SEL 1 menu sets the weighing parameters, weighing type (retail / industrial), and enables calibration. Table 2-3 shows the parameters and options available. To enter this menu, press ✶.

Display	Function	Option/Key Operation
CLC	Calibration	Yes/No. (Always Yes to maintain NTEP compliance) To disable calibration change – set to Y Press + to scroll (n/Y) Press ✶ to select
Ind	Retail/Industrial application	Yes/No. Press + to change Press ✶ to select Preset from factory, select NO
UnS	Unit selection Do Not Change	1 – kg, 2 – g, 3 – lb Press + to change Press ✶ to select Preset from factory, do not change
AGn	Gain	1 (low gain) to 6 (high gain) Press + to change Press ✶ to select
AA	Averaging mode (number samples averaged)	1 to 90 Press + or T to scroll Press ✶ to select
AF	Sample rate	50 to 200. The digit selected is marked by the decimal point to its right. Press + to select the digit to be modified Press T to change the value of the selected digit Press ✶ to select the value
Ar	Internal resolution setting (1000 internal counts)	32, 64, 128, 250 Press + to scroll Press ✶ to select
FS	Full scale weight value (in units selected before)	Press ✶ to enter this submenu. The display shows the full scale weight (example 00020 for FS=20kg or .0300 = 30lb). The digit selected is marked by the decimal point to its right Press + to select the digit to be modified Press T to change the value of selected digit Press ✶ after entering the FS value The display shows the internal counts Press ✶ to end the process
SEL1	End of SEL 1 menu	Press ✶ to exit SEL 1 menu option

Table 2-3. SEL 1 Menu Parameters

2.2 SEL 2 Menu

SEL2 menu sets the display parameters. Table 2-4 shows the parameters and options available.

Display	Function	Option/Key Operation
dP	Decimal point position	Press + to select field (weight, price, total) Press T to define the DP position (example 3 = three digits to right of decimal point) Press ✶ to select the current position Note: To set the decimal point: Choose the position of the decimal point for the Weight Display press ✶ Choose the position of the decimal pont for the Price Display press ✶ Choose the position of the decimal point for the Total Display press ✶
rnGn	Single/multi interval operation	1 – Single interval. *(Always single interval to maintain NTEP compliance)* 2 – Two intervals Press + to scroll Press ✶ to select Setting ranges: Preset from factory, do not change ranges
Dd	Display by factor	1, 2, 5, 10, 20, 50 Press + to scroll Press ✶ to select
iS	Stability window size (internal counts)	1 to 20. The digit selected is marked by the decimal point to its right Press + to select digit to be modified Press T to modify the digit Press ✶ to select
rS	Number of consecutive readings to declare stable weight	1 to 20 Press + to scroll Press ✶ to select
rT	Number of readings to declare motion condition	1 to 20 Press + to scroll Press ✶ to select
Prt	Wind filter enable	yes/no. Press + to scroll Press ✶ to select
PrtAL	Wind filter value in weight units (kg/g/lb)	Press + or T as in IS field Press ✶ to select
totSH	Minimum weight to clear total value	Press + or T as in IS field Press ✶ to select
Or	Zero setting and zero tracking limit (% of full scale)	Press + or T as in IS field Press ✶ to select
rS	Initial zero setting limit (% of full scale)	2% for OIML application. Available only for non-OIML applications. Press + or T to scroll Press ✶ to select
Ot	Zero tracking range (% of display division)	Press + or T as in IS field Press ✶ to select
tL	Tare limit (% of full scale)	1 to 99 Press + or T as in IS field Press ✶ to select Preset from factory, do not change
LOFFL	Low offset limit (in internal counts)	Press + or T as in IS field Press ✶ to select Preset from factory, do not change

Table 2-4. SEL 2 Menu Parameters

Display	Function	Option/Key Operation
HOFFL	High offset limit (in internal counts)	Press + or T as in IS field Press ✶ to select Preset from factory, do not change
SEL 2	End of SEL 2 menu	Press + or T to exit SEL 2

Table 2-4. SEL 2 Menu Parameters (Continued)

2.3 SEL 3 Menu

The SEL 3 menu option controls the calibration process of the R-30 retail scale. The first step is zero calibration. This reading is taken immediately after entering the menu. Make sure the platter is free of any load before entering this menu. To enter lb calibration mode, follow steps 1-12 below:

1. Turn scale off.
2. Turn scale over and remove two bottom front screws.
3. Set scale upright and lift off the scale platter. Remove the top four screws.
4. Facing the scale, carefully lift the left side of the cover to reveal the CPU board. *Do not detach the two ribbon cables from the right side of the CPU board*. Prop the cover open with the cables still attached.
5. Carefully remove the CPU board by pressing lightly on the two plastic retaining clamps at the top edge of the board. Lift the board up slightly and turn board over.
6. Locate jumper JP1 located next to R5 on the CPU board as shown in Figure 2-1. Remove the jumper from one pin and place it on both pins.
7. Carefully replace the CPU board. Put the cover back in place and replace the platter.
8. Turn the scale on. After the display check, the scale should display zero. **Note: Display will flash Err 1 because JP1 is installed**. Press and hold the C key for a few seconds until SEL 9 displays.
9. Press the + key until SEL 3 displays. Press ✶ to display lb-.Y Press ✶ again until display reads Put. Add test weights and press ✶ again four times until the display shows SEL 3.
10. Press + until display reads SEL 9. Press ✶ and wait for scale to turn off.
11. Remove weights from platter. Reinstall the jumper back on one pin.

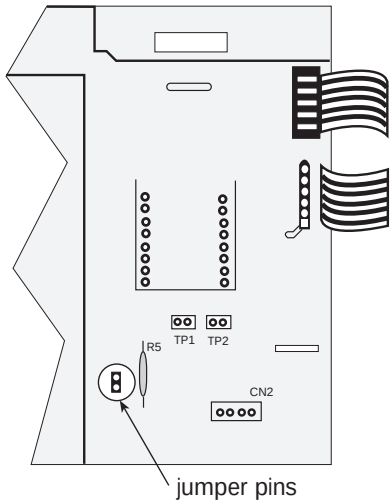

Figure 2-1. Jumper Location

12. Reinstall the CPU board. Reinstall the screws into the cover on top and bottom. Replace the platter. The scale should now be ready for use.

Table 2-5 shows the submenus and options available.

Display	Function	Option/Key Operation
lb	Toggles between lb/ kg defines the calibration weight unit	Press + to select Press ✶ to continue
CALib	Calibration process and zero point setting	Press ✶ to select At this step the zero point is taken. Make sure the scale platter is free of any load
Put	Calibration of load point	Put the calibration weight on the platter for a few seconds Press ✶ when the load is set
CALCA	Enter the load value for calibration	Press ✶ to select Enter the calibration load in the weight units selected (lb/kg). Example .0300 = 30 lb The digit selected is marked by the decimal point to its right Press + or T as in lS field Press ✶ to continue
	Calculating the gain and zero setting and the calibration factors	
End	End of calibration process	Press ✶ to continue
SEL 3	End of calibration menu	To save the calibration data, press + or T until SEL 9appears Press ✶ to enter

Table 2-5. SEL 3 Menu Parameters

At this time remove the weights from the platter and the unit turns off.

Note: Calibration steps cannot be reversed. To redo any of the above calibration steps, you must turn the scale off and start again.

2.4 SEL 6 Menu

SEL 6 menu sets the Euro (€) function exchange rate, three tare options, and the weight unit and gravity parameters of the R-30.

The Euro process supports four phases:

- Phase 0 – Local currency support only. No Euro conversion support.
- Phase 1 – Local currency is the main mode. The prices and totals are displayed in local currency. Pressing the Euro key causes the display to momentarily show the price (or total) value in Euro €.
- Phase 2 – Euro is the main mode. The prices and totals are displayed in Euro €. Press the Euro € key to momentarily show the price (or total) value in the local currency.
- Phase 3 – Euro is the only mode. All prices and total values are displayed in Euro €.

Table 2-6 shows the submenus and options available.

Display	Function	Option /Key Operation
lb	Toggles between lb/ kg	Toggle between Yes/No Press + to select Press ✶ to continue
onoF	On/Off switch	Press + to select yes or no. If the scale switch is hardware only choose no If the scale switch is software controller key on the keyboard choose yes Press ✶ to continue
Eur	Enable Euro (€)	Yes/No Press + to scroll Press ✶ to continue
rAt	Enable Euro rate display	Yes/No Press + to scroll Press ✶ to continue
tArE	Select tare mode	Press ✶ to continue Press + to select: 1 = permanant 2 = automatic 3 = additive Press ✶ to continue
FASE	Euro implementation phase selection	0-3 Use the numeric keys to define the phase as described above Press ✶ to select
PrFAS	Change to Euro previous phase	0-3 Use the numeric keys to define the phase as described above Press ✶ to continue
Euro	Set Euro rate	1 to 999.999 Use numeric keys to enter the Euro rate Press ✶ to continue
Sourc ALtit	Local altitude	Use the numeric keys to define the local altitude Press ✶ to continue
dESti ALtit	Destination altitude	Use the numeric keys to define the destination altitude Press ✶ to continue
Sourc LAtit	Local latitude	Use the numeric keys to define the local latitude Press ✶ to continue
dESti LAtit	Destination latitude	Use the numeric keys to define the destination latitude Press ✶ to continue
SEL 6	End of SEL 6 menu	Press + or T to exit SEL 6menu

Table 2-6. SEL 6 Menu Parameters

Notes:

- The R-30 supports three types of tare functions.

  Permanent

  The tare value is kept after the weight and the tare are removed from the scale. When the tare weight is removed, the display shows the tare weight with the negative sign. To cancel the tare, press T again. The scale erases the negative reading.

  Automatic

  The tare value is canceled as soon as the load is removed from the scale. When the tare weight is removed the display will zero. Pressing T twice will activate the tare as in the permanent tare described above.

  Additive

  Works like a permanent tare but the tare value may also be increased during operation. To increase the tare, add more weight and press T again.

- In order to use the source altitude, destination altitude, source latitude, and desitination latitude parameters, all four values must be specified. The calculation uses the difference between the source and the destination parameters.

2.5 SEL 8 Menu

SEL 8 menu controls the communications parameters of the R-30. The serial communications option is currently not supported.

2.6 SEL 9 Menu

Press ✶ to save all data entered in menus 1-8 and turn the scale off before using.

3.0 Operation

3.1 R-30 Keypad

The following section describes the front panel keys, annunciators, and display functions of the R-30.

Key functions are described in Table 3-1 below. To turn on the scale, press the ON button. To turn off the scale, press and hold >0< for three seconds

Key	Function/Description
>0<	Zero. The zero key has two functions. • Zeroing the scale. The zero annunciator turns on. • Turn off the scale by pressing the zero key for three seconds.
T	Tare. The R-30 supports three types of tare: permanent, automatic, and additive, which are selected through SEL 6 setup menu in Table 2-6 on page 7. Refer to tare descriptions on page 8.
+	Accumulation. Adds the current total to the accumulator. The ACC annunciator turns on.
✶	Total. Display the total of the bill. Press to ✶ display the total price to pay. Press ✶ again to clear the accumulator display but does not clear the accumulator memory. To clear the total, press C while the total is displayed.
ON	Switches on the R-30.
C	Clear. The clear key has three functions: • Clears a numeric entry. • Clears total reading and memory. • Enter setup and calibration menus by pressing the C key for a few seconds.
0-9	Use the numeric keys to enter price per unit weight.

Table 3-1. Function Keys

3.2 Display Annunciators

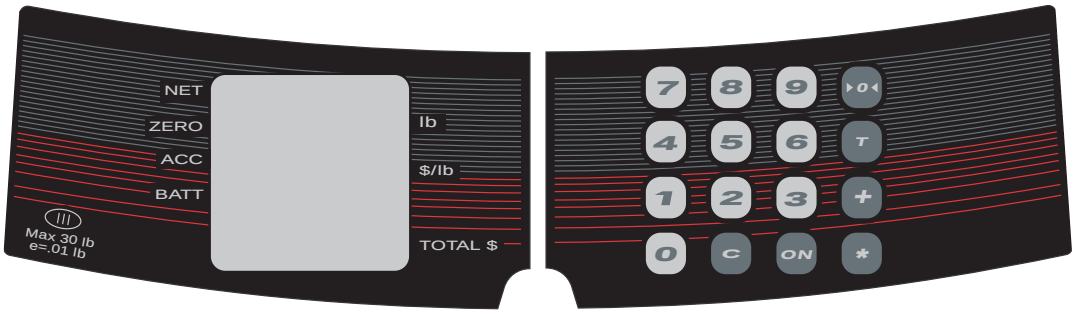

Figure 3-1. R-30 Front Panel

Display	Explanation
Net	Resets the scale weight to net.
Zero	Resets the scale gross weight to zero.
Acc	Displays the current weight from the accumulator register.
Batt	Low battery display.
lb/ $lb	Gives the total lb and the price per lb.

Table 3-2. Annunciator Display

3.3 Display Messages

Table 3-3 describes error messages that may be shown on the R-30 display.

Display	Description	Corrective Action
ERR 1	Calibration is enabled	To disable calibration: 1. Remove CALIB jumper on the scale CPU board. 2. Set CALC parameter in SEL 1 setup menu to Y.
ERR 2	Hardware failure	Replace module
LOFF	Load cell input is below limit	1. Check if the load cell is connected correctly to the CPU board. 2. Enter SEL 1 menu by pressing C for a few seconds. Press ✶ until display shows FS 0 Press ✶ again twice. The display shows the internal counts of the scale (0 to 250000). Press T a few times until the display shows a number between 3000 to 4000. 3. Change the LOFFL parameter in SEL 2 menu to a lower value.
HOFF	Load cell input is above limit	1. Check if the load cell is connected correctly to the CPU board. 2. Enter SEL 1 menu by pressing C for a few seconds. Press ✶ until display shows FS 0 Press ✶ again twice. The display will show the internal counts of the scale (0 to 250000). Press T a few times until the display shows a number between 3000 to 4000. 3. Change the HOFFL parameter in SEL 2 menu to a higher value.
Put n	The + key was pressed without any load on the platter	Put load on the platter.
tOtAL FULL	Total value > 999999	Overflow of the total field. Press C to clear the accumulator.
tOtAL 0	The + key was pressed without any price entered	Enter a price using the numeric keys.

Table 3-3. Error Messages and Troubleshooting

R-30 Limited Warranty

Rice Lake Weighing Systems (RLWS) warrants that all RLWS equipment and systems properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications as confirmed by the Distributor/OEM and accepted by RLWS. All systems and components are warranted against defects in materials and workmanship for one year.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

- Upon discovery by Buyer of such nonconformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.
- Individual electronic components returned to RLWS for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in a publication, "Protecting Your Components From Static Damage in Shipment," available from RLWS Equipment Return Department.
- Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.
- Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agent.
- RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.
- In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor for repairs made by others.

THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NEITHER RLWS NOR DISTRIBUTOR WILL, IN ANY EVENT, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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