VS-10

Veterinary Scale

Technical Manual

RICE LAKE
WEIGHING SYSTEMS

Revision History

This section tracks and describes the current and previous manual revisions for awareness of major updates and when the updates took place.

Revision	Date	Description
A	September 9, 2023	Revision history established
B	September 18, 2024	Updated troubleshooting procedures

Table i. Revision Letter History

Technical training seminars are available through Rice Lake Weighing Systems. Course descriptions and dates can be viewed at **www.ricelake.com/training** *or obtained by calling 715-234-9171 and asking for the training department.*

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*Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit **www.ricelake.com/webinars***

1.0   Introduction

The Rice Lake Veterinary Scale (VS-10) provides precise weighing of animals for accurate, reliable and repeatable weighments. Movement compensation technology eliminates errors caused by spontaneous movement of the animal and the weight can be displayed in pounds/ounces or in kilograms.

Manuals are available from Rice Lake Weighing Systems at **www.ricelake.com/manuals**

Warranty information is available at **www.ricelake.com/warranties**

Figure 1-1. VS-10 Veterinary Scale

1.1   Safety

Safety Definitions:

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.
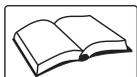
CAUTION: Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.

IMPORTANT: Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

General Safety

Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.

WARNING

Failure to heed could result in serious injury or death.

Ensure every individual operating or working with this unit has read and understands the following safety information.

Do not transport the scale with an animal on the weighing tray.

Clean the scale regularly to avoid cross contamination.

Do not allow minors (children) or inexperienced persons to operate this scale.

Do not use in the presence of flammable materials.

Do not use this product if any of the components are loose or cracked.

Do not drop the scale or subject it to violent shocks.

For accurate weighing, the scale must be placed on a level, stable surface.

Weight exceeding the maximum rated scale capacity may damage the scale.

Avoid contact with excessive moisture.

Do not make alterations or modifications to the scale; any alterations void the warranty.

For accurate weighing, verify proper setup is complete prior to first use. See Section 3.2 on page 9.

Operation at voltages and frequencies other than specified could damage the scale.

Utilizing adapters not supplied by Rice Lake Weighing Systems voids all warranties.

1.2   Disposal

Product Disposal

The product must be brought to appropriate separate waste collection centers at the end of its life cycle.

Proper separate collection to recycle the product helps prevent possible negative effects on the environment and to health, and promotes the recycling of the materials. Users who dispose of the product illegally shall face administrative sanctions as provided by law.

Battery Disposal

Dispose of batteries at appropriate waste collection centers at the end of their life cycle in accordance with local laws and regulations. Batteries and rechargeable batteries may contain harmful substances that should not be disposed of in household waste. Batteries may contain harmful substances including but not limited to: cadmium (Cd), lithium (Li), mercury (Hg) or lead (Pb). Users who dispose of batteries illegally shall face administrative sanctions as provided by law.

⚠ *WARNING: Risk of fire and explosion. Do not burn, crush, disassemble or short-circuit lithium batteries.*

2.0 Setup

The VS-10 comes fully assembled and includes the scale and a 120 V adapter. Immediately after unpacking, visually inspect the VS-10 to ensure all components are included and undamaged. If parts were damaged in shipment, notify Rice Lake Weighing Systems and the shipper immediately.

Use the following instructions for scale setup:

1. Place the scale on a sturdy, level surface.

2. Connect the 120 V adapter to the back of the scale.

3. Plug the AC adapter into a power source.

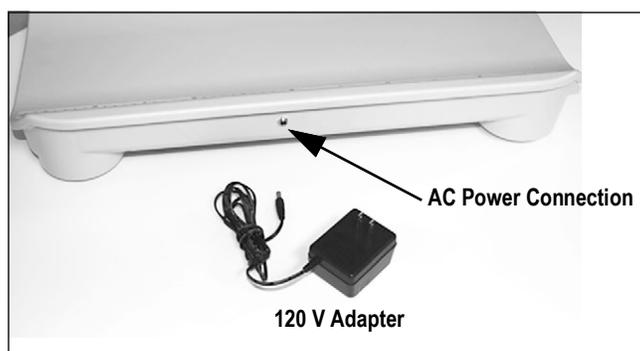*Figure 2-1. AC Power Connection Site*

The VS-10 can also be powered by four AA alkaline batteries if an additional power source is not available. A battery powered scale automatically turns off after two minutes of not being used to save battery life. Replace the batteries or connect to an AC power source as soon as possible if the low battery indicator (*Lo*) displays.

Figure 2-2. Low Battery Indicator

3.0   Operation

The VS-10 accurately weighs animals up to 44 lb (20 kg). The weighing surface also includes a ruler for measuring the length of the animal. The built-in ruler can measure animals up to 22.5 in (57 cm).

NOTE: If the scale is battery powered and has not been used for two minutes, it automatically turns off to save battery life.

3.1   Display Descriptions

The following section describes the VS-10 operating keys and their functions.
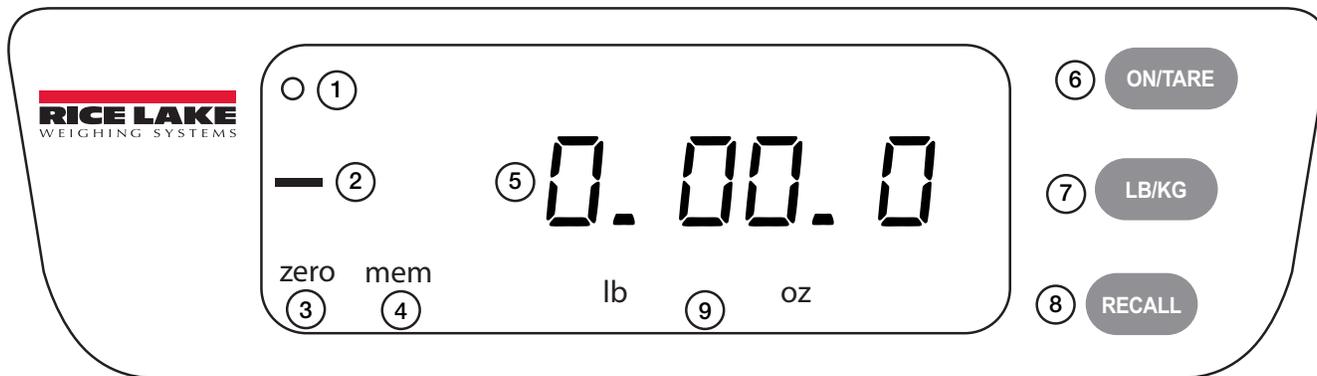
Figure 3-1. VS-10 Display

Item	Description	Function
1	Motion annunciator	Displays when a weight reading is complete
2	Negative/Minus annunciator	Indicates a negative weight reading
3	Zero annunciator	Indicates the scale is stable and ready for use
4	Memory annunciator	Indicates the last weight measurement is displayed after pressing RECALL
5	6-Digit LCD digital display	Displays the weight in pounds/ounces or kilograms
6	On/Off	Press to turn On Press and hold to turn Off
	Tare	With weight on the scale, short press to tare off the weight, 0 displays
7	LB/KG	Selects pounds/ounces or kilograms
8	RECALL	Recalls the last weight measurement *Example: Weigh a animal on the scale and then remove the animal* * Press RECALL and the animal's weight displays again*
9	LB/OZ annunciator	Indicates the scale is weighing in pounds/ounces
	KG annunciator	Indicates the scale is weighing in kilograms

Table 3-1. Front Panel with Annunciators Displayed

NOTE: The VS-10 comes pre-calibrated from the factory.

3.2   Initial Setup

Use the following steps to set up and verify the VS-10 upon initial power up and periodically thereafter.

1. Plug AC adapter cable into the back of the scale (Figure 2-1 on page 7) and the AC adapter plug into a power source.

2. Turn on the scale. A self test runs and *0.00.0 lb* or *0.00 kg* displays when complete.

3. Place a weight, not exceeding 40 lb, on the scale. The weight measurement is complete when **O** displays.

4. Press (**LB/KG**) to select unit of measure, lb/oz or kg.

5. Remove the weight from the scale. To display the weight again, press (**RECALL**).

NOTE: If setup procedure fails, see Section 5.3 on page 13. If problem is not resolved, refer to a qualified service provider.

3.3   Set Units

The VS-10 can be set to display weights in lb/oz only, kg only, or to toggle between lb/oz and kg units on the scale.

3.3.1   KG Units Only

Lock the weight units to display in kg only.

1. Ensure the scale is turned on.

2. Press (**LB/KG**) to change the displayed units to kg.

3. Press and hold (**LB/KG**) for five seconds until *kg* flashes.

4. Release (**LB/KG**). The weight units are now locked in kg. Pressing (**LB/KG**) does not switch units to lb/oz.

3.3.2   LB/OZ Units Only

Lock the weight units to display in lb/oz only.

1. Ensure the scale is turned on.

2. Press (**LB/KG**) to change the displayed units to lb/oz.

3. Press and hold (**LB/KG**) for five seconds until *lb oz* flashes.

4. Release (**LB/KG**). The weight units are locked in lb/oz. Pressing (**LB/KG**) does not switch units to kg.

3.3.3   Unlock Units

Unlock the weight units to toggle between lb/oz and kg.

1. Ensure the scale is turned on.

2. Press and hold (**LB/KG**) for five seconds until *kg* or *lb oz* flashes.

3. Release (**LB/KG**). Pressing (**LB/KG**) toggles units between lb/oz and kg.

3.4   Weigh With A Tare

The tare function removes the weight of additional items on the scale, such as a pad or blanket, at the time the animal is weighed.

1. Turn on the scale. *0:0.0 lb oz* or *0.00 kg* displays.

2. Place a pad on the weighing tray, ensuring the edges of the pad are not touching the stand. **O** displays when the weight reading is complete.

3. Press ON/TARE to remove the weight of the pad or any other accessory on the weighing tray.

4. Place a animal on the scale. **O** displays when the weight reading is complete.

5. Remove the animal from the scale.

6. Press RECALL to display the weight again, if necessary.

3.5   Weigh Without A Tare

Use this procedure when there are no additional items on the scale at the time the animal is weighed.

1. Turn on the scale. *0:0.0 lb oz* or *0.00 kg* displays.

2. Place a animal on the scale. **O** displays when the weight reading is complete.

3. Remove the animal from the scale.

4. Press RECALL to display the weight again, if necessary.

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4.0   Calibration

This section contains procedures on how to calibrate the VS-10 based on the year of the firmware version.

4.1   Firmware Version 2016 and After

Use the following instructions to calibrate the VS-10 with a newer version of firmware.

📝 *NOTE: Ensure the scale is installed on a level surface.*

The scale needs to be off at the start of the calibration procedure.

Calibration is performed using two 20 lb calibration weights or two 10 kg calibration weights.

4.1.1   Toggling Calibration between Pounds and Kilograms

🛈 *IMPORTANT: The* VS-10 *must be configured to calibrate in pounds or kilograms. Ensure that the correct calibration units have been selected before calibrating.*

Perform the following steps to select and toggle calibration units from pounds to kilograms.

1. Press `ON/TARE` to turn the scale on.

2. Press `LB/KG` and `ON/TARE` (at the same time). *UNIT 1* displays.

3. Press `ON/TARE`. *CAL* displays and *lb* lights.

4. Press `LB/KG` to switch to kg. *CAL* displays and *kg* lights.

5. Press and hold `ON/TARE` to turn the scale off.

4.1.2   Calibrating with Pounds
1. Ensure the scale is turned off.

2. Press `LB/KG` and `ON/TARE` (at the same time). The raw A/D counts display.

3. Press `ON/TARE` again. *CAL20* displays.

4. Load the scale with a 20 lb test weight. *CAL40* displays.

5. Load the scale with a second 20 lb test weight to equal a total of 40 lb.

6. *End* briefly displays and scale returns to weigh mode. *20.00* displays.

7. Place a known weight onto the scale to confirm the correct calibration. If not correct, repeat the calibration procedure.

4.1.3   Calibrating with Kilograms
1. Ensure the scale is turned off.

2. Press `LB/KG` and `ON/TARE` (at the same time). The raw A/D counts display.

3. Press `ON/TARE` again. *CAL10* displays.

4. Load the scale with a 10 kg test weight. *CAL20* displays.

5. Load the scale with the second a 10 kg test weight to equal a total of 20 kg.

6. *End* briefly displays and scale returns to weigh mode. *20.00* displays.

7. Place a known weight onto the scale to confirm the correct calibration. If not correct, repeat the calibration procedure.

4.2   Firmware Version Prior to 2016

Use the following instructions to calibrate the VS-10 with an older version of firmware.

1. Ensure the scale is installed on a level surface.

NOTE: The scale needs to be off at the start of the calibration procedure.

2. If using kg weights, the scale needs to be set up using the following instructions (skip to step 3 if using lb weights).

    • Press and hold (LB/KG) and (ON/TARE) (at the same time) until the scale displays *CAL*.

    • Release the keys. The scale displays the raw A/D counts.

    • Press (RECALL). *CAL* displays and *lb* lights.

    • Press (LB/KG) to switch to kg. *CAL* displays and *kg* lights.

    • Press and hold (ON/TARE) to turn the scale off.

3. Press and hold (LB/KG) and (ON/TARE) (at the same time) until *CAL* displays.

4. Release the keys. The raw A/D counts display.

5. Press (ON/TARE). *0.00* displays.

6. Load the scale with a 40 lb or 20 kg test weight.

7. Press (ON/TARE) again. *40.00* (lb) or *20.00* (kg) displays.

8. Press (ON/TARE) again. *Pass* displays and the scale turns off automatically.

9. Remove weight from the scale.

10. Turn on the scale.

11. Place a known weight onto the scale to confirm the correct calibration. If it is not correct, repeat the calibration procedure.

5.0   Maintenance

The following section provides instructions for maintaining, cleaning and troubleshooting the VS-10.

ⓘ *IMPORTANT: Maintenance operations not described in this section must be performed by qualified service personnel.*

5.1   Basic Maintenance

- Check the scale for proper operation and function before first use and after periods of non-use.
- Inspect the scale. If the scale does not operate correctly, contact qualified service personnel.
- Check the overall appearance of the entire scale for any obvious signs of damage.
- Inspect the condition of the AC adapter for cord fraying or for broken or bent prongs.

5.2   Cleaning

Proper care and cleaning is essential to ensure a long life of accurate and effective operation. Disconnect the scale from the AC power source before beginning the cleaning process.

ⓘ *IMPORTANT: Do not immerse the scale into cleaning solutions or other liquids. Do not use Isopropyl alcohol or other solutions to clean the display surface.*

1. Clean all external surfaces with a clean, damp cloth or tissue. Mild soap and water solution can be used.
2. Dry with a clean, soft cloth.

5.3   Troubleshooting

Use the following instructions to troubleshoot any errors with the scale.

Symptom	Possible Cause	Corrective Action
Scale does not turn on	Batteries are dead	Replace batteries or connect scale to a power source
	Electrical outlet is faulty	Use a different electrical outlet
	Power supply is faulty	Replace the adapter ***NOTE: Utilizing adapters not supplied by Rice Lake Weighing Systems voids all warranties***
Scale displays questionable weight or does not zero	There is weight on or an object interfering with the scale	Remove animal, weight or interfering object from scale
	Weight was placed on the scale before 0.0 displayed	Remove animal or weight from the scale; zero scale and begin weighing process again
	Scale is not on a level surface	Place scale on a stable surface and begin weighing process again
	Weighing tray is not placed properly	Ensure weighing tray is properly installed
	Scale is out of calibration	Check scale calibration with a known weight value; perform a new calibration if the calibration is incorrect (see Section 4.0 on page 11)
o_Ld message is displayed	Load on the scale exceeds the capacity	Remove excess weight and use scale according to its stated limit
Err message is displayed	**RECALL** key was pressed with insufficient weight on the scale	Place more than 2 lb 30 oz on the scale
OUTZ message is displayed	Scale needs to be recalibrated	Recalibrate the scale

Table 5-1. Troubleshooting Table

6.0 Specifications

Capacity:

44 lb x 0.5 oz (20 kg x 10 g)

Power:

Four AA alkaline batteries (included)
or AC adapter (included)

Battery Type

Four AA alkaline (included)

Approvals:

AC adapter: cUL us

Warranty:

Two-year limited

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