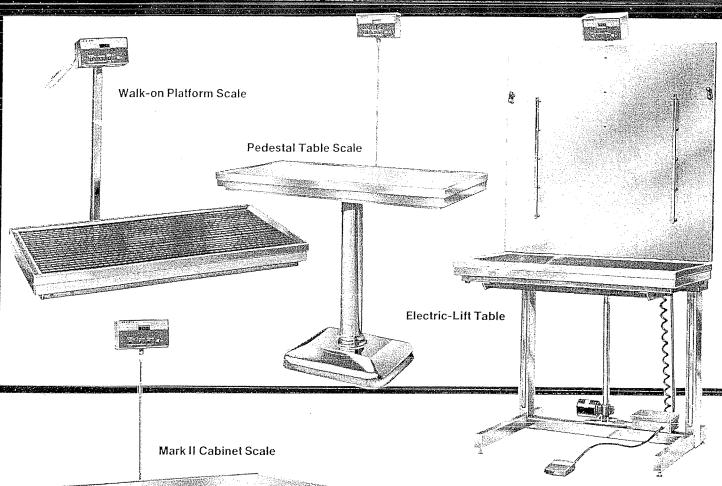
## ASSEMBLY/OPERATION INSTRUCTIONS

# SIOPLIE.

## SL-4 DIGITAL SCALE PRODUCTS





CONTENTS	
COMICIAIS	Page Number
Introduction	3
Basic Scale Assembly	4-5
Installation of Specific Scale Applications:	
"Walk-on Platform" Application	6-7
"Pedestal Table" Application	8-9
"Mark II Cabinet" Application	10-11
"Electric-Lift Table" Application	12-15
Remote Swivel Mount Installation	16
SL-4 Digital Readout Operations	17-19
Trouble Shooting Guide	20-21
Calibration Procedure	22-23
Parts Identification	24-25

### INTRODUCTION

# SHOR-LINE SL-4 DIGITAL SCALES ARE AVAILABLE IN FOUR DIFFERENT APPLICATIONS:

"Walk-on" Scale...

sets directly on the floor so the patient simply "steps on" the scale to be weighed.

"Pedestal" Scale...

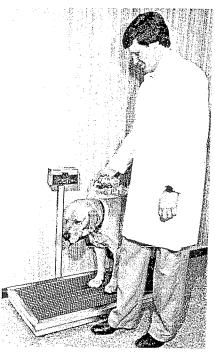
serves as a raised exam surface and scale.

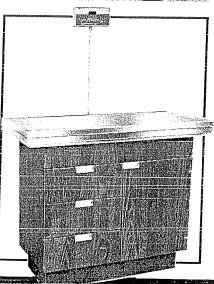
**3** "Mark II Cabinet" Scale . . .

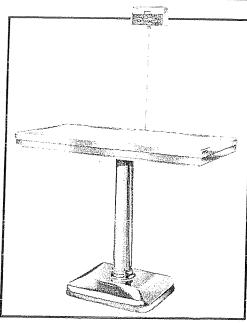
serves as a raised exam surface and scale with the added advantage of drawer and counter storage space.

"Electric Lift" Scale . . .

a combination of scale and electric lift surface for easier handling of heavier patients.









■ Each of the specific applications has installation instructions unique to itself while the Basic Scale Assembly instructions are common to all applications. For this reason it is necessary to reference the Basic Scale Assembly instructions first and then proceed to the specific scale installation instructions where indicated by the "STOP" and "GO" signs. If the instructions are not followed in the indicated order,

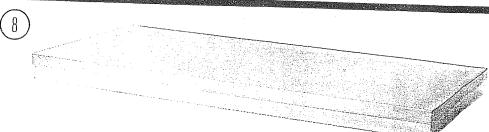
your scale, whatever its application, cannot be assembled and installed properly. Once the scale has been assembled and installed, reference the "SL-4 Digital Readout Unit Operation" for operating instructions.

Although rarely needed, we have provided a "Trouble Shooting Guide" for your convenience. If a problem should persist or you should have any questions, call Shor-Line Customer Service toll free at 1-800-821-3320.

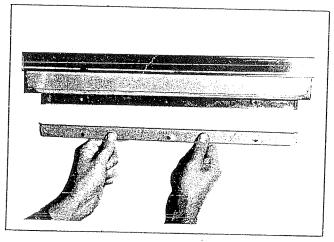
CAUTION: Each scale assembly is identified by serial number. The components: electronic readout, transducers and level arms have been balanced electronically and mechanically and are not interchangeable with other scales. Be sure on multiple orders that the parts are not mixed.

## **Basic Scale Assembly**

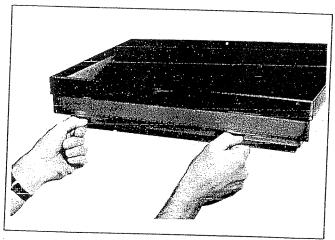
Pick up platform top and in righted position carefully set it onto the base. Top should sit set squarely on base.



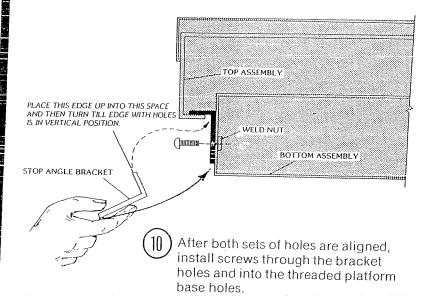
Remove three screws from platform base, then select one of the stainless steel stop angle brackets, taking notice that one edge has three holes that match three holes in the end of the platform base. Placing the edge of the bracket without the holes against the end of the platform base, push the bracket up and toward the outside of the platform.



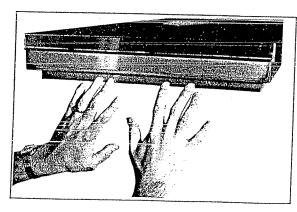
Match three holes in bracket with three holes in the end of the platform base.



Insert bracket edge up and outward from the platform base so holes in bracket line up with holes in base.



Place black mat on scale corrugated side up.

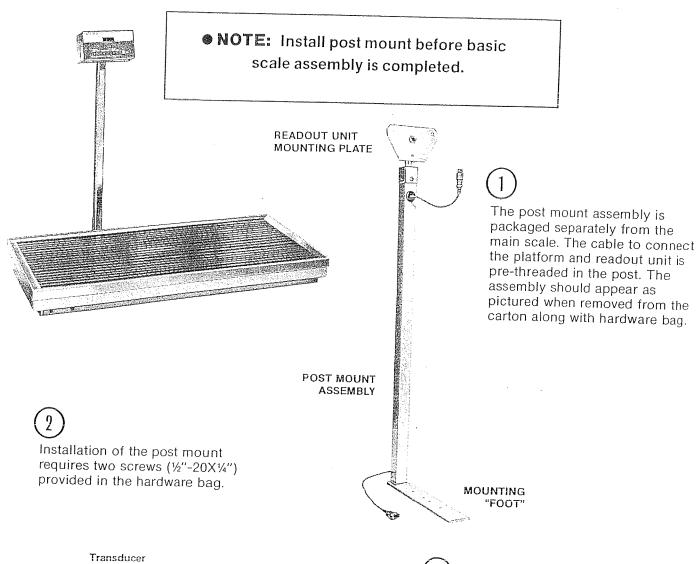


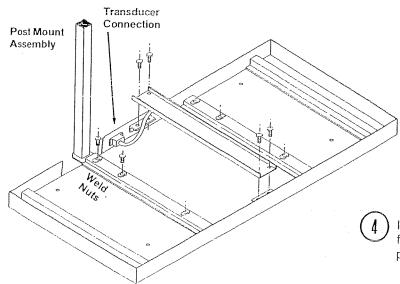
#### NOTE:

- If all steps are completed correctly, the platform top will not separate from the base.
- Keep all spare parts for future use.

## Walk-On Application

The walk-on scale requires no special installation unless the **post mount** for the SL-4 Digital Readout Unit is desired. To install the post mount, follow these instructions:

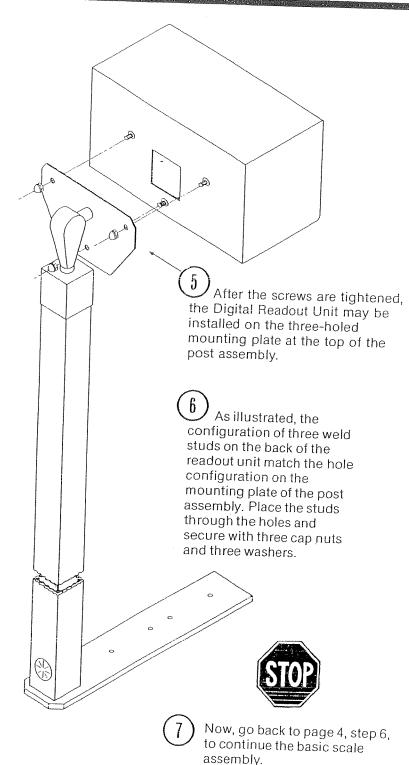




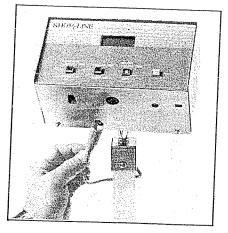
The post should be placed vertically along the back of the scale with the "foot" on the floor under the platform base and under the bracket located about 7" to the left of the scale's center as you face it. This bracket has two weld nuts (5/16"). These are larger than the installing screws and are merely reinforced clearance holes.

Install the screws through the weld nuts from the top and screw them into the pre-threaded holes in the post mount foot.

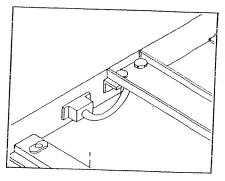




After readout unit is secured to the mounting plate, connect all cable plugs. First, connect the scale base plug to the plug extruding from the base of the post. Then, connect the plug extruding from the top of the post to the recepticle on the bottom of the readout unit.

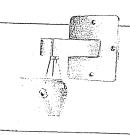


Plug receptacle in bottom of readout unit.



Plug in platform base.

NOTE: The SL-4 Digital Readout Unit comes fastened to a remote swivel mount designed to mount to the wall or other convenient location. However, if post mount is preferred, simply detach the readout unit from remote swivel mount by removing cap nuts. Store the remote swivel for possible future use. (If remote swivel mount is desired, installation instructions are on page 16).



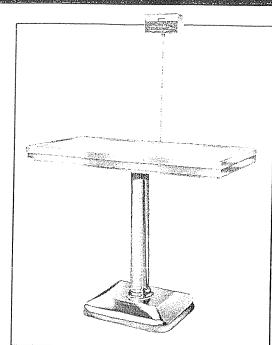
REMOTE SWIVEL MOUNT

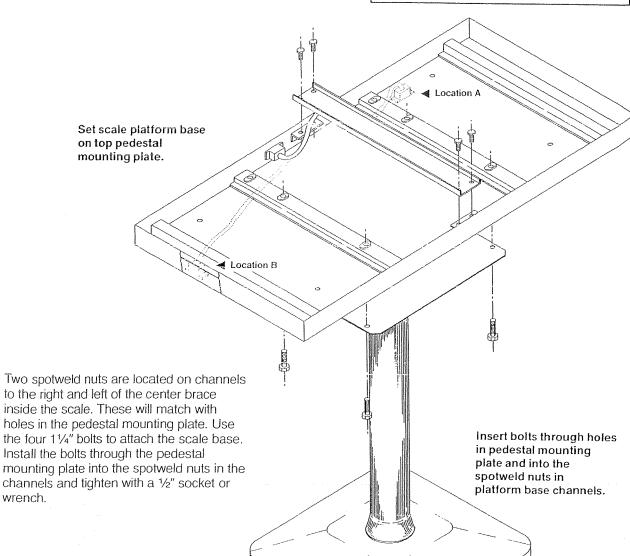
## **Pedestal Table Application**

- Unbolt and remove rubber feet from each corner of the scale platform base. These feet are not needed with your pedestal scale table.
- Unpack pedestal base and hardware.

wrench.

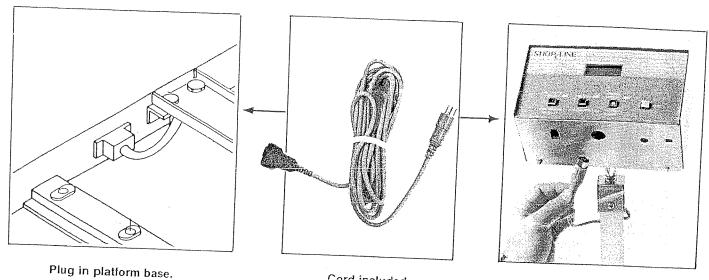
Place scale platform base on top of pedestal base mounting plate, taking care to keep scale base plug clear. The scale base plug is located at the back of the pedestal table when shipped. For your convenience, the plug may be moved to other locations. See step (6) for further instructions.





# **Pedestal Table Application** •

Connect SL-4 Digital Readout Unit to the scale by means of cord provided. Plug one end of cord into scale base and the other end of the cord into the receptacle in the bottom of the Digital



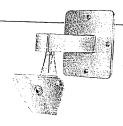
Cord included.

Plug receptacle in bottom of readout unit.

- NOTE: When moving plug from one location to another, table top must be removed from base. Ideally plug should be repositioned before table is assembled.
  - a. Cut tie-wrap on transducer cable allowing cable to extend to full length.
  - b. Remove existing hardware (screws) surrounding and holding plug and cable to platform
  - c. Re-route plug and cable to new location (A or B).
  - d. Reattach hardware.

IMPORTANT: Cable MUST be free from interferring with mechanical lever arms when top is assembled. Interference could cause damage to plug. PLEASE CHECK BEFORE PROCEEDING

NOTE: The SL-4 Digital Readout Unit comes fastened to a remote swivel mount designed to mount to the wall or other convenient location.

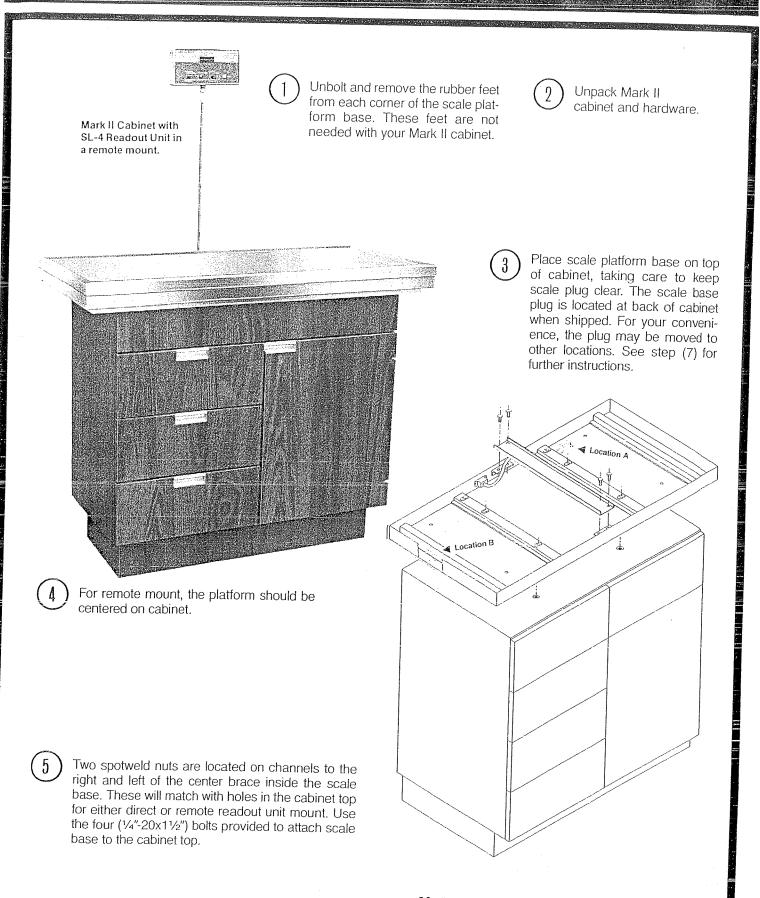


Remote Swivel Mount



Now, go back to page 4, step (6), to continue the basic scale assembly.

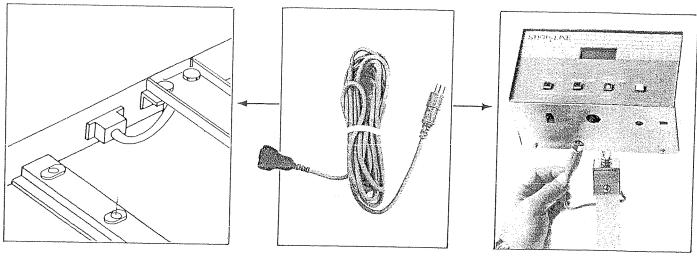
## Mark II Cabinet Application



**Note:** Spotweld nuts are larger than the bolts, so bolts will insert through to the cabinet top.

## **Mark II Cabinet Application**

Connect the SL-4 Digital Readout Unit to the scale by means of cord provided. Plug one end of cord into scale base and the other end of the cord into the receptacle in the bottom of the digital readout unit.



Plug in platform base.

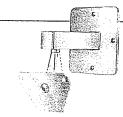
Cord included.

Plug receptacle in bottom of readout unit.

- NOTE: When moving plug from one location to another, table top must be removed from base. Ideally plug should be repositioned before table is assembled.
  - a. Cut tie-wrap on transducer cable allowing cable to extend to full length.
  - b. Remove existing hardware (screws) surrounding and holding plug and cable to platform base.
  - c. Re-route plug and cable to new location (A or B).
  - d. Reattach hardware.

IMPORTANT: Cable MUST be free from interferring with mechanical lever arms when top is assembled. Interference could cause damage to plug. PLEASE CHECK BEFORE PROCEEDING TO NEXT STEP.

**NOTE:** The SL-4 Digital Readout Unit comes fastened to a remote swivel mount designed to mount to the wall or other convenient location.



REMOTE SWIVEL MOUNT



Now, go back to page 4, step (6), to continue the basic scale assembly.

## **Electric Lift Application**

Your lift table has been designed to elevate animals and accurately display their weight (up to 300 lbs.). A virtually motionless exam top and a gentle start/stop elevating action minimizes animal anxiety.

#### ■ ASSEMBLY INSTRUCTIONS ■

The lift table is shipped in three cartons:

- One wooden pallet and corrugated box (approx. 250 lbs.) containing the main frame, motor drive, backboard and foot switch.
- One carton (approx. 60 lbs.) containing the scale platform.
- One carton (approx. 15 lbs.) containing the digital readout box.

Carefully remove the main frame from the corrugated box and wooden pallet.

The frame has leveling screws which are adjusted at the factory for a level surface. Depending on the type of floor in your office, these legs may need readjusted. Be sure the frame is level and does not rock or tip.

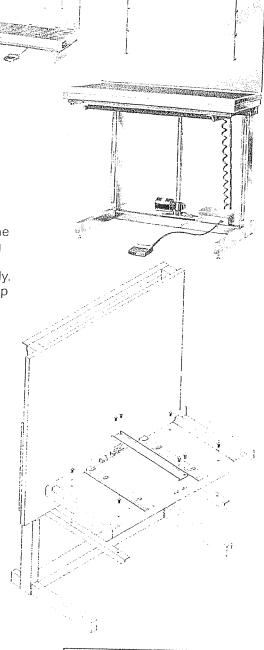
Unwind the foot switch cord and place on the floor in front of the table. Plug in the electrical cord for the table motor. Move the frame up and down by activating the foot switch. The mechanism should move freely and effortlessly. It has a special clutch that will slip at the extreme upward position and lower position.

#### **Mounting Platform Base to Lift Table**

- Unbolt and remove the rubber feet from each corner of the scale platform base. These feet are not needed with your electric-lift table.
- Place scale platform base on top of electric-lift table mounting arms, taking care to keep scale base plug clear. The scale base plug should be at back of the electric-lift mounting arms.
- (f) Insert the four 5/16"-18x1" bolts through holes in platform base and into threaded holes in the mounting arms. Tighten firmly.

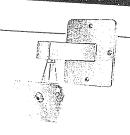


After scale base has been mounted on electric-lift mounting arms, return to the basic scale assembly section page 4, step 6, and complete the platform assembly.



# **Electric Lift Application**

**NOTE:** The SL-4 Digital Readout Unit comes fastened to a remote swivel mount designed to mount to the wall or other convenient location. However, if direct mount is preferred, simply detach the readout unit from remote swivel mount by removing cap nuts. Store the remote swivel for possible future use. (If remote swivel mount is desired, installation instructions are on page 16).



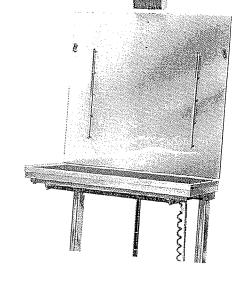
REMOTE SWIVEL MOUNT

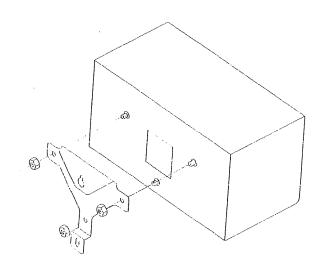
### Mounting SL-4 Digital Readout Unit to Lift Table

(1) Unpack digital readout unit and mounting plate from carton.

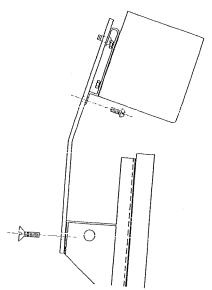
The readout unit is designed to attach to a mounting bracket at the top of backboard.

**NOTE:** For shipping purposes, the mounting bracket may be pre-assembled to the lift table. Remove bracket from jack top assembly by removing the two (#10-24x%") flathead screws.





Attach mounting plate to back of the digital readout unit by inserting the three bolts protruding from the back of the readout unit through the three holes in the plate. Secure with three cap nuts.

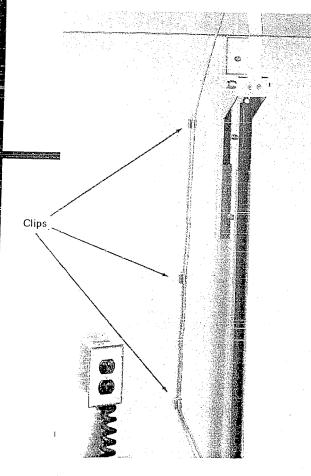


Attach the digital readout unit with mounting plate to the mounting bracket using two (8-32x%") screws provided in hardware. Install the top screw first, then place the mounting plate keyhole over the screwhead and slide down until secure. Install second screw and tighten both screws.

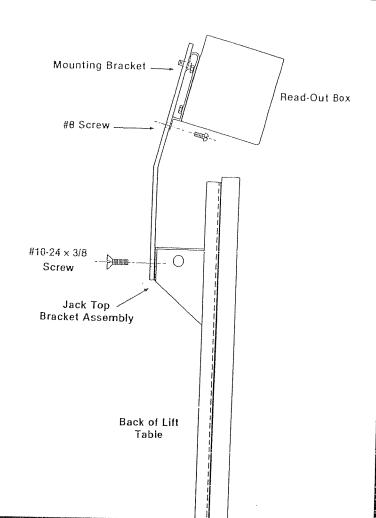
## Electric Lift Application



Attach the mounting bracket, with digital readout unit assembled, to jack top, using two (#10-24x%") screws. The readout unit faces out toward the platform.



Electrical Outlet



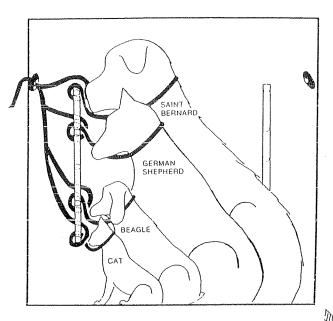
f If using A/C power (house current) instead of batteries, power cord can be plugged into the outlet on the back of the electric lift backboard. (Refer to section headed "SL-4 Digital Readout Unit Operation," for instructions on how to assemble for A/C power usage.)

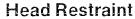
On back of lift table backboard are three gray clamps to take up and contain the excess digital readout cord.

After scale assembly has been completed, operate the lift table up and down using the foot switch while carefully checking that all cords have adequate clearance.

# Restraining Animals on the SHOR-LINE ELECTRIC-LIFT TABLE

The following instructions are simple and quick techniques for restraining animals for elevation and examination on your SHOR-LINE Table. You may use these suggestions or develop your own techniques and configurations, whichever best serves your needs.

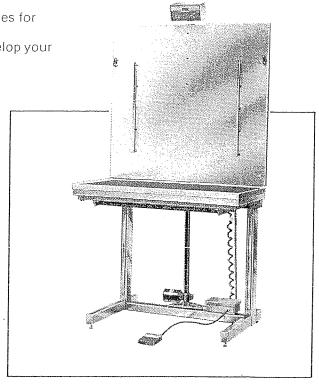


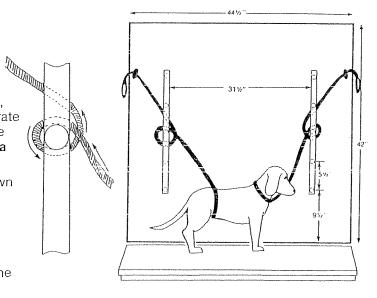


To restrain an animal's head during examination, simply use a lead attached to the collar or a separate adjustable slip-type show lead placed around the animal's neck. We do not recommend the use of a choke-type lead.

- 1) Pass the lead over a ferrule behind the tie-down bar that is level with or slightly above the animal's head.
- Bring the lead underneath the ferrule and up behind the bracket again to the spring loaded cleat.
- 3) Open the cleat with your fingers by pushing the rubber teeth toward the outside of the table.
- 4) Put the lead into the cleat and let the teeth snap back.
- 5) Pull the lead through the cleat away from the animal until the desired tension on the lead is achieved.
- 6) To make sure the lead is secure, pull the lead back through the cleat toward the animal. The lead should not slip through the cleat.

To remove the lead from the cleat, open the cleat with your fingers and pull the lead out toward you.





#### **Standing Restraint**

Restrain the head of the animal as described above.

To keep the animal in a standing position, use an adjustable slip-type show lead and secure it around the animal's abdomen just in front of the hind legs. Connect the lead to the tie-down bar and cleat as previously described under "Head Restraint."

### **Remote Swivel Mount Installation**

- Remove the readout unit and remote mount bracket from shipping carton. Reposition as pictured in Figure A.
- 2 Select a location on the wall near scale where you wish to position the readout unit. Your scale comes with a 10-ft. gray cord which must reach from base of scale to the readout unit. Be sure cord will reach to the desired position before attaching readout unit to the wall. (Note: Extralength cords can be obtained by special order).
- It is recommended that the readout unit be mounted high enough on the wall that it will always be level or tilted slightly downward for optimum readability.

If your particular application is such that you prefer to have the readout unit mounted lower on the wall and to tilt it **upward** for optimum readability, then you must modify the assembly as follows: (Figure B).

- a. Remove the three cap nuts and washers holding the readout unit to the remote mount bracket (Figure C).
- b. Remove the large nut and washer holding the remote mount bracket to the 6-sided plate (Figure C).
- c. Turn the remote mount bracket so that the locking elbow is pointed upward.
- d. Using the large nut and washer, tighten 6-sided plate to remote mount bracket (6-sided plate must be mounted with the two-hole edge up.) Be sure this attachment is secure.
- e. Reassemble the readout unit to the 6-sided plate, using the cap nuts and washers removed in step "a" above.

You are provided fasteners to be used on both drywall and plaster walls, and also on concrete walls.

- a. For drywall or plaster walls, drill four 3/8" holes where you have marked screw locations on the wall. Assemble the toggle anchors thru the wall mounting plate, then push the anchors thru the four holes and tighten the screws. Note that the anchors are designed to collapse to go thru the holes, then expand on the other side of the hole. Also note that if you remove the screw completely once the anchor is thru the hole, the anchor will fall off and have to be replaced.
- b. For concrete walls, drill four 3/8" holes using a concrete drill bit. Insert the bantam plugs into each hole. Now attach the remote mount readout assembly to the wall, using the four #10x1" pan head screws, which screw into the bantam plugs.

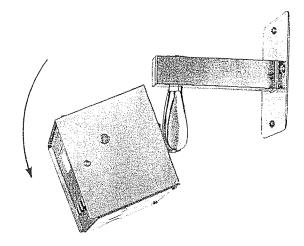
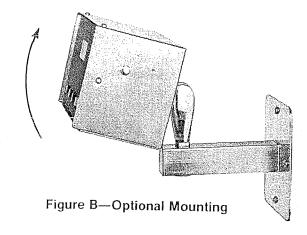
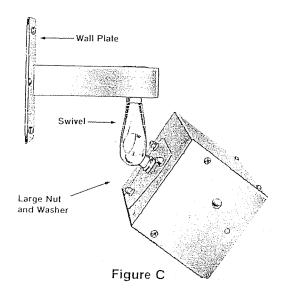


Figure A—Recommended Mounting



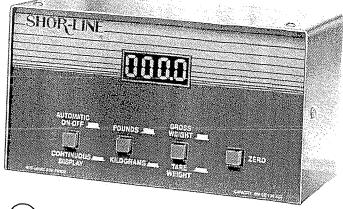


# Power Supply by Batteries (DC)

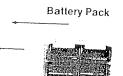
Remove the two screws securing battery pack plate located on the left side of the readout unit.

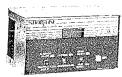


Polding the battery pack plate, carefully remove the battery pack from the readout unit.



(4) Re-insert battery pack into readout unit, using screws previously removed. Tighten battery pack plate securely.

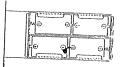


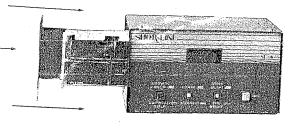


Readout Unit

Install (4) four "D" size alkaline batteries as illustrated.

Plate end of the Battery pack





NOTE: If battery pack is properly installed,

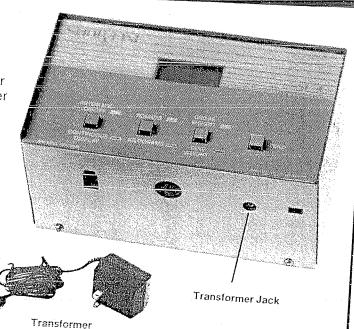
your SL-4 Digital Readout scale is operational.

# Power Supply by Electrical Outlet (AC)



Remove transformer from shipping carton. First, unwind the transformer wire and insert the transducer plug into the transformer jack on the bottom of the readout unit (see illustration).

Plug the transformer into a 115V outlet. The readout unit automatically converts to the "AC" mode.



**ECAUTION:** Always plug the transducer plug into the transformer jack BEFORE plugging the transformer into an outlet.

### **Remote Swivel Mount Installation**

- Remove the readout unit and remote mount bracket from shipping carton. Reposition as pictured in Figure A.
  - Select a location on the wall near scale where you wish to position the readout unit. Your scale comes with a 10-ft. gray cord which must reach from base of scale to the readout unit. Be sure cord will reach to the desired position before attaching readout unit to the wall. (Note: Extralength cords can be obtained by special order).
- It is recommended that the readout unit be mounted high enough on the wall that it will always be level or tilted slightly downward for optimum readability.

If your particular application is such that you prefer to have the readout unit mounted lower on the wall and to tilt it **upward** for optimum readability, then you must modify the assembly as follows: (Figure B).

- a. Remove the three cap nuts and washers holding the readout unit to the remote mount bracket (Figure C).
- b. Remove the large nut and washer holding the remote mount bracket to the 6-sided plate (Figure C).
- c. Turn the remote mount bracket so that the locking elbow is pointed upward.
- d. Using the large nut and washer, tighten 6-sided plate to remote mount bracket (6-sided plate must be mounted with the two-hole edge up.) Be sure this attachment is secure.
- e. Reassemble the readout unit to the 6-sided plate, using the cap nuts and washers removed in step "a" above.

You are provided fasteners to be used on both drywall and plaster walls, and also on concrete walls.

- a. For drywall or plaster walls, drill four 3/8" holes where you have marked screw locations on the wall. Assemble the toggle anchors thru the wall mounting plate, then push the anchors thru the four holes and tighten the screws. Note that the anchors are designed to collapse to go thru the holes, then expand on the other side of the hole. Also note that if you remove the screw completely once the anchor is thru the hole, the anchor will fall off and have to be replaced.
- b. For concrete walls, drill four 3/8" holes using a concrete drill bit. Insert the bantam plugs into each hole. Now attach the remote mount readout assembly to the wall, using the four #10x1" pan head screws, which screw into the bantam plugs.

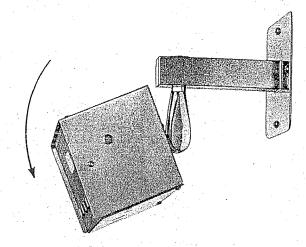
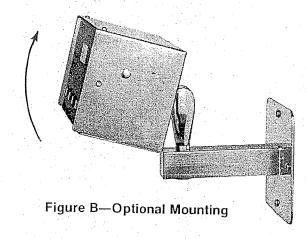
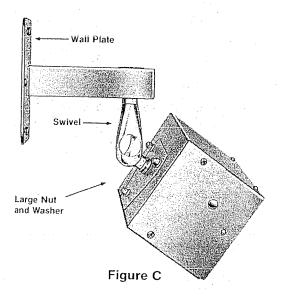


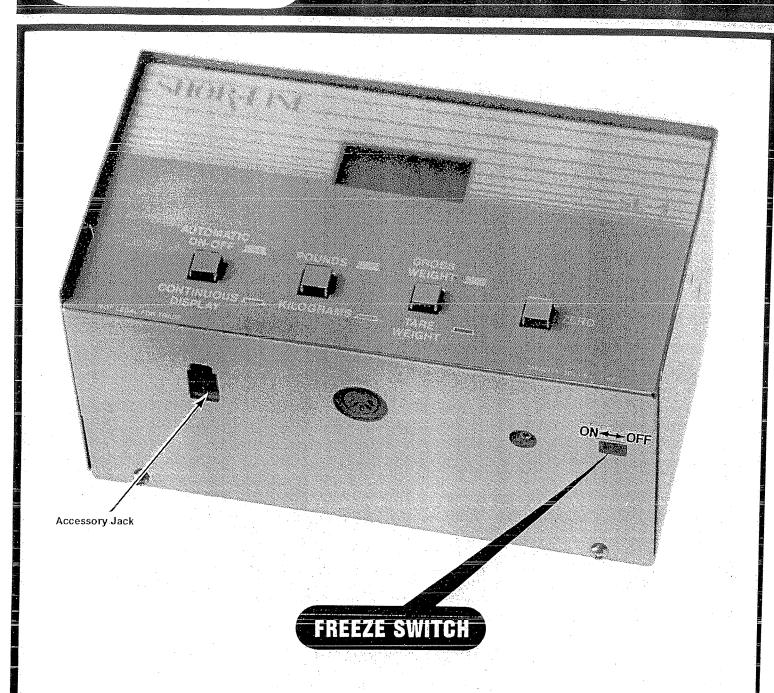
Figure A—Recommended Mounting





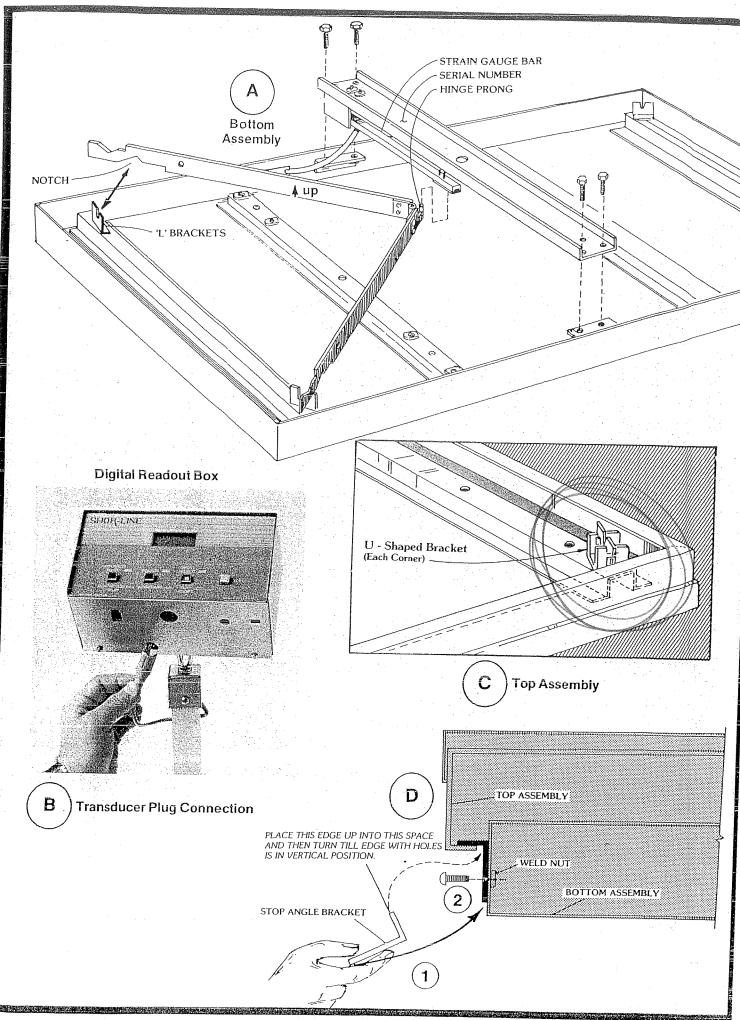
CHURLINE.

## **SL-4 Digital Readout Operation**



The "Freeze Switch" controls the "freeze" function of the readout unit. When the freeze function is off, the display will show the instantaneous weight that is sensed by the platform. Thus, while weighing an active pet, the displayed weight may fluctuate with the movement of the pet on the platform. With the freeze function "on," the displayed weight will freeze about 3 seconds after the pet is placed on the platform.

Accessory Jack is reserved for future use with accessories still under development. It does not affect the normal operation of the scale.





## **Digital Scale Troubleshooting Guide**

When checking with the manufacturer, be sure to identify scale by serial number. Serial number is shown on bottom of digital readout box as well as on the top of the transducer channel. (See figure A).

NOTE: Removing of damaged transducer cord (gray cord) from bottom assembly.

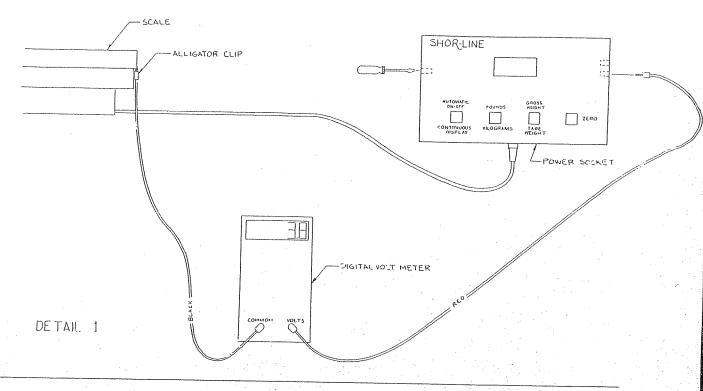
- 1) Remove stop angle DIAGNO....
  2) Remove top assembly and unplug transducer cord. 1) Remove stop angle bracket from scale assembly.

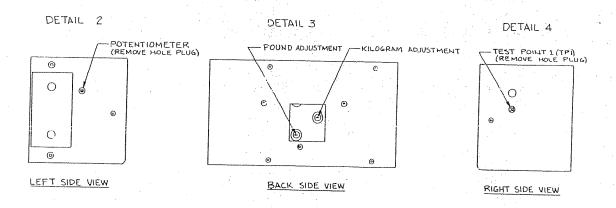
PROBLEM:	CAUSE AND CORRECTIVE ACTION:
No number displayed on digital readout box when a weight is on the scale.	<ul> <li>A. Scale does not have electrical power.</li> <li>1) If using a transformer: <ul> <li>a. Check for power at the wall receptacle (plug in a lamp to see if it lights).</li> <li>b. Ensure that transformer is securely plugged into both the wall receptacle and the transformer jack on the scale readout box.</li> </ul> </li> <li>2) If using batteries: <ul> <li>Ensure that fresh batteries are correctly installed in the battery box and that the battery box is correctly installed in the readout box.</li> </ul> </li> </ul>
Weights vary more than design tolerances with weight on platform.	A. Check for damaged "U" bracket or pivots in top assembly of lever arms. (See figure <b>C</b> ).
	B. Check for proper assembly of lever arms. (See figure A).
Display will not increase when weight is put on the platform.	<ul> <li>A. Check for proper assembly of stop angle bracket. (See figure D). Scale platform must be free to move without touching either bracket.</li> <li>B. Transducer plug not plugged in to digital readout box. (See figure B).</li> <li>C. Transducer plug in bottom assembly not plugged in. (See figure A).</li> <li>D. Check to see if you are weighing in pounds or kilograms. (Must choose one). (See figure B).</li> </ul>
Display will not zero.	A. Check transducer plug to be sure it is plugged into digital readout box. (See figure <b>B</b> ).
	B. Check power connections as described in #1 above.
Display numbers not readable (numbers tend to fade, dissolve, etc.)	A. Probably no power from battery pack. Check battery pack and replace batteries, if necessary.
TOP ASSEMBLY	

### **CALIBRATION PROCEDURES**

Refer to the diagrams below when calibrating your SL-4 Scale.

Your SL-4 Scale has been pre-calibrated at the factory. The following calibration procedures are for future reference.





See opposite page for procedures for calibrating your SL-4 Scale.

#### **EQUIPMENT REQUIRED**

- 1) Digital Volt Meter (10 mega-ohm min impedance)
- 2) Small screwdriver (flat blade)
- 3) Calibrated weights (pounds and kilograms)

NOTE: Freeze switch is off during procedure and Gross Weight/Tare Weight switch is set on Gross Weight.

#### PROCEDURE 1

- 1) Remove battery pack and hole plugs covering adjustment holes.
- 2) Plug power plug into power socket on SL-4 Digital Display Box.
- 3) Set Automatic On-Off/Continuous Display switch to Continuous Display.
- 4) Attach Digital Volt Meter (common) black wire to a convenient place on scale with alligator clip.
- 5) Plug Digital Volt Meter (DC/Volts) red wire into Test Point 1 (TP1 Detail 4).
- 6) Push and hold Zero button while adjusting Potentiometer (Detail 2) with screwdriver until Digital Volt Meter reads 3.8 VDC. Remove screwdriver and release Zero button.
- 7) Remove Digital Volt Meter wires from scale and TP1 (Detail 4).

#### PROCEDURE 2

- 1) Set Pounds/Kilograms switch to kilograms.
- 2) Place 100 kilograms of weight on scale.
- 3) Adjust kilogram adjustment (Detail 3) to read 100 kg ( $\pm$ 1%) on display.
- 4) Remove weight. Be sure display goes back to zero.
- 5) Set Pounds/Kilograms switch to pounds.
- 6) Place 200 pounds of weight on scale.
- 7) Adjust pound adjustment (Detail 3) to read 200 pounds on display.
- 8) Remove weight. Be sure display goes back to zero.
- 9) Repeat steps 1 and 2 and check display to see that it reads 100 kilograms.
- 10) Remove weight (be sure display goes back to zero) and repeat steps 5 and 6. Check display to see that it reads 200 pounds.
- 11) Remove 200 pounds of weight and be sure display goes back to zero.

NOTE: If procedures are not successful, repeat. If no accurate reading is obtained after three (3) attempts, contact SHOR-LINE Customer Service for instructions. Scale should be accurate to within  $\pm 1\%$ .





REAR VIEW

