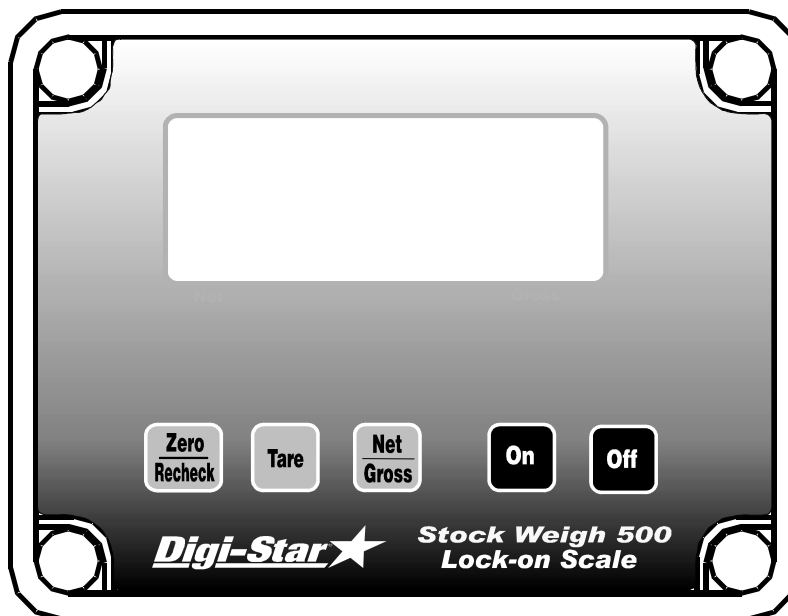




StockWeigh 500

OPERATORS MANUAL



DIGI-STAR
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StockWeigh 500

The Digi-Star StockWeigh 500 indicator is designed to weigh livestock. The Lock-On feature allows this scale to weigh active and restless animals within $\pm 1\%$ of actual weight. This indicator can be connected to various load cell systems.

Getting Started

The following steps will allow you to get familiar with your new StockWeigh 500 indicator.

Installing StockWeigh 500 Indicator

Connecting Power

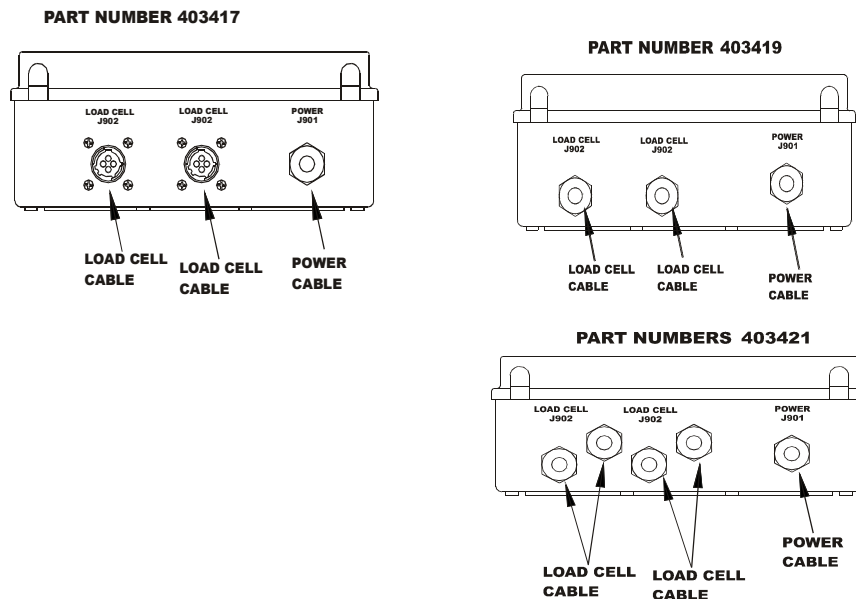
Connect power cord to the bottom panel power connector. Power can be obtained directly from a 12VDC battery or from a 120VAC power cube that plugs into a wall outlet.

Note: A small 12V deep cycle lead acid battery will provide many hours of operation for the indicator.

WARNING: Disconnect the indicator from the battery while recharging. Damage can occur to the indicator.

Connecting Load Cells

The indicator is designed to operate with two or four, strain gage load cells. Cable extension kits are available from your dealer in various lengths.



IMPORTANT!

If the rear end of a working chute is not bolted solidly to a concrete foundation, then it must be restrained from movement greater than about one inch with a chain or other flexible means.

Technical Manual:

Technical manual is available upon request. Please call (920) 563-9700 and request Digi-Star Technical Manual (F3583).

If connecting to load cells that were not provided with your system, the indicator must be calibrated to weigh properly. Contact Digi-Star Technical Support for assistance. Phone (920) 563-9700.

Turning ON the Scale

Press [ON/Record].

A brief "hello" message will be displayed. The scale enters the GROSS weighing mode.

GROSS mode displays the weight change since the unit was last ZERO/BALANCED.

Zero Balance the Scale

Press the [NET/GROSS] key and within three seconds, press the [ZERO/RECHECK] key.

The ZERO/BALANCE will "balance off" the dead load such as the platform weight or any attachment to the platform.

"ZERO" is displayed to show completion of the step and the scale is put in the GROSS mode.

Standard Operation (Using Default Settings)

To view and adjust the default setting, see "Optional Settings" and "Using Long Form Setup" starting on page 6.

Weighing Animals

1. Connect load cells and power. Turn "ON" indicator.
2. "Zero Balance" the scale by pressing [NET/GROSS] then press [ZERO/RECHECK] within 3 seconds.
3. Bring the animal onto the scale platform.
4. After a few seconds the indicator "Locks On" to an animal's weight, and an "L" will show in the upper left corner of the display.
5. Release the animal. When the animal steps off the scale, it is ready for the next animal.

To Recheck Lock-On Weight

While the animal is still on the scale platform, press the [ZERO/RECHECK] key to "RECHECK" or recalculate the weight of the animal.

Low Battery Indication

If the supply voltage drops below the (10.5 Volts), the message “RECHARGE BATTERY – TURNING OFF” and “LO BAT” will periodically show on the display to alert the operator of the low battery condition. After 2 minutes the indicator will shut off.

WARNING: Disconnect the indicator from the battery while recharging. Damage can occur to the indicator.

Self Test

Press [NET/GROSS] then [ON/Record] during normal system operation to start the self-test.

Optional Settings

The Indicator has optional settings that allow flexibility in the way that the scale is used and data is collected. To change optional settings enter “Long Form Setup” by pushing [Net/Gross] and then [On/Record] for three seconds.

Default settings for the indicator are as follows:

ZTRACK	ON	AUTOFF	OFF
W MTHD	4	COUNT	1
LOCKON	8	ARRANGE	ON
LKNHL	ON	LB-KG	LB

These parameters can be selected, de-selected or adjusted to fit the way you use the scale. See below for descriptions.

- ZTRACK** (Zero Tracking) If “ON”, the scale will adjust for small weight variances of up to 5lbs in the Lock-On weigh method. This allows the scale to compensate for such things as mud or snow accumulation on the scale platform.
- W MTHD** (Weigh Method) Weigh method allows the operator to adjust how much number-crunching the scale processor does to the load cell data before displaying the weight. See Appendix “C” for details. Select weigh method #4 “Lock-On” for animal weighing.
- LOCKON** (Lock-On) Available settings are 1 thru 9. A low value, such as a 1 or 2, allows the system to be more sensitive to animal motion. A high value, such as an 8 or 9, allows the scale to lock on faster. Use the lowest setting that still allows the system to lock on consistently.

LKNHLD

(Lock-N-Hold) This feature continues to "hold" the "Lock-On" weight on the display for an animal after it has stepped off the weighing platform.

This allows the operator to place the animal on the weighing platform, medicate, remove the animal from the platform and then record the animal's weight after it has stepped off the platform. The display will restart once another animal has stepped onto the platform and exceeds 2.5% of the scale capacity. For example if the scale capacity is set at 4000lbs (StockWeigh 3300), 100lbs is required to reset the display. The indicator will return to normal weighing after 5 minutes if no other animal steps on the weighing platform. The Recheck key can also be used to return the indicator to the weighing mode.

AUTOFF

(Auto Off) This feature allows the operator to have the indicator automatically shut itself "OFF" after either 15, 30, 45 or 60 minutes of inactivity.

This feature will extend battery life on portable scales operating off batteries. Prior to the scale shutting OFF, the message "GOODBYE" will be scrolled across the display for approximately 15 seconds. Pressing a key on the indicator during this time will prevent the unit from turning off and restart the internal "shut off timer" with the time selected in "AUTOFF".

COUNT

(Display Count) Indicator displays count in increments of 0.01, 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, and 100.

Note: If the count is set too small for the calibration, the readings will be unstable and the indicator will not be accurate.

ARANGE

(Auto-Range) If "ON" the scale increases display count size for weights over 300 and again at 600 lbs/kgs. If set to "OFF" display counts are set and do not vary.

For example: 0 to 300 lbs (1 lb Increment), 300 to 600lbs. (2 lbs Increments), 600 and up (5 lbs. Increments).

LB-KG

(Display Unit) Select desired weight unit to be displayed.

When changing weight unit using the long form, calibration is adjusted so the scale displays accurately in the new display unit.

Using Long Form Setup

Use Long form Setup to change the optional settings described on pages 3 and 4.

Turning Zero Tracking "OFF"

1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to "ZTRACK" menu.
3. Press the [Net/Gross] key to select "OFF". See page 3 for more Zero Tracking information.
4. Press the [ON/Record] key to advance to the next menu item.

Selecting Weigh Method

1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to "W MTHD" menu.
3. Press the [Net/Gross] key several times until "4" is displayed for animal weighing. See page 3 and "Appendix B" for more Weigh Method information.
4. Press the [ON/Record] key to advance to the next menu item.

Adjusting Lock-On Performance

1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to "LOCKON" menu.
3. Press [Net/Gross] to select the desired value (1 thru 9) for the "Lock On" setting. See page 3 for more Lock-On information.
4. Press the [ON/Record] key to advance to the next menu item.

Turning Lock-N-Hold "OFF"

1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to "LKNHLD" menu.
3. Press the [Net/Gross] key to select "OFF". See page 4 for more Lock-N-Hold information.
4. Press the [ON/Record] key to advance to the next menu item.

Turning Auto-Off “OFF”

1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to “AUTOFF” menu.
3. Press the [Net/Gross] key to select “OFF”. See page 4 for more Auto Off information.
4. Press the [ON/Record] key to advance to the next menu item.

Selecting Display Count

1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to “COUNT” menu.
3. Press the [Net/Gross] key several times until the desired display count value is displayed. See page 4 for more Display Count information.
4. Press the [ON/Record] key to advance to the next menu item.

Turning Auto-Range “OFF”

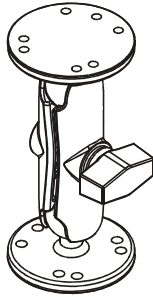
1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to “ARANGE” menu.
3. Press the [Net/Gross] key to select “OFF”. See page 4 for more Auto-Range information.
4. Press the [ON/Record] key to advance to the next menu item.

Selecting Display Unit

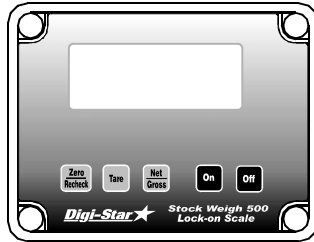
1. Enter Long Form by holding [Net-Gross] and pushing the [ON/Record] key for three seconds.
2. Press the [ON/Record] key to advance to “LB/KG” menu.
3. Press the [Net/Gross] key to select the desired display unit. See page 4 for more Display Unit information.
4. Press the [ON/Record] key to exit long form setup.

Appendix A

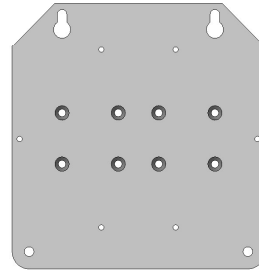
Scale Parts



Ram Mount
Part Number 403310



StockWeigh 500
Part Numbers 403416-403421

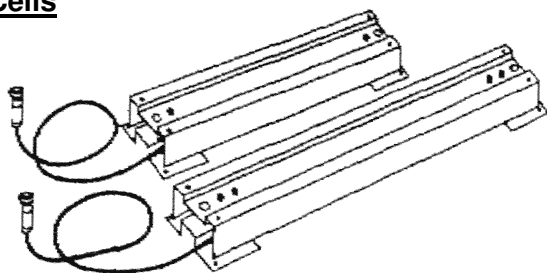


Standard Bracket
Part Number 403339



Power Converter with 6' Cord
P/N 403526

StockWeigh Load Cells



Load Cells:

Model 3300	16" – P/N 148042	24" – P/N 146769	33½" – P/N 400144
Model 6600	33½" – P/N 400058	44" – P/N 400006	

Load Cells With Out Connectors:

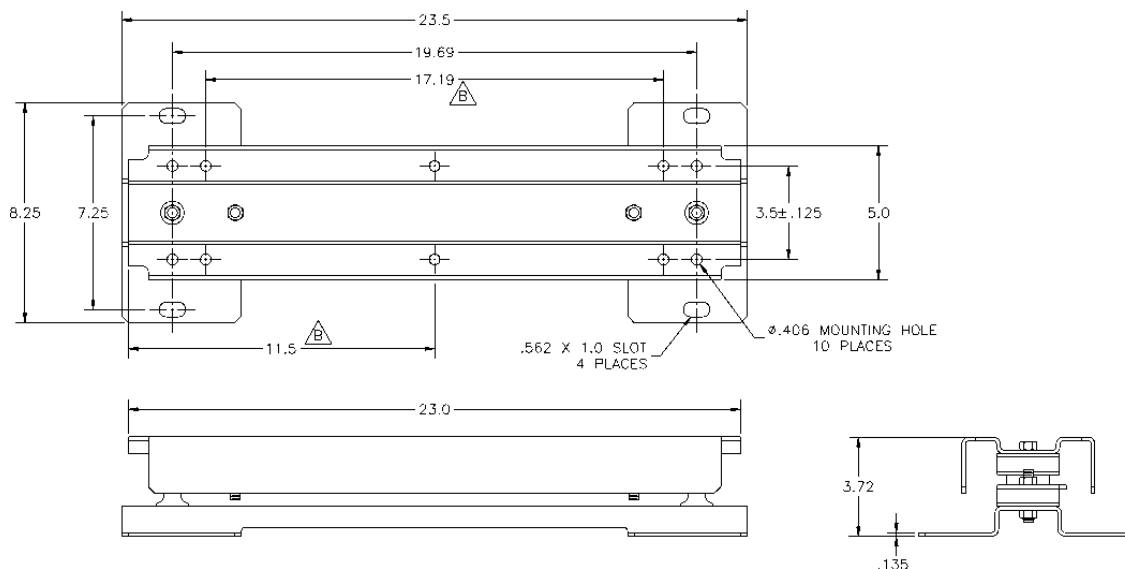
Model 3300	16" – P/N 403481	24" – P/N 403482	33½" – P/N 403483
Model 6600	33½" – P/N 403484	44" – P/N 403485	
Model 14,000	P/N 400161		

StockWeigh Load Cell Specifications

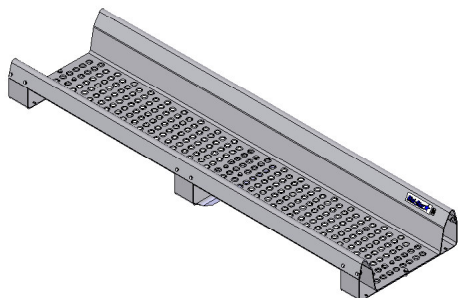
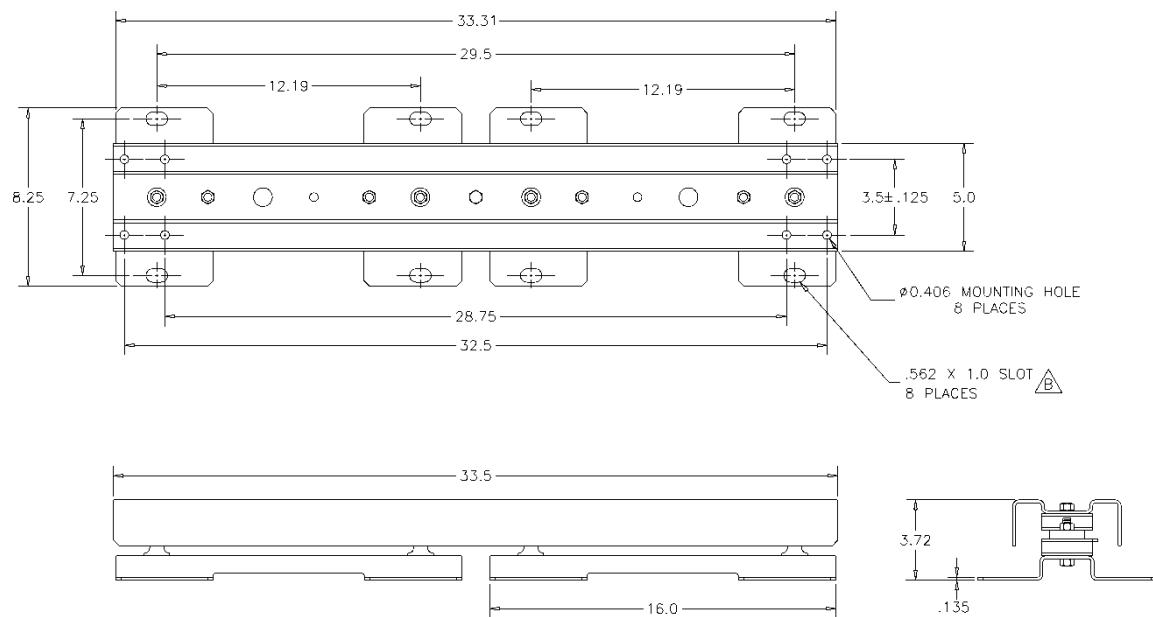
Gross Capacity Model 3300: 3300 lbs. Maximum Model 6600: 6600 lbs. Maximum		Resolution (For Both Models) <table><tr><td><u>Increment</u></td><td><u>Range</u></td></tr><tr><td>1 lbs or kgs</td><td>0-300 lbs or kgs</td></tr><tr><td>2 lbs or kgs</td><td>300-600 lbs or kgs</td></tr><tr><td>5 lbs or kgs</td><td>600 ⇨ lbs or kgs</td></tr></table>		<u>Increment</u>	<u>Range</u>	1 lbs or kgs	0-300 lbs or kgs	2 lbs or kgs	300-600 lbs or kgs	5 lbs or kgs	600 ⇨ lbs or kgs
<u>Increment</u>	<u>Range</u>										
1 lbs or kgs	0-300 lbs or kgs										
2 lbs or kgs	300-600 lbs or kgs										
5 lbs or kgs	600 ⇨ lbs or kgs										
Accuracy: ±1% and ±1Display Increment		Power Requirements: 12-14 VDC @ approx 1 Amp									
Load Cell Overall Dimensions Model 3300: 3¾" H x 8¼" W x 16, 24 & 33½" L Model 6600: 3¾" H x 8¼" W x 33½ & 44" L		AC to DC Converter 110 VAC to 13.8VDC @ 1.2 Amps									
Load Cell Cable Length: 14 Feet											

Load Cell Dimensions

Model 3300



Model 6600



StockWeigh Alley Platform PN 403360



StockWeigh 500 with Alley Platform

Appendix B

Weigh Methods

General - Weigh Method #1

The General weigh method is an all-purpose weigh method for weighing dead loads. It is commonly used for weighing dead.

Slow - Weigh Method #2

The Slow weigh method attempts to provide higher accuracy by filtering many weight samples over a longer period of time. Small, instantaneous weight changes have less effect on the displayed weight using this technique. This method is for weighing dead loads.

Fast - Weigh Method #3

The Fast weigh method is more sensitive to weight changes than the other weigh methods. When a weight changes quickly, the Fast method tries to determine the new weight as quickly as possible. This method is for weighing dead loads.

Lock-on - Weigh Method #4

Set to "LOCKON" for animal weighing, this allows scale to weigh active animals and display an accurate weight that does not fluctuate. Set to "OFF" for weighing dead weights. Lock-On sensitivity can be adjusted using the "LOCKON" menu.

Once the actual weight is displayed, the scale "Locks-On" to the displayed. Weight does not change, even if the motion never stops. A small 'L' appears on the left side of the display indicating the weight is "Locked-On." The animal's weight must be greater than 2.5% of the scales "capacity" weight before the system can "Lock-On."

In order to break the lock, 50% of the displayed weight must be either added or removed from the scale. The "Locked-On" weight can be "rechecked" by pressing the [ZERO] key on the front panel. This breaks the "lock" and the scale recalculates the weight.

Note: Setting the Weigh Method in the "Long Form" DOES NOT affect the Display Unit LB-KG.

Note: In Weigh Method #1, #2 and #3 the ZTRACK (zero-tracking) removes up to 0.05% of the scale capacity (as shown in setup). In Weigh Method #4 the weight that can be removed is set to 5lbs(2.2kg).

Appendix C

Net and Gross Mode

To Select Gross Mode

GROSS mode displays the weight change since the unit was last ZERO/BALANCED.

Press [NET/GROSS]

Note: The scale is in GROSS mode if there is a flashing arrow pointing toward the GROSS text just above the [ON/RECORD] key.

Gross mode is used for single animal weighing.

To Select Net Mode:

NET mode displays the weight change after a TARE has been performed. TARE is a temporary “zero” point.

If the scale “TARE” weight has not been entered, press [TARE] to acquire a “zero.”

Or

If in Gross mode, press [NET/GROSS]. The [NET/GROSS] key is an alternating action key. If the scale is in the GROSS mode, pressing the [NET/GROSS] key will place it in the NET mode. If the scale is in the NET mode, pressing the [NET/GROSS] key will place it in the GROSS mode.

The scale is in NET mode if there is a flashing arrow pointing toward the NET text in the lower left corner of the display.

Appendix D

Short Form Calibration

The Short Form Setup & Calibration procedure allows you to change the “SETUP” and “CAL” numbers of the indicator.

Setup Number

The “SETUP” numbers affects some parameters that also appear in the Long Form Calibration. Following is a list of functions that are controlled by the “SETUP” number:

Weigh Method (W MTHD)
Display Units (LB-KG)
Display Counts (COUNT)
Gain
Scale Capacity

Calibration Number

The “CAL” number is adjusted to make the scale read the proper weight for different load cells and to make accuracy adjustments on a scale system.

If a StockWeigh 500 indicator is provided with StockWeigh load cells as a package, the calibration number is adjusted at the factory for maximum accuracy. Systems that are assembled from separate components are given “STANDARD SETUP AND CALIBRATION NUMBERS” and are not factory calibrated. These systems should be checked and adjusted if necessary using known weights to insure accuracy. See “Calibrating the Scale for Maximum Accuracy” below.

Following is a list of Standard Setup and Calibration numbers for StockWeigh 3300, 6600 and 14000 load cells. If you are not using StockWeigh load cells, contact Digi-Star Tech Support at 920-563-9700 for setup and calibration information:

Scale Type	Unit	Setup #	Calibration #
StockWeigh 3300	Lb	413004	776
StockWeigh 6600	Lb	413007	1560
StockWeigh 10000	Lb	443010	14040
StockWeigh 14000	Lb	443015	13828
StockWeigh 3300	Kg	812002	352
StockWeigh 6600	Kg	812003	708
StockWeigh 10000	Kg	843005	6368
StockWeigh 14000	Kg	843007	6272

Calibrating the Scale for Maximum Accuracy

Before continuing, first write down the current SETUP and CAL numbers of your EZ indicator. These numbers are displayed during the Self Test. To run the self-test with the indicator already ON, press and hold the [NET/GROSS] key and press the [ON/RECORD] key to start the "Self Test". Press the [ON/RECORD] key to "pause" the Test while numbers are displayed. Press the [ON/RECORD] key again to "resume"

SETUP # _____ CAL # _____

To accurately calibrate the scale, you will need a large amount of weight that has a known value. For best results you should have at least as much weight as the largest load you plan to weigh.

Determining the New Setup and Calibration Numbers

1. Zero-Balance the scale so the display reads zero.
2. Put the KNOWN WEIGHT on the scale platform and write down the WEIGHT DISPLAY.

Perform the following equation to find the ACCURATE CAL #.

$$\frac{\text{KNOWN WEIGHT}}{\text{WEIGHT DISPLAY}} \times \text{EXISTING CAL \#} = \text{ACCURATE CAL \#}$$

Example:

The KNOWN WEIGHT is 1000lbs, but the WEIGHT DISPLAY is 950lbs. The EXISTING CAL # is 776.

$$\frac{1000}{950} \times 776 = 817$$

817 is the ACCURATE CAL #. The setup number does not change.

To Enter a New Setup and Calibration Number**Short Form Calibration**

The Short Form Setup & Calibration procedure allows you to change the "SETUP" and "CAL" numbers of the indicator. You may want to perform this procedure if the indicator is being connected to different load cells or if the scale is inaccurate and you have some accurate known weights to use for calibrating the scale.

Before continuing, first write down the current SETUP and CAL numbers of your EZ indicator. These numbers are displayed during the Self Test.

To run the self test with the indicator already ON:

Press the [NET/GROSS] key and then press the [ON/RECORD] key to start the Self Test.
Press the [ON/RECORD] key to "pause" the Self Test while numbers are displayed.
Press the [ON/RECORD] key again to allow the self-test to complete normally.

.SETUP # _____ CAL # _____

Note: Do not attempt to calibrate the scale if the indicator is not reading stable weights. The calibration procedure will not fix instability, inconsistencies, or flashing "RANGE" messages.

Press and hold the [ZERO/RECHECK] key and press the [ON/RECORD] key for 3 seconds to enter the short form calibration. The display will flash "SETUP" and then display the 6-digit setup number with the right digit flashing. To modify the setup number:

1. Press the [Net/Gross] key several times to increment the digit to its proper value.
2. Press the [TARE] key to advance the blinking digit to the left.
3. Repeat steps 1 and 2 for each digit as required.
4. Press the [ON/RECORD] key to enter the new setup number and display the calibration number.
5. Repeat steps 1 and 2 to modify the calibration number.
6. Press [ON/RECORD] to enter the new calibration number and the display will go back to normal.

Verify the accuracy of the scale and the procedure is complete!

Appendix E

Weighing Errors

OVRCAP

Capacity Limit:

The display shows the message "OVRCAP" if the weight on the scale system exceeds the capacity limit. The capacity value is entered in SETUP to warn of overloading the scale system.

+RANGE

Over Range:

The display shows the message "+RANGE" if the weight on the scale system exceeds the maximum weight measurable by the scale system. The over range value is always the system's maximum A/D counts multiplied by the scaling factor. The actual weight at which over range occurs depends on the calibration, zero, and display count size.

-RANGE

Under Range:

The display shows the message "-RANGE" if the weight on the scale system is less than the minimum weight measurable by the scale system. The under range value is always the system's minimum A/D counts multiplied by the scaling factor. The actual weight at which under-range occurs will depend on the calibration number, zero, and display count size.

Appendix F

Do-It-Yourself Platform Construction

TYPICAL WOOD PLATFORM CONSTRUCTION

The following two platforms can be built using readily available building materials. Alternate decking material (plywood or steel grating) may be used if properly supported. An example of proper support could consist of either concrete or timber piers, or a concrete slab. Treated lumber is recommended for decking material.

If alternate deck sizes and/or materials are used, be aware that too much deck deflection will affect weighing accuracy. A heavy strong structure is better than a light one that flexes.

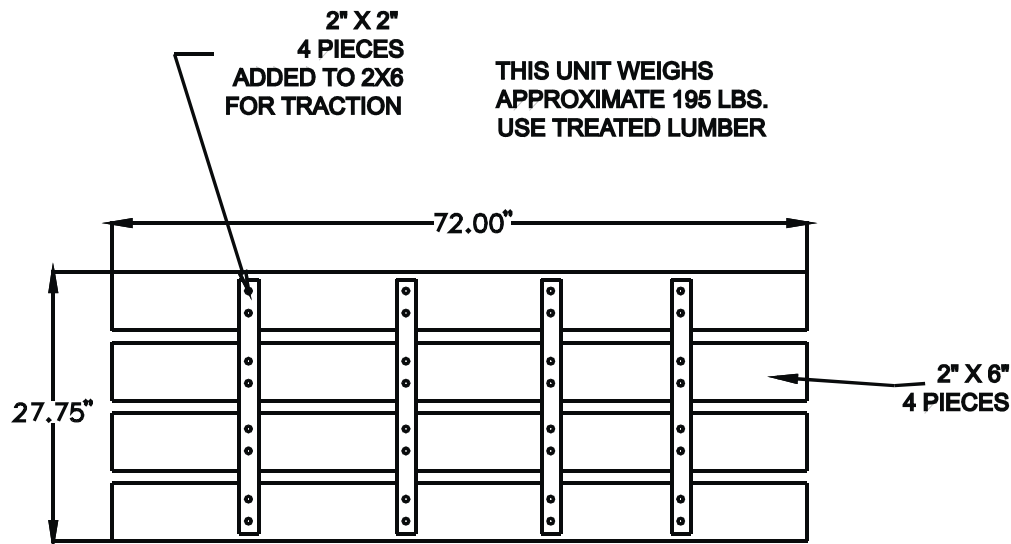


CAUTION

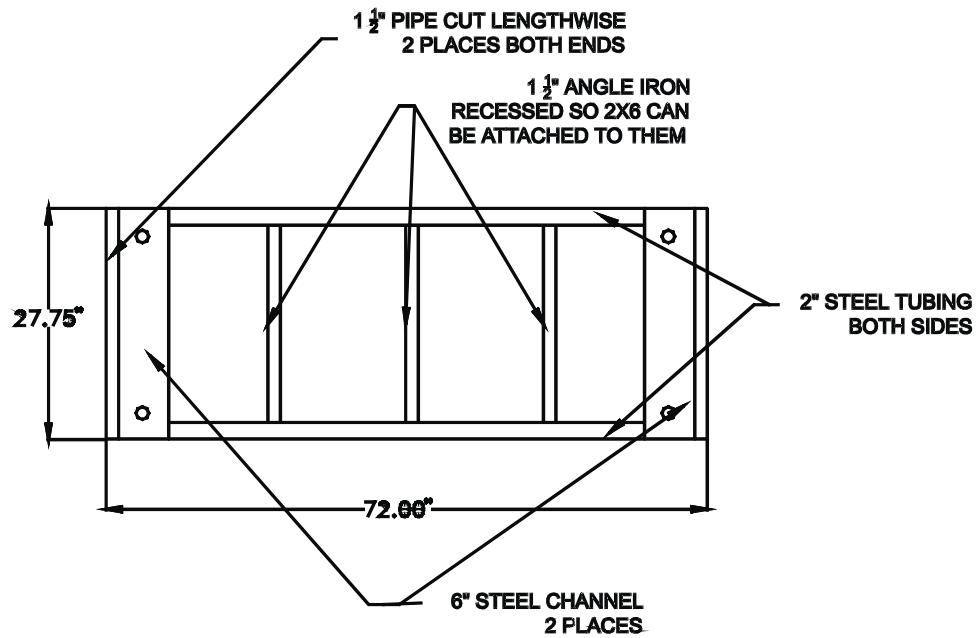
Do not weld to load cells with load cell cables connected to the indicator. If you must weld with load cells connected, locate welder ground so that current will not flow through the load cell.

Model 3300 Platform

This is a typical platform that may be used with the StockWeigh Model 3300. Do not allow deck to overhang more than 6 inches past the edge of the load cell.



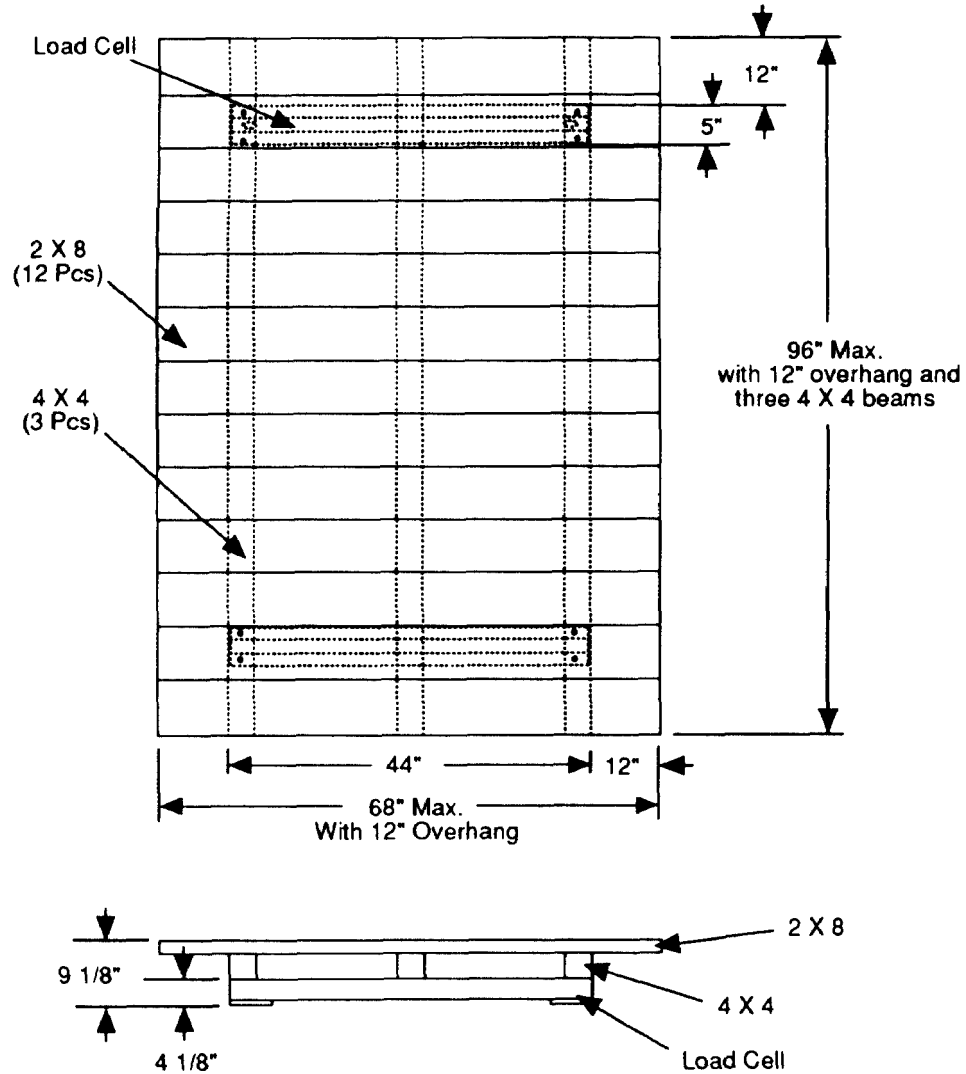
Typical Wood Platform



Typical Steel Deck for Wood Platform on Previous Page.

StockWeigh 6600 Platform

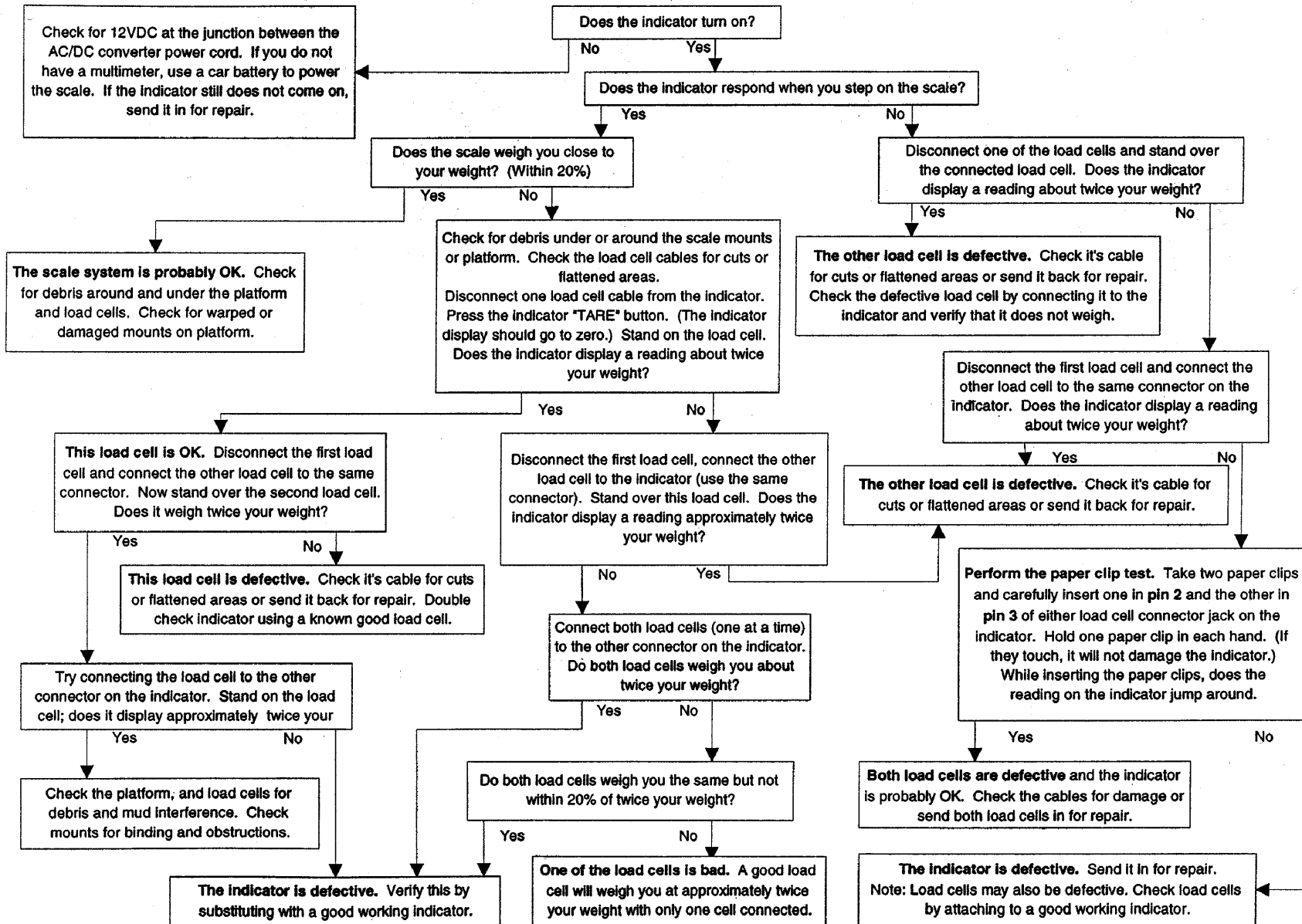
This plan is an example of a platform that may be used with the StockWeigh Model 6600. Do not allow deck to overhang more than 12 inches past the edge of the load cell.



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Troubleshooting Guide



Need help? Call Digi-Star Technical Service at 920-563-9700