

CHEMINSTRUMENTS

PROBE TACK TESTER

MODEL PT-1000

OPERATING INSTRUCTIONS

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PRODUCT DESCRIPTION

Congratulations on the purchase of your new ChemInstruments PT-1000 Probe Tack Tester. This versatile, user-friendly, carefully designed instrument allows you to determine loop tack values of adhesive laminates.

The unit has the following features:

- Automated test sequence.
- Selectable units of measure; Kilograms, grams, Newtons, Pounds, & ounces.
- Stores up to 20 tests in memory.
- Collected test data can be exported via RS232 port.
- Stored test data is available for review.
- Compatible with EZ-Lab System.



UNPACKING

ChemInstruments has made every effort to ensure that the PT-1000 arrives at your location without damage. Carefully unpack the instrument and check for any damage that might have occurred during shipment. If any damage did occur during transit, notify the **carrier** immediately.

The ChemInstruments PT-1000 consists of the following parts:

- The test frame, which includes the motor/drive mechanism and the data acquisition system.
- Probe and Annular Ring.
- 3 Calibration ring weights. .
- An envelope with this manual.

Make sure all of these components are present before discarding packaging material.

ASSEMBLY

Carefully remove the test frame/data acquisition assembly from the packaging and set it on a sturdy bench top. The space required for the unit is approximately 12" wide x 15" deep x 16" high. As with any precision piece of test equipment, it is preferable to locate the PT-1000 in an area where temperature and humidity are controlled to standard conditions ($72 \pm 2^{\circ}\text{F}$, $50 \pm 5\%$ relative humidity).

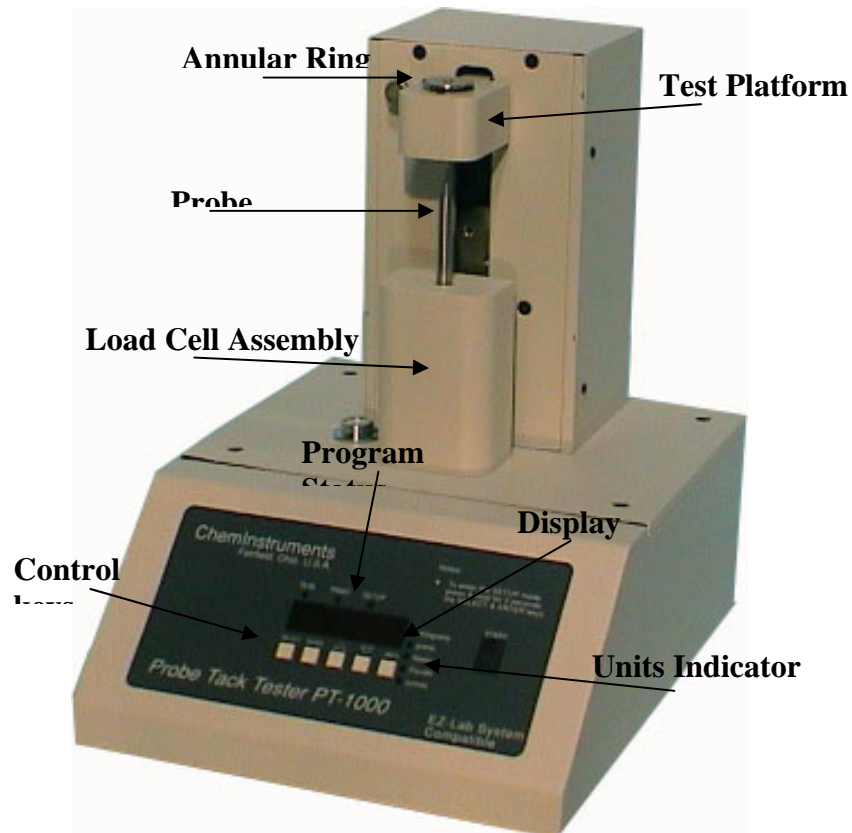
Insert the Annular Ring in the test assembly. Attach the Probe to the threaded bolt on the load cell. Connect the power cord to its receptacle on the backside of the control cabinet. Complete the connection by inserting the male end of the power cord into an appropriate AC outlet. Notice that the on/off power switch is located directly beside the power cord receptacle on the backside of the test frame. (See Photo 1 – PT-1000 Cabinet Back)

The ChemInstruments PT-1000 is now ready for calibration and use. Before proceeding with calibrating the PT-1000, it is advisable to become familiar with the Key Components of the PT-1000. These Key Components and a brief description of their function follow in the next section.



KEY COMPONENTS (See Photos 1 and 2)

- **POWER SWITCH** is located on the back panel of the control cabinet directly beside the power cord connection.
- **LOAD CELL ASSEMBLY** consists of the load cell and mounting.
- **DISPLAY** provides test data results and system status information.
- **PROGRAM STATUS INDICATOR** these three LED lights identify the operating status, either; Run, Print, or Setup Menus and are active when LED light is on.
- **UNITS INDICATOR** there are five LED lights indicating the units of measure for the data collected. They are, Kilograms, grams, Newtons, Pounds, and ounces.
- **CONTROL KEYS** control the various features of the data acquisition and operating system. There are 5 keys consisting of Select, Enter, Up↑, Down↓, and Units.
- **RS232 CONNECTION** data output port for downloading test data.
- **TEST PLATFORM-** holding the Annular Ring.
- **ANNULAR RING**
- **PROBE**



OPERATION

THEORY OF OPERATION

A test sample is secured on the annular ring per the test method and placed in the test assembly. The Probe is brought into contact with the test sample and retracted at a set speed. An electronic load cell measures the force, then feeds the information to a data acquisition unit. The data acquisition unit collects the data from the load cell and stores these data points in memory for use in calculating the maximum, minimum and average values. The data acquisition unit assigns a file number and saves the results in its memory. This data can be downloaded through the RS232 connection port, to an appropriate receiving program on your PC.

POWER UP

Turn on the master power switch, located on the back panel of the control cabinet directly next to the power line receptacle. The onboard computer will go through a self-test and then display the high (peak) force for the last test. The system is ready for conducting the next test.



Warning! Operating temperature for this equipment is 0 to 70 Celsius. The equipment needs to be completely free of condensation inside and out, before applying power."

MENU FORMAT

There are three distinct Menus for the PT-1000. They are the Run menu, Print menu, and Setup menu. Each menu has an indicator light that will be on when that menu is active. Within each menu there are a series of modes that display the test results, calibration sequence, and data storage/transfer.

Each of the three menus uses the Up ↑ and Down ↓ arrow keys to access the modes within the menu. When the desired mode is displayed the Enter key is used to access the parameter settings for that mode. Once a parameter selection is made the Enter key is used to record the setting and return to the Run menu.

The following is an outline of the three menus and the modes contained within each menu. Use this chart to quickly identify the location and proper path to access any of the settings.

RUN MENU

Modes

I Instantaneous force
A Average of last test
H Maximum of last test
L Minimum of last test

PRINT MENU

Modes

P Data transfer to PC
St Data storage on/off
dL Data storage delete

SETUP MENU

Modes

F Force
 LC Low calibration
 HC High calibration
rS Remote
bE Beep on/off

There is also a Units key that allows you to change the unit of measure to any of the five choices, Kilograms, grams, Newtons, Pounds, & ounces. The green LED lights to the right of the display indicate the current active unit of measure.

LOAD CELL CALIBRATION

It is important to calibrate the load cell to ensure that reliable data will be gathered. A calibration procedure is built into the software of the PT-1000. This procedure should be followed upon first use of the PT-1000 and whenever necessary thereafter. The following is the step-by-step procedure for calibrating the load cell.

MAKE SURE THE PT-1000 HAS BEEN ON AND RUNNING FOR 20 MINUTES BEFORE PROCEEDING WITH CALIBRATION. TO AVOID THIS WARM-UP PERIOD, LEAVE THE PT-1000 POWER ON WHEN NOT IN USE.

CALIBRATION PROCEDURE

1. Move the Test Platform assembly containing the Annular Ring to the upper idle position. Make sure the engaging pin is activated to lock the assembly in this position.
2. Simultaneously press the Select and Enter keys for 3 seconds to access the Setup menu.
3. When the “F” is visible on the Display, press the Enter key to access the calibration sequence.
4. At the “LC” display, determine the Low Offset Value desired (Typically 0.00). Make sure that you **do not** have any weight in contact with the Probe, and press the Enter key. The Display will change to, HC for high calibration value.

NOTE: the calibration sequence defaults to grams as the unit of measure. Make sure your calibration weights and entries are in grams.

5. At the “HC” display select a calibration weight (200 grams) and place the 200-gram ring weight on the Probe. Notice the hole in the ring weight fits over the tip of the Probe.
6. Set the High Offset Value on the Display to correspond with the selected calibration weight. You can change the displayed value by pressing the Up↑ and Down↓ keys.
7. Make sure the **calibration weight is completely at rest**, and then press the Enter key. The Display will change to the “I” mode showing the current reading of force.
8. Verify the calibration by placing a **different calibration weight** on the Probe. Confirm that the instantaneous force reading is the same as the selected weight resting on the Probe.

9. Repeat the calibration procedure if necessary.

SCALE

A current force reading is available by accessing the “I” mode in the Run menu. To access this mode, simply press the Up↑ key until the display shows “I ####” where the # will be the current force being measured. This reading should be used only as a quick reference.

NOTE: It is important to remember that the load cell is measuring forces at a rate of 400 times per second. The rate of display on the display screen cannot cycle at this speed. Therefore, the value in the “Scale” reading is only one of the many data points that the load cell is measuring and it is not necessarily representative of the total data reading.

AUDIBLE BEEP

The PT-1000 has an audible beep feature that sounds each time a Control Key is pressed. This provides confirmation that electrical contact has been made by the key. This audible beep feature may be turned off by following this procedure.

1. Simultaneously press the Select and Enter keys for 3 seconds to access the Setup menu.
2. From the Setup menu, press the Up ↑ key to select the Beep mode.
3. When the display shows “bE”, press the Enter key to access the settings.
4. Press the Up ↑ or Down ↓ keys to turn the beep feature off or on.
5. After selecting the appropriate setting press the Enter key to activate your choice and return to the Run menu.

RUNNING A TEST

Probe tack tests run according to written test methods, such as ASTM, PSTC, TLMI and others. These tests are conducted to determine the tack adhesive values of the selected PSA material as it is removed from a stainless steel test Probe.

Make sure the load cell has been calibrated before conducting a test.

TEST PROCEDURE

The ChemInstruments Probe Tack Tester is very simple to use. The following is the correct procedure for running a Probe Tack Test:

1. Secure the test sample on the Annular Ring per the test method and place the Annular Ring in the Test Platform.
2. Lower the Test Platform to the test position.
3. Press the Start Switch and hold it until the Test Platform starts to move. The machine will complete one full test cycle and automatically stop when finished.
4. The Test Platform will move downward and maintain probe contact with the sample for a dwell time of 1 second. The Test Platform will then move upward at 24 inches per minute. The load cell will measure the peak tension force on the Probe during this upward movement.
5. When the Test Platform returns to the start position, the Annular Ring can be removed and cleaned in preparation for the next test.
6. The Probe can be cleaned with a cotton swab and appropriate solvent when the Annular Ring is removed.
7. Repeat the procedure for additional test.

FILE MANAGEMENT

There are four file management functions available in the PT-1000. They are Review, Download, Store, and Delete. These four functions are available in three different modes within the Print Menu. The following sections describe each of these modes and the procedure for enacting each.

REVIEWING TEST DATA

When the Data Storage is turned on, test data is maintained in the memory of the PT-1000. This data is accessible for reviewing, downloading and deleting. The following procedures will describe how to review data contained within each test file.

1. Press the Select key to access the Print menu. The Display will show the letter “P” indicating Print mode.
2. Press the Enter key to access the Print mode.
3. The Display will show “P #####” where # represents the number of test currently stored in memory.
4. Pressing the Down ↓ and Up ↑ key will allow you to select any of the individually stored test files, each one indicated by a different number.
5. After selecting the file number to be reviewed, press the Select key two (2) times to access that particular file’s data. The Display will change to the “I” or current force reading.
6. Pressing the Up ↑ key will change the display from “I” to “Average, High, and then Low”. The numerical values displayed are the test data stored for the selected test file in the Print mode.
7. A new test can be run while in the review mode. Simply set up your test material in the Annular Ring, making sure you have a clean probe in place and push the Start button. The Display will revert to the current test data at the conclusion of the test.

NOTE: The current test data, (Average, High, and Low values) are always accessible in the Run menu by pressing the Up↑ key. Each push of the Up↑ key changes the display in the following sequence: I current, A average, H high, and L low.

DATA STORAGE

The PT-1000 can store test files in the memory or operate without storing test files. The following procedure describes how to turn the memory storage function on and off.

1. Press the Select key to select the Print Menu. The Display will initially show the “P” mode.

2. Press the Up ↑ to select the “St” storage mode.
3. Press the Enter key to access the Storage mode. The Display will show either, “St On” or “St OFF”.
4. Pressing the Up ↑ or Down ↓ key will toggle the Display between “St On” and “St OFF”.
When the St On is selected the PT-1000 will store up to 20 individual tests in files.
5. Press the Enter key to record the setting and return to the Run menu.

DELETING TEST DATA

The storage limit of the PT-1000 memory is 10 tests or 360 seconds. When this limit is reached, an error message, “SE FULL” is displayed. It is then necessary to delete test data from the memory in order to allow additional test data to be stored. Deleting test files before the memory is full is also accomplished with this procedure.

1. Press the Select key to access the Print Menu. The Display will show the letter “P” indicating Print mode.
2. Press the Up ↑ key to select the “dL” then press the Enter key to access the Delete mode. The Display will show “dl 00##” where the ## indicates the number of test files stored in memory.
3. Pressing the Select and Enter keys together for 3 seconds will delete the test files and return the Display to the Run Menu and I mode.

EZ-LAB SYSTEM 3.0

OVERVIEW

EZ Lab System software Version 3.0 is designed to enhance your model 1000 or 1100 ChemInstruments test platforms. The following procedure describes how to use the EZ-Lab System. Should you have any problems or questions after following this procedure, please call ChemInstruments at 513-860-1598, or contact us by e-mail at, ci@fuse.net.



INSTALLATION

Insert the EZ Lab disk into the computer. EZ-Lab will self install.

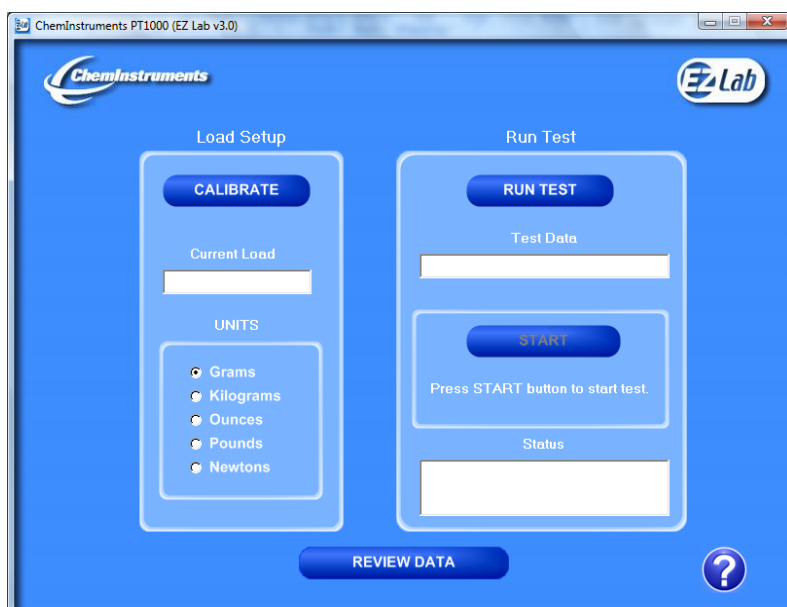
1. If EZ-Lab does not self install, select **RUN, (Drive):\Setup.exe**
2. Follow the on screen instructions to complete the software installation.
3. Connect the test platform's RS232 connection to the appropriate port on your computer with the provided RS232 serial cable.
4. On the computer, open the EZ-Lab program. This file will be located in a folder titled "EZ-Lab" on the C drive.
5. Double click on the file "EZLabv##". This will open the EZ-Lab System program and display the Main Screen.
6. Select the appropriate test platform button to activate the program. The operating screen will appear on your display.

OPERATION

This operating system is designed to provide all the necessary instructions on your computer screen. However, the following information will provide additional insight.

The Main Operating Screen is divided into 3 sections. The left and right sections are

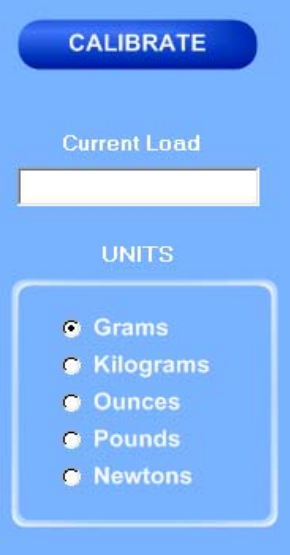
titled "**Setup**". Calibration of the load cell and choosing the units of measure are controlled in the left and right "**Load Setup**" section. The right section, titled "**Run Test**", is for starting the motor and setting the test speed.



CALIBRATION

In order for the load cell to measure forces correctly it is necessary to calibrate the system. The following procedure describes the calibration process. The test platform uses **Grams** for calibration.

1. Select the “**Calibrate**” button in the Setup section of the Main Screen.
2. Follow the on screen instructions exactly, and make sure to hang the appropriate weight on the load cell Grip when entering the high calibration value.
3. Verify the calibration by hanging some other known weight on the load cell Grip and checking the display in the Current Load field.
4. Click on appropriate bullet to select desired unit of measure.



CALIBRATE

Current Load

UNITS

- Grams
- Kilograms
- Ounces
- Pounds
- Newtons

UNITS

Click the bullet next to the unit of measure to select the desired unit for data collection and data analysis. All data will be displayed in the unit selected.

RUNNING REMOTE TEST

The “**Start**” button automatically starts a test. To stop the test, move the cart past the “**Stop**” switch on the PT-1000, or press the “**Stop**” button on EZ Lab.



Run Test

RUN TEST

Test Data

START

Press START button to start test.

Status

DATA SET INFORMATION

The screenshot shows the 'Data Set Information' window with the following elements:

- File Name**: Input field
- Operator**: Input field
- Test Method**: Input field
- Data Set ID**: Input field
- Sample Length**: Input field
- Sample Thickness**: Input field
- Failure Mode**: Input field
- Auto File Increment**: Unchecked checkbox
- FINISH**: Button
- ABORT**: Button
- Normalize Sample**: Section header
- Sample Width**: Input field
- Inches**: Selected radio button
- Feet**: Radio button
- Centimeters**: Radio button
- Meters**: Radio button
- Data Set Stored In the Following**: Section header
- File saved to: C:\EZ Lab\TestData\ar1000**
- Save File to Folder Specified Below**
- SPECIFY PATH**: Button

Upon completion of every test, the “**Data Set Information**” will automatically appear.

This allows the operator to record information about the test performed. It will also allow you select where test data is stored. All fields on the “**Data Set Information**” page are optional. The only required field is “**File Name**”.

File Name – the only required field on the Data Set Information page. You must enter a file name to save the test data.

Test Method – optional field.

The close-up shows the following input fields:

- File Name**: Input field
- Operator**: Input field
- Test Method**: Input field
- Data Set ID**: Input field
- Sample Length**: Input field
- Sample Thickness**: Input field
- Failure Mode**: Input field

Data Set ID – optional field.

Sample Length – optional field.

Sample Thickness – optional field.

Failure Mode – optional field.

AUTO FILE INCREMENT

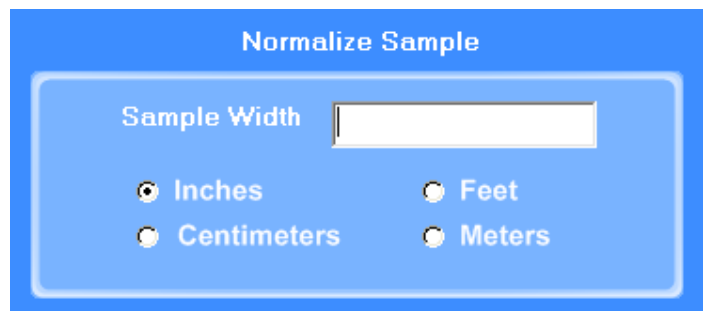
A blue rectangular button with a white square icon on the left and the text "Auto File Increment" in white.

“**Auto File Increment**” automatically assigns a sequential number to the “**File Name**”. It allows the operator to perform tests without having to rename each test, but add a number to the “**File Name**” to differentiate them. The feature is activated and deactivated by clicking the box. While active, you will not be able to change any information entered into the “**File Name**” field. EZ Lab will automatically assign sequential numbers in ascending order to each new test performed.

(**Example: File Name** – Test. Activating *Auto File Increment* will change the *File Name* Test to Test – 001. The next test performed will automatically be named Test – 002, then Test – 003 and so on.)

NORMALIZE SAMPLE

Normalize Sample allows you to record the width of the samples being

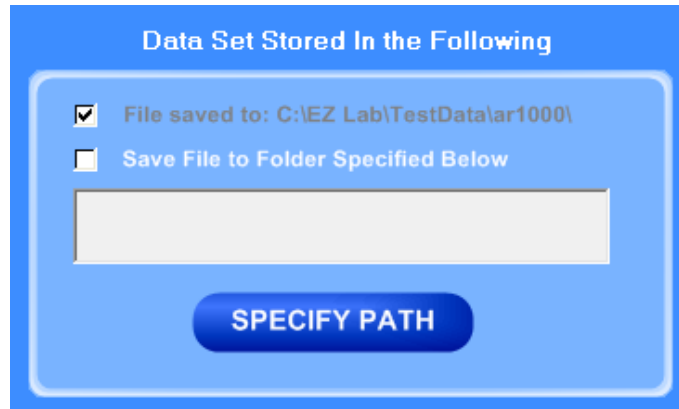
A blue dialog box titled "Normalize Sample". It contains a text input field labeled "Sample Width". Below the input field are four radio button options: "Inches" (selected), "Centimeters", "Feet", and "Meters".

Normalize Sample	
Sample Width	<input type="text"/>
<input checked="" type="radio"/> Inches	<input type="radio"/> Feet
<input type="radio"/> Centimeters	<input type="radio"/> Meters

tested. It also what the “**Normalize Data**” feature uses to calculate force per width.

STORING DATA

All data is automatically stored in a folder on the computers C: drive. EZ Lab also has the option to store the “**Specify Path**” button will allow you to select an alternative location to store your data. Once the selection is made



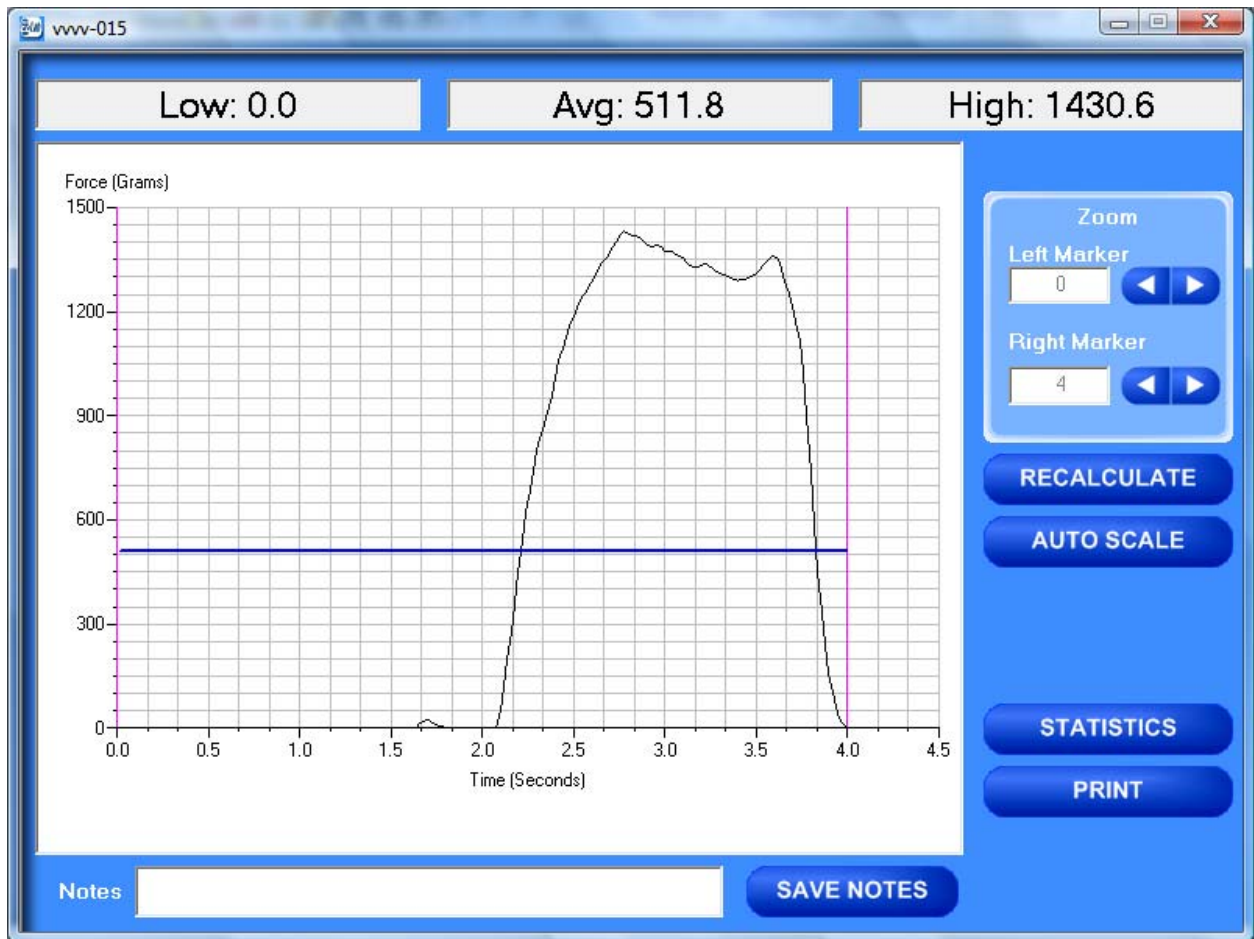
it will appear in the box above the “**Specify Path**” button. Click the box next to “**Save File to Folder Specified Below**” to activate the feature. Click the box again to turn the feature off. The previous entered storage location will remain in the box to show the last place data was saved.

FINISH AND ABORT



Once all the information has been correctly entered on the “**Data Set Information**” screen, click the “**Finish**” button. This will save the data and EZ Lab will automatically go to the “**Graph Screen**”. The “**Abort**” button discards the data from the previous test and EZ Lab automatically goes back to the “**Main Operating Screen**”.

GRAPH SCREEN



EZ Lab will automatically display the “**Graph Screen**” after the data has been entered on the “**Data Set Information**” screen. The Graph Screen will graph the profile of forces recorded during the test and will display the Low, Average, and High values.

CROPPING GRAPHS

The “**Graph Screen**” provides a cropping feature. Notice the red vertical lines (markers) located at the left and right sides of the graph. These markers can be moved horizontally on the graph by using the

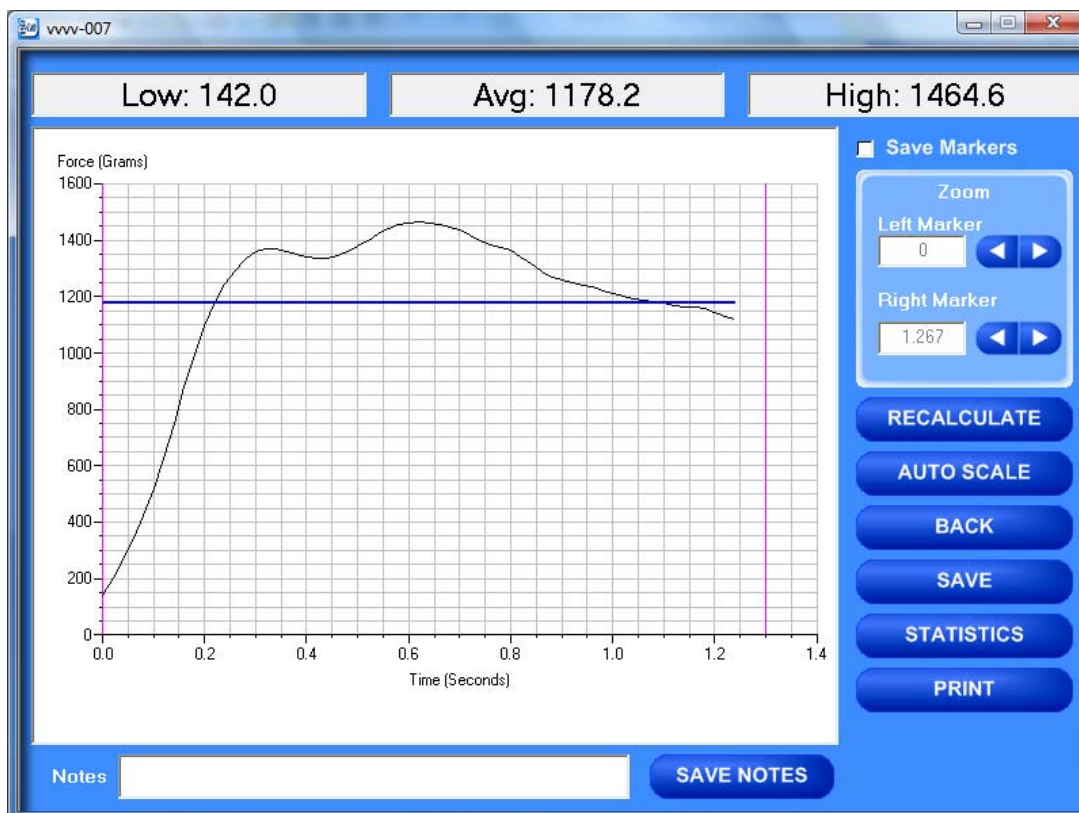


arrows labeled “**Left Marker**” and “**Right Marker**”. The field next to the arrows will indicate the position of the marker on the graph.

RECALCULATE

Note: *Cropping a graph will not erase the data saved from the original test.*

1. Using the arrows, move the left and right markers to the desired location.
2. Click the “**Recalculate**” button. This will change the data displayed on the graph page to reflect the area inside the markers. A graph can be recalculated up to 3 times.
3. After the “**Recalculate**” button has been selected, a “**Save Markers, Back, and Save**” buttons appear.



SAVE MARKERS

A blue rectangular button with a white checkmark icon on the left and the text "Save Markers" in white on the right.

EZ Lab automatically records the data from the entire test. The “**Save Markers**” feature will hold the place of the left and right marker for future tests. This will automatically crop all test performed while the feature is on. To turn this feature on, click the box located next to “**Save Markers**”. A check mark will appear in the box. To turn it off, click the box again and the check mark will disappear. Turning off this feature will reset the left and right marker to the left and right sides of the graph. Future tests will not be cropped automatically.

Note: When the feature is turned on, EZ Lab will save two different files. One file will include all of the data recorded from the test. The other file will be the data automatically cropped by using the “**Save Markers**” feature. These files will be differentiated by the suffix “**-RevA**”. The “**-RevA**” file will be the data automatically cropped by the “**Save Markers**” feature. (Example: Test-001 and Test-001-RevA)

AUTO SCALE

A blue rounded rectangular button with the text "AUTO SCALE" in white.

The “**Auto Scale**” button changes the scale of the Y axis of the graph. This feature allows for an enhanced view of the graph profile. Clicking the “**Auto Scale**”

button activates the feature. The button will change to “**Full Scale**”.

A blue rounded rectangular button with the text "FULL SCALE" in white.

Clicking the “**Full Scale**” button will restore the graph back to the original scale of the Y axis.

BACK



The “**Back**” button is used to undo changes made when cropping the graph. It will appear after the graph has been cropped by moving either of the markers and clicking the “**Recalculate**” button. “**Back**” will only undo the last recalculation done to the graph.

SAVE

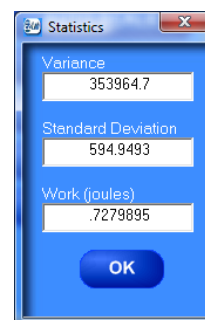


The “**Save**” button will save the cropped data as a new file with the same “**File Name**” as the original file but add the suffix “**-RevA**”. (Example: Test-001 becomes Test-001-RevA) Only one “**-RevA**” file per original test can be saved at a time. Anytime you click the “**Save**” button, a “**-RevA**” file will be saved. If there is an existing file name with a “**-RevA**” file already, the existing “**-RevA**” file will be replaced.

STATISTICS



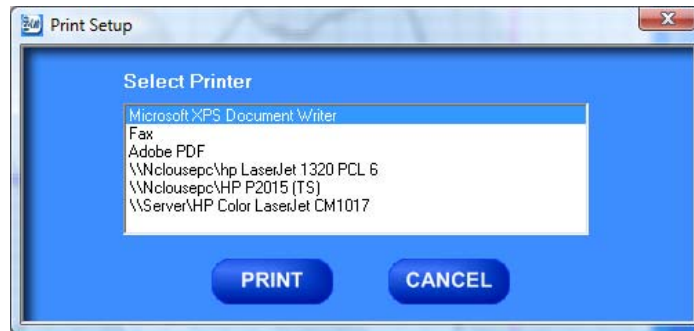
The “**Statistics**” button will open a new window and display the **Variance**, **Standard Deviation**, and **Work (joules)** of the data displayed on the graph. The data displayed on this screen will change anytime a change is made to the graph. To exit out of this screen, click either the “**OK**” button or the red “**X**” button. EZ Lab will automatically go back to the graph page.



PRINT



“**Print**” will allow you to use any printing feature available to your computer. Highlight the desired printer and click the “**Print**” button. This will take you to your computers print menu. You may exit this screen by clicking either “**Cancel**” or the red “**X**” buttons.



NOTES



The “**Notes**” field allows you to enter notes. Clicking the “**Save Notes**” button will save the notes. The notes will be stored with the information entered on the “**Data Set Information**” page.

HELP



The help button will open a “pdf” file of the machine manual. This manual contains operation instructions for both the test platform and the EZ Lab software. You must have Adobe Acrobat Reader on your computer to open “pdf” manual file. If the Adobe program is not already installed on your computer, a copy of it is included on the EZ Lab disk.

REVIEW DATA

REVIEW DATA

The “**Review Data**” button is located on the Main Operating Page. The “**Review Data**” feature will allow access previously recorded test data. The “**Review Data**” button will take you to the screen pictured below.

Data Review - C:\EZ Lab\TestData\ar1000\

Units: Grams

File Name	Date	Low	Avg	High
www-017-RevA	01/16/09 04:11 PM	25.5	1056.8	1577.0
www-017	01/16/09 02:39 PM	0.0	835.0	1577.0
www-016-RevA	01/16/09 01:58 PM	0.0	631.2	993.5
www-016	01/16/09 01:58 PM	0.0	391.6	1062.6
www-007-RevA	01/16/09 01:58 PM	1223.0	1363.5	1464.6
www-015	01/16/09 10:49 AM	0.0	511.8	1430.6
www-013	01/16/09 10:39 AM	0.0	116.0	790.8
www-012	01/16/09 10:38 AM	0.0	903.6	1619.1
www-011	01/16/09 10:38 AM	0.0	224.8	1528.5
www-009	01/16/09 10:15 AM	204.4	878.1	1069.9
www-008	01/16/09 10:13 AM	232.3	784.2	954.6
www-007	01/16/09 10:13 AM	142.0	1123.4	1464.6
www-006	01/16/09 10:06 AM	9.6	727.1	975.6
www-005	01/16/09 10:06 AM	0.0	518.0	914.0
www-004	01/16/09 10:06 AM	0.0	281.4	1585.0
www-003	01/16/09 10:06 AM	0.0	141.3	1169.7
www-002	01/16/09 09:31 AM	0.0	455.0	1174.5

Buttons: GRAPH, FILE DETAILS, DELETE, DELETE ALL, ADD TO LIST, REMOVE FROM LIST, CLEAR LIST, SAVE TO EXCEL, TABULATE DATA, OVERLAY DATA, ?

Every time the “**Review Data**” feature is accessed, the screen will automatically display the test data located in the **EZ Lab** test data folder located on your computers **C:** drive. The individual tests will be displayed in chronological order with the most recent test appearing on the top of the list. This screen will display the test’s File Name, date and time the test was performed, Low,

Average, and High values for the test performed. To access the test data from a test file, click the File Name. You will notice the File name is now highlighted. Once a file is highlighted, you may now use the buttons on the screen to access the test data.

GRAPH



The “**Graph**” button will access the “**Graph screen**”. This is the same “**Graph Screen**” displayed immediately following the “**Data Set Information Screen**”. For instructions on operating the “**Graph Screen**”.

FILE DETAILS



“**File Details**” will display all the information entered on the “**Data Set Information screen**”. It will also display the Test Speed, Length of Test, Average, High, Low, Stand Deviation, Variance, Work, and Notes recorded for the individual test. File Details will only display this information for one test.



DELETE



“**Delete**” will permanently delete the test file.

DELETE ALL

DELETE ALL

“Delete All” will permanently delete all the test files located in the **Test Data Folder** located on your computer’s **C:** drive.

HELP

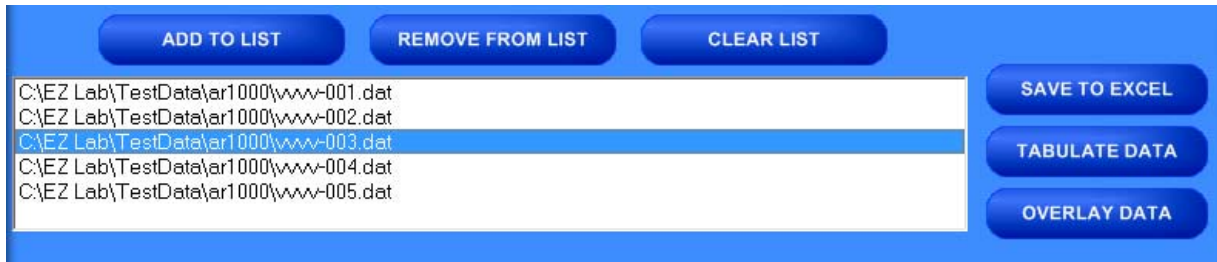


The “**Help**” button will open a **PDF** file of the machine manual. This manual contains operation instructions for both the test platform and the **EZ Lab** software. You must have Adobe Reader on your computer to open **PDF** manual file. If the Adobe program is not already installed on your computer, a copy of it is included on the **EZ Lab** disk.

The following instructions allow you compile test data from multiple files

File Name	Date	Low	Avg	High
www-016-RevA	01/16/09 01:58 PM	0.0	631.2	993.5
www-016	01/16/09 01:58 PM	0.0	391.6	1062.6
www-007-RevA	01/16/09 01:58 PM	1223.0	1363.5	1464.6
www-015	01/16/09 10:49 AM	0.0	511.8	1430.6
www-013	01/16/09 10:39 AM	0.0	116.0	790.8
www-012	01/16/09 10:38 AM	0.0	903.6	1619.1
www-011	01/16/09 10:38 AM	0.0	224.8	1528.5
www-009	01/16/09 10:15 AM	204.4	878.1	1069.9
www-008	01/16/09 10:13 AM	232.3	784.2	954.6
www-007	01/16/09 10:13 AM	142.0	1123.4	1464.6
www-006	01/16/09 10:06 AM	9.6	727.1	975.6
www-005	01/16/09 10:06 AM	0.0	518.0	914.0
www-004	01/16/09 10:06 AM	0.0	281.4	1585.0
www-003	01/16/09 10:06 AM	0.0	141.3	1169.7
www-002	01/16/09 09:31 AM	0.0	455.8	1174.5
www-001	01/16/09 09:31 AM	0.0	11.5	127.7

In order to compile test data from multiple tests, you must first create a list of the test files you would like to compile. To create a list, highlight a test file and click the “**Add To List**” button. To delete a test file from the list, click the desired file on the list and then click the “**Remove From List**” button. The “**Clear List**” button will clear all the files from the list. There is no need to highlight the files first.



SAVE TO EXCEL

EZ Lab collects data throughout the entire test. This is done by collecting individual data points. These individual data points are used to display the Low, Average, and High values displayed from the test. The “**Save To Excel**” feature allows you to view a list of the individual data points from every test on the created list. The values will be displayed in the unit of measure selected on the “**Main Operating Screen**”. Click the “**Save To Excel**” button. Follow the instructions on your screen to create a file name and save the file to the desired location on your computer.

TABULATE DATA

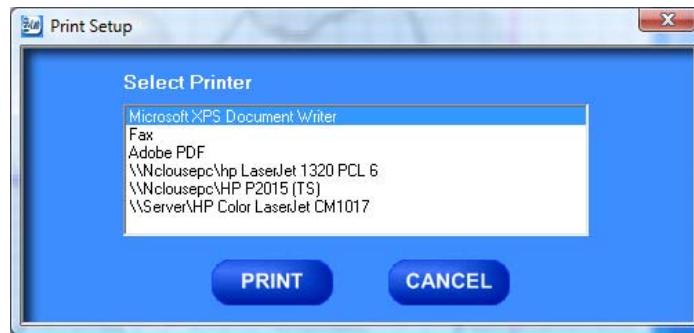
“**Tabulate Data**” will create a table of data from the files on the list created. Create a list of the desired test files and click the “**Tabulate Data**” button. The screen below will appear. The units of measure displayed will be the units selected on the “**Main Operating Screen**”.

analyze the test data. Click the “**Save To Excel**” button. Follow the on screen prompts to create a file name and save the table.

PRINT

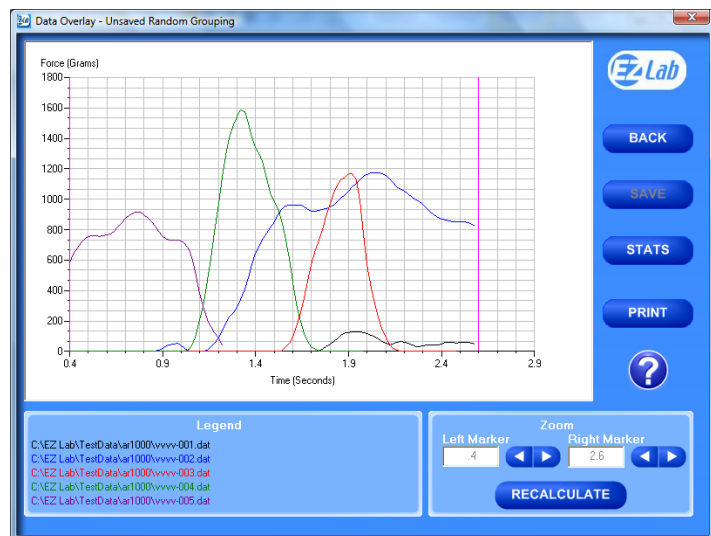


“**Print**” will allow you to use any printing feature available to your computer. Highlight the desired printer and click the “**Print**” button. This will take you to your computers print menu. You may exit this screen by clicking either “**Cancel**” or the red “**X**” buttons.



OVERLAY DATA

“**Overlay Data**” allows you to overlay graphs from up to five different tests. Create a list (see page?). Click the “**Overlay Data**” Button. The following screen will appear. The file names of the graphed tests will appear in the box labeled Legend. The file names are color coded to correspond with the colors of the graph.



CROPPING GRAPHS



The “**Overlay Screen**” provides a cropping feature. Notice the red vertical lines (markers) located at the left and right sides of the graph. These markers can be moved horizontally on the graph by using the arrows labeled “**Left Marker**” and “**Right Marker**”. The field next to the arrows will indicate the position of the marker on the graph.

Note: Cropping a graph will not erase the data saved from the original test.

1. Using the arrows, move the left and right markers to the desired location.
2. Click the “**Recalculate**” button. This will change the data displayed on the graph page to reflect the area inside the markers. A graph can be recalculated up to 3 times.
3. After the “**Recalculate**” button has been selected, a “**Save Markers, Back, and Save**” buttons appear.



BACK



The “**Back**” button is used to undo changes made when cropping the graph. It will appear after the graph has been cropped by moving either of the markers and clicking the “**Recalculate**” button. “**Back**” will only undo the last recalculation done to the graph.

SAVE

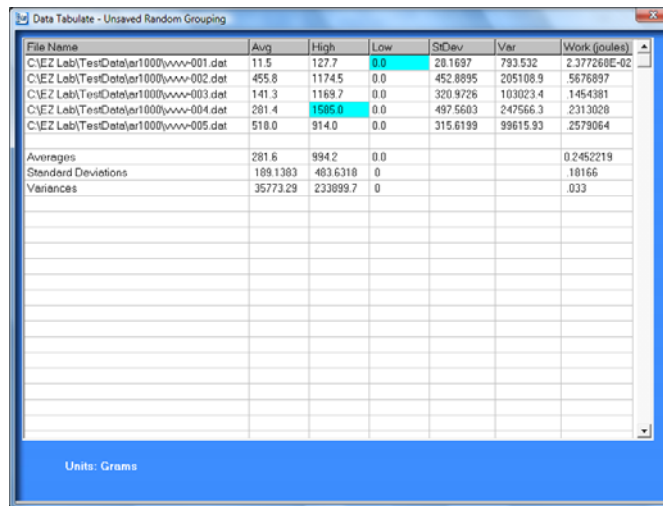


The “**Save**” button will save the cropped data as a new file with the same “**File Name**” as the original file but add the suffix “**-RevA**”. (Example: Test-001 becomes Test-001-RevA) Only one “**-RevA**” file per original test can be saved at a time. Anytime you click the “**Save**” button, a “**-RevA**” file will be saved. If there is an existing file name with a “**-RevA**” file already, the existing “**-RevA**” file will be replaced.

STATS



The “**Stats**” button will open a new window and display the **Low**, **Average**, **High Variance**, **Standard Deviation**, and **Work (joules)** of the data displayed on the graph.

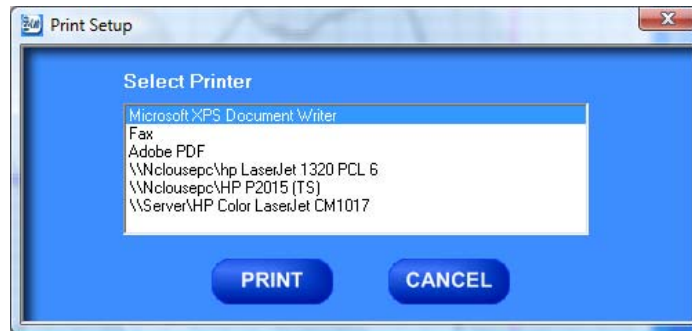
A screenshot of a software window titled "Data Tabulate - Unsaved Random Grouping". The window contains a table with 7 columns: File Name, Avg, High, Low, StDev, Var, and Work (joules). The data is organized into individual test rows and summary rows. The "Low" column for the first four tests is highlighted in light blue. The "Units: Grams" label is visible at the bottom of the window.

File Name	Avg	High	Low	StDev	Var	Work (joules)
C:\EZ Lab\TestData\ar1000\www-001.dat	11.5	127.7	0.0	28.1697	793.532	2.377260E-02
C:\EZ Lab\TestData\ar1000\www-002.dat	455.8	1174.5	0.0	452.8895	205108.9	5676897
C:\EZ Lab\TestData\ar1000\www-003.dat	141.3	1169.7	0.0	320.9726	103023.4	1454381
C:\EZ Lab\TestData\ar1000\www-004.dat	281.4	1595.0	0.0	497.5603	247566.3	2313028
C:\EZ Lab\TestData\ar1000\www-005.dat	518.0	914.0	0.0	315.6199	99615.93	2579064
Averages	281.6	994.2	0.0			0.2452219
Standard Deviations	189.1383	463.6318	0			18166
Variances	35773.29	233899.7	0			033

PRINT



“**Print**” will allow you to use any printing feature available to your computer. Highlight the desired printer and click the “**Print**” button. This will take you to your computers print menu. You may exit this screen by clicking either “**Cancel**” or the red “**X**” buttons.



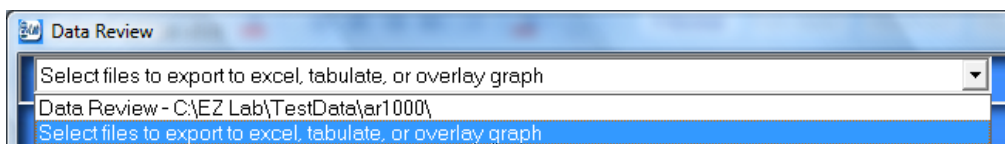
HELP



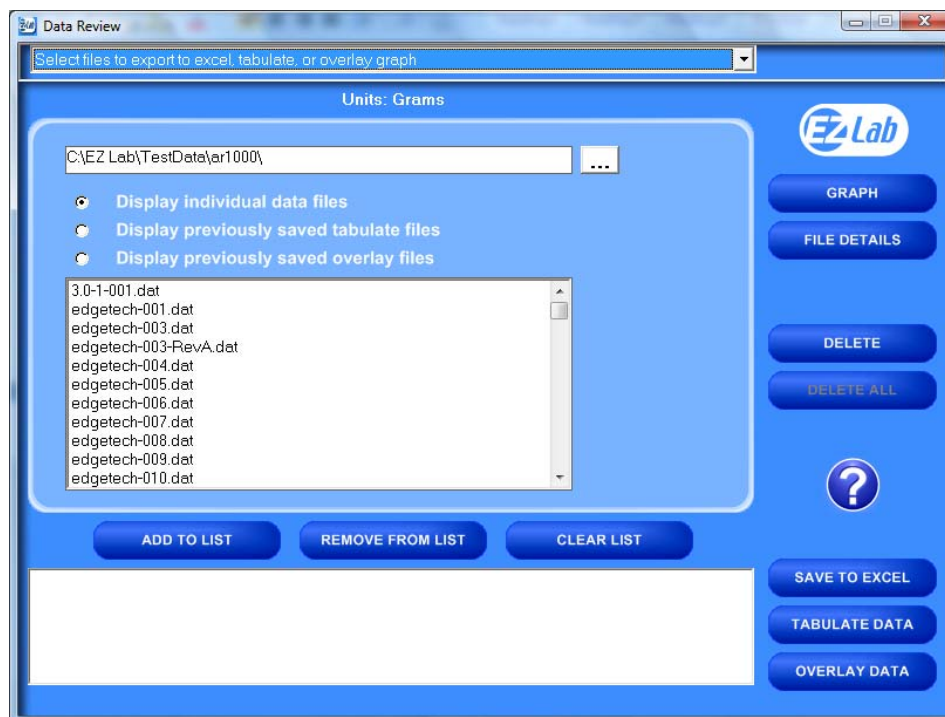
The help button will open a **PDF** file of the machine manual. This manual contains operation instructions for both the test platform and the **EZ Lab** software. You must have Adobe Reader on your computer to open **PDF** manual file. If the Adobe program is not already installed on your computer, a copy of it is included on the **EZ Lab** disk.

CHANGING DIRECTORIES

EZ Lab allows you to store your test data in multiple locations. Files can be stored in any location connected to your computer. This is accomplished on the “**Data Set Information screen**”. To change directories, click the drop down menu bar located on the top of the “**Review Data screen**”.



Click “**Select files to export to excel, tabulate, or overlay graph**” (above). This will bring you to the following screen.

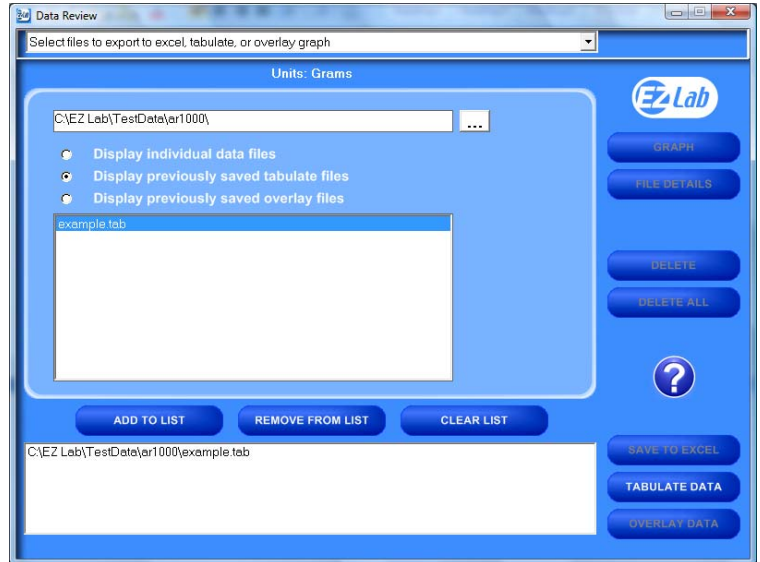


This screen will display all the test files located in the on your computer under the directory **C:\EZ Lab\TestData\ar1000**. To change directories, click the button located to the right of the directory address bar. Scrolling over the button will pop up a window “**Press this to change directories**”. Follow the on screen prompts to select files from a different directory.

This screen allows you all of the same features as the “**Review Data screen**”. It also allows you the ability to display previously saved tabulate files and overlay graphs.

PREVIOUSLY SAVED TABULATE FILES

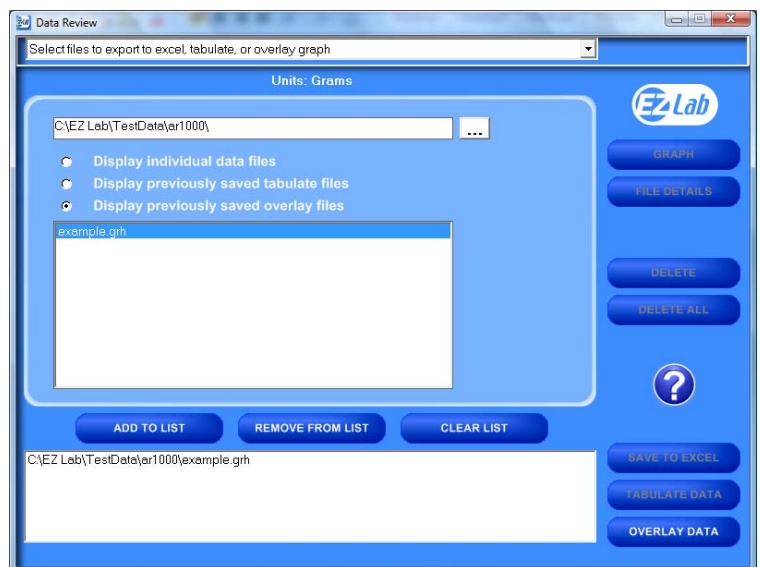
To recall previously saved tabulated files, click the bullet next to “**Display previously saved tabulate files**”. You will notice all previously saved tabulate files stored under this directory will appear in the box. Highlight the desired file and click “**Add to List**”. Click “**Tabulate Data**” to display the previously saved



tabulate file. To remove an item from the list, highlight the item on the list and click the “**Remove From List**” button. The “**Clear List**” button will automatically clear the list, there is no need to highlight the file first. You can only display one previously saved **Tabulate** file at a time.

PREVIOUSLY SAVED OVERLAY GRAPHS

To recall previously saved overlay files, click the bullet next to “**Display previously saved overlay files**”. You will notice all previously saved overlay files stored under this directory will appear in the box. Highlight the desired file and



click **“Add to List”**. Click **“Overlay Data”** to display the previously saved tabulate file. To remove an item from the list, highlight the item on the list and click the **“Remove From List”** button. The **“Clear List”** button will automatically clear the list, there is no need to highlight the file first. You can only display one previously saved overlay file at a time.

The Display previously saved overlay files screen will bring up the **“Overlay Graph”** screen. To operate this screen, see **“Overlay Data”**.

MAINTENANCE

As with any precision equipment it is important to provide care and maintenance to ensure proper performance and long life. The PT-1000 Probe Tack tester is a durable and well-designed piece of testing equipment requiring only minimal maintenance. Normal and weekly general cleaning is all that ChemInstruments recommends be done to maintain your PT-1000.

TROUBLESHOOTING

In the unlikely event you experience problems with your PLT-1000 Probe Tack tester, the following list of probable causes and corrective procedures may provide a solution.

Problem	Probable Cause	Procedure
SE Full message	10 test have been collected	Refer to Delete
No Data collected	Sample not attached	See Test Procedure
	Not in Run Menu	Refer to Running a Test
Data measurement consistently Low/High	Improper calibration	Check calibration
	Bad calibration	Refer to load cell calibration
Calibration drifts	Bad or damaged load cell	Replace load cell