



# SmartScale 500

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SmartScale 500 User Manual

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# Introduction

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Thank you for purchasing the SmartScale 500 Scale. Gallagher have been making agricultural weighing equipment for over 60 years and in the time have earned a reputation for quality equipment that withstands our tough agricultural conditions.

The SmartScale range of weighing systems is simple, tough, innovative and reliable.

All of the Scales in the Gallagher range can be matched to a choice of loadbar systems, as well as a range of platforms and crates to make an accurate and reliable weighing system.

Although designed specifically for agriculture, the SmartScale range is also suited to many industrial applications.

Features of the SmartScale 500 include entering tag numbers and the condition score of animals when weighed, the ability to view records in the current or previous sessions and the ability to copy weighing sessions to a computer.

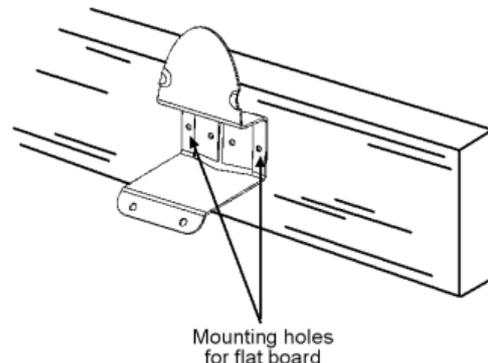
# Installation

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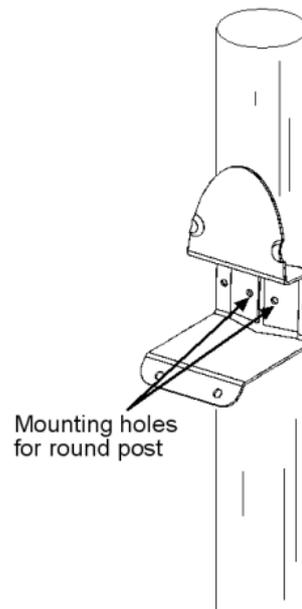
## Installing the Scale bracket

The bracket can be mounted on a flat vertical surface, or on a round post.

To mount the bracket on a flat vertical surface, for example a square post or board, use the outer holes.



To mount the bracket on a round post, use the inner holes.



Don't mount the Scale bracket on the weighing crate or chute.

## Installing the loadbars

To install the loadbars follow these steps.

1. Bolt the platform to the loadbars.
2. Ensure the platform is placed on a flat and level surface. Make sure it is not touching any rails or gates.
3. Either bolt the loadbars to the concrete pad or locate them on studs set into the concrete. This will prevent the platform from moving during the weighing session.

## Installing the Scale

The Scale can be placed on a flat surface or mounted on the Scale bracket supplied.

Position the Scale ;

- clear of the platform to ensure it does not interfere with the flow of animals during the weighing cycle
- within easy reach of the loadbar leads
- within easy reach of the operator (for manual weighing)
- in a well-lit area.

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# Power and batteries

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During a weighing session, the Scale can be powered by its internal battery alone or by its internal battery and either the battery charger or an external 12 volt battery.

The battery charger connects between an AC outlet and the Scale.

If either the battery charger or an external 12 volt battery is connected to the Scale, the Scale's internal battery will be charged while the Scale is in use.

For optimum performance, switch off the Scale and charge its internal battery for at least five hours. When fully charged, the internal battery on its own will power the Scale continuously for a minimum of eight hours. Battery life may be reduced if the Scale is being used to power an Electronic ID reader.

## Charging the battery

The battery in the Scale can be recharged using either a battery charger or an external 12 volt battery.

Recharging the battery will take up to five hours depending on the level of charge already in the battery. The Scale can be in use or can be switched off while the battery is being charged.

## Using the battery charger

To charge the battery using the battery charger, follow these steps.

1. Connect the lead between the battery charger and the Scale.

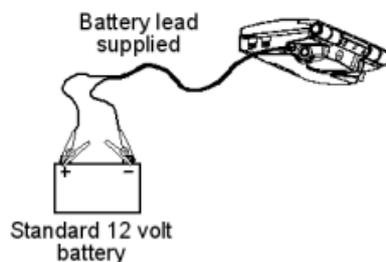


2. Plug the battery charger into an AC outlet and switch on.
3. Open the Scale case and make sure the battery charge icon  on the main screen is flashing. This indicates that the battery is charging and will be displayed whether the Scale is turned on or off.

## Using an external 12 volt battery

To charge the Scale's internal battery using an external 12 volt battery, follow these steps.

1. Connect the supplied black and red battery leads to the Scale.
2. Connect the other end of the battery leads to the 12 volt battery.



Connect the **Red** clip to the **Positive** terminal

Connect the **Black** clip to the **Negative** terminal

3. Open the Scale case and make sure the battery charge icon  on the main screen is flashing. This indicates that the battery is charging and will be displayed whether the Scale is turned on or off.

## Battery charge status

The battery icon displays in the bottom left corner of the Scale's upper screen.

It is important to note that the battery icon will only ever show the actual amount of charge left in the battery when the Scale is turned on and disconnected from external power.

Fully Charged		Battery Icon bars are all displayed constantly.
Partially Charged		Battery Icon shows first four bars constantly.
Battery Flat		No Battery Icon bars are displayed.

When the Scale is connected to the external power supply the battery icon will display the charging status.

Charging		Battery Icon shows all the bars constantly filling and then disappearing.
Topping Up		Battery Icon shows the first four bars constantly full and the remainder filling and then disappearing.
Trickle Charge		Battery Icon shows only one empty bar that is constantly travelling the length of the full Icon.

## Low battery warning

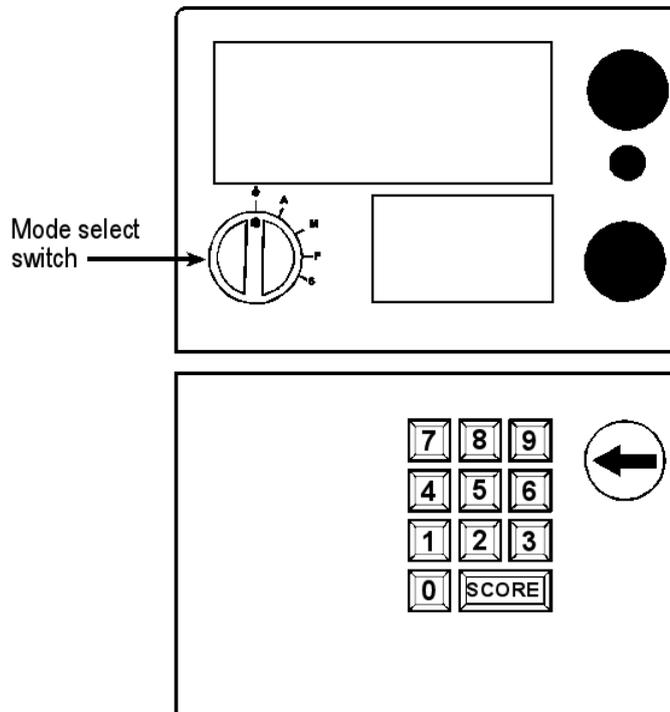
When the charge remaining in the battery drops to a very low level, the Scale will beep and the battery charge icon will start to flash. At this stage, about 15 minutes remain before the Scale shuts down.

## Low voltage shutdown

When the battery charge drops to a critical level, the Scale will shut down. At this stage it is necessary to recharge the battery.

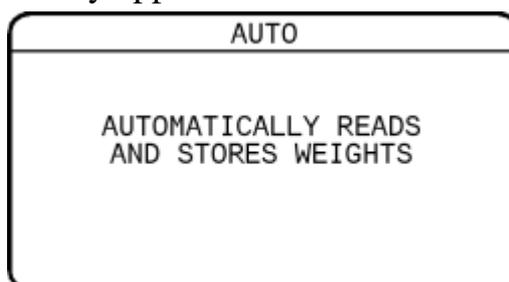
# The Mode Select Switch

The Scale can operate in three weighing modes and a setup mode. The mode select switch is located on the left hand side of the Scale.



The mode select switch has five positions: , **A**, **M**, **F** and **S**. Immediately after you turn the switch to any position except , explanatory information will display on the lower of the two Scale screens. The explanatory information will display only for a few seconds; after it disappears, the screen displays information relevant to the selected option.

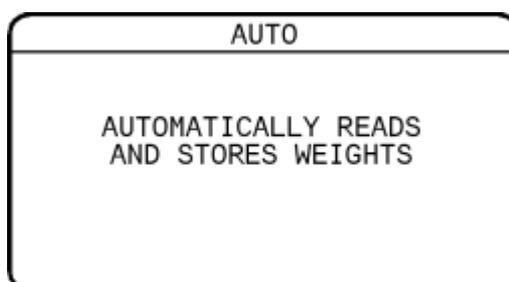
- ⏻ This position turns the Scale off.
- A** This position has two functions that change depending on whether the loadbars are connected or not connected.
- If the loadbars are connected, you can automatically measure weights and store the measurements. After the mode select switch is first turned to **A**, the following information briefly appears.



Automatic weighing is covered under *The Weighing Session* (p 35).

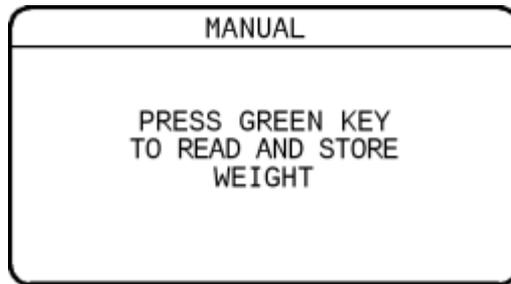
- If the loadbars are not connected, you can still-
  - record condition scores against Visual Tag Number;
  - record visual tag numbers against Electronic IDs; and
  - edit previously-recorded Visual Tag Number and condition scores.

After the mode select switch is first turned to **A**, the following information briefly appears.



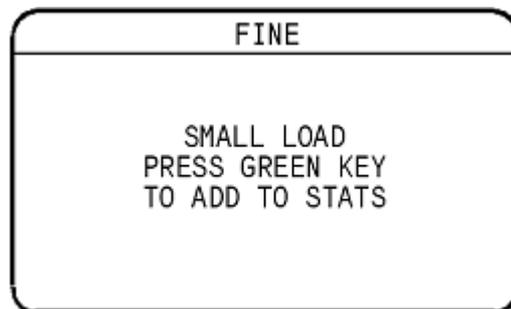
Recording condition scores and visual tag numbers is covered under *Recording Animal Information* (p 31). Editing previously-recorded Visual Tag Number and condition scores is covered under *Editing Weight Records* (p 42).

- M** This position selects manual weighing. After the mode select switch is first turned to **M**, the following information briefly appears.



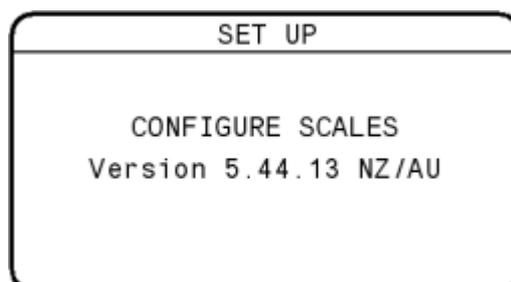
Manual weighing is covered under *The Weighing Session* (p 35).

- F** This position selects static load weighing. After the mode select switch is first turned to **F**, the following information briefly appears.



Static load weighing is covered under *Weighing Static Loads - Fine Mode* (p 40).

- S** This position accesses the setup options. After the mode select switch is first turned to **S**, the following information briefly appears.



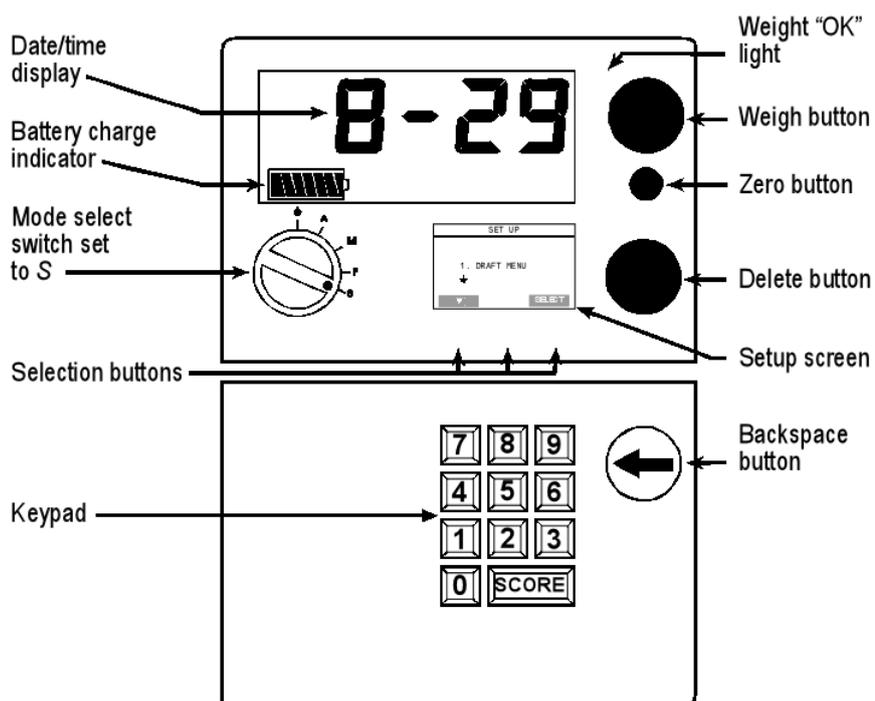
Note that the software version used by the Scale is also displayed. Setup options are covered under *Setup* (p 10).

# Setup

To access the setup menu, turn the mode select switch to **S**.

The upper screen normally displays the time in the 24-hour format. Every minute, the time display is replaced briefly by numbers corresponding to the day and month of the current date.

The lower screen displays the setup menu.

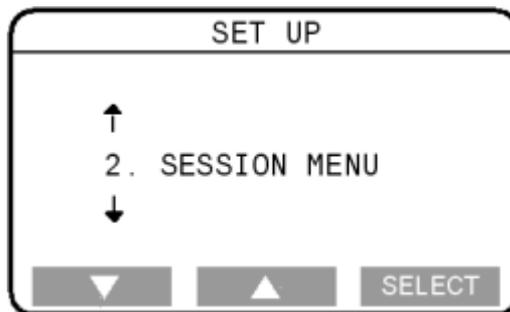


## Selecting a Setup Option

The setup menu contains six options:

1. **DRAFT MENU** - select the drafting mode and specify drafting limit(s).
2. **SESSION MENU** - select a session and view; print or delete the session.
3. **SET TIME AND DATE** - set the current time and date.
4. **USER OPTIONS** - select weight units, turn tag checking on or off and turn live printing on or off.
5. **COMMUNICATIONS** - set up a connection to a computer, printer, Electronic ID reader or other external device.
6. **SELECT COUNTRY** - for a specific country, select a language together with country-specific terminology and option preferences.

When you turn the mode select switch to **S**, one of the setup menu options will display.



Press the  or  button to move to the previous or next menu item.

Press  to select the currently displayed item.

Alternatively, using the keypad, you can press the number of the menu item that you want to select. For example, to select Session Menu, press 2; to select Communications, press 5.

For more information about each of the setup menu items refer to the following sections.

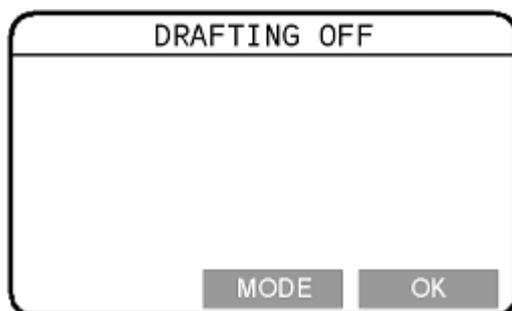
## Drafting

The Draft Menu lets you select a drafting mode and set drafting limits. You can select two-way drafting or three-way drafting or you can turn drafting off.

### Changing the drafting Mode

To change the drafting mode, select **1. DRAFT MENU** from the Setup menu, as described previously.

The current mode will be displayed at the top of the screen.



Each time you press the **MODE** button, a new drafting mode will display. The Scale cycles through the following modes:

DRAFTING OFF

2 WAY DRAFTING

3 WAY DRAFTING

When the drafting mode that you want to select is displayed, you can change the drafting limits if necessary. Refer to *Changing the Drafting Limits* (p 13).

Press **OK** to save the settings on this screen and return to the Setup menu.

## Changing the drafting limits

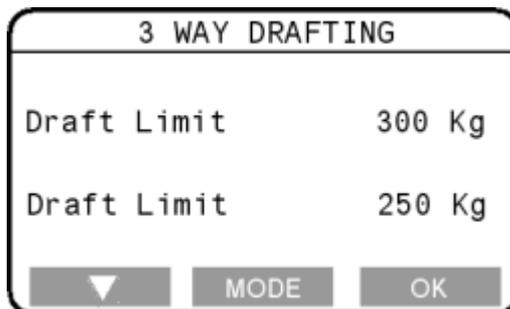
### Two Way Drafting



To change the drafting limit when Two Way Drafting is the selected mode:

1. Press to delete the existing limit.
2. Use the keypad to enter the new limit.
3. Press to save the changes and return to the setup menu.

### Three Way Drafting



To change the drafting limits when Three Way Drafting is the selected mode, follow these steps.

1. Change the upper limit.
  - If necessary, press to select **Draft Limit**.
  - Press to delete the existing limit.
  - Use the keypad to enter the new limit.
2. Change the lower limit.
  - If necessary, press to select **Draft Limit**.
  - Press to delete the existing limit.
  - Use the keypad to enter the new limit.
3. After you have set the limits, press to save the changes and return to the Setup menu.

## Changing the drafting direction

If you have set up a port on the Scale for connection to a drafter, you can configure the direction (left, right or straight ahead) an animal must take after being weighed.

### About drafters

A drafter sends an animal in a nominated direction, usually left or right; sometimes left, right or straight ahead. Most drafters do this with an arrangement of gates managed by a controller. To set up a drafting direction, the Scale transmits to the drafter's controller a number in the range 0 through 9. This is called a drafting number. After it receives the drafting number, the controller changes the status of the gates. The drafting number corresponding to a drafting direction is specified by the drafter manufacturer.

A single drafting number may cause a drafter to set more than one gate.

As an example, one manufacturer's three-way sheep drafter requires the Scale to transmit 6 to open the sheep release gates and draft left; 5 to open the sheep release gates and draft right; and 4 to open the sheep release gates and draft straight ahead.

Some drafters require all gates to be reset after an animal has passed through.

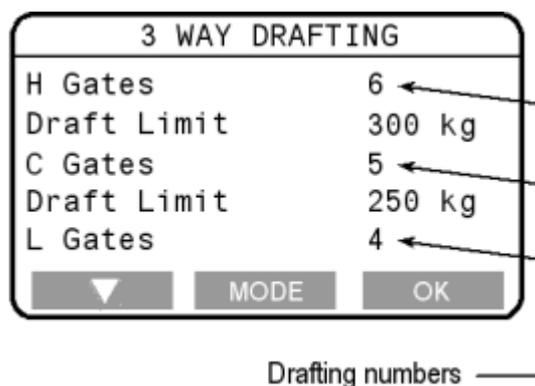
When you draft animals after weighing them, you need to assign a drafting direction to each weight category. You do this at the Scale when you associate a weight category with a drafting number.

## Displaying drafting numbers

Drafting numbers display when either **2 WAY DRAFTING** or **3 WAY DRAFTING** has been selected from the **1. DRAFT** menu.

### Note:

Drafting numbers will only display when a port on the Scale has been set to **Drafter**, **Drafter Special** or **Drafter Fast** from the **5. COMMUNICATIONS** menu.



- On the THREE WAY DRAFTING screen, drafting numbers are shown against the H Gates, C Gates and L Gates labels.
  - H Gates** sets the drafting number for animals that weigh the Upper Limit or anything higher than the Upper Limit.
  - C Gates** sets the drafting number for animals that weigh the Lower Limit or anything higher than the Lower Limit and lower than the Upper Limit.
  - L Gates** sets the drafting number for animals that weigh anything lower than the Lower Limit.
- On the TWO WAY DRAFTING screen, drafting numbers are shown against the H Gates and L Gates labels.
  - H Gates** sets the drafting number for animals that weigh the Draft Limit or anything higher than the Draft Limit.
  - L Gates** sets the drafting number for animals that weigh anything lower than the Draft Limit.

If drafting numbers have not been previously assigned, an underscore ( \_ ) will appear in place of the number.

## Changing drafting numbers

1. Press the  button repeatedly to select the drafting category (**H Gates**, **C Gates** or **L Gates**) you want to change.
2. Using the keypad, press the required digit (a number between 1 and 9) to set the route the animal in this drafting category must follow.
  - Refer to the drafter manufacturer's specification to determine the drafting number corresponding to the drafting direction.
  - If you enter 0, the gate setting will be cleared. This means no gate changes on the drafter will occur when an animal in this drafting category is weighed.
3. Press  to save the changes and return to the setup menu.

## Configuring the connection to the drafter

To configure the connection between the Scale and the automatic Drafter, follow these steps:

1. Set the mode select switch to **S**.
2. On the numeric key pad, press **5** to select the Communications menu.
3. If necessary press the  button to select the port to which the DRAFTER is connected.
4. Press the  button repeatedly until **DRAFTER** displays.
5. Press the  button.

## Resetting the drafter

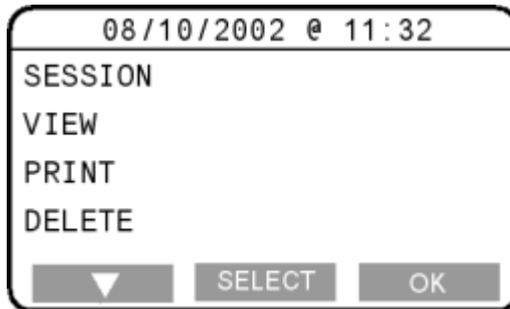
Some drafters require that all gates are reset after the weighed animal has passed through and before the next animal is weighed. If you need to reset the DRAFTER between measurements, carry out steps 1 through 5 but select **DRAFTER SPECIAL** at step 4.

## Session Menu

The session menu lets you select and then view, print or delete a weighing session.

To display the Session Menu screen select **2. SESSION MENU** from the Setup menu, as described previously.

The following screen will be displayed.

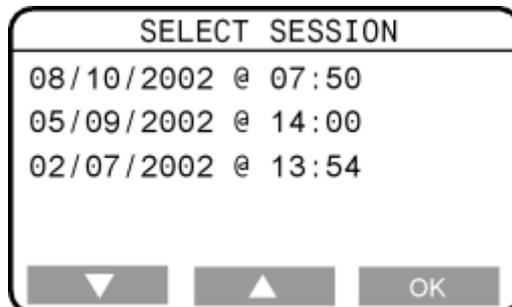


The currently selected session displays in the title bar of the screen.

You can use the  button to move between the options.

## Selecting A Session

1. Use the arrow key to highlight **SESSION** and press . A list of the sessions stored in the Scale's memory will display.



Each session is identified by the date the session was created.

2. Use  and  to highlight the session that you want to select.
3. Press  to select the session and return to the Session Menu screen.

## Viewing A Session

1. Select the session that you want to view, as described previously.
2. In the Session Menu screen, use the arrow key to highlight **VIEW**.
3. Press the **SELECT** button to view the records from the selected weighing session.
4. Use the **▲** and **▼** buttons to scroll through the records and to view the Tag Number, Weight or Condition Score.
5. Press **OK** to return to the Session Menu screen.

**Note:** You cannot edit the weight records from this view. Refer to *Editing Weight Records* (p 42) if you want to edit records in the current weighing session.

## Printing A Session

Make sure the SmartScale printer is connected to the Scale. To configure the port that the printer connects to on the Scale, refer to *Communications* (p 23).

1. Select the session that you want to print, as described in *Selecting a Session* (p 17).
2. In the Session Menu screen, use the arrow key to highlight **PRINT**.
3. Press **SELECT**.
4. Press **SORT** to select the required printing order.
5. Press **PRINT** to print the session on the attached printer.

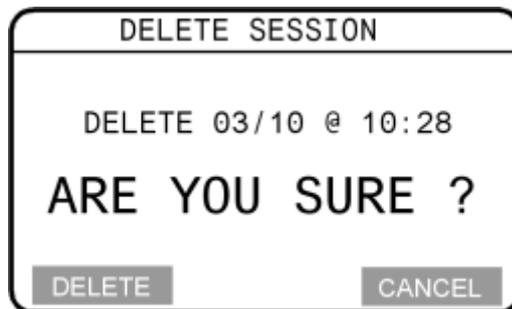
The weight records will be printed.

## Deleting A Session

**Note:** Deleting a session removes it from the Scale's memory. Before deleting a session it is recommended that you copy weighing sessions to your computer using the MyScale Pro software supplied with the Scale. Using MyScale Pro, you can restore the deleted session to the Scale, by copying it from the computer at a later date. Refer to the *MyScale Pro User Manual* for more information.

1. Select the session that you want to delete, as described in *Selecting a Session* (p 17).
2. In the Session Menu screen, use the arrow key to highlight **DELETE**.
3. Press **SELECT**.

A screen will display asking you to confirm that you want to delete the session.



4. Press **DELETE** to delete the weighing session, or **CANCEL** to return to the Session Menu screen without deleting the session.

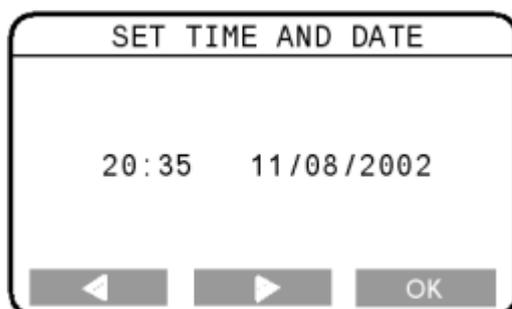
## Set Time and Date

The Set Time and Date screen lets you set the Scale's internal clock to the current time and date. The date and time are recorded each time you create a new weighing session.

You can view the current system time and date on the Scale's main screen when it is in Setup mode.

To set a new system time or date, select **3. SET TIME AND DATE** from the setup menu.

The Set Time and Date screen displays.



The currently-selected digit flashes. Press the  and  buttons to select the digit you want to change.

Type a number from the keypad to change the currently-selected digit.

Time must be entered in the 24-hour format. For example, 8:35 pm would be 20:35, while 8:35 am would be 08:35.

The date must be entered in the format DD MM YYYY. For example 8 November 2002 would be entered as 08/11/2002.

### Note:

The date format changes depending on how the country options are set up; see *Select Country* (p 25). The examples given here assume that the country selected is NZ/AU.

You cannot edit the colon (:) in the time or the forward slashes (/) in the date.

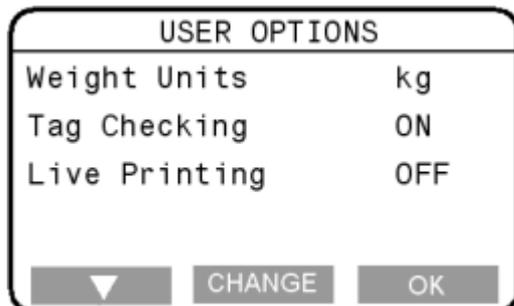
Press  to save the new time and return to the setup menu.

## User Options

From the User Options screen you can-

- select the weight measurement unit;
- turn tag checking on or off;
- turn printing on or off.

To display the User Option screen select **4. USER OPTIONS** from the setup menu.



### Changing a User Option

Press the  button to select the item you want to edit, then press the  button.

Refer to the following sections for more information on each of the User Options.

Press  to save the displayed user options and return to the setup menu.

### Weight units

You can specify whether the Scale uses kilograms (kg) or pounds (lb).

### Tag Checking

You can turn tag checking on or off.

If tag checking is on, the Scale will check for duplicate Visual Tag Number during a weighing session.

For more information about tag checking, see *Visual tag checking* (p 39).

## Live Printing

When Live Printing is turned on, the Scale will print the weight, tag number and condition score each time it locks onto a weight.

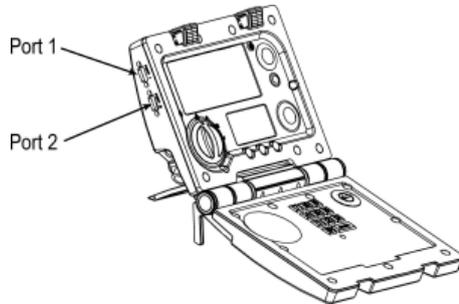
Live Printing will only occur if you have connected the SmartScale printer to the Scale and set the port to **Printer** as described in *Communications* (p 23).

To print the weights at the end of a session, refer to *Printing a Session* (p 18).

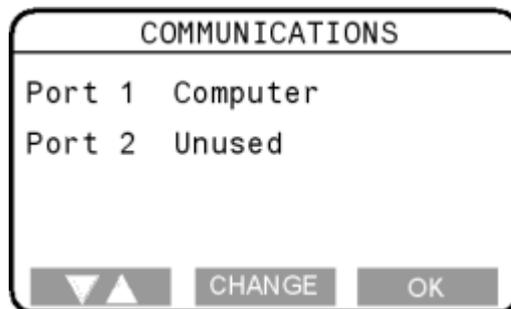
**Note:** This feature will not work with a standard PC printer.

# Communications

You can connect a device such as a computer, printer, drafter or Electronic ID reader to the Scale. Connections are made either to Port 1 or Port 2. These are located on the upper left hand side edge of the Scale. If you attach a device to a port, you must configure the port to suit. You do this from the Communications screen.



To display the COMMUNICATIONS screen select **5. COMMUNICATIONS** from the Setup menu.



To select the device that will be attached to a port:

1. If necessary, press the  button to select the port to which the device is connected.
2. Press  until the device that will be attached to the port is selected.

**Note:**

You cannot select a device for one port if it is already assigned to the other. For example, you cannot select Computer on Port 2 if it is already assigned to Port 1.

Available devices are:

Unused	The port is unused (this is the default option).
Computer	Enables the connection of a computer. Used to copy weighing sessions to or from the computer.
Printer	Enables the connection of a SmartScale Printer. Used to print weighing session data either during or after the session.
Data Logger	Enables the connection of a data logger. Used to log weight records during a weighing session. Refer to <i>Using a Data Logger</i> (p 53) for more information.
EID Allflex	Enables the connection of a Gallagher/Allflex EID stick reader. Refer to <i>Electronic ID</i> (p 50) for more information.
EID Destron	Enables the connection of a Destron EID reader. Refer to <i>Electronic ID</i> (p 50) for more information.
EID Sp ( <i>nnnn</i> )	Enables the connection of an EID reader at a nominated speed. Refer to <i>Electronic ID</i> (p 50) for more information.
Drafter	Enables the connection of an auto drafter.
Drafter Special	Enables the connection of an auto drafter that requires its gates to be reset after each animal has been weighed.  Enable the <b>Drafter Fast</b> option if you are connecting to an auto drafter that you want to operate in a fast mode.
Drafter Fast	Enables the connection of an auto drafter that requires fast drafting, for example, the Racewell Automatic Sheep Crate.  When operating an auto drafter in <b>Drafter Fast</b> mode, there is a slight decrease in the accuracy of weight measurements.
Ruddweigh	Enables the connection of devices using the Ruddweigh protocol. (NZ /AU only)

3. Press  to save the settings and return to the Setup menu.

## Autodrafter

The Scale can interface directly with auto drafters. There are three options for communicating with the connected port, Drafter, Drafter Special and Drafter Fast.

The Scale sends drafting commands to the auto drafter during the weighing session.

To connect an auto drafter with the Scale, complete the following steps:

1. Turn on the Scale.
2. Ensure the auto drafter is turned off.
3. Connect the auto drafter to one of the ports on the Scale.
4. Set the port to the required option, Drafter, Drafter Special and Drafter Fast.

Refer to *Communications* (p 23) for more information.

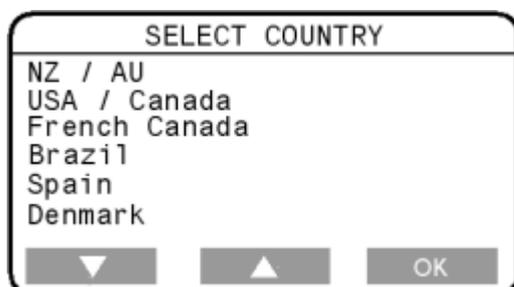
5. Turn the auto drafter on.

**Note:** For information about setting up the auto drafter into three-way drafting, refer to *Drafting*.

## Select Country

From the Select Country screen you choose the country in which the Scale will be used. Selecting a country changes the language and sets some country-specific terminology and options.

To display the Select Country screen select **6. SELECT COUNTRY** from the setup menu.



To change the country, follow these steps.

1. Press the  or  button to select the desired country.
2. Press .

# Viewing Weighing Details during a Session

The SmartScale 500 Scale provides two different formats for viewing weighing information during a weighing session.

You can view:

- Summary Weight Statistics
- Individual Weight Records (Tag Number, Weight and Condition Score)

The weighing session data is displayed on the lower screen on the Scale.

## Selecting a View

To select a different data view during a weighing session:

1. Ensure the mode select switch is set to either **A**, **M** or **F**.
2. If either Weight Stats or Draft Stats is currently displayed, press **WGHT** to view the individual weight records.

WEIGHT STATS [kg]	
( )	
Number	21
Average	286
Total	6006
Lowest	257
Highest	341
	NEW WGHT

If individual weight records are currently displayed, press the **STATS** button to view the Statistics screen.

TAG	WEIGHT	CON
231	302	56
547	287	35
369	312	54
▼	▲	STATS

Information displayed on the screens is described in the following sections.

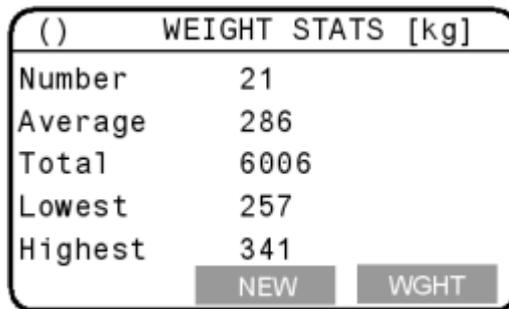
## Viewing session statistics

The Weight Stats or Draft Stats screen displays summary weight data for animals in the current weighing session. The screen that is displayed depends on the weighing mode that you are using and whether drafting is turned on or off.

If you are using automatic or manual weighing modes with two way or three way drafting switched on, the Draft Stats screen will display. This screen shows the number, average and total weight of the animals in each drafting category. If drafting is switched off or you are weighing in fine mode, the Weight Stats screen will display. This screen shows the number, average, total, highest and lowest weights for all the animals in the current session.

### Drafting Off

If drafting is turned off or you are weighing in fine mode, the Weight Stats screen will display as pictured below.



( )	WEIGHT STATS [kg]
Number	21
Average	286
Total	6006
Lowest	257
Highest	341
	NEW WGHT

## Two Way Drafting

If Two Way Drafting is selected and you are using automatic or manual weighing modes, the Draft Stats screen will display as pictured below.

() DRAFT STATS [kg]		
Limit	300	
	Low	High
Number	12	14
Average	275	318
Total	3300	4452
	NEW	WGHT

**Note:**

A (D) may display in the title bar before DRAFT STATS. This indicates that you have configured a port on the Scale for connection to a drafter.

In the example above, the drafting limit has been set to 300 kg. Twelve animals have weighed 300 kg or less. These 12 animals have an average weight of 275 kg and a total weight of 3300 kg. Fourteen animals have weighed more than 300 kg. These 14 animals have an average weight of 318 kg and a total weight of 4452 kg.

## Three Way Drafting

If Three Way Drafting is selected and you are using automatic or manual weighing modes, the Draft Stats screen will display as pictured below.

( )	(D)	DRAFT STATS [kg]	
Lim	250	300	
	Low	Mid	High
Num	12	8	10
Ave	241	269	312
Tot	2892	2152	3120
		NEW	WGHT

**Note:**

A (D) may display in the title bar before DRAFT STATS. This indicates that you have configured a port on the Scale for connection to a drafter.

In the example above, the lower drafting limit has been set to 250 kg and the upper drafting limit has been set to 300 kg. Twelve animals have weighed 250 kg or less. These 12 animals have an average weight of 241 kg and a total weight of 2892 kg. Eight animals have weighed from 251 kg to 300 kg. These eight animals have an average weight of 269 kg and a total weight of 2152 kg. Ten animals have weighed more than 300 kg. These 10 animals have an average weight of 312 kg and a total weight of 3120 kg.

## Weight Records

The Individual Weight Records screen shows the data recorded for each animal:

- Tag number
- Weight
- Condition score

You can use  and  to scroll up or down the list and view or edit other weight records in the current session.

The last weight to be recorded will be displayed at the top of the screen.

TAG	WEIGHT	CON
231	302	56
547	287	35
369	312	54

This screen can also be used to edit the weight records in the current session. Refer to *Editing Weight Records* (p 42), for more information.

---

# Recording Animal Information

---

The SmartScale 500 lets you record a condition score against an animal tag number (electronic or visual) without needing to record a weight. The information is added to the current session in the same way as a normal record, but with the weight set to zero.

**Note:**

Records that do not contain a weight are not added to the session statistics.

You can also use this method to scan Electronic ID and enter the associated Visual Tag Number prior to a weighing session.

To store animal information without a weight, follow these steps:

1. Make sure there are no loadbars connected to the SmartScale 500.
2. Turn the mode select switch to **A**, **M** or **F**.
3. If you are using Electronic ID, scan the Electronic ID.
4. If required, enter the Visual Tag Number using the keypad.

**Note:**

You must either scan an Electronic ID or enter a Visual Tag Number.

5. If you want to record a condition score, press SCORE and enter a one or two digit condition score.
6. Press the green weigh button.

A record will be added to the session containing the information you entered and with the weight set to zero. The session statistics will not change.

# About weighing

---

The Scale has three weighing modes: Automatic, Manual and Fine.

The Automatic and Manual weighing modes are optimised for weighing live animals. The Fine mode is optimised for weighing static objects.

## Weighing modes

### Automatic

Automatic mode is recommended for yards that allow a smooth flow of animals across the weighing platform.

In Automatic mode, the Scale automatically starts the weight measurement process as soon as the animal steps onto the platform. After the weight has been captured, the Scale beeps and displays the captured weight. The captured weight continues to display until the next animal steps onto the platform.

After the animal leaves the platform, the Scale attempts to compensate for the weight of any accumulation of mud or dung left on the platform. If it succeeds, the Scale displays a zero icon. If it does not you can manually restore zero by pressing the blue zero button.

### Manual

Manual mode is recommended for yards that do not allow a smooth flow of animals across the weighing platform or where the animals are restless. This mode allows the operator to decide when the measurement is made.

In manual mode, the operator presses the green weigh button to start the weight measurement process. After the weight has been captured, the Scale beeps and displays the captured weight. The captured weight continues to display until the next animal steps onto the platform.

After the animal leaves the platform, the Scale attempts to compensate for the weight of any accumulation of mud or dung left on the platform. If it succeeds, the Scale displays a zero icon. If it does not you can manually restore zero by pressing the blue zero button.

## Fine

Fine mode is recommended for weighing small static loads such as fleeces or produce.

In Fine mode, the Scale's weight display varies as objects are placed on and removed from the weighing platform.

If a weight measurement is to be added to the statistics, the operator presses the green weigh button. After the weight has been captured, the statistics are updated but the displayed weight is not frozen.

In Fine mode, automatic zero tracking is switched off, the Scale does not automatically compensate for the weight of small objects left on the platform after the weighed item has been removed. This means that if objects are left on the platform after a measurement, the weight indication will show their weight.

If you want to make a net-weight measurement of contained objects, you can have the Scale compensate for the weight of the container. To do this you would place the empty container on the weighing platform and press the blue zero button. If you then fill the container, the weight indication will be that of the container's contents.

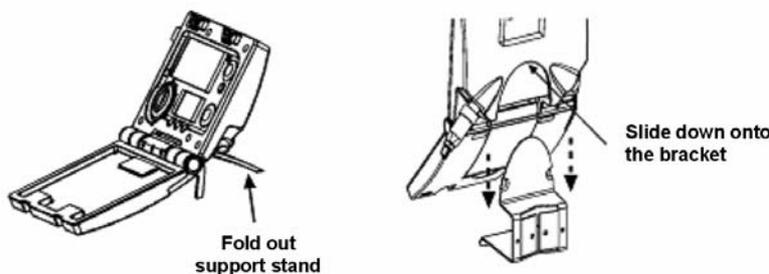
**Note:**

In Fine mode, after the blue zero button has been pressed, the weight indication shows zero but the **ZERO** icon does not display.

## Before you begin the weighing session

Before you begin the weighing session, complete the following steps:

1. Release the catches on the front of the Scale and open the case.
2. Place the Scale on a flat surface or clip it onto the Scale bracket.



3. Connect the leads from both loadbars to the Scale.
4. Determine if you require additional power for the Scale.

Either connect to an AC outlet via the battery charger or connect to a 12 volt battery. If you are not connecting to an external power source, the Scale's internal battery should be fully charged. Refer to *Charging the Battery* (p 4), if required.

5. Ensure the Scale is setup correctly for the weighing session.

To check the set up options, turn the mode select switch to **S** to display the Setup menu.

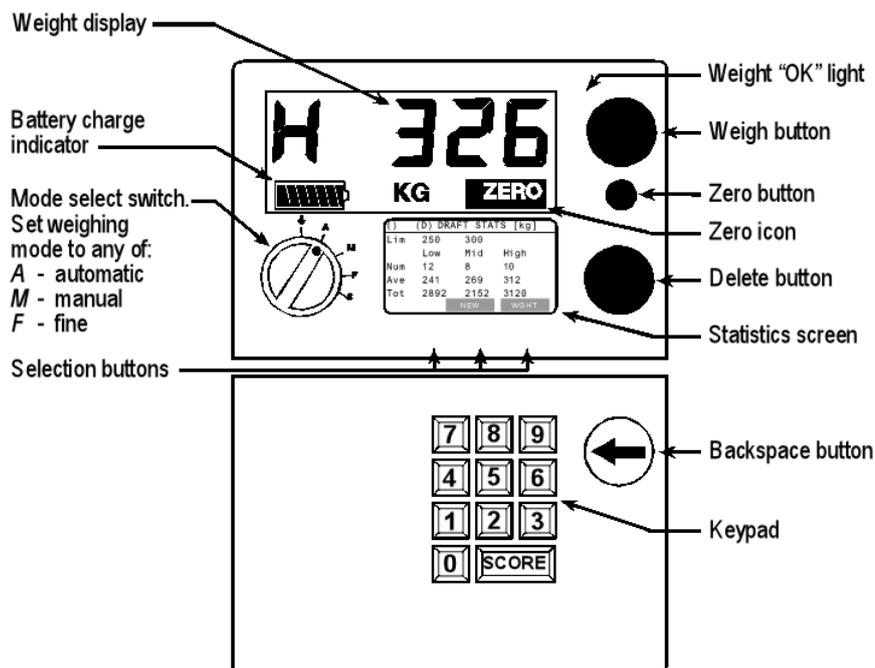
Before you begin a weighing session, ensure that you have set up the Scale with the correct date and time, and that you have selected other options such as tag checking or drafting if you require them.

If you are using an EID reader to scan Electronic ID during the weighing session, you need to connect the EID reader to the Scale and configure the port.

Refer to *Setup* (p 10), if you need more information.

You are now ready to start a weighing session.

## The Weighing Session



**Note:** If you are using the Scale without connection to an external power source, ensure that the battery has been charged for at least five hours before use.

## Weighing Animals - Automatic or Manual Modes

At all times during the weighing session ensure that the underside of the platform is kept free of dirt and stones.

1. Select the weighing mode that you want to use by turning the mode select switch to **A** (Automatic), or **M** (Manual).
2. When the Scale is switched on, the previous weighing session is still the current session. The statistics screen shows the weights and statistics from this session. Any new weights are added to this session.

If you want to create a new weighing session:

- If the Statistics screen is not displayed press **STATS** to display it.
- Press **NEW** on the Statistics screen.

The previous session is stored in the Scale's memory and can be viewed from the Session menu.

The Statistics and Individual Weight Record screens will be reset to zero.

3. Check that the **ZERO** icon is displayed. If it is not displayed, press the blue "zero" button to zero off any weight (e.g. dirt or manure) left on the platform.
4. If required, you can record the animal's Visual Tag Number or scan its Electronic ID. Refer to *Recording tag numbers* (p 38).
5. Load the animal onto the platform. Ensure the animal is contained on the platform (e.g. no hooves off the platform and no one holding the animal).
6. Follow the instructions for the weighing mode you have selected:

- **Automatic Mode**

When the Scale has determined an accurate weight for the animal, it locks on to the weight and hold it on the screen. The time taken to lock on to the weight varies depending on the movement of the animal.

- **Manual Mode**

Press the green weigh button to start weighing the animal. When the Scale has determined an accurate weight for the animal, it locks on to the weight and hold it on the screen. The time taken to lock on to the weight varies depending on the movement of the animal.

7. When the Scale has locked onto the weight:

- the Weight OK light illuminates;
- **OK** displays on the screen; and
- the Scale beeps.

If Drafting is turned on, H (High), C (Central) or L (Low) displays indicating the Drafting category.

The Statistics screen updates immediately. The Individual Weight Records screen will not update until the animal has left the platform.

8. If required, you can enter a one or two digit condition score for the animal.

Press the **SCORE** button on the keypad and type the score. If you make a mistake, press  to delete each incorrect character and then re-enter the correct information. You can enter the condition score before or while the animal is on the platform.

9. If the weight has locked on, but you want to re-weigh the animal, press the green weigh key. The Scale re-weighs the animal and lock onto the weight again. The new weight replaces the original weight and the statistics are updated.

For example, if the animal was not completely on the scale, the Scale may have locked onto an incorrect weight.

You do not need to re-enter the tag number or condition score if you have re-weighed the animal.

10. When the animal steps off the platform, the weight, tag number and condition score are stored in the Scale's memory. Refer to *Viewing Weighing Details during a Session* (p 26).

The weight remains on the screen until the next animal steps onto the platform.

If the animal has left the platform and you want to delete the weight that has just been recorded, press the red delete button. The last weight entered is deleted from the Scale's memory and the following screen displays.



11. In Automatic or Manual mode, the Scale automatically zeros off any weight left on the platform (e.g. dirt or manure). When this has occurred the **ZERO** icon is displayed on the screen.

If the zero icon does not display, press the blue zero button.

The Scale does not need to return to zero before the next animal is loaded on to the platform. Once the weight has dropped by 30%, the display will unlock ready for the next animal to be loaded onto the platform. This is a useful feature when weighing sheep.

12. Repeat the process from step 4 for the next animal.

## Recording Visual Tag Number

During an automatic or manual weighing session, you can record animal identification by the following means.

- Manually record an animal's Visual Tag Number and / or
- Scan an animal's Electronic ID.

If you have enabled tag checking, the Scale will warn of duplicate Visual Tag Number.

### Visual Tag Number

1. Before or while the animal is weighed, type the animal's Visual Tag Number from the keypad. The tag number can contain up to five digits.
2. To edit the Visual Tag Number just typed, press  to delete one or more digits and then type corrections.

### Using an Electronic ID reader

1. Before or while the animal is weighed, scan the animal's Electronic ID.  
  
If you are using Electronic ID numbers only, the last 4 digits of the tag number preceded by a colon will display on screen.  
  
If you entered a Visual Tag Number the first time the Electronic ID number was scanned, the Visual Tag Number will display on screen.
2. If this is the first time you have scanned the Electronic ID and you want to enter an associated Visual Tag Number, you can enter a Visual Tag Number now, before the animal steps off the platform.
  - Wait for the Electronic ID's number to appear on the Scale's screen.
  - Type the animal's Visual Tag Number from the keypad. The number can contain up to five digits.
  - To edit the Visual Tag Number just typed, press  to delete one or more digits and then type corrections.

In future, each time you scan the Electronic ID, the Visual Tag Number you typed will display on screen.

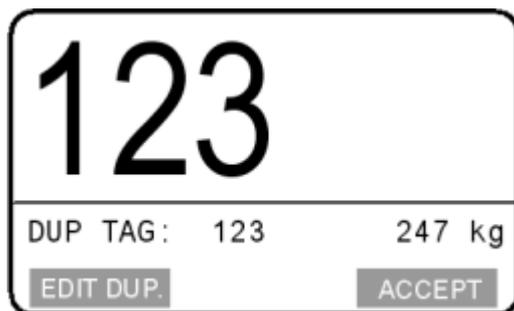
Refer to *Electronic ID* (p 50) for more information.

## Visual Tag Number checking

*Tag Checking* (p 21) under *User Options*, explains how to enable or disable Visual Tag Number checking.

With tag checking enabled, the Scale will check for duplicate visual tag numbers during a weighing session.

If you enter a Visual Tag Number that has already been entered during the current weighing session, the following screen will display and the Scale will beep three times.



From this screen you can change the Visual Tag Number just entered or one entered earlier in the weighing session. If you do not change the number before the animal leaves the platform, the duplicate Visual Tag Number will remain.

### To change the tag number that you have just entered

1. Use the backspace key  to delete all or part of the number.
2. Type digits from the keypad.

The new Visual Tag Number is recorded when the animal steps off the weighing platform.

### To change a tag number that was entered earlier in the session

1. Press the **EDIT DUP.** button.
2. Use the backspace key  to delete all or part of the number.
3. Type digits from the keypad.

The new Visual Tag Number is recorded when the animal steps off the weighing platform.

## Weighing Static Loads - Fine Mode

1. Turn the mode select switch to **F** (Fine mode).
2. When the Scale is switched on, the previous weighing session will still be the current session. The statistics screen will show the weights and statistics from this session. Any new weights will be added to this session.

If you want to create a new weighing session, press **NEW** on the Statistics screen. If the Statistics screen is not currently displayed press **STATS** to display it.

The previous session is stored in the Scale's memory and can be viewed from the Session menu. The Statistics and Individual Weight Record screens will be reset to zero.

3. Check that the weight displayed is zero. If it is not zero, press the blue zero button to zero off any weight on the platform.

Note: The **ZERO** icon is not displayed in Fine mode.

4. You can store information about the load being weighed using the "Tag Number" and "Condition Score" fields. For example, you may want to enter a wool bale reference number or a number that identifies specific bales.

Refer to the table to select the field to use. You can enter this information before the load is placed on the platform (i.e. when the platform is empty) or while the load is on the platform.

Field	What can be stored	How to use
Tag number (Reference number)	Up to five numeric characters.	Type the reference number from the keypad.
Condition score	One or two digits.	Press the <b>SCORE</b> button on the keypad and type the score.

If an incorrect entry is made, press  to delete each incorrect character and then re-enter the correct information.

5. Place the load onto the platform.
6. To record the weight, press the green weigh button. The statistics screen will update immediately. The weight screen will not update until the load is removed from the platform.
7. Move the load off the platform. The weight screen will update.

## At the end of the weighing session

1. Switch the Scale off by turning the mode select switch to the  position.
2. Disconnect the loadbar cables.
3. Fit the protective caps to the loadbar cables.
4. Fit the protective caps to the Scale.

---

# Editing Weight Records

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The weight records in the current session can be edited during or after a weighing session.

## About Editing Weight Records

- Only records in the current session can be edited on the Scale. To edit records in other sessions you will need to copy them to the computer. Refer to the *MyScale Pro User Manual* for more information.
- The Tag Number and Condition Score can be edited.
- The animal weights cannot be edited.
- Weight records cannot be edited while viewing a session in the Setup mode.

## Edit a Weight Record

To edit a weight record, follow these steps.

1. Turn the mode select switch to **A**, **M** or **F**.
2. If the individual weight records are not displayed on the lower screen, press **WGHT** to display them.

TAG	WEIGHT	CON
231	302	56
547	287	35
369	312	54

▼    ▲    **STATS**

3. Use ▲ or ▼ to select the record to be edited.
4. To edit the record, press the ← key once.

**Note:**

Two asterisks \*\* will display in the top left corner of the screen when you are in edit mode.

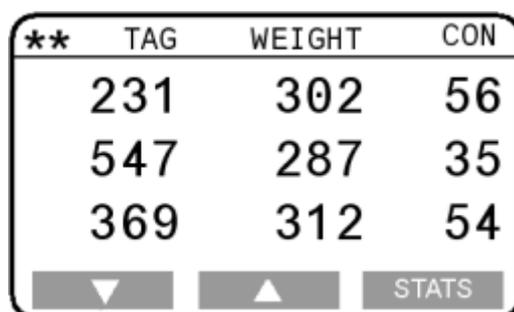
5. Press **SCORE** to move between the Tag Number and Condition Score columns.
6. After you have selected the field you want to edit, press ← to delete the selected tag number or condition score. Each time you press ← one character will be deleted.
7. Use the keypad to type a new tag number or condition score.
8. Repeat steps 5, 6 and 7 if you want to edit a field in another column.
9. If you want to edit the fields in another row, use the ▲ or ▼ buttons to select the new row, then repeat steps 3 through 8.

**Note:** Moving to a new row, automatically cancels edit mode.

## Delete a Weight Record in the Current Session

To delete a weight record in the current session, follow these steps.

1. Turn the mode select switch to **A**, **M** or **F**.
2. If the individual weight records are not displayed on the lower screen, press **WGHT** to display them.
3. Use **▲** or **▼** to select the record to be deleted.
4. Press the **←** key once.



**	TAG	WEIGHT	CON
	231	302	56
	547	287	35
	369	312	54

**Note:**

Two asterisks \*\* will display in the top left corner of the screen indicating you are in edit mode.

5. Press the red "delete" button.

The selected record will be deleted from the session and the statistics will be updated.

Repeat Steps 3, 4 and 5 if you want to delete other weight records.

---

# Memory Full Warning

---

The Scale can store up to 8000 records. This is a total of 8000 records across all weighing sessions, not just the current session.

When the record tally reaches 7900, a memory full warning will be displayed. The warning will be displayed again at 7950. When the record tally reaches 7980, the warning will be displayed each time a new record is added.

When the record tally reaches 8000, the Scale will not accept any more records.

To continue weighing, switch the Scale to the Setup mode and use the Session Menu screen to select and delete a previous session.

Before deleting a session, you can also copy the weighing sessions to a computer, so that you can keep a record of the data. Refer to the *MyScale Pro User Manual*, for more information.

---

## Weight-on-scale memory

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The Scale remembers the weight on the display at the time it is switched off. This weight is restored if the same weight is on the platform at the time the Scale is switched back on.

For example, if you are using Fine mode to weigh wool in a bale on a wool press, you can part-fill the bale and then turn the Scale off at the end of the day. Provided the load is still on the Scale, this weight is remembered when you return the following day and switch the it back on. As you add to the bale, the weight increases from the remembered weight at the end of the previous day.

# Zero tracking

---

As animals pass through the weighing crate, an accumulation of mud and dung may build up on the weighing platform. The Scale can compensate for the weight of this accumulation by subtracting it from the total weight. The automatic subtraction of the residual weight from the total weight is called zero tracking.

Zero tracking ensures that the Scale captures the animal's weight and not the mess left on the platform.

The way zero tracking is initiated depends on the weighing mode.

## **Automatic and manual modes**

In the Automatic and Manual weighing modes, zero tracking is automatically implemented if, after the animal leaves the weighing platform, the residual weight is within a defined zero tracking range.

- If the residual weight is within the defined range, the **ZERO** icon displays.
- If the residual weight is outside the defined range, the icon does not display.

To manually compensate for the residue, press the blue zero button. The **ZERO** icon displays.

During a weighing session, if the Scale consistently does not restore to zero, check that there are no obstructions under or around the platform or crate.

## **Fine mode**

In the Fine weighing mode, automatic zero tracking is disabled.

The **ZERO** icon does not display in the Fine weighing mode.

---

# Printing

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A SmartScale printer can be attached to the SmartScale 500. If the SmartScale printer is connected during a weighing session, you can configure the Scale to print each animal's tag number, weight and condition score when the Scale locks on to the weight.

The SmartScale printer has its own internal rechargeable battery. The battery can be recharged using the battery charger supplied with the printer.

For instructions on printing weights at the end of the weighing session, or from a previous session, refer to *Session Menu* (p 17).

For instructions on printing draft or weight statistics refer to *Viewing Weighing Details During a Session* (p 26).

**Note:**

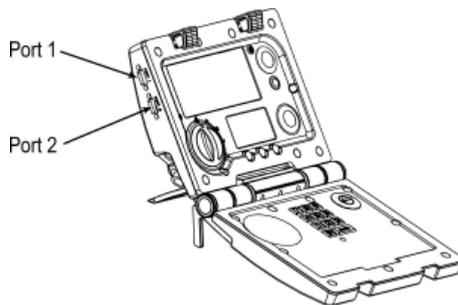
You can only use a SmartScale printer with the SmartScale 500 Scale.

## Printing weights during a weighing session

To print each weight record during a weighing session, follow these steps.

1. Connect the printer cable to one of the two serial ports on the Scale.
2. Turn the mode select switch to **S** to display the setup menu.

Select **5. COMMUNICATIONS**. Ensure the port to which the printer is connected is set to **Printer**. When the Scale case is open, Port 1 is on the top, left side of the Scale. Port 2 is directly below.



Press **OK** to return to the setup menu.

3. Select **4. USER OPTIONS** on the setup menu. Ensure **LIVE PRINTING** is turned **ON**.

Each time the Scale locks on to a weight, the following information will be printed.

- Visual tag number, or if none exists, the last four digits of the Electronic ID preceded by a colon.
- Weight.
- Condition score.
- H, C or L indicating the drafting category, if drafting is turned on.

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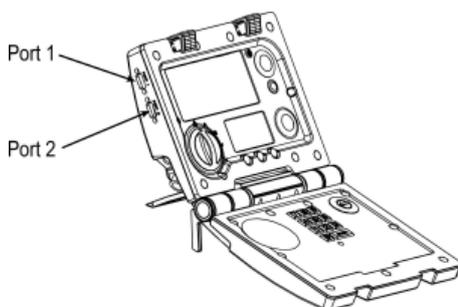
# Electronic Identification Tags

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The Scale can be used with an electronic ear tagging system. The Electronic ID reader plugs into one of the serial ports on the Scale.

## Connecting the Electronic ID reader

Plug the Electronic ID reader into either Port 1 or Port 2.



## Setting up the Scale for EID readers

### Allflex and Destron readers

To set up the Scale for an Allflex or Destron Electronic ID reader, follow these steps.

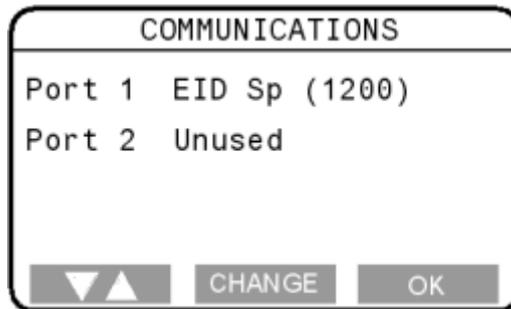
1. Rotate the mode select switch to **S** and select **5. COMMUNICATIONS**.
2. Use the  button to select the port into which the reader was plugged.
3. Press the  button until the name of the Electronic ID reader you are using is displayed.
4. Press the  button.

### Special Electronic ID reader

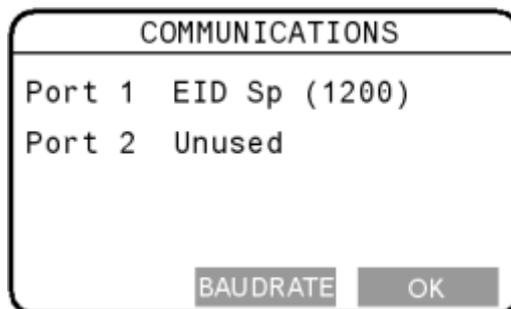
Some Electronic ID readers can communicate at a range of speeds. They are usually supplied pre-set to a single speed. The Scale can communicate with these readers if they are set to any one of the following speeds: 1200 bits/s, 2400 bits/s, 4800 bits/s, 9600 bits/s and 19200 bits/s.

To set up the Scale to communicate with one of these Electronic ID readers, follow these steps.

1. Rotate the mode select switch to **S** and select **5. COMMUNICATIONS**.
2. Use the  button to select the port into which the reader was plugged.
3. Press the  button repeatedly until **EID Sp (nnnn)** appears. The *nnnn* will be 1200, 2400, 4800, 9600 or 19200.



4. Press the  button. Observe that the screen changes to show a  button.



5. Press the  button repeatedly until the Electronic ID reader's pre-set speed appears.
6. Press the  button.

If, when you first open the Communications screen, the required port is already assigned to **EID Sp (nnnn)** and you want to change the speed, follow these steps.

7. Press the  button.
8. After the screen changes to show the  button, press the  button repeatedly until the required speed is displayed.
9. Press the  button.

## Power feed to Electronic ID readers

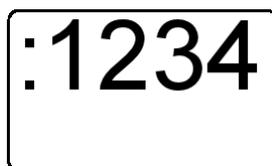
The Scale can supply power to an Electronic ID reader. Power is supplied only if the reader is connected to Port 2 and if any one of the three Electronic ID reader options is selected.

With Port 2, if you nominate a device other than an Electronic ID reader, power feed is disabled. If the Electronic ID Reader you are using does not require power from the Scale, you can connect it to either Port 1 or Port 2.

## Using an Electronic ID Reader

The first time the animal wearing the Electronic ID passes through the crate, follow these steps.

1. Scan the Electronic ID. You can scan the Electronic ID before the animal steps on the platform or while the animal is on the platform.
2. The last four digits of the Electronic ID's number, preceded by a colon, will display on the Scale's screen.



3. If you want to assign a Visual Tag Number to the Electronic ID, you can do so at this stage. Wait until the Electronic ID displays in the Scale's screen then, before the animal steps off the platform, use the keypad to type the Visual Tag Number.
4. After the animal has left the platform, the Electronic ID and Visual Tag Number will be linked together in a cross reference table in the Scale's memory.

If you do not assign a Visual Tag Number, each time you scan the Electronic ID in future, the last four digits of the Electronic ID, preceded by a colon, will display on the Scale's screen.

Once you have associated an Electronic ID with a Visual Tag Number, only the Visual Tag Number will display on the Scale's screen each time the Electronic ID is scanned in a future weighing session.

See *Recording Tag Numbers* (p 38) for more information about recording, editing and automatically checking tag numbers.

# Care and maintenance

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The SmartScale 500 is a tough and reliable product designed for use in typical livestock environments. However proper care and maintenance can extend its life.

Listed below are guidelines for keeping the SmartScale Scale in good condition.

- Don't submerge the Scale in any liquid.
- Store the Scale in a cool, dry place. Avoid storing it in direct sunlight unless it is housed in the purpose-built outdoor housing.
- After use, clean the Scale with a damp cloth. Take care not to scratch the display.
- Fit the connector caps to keep the connections clean and dry.

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# Loadbar and platform options

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It is recommended that you use Gallagher loadbars with the SmartScale 500.

The SmartScale 500 will recognise most commonly available loadbar sets. To connect to some loadbar sets, adapter cables may be required.

If you are not using Gallagher loadbars, a calibration check will be required prior to first use.

## Gallagher Standard Loadbars

### Features

- 2000 kg weighing capacity - Available in 600mm (23") and 1000mm (39") lengths
- Tough rugged steel loadbars
- Bottom feet mounting holes extend beyond top covers for ease of bolting down
- Slotted top mounting holes fit all sizes of platforms and crushes
- 6m (18') long tough loadbar cables fitted with high quality connectors
- Fully waterproof
- No rubber mounts

Talk to your Gallagher dealer about the best platform and/or crate for your requirements.

## Gallagher Heavy Duty Loadbars

### Features

- 3500 kg weighing capacity
- 1000 mm (39") rugged steel loadbars
- Bottom feet mounting holes extend beyond top covers for ease of bolting down
- 6 m (18') long tough loadbar cables fitted with high quality connectors
- Fully waterproof
- No rubber mounts
- High capacity load cells withstand large shock loads
- Heavy steel chassis construction absorbs the harshest of impacts
- Set them and forget them for permanent installation under large crushes.

Talk to your Gallagher dealer about the best platform and/or crate for your requirements.

## Gallagher Super Heavy Duty Loadbars

### Features

- 4500 kg weighing capacity
- 1000 mm (39") rugged steel loadbars
- Bottom feet mounting holes extend beyond top covers for ease of bolting down
- 6m (18") long tough loadbar cables fitted with high quality connectors
- Fully waterproof
- No rubber mounts
- High capacity load cells withstand large shock loads
- Heavy steel chassis construction absorbs the harshest of impacts
- Set them and forget them for permanent installation under the largest crushes

Talk to your Gallagher dealer about the best platform and/or crate for your requirements.

# Specifications

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## SmartScale 500 dimensions

Length	232 mm	(9¼ inches)
Width	212 mm	(8½ inches)
Height	90 mm	(3½ inches)
Weight	≈2 kg	(≈4.4 pounds)

## General

Operating Temperature	-20° to 50° C (-5° to 120° F)
Accuracy	± 1%
Environmental protection rating	IP67

## Weight increments

For Gallagher Loadbar sets, the weight increments are preset as shown in the table. For other loadbar sets talk to your Gallagher dealer.

<b>Weight Range</b>	<b>Gallagher Standard Loadbars (2000 kg)</b>	<b>Gallagher Heavy Duty Loadbars (3500 kg) and Gallagher Super Heavy Duty Loadbars (4500 kg)</b>
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Automatic or Manual modes:

0 - 50 kg	200 g increments	500 g increments
50 - 200 kg	500 g increments	500 g increments
200 - 500 kg	1 kg increments	1 kg increments
500 - 2000 kg	2 kg increments	2 kg increments
2000 - 4500 kg	Not Applicable	5 kg increments

Fine mode:

0 - 50 kg	100 g increments	200 g increments
50 - 200 kg	500 g increments	500 g increments
200 - 500 kg	1 kg increments	1 kg increments
500 - 2000 kg	2 kg increments	2 kg increments
2000 - 4500 kg	Not Applicable	5 kg increments



**ONE YEAR WARRANTY**

**REGISTER ONLINE AT [www.gallagherams.com](http://www.gallagherams.com) TO EXTEND YOUR WARRANTY TO TWO YEARS  
FOR THIS PRODUCT FROM DATE OF PURCHASE**

<p>MODEL</p> <hr style="border-top: 1px dotted black;"/> <p>SERIAL NO</p> <hr style="border-top: 1px dotted black;"/> <p>DATE PURCHASED</p> <hr style="border-top: 1px dotted black;"/>	<p>SELLING DEALER STAMP</p>
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This product is guaranteed free from defects in material or workmanship for a period of one year from date of purchase by the end user. Gallagher will repair or replace at their option any faulty product returned to them or their Dealer within this time period. Freight/forwarding costs incurred by the Customer in the warranty process remain the responsibility of the Customer.

This warranty does not cover damage (including subsequent corrosive damage) due to:

- Unauthorised repairs
- Modifications
- Failure to follow care and maintenance guidelines described in the User Manual
- Physical Mishandling
- Lightning Strike
- Floods, fires or acts of God
- Use of an arc welder on loadbars or equipment or steelwork attached to loadbars while a WeighScale is connected

Gallagher, their Distributors, and their Dealers accept no responsibility for the misuse of this product.

Gallagher, their Distributors, and their Dealers accept no responsibility for any accident caused subsequently to any tampering with or modification to or for the misuse of this product.

Gallagher, their Distributors, and their Dealers accept no liability for consequences and/or secondary

damages or losses of any kind sustained directly or indirectly, a result of failure or defect in any product, material, installation or service.

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Kyalami, Johannesburg, Gauteng, 1684

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**PLEASE READ INSTRUCTIONS CAREFULLY BEFORE USE.  
PLEASE COMPLETE DETAILS AND KEEP WITH YOUR RECEIPT — IT IS YOUR PROOF OF  
WARRANTY**