Tal-Tec Livestock Scales

User Manual

Serving Agriculture
Since 1974

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LIVESTOCK SCALE
kg
TALTEC

INTRODUCTION

Congratulations on the purchase of your Tal-Tec Livestock Scale. It is a quality product and will serve you faithfully for many years to come.

Our Mission

Today and since 1974 we at Tal-Tec strive to help the farmer manage and control his livestock herd with quality equipment that is affordable and robust.

Description

This product consists of two LOADBARS, INDICATOR, BATTERY CABLE, AC-DC Adaptor, pack of BOLTS and USER MANUAL. (The loadcells can also be referred to, as loadbars and are either 600mm or 1000mm long)

Optional Extras

- Cattle platform
- Cattle crate with gates
- Sheep or Pig crate

INSTALLATION

1. Unpack and place the indicator in a secure position.

2. Install the loadbars.

3. Run the loadbar cables to the indicator, **making sure they are protected from damage**.

4. Insert the plugs into the sockets at the bottom of the indicator. Tighten the retaining collars by hand only. The plugs can go into either socket. **Important**: Keep the plugs and sockets clean and dry.

5. The instrument has an internal battery to power the system. You can also use the 12 volt battery cable or Mains adaptor to power the system

6. By connecting the instrument to the power supply using the battery cable (Bakkie battery) or the AC-DC Adaptor the internal battery will charge.
   - The instrument is reverse polarity protected and will not work if connected incorrectly.
   - The scale will not function properly if the internal battery is flat or the power supply does not supply a good 12-volt source.

7. The scale is now ready for operation.

OPERATION

Using the scale is straight forward and logical.

Safety

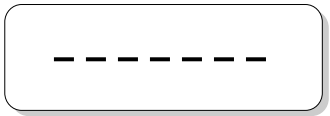
To avoid damage, never load the scale with more than the total capacity (2000kg) , i.e. the live weight and platform must not exceed 2000kg.
The cables must be protected at all times from being trampled, tugged or knotted.

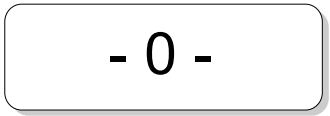
The **Display** normally shows the current live weight on the platform in kilograms.

The **Resolution** is the smallest weight change that can be displayed at a particular time or the smallest division. Normally 1kg (This can be changed by selecting fine mode)

Switching On

Press ON OFF display shows





Note: do not stand on the scale while it is busy “zeroing”.

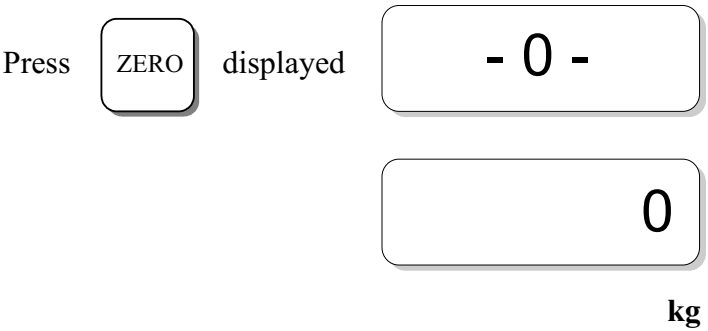
The weight shown on the display is a Live weight and never locks on a value, when the weight changes the reading changes. However, if the weight is about half way between two values, the instrument will calculate the average weight and this average weight will reflect on the screen. This function works in the case of an animal that will not stop jumping. The reading will flicker on the calculated weight.

Weighing

1. Make sure the indicator is displaying 0kg. If not, zero the scale again.
2. Move the animal onto the platform making sure it does not lean or touch any other structure.
3. Wait for the reading to stabilise.
4. The weight is then displayed and can be recorded.

FUNCTIONS

1.ZERO
To zero the scale press the zero key



The instrument returns to
live display.

2. HOLD
Press the hold key to continuously display the weight even after the animal has been removed from the platform or scale.
To return the scale to zero or to display the next weight press the 'LIVE' key.

3. FINE MODE
When weighing items of less than 200kg, you can set your scale to fine mode for a higher accuracy. The **Resolution** is the smallest weight change that can be displayed at a particular time or the smallest division.

Normally 1kg. This can be changed by the pressing the 'FINE MODE' Key.

The resolution in Fine Mode is 0.1kg for a maximum of 200kg

4. ***LIVE***
This is the escape key. If you are stuck in a setup function or reading the statistics press the 'LIVE' key to return to the weigh screen.

5. ***STATS***
The LS4 scale has a built-in statistics feature.

Press the 'STATS' key to enter into the stats program and view the following:

COUNT - Number of weights recorded
TOTAL - Total mass of all the animals
AVE - Average mass of all the animals
HI - The highest mass recorded
LOW - The lowest mass recorded

To delete the data press the 'CLEAR' key
To return to weigh screen press the 'LIVE' key

6. ***SETUP***
There are a few settings we can change or check the battery voltage. Remember to press the 'LIVE' key to exit setup.

To navigate through setup press the UP and DOWN arrow keys. To change a setting press the 'ENTER' key.

1. This setting has been disconnected and is not operational. But can be used for a back light in the display.

2. ZERO TRACKING.
   As a result of temperature changes during a weighing session, the instrument can fluctuate from zero. Cattle excrement, etc. also adds weight. You can continue to zero the instrument automatically when it registers weights of 10kg or less.

3. WEIGH MODE
   HI – High movement of animal
   Lo – Low movement of animal
   Std – Standard weighing (Default)

4. CHARGING VOLTAGE
   Operating Range 5.8V - 6.3V

5. BATTERY VOLTAGE

7. *RECORD*

To record a weight into the stats press "ENTER/RECORD" once. The display will momentarily flash 'rEc' and the weight recorded.

INSTALLATION OF LOADBARS

The loadbars and indicator are unique and cannot necessarily be interchanged with another set, without re-calibration.

A **PLATFORM** scale is a system where the entrance and exit gates are not connected to the platform and therefore not weighed.

A **CRATE** is a box type scale including entrance and exit gates. The advantage of a crate scale is that when the animal touches and pushes on the gates or sides of the crate it has no effect on the reading, thus giving the most accurate weight.

- Platforms and crates will require mounting holes to suit the loadbars.
- The 'hoof' width (width on which the animal can stand) of the platform/crate must be no wider than the length of the loadbars.
- The loadbars should be mounted as near to the ends of the platform/crate as practical.

1. Select a convenient position for the platform or crate. A level concrete foundation or other firm surface is essential. **Note: For accurate weighing the platform or crate must not make contact with any part of the race.**

2. Place the crate in the required position in the race. Lift each end in turn and position the loadbars in

place, with the mounting holes lining up with those in the crate.

DROPPING the crate or platform with the loadbars fitted, or dropping the crate or platform onto the loadbars, can overload and damage the loadcells.

3. Attach the crate to the loadbars using the four (4) bolts supplied (M10 x 75 bolt & nut).

4. If required, fit shims under the foot pads to eliminate rocking.

5. To prevent the crate or platform sliding during weighing, the loadbar foot pads can be bolted or pegged to the foundation. This is not absolutely necessary and weighing can be continued.

6. Mark the hole positions in the foot pads onto the foundation and unbolt and remove the platform.
7. Drill the holes and fit at least one raw bolt into each end of the load bar. Leave the bolts slightly loose.
8. Gently lower the platform onto the loadbars and check that the platform mounting holes line up with those in the loadbars. If not move the foot pads or platform slightly using the free play in the mounting holes, or drill out the mounting holes in the platform.

9. Bolt the platform to the loadbars and then tighten the foot pad bolts.

Note: If the holes do not line up and the bolts are forced, the scale will not Zero properly.

CARE AND MAINTENANCE

The Tal-Tec electronic scale is rugged and robust, designed to withstand the punishment of livestock handling. However, below are a few simple rules that should be followed to ensure the maximum life of the equipment.

1. The loadbars are designed to be splash and rinse proof. Under no circumstances should the equipment be submerged in water.

2. For maximum life, the loadbars should not be exposed to moisture or animal manure for extended periods. Although the loadcells have been electroplated to prevent corrosion, prolonged exposure to moisture will cause the cells to fail.

3. The loadbars should be stored in a clean and dry state.

4. **The cables should be placed so that they will not be walked on or squashed in any way.** Fitting cables inside heavy plastic, under timber, underground or up posts are possible options. Any cuts or splits in the cable will affect the performance of the scale and lead to failure, even if the slightest amount of moisture gets in. It is advisable to return damaged equipment to Tal-Tec for repair. If emergency repairs are needed, it is very important that the cable be thoroughly dried. Each core should be individually soldered and insulated.

POSSIBLE PROBLEMS

Problem When the indicator is on and the loadbars are plugged in, the display shows a big erratic value which is positive or negative.	**Cause** Problem with cables, cable damage.
	Solution Repair the cables.
Problem When the indicator is on and the loadbars connected, the display does not stay on zero, it creeps up and down by a few kilograms.	**Cause** The loadbars have been bolted to the ground and there are uneven horizontal forces acting on the loadbar feet.
	Solution Loosen the foundation bolts and re-align them.

FAULT FINDING

The Tal-Tec LS4 scale is a robust scale manufactured to work in the farm environment, but like all electronics are not indestructible. If your scale has been damaged or has stopped working you can follow these steps to pin point the fault.

The LS4 instrument – Battery

1. The instrument is powered by a 6 volt (lead acid sealed) battery and not mains. If the battery is low it will affect the performance of the scale. Charge the battery using the Mains adaptor or Car battery jumper lead both supplied with a new scale.

2. To check the internal battery voltage, turn the instrument on; press the setup button; and then the up arrow button until position 5. The display shows for example 5 ≡ 6.20. Good voltage is above 6, but it will work from 5.80 volts. Position 4 indicates the charging voltage if the charger is connected and working.

3. If the battery has been so dis-charged or run down over time that it does not turn the instrument on, the battery must be replaced, charging it will not help.

4. The battery voltage as displayed must be stable and not fluctuate up and down. If this is so the circuit board must be replaced.

The LS4 instrument – Operation

1. There is very little that can go wrong in the field if the battery is kept fully charged.

2. By placing a wet finger on the pins at the bottom of the instrument (you can short out the pins) and see if the instrument responds. If not, it could be faulty

The LS4 Loadbars - Testing

1. (Back ground)Each loadbar is fitted with two loadcells. There is an electric current flowing through each loadcell. When an animal stands on the scale there is a resistance change in the loadcell; this change is in the range of millivolts. So if there is any damage to the cable, plugs or loadbar the instrument is reading that damage and displaying an in-correct mass.

2. To eliminate any fault that could be caused by the installation of the platform/crate; first remove the loadbars and place on a level concrete slab. Workshop floor is a good place. Now place a wooden plank on the two loadbars so that when you climb onto the scale they do not rock. See picture….

3. Switch the instrument on. Now connect the plug from the loadbar; one at a time; after each one observe the reading on the display; the reading should be less than ±100kg and stable. This reading is called the offset and is normal. If the offset is above 100kg it is possible that a loadcell has been overloaded. If the offset is fluctuating in the hundreds it could indicate water damage. If the offset is fluctuating in the thousands it could indicated cable damage.

4. Once the loadbars are connected and you zeroed the scale by pressing the zero button you can test the loadbars. Climb onto the scale standing on a corner and take note of the reading; now climb off. The display must return to zero. Now repeat this on every corner; remember to climb off every time. If the readings are the same on every corner your scale is in a good condition.

5. If not, identify the loadbar with the problem (the one with the incorrect reading). Inspect the loadbar for cable damage; loose bolts or a shifted loadcell or plug damage. Repair yourself or return to Tal-Tec.

SPECIFICATIONS

Accuracy of the systems is plus or minus one persent.
Resolution of 1kg or 0.05% of the capacity
Total capacity of 2000kg; i.e. live weight plus the platform/crate.

600mm LOADBAR

Nominal length	600mm
Section width	50mm
Overall height	100mm
Platform fixing centres	562mm
Foot pad	150 x 80mm
Cable length	3.5m

1000mm LOADBAR

Nominal length	1000mm
Section width	75mm
Overall height	100mm
Platform fixing centres	862mm
Foot pad	150 x 80mm
Cable length	3.5m

Indicator

Internal battery	Rechargeable
Power source	12 volt DC
	220 AC mains

WARRANTY

The warranty guarantees every part of the scale against defects caused by failure or breakdown during normal or recommended use.

The scale is covered by a **12 month warranty**, from date of purchase.

What we ask you to do:

To get warranty service, you must provide proof of date of purchase.
Return the product to the Tal-Tec factory.

If your product is defective and returned within one year of date of purchase, we will repair it, or at our option, replace it at no charge to you. The repair or replacement will be warranted for the remainder of the original one year warranty period.

This warranty does not cover defects resulting from accidents, damage while in transit to our service centre, alterations, unauthorised repairs, failure to follow instructions, misuse, damage caused by fluctuation in electrical power, fire, floods and lightning.

Contact Tel: (+27-12-) 250 2188
P.O. Box 995; Brits; 0250
7 Theuns Mulder street; Brits; South Africa