



Serial Number: _____

Model 500 *Digital Weight Indicator*

USER MANUAL



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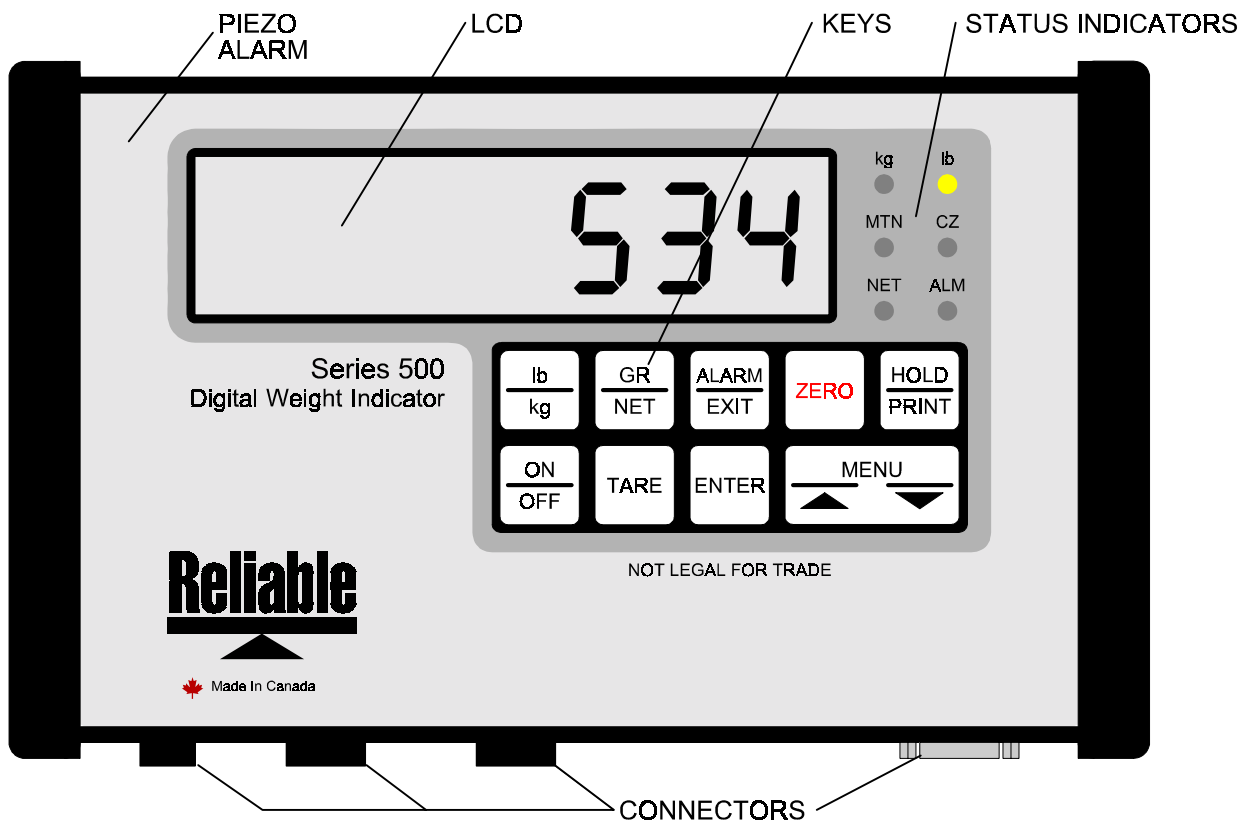
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1. Contents

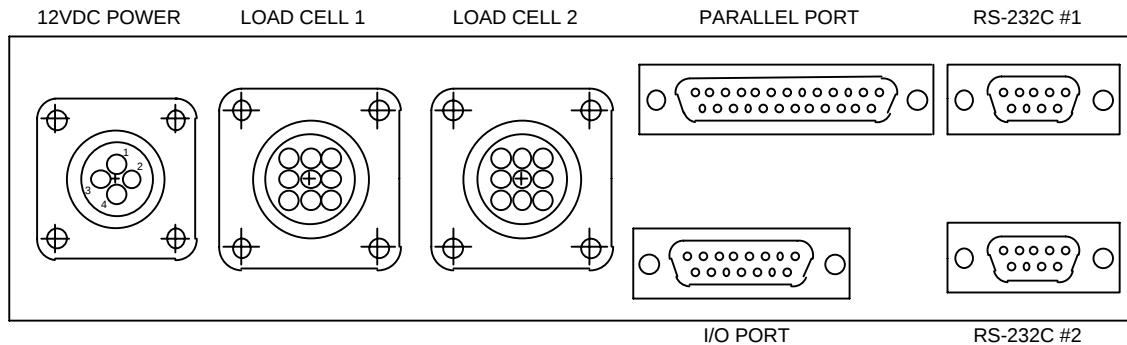
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2. General

2.1 Face of Indicator



2.2 Connector Detail



12VDC Power Connector:	AMP# 206061-1	- standard
Load Cell Connector:	AMP# 206705-1	- standard
Parallel Port Connector:	D-sub 25 position female	- optional
I/O Port Connector:	D-sub 15 position female	- optional
RS-232C Connector:	D-sub 9 position male	- 1 std, 1 opt

2.3 Status Indicators

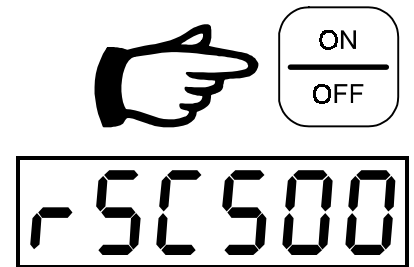
kg	Lighted when Model 500 is operating in kg
lb	Lighted when Model 500 is operating in lb
MTN	Lighted when there is MOTION on the scale platform. OFF when weight is stable on platform.
CZ	Lighted when display is within $\frac{1}{4}$ of one graduation of “0”
NET	Lighted when TARE has been pressed.
ALM	Flashes slowly when ALARM is armed. Flashes quickly when pre-alarm is reached. Lighted fully when ALARM point has been reached.

3. Basic Operation

3.1 Turning the Indicator On

1. To turn the Indicator on, press **ON/OFF**.

Display shows the model number, then the serial number and lastly, the software version. Display will rapidly go through a digit test procedure.

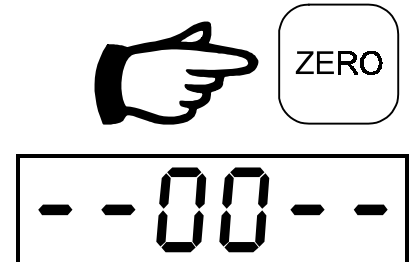


2. Allow the indicator to warm up and the display to stabilize for a few moments.
Note: At colder temperatures, more time should be allowed for warm up.



3. Press **ZERO**.

The key press is acknowledged.



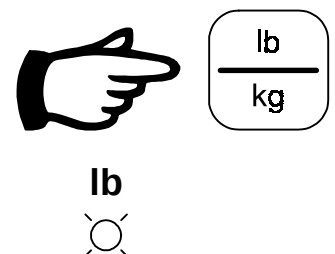
The indicator displays zero.



3.2 lb/kg Key

1. To change weighing units, press **lb/kg**.

Status indicator will show the current units.



3.3 Gross/Net/Tare Feature

TARE key is used to temporarily subtract a weight from the platform and is used to record weights while filling or emptying containers on the platform. **GR/NET** key is used to switch the display between the **GROSS** weight and the **NET** weight on the platform.

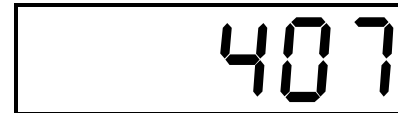
1. With the indicator **ON** and at “0”, place a weight on the platform.
2. Press **TARE**.



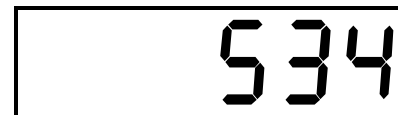
Screen shows “0” and the **NET** status indicator illuminates.



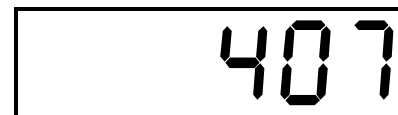
3. Place a second weight on the platform.
4. Press **GR/NET**.



Display shows the total weight on the platform. $127 + 407 = 534$ **NET** status indicator goes off.



5. Press **GR/NET** again. The display returns to the **NET** weight (407) and the **NET** status indication returns.
6. Press **TARE**.



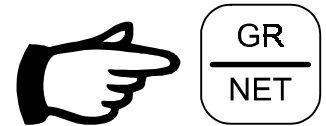
Screen shows “0” and the **NET** status indicator illuminates.



7. Place a third weight on the platform.

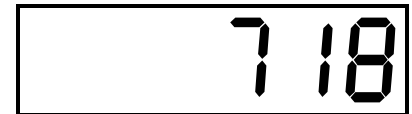


8. Press **GR/NET**.



Display shows the total weight on the platform. $127 + 407 + 183 = 718$

NET status indicator goes off.



The above procedure can be used for any number of weights or ingredients. It can also operate when removing weight from the platform.

3.4 ALARM Feature

ALARM feature has three output signals:

1. Visual - **ALM** status indicator illuminates.
2. Audio - An internal buzzer sounds for a preset length of time.
3. Electronic - A solid state signal. See Section 6 on page 53 for connector detail.

A pre-alarm setting is available to notify the proximity of the weight reading to the **ALARM** point.

There are several alarm parameters which can be adjusted in the **Interface Menu** see section 4.2 on page 28 . These include:

1. Pre-alarm point (% of **ALARM VALUE**)
2. Alarm length in seconds.

1. To set or check the **ALARM** point, press **ALARM/EXIT**.

Display will show **ALAR** briefly.

Display then shows the current **ALARM** setting. All 6 status indicators flash simultaneously.

2. To exit the alarm function without setting the alarm press **ALARM/EXIT**.

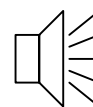
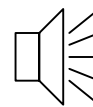
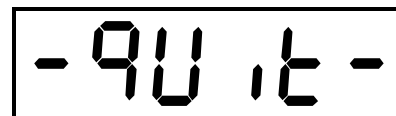
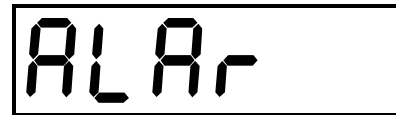
The display will show **QUIT** and will return to normal weighing.

3. To activate the **ALARM** point, press **ENTER**.

ALM status indicator will flash slowly to indicate that the alarm is active.

As the weight approaches the **ALARM** point the buzzer alarm begins to sound.

When the displayed weight reaches or passes the **ALARM** point the **ALM** light stops flashing and stays on continuously; the buzzer sounds continuously and the solid state line activates.



4. To disarm the **ALARM** at any time press **ALARM/EXIT** twice.

The display will show the **ALARM** point on the first press, then **QUIT** on the second press.



A rectangular digital display showing the number '2500' in a large, bold, black font.

A rectangular digital display showing the text '-90.1t-' in a large, bold, black font.

3.5 HOLD/PRINT/MEMORY

Model 500 has storage memory for up to 600 weight readings. Data is not lost when power is disconnected nor when the indicator is turned **OFF**. Data stored includes:

- Lot Number - up to 50 See Section 4.3.3 on page 49 for Lot number input and data retrieval.
- weight reading
- units lb or kg
- date YY.MM.DD See Section 4.2.1 on page 29 for date & time adjustment.
- time HH:MM:SS

The **HOLD/PRINT** key serves 3 purposes:

1. Takes an **average** of several weights over a preset interval and locks it on the screen for easy viewing and hand writing the result. This is particularly useful for obtaining stable readings when weighing live animals. The **averaged** reading is held on the display until the operator cancels it.
2. Sends a record to printer or computer connected to the indicator for “real time” data gathering.
3. Stores data for display or down loading to printer or computer at a later time.

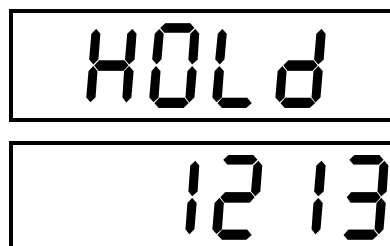
See Section 4.3 on page 42 for Reporting data .

1. To **Hold** an average weight on the display, place the weight on the scale and press **HOLD/PRINT**.

While in the **Hold Mode**, readings are constantly being averaged.

The average weight is held on the display and the **lb** light flashes rapidly. Any action on the scale is ignored and the load can be removed without changing the average weight.

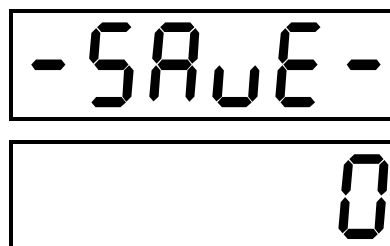
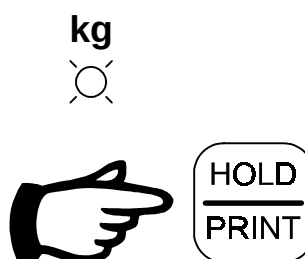
Note: If weighing in **kg**, the **kg** light will flash.



2. To release the average weight and to store the weight in memory press the **HOLD/PRINT** key.

The indicator shows **-SAVE-** and stores the weight in memory.

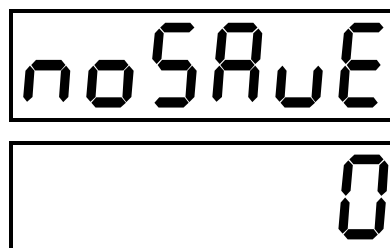
The display returns to **Normal Weighing**. The status indicator stops flashing.



3. To release the average weight and to Not store the weight in memory press the **ALARM/EXIT** key.

The indicator shows **NO SAVE**.

The display returns to **Normal Weighing**. The status indicator stops flashing.



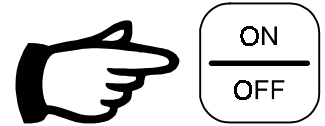
3.6 Turning the Indicator Off

IMPORTANT

Do not disconnect the power supply to turn the indicator off. Use the **ON/OFF** key. Important information is saved in memory when the indicator is turned off properly.

1. To turn the Indicator off, press **ON/OFF**.

The LCD displays **BYE** and the indicator shuts down.

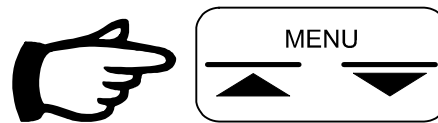


4. MENUS

The indicator has several menus that are used to set the operating parameters. Menus for adjusting parameters are listed below.

There are two **MENU** keys on the MODEL 500 face. There are three sub-menus in the Model 500 library:

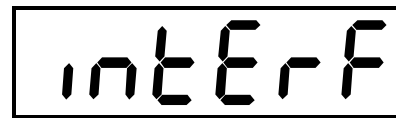
1. Press either **MENU** key. Use this key to scroll through the options.



SETUP - Controls the operating parameters of the Model 500. See Section 4.1 on page 13.



INTERFACE - Sets the operator interface parameters. See Section 4.2 on page 28.



REPORT - Sets the method of reporting data. See Section 4.3 on page 42.



2. To return to normal weighing at any time use the **ALARM/EXIT** key.

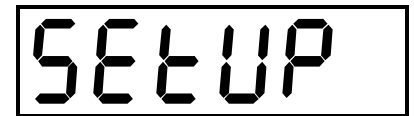


4.1 Setup Menu

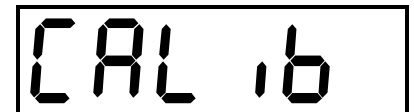
Note: Be sure to read and *fully understand* the directions before making *any modifications* to the indicator setup, failure to do so may render the indicator *inoperable*.

Using the menu arrow keys select the **SETUP** menu.

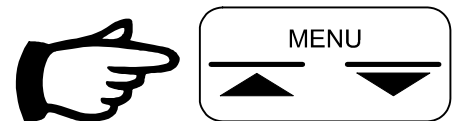
1. Indicator is in **Setup Mode**. Press **ENTER**.

A rectangular display box containing the word "SETUP" in a large, bold, sans-serif font.

Display shows **Field Calibration** option.
See section 4.1.1 on page 15.

A rectangular display box containing the text "CAL 16" in a large, bold, sans-serif font.

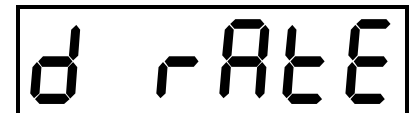
2. Press either **MENU** key to scroll through the **SETUP** parameters.



Sets the length of time that **Hold Average** is active. See section 4.1.2 on page 17.

A rectangular display box containing the text "HLD AVE" in a large, bold, sans-serif font.

Sets **Display Update Rate**. See section 4.1.3 on page 18.

A rectangular display box containing the text "d RATE" in a large, bold, sans-serif font.

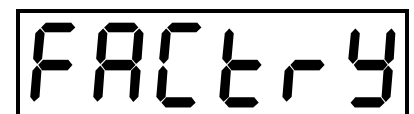
Sets **Display Averaging Rate**. See section 4.1.4 on page 19.

A rectangular display box containing the text "d AVE" in a large, bold, sans-serif font.

Sets **Serial Port Update Rate**. See section 4.1.5 on page 20.

A rectangular display box containing the text "P AVE" in a large, bold, sans-serif font.

Sets **Factory Calibration**. See section 4.1.6 on page 21. Note: For Factory Use Only.

A rectangular display box containing the text "FACTRY" in a large, bold, sans-serif font.

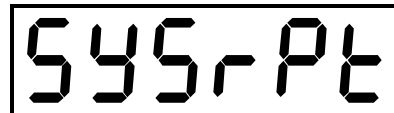
Sets **Coarse Zero Offset**. See section 4.1.7 on page 23.

Sets the **Zero Tracking Range**. See section 4.1.9 on page 25.

Sets **Maximum Capacity Rating** of the platform. See section 4.1.10 on page 26.

Sets the maximum operating **Range of the Zero Key**. See section 4.1.11 on page 27.

Activates **System Report** via Serial Port #1. See section 4.1.12 on page 28.



4.1.1 Calibration Adjustment

All indicators are calibrated at the factory with a fixed input signal. This signal is assigned a calibration factor. It may be necessary to adjust this calibration factor in order to obtain a more accurate weight reading.

Example: If a scale reading is 1% lower than the actual weight on the scale, the calibration figure should be increased by 1%.

- Scale display: 10,000
- Actual weight: 10,100
- Old Calibration figure: 5,000
- New Calibration figure: 5,050

$$\frac{\text{OldCalibrationFigure}}{\text{ScaleDisplay}} = \frac{\text{NewCalibrationFigure}}{\text{ActualWeight}}$$

$$\frac{5,000}{10,000} = \frac{\text{NewCalibrationFigure}}{10,100}$$

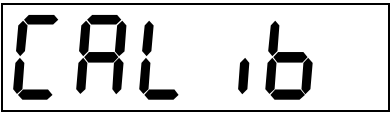
$$\text{NewCalibrationFigure} = \frac{(5,000 \times 10,100)}{10,000}$$

$$\text{NewCalibrationFigure} = 5,050$$

$$\text{NewCalibrationFigure} = \frac{(\text{OldCalibrationFigure} \times \text{ActualWeight})}{\text{ScaleDisplay}}$$

Note: Care should be taken when using this function, contact the factory at 1-800-419-1189 for help.

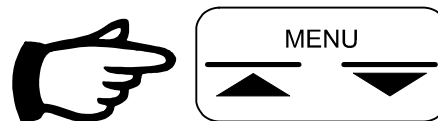
1. From the **Calibration Adjustment** menu option, press the **ENTER** key.



The current **Calibration Figure** is displayed. All Status Indicators flash.



2. Use the **MENU** Arrow keys to adjust the value as desired.



3. To accept the new setting, press the **ENTER** key.



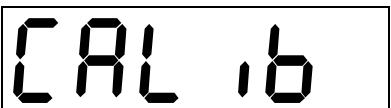
The display briefly shows **SLOPE**, then a number, then shows **PASS**.



4. Press the **ENTER** key.



The **Calibration Adjustment** menu option is displayed once again.



If Error Messages appear see section 5 on page 51.



4.1.2 Hold Average

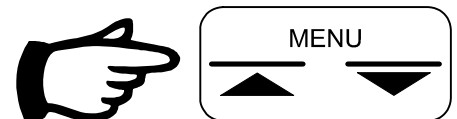
When the **HOLD/PRINT** button is pressed, the Model 500 calculates an average weight over a specified length of time called the **Hold Average Period**. This time is displayed in seconds.

1. From the **Hold Average Period** menu option, press the **ENTER** key.



The current **Hold Average Period** setting is 3.000 seconds. All Status Indicators flash.

2. Use the **MENU** Arrow keys to adjust the value as desired.



3. To accept the new setting, press the **ENTER** key. Status indicators stop flashing.



The **Hold Average Period** menu option is displayed once again.

4.1.3 Display Update Rate

The length of time between changes on the **LCD** is called the **Display Update Rate**. This time is shown in seconds.

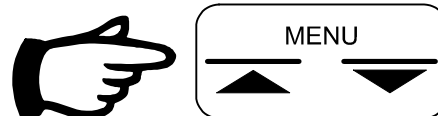
1. From the **Display Update Rate** menu option, press the **ENTER** key.



The current **Display Update Rate** setting is displayed in seconds. All Status Indicators flash.



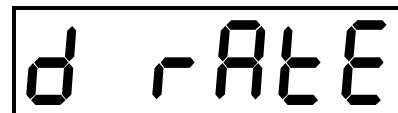
2. Use the **MENU** Arrow keys to adjust the value as desired.



3. To accept the new setting, press the **ENTER** key. Status Indicators stop flashing.



The **Display Update Rate** menu option is displayed once again.



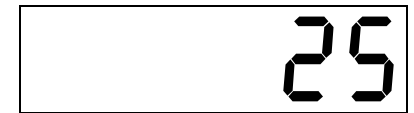
4.1.4 Display Average

The number of readings which are averaged for each **LCD** update is called the **Display Average**. Factory default is 25.

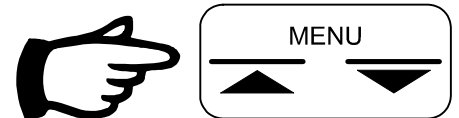
1. From the **Display Average** menu option, press the **ENTER** key.



The current **Display Average** setting is displayed. All Status Indicators flash.



2. Use the **MENU** Arrow keys to adjust the value as desired.



3. To accept the new setting, press the **ENTER** key. Status Indicators stop flashing.



The **Display Average** menu option is displayed once again.



4.1.5 Port Average

The number of readings which are averaged for each **Serial Port** update is called the **Port Average**. Factory default is 25. This number is usually the same as the **LCD** but can be different if required.

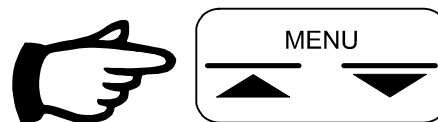
1. From the **Port Average** menu option, press the **ENTER** key.



The current **Port Average** setting is displayed in seconds. All Status Indicators flash.



2. Use the **MENU** Arrow keys to adjust the value as desired.



3. To accept the new setting, press the **ENTER** key. Status Indicators stop flashing.



Port Average menu option is displayed once again.

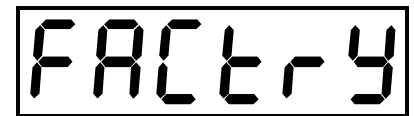


4.1.6 Factory Calibration

All indicators are calibrated at the factory and rarely need to be re-calibrated in this fashion. Most re-calibration procedures can use the **Calibration Adjustment** menu option, see section 4.1.1 on page 15.

Note: This operation is reserved for factory qualified operators. There is a password required to use this function.

1. From the **Factory Calibration** menu option, press the **HOLD/PRINT** key.



The **Factory Calibration** password is requested.



2. Enter the **Factory Calibration** password.



If password is correct the display shows **-Pass-** momentarily.



Ensure there is no weight on the scale (other than permanent platforms or similar equipment).



3. To proceed, press the **ENTER** key.



Display shows **LOAD**. Place a known weight on the scale.

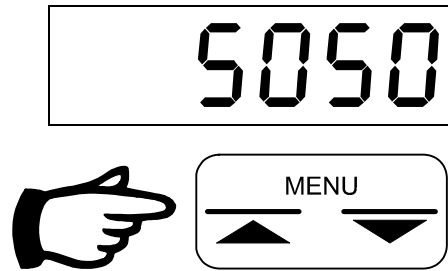


4. To proceed, press the **ENTER** key.



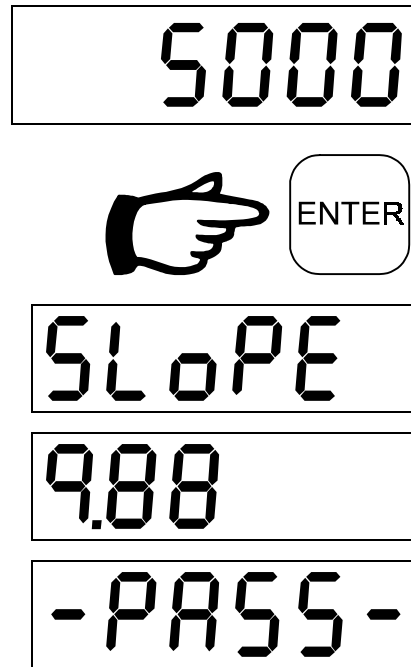
The most recently used calibration value is displayed. All Status Indicators flash.

5. Use the **MENU** Arrow keys to adjust the correct value.



6. To accept the new setting, press the **ENTER** key.

The display briefly shows **SLOPE**, then a number, then shows **PASS**.

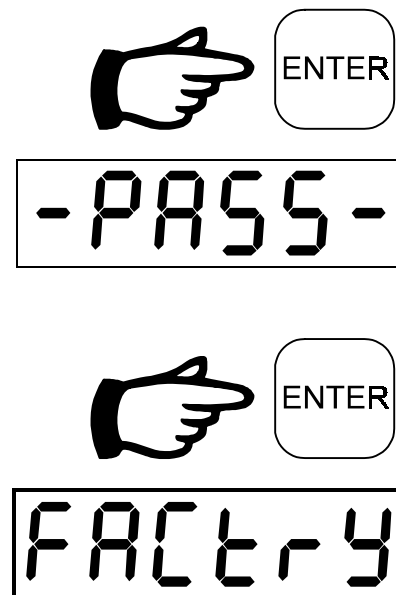


7. Press the **ENTER** key.

When the **Factory Calibration** procedure has been completed successfully, it waits for the user.

8. To proceed, press the **ENTER** key.

The **Factory Calibration** menu option is displayed once again.



4.1.7 Offset Adjustment

The **Offset Adjustment** is used as a coarse zero adjustment to compensate for static loads such as scale platforms.

Note: This operation should not be performed without prior factory authorisation as improper use can result in system failure.

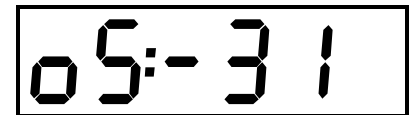
1. From the **Offset Adjustment** menu option, press the **ENTER** key.



A number will appear on the display.
This number will alternate with a “DAC Code”



The DAC Code will count upward until a stable value is reached.



The **Offset Adjustment** menu option is displayed once again.



ERROR MESSAGES See section 5 on page 51.

4.1.8 Amplifier Range

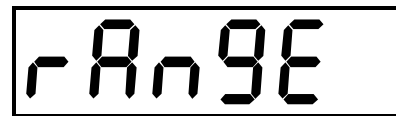
Amplifier Range is usually set at the factory and there is normally no need to change it

Load cell signals are normally rated in mV/V at full load. Typical values are: 1mV/V, 2mV/V, 4mV/V, 8mV/V. When selecting range value, be sure that the value is equal to or larger than the load cell signal.

Example: for a load cell with 2.5 mV/V use the 4 mV/V setting
for a load cell with 1.8 mV/V use the 2 mV/V setting.

It is very likely that other parameters in the **Setup** and **Interface** menus will need to be changed after this procedure is complete.

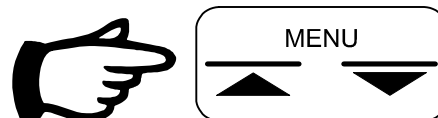
1. From the **Amplifier Range** menu option, press the **ENTER** key.



Display shows the current **Amplifier Range** setting.



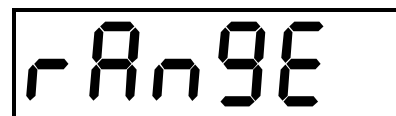
2. Use the **MENU** arrow keys to select the correct value.



3. To accept the new setting press **ENTER**.



Display returns to **Amplifier Range** menu option.

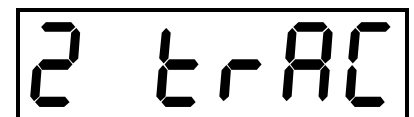


4.1.9 Zero Tracking

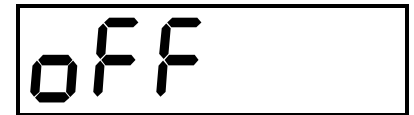
In some applications, the scale platform may be subject to external material build-up due to such things as weather or mud. In these instances, the indicator can be set (**Zero Tracking On**) to ignore these small changes and automatically zero itself.

Note: As the name implies, **Zero Tracking** only functions when the indicator is at or near a zero (0) reading.

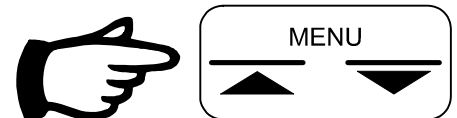
1. From the **Zero Tracking** menu option, press the **ENTER** key.



The current **Zero Tracking** status is displayed. All Status Indicators flash.



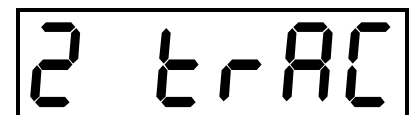
2. To change the setting, press one of the **MENU** keys.



3. To accept the new setting, press the **ENTER** key.



The **Zero Tracking** menu option is displayed once again. Status Indicators stop flashing.



4.1.10 Over Range

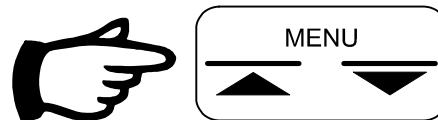
Model 500 will not function above this point. When the display reading exceeds the **Over Range** setting the display will show **OVER**. The Alarm status indicator will light and the buzzer will sound until the weight drops below the **Over Range** setting. The voltage level on the alarm pin in the **I/O** connector will change.

1. From the **Over Range** menu option, press the **ENTER** key.



Display shows the current **Over Range** setting. All Status Indicators flash.

2. Use the **MENU** Arrow keys to adjust the correct value.



3. To accept the new setting, press the **ENTER** key.



Over Range menu option is displayed once again. Status Indicators stop flashing.

4.1.11 Zero Range

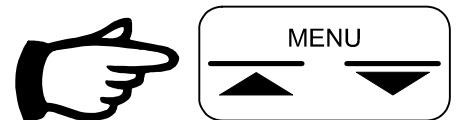
1. From the **Zero Range** menu option, press the **ENTER** key.



Display shows the current **Zero Range** setting (1 to 100%). All Status Indicators flash.



2. Use the **MENU** Arrow keys to adjust the correct value.



3. To accept the new setting, press the **ENTER** key.



Zero Range menu option is displayed once again. Status Indicators stop flashing.



4.1.12 System Report

System Report is a technical status report for use by factory technicians. The Model 500 must be connected to a computer via the Serial Port.

1. From the **Zero Range** menu option, press the **ENTER** key.



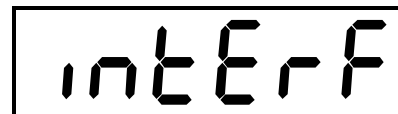
Model 500 sends its status report to the computer.



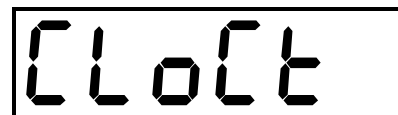
4.2 Interface Menu

Using the menu arrow keys select the **INTERFACE** menu.

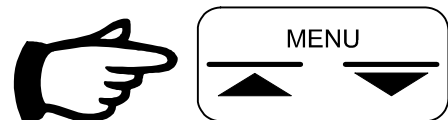
1. Indicator is in **Interface Mode**. Press **ENTER**.



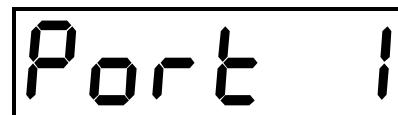
Display shows **Clock** option. See section 4.2.1 on page 29.



2. Press either **MENU** key to scroll through the **SETUP** parameters.



Sets operating parameters for the **Serial Ports**. See section 4.2.2 on page 33.



Sets the size of the **Display Graduation**.(1, 2, 5, 10 etc.) See section 4.2.3 on page 37.

Sets the location of the **Decimal Point**. See section 4.2.4 on page 38.

Sets the length of time the **Alarm** will operate. See section 4.2.5 on page 39.

Sets the level at which the **Pre-Alarm** activates. See section 4.2.6 on page 40.

Alarm Reverse sets the voltage activation level on the alarm connector. See section 4.2.7 on page 41.

4.2.1 Clock Adjustment - Time & Date

The indicator has a **REAL TIME CLOCK** which operates internally at all times. The clock retains both time and date. The indicator is set at the factory to **North American Mountain Time**. Adjust the clock to your specific time zone. Menus for adjusting the time & date are listed below.

1. From **INTERFACE** menu press the **ENTER** key.

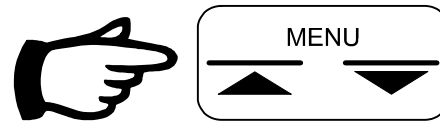


Display shows **Clock** menu option.

2. Press the **ENTER** to check or adjust the clock.



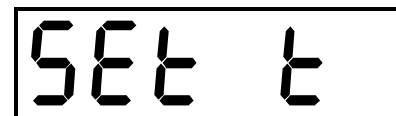
3. Use the **MENU** Arrow keys to scroll through the clock settings.



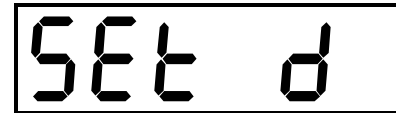
CURRENT - Shows the current time & date. The display alternates between “YY:MM:DD” and “HH:MM:SS”.



SET TIME - Adjusts the time. See Section 4.2.1.1 on page 30.



SET DATE - Adjusts the date. See Section 4.2.1.2 on page 32

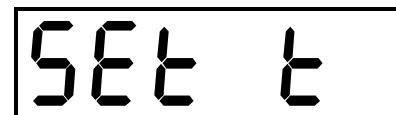


4. Use the **EXIT** key to return to **CLOCK** menu.

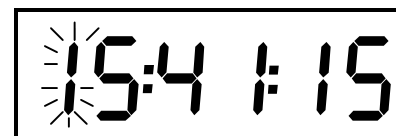


4.2.1.1 Set Time

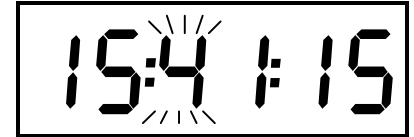
1. From **Set Time** menu press the **ENTER** key.



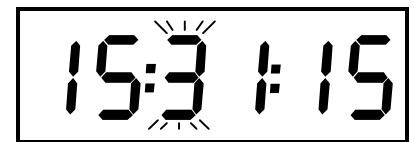
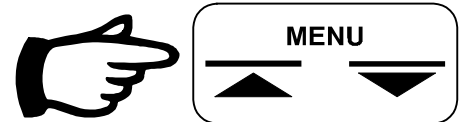
Display shows **Current** time. The left hand digit flashes. All Status Indicators flash.



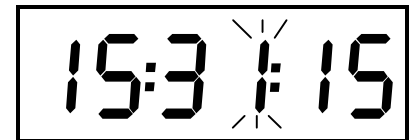
2. Use the **ENTER** key to scroll to the right until the digit to be changed begins to flash.



3. Use the **MENU** arrow keys to select the correct number

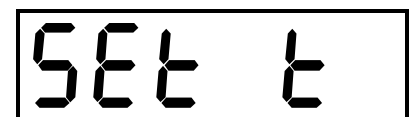


4. Press **ENTER** to accept the new digit.



Display shows the new setting. The next digit to the right begins to flash. Proceed as in Step 3. above or Step 5. Below.

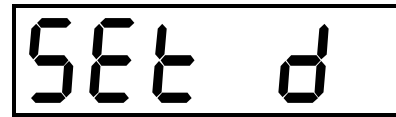
5. If no other time changes are required press **EXIT**.



Set Time menu option is displayed once again. Status Indicators stop flashing.

4.2.1.2 Set Date

1. From **Set Date** menu press the **ENTER** key.



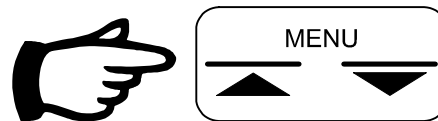
Display shows **Current** date. The left hand digit flashes. All Status Indicators flash.



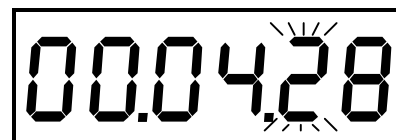
2. Use the **ENTER** key to scroll to the right until the digit to be changed begins to flash.



3. Use the **MENU** arrow keys to select the correct number



4. Press **ENTER** to accept the new digit.

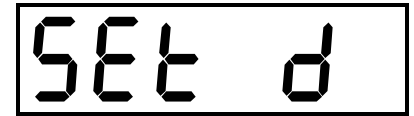


Display shows the new setting. The next digit to the right begins to flash. Proceed as in Step 3. above or Step 5. Below.

5. If no other time changes are required press **EXIT**.



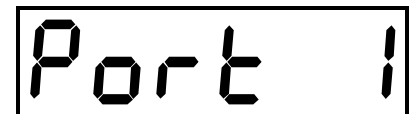
Set Date menu option is displayed once again. Status Indicators stop flashing.



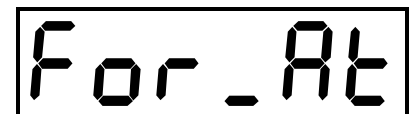
4.2.2 Serial Port

The RS232 serial port characteristics can be set in the menus below.

1. From the **Port 1** menu option, press the **ENTER** key.



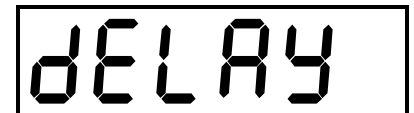
Display shows **Serial Communication Format** menu option. See section 4.2.2.1 on page 34.



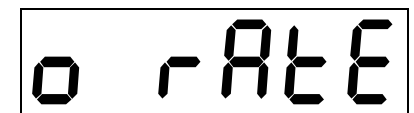
Adjusts the **BAUD RATE** of the serial port. See Section 4.2.2.2 on page 34.



Sets a **DELAY** between output strings at the serial port. See Section 4.2.2.3 on page 35.

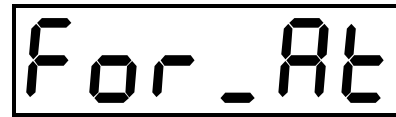


Adjusts the **OUTPUT RATE** of the serial port. See Section 4.2.2.4 on page 36.

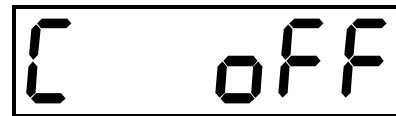


4.2.2.1 Serial Port Format

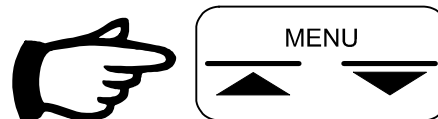
1. From the **Format** menu option, press the **ENTER** key.



Display shows the current setting. All Status Indicators flash.



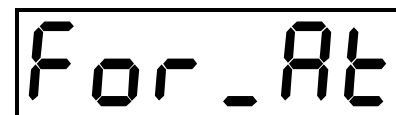
2. Use the **MENU** arrow keys to select the desired output format. See on page for options and details.



3. To accept the new setting , press **ENTER** key. See section 6 on page 53 for options and details.



Format menu option is displayed once again. Status Indicators stop flashing.



4.2.2.2 Serial Port Baud Rate

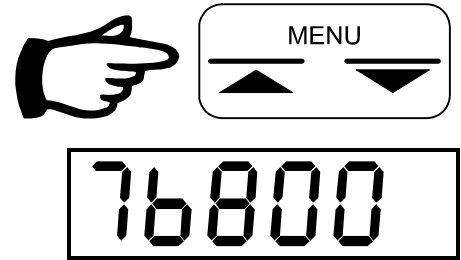
1. From the **Serial Port Baud Rate** menu option, press the **ENTER** key.



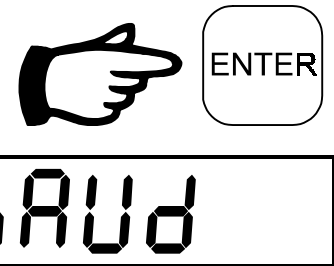
Display shows the current setting. All Status Indicators flash.



2. Use the **MENU** arrow keys to select the desired output rate.



3. To accept the new setting , press **ENTER**.



Serial Port Baud Rate menu option is displayed once again. Status Indicators stop flashing.

4.2.2.3 Serial Port Delay

When interfacing to low speed RS-232 serial devices, a delay between characters can be implemented to prevent input buffer overflows. The **Serial Port Delay** setting controls the character delay length in milliseconds.

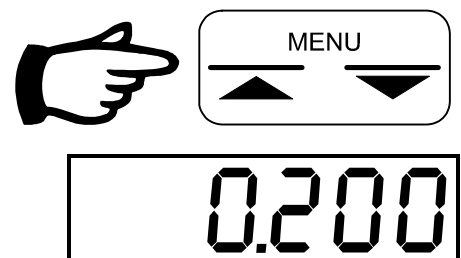
1. From the **Serial Port Delay** menu option, press the **ENTER** key.



The current **Character Delay** setting is displayed. All Status Indicators flash.



2. Use the **MENU** arrow keys to select the desired delay.



3. To accept the new setting, press the **ENTER** key.

The **Port 1 Character Transmission Pacing** menu option is displayed once again. Status Indicators stop flashing.



DELAY

4.2.2.4 Serial Port Output Rate

The Serial Port output frequency can be adjusted to a higher or lower rate than the LCD.

1. From the **Serial Port Output Rate** menu option, press the **ENTER** key.

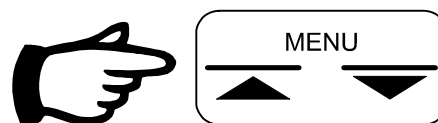
0 RATE



0.200

The current **Serial Port Output Rate** setting is displayed. All Status Indicators flash.

2. Use the **MENU** arrow keys to select the desired output format. See on page for options and details.



0.100

3. To accept the new setting, press the **ENTER** key.



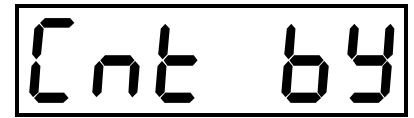
0 RATE

The **Serial Port Output Rate** menu option is displayed once again. Status Indicators stop flashing.

4.2.3 Count By Menu

The Display Resolution of the Indicator can be set to several options called Count By or Graduation Size.

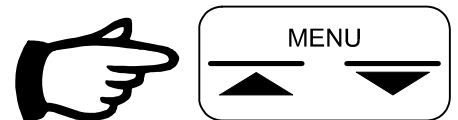
1. From the **Count By** menu option, press the **ENTER** key.



The current **Count By** setting is displayed. All Status Indicators flash.



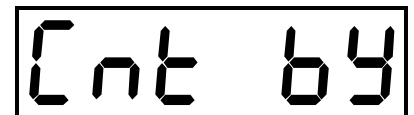
2. Use the **MENU** arrow keys to select the desired output format.



3. To accept the new setting, press the **ENTER** key.



The **Count By** menu option is displayed once again. Status Indicators stop flashing.



4.2.4 Decimal Point Menu

The Decimal point location can be set as required.

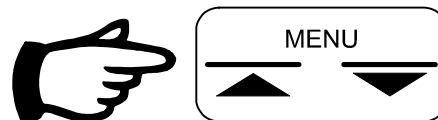
1. From the **Decimal Point** menu option, press the **ENTER** key.



The current **Decimal Point** setting is displayed. All Status Indicators flash.



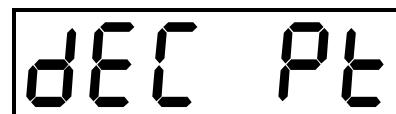
2. Use the **MENU** arrow keys to select the desired decimal point location



3. To accept the new setting, press the **ENTER** key.



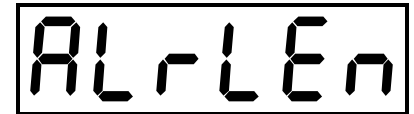
The **Decimal Point** menu option is displayed once again. Status Indicators stop flashing.



4.2.5 Alarm Length

The length of time that the alarm buzzer, status indicator and output signal are active can be adjusted from 0 to 10 seconds (0 setting gives a continuous output).

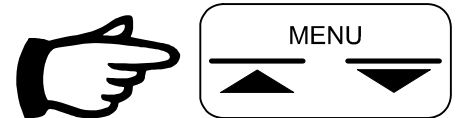
1. From the **Alarm Length** menu option, press the **ENTER** key.



The current **Alarm Length** setting is displayed. All Status Indicators flash.



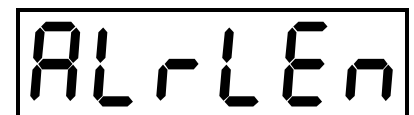
2. Use the **MENU** arrow keys to select the desired alarm length.



3. To accept the new setting, press the **ENTER** key.



The **Alarm Length** menu option is displayed once again. Status Indicators stop flashing.



4.2.6 Pre-Alarm

Pre-Alarm setting activates a warning signal to notify the operator the displayed value is approaching the Alarm point. The pre-alarm is set as a percentage of the alarm point value.

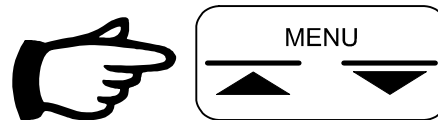
1. From the **Pre-Alarm** menu option, press the **ENTER** key.



The current **Pre-Alarm** setting is displayed. All Status Indicators flash.



2. Use the **MENU** arrow keys to select the desired **Pre-Alarm** setting.



3. To accept the new setting, press the **ENTER** key.



The **Pre-Alarm** menu option is displayed once again. Status Indicators stop flashing.



4.2.7 Alarm Reverse

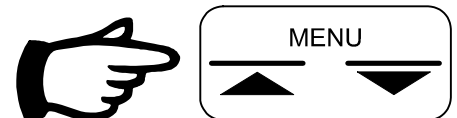
The Alarm signal line is normally at +5 VDC. See Section 6 on page 53 for connector detail. When the Alarm (or pre-alarm or over range) is reached the signal will drop to 0VDC. **Alarm Reverse** option reverses the signal. Normal level will be 0 VDC and alarm level will be +5 VDC.

1. From the **Alarm Reverse** menu option, press the **ENTER** key.



The current **Alarm Reverse** setting is displayed. All Status Indicators flash.

2. Use the **MENU** arrow keys to change the **Alarm Reverse** setting.



3. To accept the new setting, press the **ENTER** key.



The **Alarm Reverse** menu option is displayed once again. Status Indicators stop flashing.

4.3 Report Menu

Model 500 has a data storage memory for up to 600 weight readings. Data is not lost when power is disconnected nor when the indicator is turned **OFF**. Data stored includes:

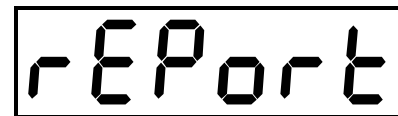
- Lot Number - up to 50
- weight reading
- units lb or kg
- date YY.MM.DD
- time HH:MM:SS

Reports can be made on the display or via the RS232 Port.

Reports on the indicator consist of lot summaries only. Reports delivered via the RS232 port include all readings for each lot.

Data is stored until the operator clears it. See Section 3.5 on page 9 for instructions on storing data.

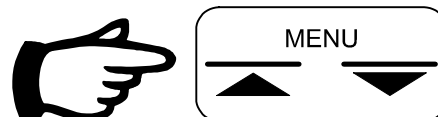
1. From the **Report** menu option, press the **ENTER** key.



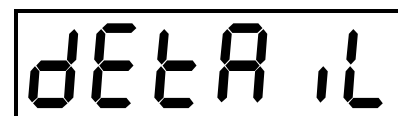
Displays the Total Weight, Average Weight, number of readings, Highest reading and Lowest reading within each lot. See Section 4.3.1 on page 44 .



2. Use the **MENU** arrow keys to select the desired Report function.



Displays the individual readings within each Lot. See Section 4.3.2 on page 48



Sets the number of the lot where next weight readings are to be stored.

Note: Weights can be stored in a Lot number that was used previously.

Example: If the weighing at Pen #2 (Lot 2) was interrupted, it is possible to go to Pen # 3 and record weights into Lot 3. When finished at Pen #3 it is possible to change the Model 500 back to Lot 2 and return to Pen # 2 to complete the weighing. See Section 4.3.3 on page 49.

Clears the data from memory. See Section 4.3.4 on page 50.

3. Use the **EXIT** key to return to **REPORT** menu option.



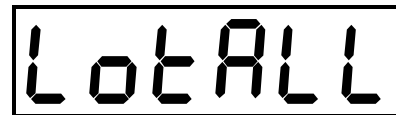
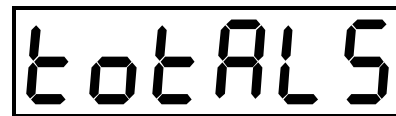
4.3.1 Totals

Totals for each Lot are available in summary on the Model 500 display. If individual Lots have not been requested at time of recording, all weights are automatically stored in Lot “0” or “ALL”. Model 500’s are shipped from the factory with a single Lot “0”. To set the memory for more than one Lot see Section 4.3.3 on page 49.

4.3.1.1 Single Lot

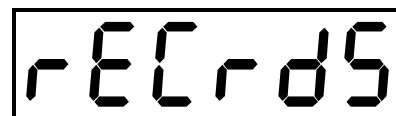
Used when there is no need to separate the records into several Lots.

1. From the **Totals** menu press the **ENTER** key.



Displays the Total Weight, Average Weight, number of readings, Highest reading, **Hi**, and Lowest, **Lo**, reading for all weights in the memory.

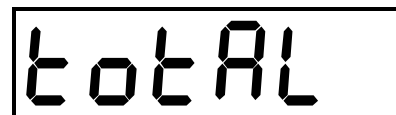
Number of records in the Lot.



Note: The sequence will repeat itself indefinitely allowing the operator to write down the numbers and check them.



Total of the weights the Lot.



Average of the weights the Lot.

41473

Ave

727.6

Highest of the weights the Lot.

H.

807

Lowest of the weights the Lot.

Lo

658

Display returns to Lot All and the sequence begins again.

LotALL

2. Use the **EXIT** key to return to **TOTALS** menu option.



ALARM
EXIT

TOTALS

3. Press the **ENTER** key to view the next Lot.



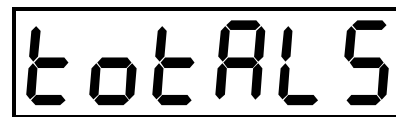
ENTER

4.3.1.2 Multiple Lots

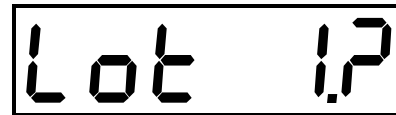
Totals for each Lot are available in summary on the Model 500 display. To view individual Lot summaries go to Set Lot, section 4.3.3 on page 49. Set the Lot number from 1 to 50 then return to **Totals** and proceed below.

NOTE: Do not use Lot 0 for storing data in multiple lots. It is used only for single lot storage.

1. From the **Totals** menu press the **ENTER** key.



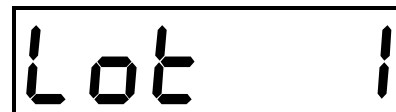
Displays the Number (1.?) of the first Lot containing data.



2. Press **ENTER** key to view the summary.



Displays, in sequence, the following:
Lot Number,



Number of records in the Lot,



Note: The sequence will repeat itself indefinitely allowing the operator to write down the numbers and check them.



Total of the weights the Lot,



Average of the weights the Lot,

12 105

Ave

526.3

Highest of the weights the Lot,

H 1

6 13

Lowest of the weights the Lot,

Lo

463

Display returns to Lot 1 and the sequence begins again.

Lot 1

3. When ready, press the **ENTER** key to view the next Lot.



OR

4. Use the **EXIT** key to return to **TOTALS** menu option.



4.3.2 Detail

Detailed records can only be transmitted to printer or computer. See Section on page about communication protocols required.

1. From the **Detail** menu option, press the **ENTER** key.



Displays the first Lot with stored records.

2. Press **ENTER** key to transmit the detailed records.

OR

Go to Item 3 below.

When the data has been sent, the LCD shows **-good-** momentarily, then displays the next Lot with stored records

3. Press **EXIT** key to select the next Lot with detailed records.

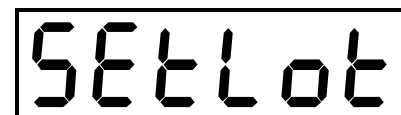


If there are no more Lots with data, the display shows **-done-** momentarily.

4.3.3 Set Lot

Lot numbers are assigned in this menu. Records can be added to an existing Lot or a new, empty Lot may be assigned. See Section on page.

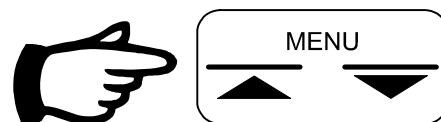
1. From the **Set Lot** menu option, press the **ENTER** key.



Displays the most recently used Lot Number. More weights may be added to this Lot, a previously used Lot may be selected or a new Lot may be selected.



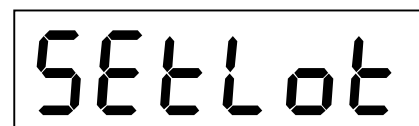
2. Use the **MENU** arrow keys to select the desired Lot.



3. Press **ENTER** key to accept the Lot to be used.



Display returns to **Set Lot** menu option.



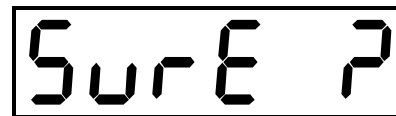
4.3.4 Clear

Data stored in memory can be cleared using this option. A safety feature is provided for protection against inadvertently clearing all the stored data.

1. From the **Clear** menu option, press the **ENTER** key.



Display asks if you are **SURE?** that you want to clear all the data from the memory.



2. To proceed with Clearing the data press the **ENTER** key again.
OR



Go to Item 3 below.

Display shows -Busy- while records are being cleared.



Display shows -done- momentarily.



3. Use the **EXIT** key to return to **CLEAR** menu option.



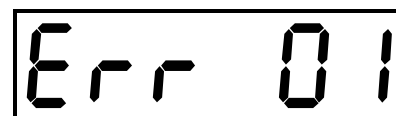
Display returns to **CLEAR** menu option.



5. Error Messages

If the **Factory Calibration** function fails, an error message will be displayed. **Error 01**, **Error 02**, **Error 03** and **Error 04** are defined as **Calibration** errors. These errors are generally caused by not following the calibration procedure correctly.

1. An error has occurred and a **Factory Calibration** error message is displayed.



The display returns to **Factory Calibration** menu.



Error Type	Description
01	The high weight entered is lower than the low weight. Perform the Offset Adjustment procedure in section 4.1.7 on page 23 with no weight on the scale and then retry the Factory Calibration procedure.
02	The high weight signal is lower than the low weight signal. Ensure that the load cell is wired correctly and installed correctly (right-side up). Contact the factory for proper installation and wiring configuration if you are unsure.
03	There is too much difference between the low weight and the high weight for the indicator to perform the calibration calculations. Contact the factory about Gain Resistor Settings and load cell output.
04	There is not enough difference between the low weight and the high weight for the indicator to perform the calibration calculations. Ensure the load cell is connected properly and that the cable is in good condition.
05	Parallel printer busy
06	
07	Parallel printer error
08	Tare Offset out of range - Large negative input

09	Tare offset out of range - Large positive input
10	Menu error - Scroll List can't find a message to match the data.
11	A/D internal full scale calibration failed
12	A/D internal Zero calibration failed
13	Least significant digit has less than 4 A/D readings - Legal for trade applications only
14	Zero key out of range
15	Calset resistor mismatch

6. Connector Details

See diagram, section 2.2 on page 4.

M500-Power Connector AMP# 206061-1

Mating Connector: AMP 206060-1

AMP Pin #	Wire Colour	Signal
1	Red	+ 12 to 30 Volts DC ground
2	Black	
3	n/c	
4	n/c	

M500-Load Cell Connector AMP # 206705-1

Mating Connector: AMP 206708-1

AMP Pin #	Wire Colour	Signal
1	Red	+ Excitation 1
2	Black	- Excitation 2
3	Green	+ Signal
4	White	- Signal
5	Brown	+ Excitation 2
6	Blue	- Excitation 2
7		Cal Set 1
8		Cal Set 2
9	Orange	Shield

M500-RS232 Connector: 9 position sub-D male

Mating Connector: 9 position sub-D female

Pin #	Wire Colour	Signal
2	White	Receive data
3	Green	Transmit data
9	Black	signal ground

M500-Input/Output Connector: 15 position sub-D female

Mating Connector: 15 position sub-D male

Pin #	Wire Colour	Signal
1	Yellow	External Alarm
15	Black	Signal Ground

The alarm circuit is capable of operating a solid state relay such as an OMRON G3NA-220B Solid State Relay or equivalent. Consult your local electrical supply house for availability.

7. Communication Port Protocols

C1: Port Enabled. Enables the serial port for miscellaneous reports.

C11: Weight only on a Hold button

Hold button pressed

4001

C12: Weight with units on a Hold button

Hold button pressed

4001 1b

C13: Weight with units and date & time on a **Hold** button

Hold button pressed

4001 1b

2001-09-05 10:5326

C16: Weight only on a **Display Update**

4001

C17: Weight with units on **Display Update**

4001 1b

8. Limited Warranty

This warranty applies to all new equipment manufactured by RELIABLE SCALE CORPORATION except when otherwise specified in the Terms of Sale. Warranty is subject to the following terms and conditions:

- All new products are warranted for a period of twelve (12) months from the date of final sale to the end user (maximum 24 months from date of manufacture).
- RELIABLE SCALE CORPORATION shall at its option, repair or replace or refund the purchase price, within a reasonable period of time, after being notified of the alleged defect and after acknowledging that a defect does in fact exist.
- Warranty claims must be submitted in writing by mail, fax or email to RELIABLE SCALE CORPORATION within the warranty period.
- This warranty does not extend to any consequential damage of other equipment, loss of use, commercial or economic loss or inconvenience prior to or during the repair period.
- RELIABLE SCALE CORPORATION is not responsible for any damage or defects caused by misuse, negligence, neglect, modification, improper operation, improper maintenance, or repairs by any unauthorized persons.
- This is the sole warranty applicable to RELIABLE SCALE CORPORATION'S products, and no RELIABLE SCALE CORPORATION employee, agent or dealer has any authority to add to this warranty whatsoever.
- Products for warranty repair must be returned to the factory freight prepaid by the customer. RELIABLE SCALE CORPORATION is not liable for any cost related to removal, replacement, or shipping of the products or any other associated equipment.

Batteries supplied in or with RELIABLE SCALE CORPORATION products are NOT covered by this warranty.