



EZ 3500

OPERATORS MANUAL



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Table of Contents

About the Product	1
Features of Model EZ3500, EZ3500V and EZ3500 RC	1
Specifications	1
Installation	1
Indicator Mounting	1
Power Connection	1
Bottom Panel Cable Connections	3
Operation	4
Turning on the scale	4
Zero Balance the Scale	4
Transfer Data to the EZ3500	4
Receiving Data from the EZ3500	5
Send Undone Data Back to PC (RF Datalink)	5
Data Formats for the EZ3500	5
Starting a Recipe	6
Recipe Direct Access	7
Ingredient Loading	7
Pen Unloading	8
Pen Direct Access	9
Go Back to a Skipped Ingredient	9
Change Feeding Number	10
Use the Arrow Keys in Recipe or Pens List	10
Use the Arrow Keys to Select Ingredients or Pens	10
Clear the EZ3500 Memory	10
Re-use Recipe and Pen Data	10
Add a Pen or Pen List	11
Pre-Alarm	11
Auto-Advance	12
Delay Time	12
Auto Ingredient / Manual Pen Advance	13
Mix Timer	13
Rotation Counter	13
Scale ID or Truck ID	14
Radio Number	14
Re-Size	14
Data Storing Options	14
Hold	15
Bunk Read	15
Time and Date	16

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About the Product

Features of Model EZ3500, EZ3500V and EZ3500 RC

- Large 1.7" display for greater readability (1" for model EZ3500)
- Scrolling help messages in multi-language formats
- Navigational pad for quick selecting from recipe, ingredient or pen list
- Interfaces with feeding software and bunk reading programs
- Supports Datakey data transfer
- Supports Datalink wireless data transfer
- Supports Cab Control wireless display
- Front panel calibration without simulator or weights
- Powerful microprocessor and expanded memory

Specifications

- Temperature range: -20 °F to 140 °F (-28 °C to 60 °C)
- Power requirements: 10.2 VDC – 16VDC
- Power consumption on: 160mA, 4L.C. 350Ω
- Power consumption off: 1mA
- Enclosure rating: IP65, IEC529
- Size (l x h x w): 10.3" x 7.2" x 5.0" (262 x 183 x 127 mm)
- Weight (unpacked): 4.5 Lbs (2.04 kg)
- Display: 1.0" (25.4mm) or 1.7" (43.2mm)
- Power & Load Cell: gold plated contacts
- Remote and Printer: gold plated contacts
- Datakey: palladium alloy-plated contacts

Installation

Indicator Mounting

The indicator is easily attached to the indicator-mounting bracket by hooking the top over the plate and securing the bottom with two screws and nuts (size# 10 – 24 x 5/8" or M5 x 16mm).

Power Connection

Warning!



Disconnect the indicator power cord before jump-starting or fast charging a battery.

Disconnect all indicator leads before welding on equipment. Damage may occur to the indicator and load cells.

Connect the power cable directly to a 12 Volt vehicle battery or to a 12 volt regulated power supply.

Connect the RED wire from the power cable to +12 VDC and the BLACK wire to GROUND. The indicator is fused internally at 4 amps.

Attach the scale end of the power cable to the J901 connector located on the bottom panel of the scale.

Power Cable

Wire Color	Wire Function
RED	Battery(+12VDC)
BLACK	GROUND
ORANGE	Remote Alarm Out+
BLUE	Remote Input (Rotation Counter)

Remote Alarm Connections

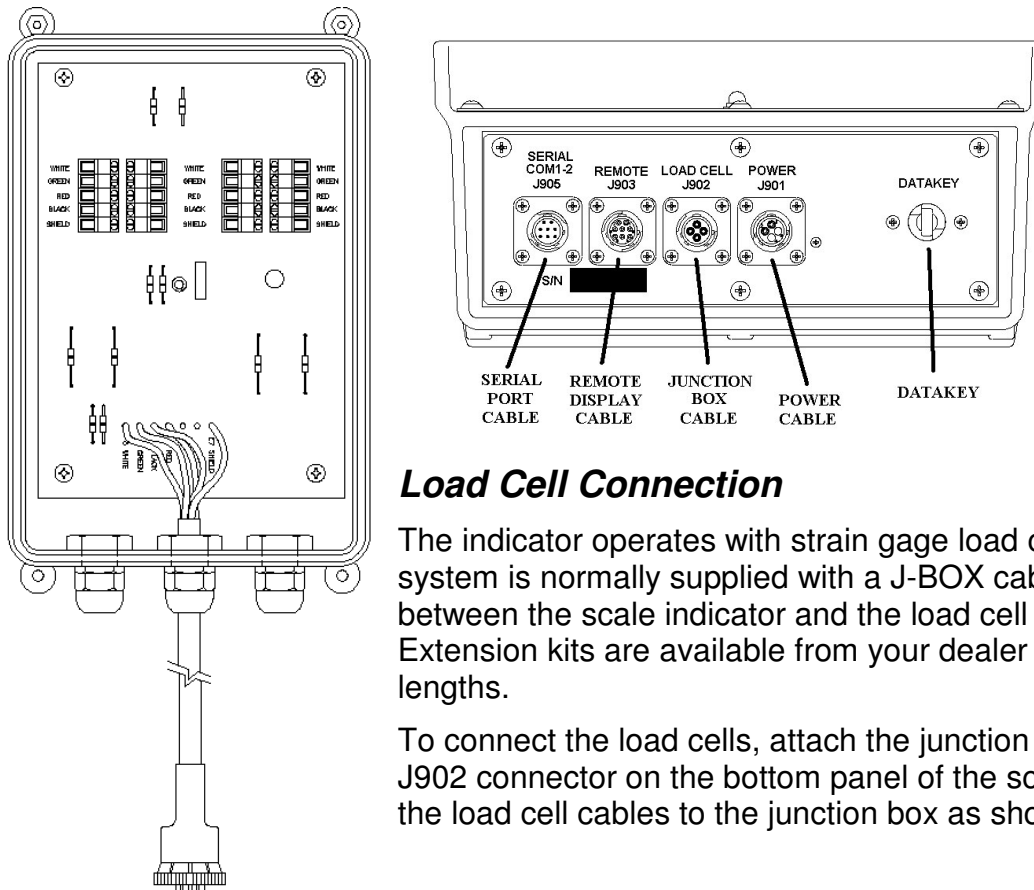
If a remote 12 VDC alarm is to be used, connect the +12VDC side of the alarm to the power cable ORANGE wire and the GROUND side of the alarm to the frame (=ground).

Note: The alarm output is fused for a maximum drain of 10 amps. The remote alarm connections may also be used for motor control purposes when used with a relay.

Remote Input Connections

If the remote input is to be used, connect on the side of the normally open momentary switch or relay contact to the power cable BLUE wire, and the other side to the frame or other GROUND connection. If your power cable does not contain a blue wire and you desire to use this feature, contact your dealer for a special cable. A process control box is available for motor control and remote enter preset capability.

Bottom Panel Cable Connections



Load Cell Connection

The indicator operates with strain gage load cells. The system is normally supplied with a J-BOX cable going between the scale indicator and the load cell junction box. Extension kits are available from your dealer in various lengths.

To connect the load cells, attach the junction box cable to the J902 connector on the bottom panel of the scale. Connect the load cell cables to the junction box as shown left.

Terminal Color	Description
WHITE	SIGNAL +
GREEN	SIGNAL -
RED	EXCITATION +
BLACK	EXCITATION -
SHIELD	SHIELD

Notes: Follow color key on circuit board to insure proper connection of load cell wires.

For stationary scales, a lightning protected J-Box should be installed to prevent or lessen damage to the scale when lightning strikes nearby. Lightning protection is not required for mobile applications. For lightning protection installation instructions, refer to Digi-Star form F3050.

Serial Port

The serial port if installed can be used to communicate with computers and other digital input/output devices.

Remote Display

The remote port outputs data to an optional remote display models RD2000, RD2000V and RD400. Connect cable from remote display directly to this port.

DataKey

The DataKey port accepts the DataKey memory device. Information can easily be transmitted between a PC and the EZ4300 using the DataKey.

Operation

Turning on the scale

- Press [ON].

After the "HELLO" message is displayed:

- Enter a user ID, and then press the [ID] key.
- Enter a feeding number, and then press the [ID] key.

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 [Net/Gross] and within three seconds, press the [Zero] key.

"0" is displayed to show completion of the step and the scale is put in the gross mode.

Transfer Data to the EZ3500

Datakey Mode

While the scale is in the gross weighing mode, install the Datakey.

- Press [ON], the scale will display the number of records left to be transferred.

Note: If the scale displays that there is un-used data in the memory, press [On] to overwrite the un-used data in the EZ3500.

- Remove the Datakey when the data transfer is complete.

RF Datalink Mode

When RF Datalink connects with the EZ3500 the display shows “←PC→”.

When RF Datalink is sending data to the EZ3500 the display shows “DL← IN”.

Once the EZ3500 has received all of the data, the scale will display “ALL FEED LINES
RECEIVED - PRESS RECIPE KEY TO CONTINUE”

Receiving Data from the EZ3500

Datakey Mode

- ❑ Insert the Datakey, the scale will automatically send the completed data to the Datakey.
- ❑ Remove the Datakey when done.

RF Datalink Mode

When the EZ3500 is ready to send completed data, RF Datalink will link with the EZ3500. The display will show:←PC→

When the EZ3500 is sending completed data to RF Datalink, the display shows: DL→OUT

Send Undone Data Back to PC (RF Datalink)

This option is used when the operator does not complete all the feeding data at the end of the feeding schedule.

- ❑ Press the [Select] key until the display shows: EZ→PC
- ❑ Press the [Function] key to select this option

The EZ4300 will now mark the undone information as completed and send the feeding data back to RF Datalink.

Note: When using this option, undone information left in the EZ4300 memory will be erased.

Data Formats for the EZ3500

Data sent to the EZ3500 can be sent in two formats:

Complete Loads Mode: Each load is built by the PC software. It assigns pens to a recipe and builds an exact load for the pens.

Loads are built and delivered by pressing [Recipe] only.

Recipe and Pen List Mode: The PC software sends the recipe data and the pen data in two different fields. The operator selects the recipe to build and which pens will be delivered.

- ❑ Press [Recipe] to select a recipe list or press [Pens] to select the pens list.

Notes: Recipe and Pen List format is also used for recipes only and pens only. Recipe and Pens List mode is not recommended for use with EZ 3500.

Starting a Recipe

- ❑ Press [Recipe].

Complete Loads Mode

The scale will show the pen number, feeding number and recipe name.

PEN- 1, 2 FEEDING 1 - RECIPE DRYCOW

Recipe and Pen List Mode

The scale will show the recipe name and the total amount to build for the pens in the feeding.

RECIPE DRYCOW TOT= 3000

This example will be the same for recipes only, with no total to unload to pens

- ❑ Press [Recipe] to select the next recipe list.
- ❑ Press [Load/Unload] to start the recipe.

Complete Loads Mode

The scale will now give you the option to resize the pen call weight or press [Select] to change by number of head in the pen.

Recipe and Pen List Mode

The scale will now give you the option to resize the recipe load weight.

- ❑ Enter a new call weight or keep the original weight.
- ❑ Press [Load/Unload].

The first ingredient and call weight will be displayed to load.

Note: If the scale gives you a warning that the resized amount is over capacity, press the [Recipe] to over ride the over capacity warning.

Recipe Direct Access

Recipes can be selected in two different ways:

- Press [Recipe].

or

- Enter the recipe name (or number) and press [Recipe].

To move to a section in the list of recipes, enter the first few digits of the recipe name or number and press [Recipe]. This will move you to the recipes in the list starting with those digits.

Note: To enter a letter on the keypad, press and hold the key with the letter required. The display will then change to display the letters on that key.

Ingredient Loading

During in the ingredient loading sequence, the scale will display the following example:

DRY HAY ↔ 5500

The display will flash between the ingredient name and the call weight: **DRY HAY ↔ 5500**

When the ingredient and call weight is being displayed, start loading the ingredient.

The ingredient call weight will begin counting down towards zero.

As the weight approaches zero, the alarm light and buzzer will begin to sound.

Once you have reached the preset weight, you have two options to advance the ingredient:

- Manual: Press [Advance] or [Print] to advance to next ingredient.
- Automatic: Advances when the weight reaches the tolerance percentage and the timer runs out.

Note: For more information on how to setup the automatic mode refer to page:10

If the format is in “Complete Loads Mode” the pen unloading sequence will follow the recipe loading. Do not press the [Pens] key to start pen unloading.

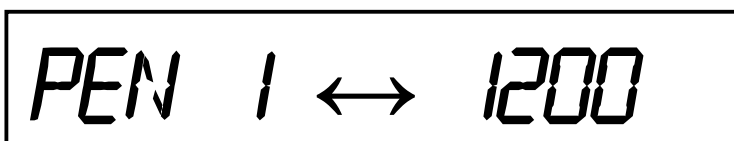
Pen Unloading

There are two modes for pen unloading “Complete Loads Mode” and “Recipe and Pens List Mode”.

Complete Loads Mode

Once the ingredients have been loaded, the scale will display: START DELIVERIES - 15000 LOADED

When the message is done displaying the scale will display the first pen to unload.

A rectangular box representing a scale display. Inside, the text "PEN 1" is followed by a double-headed arrow "↔" and then the number "1200".

- ❑ Press [Pens/Down Arrow] to select a different pen.
- ❑ Press [Load/Unload] to start pen delivery.

When the pen and the call weight are being displayed, begin unloading to the pen.

The pen call weight will begin counting down towards zero.

As the weight approaches zero, the alarm light and buzzer will begin to sound.

Once you have reached the preset weight you have two options to advance to the next pen:

- ❑ Manual: Press [Advance] or [Print].
- ❑ Automatic: Weight reaches the tolerance percentage and the timer runs out.

Note: For more information on how to setup the automatic mode refer to page:10

Recipe and Pen List Mode

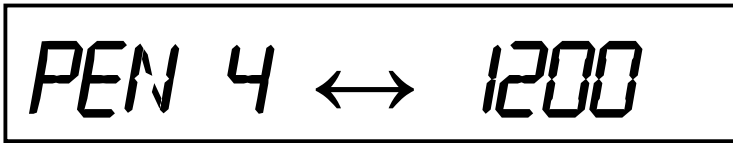
- ❑ Press [Pens] to access the “Pens List”.

The scale will display the following:

A rectangular box representing a scale display. Inside, the text "PRESS ADV" is followed by "TO ADVANCE TO PEN 4".

- ❑ Press [Pens\Down Arrow] to change pen.
- ❑ Press [Load\Unload] to start pen delivery.

The scale will display the following:



When the pen and the call weight is being displayed, begin unloading to the pen.

The pen call weight will begin counting down towards zero.

As the weight approaches zero, the alarm light and buzzer will begin to sound.

Once you have reached the preset weight you have two options to advance to the next pen:

- ❑ Manual: Press [Advance] or [Print].
- ❑ Automatic: Weight reaches the tolerance percentage and the timer runs out.

Note: For more information on how to setup the automatic mode refer to page:XX

Pen Direct Access

Pens can be selected in three different ways:

- ❑ Press the [Pens] key.
- ❑ Enter the name or number and then press the [Pens] key.

By entering the pen name or number and pressing the [Pens] key, the pen will be automatically started. To move to a section in the list of pens, enter the first few digits of the pen name or number and press the [Pens] key. This will move you to the pens in the list starting with those digits.

Note: To enter a letter on the keypad, press and hold the key with the letter required. The display will then change to display the letters on that key.

Go Back to a Skipped Ingredient

If the indicator accidentally skips an ingredient:

- ❑ Press the [Recipe\Down Arrow] then press [Select\Up Arrow] key to move back to the ingredient.
- ❑ Press [Load\Unload]

Note: If the ingredient weight changed more than 40 lbs. you cannot restart that ingredient.

Change Feeding Number

To change feeding number:

- ❑ Press the [ID] key.
- ❑ Enter your user ID number.
- ❑ Press the [ID] key.
- ❑ Enter the feeding number (1-9).
- ❑ Press the [ID] key.
- ❑ The scale will return to normal weighing mode.

Use the Arrow Keys in Recipe or Pens List

- ❑ The up and down arrows will move the list one line of information at a time.
- ❑ Using the right and left arrows will move the list three lines of information at a time.

Use the Arrow Keys to Select Ingredients or Pens

While you are in a loading or unloading sequence:

- ❑ Press the [Recipe\Down] arrow to locate the ingredient or pen required
- ❑ Press [Load\Unload] to start.

Note: In order to move back you must press the [Recipe\Down] arrow first, then press the [Select\Up] arrow then press [Load\Unload] to start.

Clear the EZ3500 Memory

To clear the EZ3500 memory:

- ❑ The unit must be powered off,
- ❑ Press and hold [Clear]. Press [On], and continue holding the clear key until the E4300 displays: "MEMORY". Then release the clear key
- ❑ Press [On] to erase the feeding memory. The scale will then continue to power up as normal.

Re-use Recipe and Pen Data

To re-use the recipe and pen data in the EZ3500:

- ❑ Press [Off] to turn power off,
- ❑ Press and hold [Clear].
- ❑ Press [On], and continue holding [Clear] until the EZ3500 displays: "MEMORY".
- ❑ Release [Clear] and press [Clear] again to re-use the recipe and pen data.

The scale will then continue to power up as normal.

Note: When you re-use the data stored in the EZ3500, it will take the recipe and pen information and remove the completed weights loaded or unloaded and mark them as undone.

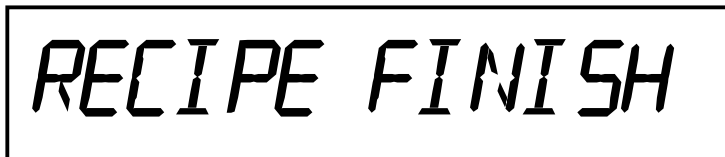
It will not accumulate the data from day to day. Download the data on to the Datakey before re-using the recipe and pen data stored in the EZ3500.

Add a Pen or Pen List

This option is used when a pen is not in the current pen list in the EZ3500.

- ❑ Enter the pen name or number on the keypad and press [Pens].
- ❑ Press [On] to add this pen.

The display will then show:



The display will show the selected recipe for the pen.

- ❑ Press [Recipe\Down Arrow] to find the desired recipe
- ❑ Press [Load\Unload] to select the desired recipe.
- ❑ Enter the amount to be unloaded to the pen using the keypad.
- ❑ Press [Load\Unload].
- ❑ Enter the number of animals in the pen using the keypad.
- ❑ Press [Load\Unload].

The EZ3500 will enter the pen-unloading mode.

Pre-Alarm

The Pre-Alarm feature is an “early warning” for the preset weight. For example, if the Pre-Alarm is set for a value of 100 lbs. and the preset weight is 1000 lbs. the preset alarm will flash during the last 100 lbs. of the preset.

The Pre-Alarm provides an early warning before reaching the preset which allows the operator to be more accurate.

To change the Pre-Alarm:

- ❑ Enter short cut number: “401” and then press [Select].
- ❑ Press [Select] to change between *WEIGHT* or *PERCENT*.
- ❑ Press [On] to store the setting. The Pre-Alarm feature is displayed next.
- ❑ Press [Clear] to erase the current value, enter the Pre-Alarm value on the keypad.
- ❑ Then press [On] to store the setting.

Auto-Advance

The auto advance feature allows for hands free operation of programmed recipes and pens. When the auto advance feature is activated, the indicator automatically prints and advances to the next ingredient or pen once the tolerance and delay time requirements have been met. Tolerance and delay time requirements are explained below.

The Tolerance feature is a “tolerance window” for the preset ingredient or pen during batching. For example, if the tolerance is set to 5% and the preset is 1000 lbs., the “tolerance window” is 50lbs. The scale is in the “tolerance window” when the display is between 50 and –50 lbs.

The auto-advance function activates the Delay Time while the weight is in the tolerance window. The Delay Time allows the operator to slightly “under or over shoot” and ingredient or pen amount and still automatically advance to the next ingredient or pen. The auto-advance Delay Timer resets every time the weight moves out of the tolerance window.

To Change the Tolerance

- ❑ Enter short cut number: “442” and press [Select].
 - ❑ Press [Select] to choose desired percentage.
 - ❑ Press [On] to store the setting.
- Tolerance Percentage settings: OFF, 0.5, 1, 2, 3, 4, 5, 7, or 10.

Delay Time

The delay time feature allows an operator to select the amount of time the scale should wait before automatically advancing to the next ingredient or pen. This helps insure accuracy for the ingredient or pen amount. For example, if the delay time is set to 10 seconds and the preset alarms are activated continuously, the auto-advance starts the Delay timer. If the preset de-activates, the delay timer is reset, therefore assuring that the preset weight amount has to be met for the total delay time amount.

Setting the Delay Time to manual prevents the scale from ever auto-advancing, regardless of the weight.

To Change the Delay Time

- ❑ Enter short cut number: 443 and press [Select].
- ❑ Press [Select] to select the delay time (In seconds).
- ❑ Press [On] to store the setting.

Delay Time Selections in Seconds: Manual, 1, 2, 3, 5, 7, 10, 20, 30, or 60.

Note: Set to Manual to prevent automatic advance after the amount has been reached.

Auto Ingredient / Manual Pen Advance

Use this option when you require that the ingredients automatically advance and manually advance between pens.

- ❑ To change this option, enter short cut number “461” and then press [Select].
- ❑ Press [Select] to toggle between on/off.
- ❑ Press [On] to store the setting.

Mix Timer

- ❑ Press [Timer/Counter].
- ❑ Use the numeric keypad to enter the amount of time.
- ❑ Press [Timer/Counter].

The timer begins to count down, when it reaches zero, the alarm light and buzzer will turn on

- ❑ Press [Clear] to enter the weighing mode.
- ❑ Press the [Recipe] or [Pens] key to re-enter the batching mode.

Rotation Counter

- ❑ Press [Timer/Counter].
- ❑ Use the numeric keypad to enter the number of rotations.
- ❑ Press [Timer/Counter].

The Rotation Counter will begin to count down, when the counter has reached zero, the alarm light and buzzer will turn on.

- ❑ Press [Clear] to turn off the alarm and enter the weighing mode.
- ❑ Press the [Recipe] or [Pens] key to re-enter the batching mode.

Drive Ratio

The drive ratio is the ratio of the number of turns seen by the sensor divided by the number of mixer rotations.

Example: The sensor for the rotation counter is on a PTO. Every 30 rotations of the PTO the counter will count 1 rotation. Enter a value of 30.00.

Example: The sensor for the rotation counter is on a bearing end. The shaft makes 2-1/2 rotations for each rotation of the mixer. Enter a value of 2.50.

- ❑ Enter short cut number “422” and press [Select].
- ❑ Use the numeric keypad to enter the value.
- ❑ Then press [On] to store the setting.

Scale ID or Truck ID

Each EZ3500 has a scale ID name. To change the scale ID name or number:

- ❑ Enter short cut number 108 and press[Select].
- ❑ Press [Clear] to erase the old ID name or number.
- ❑ Use the alphanumeric keypad to enter the new ID name or number.
- ❑ Press [On] to store the setting.

Note: If you are using the scale with a software program, i.e. TMR Tracker or Diet Manager, make sure the ID matches what is entered in the software program.

Radio Number

- ❑ Enter short cut number “231” and press [Select].
- ❑ Press [Select] to change the radio number.
- ❑ Press [On] to store the setting.

Note: Do not use the same number for two different scales.

Re-Size

The resize option allows the EZ3500 operator to make weight changes to the pens unload weight or the recipe load size.

To turn this feature on or off:

- ❑ Enter short cut number “448” and press [Select].
- ❑ Press [Select] to toggle between On/Off
- ❑ Press [On] to store the setting.

Data Storing Options

There are three ways data is stored using the Datakey.

Quick Start: Automatic data transfer. The key uploads and downloads when installed into the EZ3500.

Auto: The Datakey stays installed into the EZ3500 and data is stored after each ingredient or pen is completed.

Manual: The Datakey does not need to stay installed in the EZ3500. Data is stored when pressing [Select] to change the option to (*JK*→*EZ*) upload data or (*EZ*→*JK*) to download data. Then press [Function] then [On] to activate the option.

To turn this feature on or off:

- ❑ Enter short cut number: 447 and press[Select].
- ❑ Press[Select] to change the option.
- ❑ Press [On] to store.

Hold

The Hold mode prevents the displayed weight from changing due to “Zero Shift” while moving the mixer.

- ❑ Press [Hold] to “hold” the displayed weight.

The EZ3500 will display the weight and the word “*HOLD*”

The EZ3500 reactivates and adjusts the Zero/Balance to maintain the gross weight. Small changes in weight can occur while moving the mixer to new locations for loading or unloading. This change is called “Zero Shift” and is due to several factors including terrain changes and mechanical stresses.

- ❑ Press [Hold] To return the EZ3500 back to normal.

If weight is accidentally added while in the hold mode, press [On] to cancel the Holding action.

Bunk Read

While in the unload sequence for a pen:

- ❑ Enter the amount you want to change the “Call Weight” by using the keypad.
- ❑ To toggle the amount between + and -, press [Bunk Read] while the weight entered is displayed.

Example: To change a “Call Weight” from 8000 to 8500:

- ❑ Enter “500” and press [Bunk Read].

The scale will display “BUNK READ”, the weight entered and return to the unload sequence for the pen.

To change the “Call Weight” from 8000 to 7500:

- ❑ Enter “500” and press [Bunk Read].
- ❑ Press [Bunk Read] again (while weight is displayed).

The scale will display “BUNK READ”, the weight entered and return to the unload sequence for the pen.

Time and Date

The time and date is set for Central time in the AP/PM format. The time may not be correct due to a difference in time zones and daylight savings time.

Entering The Time:

- ❑ Enter short cut number “202” and press [Select].
- ❑ Press [Function] to move cursor right to left,
- ❑ Press [Select] to increment the number until the proper time is set.
- ❑ Press [On] to store the time.
- ❑ Press [Select] to change between AM/PM.
- ❑ Press [On] to save and return to gross weighing mode.

Entering The Date:

- ❑ Enter shortcut number “204” and press[Select].
- ❑ Press [Function] to move cursor right to left.
- ❑ Press [Select] to increase the number until the proper date is set.
- ❑ Press [On] to save and return to gross weighing mode.