

# **SR Scales®**

by SR Instruments, Inc.

**Model SRV710W**



**Zoological Scale System  
App Enabled Wireless**

## **Operating and Service Manual**

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## PACKING CHECKLIST - Model SRV710W Zoological Scale System

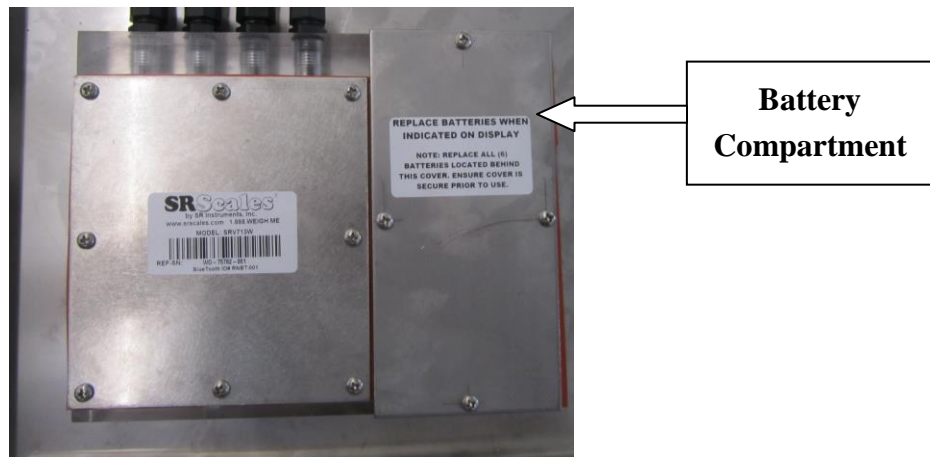
√	DESCRIPTION	QUANTITY
	PLATFORM SCALE	1 ea
	PACK OF SIX (6) "AA" BATTERIES	1 ea
	CALIBRATION CERTIFICATE	1 ea
	WARRANTY CARD	1 ea
	TABLET AND CASE	1 ea
	MANUAL	1 ea

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## ASSEMBLY

- STEP 1:** Unpack the Scale Platform (1) and check parts against the PACKING CHECKLIST. If there are any missing or damaged parts, call the Service Hotline at: 1-800-654-6360.
- STEP 2:** Place the Platform upside-down on the floor and remove the cover on the Battery Compartment.
- STEP 3:** Install six (6) “AA” cell batteries and select desired units of weight to be displayed with (LB/KG switch) according to BATTERY REPLACEMENT instructions.
- STEP 4:** Turn platform right side-up and press the “DISPLAY” button to confirm display is working.

**Figure 1: Battery Compartment**



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## REPLACEMENT PARTS and ACCESSORIES

Part #	Description
FK5210039	RUBBER LEVELING FOOT
MAN710W	MANUAL

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## SYSTEM DESCRIPTION and INTENDED USE

### SYSTEM DESCRIPTION

The SRV710W Zoological Scale employs the latest in microprocessor and load cell technology to provide accurate and repeatable weight data. Four (4) identically matched Load Cells are environmentally sealed and strategically placed to ensure an accurate representation of the subject's weight.

The SRV710W Zoological Scale derives its power from six (6) each "AA" batteries.

With the push of a button, weight is displayed with a displayed resolution of 0.2 pounds or 0.1 kilograms.

The SRV710W Zoological Scale is equipped with a Bluetooth wireless module. By waking the scale up with the "weigh" button the wireless feature is turned on. Then use the free SR Scales app (Google Play store) to connect with the scale to allow for remote wireless operation.

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### INTENDED USE

The SRV710W Zoological Scale is designed for use with hooved animals, and other large animals. It is a preferred means of gathering weight data up to 2000 pounds or 907 kilograms.



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## STORAGE and TRANSPORTATION

### STORAGE

If storing this equipment for periods longer than three (3) months, remove the batteries. To maintain proper operation of this instrumentation, storage and transport conditions should not vary outside the following conditions: Relative Humidity 0% to 85%, Ambient Temperature 14°F to 122°F (-10°C to +50°C).

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## CLEANING and DISINFECTING

### CLEANING

To clean the display / user interface and other scale contact areas:

- Use soft bristle brush with mild soap and water to clean platform/patient contact areas.
- Do not use abrasive materials to clean scale surface to prevent damage to the surface finish.
- Wipe surface with clean soft cloth dampened with water and then dry with clean soft cloth.
- Do not spray liquid directly onto interface surfaces. Use only a damp cloth.

### DISINFECTION

To disinfect the display / user interface and other scale contact areas:

- Use a soft cloth dampened with disinfectant or a damp disposable disinfectant cloth. Cloth cannot be dripping wet. Follow manufacturer's instruction on the proper use of commercially available disinfectants.
- Disinfectant solutions with 1% sodium hypochlorite or 70% isopropyl alcohol are suitable for display / user interface and other scale contact surfaces.
- After disinfecting, use a soft cloth dampened with clean water and dry with a soft clean cloth to prevent buildup of material on scale finish.
- Do not use abrasive material to disinfect / clean scale surfaces to prevent damage to the surface finish.
- Do not spray liquid directly onto scale surfaces. Use only a damp cloth.

**WARNING: DO NOT SPRAY CLEANING SOLUTION OR LIQUIDS DIRECTLY ON SURFACES TO BE CLEANED.**

**WARNING: EXPOSURE TO EXCESSIVE LIQUID WILL DAMAGE USER INTERFACE KEYPAD.**

**WARNING: DO NOT USE PRESSURIZED WATER OR STEAM. THE SCALE SYSTEM CONTAINS ELECTRONIC COMPONENTS THAT MAY BE ADVERSELY AFFECTED BY EXPOSURE TO SUCH AN ENVIRONMENT.**

## SPECIFICATIONS

<b>MAXIMUM WEIGHT CAPACITY</b>	2000 lb. / 907 kg. (Minimum 10 lb.)
<b>PLATFORM SIZE</b>	36 in x 54 in x 2 ¾ in 91 cm x 137 cm x 7 cm
<b>DISPLAY TYPE</b>	LCD
<b>DISPLAY RESOLUTION</b>	0.2 lb / 0.1 kg
<b>ACCURACY</b>	0.2% +/- 1 digits of displayed resolution for calibrated range
<b>AUTO ZERO</b>	One button operation
<b>STABILIZATION TIME</b>	Five (5) seconds
<b>AUTO POWER DOWN</b>	After five (5) minutes
<b>BLUETOOTH ON-TIME</b>	5 minutes from last button press
<b>AVERAGING</b>	Automatic digital filter
<b>POWER SUPPLY</b>	Six (6) “AA” cell batteries
<b>CALIBRATION</b>	Calibration is traceable to NIST standards
<b>OPERATING CONDITIONS</b>	Normal operating conditions for this product: Ambient Temperature Range: 40°F to 95°F (5°C to 35°C) Relative Humidity Range: 0% to 85%. Avoid exposure to high-pressure water or steam.
<b>TRANSPORTATION AND STORAGE</b>	Storage and transport conditions should not vary outside the following conditions: Relative Humidity 0% to 85%, Ambient Temperature 14°F to 122°F (-10°C to +50°C). Remove batteries if storing longer than three (3) months.
<b>BLUETOOTH REQUIREMENTS</b>	Refer to <a href="#">the SR Scales App</a> on the Google Play store for further information. Minimum requirements for an OS level of android device are listed at the Google play store

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## BUTTON FUNCTIONS

The “**DISPLAY**” button is used to turn the system on and display the subject’s weight.

The “**DISPLAY**” button is also used to zero the system by pressing and holding the “**DISPLAY**” button for 2-3 seconds.

### LB/KG MODE

The “**LB/KG MODE**” Toggle Button (Figure 2) allows weight data to be viewed in either pounds or kilograms, displayed in a resolution of 0.2 pounds or 0.1 kilograms.

The “**LB/KG MODE**” Pushbutton is located within the battery compartment on the underside of the scale. Select the mode for weighing with this Toggle Button.

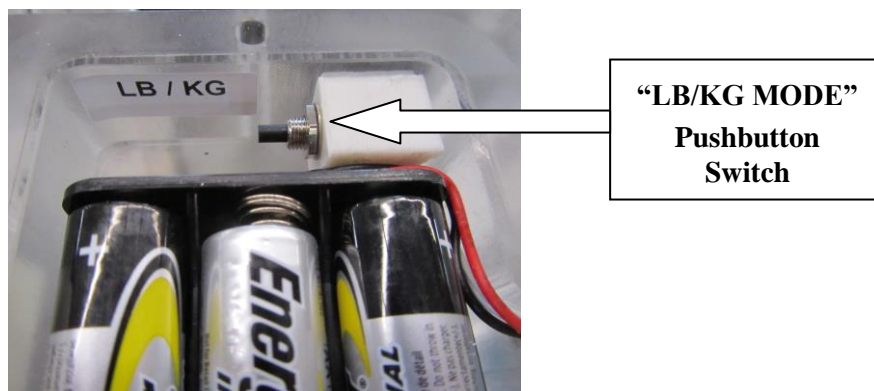


Figure 2: LB/KG Mode Pushbutton Switch

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## BASIC SYSTEM OPERATION

Ensure that the scale is free and clear of any obstructions before operating.

Press the “**DISPLAY**” button and hold it for 2-3 seconds. The display will read “0.0” and be ready for weighing.

When a mat or pad is to be used on the scale platform, the weight of the pad must be tared out. Place the mat on the platform, then press and hold the “**DISPLAY**” button for 2-3 seconds. The display will read “0.0”.

**Note:** The display will automatically shut down after five minutes. The zero (TARE) will be stored in memory.

Assist the animal on the scale platform; its weight will appear on the display.

**Note:** The display will automatically shut down after five minutes. Press the “**DISPLAY**” button to restart.

It is recommended that the system be zeroed prior to each subject being weighed.



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## SR SCALES APP

Use the free SR Scales app (Google Play store) to connect with the scale from any Android device to allow for remote wireless operation.

Use your Android device to display weight and control the SRV710W scale functions (Figure 3). Ensure your remote display indicates “**CONNECTED**” before use.

The “**WEIGH**” button will display weight in pounds or kilograms as selected.

The “**Held Wt**” button allows access to the last stable weight that was achieved.

The “**ZERO**” button is used to zero the system.

The “**KILOS**” button allows weight data to be viewed in kilograms, displayed in a resolution of 0.1 kilograms.

The “**POUNDS**” button allows weight data to be viewed in pounds, displayed in a resolution of 0.2 pounds.



**Figure 3: Button Functions**

## BATTERY REPLACEMENT

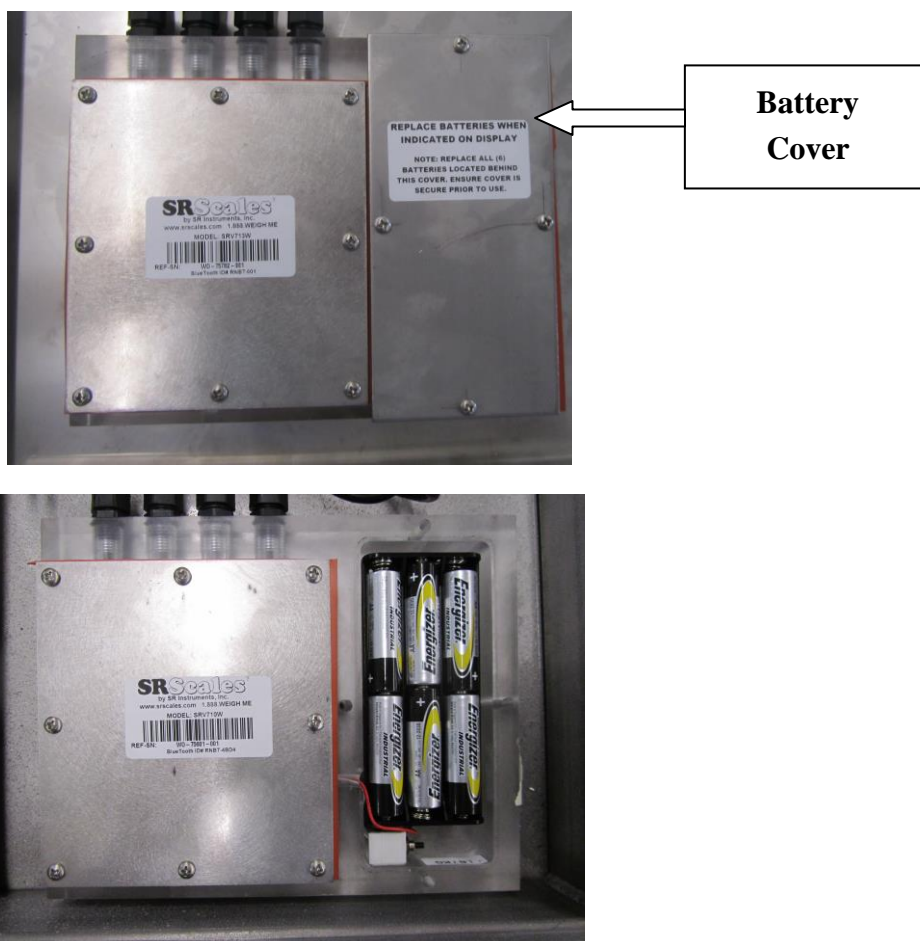


Figure 4: Battery Replacement

### REPLACING BATTERIES

When battery replacement is needed, an indicator will appear on the display.

**STEP 1:** Turn the platform over and remove the four screws on the Battery Cover (Figure 4).

**STEP 2:** Remove and replace the six (6) “AA” cell batteries.

**STEP 3:** Press the “**DISPLAY**” button to confirm display is working. Verify that the desired units of weight (LB/KG) are active.

**STEP 4:** Replace the screws in the Battery Cover.

**NOTE: TIGHTEN SCREWS ONLY UNTIL RUBBER SEAL STARTS TO COMPRESS.**

**STEP 5:** Position the scale back into weighing position.

**STEP 6:** Zero the system. Scale is ready for use.

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## THEORY OF OPERATION

SR Instruments patient weighing systems are digital scales. Strain-gauge force cells convert the force of an applied weight into an analog signal. This signal is amplified by an operational amplifier and converted to a digital signal by an analog to digital converter. The digital signal is transferred to a micro-controller where it is filtered, converted to appropriate units and displayed on a liquid crystal display.

Strain-gauge force cells each contain four strain gauges mounted in a full Wheatstone-bridge configuration. These bridges convert the physical movement of the force cell, due to the applied mass on the system, into minute changes in electrical resistance. These changes in resistance produce a voltage difference across the Wheatstone-bridge, which is amplified by the operational amplifier. The amplifier is configured to current sum the output of each cell, with potentiometers serving to adjust the sensitivity (voltage out per unit of weight applied) of each bridge.

The output of the operational amplifier is digitized by the analog to digital converter.

The micro-controller averages and filters the digital output of the analog to digital converter, subtracts the value saved during the system zero operation and scales the filtered output, then displays the result on the liquid crystal display. The micro-controller performs a rolling average of data for continuous weigh.

## CALIBRATION



### IMPORTANT



**CALIBRATION CHECK** Qualified service personnel only should perform this procedure. Load cells have no user serviceable components and should not be tampered with for any reason. Re-calibration is generally not required, but should be verified periodically to ensure accuracy. The recommendation for calibration check is at least once every 12 months, or as individual maintenance policy requires.

**STEP 1:** Select known calibrated weights, traceable to NIST.

**NOTE:** **CALIBRATED WEIGHT SHOULD BE EQUAL TO OR GREATER THAN THE MAXIMUM PATIENT WEIGHT, NOT TO EXCEED THE MAXIMUM CAPACITY OF THE SCALE. DO NOT USE UNCALIBRATED WEIGHTS.**

**STEP 2:** Remove the two (2) screws holding the display housing to the platform

**STEP 3:** Pull the display out from under the platform and remove the eight (8) screws from the display box cover pictured Figure 4.

**STEP 4:** Press the calibration button (Figure 5). The display will read “CAL”.

**STEP 5:** Press button “S4” (Figure 5) to scroll through menu options until “FULL” is displayed. Press the **DISPLAY** button.

**STEP 6:** Set the “FULL” value to the selected weight from Step 1. Use the **DISPLAY** button to select digit positions and use button **S4** to change the value.

**STEP 7:** When finished, the display will read “SAVE”. Press the **DISPLAY** button to save, or press button **S4** then **DISPLAY** to “QUIT”.

**STEP 8:** Press **S4** to scroll to the menu option “2 PT” and press the **DISPLAY** button.

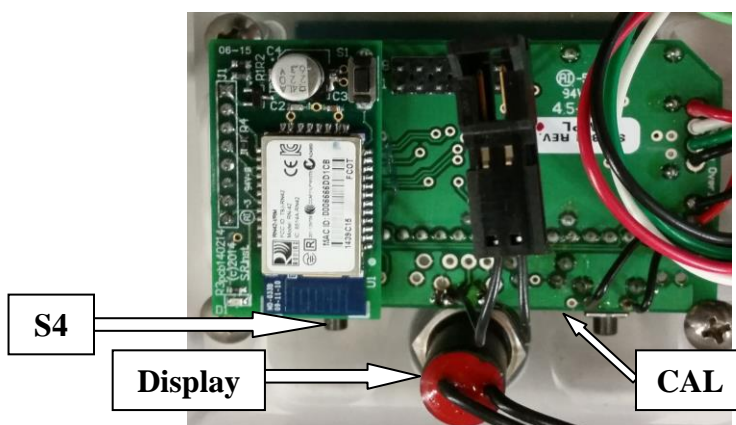


Figure 5: Calibration Buttons

Calibration Tolerance Chart		
Lower Limit	Applied Weight	Upper Limit
99.8	100	100.2
199.6	200	200.4
249.5	250	250.5
399.2	400	400.8
499.0	500	501.0
748.5	750	751.5
998.0	1000	1002.0
1497.0	1500	1503.0
1996.0	2000	2004.0

**STEP 9:** Ensure nothing is in contact with the platform then press the **DISPLAY** button when the display reads “ZERO”.

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## CALIBRATION (Cont'd)

**STEP 10:** When the display reads “FULL”, place the weight from Step 1 on the platform and press the **DISPLAY** button.

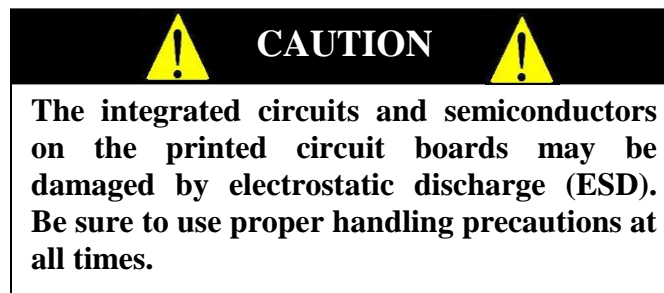
**STEP 11:** Press the **DISPLAY** button once more to save. To exit without saving, press **S4** to select “QUIT”, then press the **DISPLAY** button

**STEP 12:** When finished making adjustments, remove all weight from the scale.

**STEP 13:** Replace the display box cover and securely tighten screws. Re-attach display to platform and securely tighten screws.

**NOTE:** **TIGHTEN SCREWS ONLY UNTIL RUBBER SEAL STARTS TO COMPRESS.**

**STEP 14:** Press and hold the **DISPLAY** button to zero the platform. When the display indicates “0.0”, place the calibrated weight on the scale again and check against the weight displayed. If the weight is not correct, recalibrate. (If calibration cannot be accomplished, call the Service Department.)



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## TROUBLESHOOTING

SYMPTOM	REASON/CORRECTIVE ACTION
Weight reading is much lower than expected.	Check that the platform is clean underneath, stand on each of the four corners to see if one corner is not weighing correctly.
<b>For additional information or assistance, telephone our Service Hotline: 1-800-654-6360 or e-mail: <a href="mailto:sri@srinstruments.com">sri@srinstruments.com</a></b>	

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## WARRANTY

### TWO (2) YEAR LIMITED WARRANTY

Each **SR Scales**<sup>®</sup> system is manufactured with high quality components. SR Instruments, Inc. warrants that all new equipment will be free from defects in material or workmanship, under normal use and service, for a period of two (2) years from the date of purchase by the original purchaser. Normal wear and tear, injury by natural forces, user neglect, and purposeful destruction are not covered by this warranty. Warranty service must be performed by the factory or an authorized repair station. Service provided on equipment returned to the factory or authorized repair station includes labor to replace defective parts. Goods returned must be shipped with transportation and/or broker charges prepaid. SR Instruments, Inc.'s obligation is limited to replacement of parts that have been so returned and are disclosed to SR Instruments, Inc.'s satisfaction to be defective. The provisions of this warranty clause are in lieu of all other warranties, expressed or implied, and of all other obligations or liabilities on SR Instruments, Inc.'s part, and it neither assumes nor authorizes any other person to assume for SR Instruments, Inc. any other liabilities in connection with the sale of said articles. In no event shall SR Instruments, Inc. be liable for any subsequent or special damages. Any misuse, improper installation, or tampering, shall void this warranty.

### DAMAGED SHIPMENTS

Title passes to purchaser upon delivery to Transportation Company. Purchaser should file any claims for shortage or damage with the delivery carrier and should refuse any shipment that has obvious external damage.

### RETURN POLICY

All products being returned to SR Instruments, Inc. require a Return Goods Authorization number (RGA). To receive an RGA, call our Customer Service at 716-693-5977 ext 103 or toll-free in the USA and Canada at 800-654-6360 ext 103.

When inquiry is made, please supply model and serial numbers, purchase order and reason for return.

Generally, deleted, damaged, and outdated merchandise will not be accepted for credit. A minimum restocking charge of 15% will be assessed on return of current merchandise unless scale is returned because of SR error.

No returns will be accepted after 30 days.

All returns are to be shipped **FREIGHT PREPAID** to: SR Instruments, Inc., 600 Young Street, Tonawanda, NY 14150.

### RESTOCKING FEE

- **15% fee** will be assessed on return of current merchandise
- **No fees** will be charged if the scale is returned because of an error on the part of SR Instruments, Inc.
- **No returns** accepted after 30 days.

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## NOTES



**Precision & Technology in  
Perfect Balance®**