

Forté Series 8760 System

Calibration Subsystem Manual

Bales of Pulp

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Forté Technology Inc.

125 John Hancock Road

Suite 9

Taunton MA, 02780 U.S.A.

Telephone: 508-802-9634

E-mail: forte@forte-tec.com

URL: www.forte-tec.com

Rev. D

Forté Series 8760 Calibration Subsystem Manual

REVISION HISTORY:

Revision	Date	Author	Description
A	02/19/2004	MCD	Original Release, Screen Shots for Bales of Pulp
B	06/29/2004	MCD	Screen Shots with XP OS and Version 80-4001-4.1
C	04/04/2007	GTM	Manual Calibration History menu added
D	08/12/2008	GM	Contact info updated - Taunton

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1.0 THE FORTÉ CALIBRATION SUBSYSTEM

The Forté Calibration Subsystem provides a graphic user interface and a database to define and maintain the system calibrations.

The Forté test cell / electrode system is designed to measure moisture in materials. Materials may vary in composition, size, shape and weight. Because of these differences, unique calibrations are required for various product types. A calibration is the mathematical correlation of the Forté oscillator measurement, referred to as the Forté Number, to the properties of the material under measurement.

The basic equation is:

$$\% \text{Moisture of a selected type} = A * \text{LOG} (\text{Forté Number} / \text{Gross Weight}) + B$$

There are two methods for creating a calibration. By one method the A and B constants of the equation are manually determined and entered in the Calibration System by the user.

The more preferable and accurate method is to collect sample data from a normal production run. Items of approximately the same weight (within +/- 10% as a target), and covering the expected range of low to high moisture content should be identified, sampled, and tracked through the Forté measurement sequence.

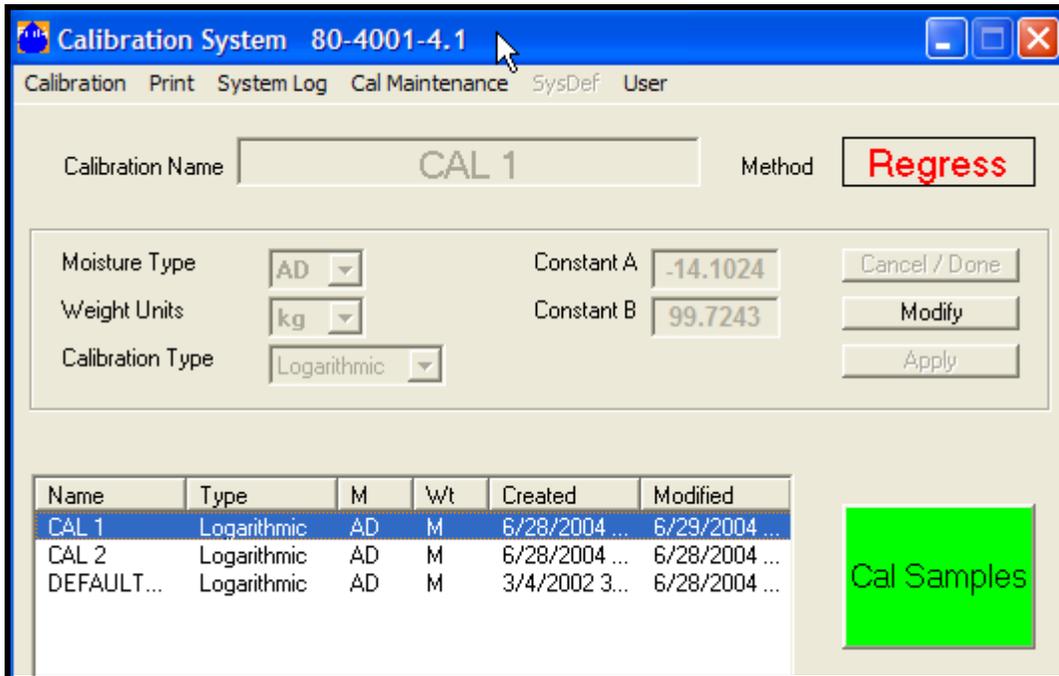
Each set of data points collected for a sampled item is comprised of three variables:

- The Forté Number, which is the difference between a reference reading of the empty test cell or press station and a second reading with an item in the test cell or in the press,
- The Gross Weight of the tested item,
- The average of the Laboratory % Moisture measurements of individual product samples. Laboratory % Moisture is derived by oven tests.

The user collects sets of data points for each item. The Weight, the Forté Number, and the results of the Laboratory % Moisture analysis are entered into the Samples for Calibration Subsystem. The Calibration Subsystem performs a complex regression analysis that determines the optimal equation for the system to use when that particular product type is being measured. The Forté moisture measurement equation requires A and B constants. A and B are derived from regression analysis and define the calibration that allows for automatic moisture measurement.

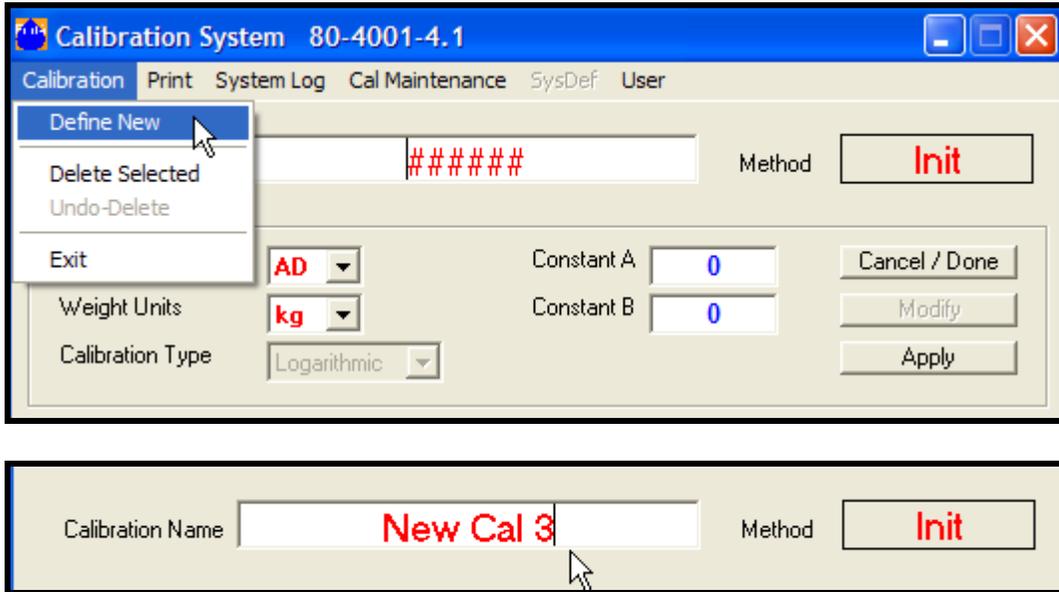
In summary, the calibration procedure is a data collection process in which:

- A product type is selected,
- Individual items of the product type are measured in the Forté test cell or bale press,
- Sets of calibration data for each item are collected,
- Item weights and associated Forté Numbers are recorded,
- Sub-samples from the product are analyzed for moisture content by an approved laboratory method,
- The collected sets of data are entered into the Forté program,
- The system performs a complex regression analysis that determines the optimal equation for the system to use when that particular product type is being measured,
- Calibration constants are identified and assigned to particular stock and grade combinations.

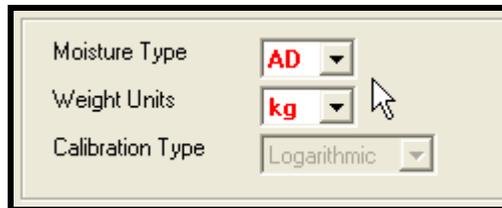


1.1 OVERVIEW OF THE CALIBRATION SUBSYSTEM: A USER GUIDE TO THE MAIN COMMANDS

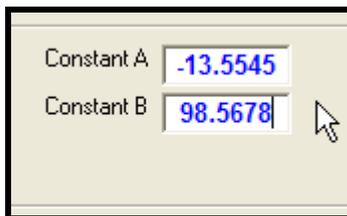
The user selects the DEFINE NEW command from the Calibration System menu bar and enters a new name into the Calibration Name box. The user presses the Enter key on the keyboard to activate the new calibration name.



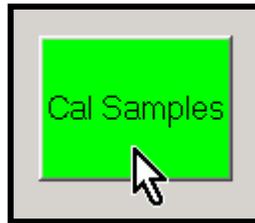
The user defines the Moisture Type and the Weight Units by selecting the correct definitions from the combo boxes on the Calibration system window. The default moisture and weight types are defined in the Forté Fsys.ini system file.



If calibration constants A and B are known, they can be typed into the text boxes at this time. When the Apply button is clicked, the calibration is entered into the system and is ready to be assigned to a stock/grade.



If the calibration constants are unknown, but sets of calibration data have been collected, the user enters the Samples for Calibration window by clicking on the green Cal Samples button.

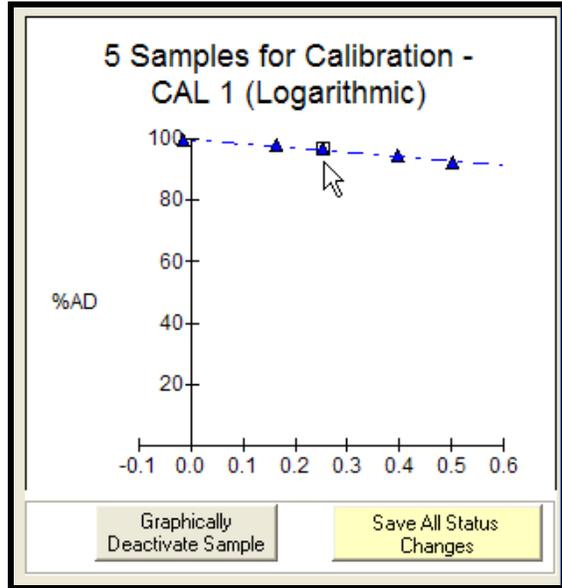


The Samples for Calibration window opens.

Sample	Active	Weight kg	Forte	Lab %AD	Created	Changed
1	YES	225	403	96.7	6/29/2004	6/29/2004
2	YES	227.5	332	97.8	6/29/2004	6/29/2004
3	YES	229.3	221	99.4	6/29/2004	
4	YES	224.7	713	92.1	6/29/2004	
5	YES	231.2	576	94.3	6/29/2004	

A and B Constants				
Points	A	B	S.D.	Corr
All	-14.102	99.724	0.47	-0.98
Curr	-14.10	99.724	0.47	-0.98
Prev				

The user enters a minimum of four sets of sample data into the Sample Number boxes for Weight, Forté Number, and Laboratory Moisture. Pressing the Update button after each data set adds a point to the graph and adjusts the A and B calibration constants.



The sample data is added to the listview box at the top of the screen.

Sample	Active	Weight kg	Forte	Lab %AD	Created	Changed
1	YES	225	403	96.7	6/29/2004	6/29/2004
2	YES	227.5	332	97.8	6/29/2004	6/29/2004
3	YES	229.3	221	99.4	6/29/2004	
4	YES	224.7	713	92.1	6/29/2004	
5	YES	231.2	576	94.3	6/29/2004	

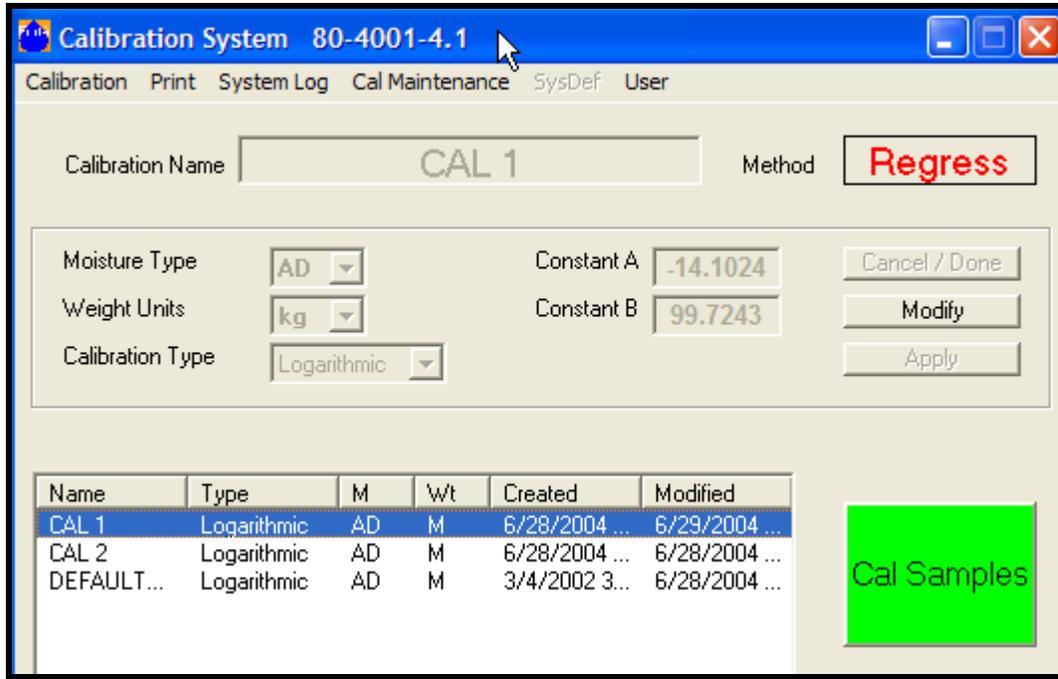
After all data points have been entered and edits have been made, click-on the Save All Status Changes button to save the calibration.

Points	A	B	S.D.	Corr
All	-14.102	99.724	0.47	-0.98
Curr	-14.10	99.724	0.47	-0.98
Prev	ActA	ActB	StDe	Repr

Click-on the Windows close box to exit from the Samples for Calibration window, or use the

Data Samples menu > Close command.

The Samples for Calibration window closes. The Calibration System window returns. The new A and B calibration constants for the selected calibration name will be listed in the A and B text boxes on the Calibration System window.



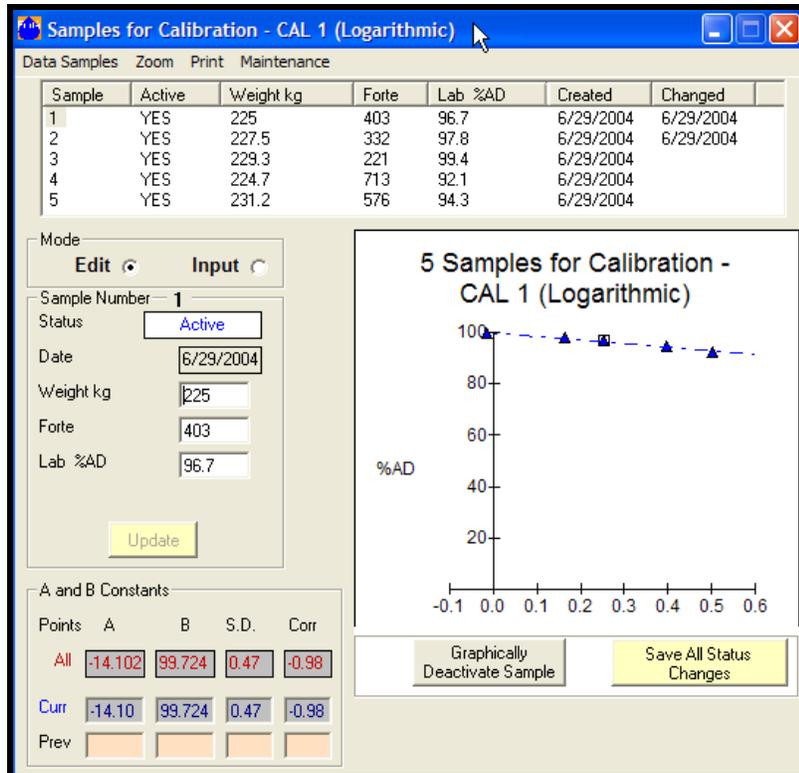
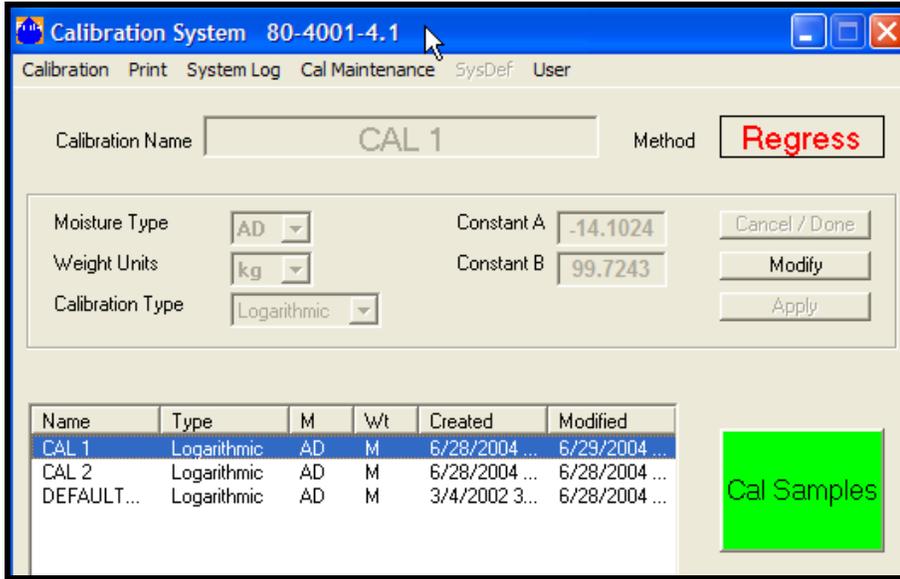
The calibration is now ready to be assigned in the Stock/Grade Subsystem.

To modify an existing calibration:

- Select the target calibration name from the listview box by clicking-on it.
- The selected calibration will then be displayed in the Calibration Name box.
- Click-on the Modify button to allow for changes in the name, Moisture Type, Weight Units, or A and B constants.
- Press the Apply button to save the modifications.

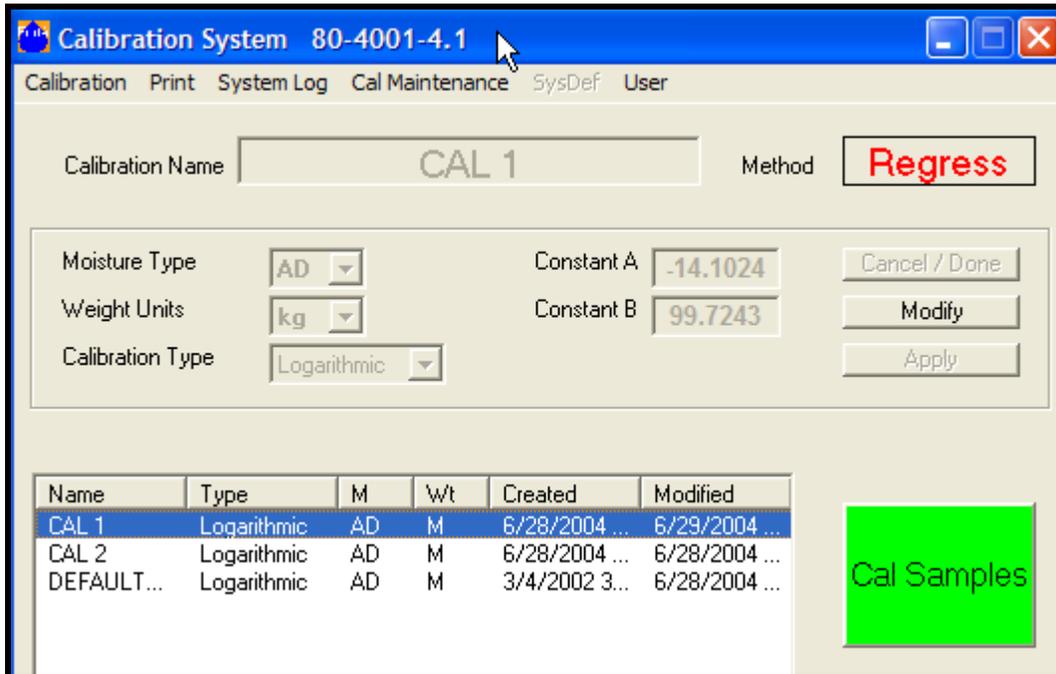
2.0 CALIBRATION SUBSYSTEM WINDOWS

There are two main windows in the Calibration Subsystem; the Calibration System window and the Samples for Calibration window.



3.0 CALIBRATION SYSTEM WINDOW

The Calibration System window is the main calibration window and opens by default when the Calibration Subsystem is activated.

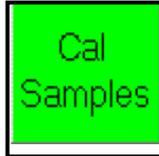


The Calibration System window permits the user to:

- Add a new calibration name.
- Delete an existing calibration.
- Modify the selected calibration constants in the equation.
- View a list of all existing calibration names.
- View the moisture measurement equation and the calibration constants for a selected calibration.
- View the Method by which a calibration was created.
- Print the parameters of one calibration or all calibrations.
- Access the Calibration System log.
- Compact the Calibration database before a backup.
- Create and restore calibration backups.
- Log on or log off of the Calibration System.
- Select an existing calibration to modify or edit in the Samples for Calibration window.
- Access the Samples for Calibration window to input new data or edit an existing calibration.

4.0 THE SAMPLES FOR CALIBRATION WINDOW

The Samples for Calibration window is opened by clicking on the Cal Samples button on the Calibration System screen.



Sample	Active	Weight kg	Forte	Lab %AD	Created	Changed
1	YES	225	403	96.7	6/29/2004	6/29/2004
2	YES	227.5	332	97.8	6/29/2004	6/29/2004
3	YES	229.3	221	99.4	6/29/2004	
4	YES	224.7	713	92.1	6/29/2004	
5	YES	231.2	576	94.3	6/29/2004	

Points	A	B	S.D.	Corr
All	-14.102	99.724	0.47	-0.98
Curr	-14.10	99.724	0.47	-0.98
Prev				

The Samples for Calibration window permits the user to:

- View a list of all of the sample weights, Forté Numbers and laboratory moisture measurements for one calibration.
- Enter sample data for a new calibration.
- Add new sample data to an existing calibration.
- Delete data from an existing calibration.
- Temporarily deactivate or activate existing calibration data points.
- Delete, and then restore, one data point from a selected calibration.
- Delete all data points from a selected calibration.
- View a graph of the calibration sample data points.
- Enlarge the view of the graph with the Zoom command.
- Print an image of the calibration graph with the calibration data.
- View the calibration constants for all data points, for the current data point sets, and for the previous data point sets.
- View the Standard Deviation (S.D.) and the Correlation Coefficient (Corr) for all data points, for the current data points, and for the previous data points.

5.0 FREQUENTLY ASKED QUESTIONS: CALIBRATION SUBSYSTEM

The Forté Calibration Subsystem allows the user to easily name, create, edit and store a large number of moisture measurement calibrations. The following questions cover the most commonly used functions available on the Calibration System screen and the Samples for Calibration screen.

The step-by-step answers assume that the user is familiar with using standard Windows mouse and keyboard procedures to select and activate system menus and commands. The terms “select” and “click on” are used interchangeably and indicate that the user should highlight the described menu and command items by placing the mouse cursor over them, and then click the left mouse button to complete the action. References to the ENTER key indicate that a keyboard ↵ ENTER keystroke is required.

Some of the numbered steps require user action. Other steps describe the system's response to a user action.

5.1. HOW DO I ENTER THE CALIBRATION SUBSYSTEM?

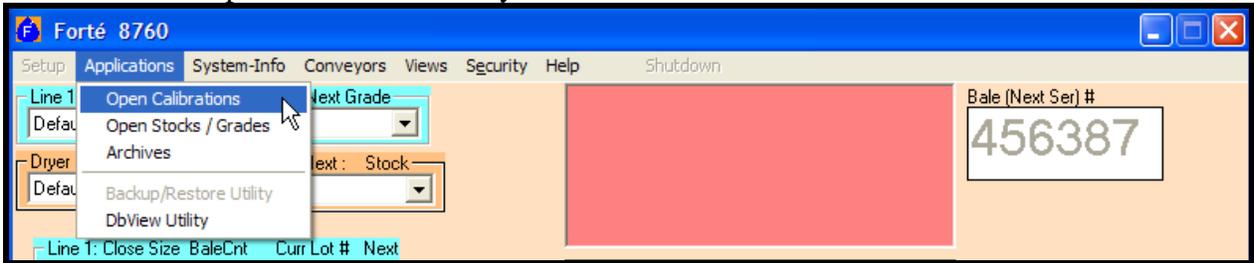
1. Start the Forté Moisture Measurement program by clicking on the Forté program icon on the desktop.



2. The main Forté Measuring System screen is displayed.
3. Select the Applications menu from the drop-down menu bar.



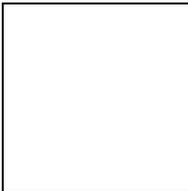
- Select the Open Calibrations subsystem command.



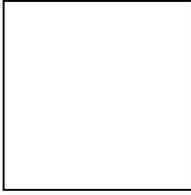
- The Validation box is displayed.



- Enter the Name of a registered user
Cal is the default Name, and can be changed by the administrator. A Name must be entered correctly in order to log into the system.
- Enter an assigned Password. If Cal is used as the Name, no password is required. Passwords are optional and are not required if not assigned by the administrator.
- NOTE: Names and passwords are case sensitive.
- Left clicking on the Submit button with the mouse will display the Calibration System screen. With full access all defined menu items are active.



- If a user does not enter a recognized Name and Password, the Calibration Subsystem will open with limited access rights. The user can quickly check calibration information without making changes by closing the validation box.
- The limited access state is recognizable by the fact that key menu bar commands are “grayed-out” and not accessible by the user.

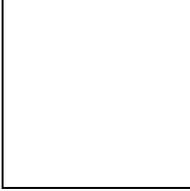


12. The Calibration Subsystem may also be opened by clicking-on the Calibrations icon on the Windows desktop and following steps 6 through 10.

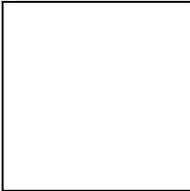


5.2 HOW DO I CREATE A NEW CALIBRATION BY ENTERING COLLECTED SAMPLE DATA?

1. Go to the Calibration System screen.
2. Select the Calibration drop-down menu.
3. Select Define New from the Calibration menu.



4. The Calibration Name text box changes format to #####.
5. The Method text box changes to Init.
6. The text boxes for A and B constants are blank.
7. Click-on the Calibration Name box.
8. Type in a new calibration name and press the Enter key.



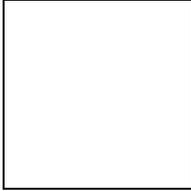
9. The system verifies that this new calibration name is unique. If a duplicate calibration name is found, a warning message is displayed and the operator must enter a new calibration name. The Cancel button exits the procedure.



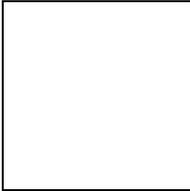
10. Before the Enter key is pressed, the user may cancel the Define New Cal procedure by clicking-on the Cancel button. The new calibration process is aborted and the previous

calibration is displayed. Once the Enter key is pressed, the calibration name must be deleted by using the Delete Selected Cal command.

11. Enter a new name in the Calibration Name box and press the keyboard Enter key. The screen updates to the default settings for a new calibration. The new calibration name is added to the listview box. Select the correct Moisture Type and Weight Units from the combo boxes. At this point, values for constant A and constant B can be manually entered into the text boxes and the Apply button selected. This will result in a Manual calibration Method Type.



12. If sets of calibration data have been collected by measuring and sampling items of one type, but at different moisture levels, the data can be entered into the Calibration Subsystem by clicking-on the green Cal Samples button to open the Samples for Calibration window.
13. When the Cal Samples Button is selected the system screen changes to the Samples for Calibration display with the associated graph.



14. The sample list box at the top of the window is empty.
15. The graph is blank.
16. The Input mode is active.
17. The A & B Constants box is empty.
18. The Sample Number text boxes are ready to accept data.
19. The first set of sample data is:

Weight in Kg = 225.3,
 Forte = 724,
 and Lab % Air Dry = 91.11.

20. Use the mouse to place the cursor in the Weight text box.
21. Enter the weight value of the first sample in the text box. The weight may be entered with up to 5 total digits and one decimal place.

Valid formats = X.XXXX, XX.XXX, XXX.XX, XXXX.X, or XXXXX.

Type in the Weight:

225.3

Press the Enter key on the keyboard.

22. Use the Tab or Enter key to advance the cursor to the Forté text box or click in the Forté text box with the mouse.
23. Enter the Forté value of the first sample in the text box. The Forté Number is a whole number of up to 5 digits from 1 to 99999.

Type in the Forté Number:

724

Press the Enter key on the keyboard.

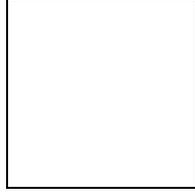
24. Use the Tab or Enter key to advance the cursor to the Lab %AD text box or click-on the text box.
25. Enter the Lab %AD value of the first sample in the text box.
Valid formats = X.XXX, XX.XX, XXX.X, or XXXX.
Acceptable entries range from 0.000 to 9999.

Type in the Lab %AD:

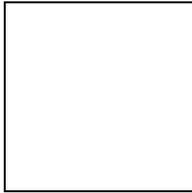
91.11

Press the Enter key on the keyboard.

26. Use the Tab or Enter key or the mouse to advance the cursor to the Update button. Press the Enter key to assign the new data to the calibration. Click-on the Update button to activate the point on the graph. The first data set is entered in the sample list box and a data point is added to the graph. The system is ready to accept another set of sample data.
27. The cursor focus returns to the Weight text box.
28. Use the same procedure to enter more sets of sample data. A minimum of four sets of data points should be entered for each calibration. Ten sets of points representing the normal expected range of moisture are recommended as a standard.
29. As each set of data is added into the Sample Number boxes, and the Update button is pressed, the data is added to the top listview and points are added to the graph.



30. The user can exit from the Samples for Calibration window at any time by clicking on the Windows close box or by selecting the Close command from the Data Samples drop-down menu. Only those data points that have been saved by the Update Button will be retained and reflected in the A & B values.



New values are entered into the text boxes for A and B, the Method is now listed as Regress.

31. Exiting from the Samples for Calibration window places the A and B values into the text boxes on the Calibration System window. The Calibration Method is listed as Regress.

NOTE: The Calibration Subsystem defaults to the moisture and weight type designations entered in the FSys.ini file in the System folder.

The available moisture types are:

AD (air dry),

MC (moisture content),

MR (moisture regain),

and BD (bone dry).

The available weight designations are Lbs (pounds) and Kgs (kilograms).

If different designations are required for a specific calibration the user can return to the Calibration System window, click on the MODIFY button, select the required designations from the moisture and weight type combo boxes, and click on the APPLY button to save the changes.

5.3 HOW DO I MANUALLY ENTER THE A&B CONSTANTS IN A NEW CALIBRATION EQUATION?

1. Go to the Calibration System screen.
2. Select the Calibration drop-down menu.
3. Select Define New from the Calibration menu.
4. The Calibration Name text box changes format to #####.
5. The Method text box changes to "Init".
6. The text boxes for the A and B parameters both contain 1.
7. Type in a new name in the Calibration Name text box and press the Enter key.
8. The system verifies that this new calibration name is unique. If a duplicate calibration name is found, a warning message is displayed and the operator must enter a new calibration name.
9. Before the Enter key is pressed, the user may cancel the Quick Cal routine by clicking-on the Cancel button. The new calibration process is aborted and the previous calibration is displayed.
10. NOTE: Once the Enter key is pressed the calibration name must be deleted by using the Delete Selected Cal command.
11. Press the Enter key. The new calibration name is added to the calibration list box and the cursor jumps to the A text box.
12. Enter the value of the A and B constants (4 decimal places max) into the respective text boxes. Click-on the A and B text boxes to move the cursor from one to the other.
13. Define the moisture content type by selecting it from the first combo box.
14. Define the weight unit type by selecting it from the second combo box.
15. When the A and B constants are entered, and the moisture type and weight units are selected, click on the Apply button to save the calibration.

16. The Method box updates to Manual from Init.
17. The date and time data for the new manual calibration is updated in the list box.
18. Actual sets of sample data can later be assigned to this calibration by clicking -on the Cal Samples button and entering the data into the Sample Numbers text boxes on the Samples for Calibration window.
The old, manually entered calibration constants will be replaced.

5.4. HOW DO I MANUALLY ENTER DIFFERENT A&B CONSTANTS IN A CALIBRATION EQUATION?

1. Go to the Calibration System screen.
2. Select the existing calibration to be modified from the calibration list box.
3. Click-on the Modify button.
4. The background color in the text and combo boxes changes from gray to white.
5. Click-on the A constant text box.
6. Use the Backspace or Delete keys to remove the existing A constant.
7. Enter the new A constant.
8. Click-on the B constant text box.
9. Use the Backspace or Delete keys to remove the existing B constant.
10. Enter the new B constant.
11. OPTION: Click on the Cancel button to cancel changes. The original figures are restored.
12. Click-on the Apply button to save the changes.
13. The background color in the text and combo boxes changes from white to gray.
14. The Modified date in the calibration list box updates.
15. The Modify button is active. Cancel and Apply are Inactive.
16. NOTE: If the existing calibration was entered using the Manual method, the newly modified calibration will remain Manual. If the existing calibration was created by regressive analysis of sample data, the Method box will change from Regress to Manual, but the existing data on the Samples for Calibration window will be retained.

5.5 HOW DO I ADD NEW SAMPLE DATA POINTS TO AN EXISTING CALIBRATION?

1. Go to the Calibration System screen.
2. Select a calibration from the calibration list view box.

Name	Type	M	Wt	Created	Modified
HW1	Logarithmic	AD	M	12/19/200...	2/9/2004...
HW2	Logarithmic	AD	M	12/19/200...	12/19/200...
HW3	Logarithmic	AD	M	12/19/200...	12/19/200...

3. Click-on the green Cal Samples button.
4. The Samples for Calibration window for the selected calibration is activated.
5. The Status box is Active.
6. Select the Input mode to enter the new Weight, Forté Number and Lab % AD data points.

Mode

Edit Input

Sample Number **3**

Status

Date

Weight Kgs

Forte

Lab %AD

7. Use the mouse to place the cursor in the Weight text box.
8. Enter the weight value in the text box. The weight may be entered with up to 5 total digits and one decimal place.
Formats= X.XXXX, XX.XXX, XXX.XX, XXXX.X, or XXXXX.
9. Use the Tab or Enter key to advance the cursor to the Forté text box or click on the Forté text box with the mouse.

10. Enter the Forté value in the text box. The Forté Number is a whole number of up to 5 digits ranging from 1 to 99999.
11. Use the Tab or Enter key to advance the cursor to the Lab %MC text box or click-on the text box.
12. Enter the Lab %MC value in the text box.
Formats = X.XXX, XX.XX, XXX.X, or XXXX.
Acceptable entries range from 0.000 to 9999.
13. Use the Tab or Enter key or the mouse to advance the cursor to the Update button. Press the Enter key or click-on the Update button to assign the new data to the calibration.

Mode	Input
Sample Number	4
Status	Active
Date	2/11/2004
Weight Kgs	253.6
Forte	346
Lab %AD	97.2
Update	

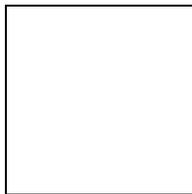
14. To enter additional points, repeat steps 6 to 13.
15. Close the window to return to the main Calibration System window.

5.6 HOW DO I PERMANENTLY REMOVE DATA POINTS FROM AN EXISTING CALIBRATION?

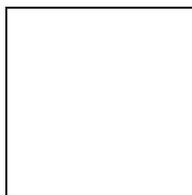
1. Go to the Calibration System screen.
2. Select a calibration from the calibration list box.
3. Click-on the green Cal Samples button.
4. The Samples for Calibration window is activated.
5. Select the Edit mode.

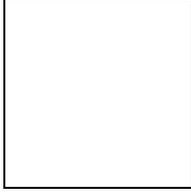


6. On the graph, click-on the point to be deleted, or select it from the sample list box. The selected point on the graph will be enclosed in a box.
7. Go to the menu bar and select Delete Selected Sample(s) from the Data Samples command menu.

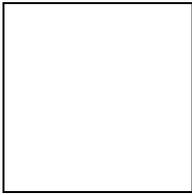


8. When the Delete Selected Sample(s) command is selected, a message box will immediately display asking the user to confirm the calibration deletion request. If NO is selected, no change will occur. If the user answers YES, the sample list box will update to show that the selected sample has been deleted by "graying out" the line of data. The point is removed from the graph. The A and B constants are updated.





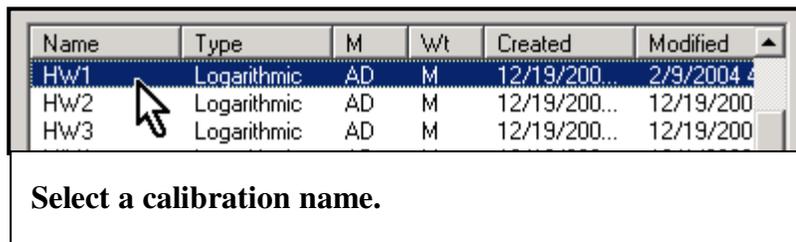
9. The deleted point set will be displayed in the top listview box as a "grayed-out" line of data for thirty days. After thirty days the point will be permanently deleted.
10. During the thirty-day time period, the deleted point may be restored to active status by highlighting it in the listview, and then applying the Restore Selected Sample(s) command in the Data Samples menu.



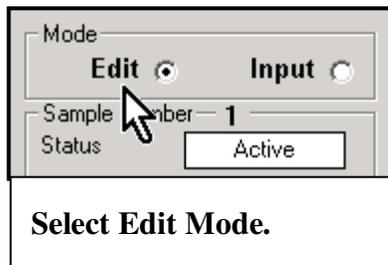
11. Exit the Samples for Calibration window.

5.7 HOW DO I TEMPORARILY REMOVE ACTIVE DATA POINTS FROM AN EXISTING CALIBRATION?

1. Go to the Calibration System screen.
2. Select a calibration from the calibration list box.



3. Click on the green Cal Samples button.
4. The Samples for Calibration window is activated.
5. Select the Edit mode.

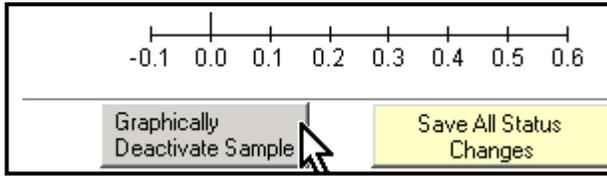


6. On the graph, click on the point to be de-activated, or select it from the sample list box. The current Status of the point in the Sample Number box is listed as Active.

Sample	Active	Weight Kgs	Forte	Lab %AD	Created	Changed
1	YES	244	888	90.9	12/19/2003	12/19/2003
2	YES	250	244	99.8	12/19/2003	
3	YES	255	543	95	2/11/2004	

Select the point to deactivate from the listview box or graph.

- Go to the graph and click on the Graphically Deactivate Sample button.



- When this command is selected the Status of the point will change from Active to Temporarily Inactive. The point on the graph will change from a solid blue triangle to a red outlined triangle. The current A and B constants will update.

Sample	Active	Weight Kgs	Forte	Lab %AD	Created	Changed
1	YES	244	888	90.9	12/19/2003	12/19/2003
2	YES	250	244	99.8	12/19/2003	
3	YES	255	543	95	2/11/2004	

Mode: Edit Input

Sample Number: 1

Status: Temp Inactive

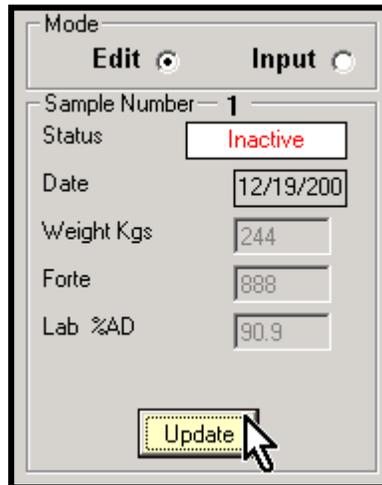
Date: 12/19/200

Weight Kgs: 244

3 Samples for Calibration - HW2 (Logarithmic)

Graphically Deactivating a Sample point.

- To confirm the Inactive state, click on the Update button in the Sample Number box. The Status changes to Inactive. The Active column in the sample list box changes from Yes to No.



Sample	Active	Weight Kgs	Forte	Lab %AD	Created	Changed
1	NO	244	888	90.9	12/19/2003	2/11/2004
2	YES	250	244	99.8	12/19/2003	
3	YES	255	543	95	2/11/2004	

Sample Point 1 is no longer listed as Active.

10. Click on the Save All Status Changes button to save the changes.

A B Coefficients				
Points	A	B	S.D.	Corr
All	-15.469	99.764	0.22	-1.00
Curr	-14.16	99.650	0.00	-1.00
Prev	-14.16	99.650	0.00	-1.00

-0.1 0.0 0.1 0.2 0.3 0.4 0.5 0.6

Graphically Reactivate Sample Save All Status Changes

New A and B values are saved.

11. Exit the Samples for Calibration window.

12. The A and B constants reflect the modified sample population.

Calibration System 80-4001-4.0

Calibration Print System Log Cal Maintenance SysDef User

Calibration Name Method

Moist Type	<input type="text" value="AD"/>	Coeff A	<input type="text" value="-14.1672"/>	<input type="button" value="Cancel / Done"/>
Wt units	<input type="text" value="Kgs"/>	Coeff B	<input type="text" value="99.6505"/>	<input type="button" value="Modify"/>
Cal type	<input type="text" value="Logarithmic"/>			<input type="button" value="Apply"/>

5.8 HOW DO I RESTORE A TEMPORARILY DE-ACTIVATED DATA POINT TO AN EXISTING CALIBRATION?

1. Go to the Calibration System screen.
2. Select a calibration from the calibration list box.
3. Click-on the green Cal Samples button.
4. The Samples for Calibration window is activated.
5. Select the Edit mode.
6. On the graph, click-on the point to be activated, or select it from the sample list box. The current Status of the point in the Sample Number box is listed as Inactive.

The screenshot shows the 'Samples for Calibration - HW2 (Logarithmic)' window. It contains a table of samples, a form for editing sample details, and a graph of %AD vs. weight. Sample 1 is highlighted as 'Inactive'.

Sample	Active	Weight Kgs	Forte	Lab %AD	Created	Changed
1	NO	244	888	90.9	12/19/2003	2/11/2004
2	YES	250	244	99.8	12/19/2003	
3	YES	255	543	95	2/11/2004	

Mode: Edit Input

Sample Number: 1
 Status: Inactive
 Date: 12/19/200
 Weight Kgs: 244
 Forte: 888
 Lab %AD: 90.9

Update

A B Coefficients

Points	A	B	S.D.	Corr
All	-15.469	99.764	0.22	-1.00

Graph: 2 Samples for Calibration - HW2 (Logarithmic)

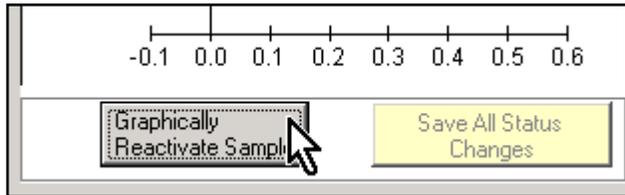
%AD vs. Weight (Kgs)

Graphically Reactivate Sample

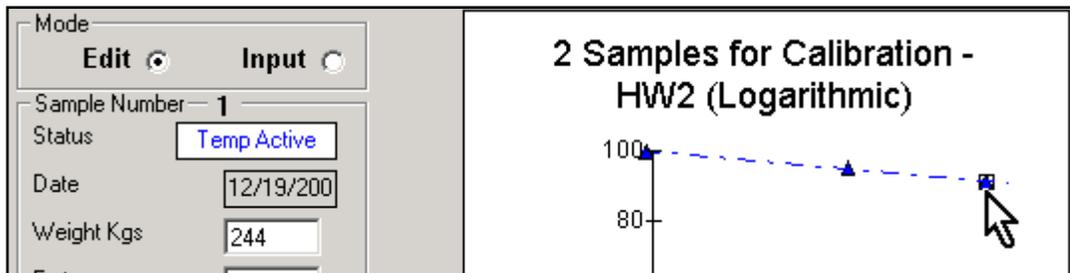
Save All Status Changes

Restoring a Temporarily De-activated Point.

- Go to the graph and click-on the Graphically Reactivate Sample button.



- When this command is selected the Status of the point will change from Inactive to Temporarily Active. The point on the graph will change from a red outlined triangle to a solid blue triangle. The current A and B constants will update.



- To change to the Active state, click-on the Update button in the Sample Number box. The Status changes to Active. The Active column in the sample list box changes from No to Yes.

A screenshot of a sample details form. The fields are: "Sample Number" set to 1, "Status" set to "Temp Active", "Date" set to 12/19/200, "Weight Kgs" set to 244, "Forte" set to 888, and "Lab %AD" set to 90.9. At the bottom of the form, there is a yellow "Update" button with a mouse cursor pointing at it.

Samples for Calibration - HW2 (Logarithmic)

Data Samples Zoom Print Maintenance

Sample	Active	Weight Kgs	Forte	Lab %AD	Created	Changed
1	YES	244	888	90.9	12/19/2003	2/11/2004
2	YES	250	244	99.8	12/19/2003	
3	YES	255	543	95	2/11/2004	

Mode: Edit Input

Sample Number: 1

Status:

Date:

Weight Kgs:

Forte:

Lab %AD:

A B Coefficients

Points	A	B	S.D.	Corr
All	-15.469	99.764	0.22	-1.00
Curr	-15.46	99.764	0.22	-1.00
Prev	-15.46	99.764	0.22	-1.00

3 Samples for Calibration - HW2 (Logarithmic)

All data points Active.

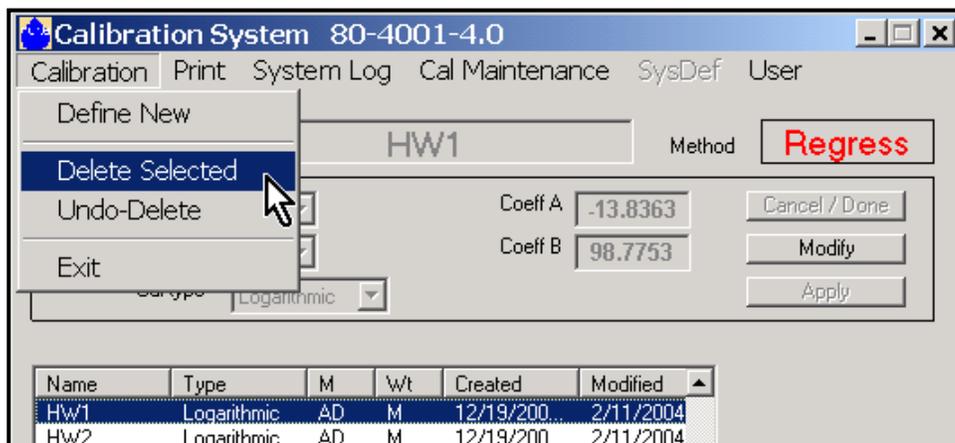
- Exit the Samples for Calibration window. The A and B constants now reflect the modified sample population.

5.9 HOW DO I DELETE AN EXISTING CALIBRATION?

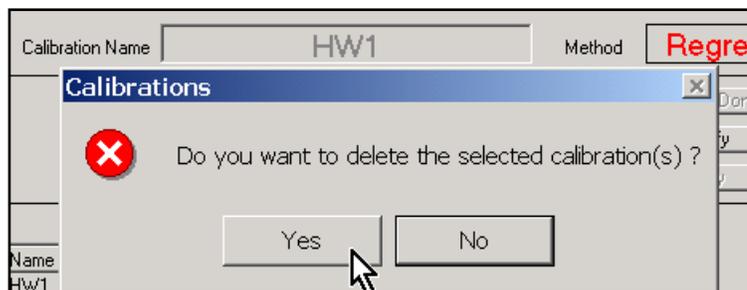
1. Go to the Calibration System screen.
2. Select the calibration to be deleted from the calibration list box.

Name	Type	M	Wt	Created	Modified
HW1	Logarithmic	AD	M	12/19/200...	2/9/2004...
HW2	Logarithmic	AD	M	12/19/200...	12/19/200...
HW3	Logarithmic	AD	M	12/19/200...	12/19/200...

3. Select the Calibration drop-down menu.
4. Click-on the Delete Selected command.

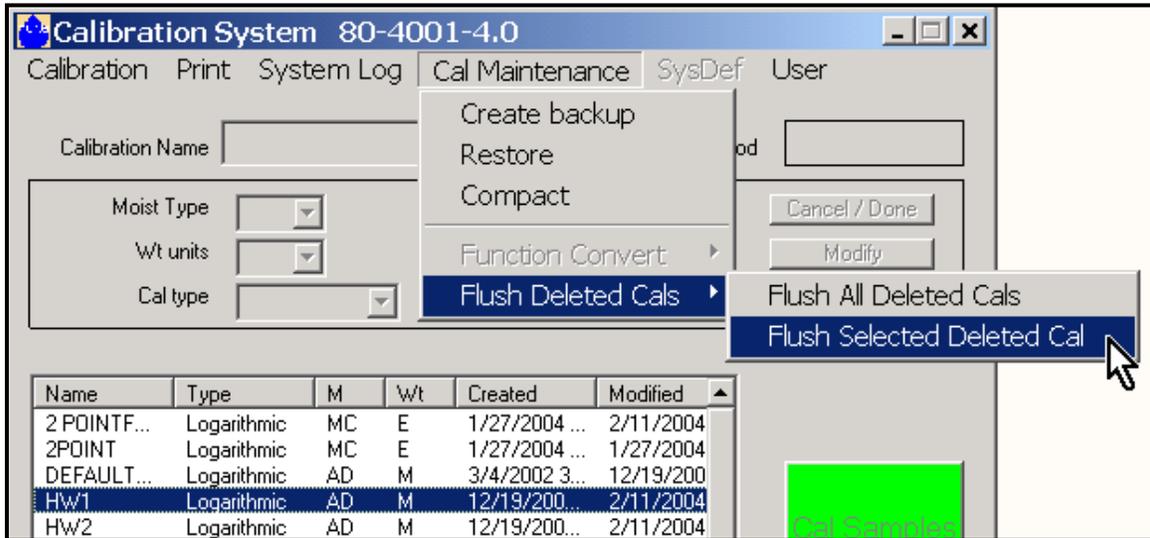


5. When this command is selected a message box will immediately display asking the user to confirm the calibration deletion request. If the user answers YES, the calibration list box will be updated to show that the selected calibration has been deleted. Otherwise, no change will occur.



6. The deleted calibration is displayed in light gray text in the calibration listview box. It can be restored by using the Un-delete command.

- The deleted calibration will be permanently removed from the list after thirty days. To immediately remove the calibration from the list, The Flush Deleted Cals command from the Cal Maintenance menu must be used.



Select the deleted calibration from the listview box. Use the Cal Maintenance Flush commands to remove the selected calibration, or all deleted calibrations, from the listview box.

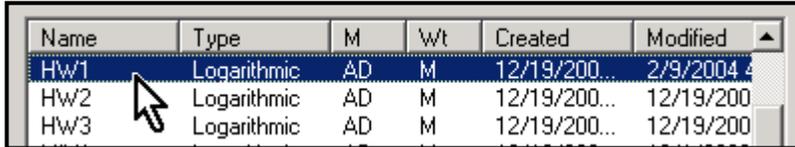
- A confirmation box will appear to confirm the permanent deletion of the selected calibration. Click-on the Yes button to remove the calibration from the listview.



The calibration is removed from the listview.

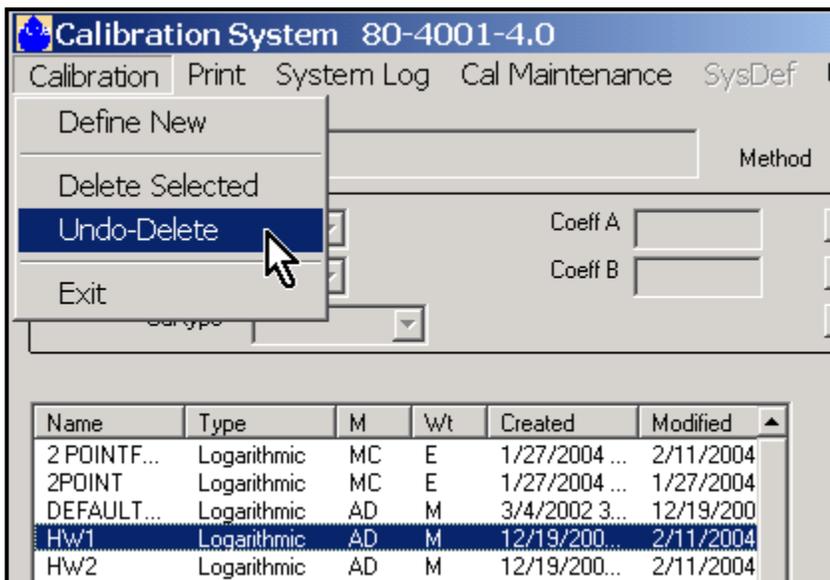
5.10 HOW DO I RESTORE A DELETED CALIBRATION?

1. Select the calibration to restore from the listview box. Deleted calibrations are displayed with light gray text.

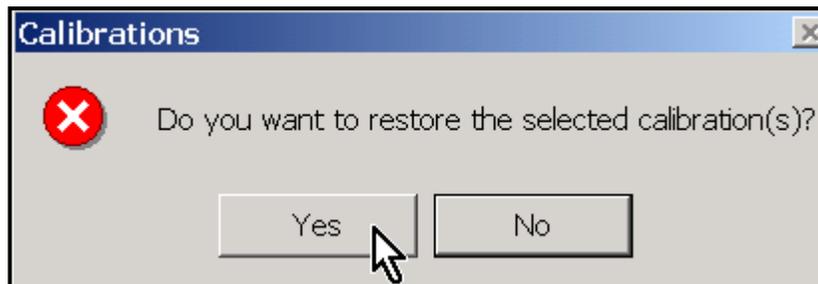


Name	Type	M	Wt	Created	Modified
HW1	Logarithmic	AD	M	12/19/200...	2/9/2004 4
HW2	Logarithmic	AD	M	12/19/200...	12/19/200
HW3	Logarithmic	AD	M	12/19/200...	12/19/200

2. Select the Calibration drop-down menu from the Calibration System window.
3. Click-on the Undo-Delete command.



4. The user is asked to confirm the restore of the deleted calibration.



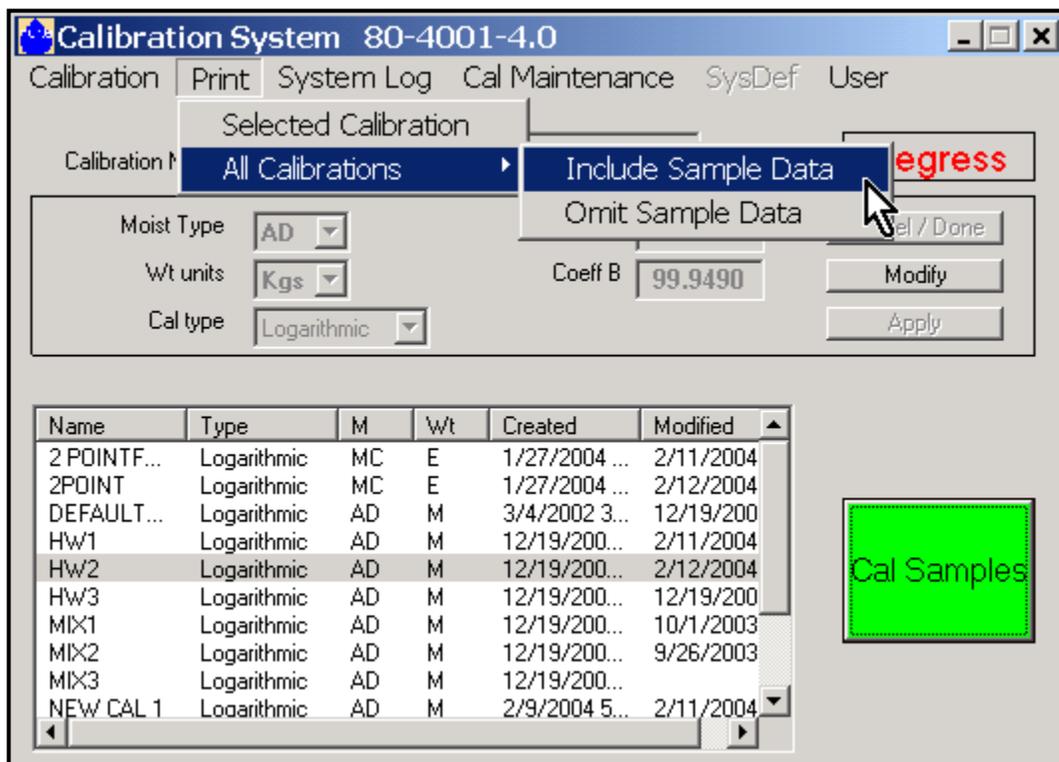
- When the Undo-Delete command is confirmed, the calibration list updates to show that the last deleted calibration has been restored. The calibration information in the listview is again displayed in black text.

DEFAULT...	Logarithmic	AD	M	3/4/2002 3...	12/19/200
HW1	Logarithmic	AD	M	12/19/200...	2/11/2004
HW2	Logarithmic	AD	M	12/19/200...	2/11/2004
HW3	Logarithmic	AD	M	12/19/200...	12/19/200

The deleted calibration is restored.

5.11 HOW DO I PRINT A COPY OF THE CALIBRATION DATA?

1. Go to the Calibration System window.
2. Select the Print drop-down menu from the Calibration System window.
3. To print a copy of the currently displayed calibration from the calibration list box, click on the Selected Calibration command. The A and B coefficients, the sample points and data, the Method, and the creation and modification dates are included in the print out.
4. To print a copy of all system calibrations, click on the All Calibrations command. The A and B constants, the Method and the creation and modification dates are included in the print out. The option to include or omit the sample data from the printout is available from the All Calibrations command.



5. The Forté System will send the output to the default Windows printer.

6. A sample output for one calibration is shown below.

Name	Coeff A	Coeff B	Created	Modified	Method
HW1	-13.3743	98.5388	02/12/04	02/12/04	Regress

Sample	Weight Kgs	Forte	Lab Value %AD	Created	Modified
1	251.5	777	92.6	2/12/04	
2	254.2	565	95.7	2/12/04	
3	249.3	238	98.7	2/12/04	
4	247.4	855	90.1	2/12/04	
5	248.9	437	94.2	2/12/04	

5.12 HOW DO I PRINT A COPY OF THE CALIBRATION GRAPH?

1. Go to the Samples for Calibration window.
2. Select the Print drop-down menu from the Samples for Calibration window.

Samples for Calibration - HW2 (Logarithmic)

Sample	Active	Weight	Force	%AD	Created	Changed
1	YES	244	888	90.9	12/19/2003	2/11/2004
2	YES	250	244	99.8	12/19/2003	
3	YES	255	543	95	2/11/2004	
4	YES	247.7	345	97.6	2/12/2004	
5	YES	251.34	726	93.2	2/12/2004	

Mode: Edit Input

Sample Number: 1

Status: Active

Date: 12/19/200

Weight Kgs: 244

Force: 888

Lab %AD: 90.9

Update

A B Coefficients

Points	A	B	S.D.	Corr
All	-15.264	99.949	0.37	-0.99
Curr	-15.26	99.949	0.37	-0.99
Prev	ActA	ActB	StDe	Regr

6 Samples for Calibration - HW2 (Logarithmic)

%AD

Graphically Deactivate Sample

Save All Status Changes

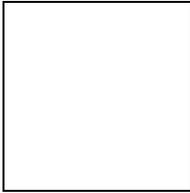
3. To print a copy of the graph for the current calibration, click on the Print Graph Image command. The A and B constants, the sample points and data, the Method, and the creation and modification dates are included the print out.

5.13 HOW DO I VIEW THE CALIBRATION SYSTEM LOG MESSAGES?

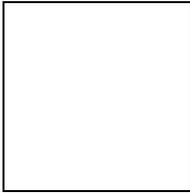
NOTE: The information in the Log File “Calibrations” window is stored in the System text file.

The default location of this file is C:\ForteSystem\Calibrations\ASCIILog.

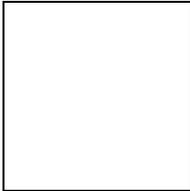
1. Go to the Calibration System window.
2. Select the System Log drop-down menu.
3. Click on the Show Log command.



4. The Log File Calibrations window is displayed.

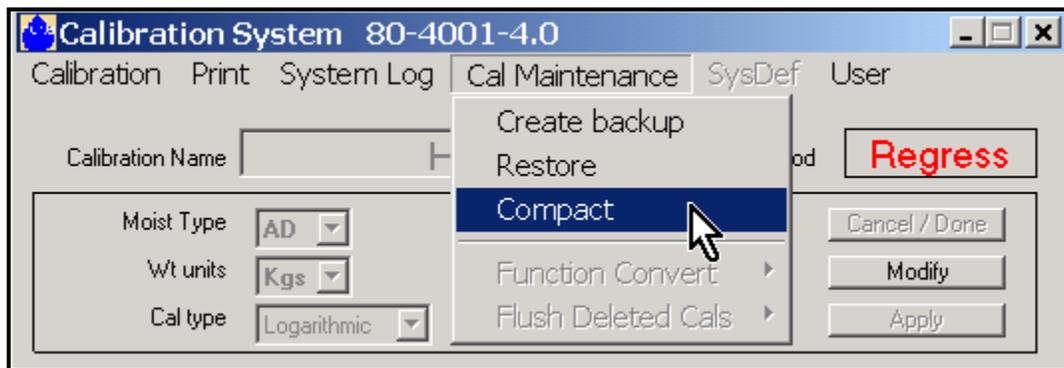


5. Clearing the log and log printing options are available from the Maintenance menu on the Log File screen.

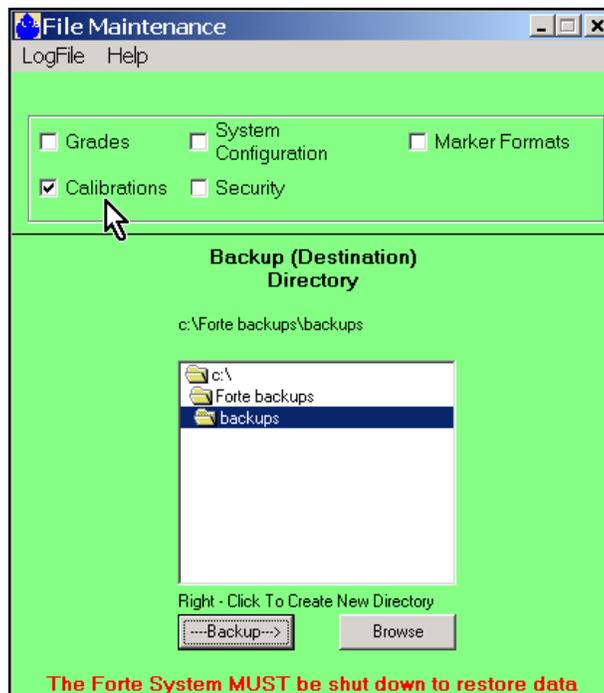


5.14 HOW DO I MAKE A BACKUP OF THE CALIBRATION DATA?

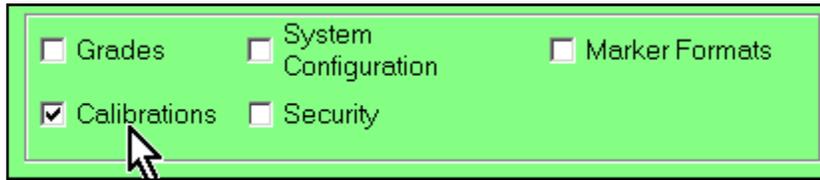
1. Go to the Calibration System window.
2. Select the Cal Maintenance drop-down menu. To reduce the backup size, use the Compact command to compact the Calibrations database. The database cannot be compacted if the main Forté Measuring System application is running. Compacting is NOT required before creating a backup file.



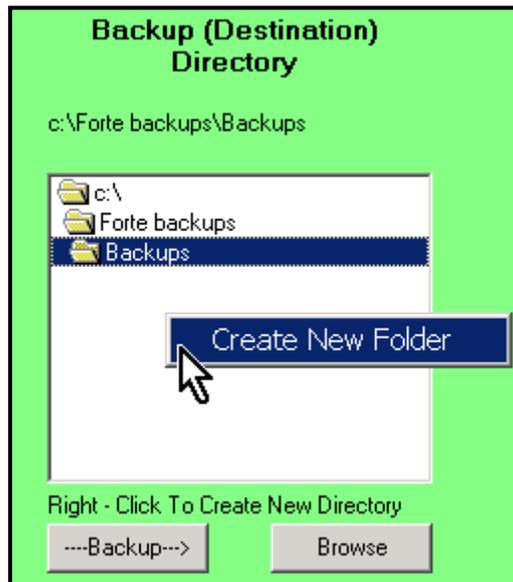
3. Clicking-on the Create Backup command opens the File Maintenance Window.



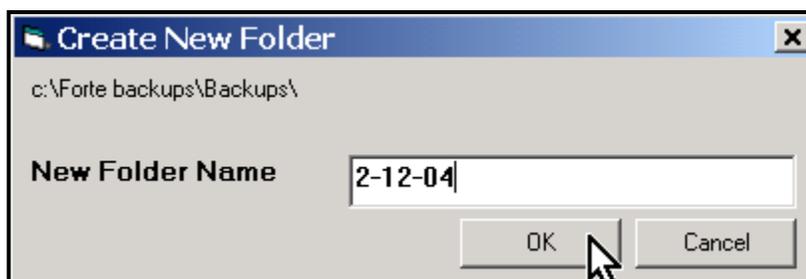
4. Select the Calibrations check box at the top of the window.



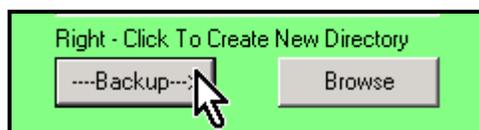
5. Select or create a destination folder for the backup file by using the directory box in the middle of the window and/or the Browse button.



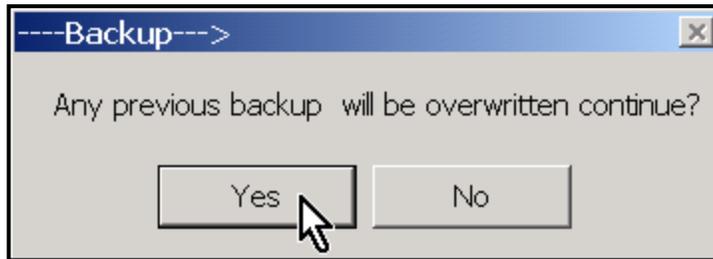
6. Right clicking in the directory listview box also allows the user to name a new backup folder. Enter the new folder name and select OK to continue.



7. Click the Backup button to start the backup.



8. A backup warning box appears. Select "Yes" to continue and overwrite any existing backup in the target director



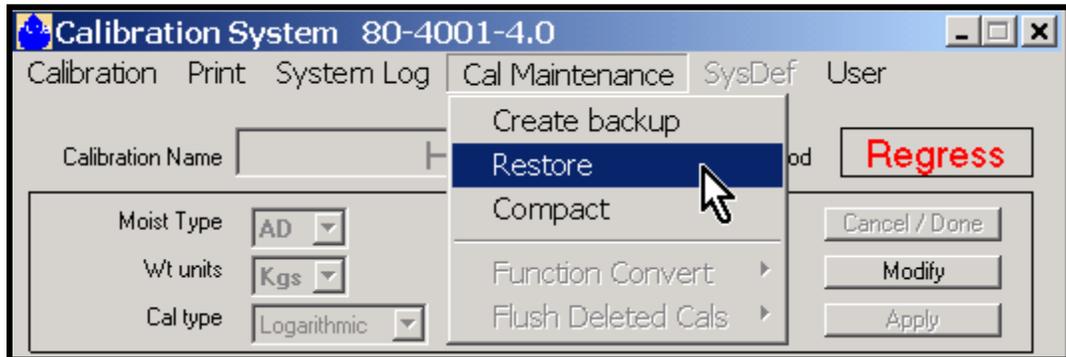
9. When the backup is complete, a message box appears. Click-on the OK button. The backup calibrations file, Calibrate.mdb, is now in the backup directory specified for Calibrations.



10. Exit from the File Maintenance window by using the Windows Close box in the upper right corner of the window.
11. Help is available by using the Help menu command in the File Maintenance window.
12. The Calibration file can also be backed up by the Backup/Restore Utility command. The command is found in the Applications menu on the Forté Measuring System window.

5.15 HOW DO I RESTORE CALIBRATION DATA?

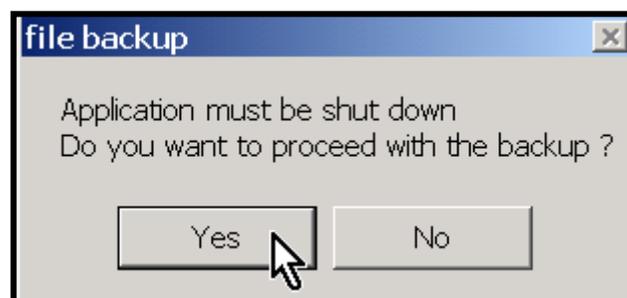
1. Go to the Calibration System window.
2. Select the Cal Maintenance drop-down menu and click-on the Restore command.



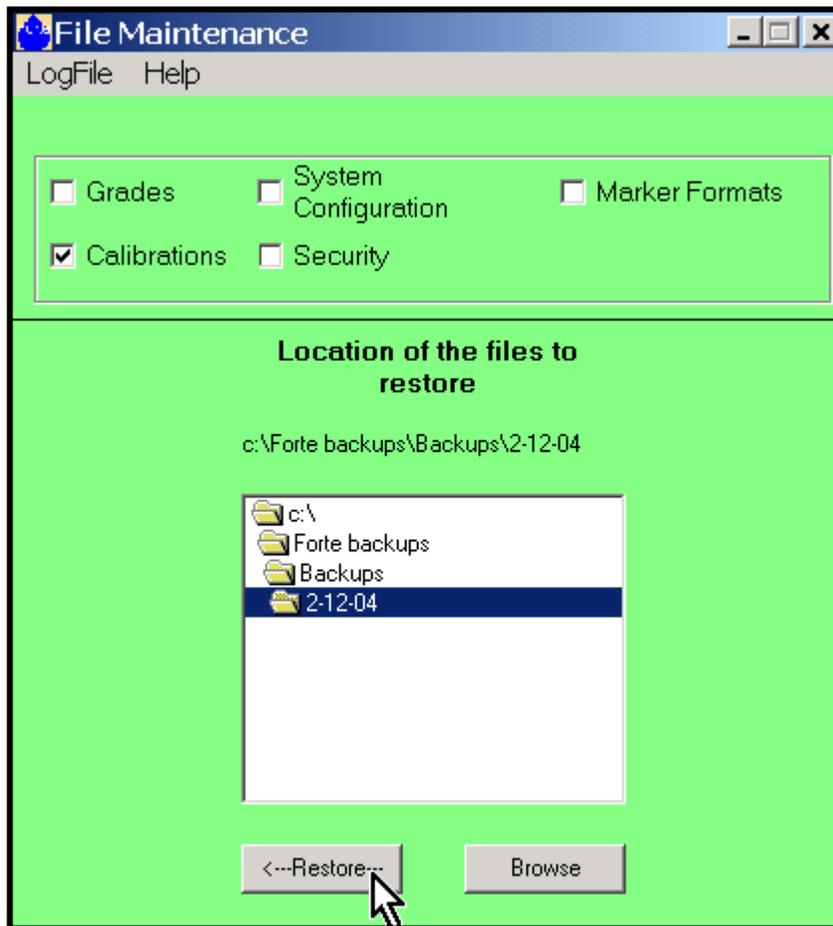
3. If the Forté Measuring System is running, it must be shutdown in order to restore the data correctly. Answer OK in the message box, then close the main Forté Measuring System application.



4. To use Restore, the Calibration System must also be closed. Click-on the Yes button to close the Calibration subsystem.



- The Calibration System window closes. The File Maintenance window opens. Select Calibrations and the folder from which the backup will be restored.



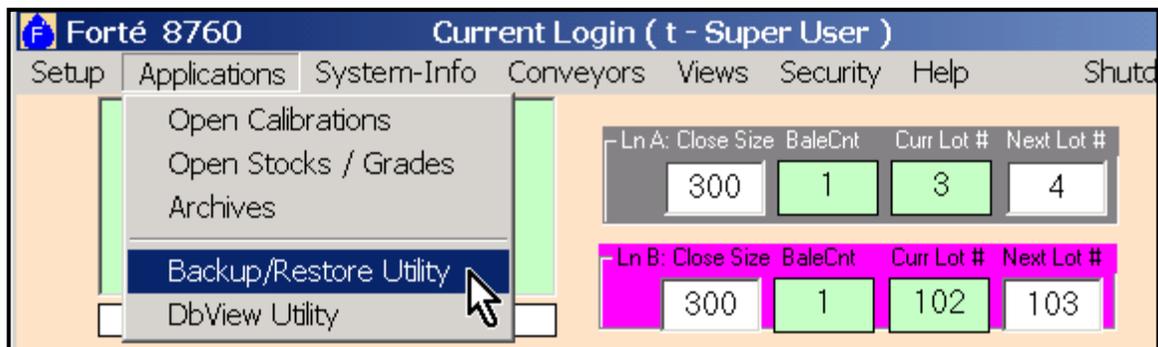
- The Restore command will overwrite any existing calibration data. Answer "Yes" to continue. The Calibrate.mdb file will be restored to the default location of C:\ForteSystem\Calibrations.



- Click-on the OK button in the Restore Complete message box to finish the restore procedure.



- Exit from the File Maintenance window by using the Windows Close box in the upper right corner of the window. The main application and Calibration System can both be re-started.
- Help is available by using the Help menu command in the File Maintenance window.
- The Calibration file can also be restored by the Backup/Restore Utility command. The command is found in the Applications menu on the Forté Measuring System window.



Close the main application before using the Restore utility.

5.16 HOW DO I CLOSE THE SAMPLES FOR CALIBRATION WINDOW, SAVING ANY NEW DATA OR EDITS?

1. Click on the Windows close box in the upper right hand corner of the Samples for Calibration window.
2. Another method to close the screen is to select the Close command from the Data Samples menu.

The screenshot shows the 'Samples for Calibration - HW2 (Logarithmic)' window. The 'Data Samples' menu is open, and the 'Close' option is highlighted. The table below the menu contains the following data:

Forte	Lab %AD	Created	Changed
888	90.9	12/19/2003	2/11/2004
244	99.8	12/19/2003	
543	95	2/11/2004	
345	97.6	2/12/2004	
726	93.2	2/12/2004	

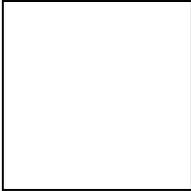
The graph on the right shows the calibration curve for 6 samples. The y-axis is labeled '%AD' and ranges from 0 to 100. The x-axis ranges from -0.1 to 0.6. The data points are approximately at (0.0, 100), (0.15, 98), (0.25, 96), (0.35, 94), (0.45, 92), and (0.55, 90). A dashed line represents the logarithmic fit.

3. The A and B calibration constants are saved to the Calibration System window.

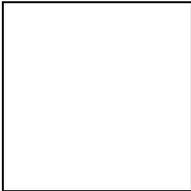
5.17 HOW DO I ACCESS THE CALIBRATION HISTORY MENU?

The calibration history menu can be accessed from the Calibration pull down menu on the Calibration System Sub-Menu. The calibration history menu stores previous calibration files but only those that are manually entered. Auto-generated calibration files are not stored.

1. Select the History (Manual Entries) menu under the Calibration Heading.
- 2.

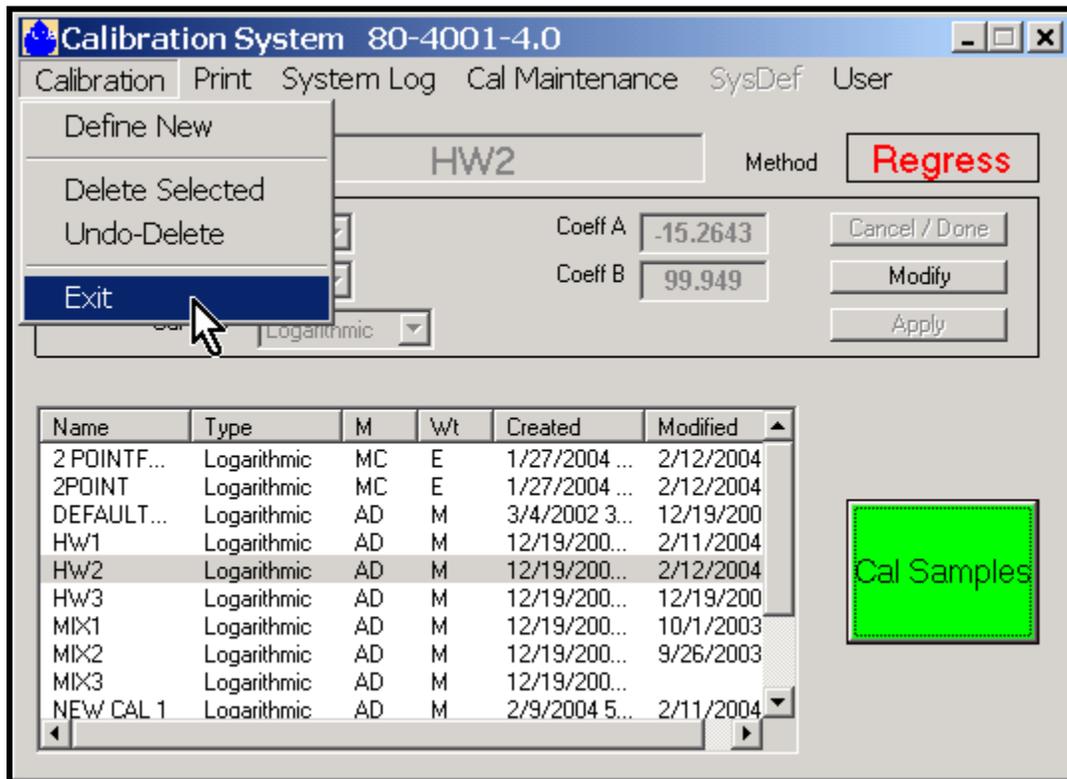


2. The Calibration History stores up to twenty manually entered Calibrations.



5.18 HOW DO I EXIT FROM THE CALIBRATION SUBSYSTEM?

1. Go to the Calibration System window.
2. Click-on the Windows close box in the upper right-hand corner of the Calibration System window.
3. Another method is to select the Calibration drop-down menu. Click-on the Exit command.



6.0 NOTES:

7.0 CUSTOMER SERVICE AND SUPPORT

Forté Technology Inc. provides telephone and e-mail support for up to ten (10) hours, computed in 15-minute increments, for a period of one (1) year after installation of a system. Thereafter support is charged at our standard hourly service rate, computed in 15-minute increments.

For information on current service rates, please contact Forté Technology Inc.

7.1 CONTACT INFORMATION

Forté Technology's normal hours of operation:

Monday through Friday - 08:00 to 17:00 Eastern Standard Time (EST).

Mailing/Shipping Address:

FORTÉ Technology, Inc.
125 John Hancock Road
Suite 9
Taunton MA, 02780 U.S.A.

Telephone: 1-508-802-9634

Fax: 1-508-824-2085

E-mail: service@forte-tec.com

Internet: www.forte-tec.com