

# Calspex 5.2



## USER MANUAL

[www.vantek-nem.com](http://www.vantek-nem.com)

Last Updated: 1/1/2005

Basic Features	page 3
Starting Up Calspex	page 5
Gage Types (GDF's)	page 6
Thread Calculator	page 9
Customer Database	page 18
Preferences	page 20
Calibration Reports (Certificates)	page 29
Gage R&R	page 41
Printing	page 44
Launch Other Modules from CCS5.2	page 47



## Basic Features

Calspex can create professional calibration and GR&R reports. Calspex enables you to be accurate and consistent, with little effort. If you are unfamiliar with the basic features of Calspex, browse through this Basic Features section before embarking on the report-writing process.

### The Toolbar and Tool Tips

The toolbar grants you quick and easy access to some of Calspex most popular features.



Figure 1: Calspex Toolbar

To learn the function of a particular button, simply rest your cursor on the button until the tool tip appears, providing you with a short description.

### The Menu Bar

The menu bar appears at the top of your screen and contains all the options available in the toolbar, plus many more.

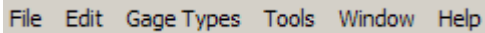


Figure 2: Calspex Menu Bar

When you click on any of the words in the menu bar, a pop-up menu appears, providing you with multiple options from which to choose.

*The letters you see underlined in the main menu and pop-up menus inform you of the various shortcuts with which they can be accessed.*

### The Flowchart

The flowchart that accompanies all calibration reports is an important feature of Calspex. It can be seen to the left as you complete a report.



Figure 3: Calspex Flowchart

Think of the flowchart as the framework of a calibration report. It maps out the main sections of a report and displays the sequence of events for a specific calibration. Furthermore, clicking on the various boxes of the flowchart allows direct access to the corresponding sections of the calibration report.

*When you begin a report, all text in the flowchart is white. As you complete the various portions, the corresponding text become yellow.*

## The Notepad

The Notepad is useful in that it serves as a built-in word processor. It allows you to write text, edit reports, and create reports. To access the notepad, click Tools in the main menu and select Start Notepad.

## Starting Up Calspex

When you first open Calspex, the following screen is displayed.

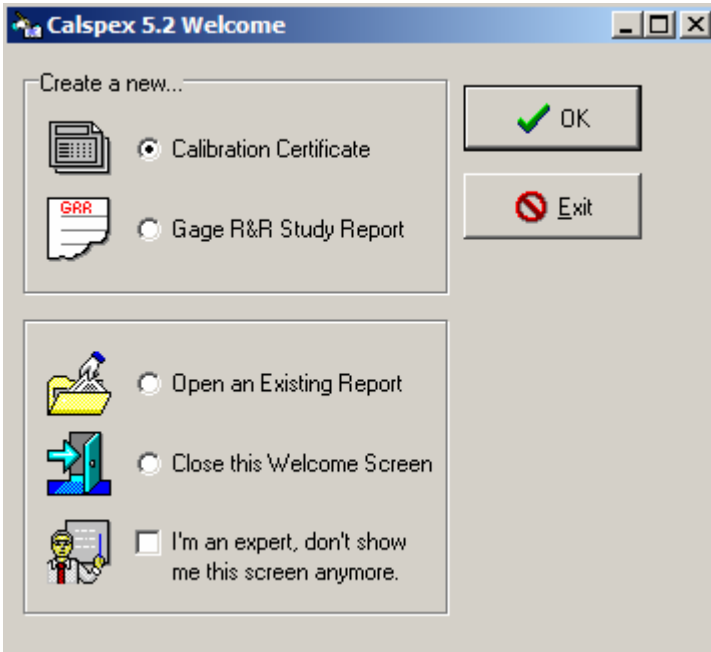


Figure 4: Calspex Welcome Screen

The Welcome Screen directly launches the user to Calspex most popular functions, thereby bypassing the usual steps.

## Gage Types (GDF's)

Before you begin entering data you must learn how to navigate and maintain your Gage Types, which are also known as GDF's (Gage Definition Files). One of Calspex most useful features is its ability to "learn" the types of gages you want to calibrate and the types of reports you want to generate. When you choose to define a Gage Type, you basically teach Calspex about the properties of your gage. They might include the types of Datasets you wish to include (if any), or any necessary parameters you would like to see included in the calibration report. Gage Types are essentially detailed templates that are used to create calibration reports.

### Creating/Editing Gage Types

**To define a new Gage Type or edit an existing one:**

**Step 1:** Select Gage Types from the Menu Bar.

**Step 2:** Select one of following options:

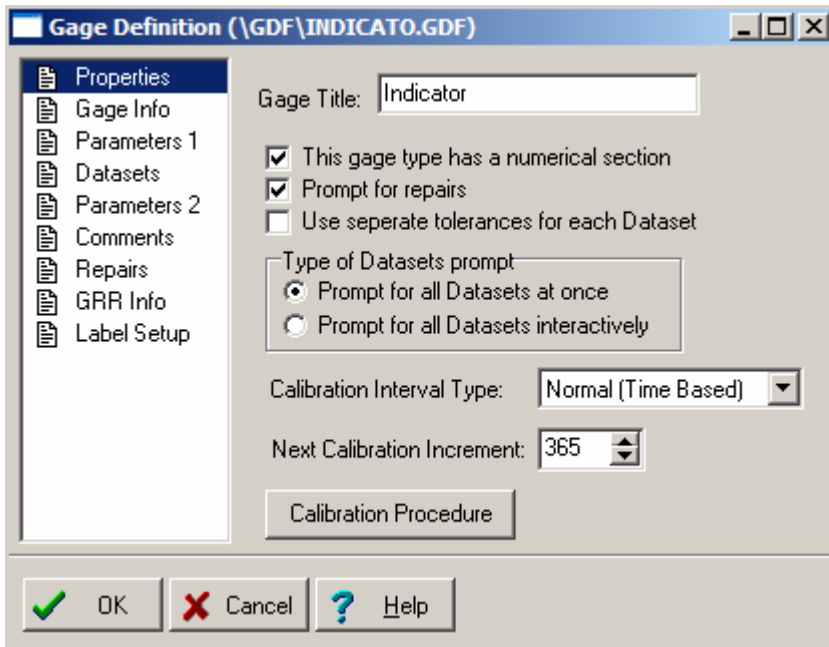
- ✓ New...if the gage you are defining is new and unique; unlike any other.
- ✓ Derive...if the gage you are defining is derived from, or shares the characteristics of a previously defined Gage Type.
- ✓ Edit...if you are editing the properties of a current Gage Type rather than defining a new one.
- ✓ Delete...if you wish to delete an existing Gage Type.

**Step 3:** If you select New or Derive, enter the title of the Gage Type in the New Gage dialog box. Then click OK or press the Enter key.

*If you are defining a new Gage Type, skip the following step.*

**Step 4:** Select a Gage Type from the Select Gage Type list. Then click OK or press the Enter key.

Notice that you have retrieved the Gage Definition window. The Gage Type name is displayed in the Gage Title field and the .gdf filename is displayed in the title bar. The Gage Definition window has seven tabs on the left-hand side.



You define your Gage Type by clicking on each tab and choosing from the options provided.

*Feel free to skip tabs if they do not pertain to your particular Gage Type.*

Defining your Gage Type essentially entails:

- ✓ Teaching Calspex about the properties of your gage
- ✓ Setting up certain defaults to be active each time you create a new report using the Gage Type
- ✓ Instructing Calspex to prompt you for certain information each time you use the given Gage Type

Figure 5: Gage Definition Window (Properties Tab)

*Keep in mind that even though you establish certain defaults here, they are by no means set in stone. During the calibration report process, you are able to skip functions or modify information.*

## The Properties Tab

The Properties tab allows you to choose which primary features you will use when creating a new calibration report. Does your gage have numerical values to be measured? Do you want to track repairs on this gage? Do you want to be prompted for all datasets at once? Are there specific procedures you want to follow during the calibration of this gage? These are the types of questions you answer in the Properties tab.

### To establish properties:

- Step 1:** Click on the Properties tab, if it is not already displayed.
- Step 2:** Check the first check box if the Gage Type has numerical values to be measured during the calibration. All numerical values are measured in Datasets. You will have master/nominal values and measured/actual values.
- Step 3:** Check the second check box if you want to track and report any repairs performed on this type of gage.
- Step 4:** Check the third check box if you want the flexibility of defining different tolerances for each Dataset.
- Step 5:** Determine the type of Dataset prompt by clicking one of the two radio buttons:
- ✓ Prompt for all Datasets at once...Selecting this option instructs Calspex to display all Datasets in a selection screen where you can select which Datasets will be used in the report at the beginning of the calibration.
  - ✓ Prompt for all Datasets interactively...Selecting this option instructs Calspex to prompt for each Dataset as they occur throughout the calibration.
- Step 6:** Setup the Calibration Interval Type for this type of gage:
- ✓ Normal (Time Based)...Select this option if you want to recalibrate this gage based on a specific time period (e.g. Every 6 months). Set the Next Calibration Increment to the number of days applicable.
  - ✓ Actual Usage Based...If you are using or are going to use Gage Tracking (see Recall Database), you can recalibrate gages based on the amount of actual usage on the gage. Enter the number of hours that the gage can be used until it needs to be recalibrated.
  - ✓ Part Number Based...This option should only be selected when using Gage Tracking (see Recall Database). It will monitor how many parts this gage has been used on, and then flag it for recalibration after a specific number of parts have been reached.

### The following step is optional:

- Step 7:** Click on the Calibration Procedure button to include specific procedures you wish the user to follow during the calibration process. Notice that you have retrieved the Calibration Procedure window.

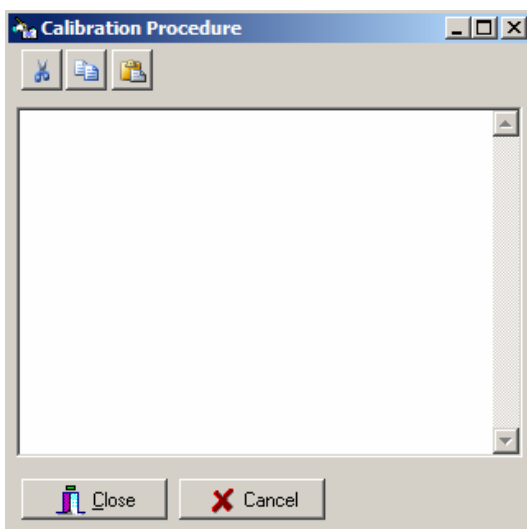


Figure 6: Calibration Procedure Window

*Only ASCII text can be entered (or pasted) here.*

## The Gage Info Tab

This tab allows you to define default values for the Gage Info screen that appears during a calibration report. Entering information in this screen (such as the Gage Description, Model and Location) allows Calspex to display that information by default each time you use the Gage Type to calibrate a gage. If there is no default information to enter, you may skip the following steps. These fields can be left blank.

*Information entered here becomes the default information for each gage of this type. It can be modified while entering a calibration report.*

The screenshot shows a window titled "Gage Definition (\GDF\THREADWO.GDF)". On the left is a tree view with the following items: Properties, Gage Info (selected), Parameters 1, Datasets, Parameters 2, Comments, Repairs, GRR Info, and Label Setup. On the right are several input fields: "Control #:" (empty text box), "Manufacturer:" (empty drop-down menu), "Model:" (drop-down menu with "Go/NoGo" selected), "Serial #:" (empty text box), "Gage Desc:" (text box containing "Thread Working Plug"), and "Location" (empty text box). At the bottom are three buttons: "OK" (with a green checkmark icon), "Cancel" (with a red X icon), and "Help" (with a blue question mark icon).

Figure 7: Gage Definition window (Gage Info tab)

### To establish gage information:

- Step 1:** Click the Gage Info tab.
- Step 2:** Type the gage's prefix in the Control # field.
- Step 3:** Press Tab to move to the Manufacturer field and enter the gage's default manufacturer or select one from the drop-down list. See the Mfg & Models Tab in Preferences for instructions on how to customize these drop down boxes.
- Step 4:** Tab to the Model field and enter the gage's default model or select one from the drop-down list. The Model field could include information such as a model #, size, gage type, etc.
- Step 5:** Tab to the Serial # number field and enter the gage's default serial number or manufacturers' serial number.
- Step 6:** Tab to the Gage Desc field and enter the gage's default description.
- Step 7:** Tab to the Location field and type the gage's default location.

## The Parameters 1 and Parameters 2 Tabs

These two tabs allow you to establish certain parameters for your Gage Type. Parameters are general features (as opposed to numerical values), which need to be verified and/or recorded on a calibration report. Threaded plugs for instance, might have the following parameters:

- ✓ GO thread size
- ✓ GO MOW size
- ✓ NOGO thread size



- ✓ NOGO MOW size

The Parameters 1 tab and the Parameters 2 tab function the same way. The first tab allows you to list the parameters to appear *before* entering numerical data (if any) in a calibration report. The second parameter set allows you to list the parameters to appear *after* entering numerical data (if any) in a calibration report.

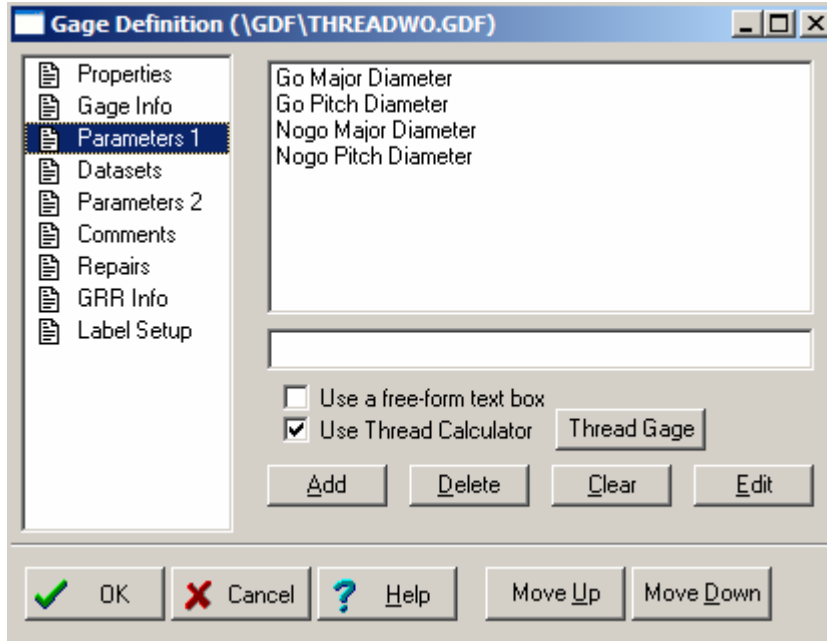


Figure 8: Gage Definition Window (Parameters 1 Tab)

#### To establish parameters:

- Step 1:** Click on either the Parameters 1 or Parameters 2 tabs.
- Step 2:** Click the Add button. Notice that the word BLANK appears highlighted in the both the dialog box and the text field below it. Simply type the desired parameter directly over the highlighted text. Continue clicking the Add button to repeat the process for as many parameters as you would like.
- ✓ To delete a parameter, simply highlight it in the list and click the Delete button.
  - ✓ To move a given parameter within the list or change the order of the parameters, simply highlight the item in the list and click the Move Up or Move Down buttons.
- Step 3:** Check the Use a free-form text box check box located in the Parameters 1 tab if you want a blank text box to appear during the calibration report. The free-form text box allows the user to record additional calibration data or procedures in paragraph form.

## THREAD CALCULATOR

The Thread Calculator is an important and useful feature in version 5.2 that allows you to have Calspex automatically determine thread dimensions based on a specific thread type. For example, when you are calibrating a threaded plug, you can tell Calspex that the plug is a UN Class 2, 2.50" nominal diameter with a 10 pitch. The Thread Calculator will then calculate ALL of the pertinent information. The resulting calculations can be incorporated into the various parameters you have established. Check the Use Thread Calculator check box if you are going to use these features in your Gage Type.

Several different windows are used for this setup. From the Parameters 1 tab use the Thread Gage button to bring up the following window:

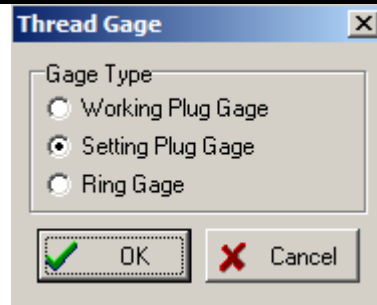


Figure 9: Thread Gage Type Window

This window allows you to choose what type of gage you will be calibrating. This setting affects the entire gage definition file.

To assign thread dimensions to specific parameters, simply double click on the parameter in the list or click the Edit button. The following window will appear:

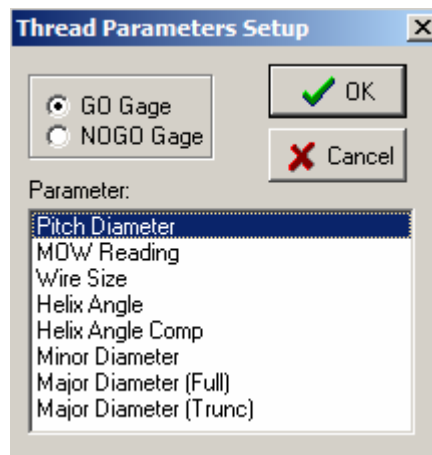


Figure 10: Thread Parameter Setup Window

Select either the GO Gage or the NOGO Gage radio button. Then click the appropriate dimension you want to automatically appear in the selected parameter. Click OK when you are finished. Continue to use this Thread Parameter Setup for each parameter in your list.

## The Datasets Tab

The Datasets tab enables you to define the kind of Datasets (numerical values) you wish to include for a particular Gage Type. The Datasets tab looks similar to the Parameters 1 and Parameters 2 tabs and functions in much the same way.

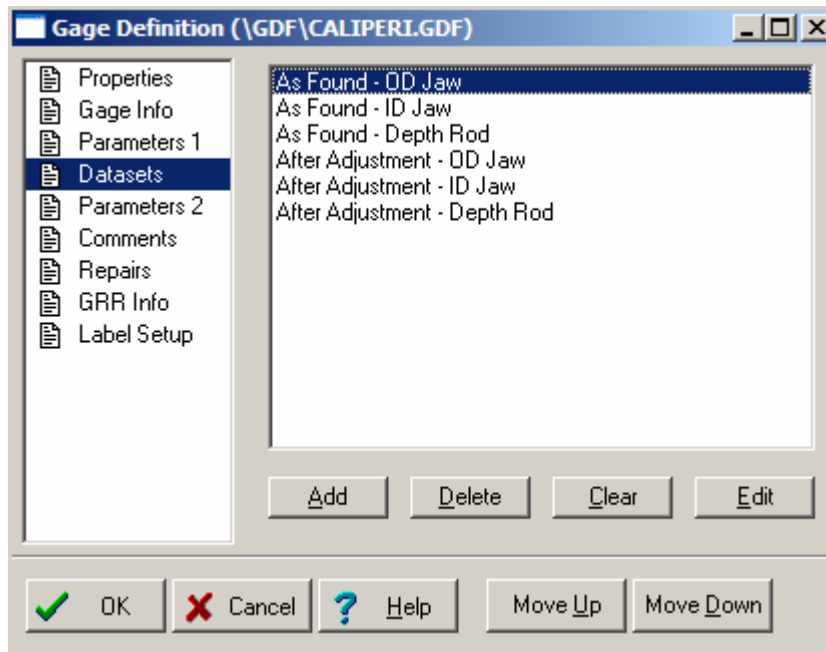
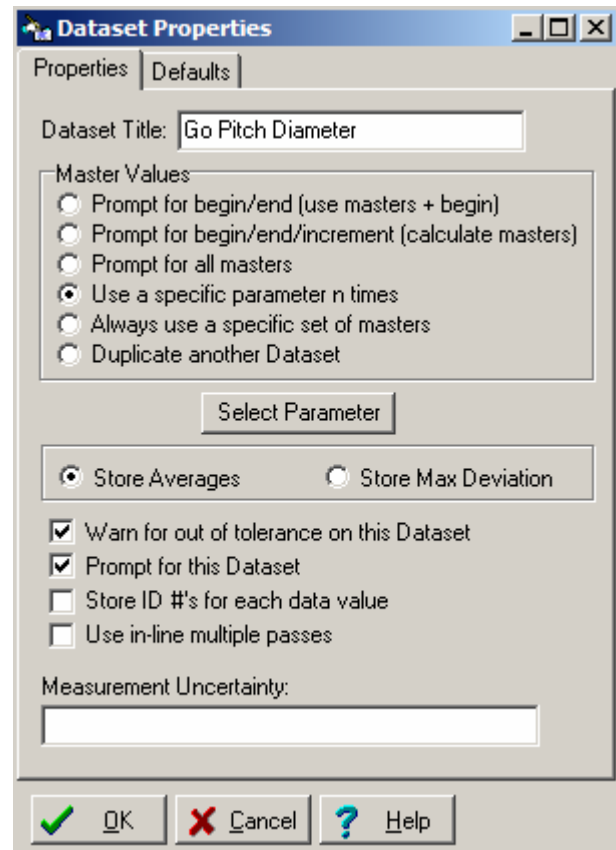


Figure 11: Gage Definition Window (Datasets Tab)

### To establish Datasets:

- Step 1:** Click on the Datasets tab.
- Step 2:** Click the Add button. Notice that the words NEW DATASET appear in the dialog box. Continue clicking the Add button to include as many Datasets as you like.
- Step 3:** To further define a particular Dataset, highlight it in the list and click on the Edit button, or simply double click on the desired Dataset. Notice that you have retrieved the Dataset Properties window. The Dataset Properties window consists of three tabs:
- ✓ Properties tab
  - ✓ Defaults tab
  - ✓ Master Values tab
- Step 4:** Click on the Properties tab, if it is not already displayed.
- Step 5:** Give your Dataset a title by typing in the highlighted Dataset Title field.
- Step 6:** Determine how the master values for this Gage Type are calculated by selecting an option from the master values radio button group:



- ✓ Prompt for begin/end...Selecting this option instructs Calspex to take the beginning master value and add it to each master value. See Step 16 below for more information on using the begin/end option.

Figure 12: Dataset Properties Window

- ✓ Prompt for begin/end/increment...Selecting this option instructs Calspex to calculate each master value starting with the Begin Master value and proceeding to the End Master value in the increment which you specify.
- ✓ Prompt for all masters...Selecting this option instructs Calspex to prompt you for all master values at the time of calibration. Use this option when the number of master values, or the master values themselves, change from one calibration to another.
- ✓ Use a Specific Parameter n times...Selecting this option instructs Calspex to use the value of a parameter listed in the Parameters 1 tab and use it as a master value(s). Notice that when you click on this option, a list of those parameters appears. Simply double click on the desired one or highlight it in the list and click OK. When prompted, enter the number of times you want the value repeated and click OK or press the Enter key.
- ✓ Always use a specific set of masters...Selecting this option instructs Calspex to use the same master values for each gage of this type. The user is not prompted for master value information while performing the calibration.
- ✓ Duplicate another Dataset...Selecting this option instructs Calspex to duplicate master values from another Dataset. Notice that when you click on this option, a list of Datasets appears. Simply double click on the desired one or highlight it in the list and click OK or press the Enter key.

*The Properties tab determines the method by which Calspex calculates master values. The Master Values tab allows you to enter the master values themselves.*

**Step 7:** Determine the type of information stored when multiple passes are used during a calibration.

- ✓ Click the first radio button if you want Calspex to store the average of measurements taken during multiple passes.
- ✓ Click on the second radio button if you want Calspex to store the maximum deviation of each measurement.

**Step 8:** Check the Warn for out of tolerance on this Dataset check box if you want Calspex to display the gage's tolerance status for this Dataset when you are prompted to pass or fail the gage.

**Step 9:** Check the Prompt for this Dataset check box if the Dataset is optional and does not need to be used for each calibration.

**Step 10:** Check the Store ID #'s for each data value check box if you want to display additional information for each measured value. The most common use for this option would be if you have a gage block set and wish to include the individual serial numbers for each gage block. Otherwise, this column could include brief notes or comments pertaining to each reading during calibration.

**Step 11:** Check the Use-in line multiple passes check box if you want to have Calspex display the same set of master values more than once so that the user can enter additional measurements for each value.

**Step 12:** Enter any uncertainty values in the Measurement Uncertainty text box. These values will be displayed underneath each Dataset on both the calibration report and during the calibration process.

**Step 13:** If applicable, check the Use an Offset check box if you want to be prompted for an offset value when completing a Dataset. Offsets are constants that are added to the master values. For instance, a NOGO gage pin set might have an offset of 0.0002". The nominal diameter for a 0.250" pin would therefore be 0.2502".

**Step 14:** Click on the Defaults tab.

**Step 15:** Determine your default tolerances for this gage. This is the amount of inaccuracy you are willing to tolerate while calibrating this type of gage.

- ✓ If you choose to express tolerance in numerical values, click the appropriate radio button and tab to the + Tol. and - Tol. fields. Enter the positive and negative deviations.
- ✓ If you choose to express tolerance as a percentage, click on the % of Master radio button and tab to the % Tol. field. Enter the tolerance percentage which will then be calculated automatically for each master value during the calibration process.

*Do not include the plus sign, (+) minus sign (-) or percentage sign (%) when entering the tolerance values.*

*If certain options do not appear in the Defaults tab, it is likely because those options are not applicable to your specific type of Dataset. The options that appear here depend upon those selected earlier in the Properties tab.*

**Step 16:** If you are using the begin/end options for master values, more fields will appear below the Tolerances section. Tab to the Begin Master, End Master, Increment, Master Range and Master Increment fields to enter the desired default values.

The Master Range field is used to specify the entire range of the master values you define for this gage. For example, if your master values go from 0.0000 to 25.2000 your Master Range would be 25.2000. When calibrating gages that exceed the master range, the software automatically increments the master values by a specific amount until the end value is reached. This increment amount is the Master Increment value. For example, if our master values range from 0.0000 to 25.0000 and after 25.0000, we want to increment by 25.0000 units, we would enter a master range and a master increment of 25.0000. Using these values, a gage with a begin master of 0.0000, and an end master of 100.0000 would have calibration points at 0.0000 → 25.0000 (according to our "Master Values"), then 50.0000, 75.0000, and 100.0000.

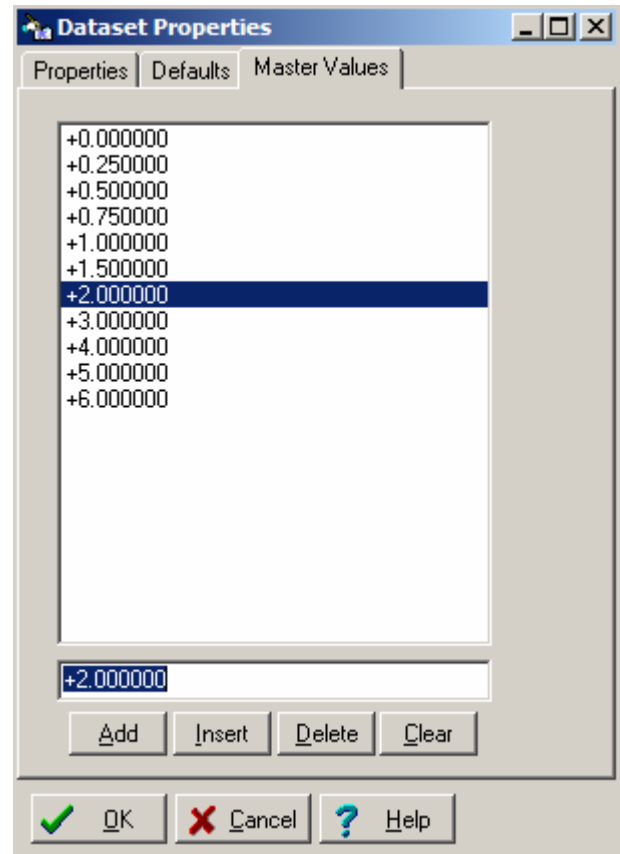


Figure 13: Dataset Master Values

**Step 17:** Click on the Master Values tab.

*Depending upon the selections made in the Master Values section of the Properties tab, this screen may be blank.*

**Step 18:** Enter the first master value for the Dataset by clicking on the Add button and typing in the value. Continue pressing the Add button to enter as many values as you like.

- ✓ To insert another master value in the list, simply highlight the number in the list *beneath* which you want to insert another value. By default, 0.000000 appears as the inserted value. To change the value, simply highlight it and enter a new number.
- ✓ To delete a value, simply highlight it and click the Delete button.
- ✓ To clear all master values already entered, click on the Clear button.

**Step 19:** You have now completed all the options in the Dataset tab. Click OK to save the preferences selected in the Dataset Properties window.

## The Comments Tab

The Comments tab allows you to customize the comments that appear by default in the Comments window during a calibration report.

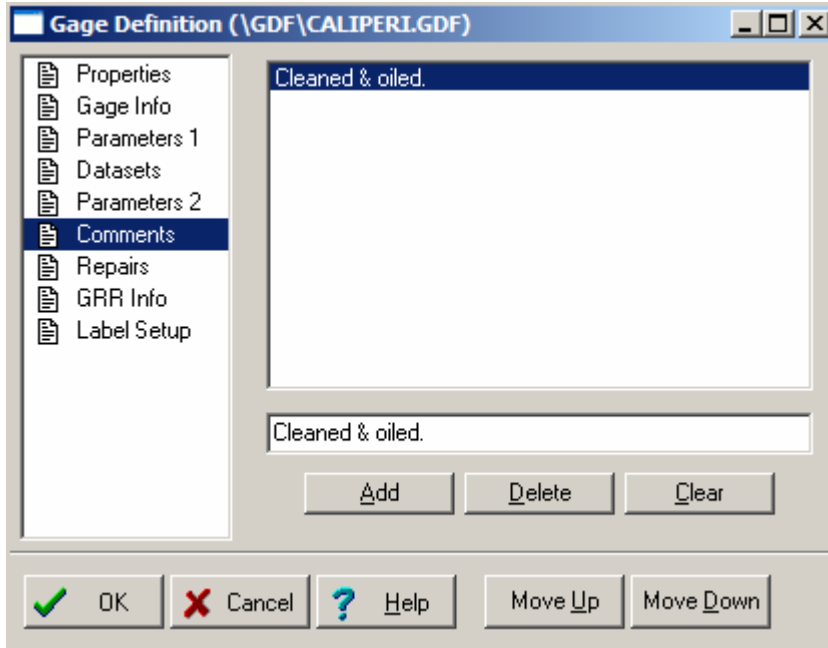


Figure 14: Comments Tab

### To establish comments:

**Step 1:** Click on the Comments tab.

**Step 2:** Click the Add button. Notice that the word BLANK appears highlighted in the both the dialog box and the field below it. Simply type the desired comment directly over the highlighted text. Continue clicking the Add button to repeat the process for as many comments as you like.

- ✓ To delete a comment, simply highlight it and click the Delete button.
- ✓ To clear all comments already entered, click the Clear button.
- ✓ To move a given comment within the list or to change the order of the comments, simply highlight the item in the list and click the Move Up and Move Down buttons.

## The Repairs Tab

The Repairs tab allows you to enter the text that appears by default in the Repairs window during a calibration report.

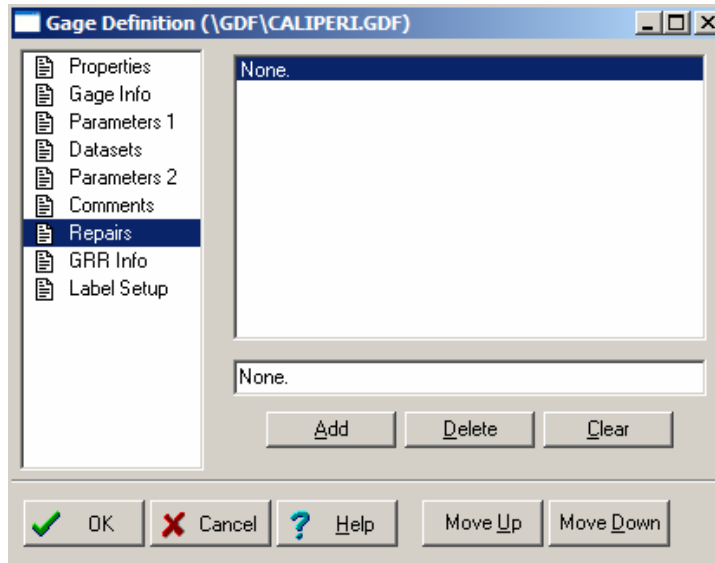


Figure 15: Repairs Tab

### To establish repairs:

**Step 1:** Click on the Repairs tab.

**Step 2:** Click the Add button. Notice that the word BLANK appears highlighted in the both the dialog box and the field below it. Simply type the desired repair comment directly over the highlighted text. Continue clicking the Add button to repeat the process for as many repair comments as you like.

- ✓ To delete a repair, simply highlight it and click the Delete button.
- ✓ To clear all repairs already entered, click the Clear button.
- ✓ To move a given comment within the list—that is, to change the order of the comments—simply highlight the item in the list and click on the Move Up and Move Down buttons.

## The GRR Info Tab

The GRR (or gage repeatability and reproducibility) tab allows you to instruct Calspex to report the amount of repeatability and human error when conducting a calibration report on a given Gage Type.

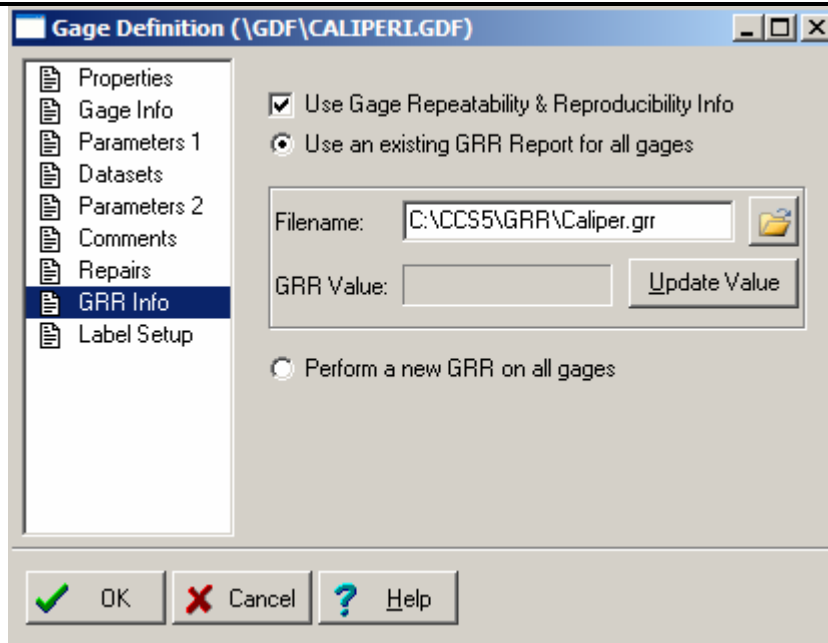


Figure 16: GRR Info Tab

### To establish Gage R&R information:

- Step 1:** Click the Use Gage Repeatability & Reproducibility info check box if you want Calspex to report the amount of Gage R&R information each time this gage is calibrated.
- Step 2:** Click the Use an Existing GRR Report for all gages radio button if you want Calspex to use an existing GR&R report each time this gage is calibrated. Then specify the GR&R report filename in the Filename field, or browse for the desired filename by clicking the button displaying a folder.
- OR**
- Step 3:** Click on the Perform a new GRR on all gages radio button if you want to conduct gage repeatability and reproducibility during each calibration of the gage.



### Remember to Save Your Gage Type!

Once you have defined your gage to your satisfaction, using all the tabs available to you in the Gage Definition window, be sure to click the OK button to save your Gage Type.

### Label Setup Tab (Using Calibration Tags)

The Calspex software can print gage tags (calibration labels, etc...) using the Brother P-Touch PC serial label printer. The tag information and format is set specific to each gage definition. To setup this information, use the last tab in the Gage Definition window, which is labeled "Cal Tag".



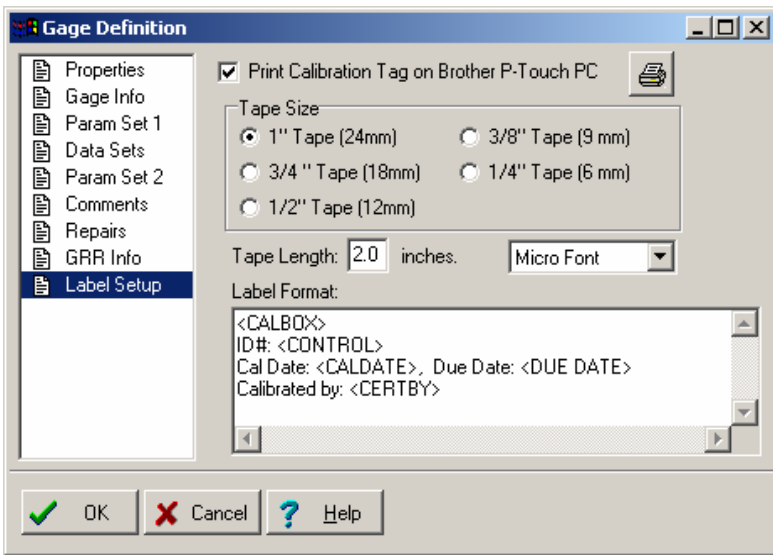


Figure 17: Label Setup Tab

**To setup Calibration Tags / Labels:**

- Step 1:** To enable printing cal tags for this Gage Type, check of the top check box.
- Step 2:** Select the width of the tape you want to use for this type of gage using the various radio buttons.
- Step 3:** Select the length of the tape in the box, and select the proper font size to use (Normal, Small, or Micro).
- Step 4:** Adjust the cal tag format using the large text box. You may type any text you like in this box (like your company name, etc.) To insert actual gage information, use the following codes:

- <CONTROL> Control Number
- <MFG> Manufacturer
- <MODEL> Model Number
- <SN> Gage Serial Number
- <LOCATION> Home Location
- <DEPT> Department for this gage
- <COMPANY> Owner of the Gage
- <CERTBY> Calibration Technician's Name
- <DOCNO> Calibration Document Number
- <CALDATE> Calibration Date
- <DUEDATE> Next Calibration Due Date
- <FILENAME> Filename of the Calibration Report.
- <CALBOX> Prints the word 'Calibration' inside a box.

*When inserting gage fields, be sure that the brackets ("**<**" and "**>**") have at least one space before and after them, unless when a field is the first thing on a new line.*

- Step 5:** Test the tag format by using the printer button located at the top of the window. Make sure you select the correct printer when the print dialog box appears.

**Other Gage Type Options**

**Editing a Gage Definition File:**

- Step 1:** Click Gage Types in the main menu and select the Edit option.
- Step 2:** When prompted with a list of all Gage Types, select the one you wish to edit from the list. Notice you have retrieved the Gage Definition window.

**Deleting a Gage Definition File:**

- Step 1:** Click Gage Types in the main menu and select the Delete option.

**Step 2:** When prompted with a list of all Gage Types, select the one you wish to delete from the list. When prompted, click Yes.

**Importing a Gage Type:**

**Step 1:** Instruct Calspex where to find the .gdf files by clicking Gage Types in the main menu and select Import Gage Types.

**Step 2:** Select the desired files to import and click OK or press the Enter key. The imported files are now available for use. You may now select your newly imported Gage Type(s) from the Select Gage Type List.

*Holding down the Shift key and clicking on the first and last file allows you to select all files in the list. Holding down the Control key allows you to multi-select individual files in the list.*

**Using the Gage Type Wizards:**

**Step 1:** Click Edit in the main menu and select either New Gage Type Wizard or Edit Gage Type Wizard.

**Step 2:** If you are creating a new Gage Type, enter the title and click OK or press the Enter key.

**Step 3:** If you are editing an existing Gage Type, select it from the Select Gage Type List.

**Step 4:** Click the Next and Prev buttons to navigate through the wizard. Follow the on-screen instructions to continue. Once the end has been reached, click the Finish button to close and SAVE your Gage Type. If you click Cancel before reaching the end, your changes will not be saved.

# Customer Database

Calspex comes complete with a company “rolodex,” ideal for calibration houses with many customers. This customer database can be accessed during a calibration report, thereby allowing you to enter company information with the click of a button. You will notice that initially most of the fields in the Customer Database are grayed. This new feature has been implemented to avoid accidentally making changes or deleting customer records. Simply click the Edit Mode button to switch to the editing mode. Now you can add, delete or make any other changes you require. By clicking the View Mode button, the Customer Database will once again be secured. The only two fields that can be changed in any mode are Department and PO/Acct.

The screenshot shows a window titled "Customer Database" with the following fields and controls:

- Company: VANTEK (with a "Find Company" button to its right)
- Street1: 2601 GENESEE STREET (with a "View Mode" button to its right)
- Street2: (empty)
- City, State, Zip: BUFFALO NY 14225
- Contact: 716-827-3770
- Department: SOFTWARE
- PO/Acct: (empty)

At the bottom right, there are "OK" (with a green checkmark) and "Cancel" (with a red X) buttons. At the bottom center, there is a navigation bar with buttons for back, forward, search, and other functions.

Figure 18: Customer Database Window

## Editing the Database

### Add Customers:

**Step 1:** Access the Customer Database by clicking Tools in the main menu and selecting Customer Database. Notice you have retrieved the Customer Database window.

*The customer database cannot store multiple records with the same company name. To avoid this situation, use abbreviations, or alter punctuation in the company name.*

**Step 2:** Click the Edit Mode button to have full access to the Customer Database window and all the fields.

**Step 3:** Click inside the Company field and enter the company name.

**Step 4:** Tab to the remaining fields and enter the company’s address and administrative information.

**Step 5:** Once you are finished entering the information, click the Save button (check mark) to save changes to the Customer Database.

### Delete Customers:

**Step 1:** Find the desired company by one of the following methods:

- ✓ Use the arrow buttons provided to search through all customer records.
- ✓ Click the Find Customer button and enter the company name when prompted. Click OK or press the Enter key.
- ✓

**Step 2:** Click the Edit Mode button to have full access to the Customer Database window and all the fields.

**Step 3:** Once you have retrieved the desired customer, simply click the minus (-) button in the button bar. When prompted, click OK or press the Enter key.

### Update Customer Records:

**Step 1:** Find the desired company by one of the following methods:

- ✓ Use the arrow buttons provided to search through all customer records.
- ✓ Click the Find Co. button and enter the company name when prompted. Click OK or press the Enter key.

**Step 2:** Click the Edit Mode button to have full access to the Customer Database window and all the fields.

**Step 3:** Once you have retrieved the desired company record, simply click inside the fields and alter the information as you like.


**Step 4:** Click the check mark button in the button bar to save the changes.

*If you work in a multi-user environment, where records are changing rapidly, you can update the information on your screen by clicking the Refresh button. This button can only be accessed in the edit mode.* 

# Preferences

Customize Calspex even further by creating your own defaults and ensuring that your personal preferences are retained and given priority whenever you use the program. Once you select a preference for a certain feature, your preference becomes the default.

## To open preferences:

- Step 1:** Click on this button in the toolbar,  or click Edit in the main menu and select Preferences.
- Step 2:** Enter your password when prompted.

*If you have not previously customized Calspex, use the default password, "ads", until you are able to select your own. Please see the Preferences Tab section below for more information about passwords.*

Notice that you have retrieved the Calspex Preferences window. This window has eight tabs at the top.

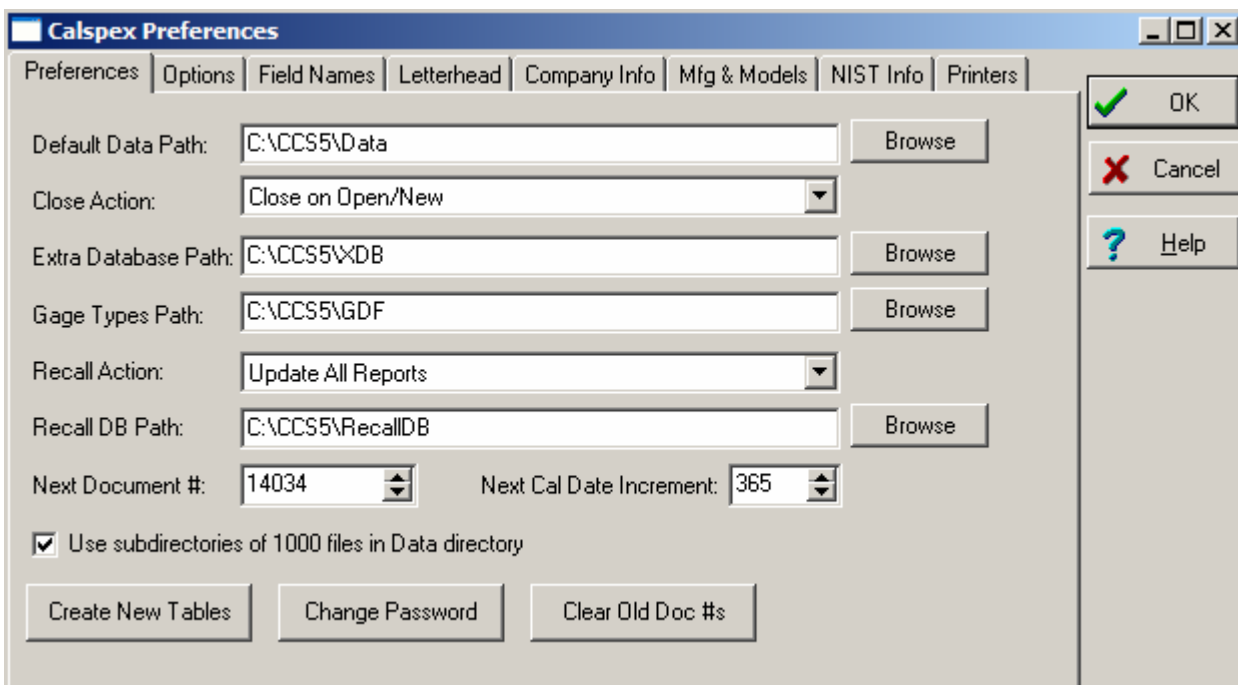


Figure 19: Calspex Preferences

## The Preferences Tab

The Preferences tab in the Calspex Preferences window allows you to specify where Calspex saves calibration reports, Gage Types (Gage Definition Files), and internal tables. Here you can also establish the link, if any, between Calspex and the Recall Database.

Please be aware that these settings are automatically established during the installation process. Any changes to this setup following the installation might cause Calspex to not function as intended. Only edit this information if you are familiar with your computer or network setup and have contacted Vantek support if you are unsure.

## To establish preferences:

- Step 1:** Click on the Preferences tab, if it is not already displayed.
- Step 2:** Click inside the Default Data Path field. Enter the data path you want Calspex to use when saving and loading calibration reports. If you are not sure which data path to use, click the Browse button and select one from the Path Dialog window.

- Step 3:** Determine the number of documents you can have open at one time by clicking on the Close Action drop-down box.
- ✓ Close on Open/New...Clicking on this option allows you to have only one document open at a given time. Open documents will be closed when you start a new report or open an existing report.
  - ✓ Close on Save...Clicking on this option causes a document to be closed once you save it. Calibration reports will be closed when each report is saved.
  - ✓ Never Close Automatically...Clicking on this option instructs Calspex never to close a document unless you close it yourself.
- Step 4:** Tab to the Extra Database Path field. Enter the database path you want Calspex to use when saving and loading internal tables. Internal tables store gage manufacturer and model information, NIST numbers, and company information. If you are not sure which database path to use, click the Browse button and select one from the Path Dialog window.
- Step 5:** Tab to the Gage Types Path field. Enter the file path you want Calspex to use when saving and loading Gage Types (Gage Definition Files). If you are not sure which path to use, click the Browse button and select one from the Path Dialog window.
- Step 6:** Determine the type of link between Calspex and the Recall Database by clicking on the Recall Action drop-down box.
- ✓ No Database Link...Clicking this option severs all connections between Calspex and the Recall Database. (This option is provided for those who use Calspex but not the Recall Database).
  - ✓ Update New Reports...Clicking on this option ensures that new reports created in Calspex are saved in the Recall Database.
  - ✓  
*Those reports that are updated in Calspex, however, are not updated in the Recall database.*
  - ✓ Update all Reports...Clicking on this option ensures that all reports created, updated, or edited in Calspex are updated and saved in the Recall Database.
  - ✓
- Step 7:** Tab to the Recall DB Path field. Enter the data path where Calspex can find the Recall Database. If you are not sure which path to use, click the Browse button and select one from the Path Dialog window.
- Step 8:** Determine the next document number to be assigned to a calibration report. Simply enter the number manually in the Next Document # field, or use the arrow buttons to increase or decrease the number.
- Step 9:** In the Next Cal Date Increment field, determine the default time increment between calibration reports. The number displayed here refers to days. Simply use the arrow buttons to increase or decrease the time increment, or type your own within the field itself.

*The time increment specified here enables Calspex to calculate the next calibration dates for each report you perform.*

*The following step should be performed only if you have deleted your databases and wish to create new ones.*

### The following steps are optional:

- Step 10:** Click on the Create New Tables button if your databases have been deleted, or if you need to create multiple databases.
- Step 11:** Edit your password by clicking on the Change Password button. Enter the desired password twice when prompted and click OK or press the Enter key.
- Step 12:** If you wish to erase all old document numbers and begin fresh, click the Clear Old Doc #s button.
- Step 13:** If you plan on having a large database (thousands of records or more), you can check the "Use Subdirectories of 1000 files in Data directory" check box. Once this option is enabled, any new calibration reports will be saved to its corresponding subdirectory according to its document number. These individual folders will be located in the Calspex Data folder (CCS5\Data).

- ✓ Certificate# 2438 would be placed in the 2k folder. (CCS5\Data\2k)
- ✓ Certificate# 8100 would be placed in the 8k folder (CCS5\Data\8k)
- ✓ Certificate# 17501 would be placed in the 17k folder (CCS5\Data\17k)

*Please note that once you select this option, it will only begin to separate certificates from the time you checked it. It will not separate existing certs already located in the Data folder.*

## The Options Tab

The Options tab allows you to set up certain startup, printing, and calibration report features.

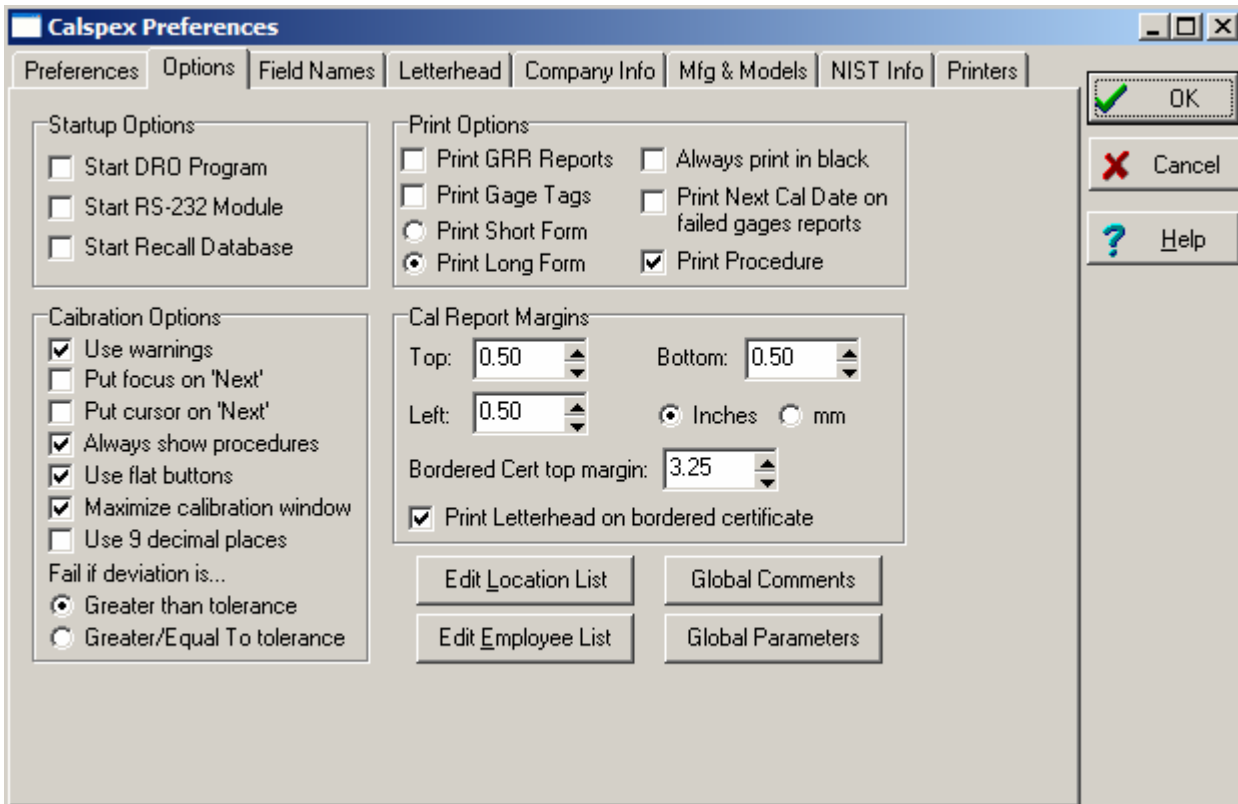


Figure 20: Options Tab

### To establish startup, printing, and calibration report features:

- Step 1:** Click the Options tab.
- Step 2:** Choose which programs, if any, you would like to have opened each time you use Calspex. Simply check the desired programs in the Startup Option check box group.
- Step 3:** Determine which features you would like activated during the calibration report process by choosing from the options displayed in the Calibration Options check box group.
- ✓ Use warnings...This option causes Calspex to warn you during a calibration report if you have not entered a control number or if you have not filled in the "Certificate by" field.
  - ✓ Put focus on 'Next'...This option causes the Next button to be emphasized during the calibration report process. Essentially, the Next button becomes the default button, allowing you to simply press the Enter key to advance to the next screen.
  - ✓ Put cursor on 'Next'...This option instructs Calspex to place the mouse cursor on the Next button throughout the calibration report process.

- ✓ Always show procedures...This option instructs Calspex to always display the Calibration Procedure for a given Gage Types when creating a calibration report. The procedure will be displayed at the bottom of the screen during the calibration report process. See "Creating/Editing Gage Types" for more information about entering a Calibration Procedure for a Gage Type.
- ✓ Use flat toolbar buttons...By selecting this option, Calspex will display the toolbar icons flat instead of raised.
- ✓ Maximize calibration window...This option instructs Calspex to maximize the calibration window when creating or editing a calibration report. It will automatically be maximized.
- ✓ Use 9 decimal places...This option will allow Calspex to display 9 decimal places as opposed to the default value of 6.

**Step 4:** Determine how Calspex interprets in or out of tolerance conditions.

- ✓ Click the Greater than tolerance radio button if you want Calspex to declare a gage out of tolerance when the deviation is *greater than* the maximum deviation specified.
- ✓ Click the Greater/Equal to tolerance radio button if you want Calspex to declare a gage out of tolerance when the deviation is greater than or equal to the maximum deviation specified.

**Step 5:** Determine the format and contents of your printed calibration report by selecting certain options from the Print Options group.

- ✓ Print GRR Reports...Clicking this check box causes the Gage R&R value, calculated for a particular gage, to be printed after the calibration report.
- ✓ Print Gage Tags...Clicking this option instructs Calspex to print Gage Tags after completing a calibration report.
- ✓ Print Short Form...Click this option if you want only the gage information, not the numerical data, displayed on a printed report.
- ✓ Print Long Form...Click this option if you want both the gages information and all the accompanying numerical data displayed on a printed report.
- ✓ Always print in black...Use this option for printers that do not correctly print out of tolerance measurements. These entries usually print in red ink.
- ✓ Print Next Cal Date on failed reports...Selecting this check box will instruct Calspex to always print the next calibration date (due date) on all calibration reports, even the gages that have failed. Otherwise, if this option is not enabled, Calspex will NOT print the next calibration date on reports in which the gage has failed.
- ✓ Print Procedure...Clicking this check box instructs Calspex to print the entire Calibration Procedure from a given Gage Type. The procedure will be taken directly from the Gage Type that was used to create the calibration report.

**Step 6:** Setup Calspex with your gage locations by clicking on the Edit Location List button. Notice the Location List window appears. Simply type each gage location on a separate line within the text box. Then click OK or press the Enter key.

*Calspex makes the location list available to you in the Location drop-down box of a calibration report (Gage Info screen), thereby saving you the time of entering the location manually.*

**Step 7:** Setup Calspex with your list of employees that are able to certify gages by clicking on the Edit Employee List button. Notice that the Employee List window appears. Simply type each employee name (or other form of identification) on a separate line within the text box. Then click OK or press the Enter key.

*Calspex makes the employee list available to you in the Certificate by drop-down box of a calibration report (Header Info screen), thereby saving you the time of entering the employee name manually.*

**Step 8:** Setup Calspex with your desired list of default parameters which will appear in the Parameters 1 section for each calibration report you create. These parameters will be text only and cannot be used to define any tolerances, datasets, etc. Parameters already setup in the Gage Types will still appear along with the global ones.

**Step 9:** Setup Calspex with your desired list of default global comments which will appear in the Comments section for each calibration report you create. Comments already setup in the Gage Types will still appear along with the global ones.





## The Field Names Tab

The Field Names tab allows you to edit and change field names as they would appear in Calspex AND on calibration reports. Calspex comes installed with default values that can be modified at anytime.

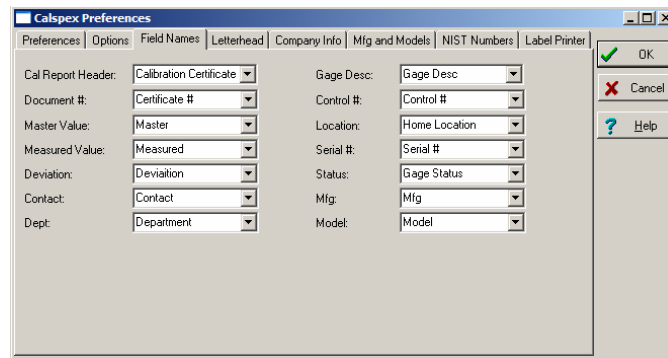


Figure 21: Field Names Tab

## The Letterhead Tab

The Letterhead tab allows you to change the appearance of your company name and address, which is printed at the top of each certificate. Here you can adjust the font style, font size or add any additional information. If the Print Letterhead and select company info for each gage check box is checked, you will have the option of selecting different customers from the Customer Database when you create a new calibration report. Otherwise, your company name will always be displayed by default in the Header Information section.



Figure 22: Letterhead Tab

## The Company Info Tab

The Company Info tab contains information pertaining to your particular company and other vendors. If the “Print Letterhead...” check box is selected in the Letterhead tab, you will be able to select a vendor at the beginning of the calibration report (Header Info). This vendor information is printed at the top of every calibration report, above the customer name and address. This is a valuable feature for calibration houses that occasionally use outside vendors to calibrate their customer’s equipment. If you do not wish to use vendor files, this tab does not apply.

*Much of the information entered here is displayed in the header of a printed calibration report.*

The screenshot shows the 'Calspex Preferences' dialog box with the 'Company Info' tab selected. The dialog contains several input fields and buttons. The 'Vendor Name' field is a drop-down menu showing 'Vantek'. The 'Company Name' field is a text box with 'Vantek'. The 'Street Address' field is a text box with '2601 Genesee Street'. The 'City, State, Zip' section has three text boxes: 'Buffalo', 'NY', and '14225'. The 'User' field is empty. The 'Vendor File' field is a text box with 'Vantek.vnd'. The 'Disclaimer' field is a multi-line text area. On the right side, there are buttons for 'New Vendor', 'Delete Vendor', 'Import Vendor', and 'Export Vendor'. At the bottom right, there are buttons for 'OK', 'Cancel', and 'Help'.

Figure 23: Company Info Tab

**To add a new vendor:**

- Step 1:** If you wish to add a new vendor to the drop-down box simply click the New Vendor button.
- Step 2:** You will notice that the only field displayed is the Vendor Name. Type the name of this new vendor file and press the Enter key.
- Step 3:** The address fields will now appear. Simply type over the information with the correct company name, address and disclaimer for this new vendor. Click the OK button to save any changes.

**To delete a vendor:**

- Step 1:** If you wish to delete a vendor simply select that vendor from the drop-down box and click the Delete Vendor button.

**To import a vendor:**

- Step 1:** If you wish to import a vendor simply click the Import Vendor button.
- Step 2:** Select the correct .vnd file and click Save.
- Step 3:** You will notice that the only field displayed is the Vendor Name. Type the name of this new vendor file and press the Enter key. All the information from the vendor file will be automatically displayed in the appropriate fields.

**To edit company information without using a vendor file:**

- Step 1:** Make sure that the <Do not use vendor file> option is selected in the Vendor Name drop-down box. If you need to change your company information you can do so simply by editing the appropriate fields.

**To edit company information when using vendor files:**

- Step 1:** Make sure that the correct vendor is selected from the Vendor Name drop-down box. If you need the company information you can do so simply by editing the appropriate fields.

## The Mfg & Models Tab

The Mfg & Models tab allows you to record the gage manufacturers and models your company deals with on a regular basis. The information entered here is then made available to you during a calibration report, with the simple click of a button, thereby saving you the time of entering the information manually.

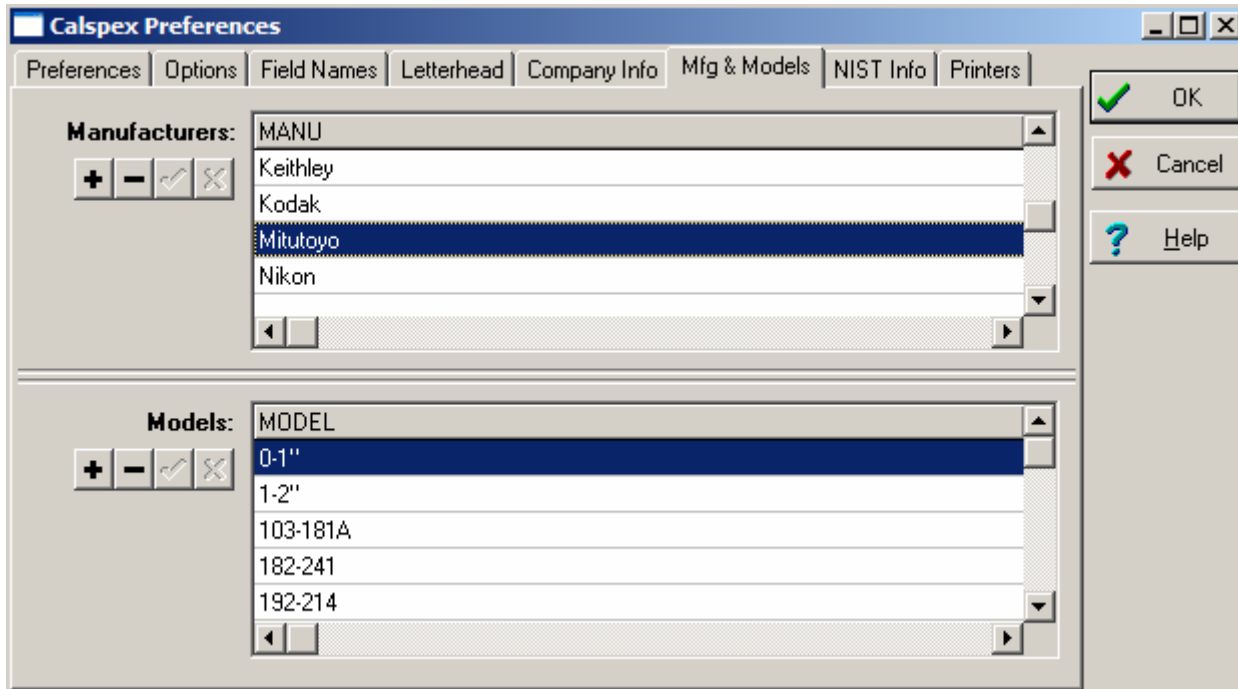


Figure 24: Mfg & Models Tab

The Mfg & Models tab contains two lists: One for manufacturers and one for models. These two lists are cross-referenced, enabling you to assign several different models to each manufacturer.

### To add gage manufactures and models:

- Step 1:** Click the plus (+) sign under the Manufacturers heading. Notice that Calspex has provided you with a blank space in the Manufacturers list.
- Step 2:** Type the name of the new manufacturer and click the Manufacturer's check mark button.
- Step 3:** Add the gage models made by this particular manufacturer by highlighting the new manufacturer in the Manufacturers list and clicking the plus (+) button under the Models heading. Notice that Calspex has provided you with a blank space in the Models list.
- Step 4:** Click inside the highlighted space in the Models list and begin type the name of the model. Then click the Models check mark button.
- Step 5:** Repeat Steps 4 and 5 for as many models as you like.

*You can determine where in the list your new manufacturer or model appears by clicking on the row just beneath the desired location.*

## The NIST Info Tab

The NIST Info tab maintains a list of all your calibration masters traceable to NIST. Calibration masters are recorded here, in order to make them available to you during calibration reports. The NIST Numbers tab also allows you to create master sets. Master sets combine several master gages used during a calibration into a single entry.

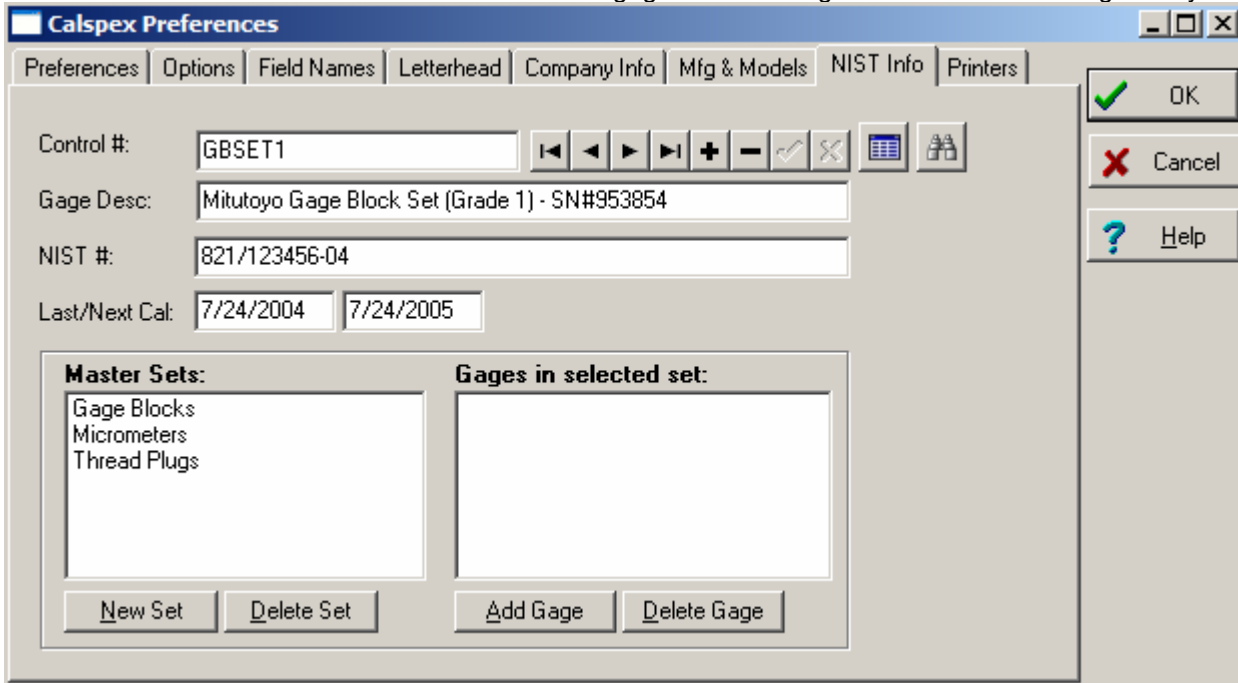


Figure 25: NIST Numbers Tab

### To add master gages:

- Step 1:** Click the plus (+) button in the button bar at the top of the tab. Notice your cursor is blinking inside the Control # field.
- Step 2:** Type the master gage's control number in the Control # field.
- Step 3:** Tab to the Description field and enter a description of the master gage.
- Step 4:** Tab to the NIST # field and enter the gages NIST number.
- Step 5:** Tab to the Last/Next Cal fields and enter the master gage's last and next calibration dates.
- Step 6:** Click the check mark button in the button bar to add the new master gage.

*Once the Control # for a master gage is entered into the NIST database, any new calibration report created in Calspex for that particular master will automatically update the NIST database with the latest NIST# and Last/Next Cal fields.*

### To edit master gages:

- Step 1:** Find the desired master gage by using one of the following methods:
  - ✓ Use the arrow buttons provided to search through all master gage records.
  - ✓ Use the ninth button in the toolbar to retrieve a condensed list of all master gages. Simply select the desired one from the list and click OK.
  - ✓ Click the tenth button in the toolbar, enter the control number of the desired master gage, and click OK or press the Enter key.
- Step 2:** Once you have retrieved the desired master gage, simply click inside the fields and change the information as you like. Remember that this information is automatically updated when a master gage is calibrated in Calspex.

**Step 3:** Click the check mark button in the button bar to save any changes.

**To delete master gages:**

**Step 1:** Find the desired master gage by one of the following methods:

- ✓ Use the arrow buttons provided to search through all master gage records.
- ✓ Use the ninth button in the toolbar to retrieve a condensed list of all master gages. Simply select the desired one from the list and click OK or press the Enter key.
- ✓ Click the tenth button in the toolbar, enter the control number of the desired master gage, and click OK or press the Enter key.

**Step 2:** Once you have retrieved the desired master gage, simply the minus (-) button in the button bar.

**To define master gage sets:**

**Step 1:** Click the New Set button in the bottom left corner of the tab. When prompted, enter a name for the master gage set and click OK or press the Enter key.

**Step 2:** Find the master gages you wish to be part of this master set by one of the following methods:

- ✓ Use the arrow buttons provided to search through all master gage records.
- ✓ Use the ninth button in the toolbar to retrieve a condensed list of all master gages. Simply select the desired one from the list and click OK or press the Enter key.
- ✓ Click the tenth button in the toolbar, enter the control number of the desired master gage, and click OK or press the Enter key.

**Step 3:** Click the Add Gage button to add this gage to the master set.

**Step 4:** Repeat Steps 2 and 3 for the gages you want to comprise the master gage set.

*To delete a master gage set or a master gage from either list, simply highlight it and click the Delete Set button or the Delete Gage button.*

## The Printers Tab

The Printers tab has a drop-down box which contains a list of your printers currently being used on your computer. If you are using a Label Printer, simply select it from the drop-down box. This will be used as the default printer for Calspex.



### **Remember to Save Your Preferences!**

Once you have customized Calspex to your satisfaction, using all the tabs available to you in the Calspex Preferences window, be sure to click OK or press the Enter key to save your preferences.


## Calibration Reports (Certificates)

Having defined your gages and customized Calspex, the calibration report process is easy. Simply complete the steps as Calspex prompts you. At the end, you are left with an accurate and professional calibration report.

Each calibration report is catered specifically to the particular Gage Type, as specified by the gage definitions you created earlier. The features of calibration reports, therefore, vary greatly from gage to gage and are controlled, largely, by you.

A generic calibration procedure is outlined below. Keep in mind, however, that this description is skeletal— that, depending upon your Gage Type, your calibration report may contain additional features.

### Creating a New Report

To begin a new calibration report, click the first button in the toolbar,  or click File in the main menu and select New.

#### 1. Select Gage Type

What type of gage do you want to calibrate? This is the first thing Calspex needs to know before guiding you through a new calibration report.

*You can change your Gage Type at any time in the calibration process. Simply click Edit in the main menu and select Change Gage Type. Then choose the desired type from the Select Gage Type List.*

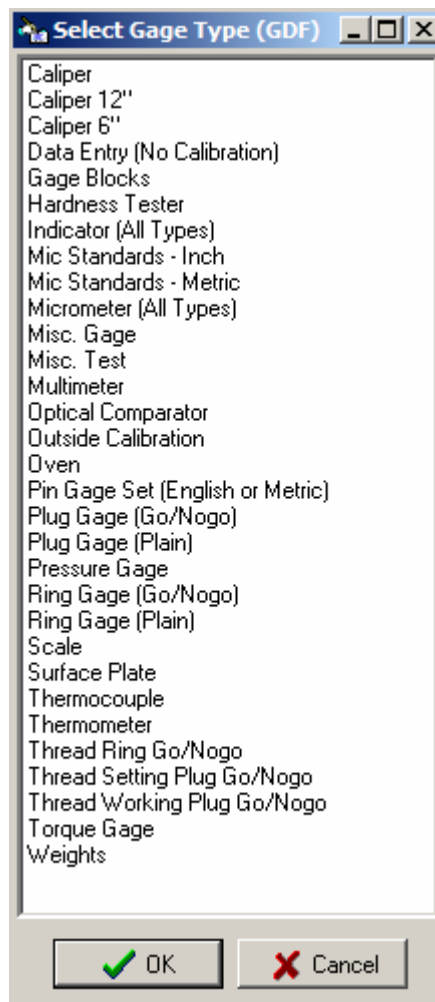


Figure 26: Pick List

**To select a Gage Type:**

**Step 1:** Simply select the desired Gage Type from the Select Gage Type List and click OK or press the Enter key.

*The gages available to you in the Select Gage Type List are those you have created yourself during gage definition, as well as certain generic Gage Types provided by Calspex.*

**2. Enter the Header Information**

The header contains information about the company for which you are calibrating the gage. In the case of a calibration house, the header displays their vendor file and customer information. In the case of the end-user, however, the header displays information about his or her own company. You may click the Next and Prev buttons at anytime throughout the calibration report process in order to navigate through the different sections.

Figure 27: Header Information

Any written calibration procedure specified in the Gage Type will appear here.

**To enter header information for the calibration house:**

*Ensure the "Print Letterhead..." check box in the Letterhead tab of Calspex Preferences is checked. When this box is checked, the company information in the header is changeable for each calibration report. For more information, please refer to the section entitled, The Letterhead Tab.*

- Step 1:** Select a vendor for this particular gage by clicking the Vendor drop-down arrow. This can either be your own company or another vendor depending on what you established in the Company Info tab of Calspex preferences.
- Step 2:** Select the customer for whom you are calibrating the gage (if different from the one already displayed) by clicking the Select Customer button. Notice that you have retrieved the Customer Database window.
- Step 3:** Use one of the following methods to find the desired company record:
- ✓ Use the arrow buttons to search through the company records
  - ✓ Click on the Find Customer button and enter the name of the desired company in the dialog box provided. Calspex then jumps directly to that company's record.
  - ✓



- Step 4:** Click the Customer Database window's OK button when you have retrieved the desired company record. Notice that the company information has been inserted into the header for you.
- Step 5:** Add or modify the information displayed by clicking in the fields and typing in the desired information.
- Step 6:** Tab to the Cal Date field and enter the calibration date if different from the one displayed. Calspex automatically enters the current date for you.
- Step 7:** Tab to the Certificate by field and enter the name of the person certifying the gage, or select one from the drop-down list.
- Step 8:** Once the header information has been added, click the Next button.

**To enter header information for the end-user:**

*Ensure the Print Letter Head check box in the Company tab of Calspex preferences is NOT checked. This is the best option for the end-user. When this box remains unchecked, the company information appears grayed out and unchangeable in the header. For more information, please refer to the section entitled, The Letterhead Tab.*

- Step 1:** Tab to the Contact field and enter the name and/or telephone number of the person to contact regarding this gage.
- Step 2:** Tab to the Department field and enter the department to which the gage belongs.
- Step 3:** Tab to the PO/Acct field and enter a purchase order or account number.
- Step 4:** Tab to the Cal Date field and enter the calibration date if different from the one displayed. Calspex automatically enters the current date for you.
- Step 5:** Tab to the Certificate by field and enter the name of the person certifying the gage, or select one from the drop-down list.
- Step 6:** Once the header information has been added, click on the Next button.

**3. Enter the Gage Information**

After entering company/vendor information in the header, Calspex prompts you for specific information about the current gage being calibrated.

Figure 28: Gage Info Window

**To enter gage information:**

**Step 1:** Click inside the Control # field of the Gage Info window and enter the gage's control number.

**Step 2:** Tab to the Manufacturer field and enter the gage's manufacturer, or select one from the drop-down list.

**Step 3:** Tab to the Model field and enter the gage's model, or select one from the drop-down list.

*The manufacturers and models available to you here are determined by those entered in Calspex Preferences. Please refer to the section The Mfg & Models Tab for more information.*

**Step 4:** Tab to the Serial # field and enter the gage's serial number.

**Step 5:** Though Calspex might enter the name of the gage in the Gage Desc field (if specified as a default during gage definition), you can tab to this field and modify the description as you like.

**Step 6:** Tab to the Location field and enter the gage's location, or select one from the drop-down list.

**Step 7:** After entering all pertinent gage information, click the Next button.

**4. Enter the Parameters**

Parameters may or may not be used in different Gage Types. These fields are used to record and report information that is either numerical data, regular text, or is information which master values (for other datasets) is based on. For example, on a Threaded Plug Gage Type, we might have the following window:

Parameters	
Go Major Diameter	0.75000
Go Pitch Diameter	0.70360
Nogo Major Diameter	0.74135
Nogo Pitch Diameter	0.71042

< Prev    Next >    Cancel

Figure 29: Parameters Window

These parameters will be used for the calculation of their corresponding datasets. To enter the parameters, simply type in the applicable information in the given fields.

### *Using the Thread Calculator*

Some Gage Types will use the Thread Calculator to determine thread dimensions (like those shown above). If this option is enabled, two additional windows will appear before the parameters screen is displayed.

The first window allows the user to specify the thread characteristics. Select the thread form, nominal diameter, thread pitch, class, tolerances (if applicable) and Length of Engagement.

Thread Calculator Information

Thread Type: UN Threads

Thread Class: Class 2

Nominal Diameter: +0.750000

Threads per Inch: 14

Length of Engagement

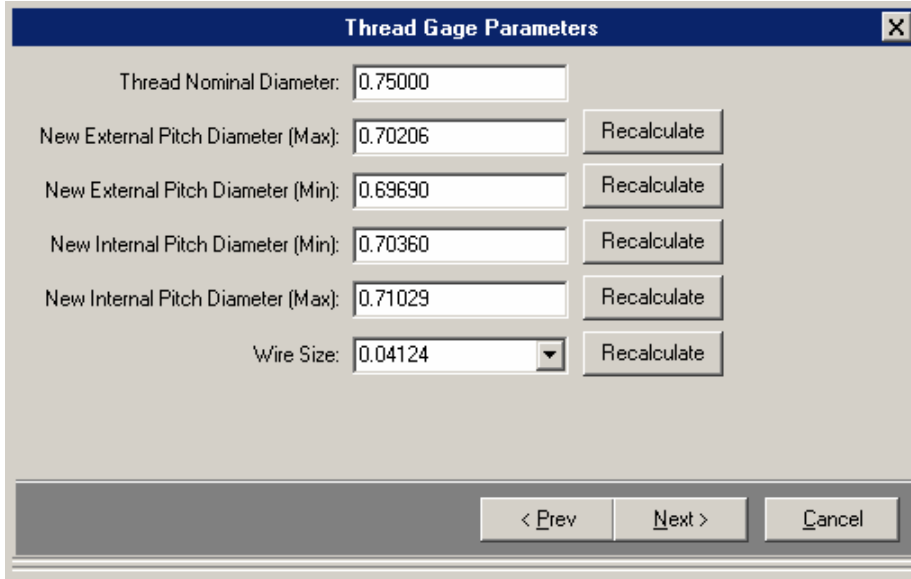
Standard L.O.E.

Custom L.O.E.

< Prev    Next >    Cancel

Figure 30: Thread Calculator Information

Once you have entered the thread characteristics, the software will calculate standard dimensions and display the following window:



Parameter	Value	Action
Thread Nominal Diameter:	0.75000	
New External Pitch Diameter (Max):	0.70206	Recalculate
New External Pitch Diameter (Min):	0.69690	Recalculate
New Internal Pitch Diameter (Min):	0.70360	Recalculate
New Internal Pitch Diameter (Max):	0.71029	Recalculate
Wire Size:	0.04124	Recalculate

< Prev    Next >    Cancel

Figure 31: Thread Calculations

From this window, you can adjust these dimensions if the thread is a non-standard size. Simply type in the new value, and click the appropriate Re-Calculate button.

If the wires used are different from the best fit wire size displayed, simply select the new wire size from the list, or type in a custom wire size and click the Re-Calculate button.

Once the proper values are shown, click the Next button. You will see the normal Parameter set screen, but with all the thread dimensions filled in. Click the Next button, or fill in any additional parameters.

## 5. Enter the Data

Most calibration reports require the input of numerical values. Calspex makes this process simple by incorporating the use of Datasets into the calibration report. Each Dataset is broken-up into three primary sections:

- ✓ Tolerances
- ✓ Entering Master Values
- ✓ Measured Values

Depending on the Gage Type's Dataset prompt option, Calspex will either display all Datasets at once or individually as you go through the calibration report process.

- ✓ If the Gage Type instructs Calspex to display all Datasets at once, then a Dataset Selection screen will appear immediately after the Gage Info screen. If there are many Datasets used in your Gage Type, feel free to use the Check All or Check None buttons. Check which Datasets you wish to use in your calibration report and click the Next button. Only those Datasets that have the "Prompt for this Dataset" checked in the Dataset Properties will be displayed in the Dataset Selection screen.

*If prompted for all at once, you can always go back and add or delete Datasets even after the calibration report is saved. You cannot do this when the Datasets are displayed individually.*

- ✓ If the Gage Type instructs Calspex to display all Datasets individually, you will not have a Dataset selection screen, rather an information message pop-up asking you whether or not you wish to include a particular Dataset in your report. When this happens, click Yes or No to advance. However if you click No, you may not access that Dataset again. Only those Datasets that have the "Prompt for this Dataset" checked in the Dataset Properties will use the information message pop-up.

*You must complete the measurements for each Dataset before moving on to the next one.*

*When you recalibrate a gage, only those Datasets that were used in the LAST calibration of that gage will be selected. You may still add or take away any Dataset according to your specifications (See Recalibrating a Gage). Any Datasets that were used for the last calibration report, but do not exist in the current Gage Type will be displayed at the bottom of the Dataset selection window.*

Depending on the Gage Type setup, the next window is the tolerance window. You may edit tolerances here.

Because you have already established master values during gage definition (or earlier in the calibration report), you are only required to enter measured values here. Calspex does the rest. If, however, you want to enter other master values than those displayed, Calspex gives you the flexibility of doing so.

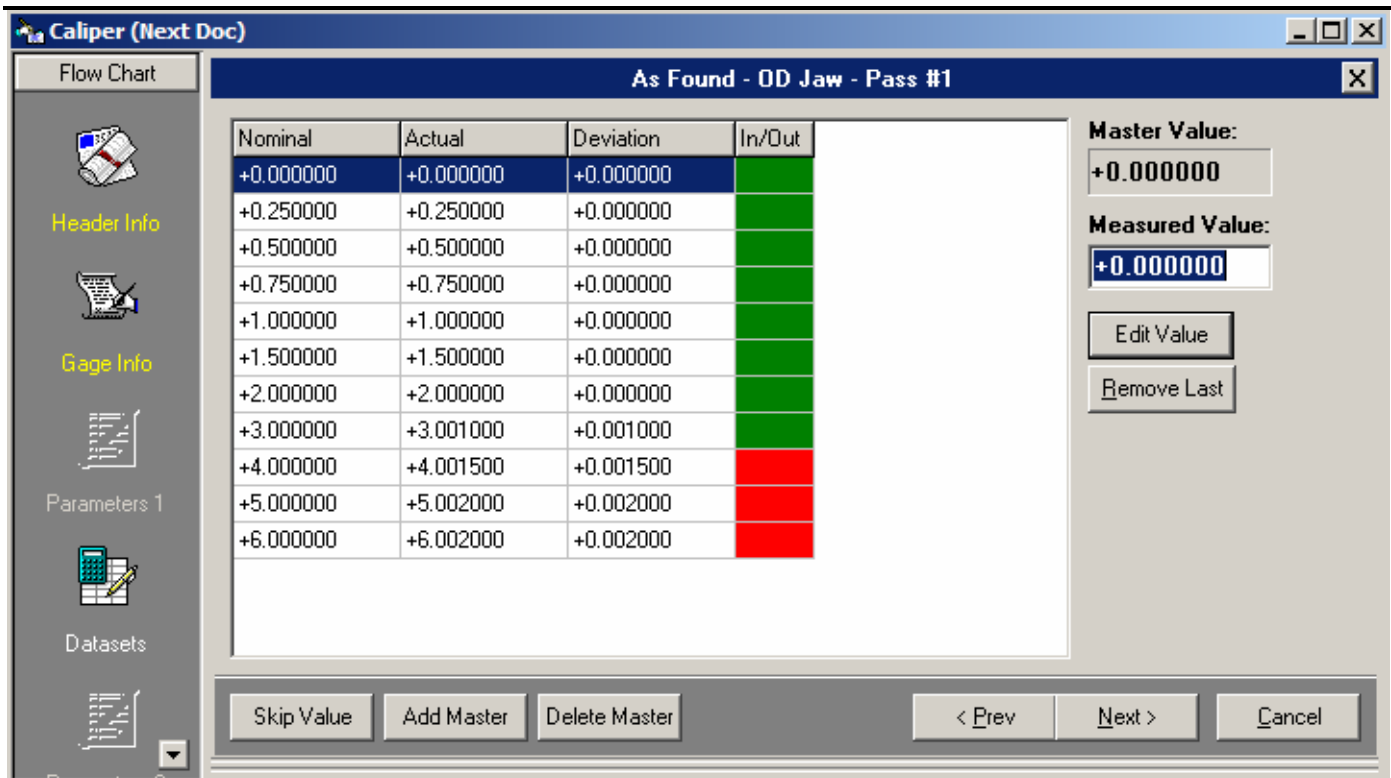


Figure 32: Data Table

Any uncertainty values entered for this Dataset in the Gage Type will appear here.

### What is the Data Table showing me?

The data table consists of four vertical columns:

- ✓ The first column displays the master values
- ✓ The second column displays the measured or actual values
- ✓ The third column displays the deviation of the measured values from the master values
- ✓ The fourth column enables you to see, at a glance whether the gage is in or out of tolerance. A green box means the measured value is in tolerance with the master value. A red box means the measured value is out of tolerance with the master value.
- ✓ The fifth column (if needed) enables you to enter an individual serial number or other information for each master value.

#### To enter additional master values:

**Step 1:** Click the Add Master button.

**Step 2:** When prompted, enter the new master value and click OK or press the Enter key. Notice that it appears immediately in the data table.

*You can enter new master values at any point in the data entry process.*

#### To add measured values:

**Step 1:** Click inside the Measured Value field and enter your first measured value. (If your measured value is the same as the master value, simply proceed to Step 2.)

**Step 2:** Click the Add Value button. Notice that Calspex proceeds immediately to the next value. If you wish to remove the value just entered, click the Remove Value button.

**Step 3:** Repeat Steps 1 and 2 for all measured values.

*If you want to skip a value at any point in the data entry process, simply click the Skip Value button.*

**To edit measured values:**

**Step 1:** You can change a measured value simply by clicking it in the data table, editing the value displayed in the Measured Value field, and clicking the Edit Value button.

*Once you have completed data entry, the Add Value button becomes the Edit Value button; both function the same way.*

**To delete measured values:**

**Step 1:** You can delete a master value by selecting it in the data table and clicking the Delete Master button.

***Using the Data Table in Conjunction with another Program***

You may notice that if you right-click in the gray area of the data table, you retrieve a pop-up menu. This menu is designed to help you use the data table in conjunction with other programs.

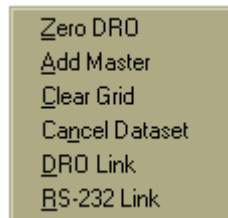


Figure 33: Data Table Options

From here you can perform the following:

- ✓ Add a master value (functions the same way as the Add Master button)
- ✓ Clear the Data table
- ✓ Close the Data table
- ✓ Re-establish a link with RS-232.

## 6. Enter NIST Information

This portion of the calibration report enables you to specify the calibration master, traceable to NIST, used to calibrate your gage. Because you have already established your master gages and master gage sets in Calspex preferences, there is no need to do so here. Please refer to the section The NIST Numbers Tab for more information about setting up master gages.

Figure 34: Next Cal, NIST Window

### To enter NIST and next calibration date information:

**Step 1:** Select the type of calibration interval you want to use for this gage.

**Step 2:** Specify the date or interval upon which you want to conduct the next calibration report, if different from the one displayed. (Calspex automatically calculates this date from the time increment specified in the Preferences tab. For more information, please refer to the section entitled The Preferences Tab.) If you are using time based recalibration intervals, you can specify the Next Calibration Due date in 2 ways:

- ✓ Enter the date manually in the Next Cal Date field
- ✓ Click on the small button displaying a 12. When the calendar appears, use the arrow buttons to search through the months. Then click on the desired date.

If you are using usage based recalibration intervals, specify either the number of parts to be measured until the next calibration, or the number of usage hours.

**Step 3:** If you are using a single master gage, ensure that the Single Master Gage radio button is clicked. Then search for the desired master gage using one of the following methods:

- ✓ Use the arrow buttons provided to search through all master gage records.
- ✓ Click the Find Master button, enter the control number of the desired master gage, and click OK or press the Enter key.

**Step 4:** If you are using a master gage set, ensure that the Master Gage Set radio button is clicked. Then select the desired set from the drop-down list provided.



*You can edit master gage sets simply by clicking on the Edit Sets.... button. Notice that you have retrieved the NIST Numbers tab in Preferences. For information on creating master gage sets, please refer to the section entitled The NIST Numbers Tab.*

## 7. Comments/Text

All calibration reports have a Comments section. Default comments will be displayed here according to the specifications you used when setting up the Gage Type or any global comments. Please be aware that even though you might have default comments, you can still delete or edit them. To add additional comments simply begin typing anywhere in the text area. If your Gage Type uses a Free-Form Text Box, a separate text area will appear immediately after the NIST Information. This is basically the same as the Comments section however some people might prefer to manually type additional calibration data here.

## 8. Gage Status (Pass, Fail, Limited, As Found)

All calibration reports require you to give a Pass/Fail gage status. Regardless of whether gage readings are within the specified tolerance, or if you've taken numerical readings at all, it is entirely up to you whether or not you deem the gage to have passed, failed, limited calibration or readings as found.

*The Pass/Fail status of the gage is displayed on a printed calibration report.*

Calspex presents you with the following window.

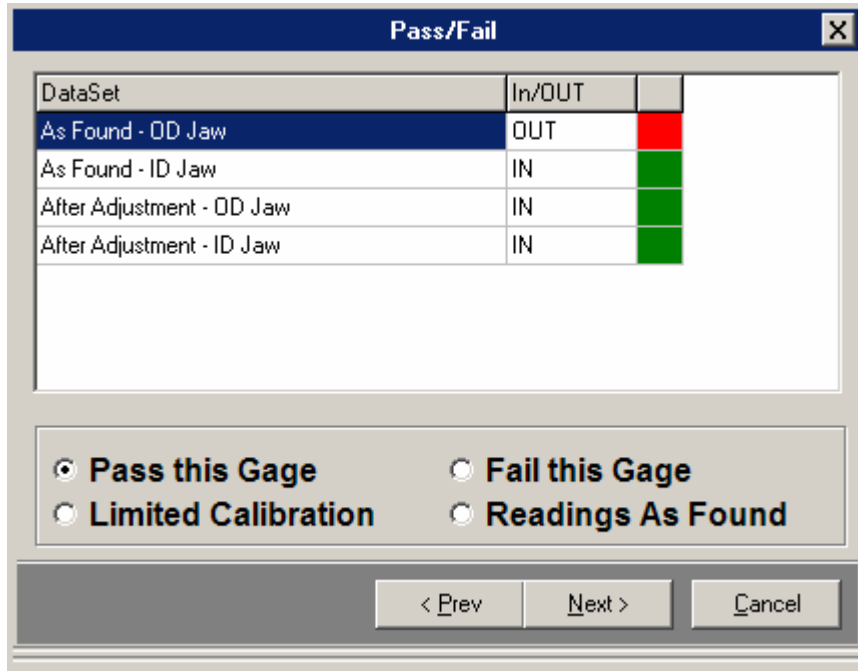



Figure 35: Pass/Fail Window

Notice that the Pass/Fail window shows you whether each Dataset has passed or failed within the specified tolerance. This can be helpful when determining what Pass/Fail gage status to give. Simply click the desired radio button; then click Next.

## 9. Save the Calibration Report

After each calibration report, you are prompted to save it. Unless you specify otherwise, each calibration report is saved under its document number.


### To manually save a report:

**Step 1:** Click the third button in the toolbar,  or click File in the main menu and select Save or Save As.

**Step 2:** When prompted, give the file a name. Then click OK or press the Enter key.

## Editing Calibration Reports

Once you have completed a calibration report, there are several ways to retrieve it. Choose one of the following methods:

- ✓ Click the second button in the toolbar , or select File in the main menu and click the Open option. When the Open window appears, select the desired calibration report from the list of files and click OK or press the Enter key.
- ✓ If you have recently completed the report, you may be able to retrieve it from the File menu itself. The File menu displays the last five documents worked on. Simply click the desired document from the list.

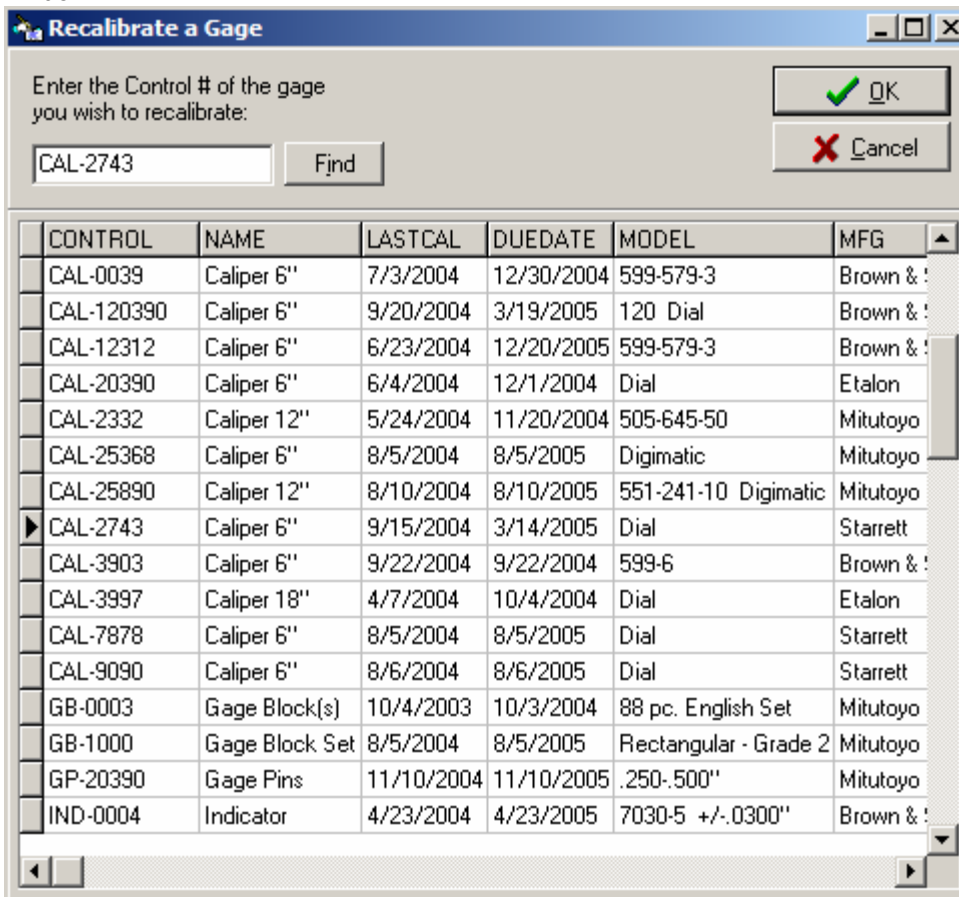
*Notice that, once you've retrieved a calibration report, the report flowchart appears. The flowchart visually represents the features of the given report. To view a particular portion of the report, simply click the corresponding heading in the flowchart.*

## Recalibrating a Gage

Calspex makes recalibrating a gage easy. Simply follow the procedures outlined below.

### To recalibrate a gage:

**Step 1:** Click Tools in the main menu and select Recalibrate a Gage. Notice you have retrieved the Recalibrate a Gage window.



CONTROL	NAME	LASTCAL	DUEDATE	MODEL	MFG
CAL-0039	Caliper 6"	7/3/2004	12/30/2004	599-579-3	Brown & S
CAL-120390	Caliper 6"	9/20/2004	3/19/2005	120 Dial	Brown & S
CAL-12312	Caliper 6"	6/23/2004	12/20/2005	599-579-3	Brown & S
CAL-20390	Caliper 6"	6/4/2004	12/1/2004	Dial	Etalon
CAL-2332	Caliper 12"	5/24/2004	11/20/2004	505-645-50	Mitutoyo
CAL-25368	Caliper 6"	8/5/2004	8/5/2005	Digimatic	Mitutoyo
CAL-25890	Caliper 12"	8/10/2004	8/10/2005	551-241-10 Digimatic	Mitutoyo
CAL-2743	Caliper 6"	9/15/2004	3/14/2005	Dial	Starrett
CAL-3903	Caliper 6"	9/22/2004	9/22/2004	599-6	Brown & S
CAL-3997	Caliper 18"	4/7/2004	10/4/2004	Dial	Etalon
CAL-7878	Caliper 6"	8/5/2004	8/5/2005	Dial	Starrett
CAL-9090	Caliper 6"	8/6/2004	8/6/2005	Dial	Starrett
GB-0003	Gage Block(s)	10/4/2003	10/3/2004	88 pc. English Set	Mitutoyo
GB-1000	Gage Block Set	8/5/2004	8/5/2005	Rectangular - Grade 2	Mitutoyo
GP-20390	Gage Pins	11/10/2004	11/10/2005	.250-.500"	Mitutoyo
IND-0004	Indicator	4/23/2004	4/23/2005	7030-5 +/- .0300"	Brown & S

Figure 36: Gage Recall Window

**Step 2:** Find the gage you want to recalibrate using one of the following methods:

- ✓ Type the gage control number in the Control # field. Then click the Find button.
- ✓ Scroll through the gages until you find the one you want to re-calibrate. Highlight the gage in the list.

**Step 3:** Click OK or press the Enter key. Calspex launches you directly into the calibration process. Notice that you do not need to enter gage and company information, as it is already entered for you. The master values will be the same as well, as long as you select the same Dataset(s) as before.

## Duplicating a Calibration

The Duplicate Last Calibration option allows you to create new reports and reproduce the exact same data with little effort. This feature saves time and eliminates the need to re-enter important information. After you save a new calibration report, you can use this feature to duplicate data in your next report such as manufacturer, model, location, department, master values, comments, repairs, etc. You will still have the ability to change measured values (if they are different from the previous calibration). Calspex automatically uses the same Gage Type and it will even select the same datasets as before!

*Please note that even though the information is replicated, you can still make changes to any part of the certificate. Once again, the data is not set in stone!*

### **To duplicate a last cal:**

- Step 1:** Click Tools in the main menu and select Duplicate Last Calibration. A new calibration report will be displayed automatically.
  
- Step 2:** Click the Next button throughout the entire certificate and you will notice that the data and master values are identical to your previous calibration.
  
- Step 3:** Once you are finished, click the save button as usual.

## Gage R&R

To account for repeatability and human error during your calibration of certain gages, Calspex is equipped to conduct GR&R reports. GR&R reports allow you to compare measured values, taken during several trials, to each other, rather than to master values. Calspex then allows you to account for a certain degree of error whenever you calibrate the given gage.

Calspex gives you the option of conducting a GR&R report during the calibration process itself or independently. Please refer to The GRR Tab for more information.

### Conducting Independent GR&Rs

When you click Tools in the main menu and select Gage R&R, an entire sub-menu pops up, devoted to GR&R reports. Here you can:

- ✓ Begin a new GR&R report
- ✓ Open or close an already existing GR&R report
- ✓ Save a GR&R report
- ✓ Print a GR&R report

#### To conduct a GR&R report:

**Step 1:** Click Tools in the main menu and select Gage R&R. Then click the New option. Notice you have retrieved the Gage R&R Form window and a corresponding GR&R flowchart.

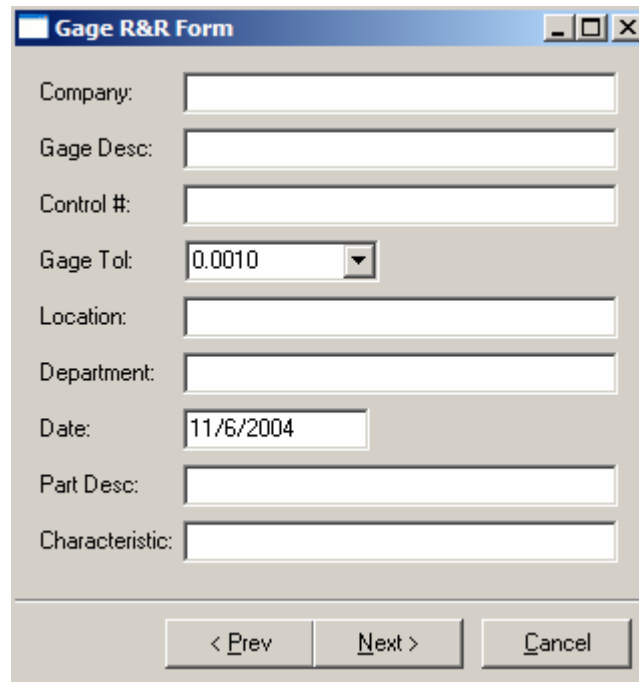


Figure 37: Gage R&R Form Window

**Step 2:** Click inside the Company field and enter the company name. Tab to the other fields and enter all desired information. Then click Next.

**Step 3:** Determine the number of samples—that is, the number of measurements—you want to take.

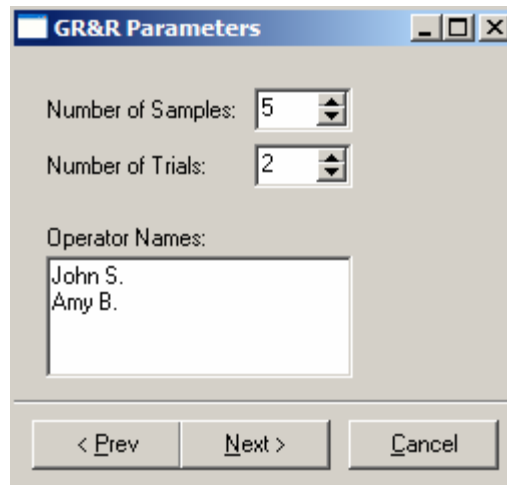


Figure 38: GR&amp;R Parameters

Use the arrow buttons to the right of the Number of Samples field to increase or decrease the number. You can also click inside the field itself and type in the desired number. (Values can range from 1 to 10).

- Step 4:** Determine the number of trials—that is, the number of times you want to take the measurements. Use the arrow buttons to the right of the Number of Trials field to increase or decrease the number. You can also click inside the field itself and type in the desired number. (Values can range from 1 to 3).
- Step 5:** Tab to the Operator Names dialog box and enter the names of the operators. You must have at least one name and not more than three. Click Next.

*Notice that you have retrieved a window entitled Values for (the name of the operator). Notice also that the number of trials you selected is represented by tabs near the bottom of the window.*

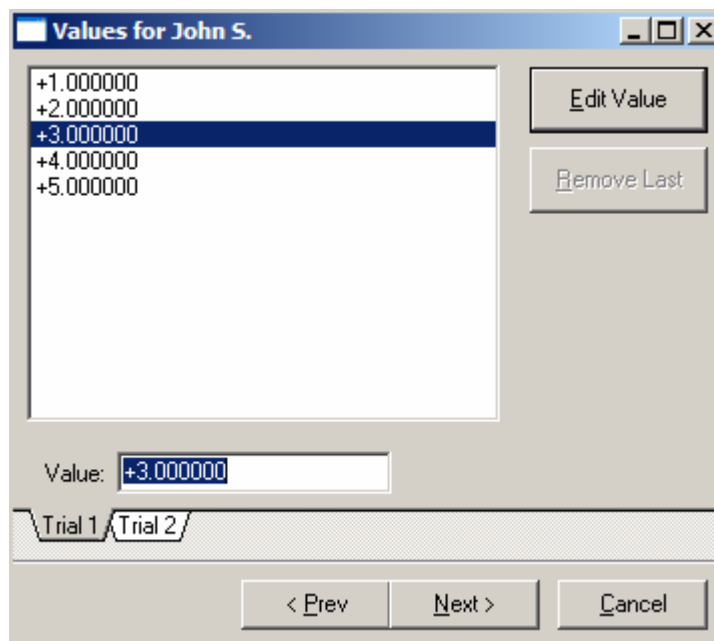


Figure 39: GR&amp;R Values Window

- Step 6:** Have the first operator enter a measured value in the Value field, then press the Add Value button. Repeat this process for all samples.

*Values can be edited after all samples have been taken. Simply click on the value you want to change and typing the updated measurement in the Value field. Then click the Edit Value button.*

- Step 7:** If you have more trials to enter, click the appropriate tab to do that trial. Once all samples for all trials have been taken, click the Next button.
- Step 8:** Repeat the above process for all operators and all trials. When you have completed all the trials, Calspex displays the Gage R&R value.
- Step 9:** Save the GR&R file when prompted.

## Conducting GR&Rs within a Calibration Report

If you have told Calspex to account for GR&R information in your definition of a particular gage, you will be prompted for GR&R information during the calibration report.

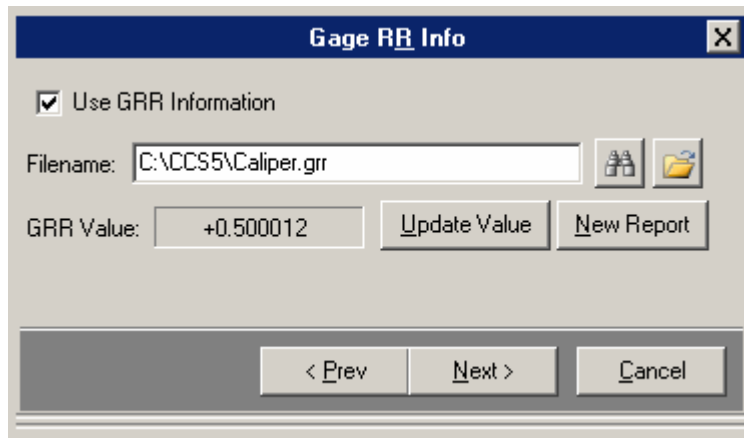


Figure 40: Gage R&R Info Window

When prompted for GR&R information, you can do one of two things:

- ✓ Use an already existing GR&R file. Click the button displaying binoculars and select the GR&R file you want to use. Use the Update Val button to make the GR&R value appear in the box.
- ✓ Conduct a new GR&R report, then and there. Click the New Report button and conduct a GR&R report by following the steps outlined above in Conducting Independent GR&R Reports.

*Ensure that the Use GRR Information check box is checked.*

## Printing

Calspex allows you to create three types of printed reports:

- ✓ Short Form Reports: This type of printed calibration report displays the gage's status, not the numerical data.
- ✓ Long Form Reports: This type printed calibration report displays the gages status, accompanied by numerical data.
- ✓ GR&R Reports: This type of printed report displays the results of a given GR&R report, accompanied by an explanation of how Calspex calculates the GR&R value.

Calspex also allows you to batch print multiple reports at once. Before printing a calibration report, however, it is advisable to use the Print Preview feature.



**Print Button**



**Print Preview Button**

### Using Print Preview

Calspex Print Preview feature is useful in that it allows you to see how a calibration report will look on the printed page.

#### To preview a report:

**Step 1:** Retrieve the desired report if it is not already displayed on your screen.

**Step 2:** Click the fifth button in the toolbar,  or click File in the main menu and select the Print Preview option.

*The type of calibration report displayed (Long Form or Short Form) depends upon the selection made in the Options tab of Calspex Preferences. Please refer to The Options Tab for more information.*






**Step 2:** When presented with the Print window, specify the number of copies you want to print by clicking inside the Copies field and entering a number. Then click OK or press the Enter key.

**For a GR&R report:**

**Step 1:** Click Tools in the main menu and click Gage R&R. Then click Print from the pop-up menu.

**OR**

**Step 2:** Click the Print button in the toolbar  ensuring that the GRR flowchart is active on your screen.

**Step 3:** When presented with the Print window, specify the number of copies you want to print by clicking inside the Copies field and entering a number. Then click OK or press the Enter key.

*You can also access the traditional Windows Print Setup feature. Simply click the File in the main menu and select Print Setup.*

### Printing Multiple Calibration Reports

Calspex provides you with the option of batch printing multiple calibration reports. Simply follow these steps:

**Step 1:** Click Tools in the main menu and select Batch Print. Notice you have retrieved the Batch Print window.

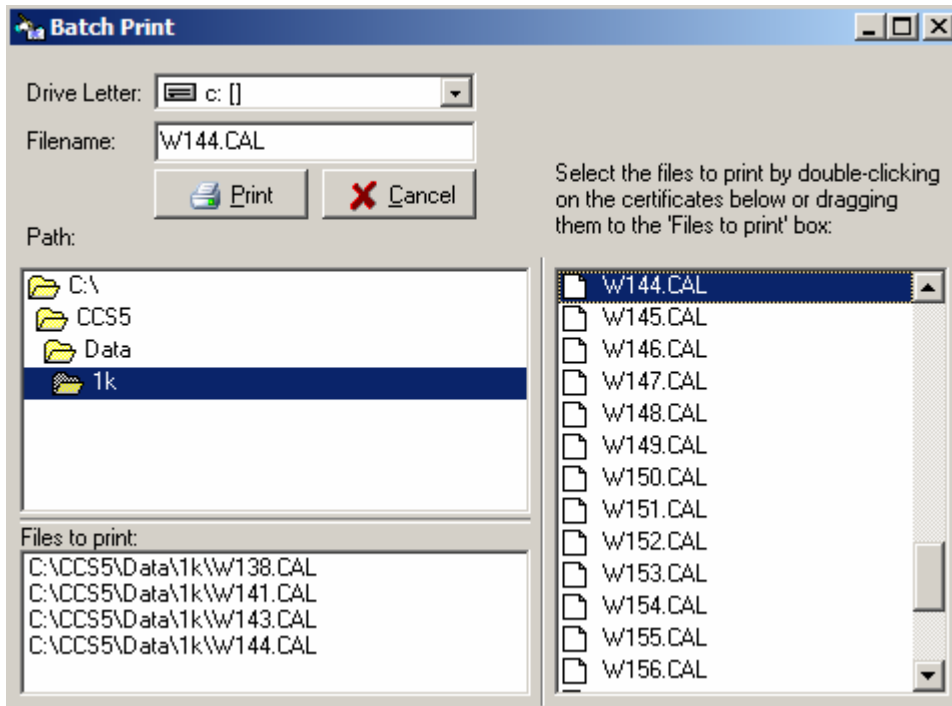


Figure 42: Batch Print Window

**Step 2:** Your calibration files are listed for you in the box in the upper right-hand corner of the window. Simply click and drag those you want to print to the box in the lower half of the window.

*To drag several files at once, simply hold down the Control key and select all the files you want to print. Then click and drag to the lower box, bringing all the files with you.*

**Step 3:** Click the Print button.

*You can also access the traditional Windows Print Setup feature. Simply click the File in the main menu and select Print Setup.*

## **Launch other modules from Calspex**

Launching other programs from Calspex is easy. If there are certain programs you always want to launch simultaneously with Calspex, you can do so in the Options tab of Calspex Preferences. Please refer to The Options Tab for more information.

### **To launch the Recall Database from Calspex:**

**Step 1:** Click this button in the toolbar. 