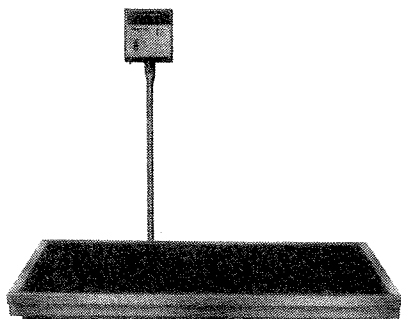


ASSEMBLY / OPERATION INSTRUCTIONS

1

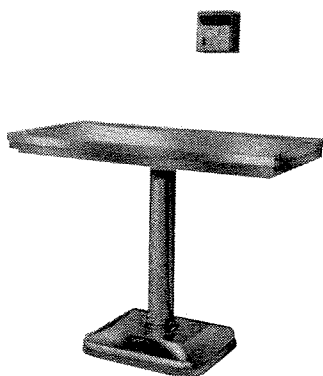


Shor-Line Digital Scales are available in four different combinations:

- 1) "Walk-On" Scale . . . sets directly on the floor with either a remote or post-mount readout box.
- 2) "Pedestal" Scale . . . serves as a raised exam surface as well as a scale. Direct-mount or remote-mount readout box is available.
- 3) "Mark II Cabinet Mount" Scale . . . available with direct-mount or remote-mount readout box.
- 4) "Elevator Lift" Scale . . . a combination that performs as a scale and elevator lift surface for easier handling of heavier patients. Remote or direct-mount readout box is available.

This Assembly/Operation Manual includes your particular scale combination, which you can identify from the photos on this page.

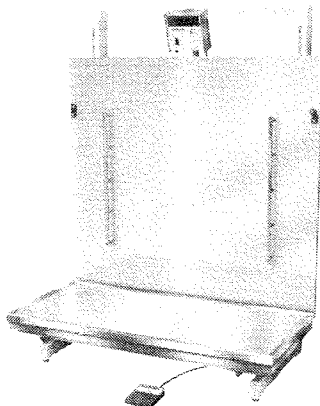
2



3



4



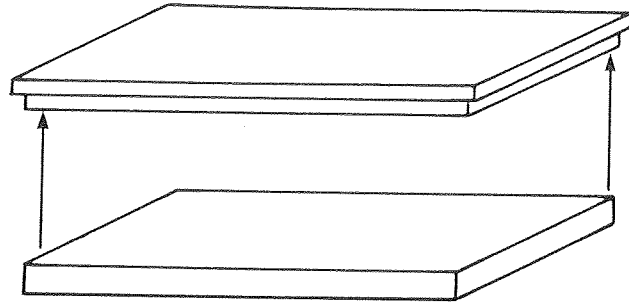
CONTENTS

	PAGE
SCALE ASSEMBLY	2-4
SCALE MOUNTING	
Walk-On Installation	5
Pedestal Installation	5
Mark II Cabinet Installation	6
Elevator Lift Installation/Restraining Instructions	7-8
DIGITAL READOUT BOX MOUNTING	
Elevator Lift Installation	9
Walk-On Post Installation	10
Pedestal and Mark II Scales (Direct Installation)	11
Remote Installation	12
OPERATION OF DIGITAL SCALE	13
DIGITAL SCALE TROUBLE SHOOTING GUIDE	14-15
PARTS IDENTIFICATION	16

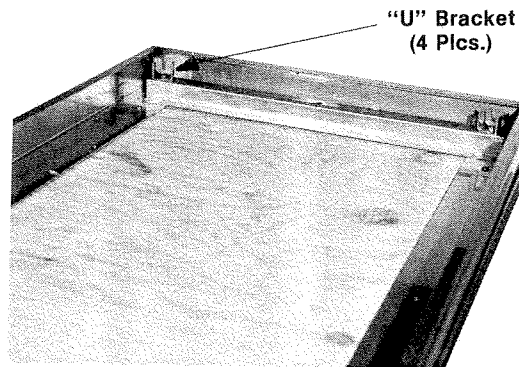
SCALE ASSEMBLY STEPS

- 1) Remove scale, hinged lever arms (2), stainless steel stop angle brackets (2), and hardware from shipping carton.

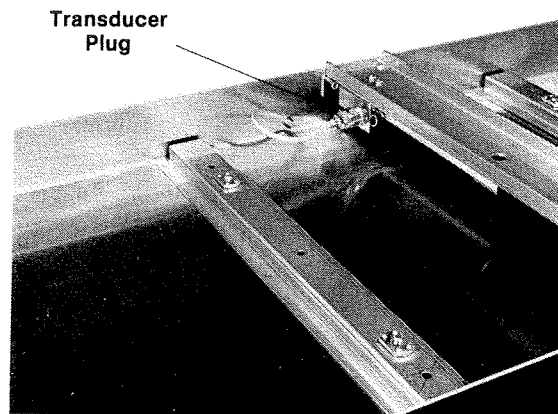
- 2) Lift platform top from base.



- 3) Turn platform top upside down, locate four corner "U" brackets and remove tape. Place top aside.



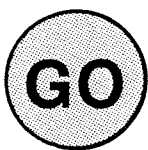
- 4) Remove packaging material from platform base. Be sure transducer plug is locked securely into its socket. Twist plug clockwise to lock.



IMPORTANT



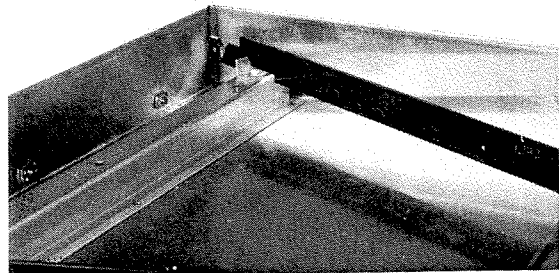
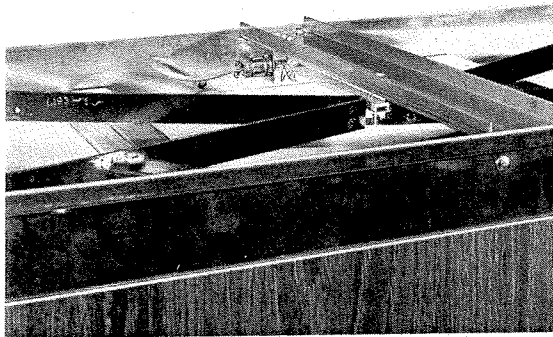
- 5) At this point it is necessary to follow specific instructions for installing your scale according to application, before continuing with the basic "Scale Assembly":
- A. Walk-On installation; page 5
 - B. Pedestal Mount installation; page 5
 - C. Mark II Cabinet Mount installation; page 6
 - D. Elevator Lift Mount installation; page 7



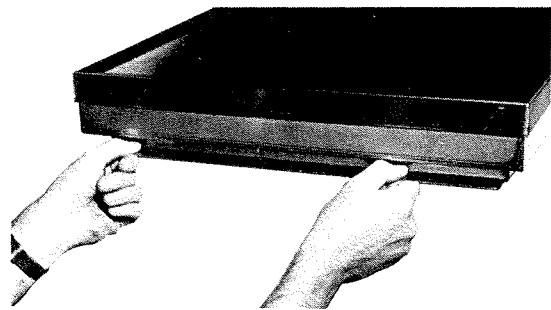
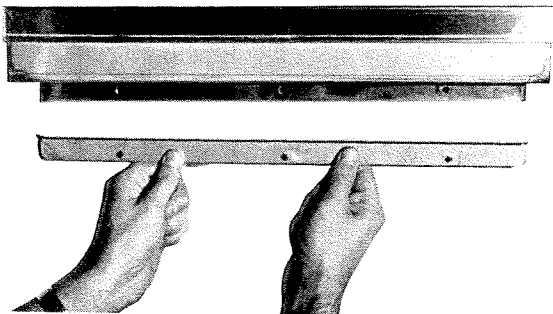
Proceed with Scale Assembly (step 6) instructions **only** after the appropriate installation procedures for your scale have been executed. Otherwise, the mounting bolts on your scale, which are exposed at this time, will be rendered inaccessible.

Scale Assembly (continued)

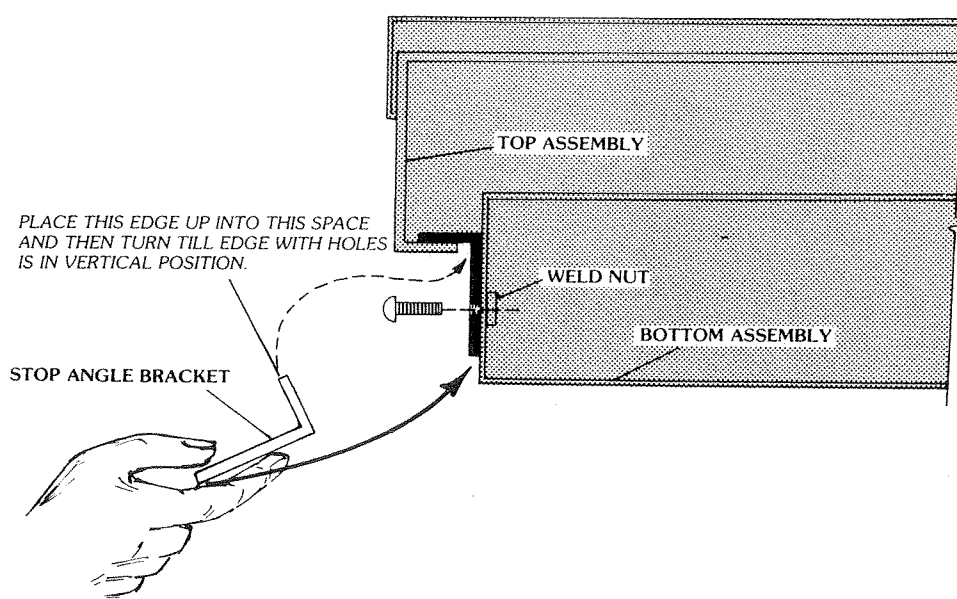
- 6) Pick-up one hinged lever arm set. Open arm into a "V" shape with hinge prong pointing up. (Black or White).
- 7) Place hinge prong under strain gauge bar located below the center brace. The notched ends of the lever arms should then drop into the "L" brackets located in the corners of the platform base. Repeat steps with the other hinged lever arm. Place black lever arm in black "L" bracket, and white lever arm in white bracket.



- 8) Pick up platform top, in righted position, and carefully set top onto base. Top should sit squarely into base.
- 9) Pick-up one stainless steel stop angle bracket. Notice that one edge has three holes that will match up with three holes in the end of the platform base. Place the edge of this bracket that is without holes against the platform base.

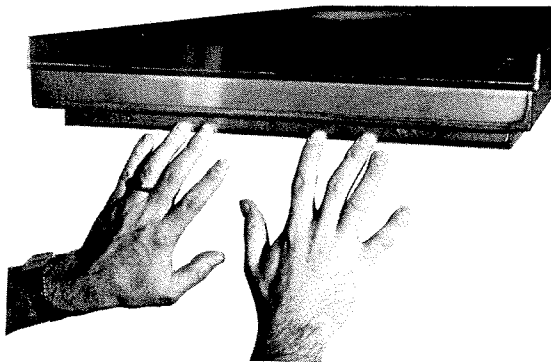


10) Push this bracket up and turn toward the outside of the platform.



11) Holes in the bracket should now match with the holes in the platform base. Install screws provided, and repeat steps with remaining bracket on the other end of the platform base.

NOTE: If you can separate the platform top from the base after installing these stop angles, you have attached them incorrectly. Repeat steps, 9, 10 and 11.

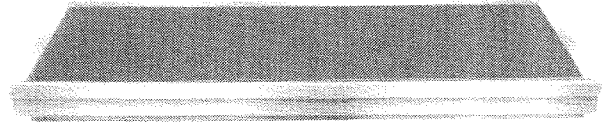


SCALE MOUNTING

WALK-ON INSTALLATION

If your scale is a walk-on, no special mounting instructions are necessary since the walk-on is used on the floor. Proceed with the scale assembly steps.

(Step 6, page 3, is next)

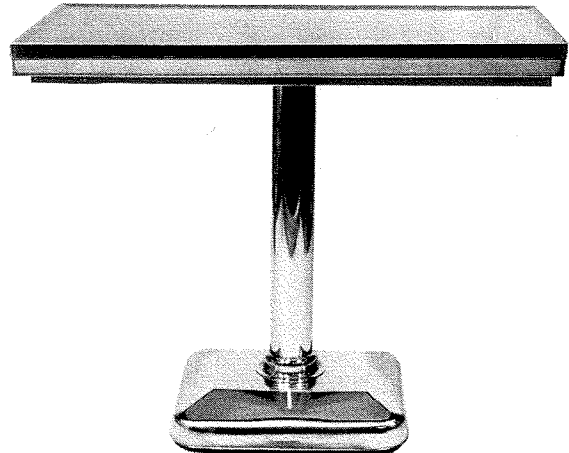


PEDESTAL INSTALLATION

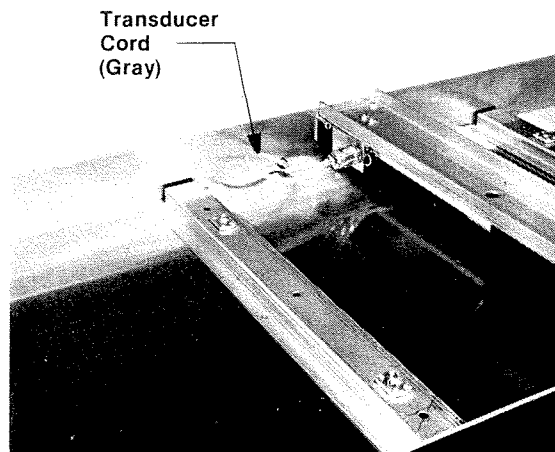
A) Unbolt and remove rubber feet from each corner of the platform base. These feet are not needed with your pedestal base table.

B) Unpack pedestal base and hardware.

C) Place platform on top of pedestal base mounting plate. Gray transducer cord from the platform base should be at the back of the table.



D) Two spotweld nuts are located on a channel to the right and left of the center brace of the platform base. These will match with holes provided in the pedestal base mounting plate. Use the four 1 1/4" long bolts provided to attach the platform base. Install bolts from underneath the mounting plate up and into the scale platform. Bolts will require a 1/2" socket or wrench.

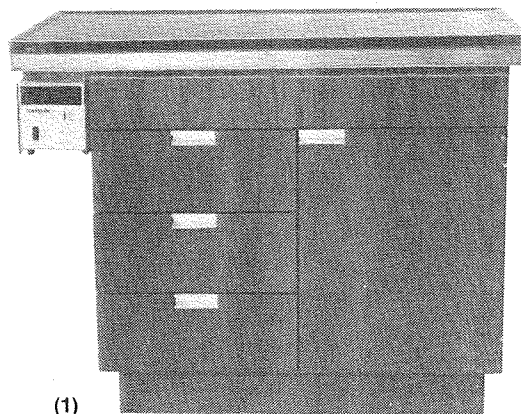


(Step 6, page 3, is next)

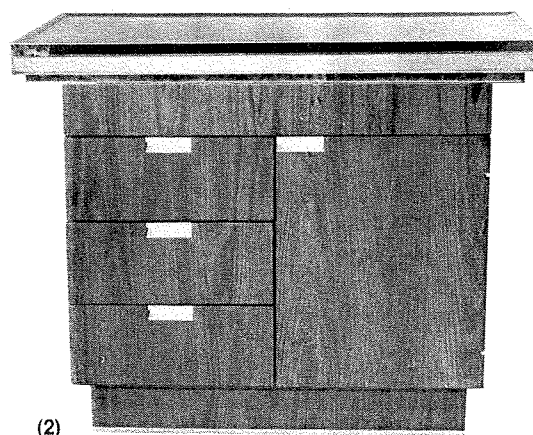
MARK II CABINET INSTALLATION

- A) Unbolt and remove rubber feet from each corner of the platform base. These feet are not needed with your Mark II cabinet.

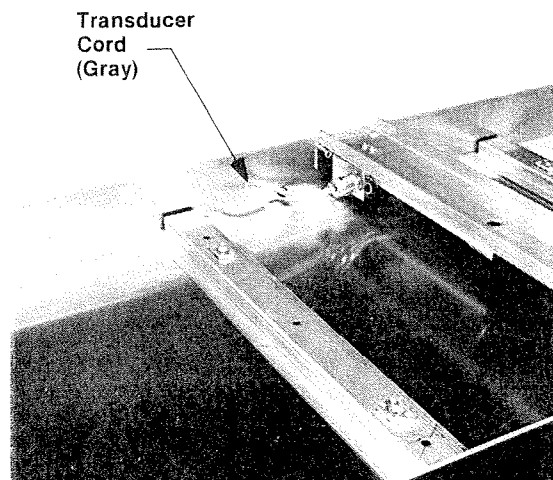
- B) Unpack Mark II cabinet and hardware.



- C) Place platform on top of Mark II cabinet. Gray transducer cord from the platform base should be at the back of the cabinet. (1) Platform base must be flush at the front, back and right side of the cabinet allowing the platform to overhang the cabinet on the left side, when readout is mounted directly on the table. (2) Platform is centered on the cabinet when remote readout box is used.



- D) Two spotweld nuts are located on a channel to the right and left of the center brace of the platform base. These will match with holes provided in the cabinet top. Use the four 1½" long bolts provided to attach the platform base to the cabinet. (These screws require a phillips screwdriver to install.)



ELEVATOR LIFT INSTALLATION

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

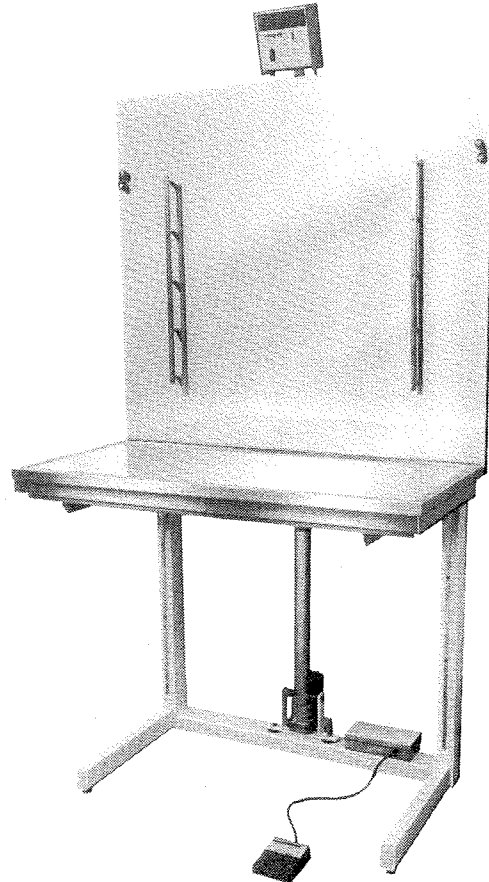
ASSEMBLY INSTRUCTIONS

Your lift table is shipped in three cartons:

One wooden crate (290 lbs. approximately) containing the main frame, motor drive, backboard and foot switch.

One carton (60 lbs. approximately) containing the scale platform.

One carton (10 lbs. approximately) containing the digital read out box.



- A) Carefully uncrate the main frame and place near the desired location in your office.
- B) The frame has three 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 to be readjusted. Be sure the frame is level and does not rock or tip.
- C) 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. The mechanism has a special clutch that will slip at the extreme upward position and lower position.

Restraining Animals on the SHOR-LINE® Elevator/Weigh Table

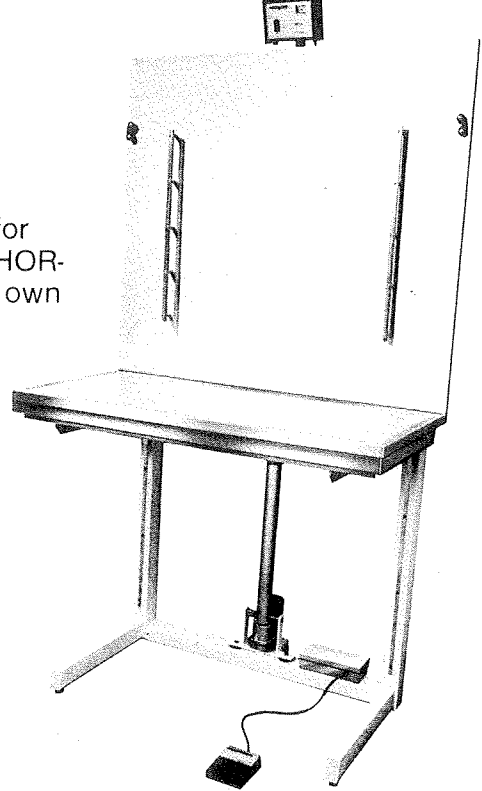
The following instructions are simple and quick techniques for restraining animals for elevation and examination on your SHOR-LINE Table. You may use these suggestions or develop your own techniques and configurations, whichever best serves your needs.

Head Restraint

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.
- 2) 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.**

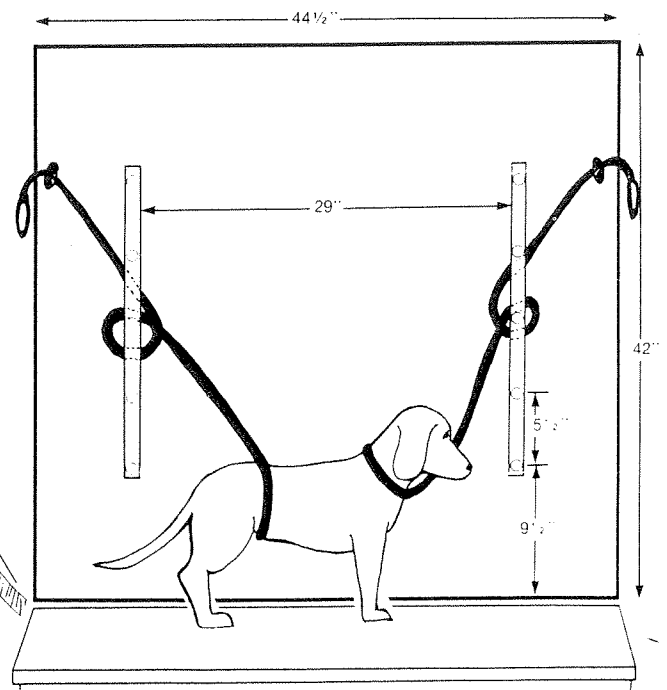
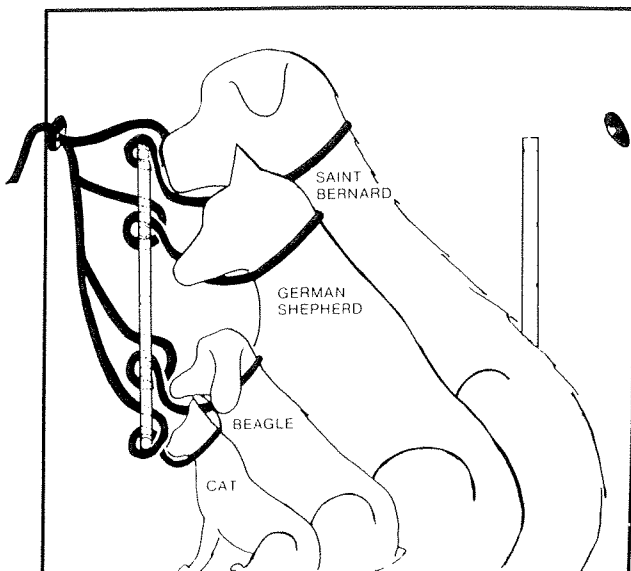
To remove the lead from the cleat, open the cleat with your fingers and pull the lead out toward you.



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".



DIGITAL READ-OUT BOX INSTALLATION FOR ELEVATOR LIFT SCALE

- A) Unpack the Read-Out box shipping carton.
- B) The Read-Out box is designed to attach to the bracket provided at the top of the backboard. This bracket is tilted 15° to allow for easy reading of the display at any elevation.

- C) To attach digital Read-Out mounting bracket to lift table use two #10-24×3/8 flathead screws to bolt mounting bracket to jack top bracket assembly.

NOTE: To avoid difficulty in installing, #6 screw in read-out box, due to table interference, you may want to attach read-out box to mounting bracket (Step 4) before attaching mounting bracket up to table (Step 3).

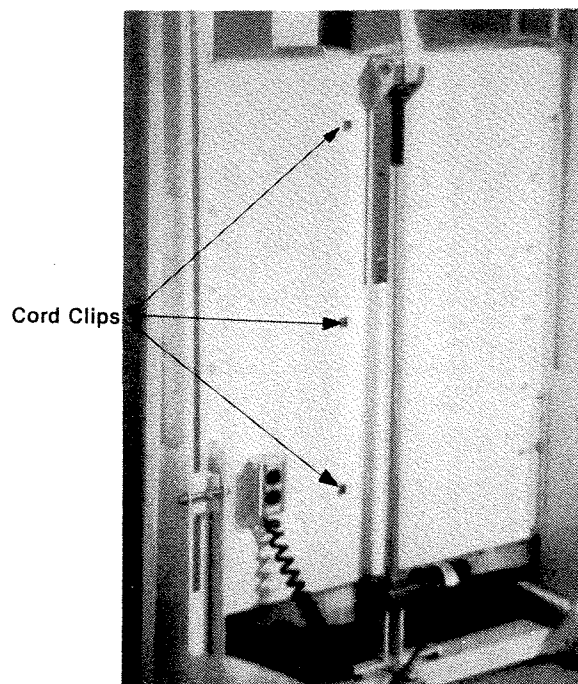
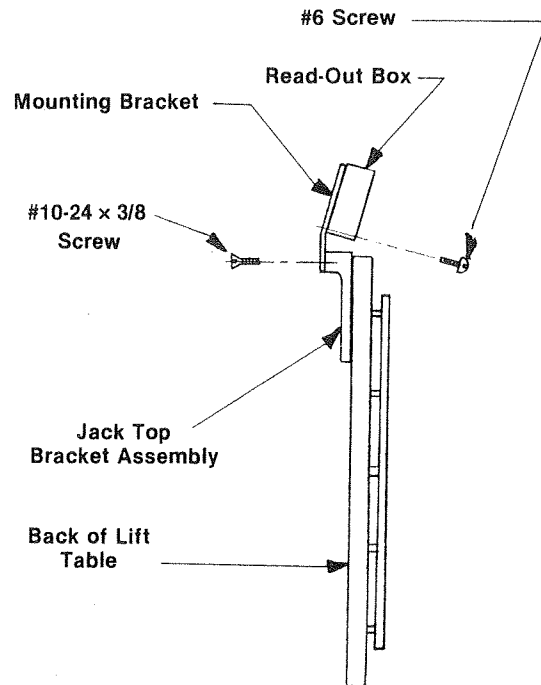
Also note that read-out mounting bracket (discussed in Step 3) may have already been installed at factory (Schroder Mfg.)

- D) The Key hole slot at the back of Read-Out box will hook on a screw and nut arrangement on top of the mounting bracket. A #6 screw (taped to the mounting bracket) is provided to install through the hole in the bottom of the Read-Out box into the bracket.

- E) Connect the Electrical cord from the Read-Out box to the outlet on the backboard.

NOTE: (Scale Base has a grey 10 foot cord). On the back of the elevator lift scale backboard are 3 gray clamps to take up and contain the excess cord when mounting digital Read-Out on Backboard. Roll up excess cord as needed and place in clamps. Clamps on back of lift backboard for excess cord storage.

- F) Move lift table up and down with foot switch while checking for any moving parts interfering with cord.

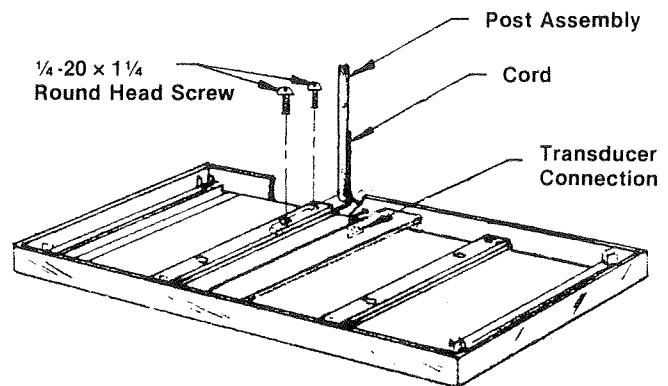


DIGITAL READ-OUT BOX INSTALLATION FOR WALK-ON SCALE (POST MOUNT)

Prior to assembly of the walk-on scale:

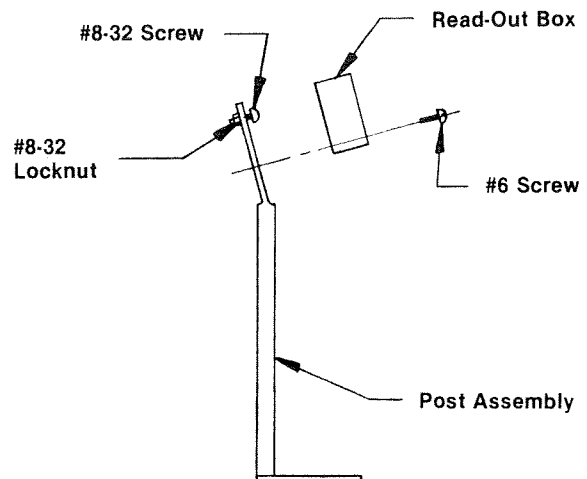
- A) Digital read-out post bolts to the base of the scale prior to scale assembly. It requires two bolts as described: $\frac{1}{4}$ - 20 \times 1 $\frac{1}{4}$ are in the hardware bag located in the post mount box.
- B) The post assembly should be carefully unpacked and placed vertically along the back of the scale with mounting plate on the floor. The post is mounted 7 $\frac{1}{4}$ " left of the center when looking at the base from the front.

C) The two bolts go through the two 5/16 spot weld nuts on the bracket which has been welded on the base. These spot weld nuts are larger than the screw and are merely clearance holes.



D) The bolts are installed from the top, bolt into the pre-threaded base of the post (the base is $\frac{1}{4}$ " thick, 2" wide and 9" long).

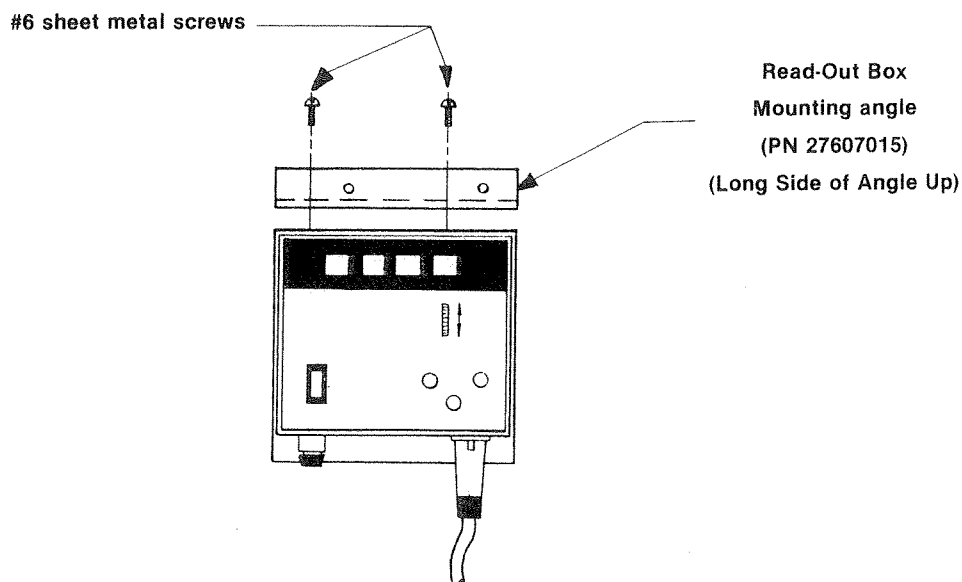
E) The key hole slot at the back of the read-out box (will hook a screw and nut arrangement on the top of the post mount) is provided to install through the hole in the bottom of the read-out box into the post.



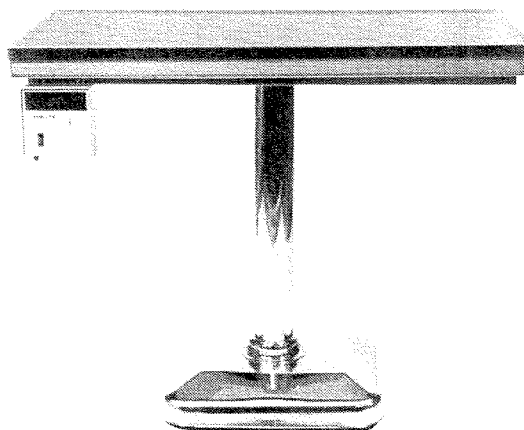
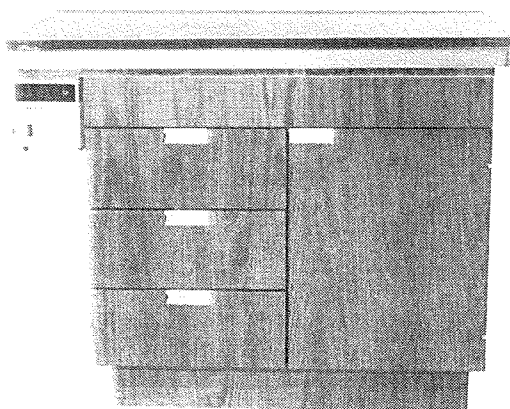
F) After these two bolts are tightened, the post mount assembly is ready for the wiring to be connected at the plug fitting in the scale base.

DIGITAL READ-OUT BOX INSTALLATION FOR PEDESTAL AND MARK II SCALES (Direct Installation)

Remove READ-OUT from shipping carton.



- A) Remove two #6 sheet metal screws from top of control box and **save**.
- B) Mount control box mounting angle on top of control box with the two #6 screws.
- C) Connect female plug on gray cord from platform to the socket on bottom, align keyway, and push in until locked in place. Connect electrical cord to outlet.



DIGITAL READ-OUT BOX

Remote Installation

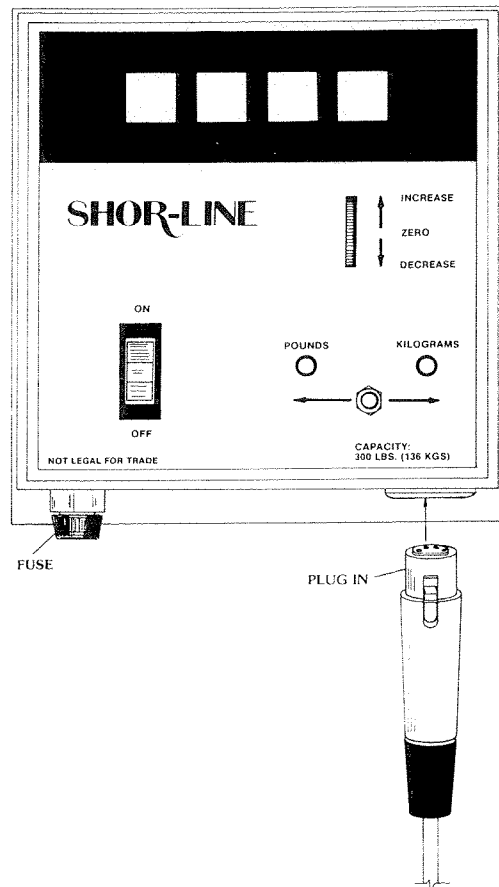
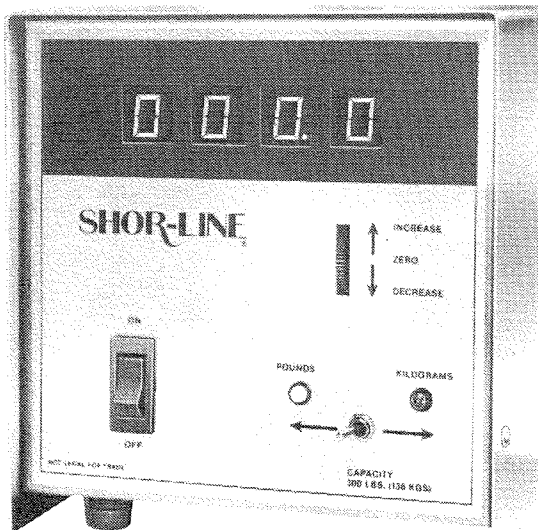
(May be applied to all scales)

Remove READ-OUT from shipping carton.

Locate a spot on a wall near the scale where you wish to position the read out box. You are provided with 10' of gray cord from the base to the read-out box. Be sure the cord will reach to the desired position before attaching the read-out to the wall. The back of the read-out box has a key hole slot. Locate a stud in the wall and drive in one #10 nail (not provided) until about 1/2" protrudes from the wall. Attach read-out box to the wall. A small hole is provided at the bottom of the read-out box to insert a screw (not provided) into the wall to prevent the box from swaying.

Connect female plug on gray cord from platform to the socket on bottom, align keyway and push in until locked in place.

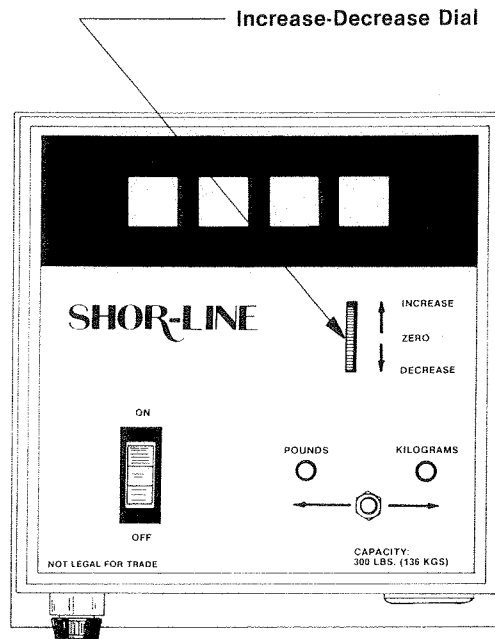
Connect electrical cord to outlet.



OPERATION OF DIGITAL SCALE

- A) Turn the ON-OFF switch to the ON position. Red numerals will appear on the read-out box. The read-out should display all zeros.

- B) If the read-out displays numbers instead of zeros after a few seconds of warm-up, the read-out can be "zeroed" by use of the INCREASE-DECREASE dial. For example, if the read-out displays 999.4, turn the dial slowly upward in the increase direction until all zeros are displayed. If the read-out displays 000.6, turn the dial slowly downward in the decrease direction until all zeros are displayed. The read-out may require occasional "zeroing" after repeated use.



NOTE:

Scale is accurate $\pm 2\%$ from 0 to 300 lbs. (kgs). Accuracy is reduced on weights above 300 lbs. (kgs) or at temperatures below 0°C (32°F) and above 50°C (122°F). Maximum read-out display is 320-340 lbs. (kgs).

Display update rate when adding or subtracting weight on the scale top is approximately 1 second elapsed time.

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 bracket from scale assembly.
- 2) Remove top assembly, unplug from transducer. Turn blue plug counter clockwise and disconnect. Remove strain relief and pull gray cord down slot, push plug through large hole in bottom of pan assembly.

PROBLEM:

CAUSE AND CORRECTIVE ACTION:

1. No number displayed on digital readout box.

- A. Check for voltage at wall recepticle. (Plug in lamp to see that it lights).
- B. Be sure unit is plugged into recepticle.
- C. Check "On" switch on digital readout box. (See figure B).

2. Weights vary more than design tolerances with weight on platform.

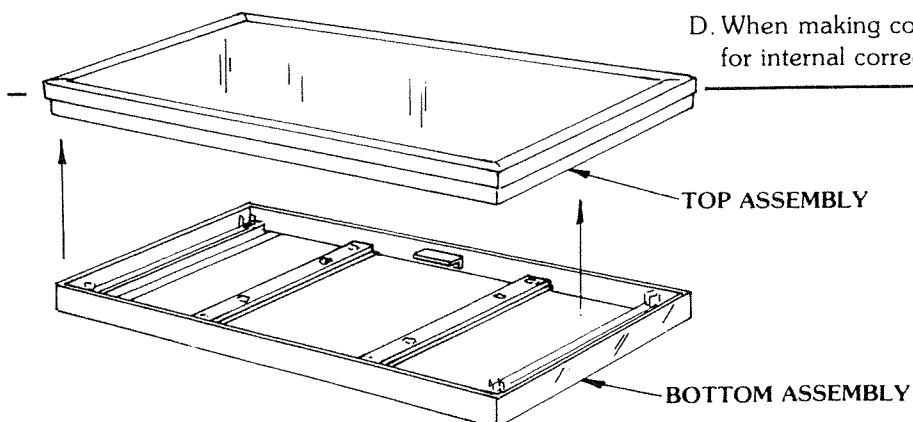
- A. Check for damaged "U" bracket or pivots in top assembly of lever arms. (See figure C).
- B. Check for proper assembly of lever arms. (See figure A).

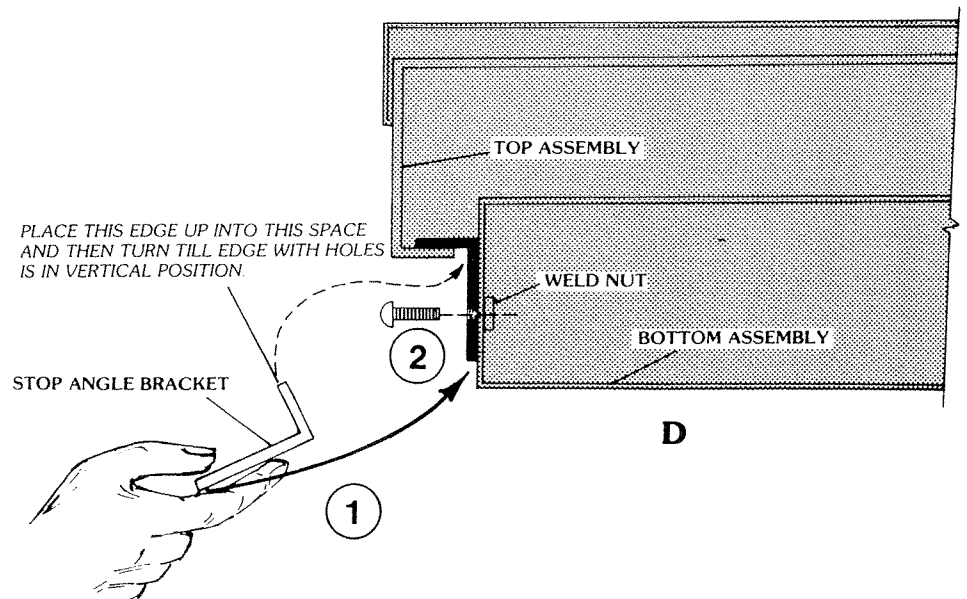
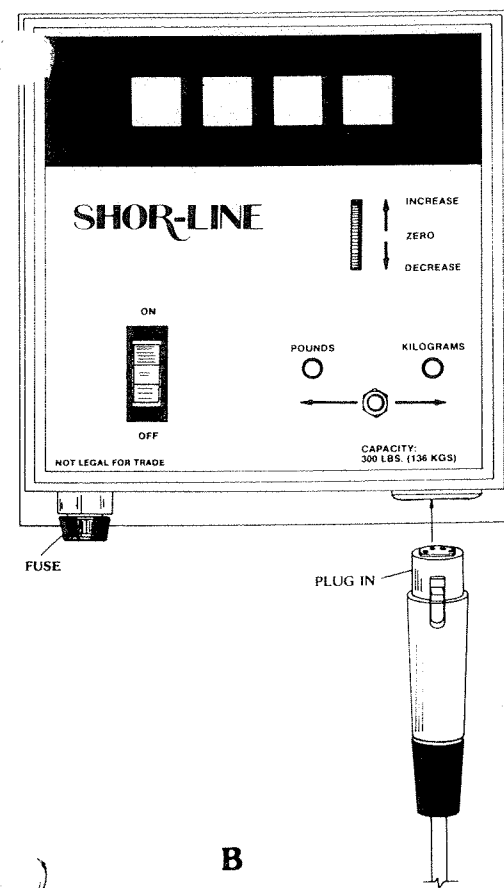
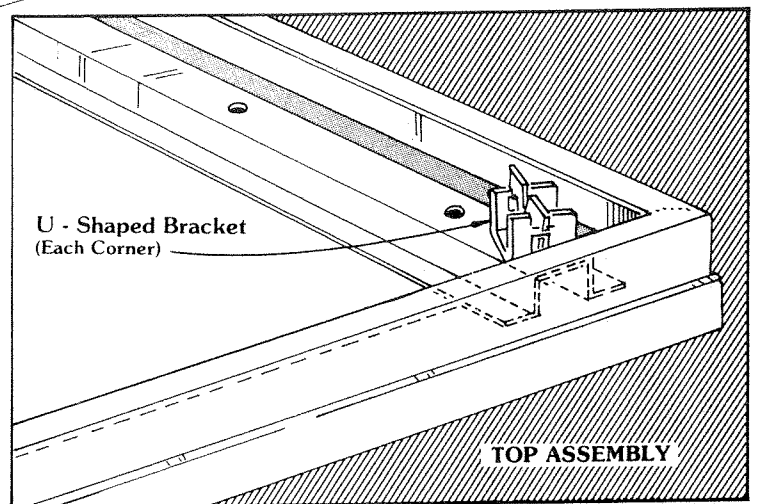
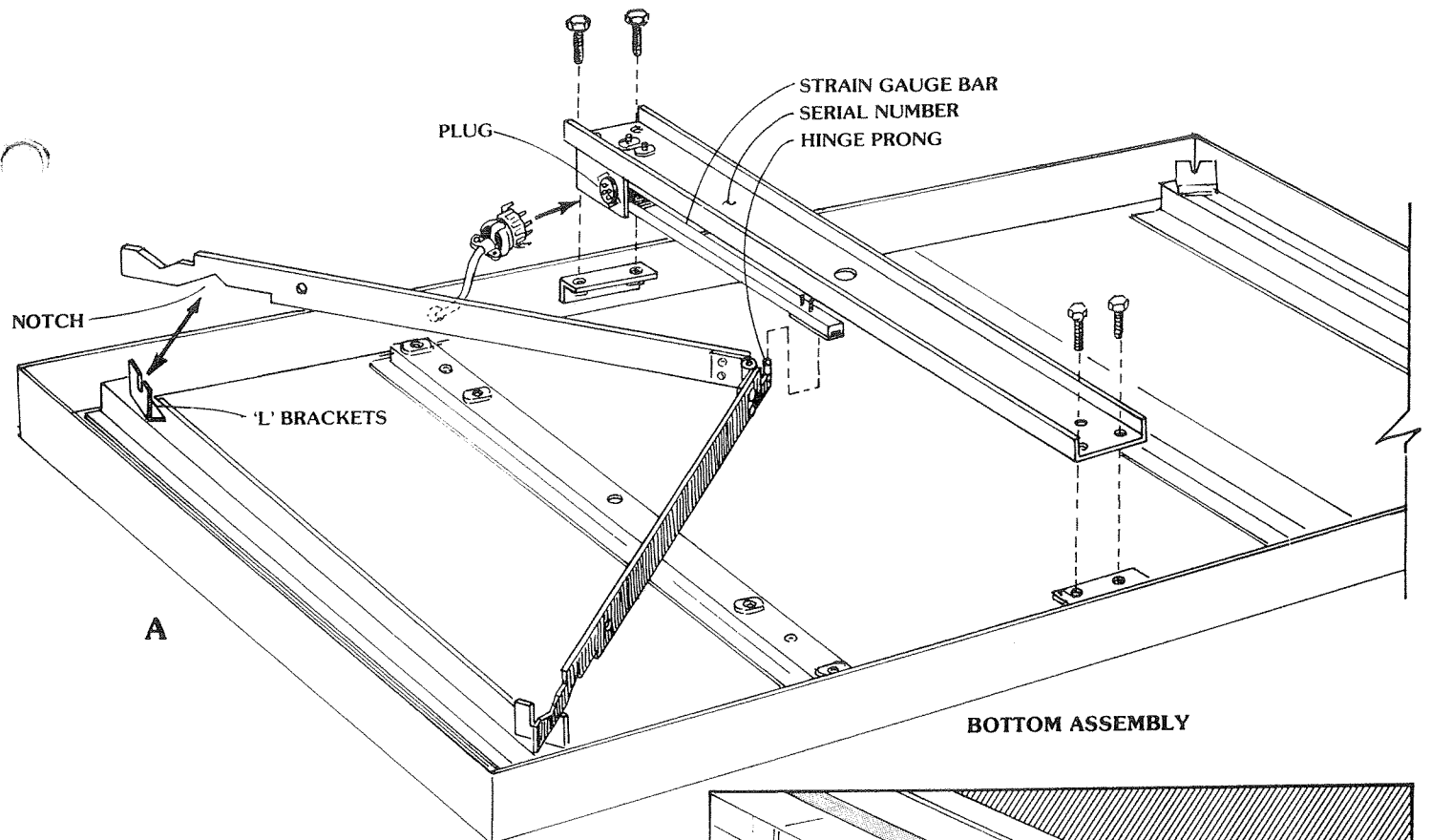
3. Display will not increase when weight is put on the platform.

- A. Check for proper assembly of stop angle bracket. (See figure D).
Scale platform must be free to move without touching either bracket.
- B. Transducer plug not plugged in to digital readout box. (See figure B).
- C. Transducer plug in bottom assembly not plugged in. (See figure A).
- D. Check to see if you are weighing in pounds or kilograms. (Must choose one). (See figure B).

4. Display will not zero.

- A. Check transducer plug to be sure it is plugged into digital readout box. (See figure B).
- B. If display reads 999.2 (or less than zero) move zero control wheel upward. (See figure B).
- C. If display reads more than zero (000.4) move zero control wheel downward. (See figure B).
- D. When making corrections, move zero wheel slowly, allowing for internal correction.





PARTS IDENTIFICATION

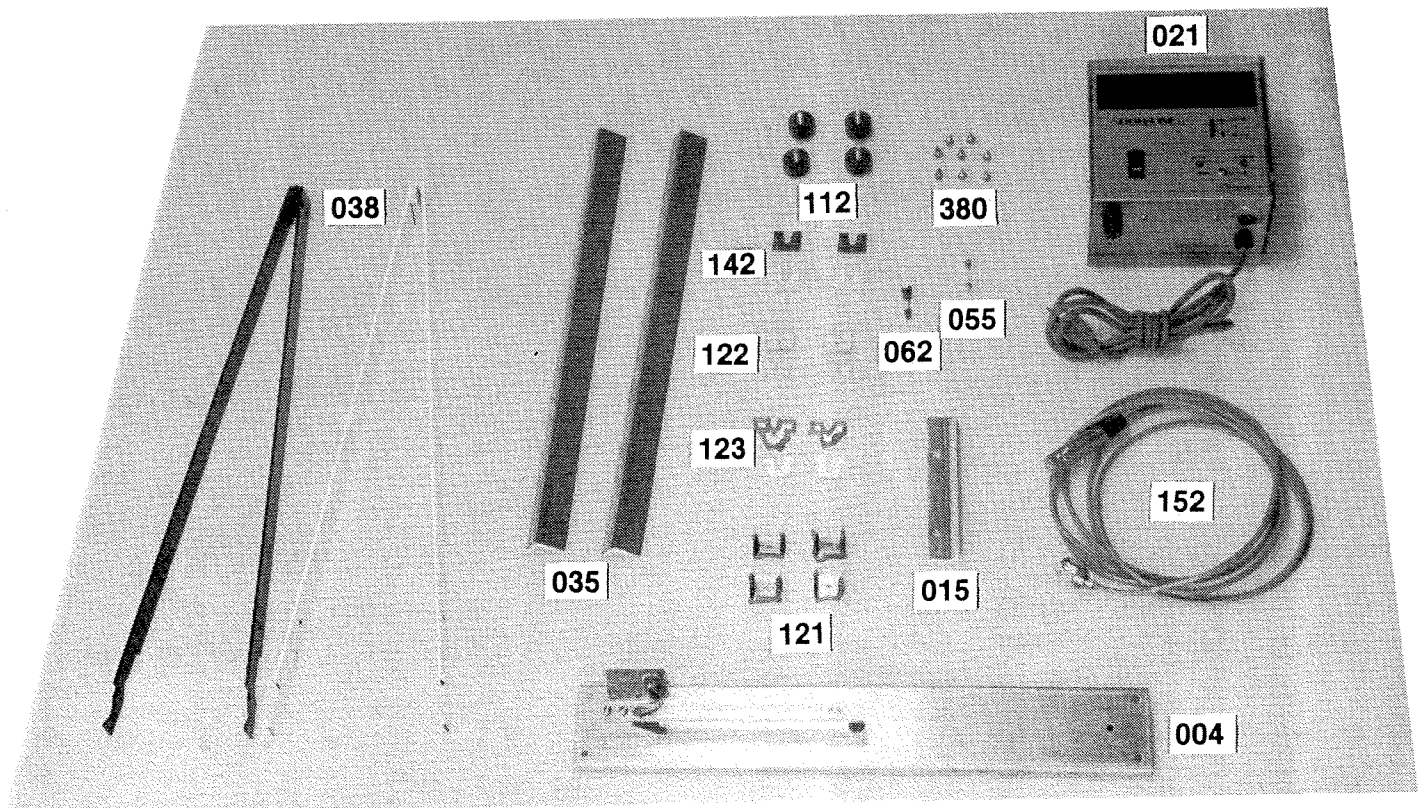
These are parts referred to in this manual.

PART NUMBER	DESCRIPTION	QUANTITY
27607152	Transducer Cord Assembly	1
27607004	Transducer	1
27607021	Control Box	1
27607038	Lever Arms	2
27607112	Rubber Feed #59-W	4
06010380	10-24 x 3/8 Phillips HO Screws	8
27607035	Electric Scale Stop Angle	2
27607062	Strain Relief #F2	1
27607015	Control Box Mounting Angle	1
27607121	"U" Bracket	4
27607123	Pivot Plate	4
27607122	"L" Bracket	4
27607142	"L" Bracket Extension	4
27607055	Fuse AGC 1/2 Amp Rating	1

(Quantities are per 1 unit)

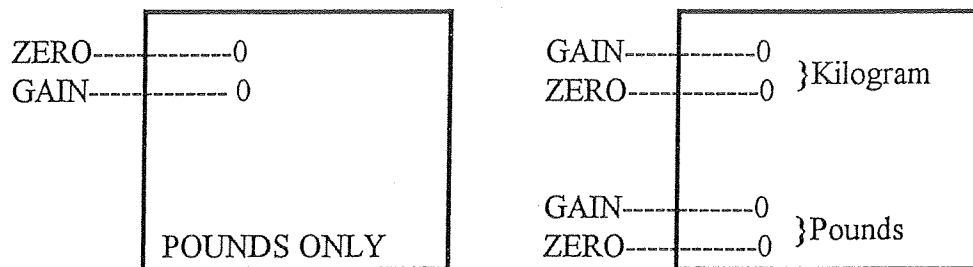
Only Parts
available
now

Parts are identified in photo below with last three digits of part number.



CALIBRATION PROCEDURES FOR SHOR-LINE DIGITAL SCALE

1. You will need a small blade type screw driver to fit in the hole in the back of the read out box.
2. Accurate known weight 150 to 200 pounds or equivalent in kilograms. To convert pounds to kilograms use the multiple .4536. (Example $200 \times .4536 = 90.72$ Kilograms).



STEP ONE

- A. Check the transducer to be sure it is in the correct position and secure.
- B. Check the lever-arms for correct position.
- C. Check the "U" brackets and pivot plates. Per instruction manual. The pivot plates should pivot freely in the "U" bracket.

STEP TWO

- A. Set the increase-decrease dial approximately in center of travel. Half way from extreme increase and half way from extreme decrease.

STEP THREE

- A. Place the pounds/kilogram switch on the front of the read out box in the kilogram position.
- B. With the small bladed type screw driver, using the second hole from the top of the readout box, adjust the readout box to read all zero's.
- C. Move the pounds/kilogram switch to the pounds position, and using the forth hole from the top of the readout box, adjust the readout box to read all zero's.

NOTE: In pounds or kilogram zero adjustment. If you cannot obtain zero in the tenths digit position, get as close to zero as possible (1-3 tenths) you can use the increase/decrease dial on the front of the readout box to adjust to zero.

STEP FOUR

Pounds Calibration

- A. With the scale zero and the pounds/kilogram switch in the pounds position you can now place the accurate known weight on the scale. Using the third hole down from the top of the readout box (gain) adjust the readout box to read equal to the weight on the scale. The scale is now calibrated for pounds.

STEP FIVE

Kilogram Calibration

- A. With the scale zeroed out and the pound/kilogram switch in the kilogram position, place the known accurate kilogram weight on the scale and using the first hole down from the top of the scale (gain) adjust the readout box to read equal to the weight on the scale. The scale is now calibrated for kilogram.

NOTE:

If you do not have kilogram weights you use the pound weight and multiply the pounds by .4536 to obtain kilograms.

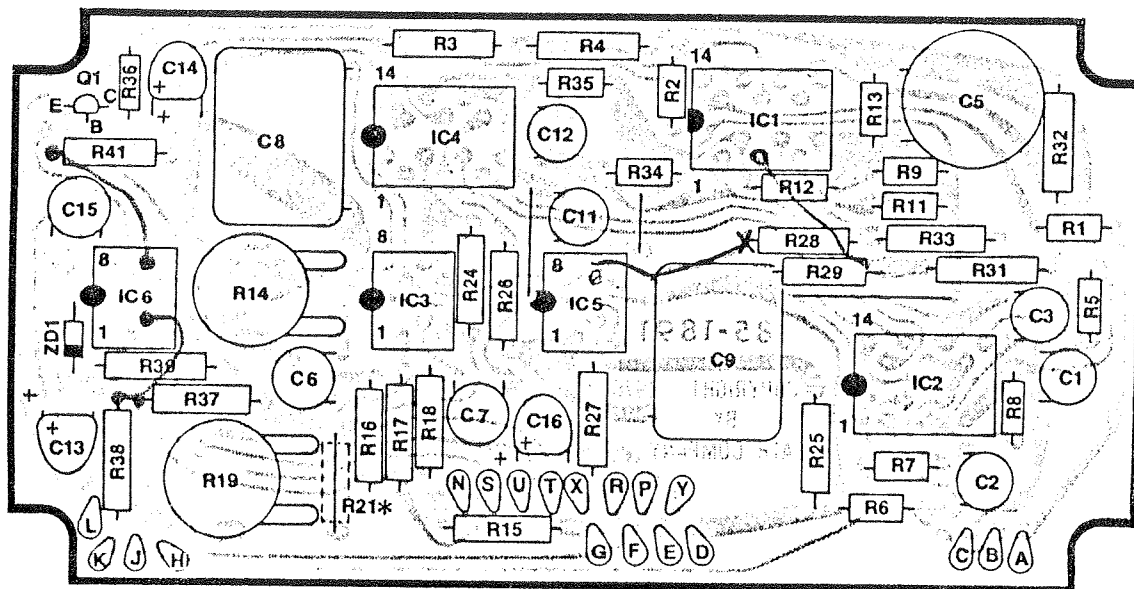
CIRCUIT BOARD X-RAY VIEWS

NOTE: To find the PART NUMBER of a component for the purpose of ordering a replacement part:

A. Find the circuit component number (R5, C3, etc.) on the "X-Ray View."

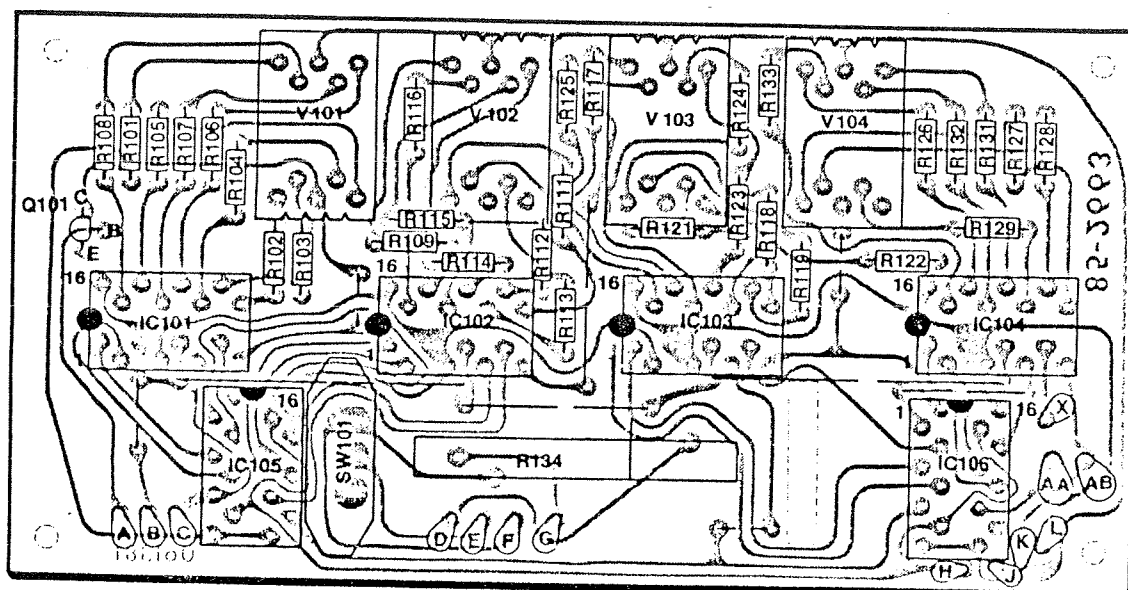
B. Locate this same number in the "Circuit Component Number" column of the "Parts List."

C. Adjacent to the circuit component number, you will find the PART NUMBER and DESCRIPTION which must be supplied when you order a replacement part.

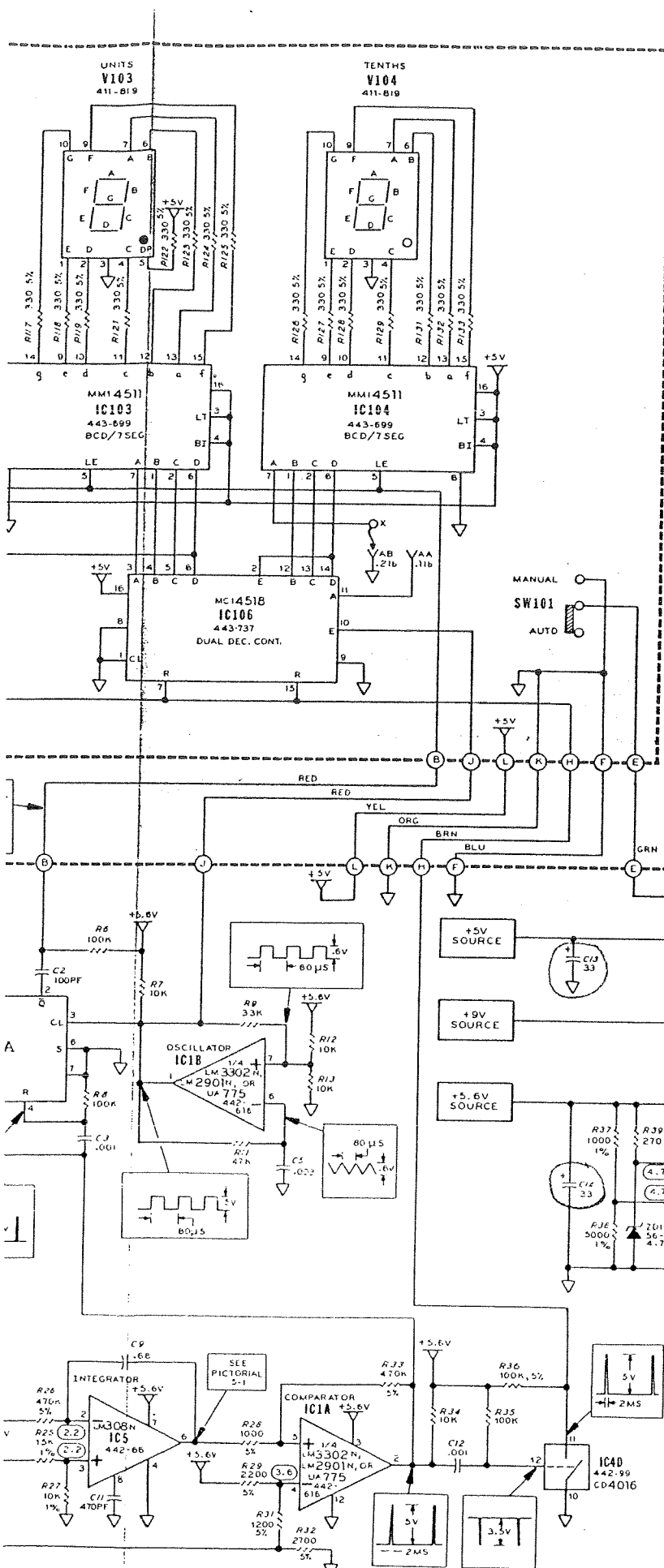


*OPTIONAL

A TO D CIRCUIT BOARD
(VIEWED FROM COMPONENT SIDE)







DISPLAY CIRCUIT BOARD
(VIEWED FROM COMPONENT SIDE)



SCHEMATIC OF THE HEATHKIT[®] DIGITAL SCALE MODEL GD-1186

NOTES:

1. ALL RESISTOR VALUES ARE IN OHMS (K=1,000; M=1,000,000).
2. ALL CAPACITOR VALUES LESS THAN 1 ARE IN μ F. CAPACITOR VALUES LARGER THAN 1 ARE IN pF.
3. REFER TO THE X-RAY VIEWS FOR THE PHYSICAL LOCATION OF PARTS.
4.  THIS SYMBOL INDICATES A LETTERED CIRCUIT BOARD CONNECTION.
5.  THIS SYMBOL INDICATES CIRCUIT BOARD GROUND.
6.  THIS SYMBOL INDICATES A DC VOLTAGE TAKEN WITH A HIGH IMPEDANCE VOLTMETER FROM THE POINT INDICATED TO CIRCUIT BOARD GROUND. VOLTAGES MAY VARY $\pm 20\%$. THE VOLTAGES WERE TAKEN WITH NO WEIGHT APPLIED TO THE SCALE.
7. WAVEFORMS WERE TAKEN AT THE POINT INDICATED. THE AMPLITUDE IS SHOWN AS PEAK-TO-PEAK VOLTAGE. THE WAVEFORMS WERE TAKEN WITH NO WEIGHT APPLIED TO THE SCALE.
8.  SG201 AND SG204 ARE MOUNTED ON THE BOTTOM OF THE METAL BEAM. SG202 AND SG203 ARE MOUNTED ON TOP. THIS IS NOT A PART OF THE A TO D CIRCUIT BOARD.

C14 causes readout to go around.

