



Cal-Master Tutorial

Purpose:

The purpose of this tutorial is to thoroughly demonstrate primary features of Cal-Master by walking the user through a series of steps using sample data in a real database (the tutorial database).

Important notes:

- The tutorial database *always* runs as a Silver edition (i.e. in “Silver mode”) – even when the actual database is licensed as a Basic edition. This document highlights the few steps **in green** that could normally not be accomplished (due to unavailable features), or would be done differently, in the Basic edition/actual database (i.e. if the user were not using the tutorial database).
- The tutorial database is always limited to a maximum of 15 instruments.
- The user of this tutorial may simply *read* this tutorial document to see how screens and alarms *would* respond to changes in data and time, or the user may simultaneously make corresponding changes to data in the tutorial (sample) database. This document assumes you are making changes.
- This tutorial assumes the current date is 7/15/2020 (a date in the future). When the tutorial database is connected, today’s date is represented by a setting (in the tutorial menu), rather than your computer’s clock. The user will be instructed to change this setting throughout the tutorial to see how Cal-Master would react to advancing time (without having to change your computer’s clock). Note: when the actual database is connected, today’s data is taken as the date on your computer’s clock.
- If you have previously modified the tutorial database, yet wish to resynchronize it with this tutorial document, please choose "Reset Tutorial Database" from the Tutorial menu (the tutorial database must be connected in order to reset it). Resetting will ensure the sample data appears as when Cal Master was first installed, and will also restore the current date (setting, for tutorial) to 7/15/2020.

[The most recent version of this document is maintained at www.TQSMedia.com/currentdocuments.htm - click here to access](http://www.TQSMedia.com/currentdocuments.htm)

Tips:

- As long as the tutorial database is connected, do not be afraid to make a mistake, since the original data can always be restored by resetting, as described above.
- When the tutorial database is connected, no other users can see your entries/changes, even when a multi-user setup is in use - the tutorial database and current date setting are your own. Feel free to experiment with the tutorial database and current date setting at any time, even long after your company's actual database has been officially started.
- The tutorial database can be used as a "sand box", or a place to "see what happens" when trying something new, without having to worry about making mistakes.
- However, the first time through this tutorial, we suggest you do not stray too far from this document, since making other changes may result in a mismatch between the screenshots in this document and your tutorial database (making this document difficult to follow along).
- It will probably be easier to follow this tutorial if you print this document and then follow the hard copy. (Print it in color if possible.)

Begin Tutorial Here:

1) Make sure the main screen (or Switchboard) indicates that the tutorial database is connected, as opposed to the "Actual" database, and it is using 7/15/2020 as today's date. The database that is connected and the date used as today's date are indicated just above and to the right of the Quit button. You can use the Tutorial menu from the Switchboard screen to connect to the tutorial database, or use the buttons near the lower-right on the Switchboard screen itself. Reset the tutorial database if necessary.

2) The first step that almost all users will need to take is to add Instrument Classes. An instrument class describes a group of instruments that have similar calibration requirements, for example similar calibration frequencies, and similar calibration procedures. By defining classes, data entry of instruments is made easier, since some information can default to that of the instrument class. Also, locating information regarding a particular instrument is easier using classes, since large quantities of information are categorized by class. Definition of classes is very flexible. Let's assume that the business has many types and sizes of rulers and tape measures, but all of them will be set on the same calibration schedule, using the same calibration procedure. From the main switchboard screen, click the "Instrument Classes" button, and then click the "New Record" button at the top. Then, type the information as follows in the blanks, and click "Save Record" at the top to save the new class:

The screenshot shows the 'Instrument Classes' form with the following fields and values:

- Instrument Class Name: Rulers and Tape Measures
- Class Frequency: 12 Months
- Class Prewarning: 2 Weeks
- Reference Documentation: QOP-11-01-035
- Class Notes: (empty text area)

At the top of the form are buttons: Find, New Record, Save Record (highlighted), Undo Changes, Delete Record, and Close.

At the bottom of the form is a navigation bar with the text 'Record: [Navigation icons] 10 of 10'. The number '10' is highlighted in a yellow box with an annotation: 'The number 10 here indicates you are viewing class record 10 (of 10)'. The 'of 10' part is also highlighted in a yellow box with an annotation: 'The number 10 here indicates there are 10 class records in total (after adding the above class - "Rulers and Tape Measures")'. A larger yellow box with an annotation 'Use these buttons to browse go to first, previous, next, and last class record. (Similar in all forms)' points to the navigation icons.

Below the navigation bar is the text 'Licensed to: Any Company, Inc. - Any City USA'.

The information above indicates that all rulers and tape measures will be calibrated at least every 12 months. Also, since the "Prewarning" is 2 weeks, the database administrator will be warned (by alarm) starting 2 weeks prior to the calibration due date. All such calibrations will be performed in accordance with procedure number QOP-11-01-035. Click the Close button at the top right to close this form (Close would also save the record if any changes had been made).

3) Now add a new instrument under the new class "Rulers and tape measures". On the main switchboard screen, click the button "Instruments", and then click the "New Record" button at the top. Then select "Rulers and tape measures" under the instrument class drop-down list at the top left. Then, type the other information as follows in the blanks, including the information shown under the "Location and Status" tab. Make sure to click the "Yes" check box under "In service".

The screenshot shows the 'Instruments' software interface. At the top, there is a menu bar with buttons: Filter, Find, New Record, Save Record, Undo Changes, Delete Record, Copy Instrument, and Close. Below the menu bar, the 'Instrument Class' is set to 'Rulers and Tape Measures' and the 'Instrument Number or ID' is '8749'. The 'Instrument Name' is 'Starret 12 foot tape'. The 'Location and Status' tab is active, showing the 'In Service' section with the 'Yes' checkbox checked. The 'Normal Location' and 'Current Location' are both set to 'Dept 56'. The 'Current Status' is 'OK'. Callout boxes provide instructions: 'Choose "Rulers and Tape Measures"' points to the instrument class dropdown; 'Location and Status' tab' points to the tab; 'Click "Yes" under "In Service" to ensure this instrument is monitored by Cal Master alarms.' points to the 'Yes' checkbox; 'Enter these items' points to the instrument number, name, and location fields; and 'Current Location is not available in Basic edition/actual database' points to the 'Current Location' dropdown.

The instrument number or ID is required and must be unique (in this case 8749). If it was not unique, the database would not accept the value. The instrument name is required, but the content is flexible. Typically, enter the manufacturer and other specific descriptions that will make the instrument more recognizable (in this case we entered "Starret 12 foot tape"). The Normal Location and Current Location fields are optional. For these fields, a new entry can be made, or a value can be selected from the drop-down menus.

(Continued on next page intentionally)

Next, click on the “Scheduling and Alarms” tab. A screen similar to the following appears:

Instruments Filter Find New Record Save Record Undo Changes Delete Record Copy Instrument Close

Instrument Class: Rulers and Tape Measures Instrument Number or ID: 8749 Purchase Date:
Instrument Name: Starret 12 foot tape Instrument Owner:

Location and Status Scheduling and Alarms Calibration Points and Requirements References

Calibration Frequency: 12 Months
Prewarning Period: 2 Weeks (Optional)

Last Calibrated: Next Calibration Due Date: 8/26/2020 Today: 7/15/2020 10:53:37 PM
Last Calibrated at Usage#: Next Due at Usage#: Current # of Usages:

Current Status: OK Prewarning (and in service)

Record: 9 of 9

“Scheduling and Alarms tab”

Note: This is still the record for instrument number 8749

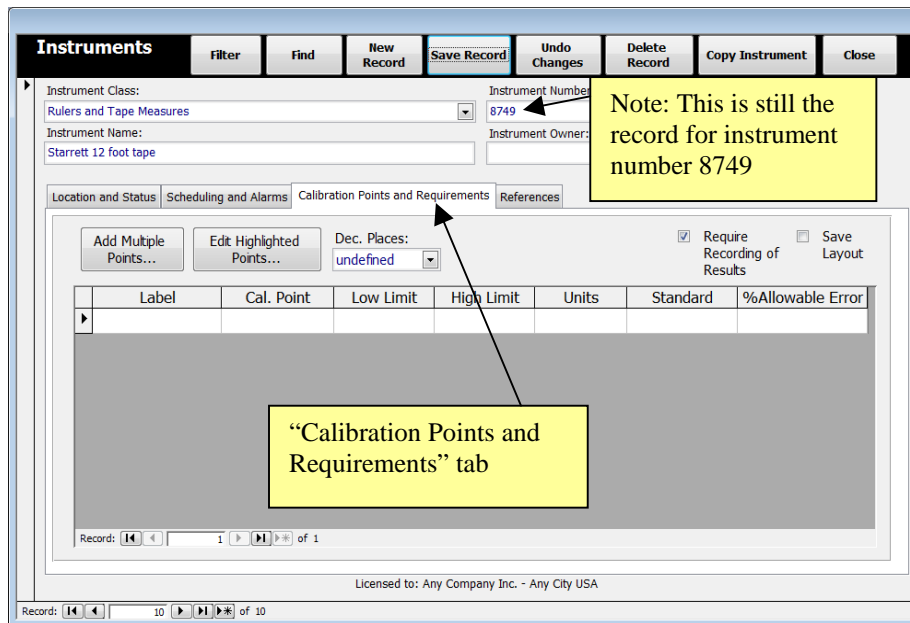
If the Calibration Frequency and Prewarning Period has units of time (Days, Weeks, or Months), then these fields apply.

If the Calibration Frequency and Prewarning Period has units of “Usages” (not available in Basic edition/actual database), then these fields apply.

Note that the calibration frequency and prewarning period defaulted from the class "Rulers and Tape Measures". Although, note that you can modify or customize these values for each instrument. Either the Next Calibration Due Date or the Next Due at Usage#, one or the other, must be *initially* set by the user. Subsequently, Cal Master will increment the Next Calibration Due Date or Next Due at Usage# automatically based on the last calibration date/usage and the instrument's calibration frequency. In this case, set the Next Calibration Due Date to 08/26/2020. The “Last Calibrated” or “Last Calibrated at Usage#” fields are updated automatically by Cal Master when calibration records are saved. Note that the current date/Today’s date is not yet within two weeks (the prewarning period) of the Next Calibration Due Date – thus the instrument will not yet have a prewarning alarm.

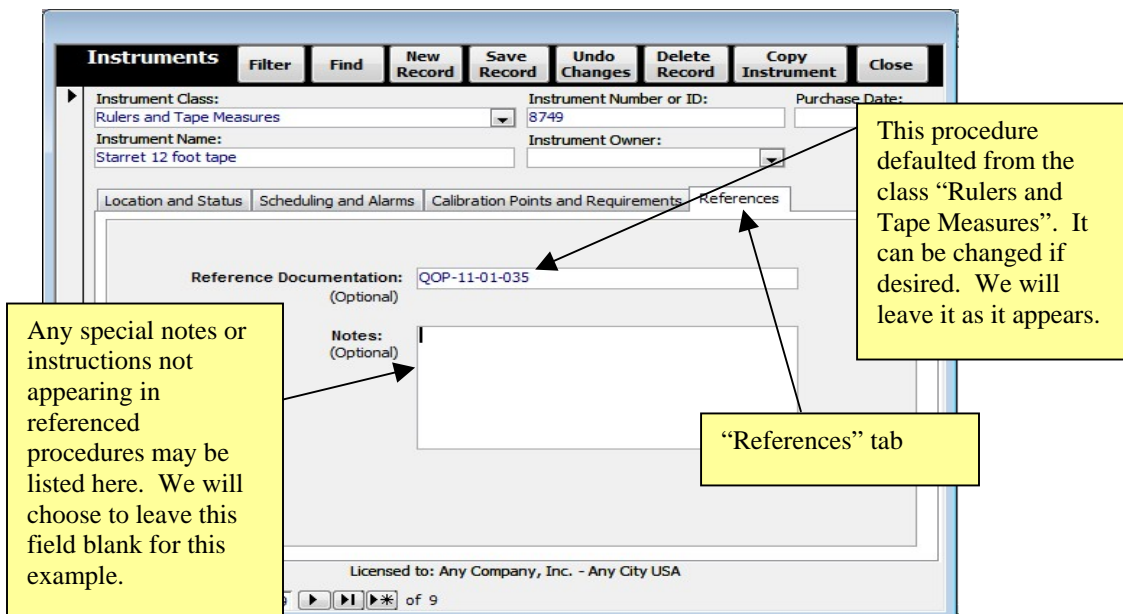
(Continued on next page intentionally)

Next, click on the “Calibration Points and Requirements” tab. A screen similar to the following appears:



This is an optional tab. It can be used to define calibration checkpoints, tolerances, units, and standards. If calibration points are defined, then each calibration record entered will contain these points, along with a datasheet/columns where recording results may be recorded. It is possible to not define any calibration points, in which case subsequent calibration records need only record the initial pass/fail result and final pass/fail result (if applicable). For the above instrument please do just that - do not define any calibration points. In a subsequent example we will define an instrument with some calibration points.

Finally, click the "References" tab. A screen similar to the following appears:



4) Now choose the “Save Record” button at the top of the form to save the new instrument record. Now click the “New Record” button at the top of the form to add another instrument record.

The pencil here means the record changes are unsaved (same in all forms)

Choose “Height gages” as the Instrument class

Click “Yes” under In Service

Enter this information

“Current Location” is not available in Basic edition/actual database

Next, click the “Scheduling and Alarms” tab.

Note that the height gages class has a default frequency of 8 usages, and a default Prewarning of 2 usages.

Enter 3 under “Next Due at Usage#”

“Usages” are not available as a scheduling method in Basic edition/actual database

Then click the “Save Record” button at the top. This will cause the “Current # of Usages” field to be automatically updated – in this case to 0. (You didn’t have to click Save Record at this stage, but we wanted to demonstrate what happens.) Since the current # of usages (0) is not yet within the Prewarning number of usages (2) of the Next Due at Usage # (3), this instrument will not yet have a Prewarning alarm.

After entering a 3 in the “Next Due at Usage#” field, click the “Calibration Points and Requirements” tab.

In the Basic editon/actual database, high/low limits can only be set by indirectly, by setting the %Allowable error, and all calibration points must have the same %Allowable error.

The only field required is the “Cal. Point” field. It can be numerical or non-numerical (for Silver edition), and it can be duplicated – as below.

Number of Decimal places for Cal. Point and high/low limits

Optional fields. On a calibration record, the standards will default to these entries, but they can be changed if a different standard is ultimately used.

In the Basic editon/actual database, the “Standard” field is not available (as a means of establishing a default standard). (However, actual standards used can still be entered in the calibration results screen.

Label	Cal. Point	Low Limit	High Limit	Units	Standard	%Allowable
X-axis	1.500	1.495	1.505	inches	gage 37665	
X-axis	6.000			inches	gage 38762	
Y-axis	1.500	1.490	1.510	inches	gage 37665	
Y-axis	6.000			inches	gage 38762	

Type in the row with an asterisk (new record) to add each of these records shown – one at a time

The “label” field can have any text – intended as a description of the Cal. Point

Each Cal. Point can have its own high/low limits. If left blank, like 6.000 above, the result will be entered on calibration records as a pass/fail.

This column is not often used (in Silver Edition), but allows you to set high/low limits indirectly – with a %Allowable Error.

Type in the row with an asterisk (new record) to add each of these four calibration point records shown – one at a time. Then, under “Dec. Places”, choose 3. Note: Multiple records can be added in a pattern simultaneously by using the “Add Multiple Points...” button (not available in Basic edition/actual database). The use of this function is described in the Cal Master User’s Manual.

Next, click the “References” tab.

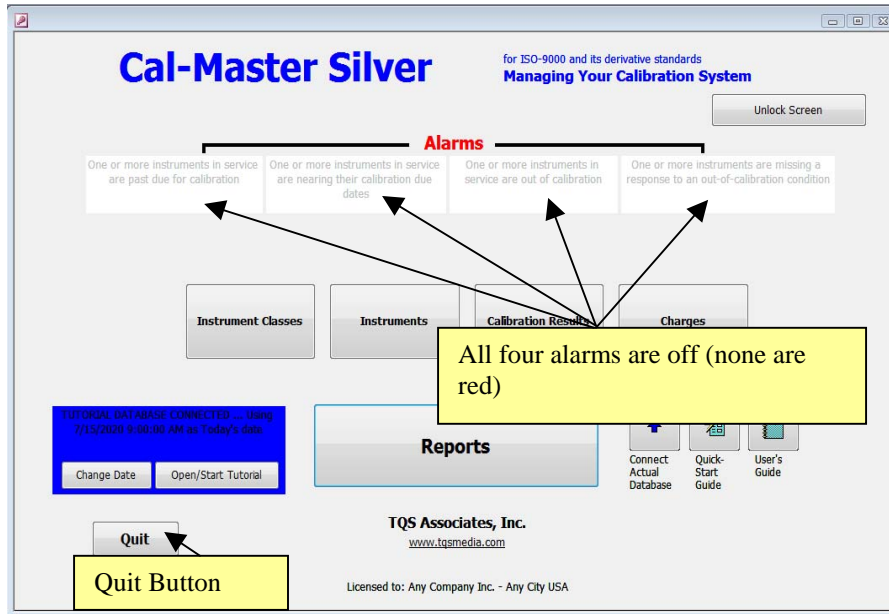
Notice the “Reference Documentation” entry defaulted from the class record.

Under “Notes” enter the text shown.

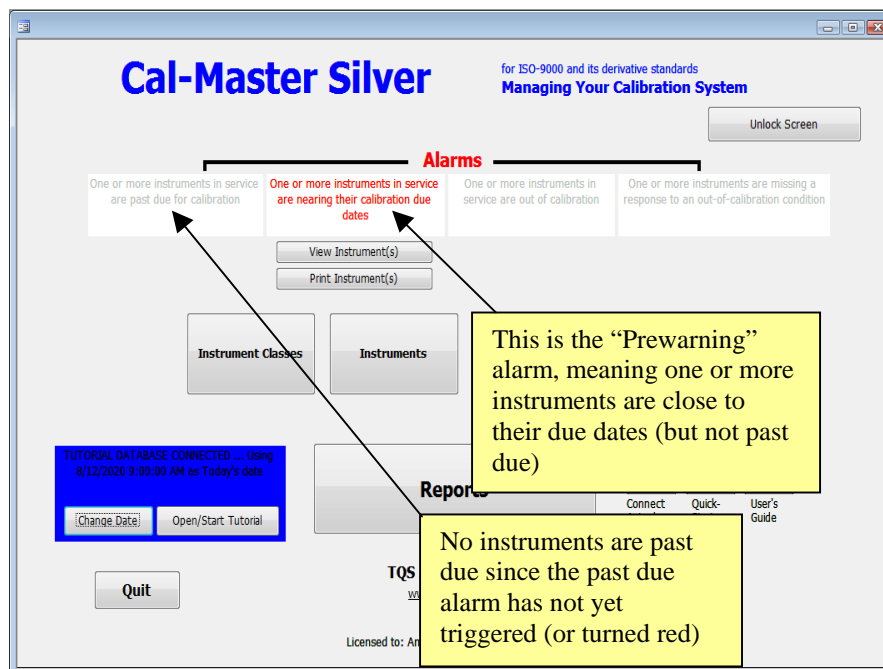
Reference Documentation: QOP-11-01-023 (Optional)

Notes: Ensure gage is clean and free of obvious damage prior to calibrating. (Optional)

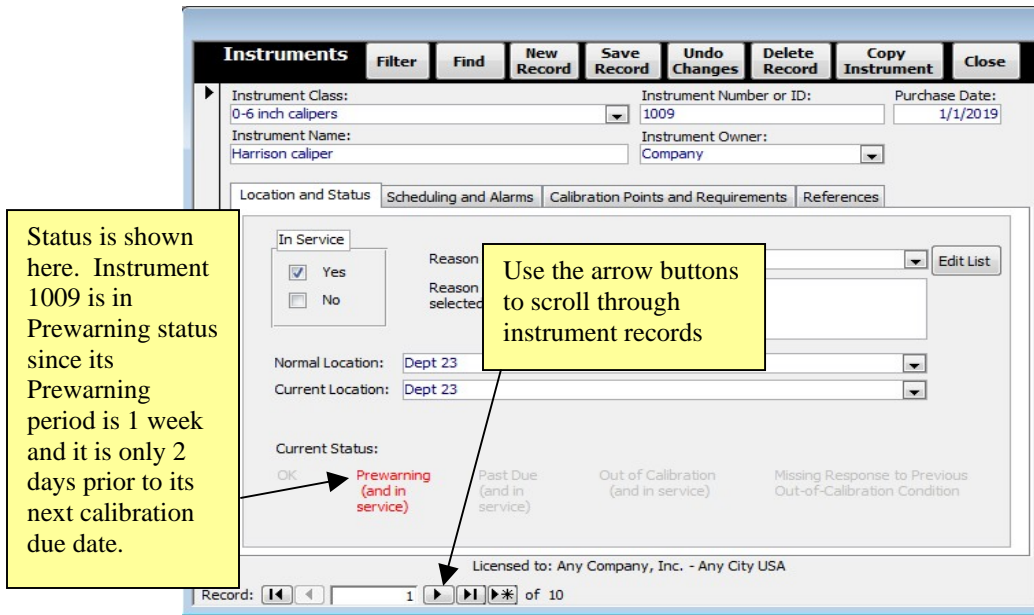
5) After entering the text shown under the “References” tab, click the “Save Record” button. Then click the “Close” button at the top right to close the Instruments form. Notice there are no alarms active on the main switchboard, as shown below.



6) Now we'll force instrument# 8749, the first instrument you added, to have a prewarning alarm by changing the setting for today's date to within 2 weeks of this instrument's next due date. Choose “Change the date the Tutorial uses as Today's date” from the Tutorial menu, and change the date to 8/12/2020 (the time does not have to be changed). The main switchboard screen should now appear similar to the following:

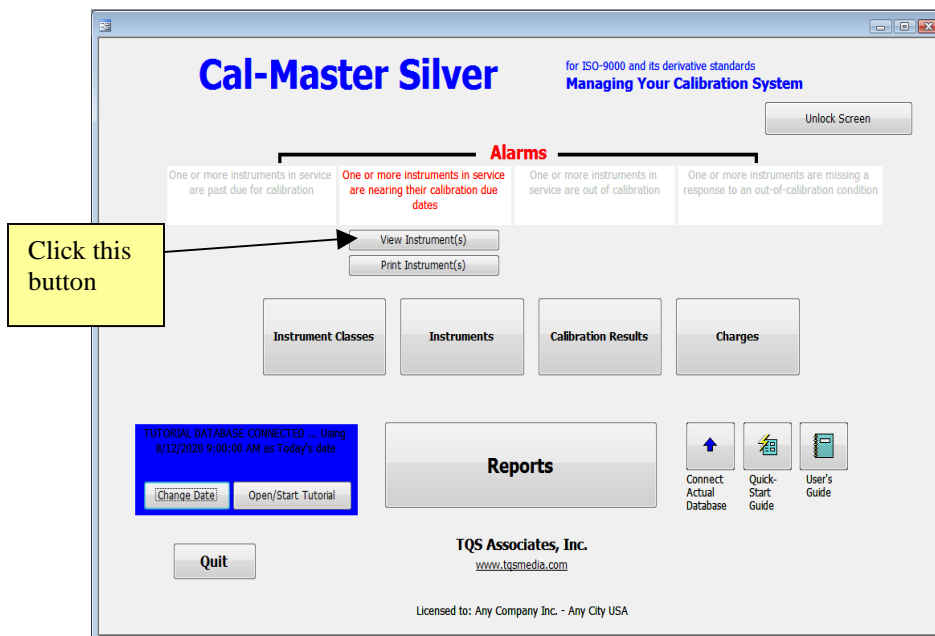


- Click the "Instruments" button on the main switchboard screen, and scroll through the instruments paying attention to the instruments' status.

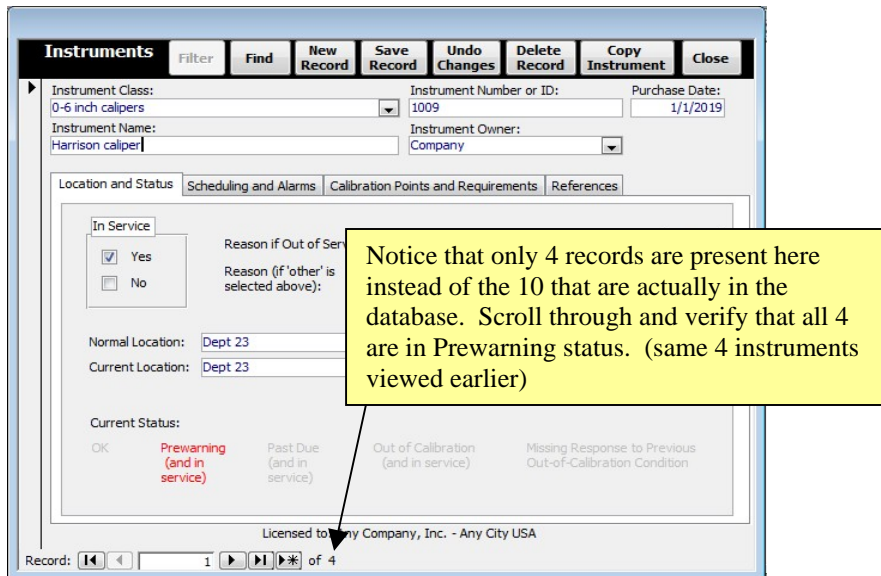


As you scroll through, notice there are actually four different instruments with a Prewarning status (instrument ID's 1008, 1009, 1010, and 8749 – one of the two new instruments you added). Close the instruments form again using the Close button at the upper right.

- On the main switchboard screen, click the button "View Instrument(s)" directly under the alarm which is currently active, as shown:

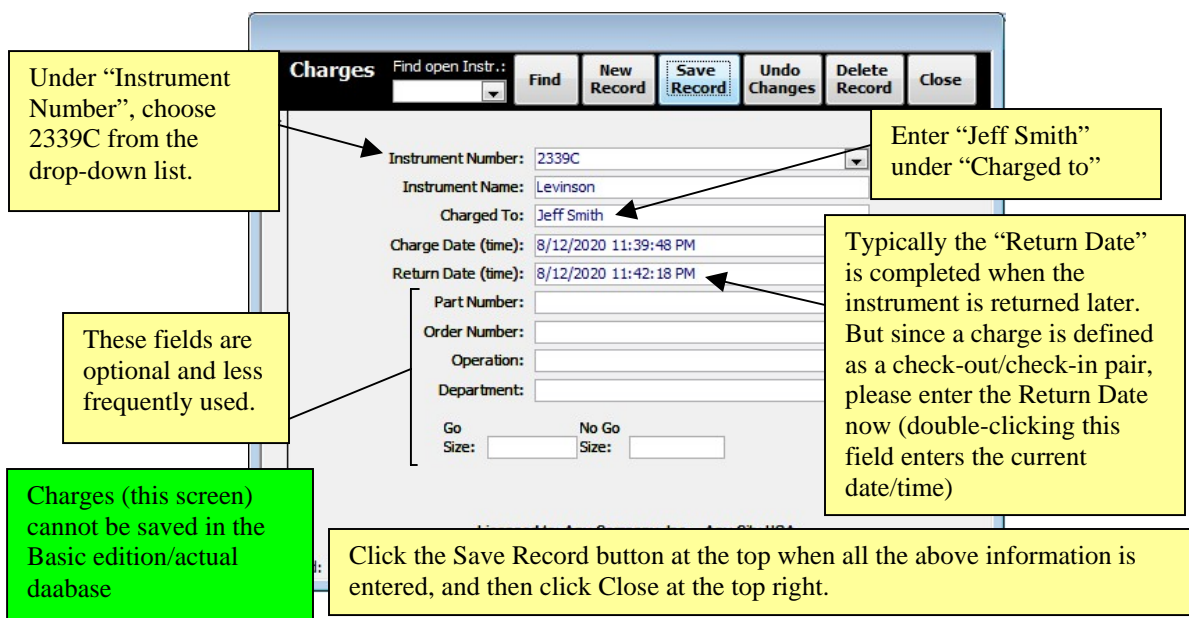


The instruments screen will be opened again. However notice that the number of records has been reduced - you are viewing a filtered set of instrument records - that is only those in Prewarning status.



Click the Close button at the top right again to close the Instruments form.

9) Now we'll force instrument# 2339C, the second instrument you added, to have a prewarning. Since this instrument is scheduled using number of usages instead of time, setting the clock forward will not trigger its alarms. Incrementing this instrument's current number of usages will cause its alarms to trigger. By default, charging out (checking out) and checking in an instrument will cause its current number of usages to increment by one. Click the "Charges" button on the main switchboard, and click "New Record" at the top.



10) Now open the Instruments screen again from the switchboard, locate Instrument #2339C, and click its “Scheduling and Alarms” tab.

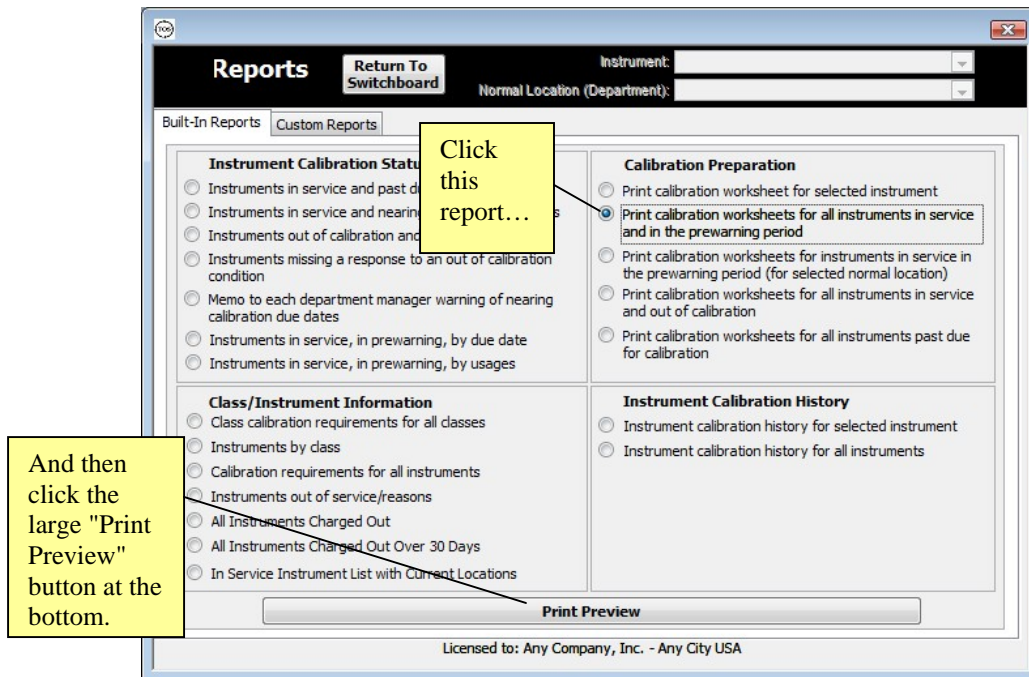
The screenshot shows the 'Instruments' application window. At the top, there is a menu bar with buttons: Filter, Find, New Record, Save Record, Undo Changes, Delete Record, Copy Instrument, and Close. Below the menu bar, the instrument details are displayed: Instrument Class: Height gages, Instrument Number or ID: 2339C, Purchase Date: (empty), Instrument Name: Levinson, Instrument Owner: (empty). The 'Scheduling and Alarms' tab is selected, showing fields for Calibration Frequency: 8 Usages, Prewarning Period: 2 Usages (Optional), Last Calibrated: (empty), Next Calibration Due Date: (empty), Today: 8/12/2020 11:55:51 PM, Last Calibrated at Usage#: (empty), Next Due at Usage#: 3, and Current # of Usages: 1. The 'Current Status' section shows 'Prewarning (and in service)' in red text. A yellow callout box with a black border contains the text: 'Notice that the “Current # of Usages” field now shows “1” and the Prewarning alarm is now on – since it is within 2 usages of the next calibration usage number.' Arrows point from the callout box to the 'Current # of Usages' field and the 'Prewarning (and in service)' status.

The “Current # of Usages” field was incremented automatically upon charge out/in since a setting in the Controls form called “Charges Drive Number of Usages” is checked (the default setting). If this setting was unchecked, then a charge out/in would have no effect on the Current # of Usages, and the Current # of Usages field would have to be incremented manually – directly on the instrument’s record (which might be preferred). See “Controls” in the User’s Guide for more detail. Also note that, under the “Location and Status” tab, the “Current location” was updated upon saving the charge record. Actually it is normally updated twice (if default options are used in the Controls screen) – once when an instrument is checked out, and again when the instrument is checked back in. The Controls screen allows a user to define a “Return Location”- in the Tutorial database this is defined as “Gage Crib”. Since we updated the charge record only once with a charge date *and a return date*, you will not see the Current Location field updated with “Jeff Smith” since it was immediately set back to “Gage Crib”.

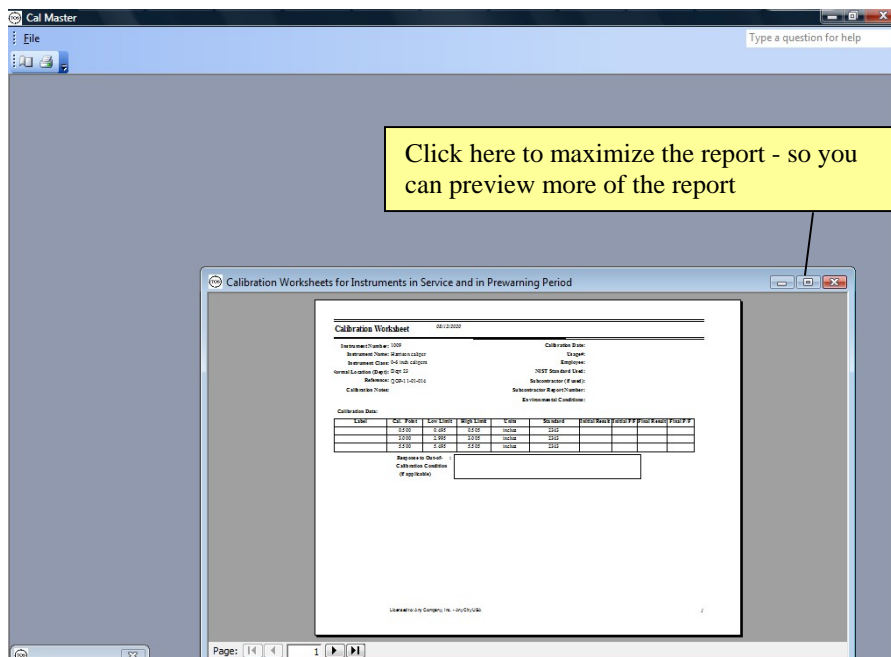
(Continued on next page intentionally)

11) Let's assume that you have been checking the database for alarms every few days, and on 8/12/2020 (which the tutorial is currently set to), you wish to calibrate all the devices that are in Prewarning status before they become past due. Let's also assume the calibration cannot be performed near a PC. Therefore, calibration worksheets listing calibration requirements and spaces for results, would come in handy.

From the main switchboard screen, click the "Reports" button (the large button near the lower-middle). A screen similar to the following should appear:



The following screen should appear:



The screen will then appear more like this:

Use the print button to print a copy of the worksheets.

Note that the worksheet contains all information necessary to remotely calibrate the device (e.g. procedure reference, notes, Cal Points, high/low limits, units, standards, etc.)

When finished viewing/printing the report, click the lower X to close the report and return to the Reports form. (the upper red X would close Cal Master)

Use the buttons here to scroll through the various pages of the report. In this instance, there should be five pages, one page for each instrument in Prewarning. Note: left-most and right-most buttons jump to first and last pages, while two inner buttons move one page at a time.

The worksheet also contains blanks to complete required information, such as standards used, initial and final values and pass/fail results (finals may not be necessary), calibration date, usage#, employee, environmental conditions, etc.

Cal Master - [Calibrat...]
File

Type a question for help

Calibration Worksheet 08/12/2020

Instrument Number: 1009
Instrument Name: Harrison caliper
Instrument Class: 0-6 inch calipers
Normal Location (Dept): Dept 23
Reference: QOP-11-01-014
Calibration Notes:

Calibration Date:
Usage#:
Employee:
NIST Standard Used:
Sub contractor (if used):
Sub contractor Report Number:
Environmental Conditions:

Label	Cal. Point	Low Limit	High Limit	Units	Standard	Initial Result	Initial P/F	Final Result	Final P/F
	0.500	0.495	0.505	inches	2343				
	3.000	2.995	3.005	inches	2343				
	5.500	5.495	5.505	inches	2343				

Response to Out-of-Calibration Condition (if applicable)

Page: 1

Try scrolling through the various pages of this report using the buttons at the lower left, and verify that all five instruments with a Prewarning status are present (there will be one instrument per page). Note that both time-based and usage-based instruments in prewarning are included in this report.

Any time calibration can be performed in front of a PC, it would be most efficient to enter calibration results directly into the database, instead of first completing such a worksheet. However, when remote calibration must be performed, such a worksheet will ensure all the required information is collected before returning to the PC/database to enter the calibration record.

In the next section we will show how to enter calibration results into Cal Master. Before we start, close the report by clicking the lower X – near the upper right (as shown in the above screenshot), and then close the Reports form by clicking the "Return to Switchboard" button at the top of that form (i.e. at the top of the "Reports" form). You should now be back at the main switchboard form.

(Continued on next page intentionally)

12) Click the "Calibration Results" button on the main switchboard screen. Then click the "New Record" button at the top of the Calibration Results form. A screen similar to the following appears.

The screenshot shows the 'Calibrations' form with the 'Instrument No.' dropdown menu open. The menu lists various instrument numbers and names, with '8749 Starret 12 foot tape' highlighted. A callout box points to this selection with the text: "Choose 8749 Starret 12 foot tape from the Instrument No. Drop Down List." Another callout box at the bottom notes: "Note: you could choose a class first from the Instrument Class drop-down list in order to narrow down a large list of instruments in the Instrument No. drop-down list, and then choose an instrument number." The form also shows fields for 'Instrument Class', 'Instrument Name', 'Calibration Date', 'Usage #', 'Employee', 'Standard', 'Subcontractor', 'Report Number', and 'Environmental Conditions'.

After choosing instrument number 8749, a new record is added that must now be completed. The Calibration Results form will now appear as follows:

The screenshot shows the 'Calibrations' form with the instrument number 8749 selected. The 'Instrument Class' is 'Rulers and Tape Measures' and the 'Instrument Name' is 'Starret 12 foot tape'. The 'Calibration Date' is '8/12/2020 12:49:38 PM' and the 'Usage #' is '0'. A callout box on the left notes: "Notice that the class, calibration date, current usage number are automatically completed." A callout box in the center explains: "If you desire, click the 'Reference and Notes' tab and notice that the Reference procedure 'QOP-11-01-035' was copied from the Instrument record (to show what procedure was in effect at the time of calibration). The 'Notes' field would also have been copied if there were any." A callout box on the right states: "The 'Data' tab would contain calibration points and requirements copied from the instrument record if there were any. Recall we left this tab blank for this instrument. Verify if desired." The form also shows fields for 'Dec. Places', 'Initial Pass/Fail', and 'Final Pass/Fail'.

Return to the “Summary” tab.

The screenshot shows the 'Calibrations' software interface. At the top, there is a menu bar with buttons: Filter, Find, New Record, Save Record, Undo Changes, Delete Record, and Close. Below this, the 'Summary' tab is active. The form contains the following fields and values:

- Instrument Class: Rulers and Tape Measures
- Instrument No.: 8749
- Instrument Name: Starret 12 foot tape
- Dec. Places: undefined
- Initial Pass/Fail: P
- Final Pass/Fail: (empty)
- Calibration Date: 8/12/2020 12:49:38 PM
- Usage#: 0
- Employee: Chris Porter
- Standard: 76573
- Subcontractor: (empty)
- Report Number: (empty)
- Environmental Conditions: (empty)

Two yellow callout boxes provide instructions:

- One points to the 'Save Record' button at the top, stating: "After entering the employee and standard, choose 'P' (for Pass) under Initial Pass/Fail, and then click the 'Save Record' button at the top."
- Another points to the 'Employee' and 'Standard' fields, stating: "Enter 'Chris Porter' under Employee and enter '76573' under Standard."

Now the user must enter an Employee name (which can be entered or selected from the list) and the NIST traceable standard ID, and the actual calibration result. Under Standard, you should enter the ID number of the device or standard set against which the instrument (ID# 8749) is being calibrated. Let's assume this tape is being calibrated against a gage block set - say gage block set# 76573. Under "Standard", enter "76573" or "Gage block set 76573. Of course gage block set 76573 must also be listed in the Instruments screen, and periodic certifications (or calibrations) must be performed against NIST traceable standards. The "subcontractor" and "report number" fields are only required when the calibration is performed by an outside service, and the Environmental Conditions field is optional.

In this above example, we are assuming the instrument passed calibration on the first try, without adjustment. Therefore no Final Pass/Fail result is required. If the Initial Pass/Fail result was Fail, then a Final Pass/Fail result would be required, or else the instrument would have an “out of calibration” alarm. Note that if this instrument had any calibration points and the “Require Recording of Results” checkbox was checked in the Instruments form (the default), then the user would not be able to choose Initial or Final Pass/Fail status for the entire calibration record (as we did above). Instead, individual results would have to be entered for each cal point under the “Data” tab. You will see this situation in the next example. Note: the option to not define any cal points may be particularly useful for outside service calibrations, or for situations that demand less rigor and evidence of calibration. Choose “P” (for pass) under the Initial Pass/Fail field at the top of the form as shown and click “Save Record” at the top. Then choose Close at the upper right to close the form.

(Continued on next page intentionally)

13) On the main switchboard screen, click the "Instruments" button, locate instrument ID 8749, and click the "Scheduling and Alarms" tab.

Notice the "Last Calibrated" field was automatically updated and the "Next Calibration Due Date" was automatically incremented by the Calibration frequency (12 months).

The "Current Status" is now "OK" – instead of Prewarning

Upon saving the calibration result with an acceptable result (pass), notice the instrument was automatically rescheduled for its next calibration and it was removed from Prewarning status. Click Close at the upper right to return to the switchboard.

14) Now let's enter a calibration record for the second instrument you added earlier. Click the "Calibration Results" button on the switchboard, click "New Record" at the top, and choose "2339C Levinson" in the Instrument No. drop down list near the upper right. The screen should now appear similar to the following:

Note: Calibration date and Usage# were entered by Cal Master

Please select "Angela Kay" under the Employee drop-down, and enter "70 degrees C" under Environmental Conditions

Standards can be defined in the Data tab under each calibration result or they can be defined once only for the calibration record on the Summary tab here. In this example, we'll define them in the Data tab – so we'll leave this field blank.

Select “Angela Kay” under the Employee drop-down, and enter “70 degrees C” under Environmental Conditions. Then click the “Reference and Notes” tab, and notice that both fields under this tab were copied from the instrument record (note that you can change them in the Calibration record without changing them in the Instruments form). Now click the “Data” tab.

Calibrations Filter Find New Record Save Record Undo Changes Delete Record Close

Instrument Class: Height gages Instrument No.: 2339C
 Instrument Name: Levinson Dec. Places: 3 Initial Pass/Fail Final Pass/Fail

Summary Reference and Notes **Data**

Label	Cal. Point	Low Limit	High Limit	Units	Standard	Initial Resul	Initial PF	Final Result	Final PF	%
X-axis	1.500	1.495	1.505	inches	gage 3766					
X-axis	6.000			inches	gage 3876					
Y-axis	1.500	1.490	1.510	inches	gage 3766					
Y-axis	6.000			inches	gage 3876					

Record: 1 of 4

Record: 7 of 9

Licensed to: Any

Callout 1: All the data shown here, including Decimal Places, was copied from the Instrument record (we have not added anything yet to the Data tab)

Callout 2: You cannot (with default setup) choose pass/fail at the top, since data exists in the Data tab. Instead, the “Initial PF” (PF=Pass/Fail) column in the “Data” tab must be completed for each record. For the two records shown with high/low limits, the user cannot choose Initial PF even in the Data tab, but rather the user must enter a numerical value in the “Initial Results” column. Cal Master automatically updates Pass/Fail fields in such scenarios. Final PF and Final Results work similarly.

Enter 1.497 in the Initial Result field for the first record in the Data tab. Then, in the second record, simply choose “P” (for pass) under the Initial PF column (since there are no high/low limits). Then click in the third record, but don’t enter anything in it yet. The screen appears as follows:

Calibrations New Record Undo Changes Delete Record Close

Instrument Class: Height gages Instrument No.: 2339C
 Instrument Name: Levinson Initial Pass/Fail Final Pass/Fail

Summary Reference and Notes **Data**

Label	Cal	Low Limit	High Limit	Units	Standard	Initial Result	Initial PF	Final Result	Final PF	%
X-axis	1.500	1.495	1.505	inches	gage 3766	1.497	P			
X-axis	6.000			inches	gage 3876		P			
Y-axis	1.500	1.490	1.510	inches	gage 3766					
Y-axis	6.000			inches	gage 3876					

Record: 3 of 4

Record: 7 of 9

Licensed to: Any Company, Inc. - Any City USA

Callout 1: Notice that when the first record was saved (when clicking out of it), Cal Master automatically inserted a “P” in the “Initial PF” column.

Callout 2: Since two records in the data tab still have no results, Cal Master has not yet completed the overall Initial Pass/Fail field for this calibration record.

In the third record, enter 1.508 under the “Initial Result” column. In the fourth record, choose “P” under the “Initial PF” column. When finished, click in another record to save the fourth record, and notice that the main “Initial Pass/Fail” field for this calibration record at the top of the form is automatically set to “P” by Cal Master.

Once all records in the Data tab have an initial pass/fail result, the main calibration record's “Initial Pass/Fail” field is completed automatically by Cal Master.

Label	Standard	Initial Result	Initial PF	Final Result	Final PF	%
X-axis	gage 3766	1.497	P			
X-axis	6.000 inches gage 3876		P			
Y-axis	1.500 inches gage 3766	1.508	P			
Y-axis	6.000 inches gage 3876		P			

THE MAIN CALIBRATION RECORD MUST HAVE A PASS OR FAIL RESULT (HERE) BEFORE CAL MASTER RESCHEDULES THE NEXT CALIBRATION IN THE INSTRUMENTS FORM. (IF THE INITIAL RESULT IS FAIL, THEN THE INSTRUMENT IS STILL RESCHEDULED AND THE INSTRUMENT'S OUT-OF-CALIBRATION ALARM IS TURNED ON UNTIL AN ACCEPTABLE FINAL RESULT IS ENTERED.)

The “Standard” column in the Data tab may be changed if it turns out a different standard than defined in the Instruments form is actually used. Choose Close at the upper right to close the form.

15) On the main switchboard screen, click the "Instruments" button, locate instrument ID 2339C, and click the “Scheduling and Alarms” tab.

Notice that the “Last Calibrated at Usage #” field and the “Next Due at Usage #” field were updated by Cal Master. The latter field was incremented by the calibration frequency – 8 usages.

Calibration Frequency: 8 Usages
 Prewarning Period (Optional): 2 Usages
 Last Calibrated: 8/12/2020 2:28:51 PM
 Next Calibration Due Date: [Empty]
 Today: 8/12/2020 10:27:01 PM
 Last Calibrated at Usage #: 1
 Next Due at Usage #: 9
 Current # of Usages: 1

Current Status: **OK** (Prewarning (and in service) is selected)

The Current Status was changed from Prewarning back to OK.

16) Close the Instruments form with the Close button at the top right. Return to the Calibration Results form and locate the first calibration record you added – for Instrument Number 8749.

Calibrations Filter Find New Record **Save Record** Undo Changes Delete Record Close

Instrument Class: Rulers and Tape Measures Instrument No.: 8749
 Instrument Name: Starrett 12 foot tape Dec. Places: undefined Initial Pass/Fail: F Final Pass/Fail:
 Summary Reference and Notes Data

Calibration Date: 8/12/2020 12:49:38 PM
 Usage#: 0
 Employee: Chris Porter
 Standard: 76573
 Subcontractor: Optional
 Report Number:
 Environmental Conditions:
 License to: Any Company Inc. - Any City USA
 Record: 9 of 9

Instrument No. 8749

Change the Initial Pass/Fail field for the entire calibration record from "P" to "F" (from pass to fail) and then click "Save Record" at the top.

As shown above, change the Initial Pass/Fail field for the entire calibration record from "P" to "F" (from pass to fail) and then click "Save Record" at the top. Then close the Calibration form with the close button at the upper right.

17) Notice on the main switchboard that two new alarms are on.

Cal-Master Silver

Alarms

- One or more instruments in service are past due for calibration
- One or more instruments in service are nearing their calibration due dates
- One or more instruments in service are out of calibration
- One or more instruments are missing a response to an out-of-calibration condition

View Instrument(s) View Calibration(s) View Calibration(s)
 Print Instrument(s) Print Calibration(s) Print Calibration(s)

Instrument Classes Instruments Calibration Results Charges

TUTORIAL DATABASE CO 8/12/2020 9:00:00 AM
 Change Date

This alarm is on because as-is, without a final (or post-adjust) result, this instrument is deemed out-of-calibration.

This alarm is on until evidence is entered that suspect materials (checked with this instrument) have been evaluated and dispositioned (an ISO-9000 requirement)

If desired, you could open the Instruments form and verify the these two alarms are shown ON in the instrument record for instrument# 8749.

18) Return to the “Calibration Results” form and locate the calibration record you added for instrument# 8749 once again. Let’s assume the instrument was in fact initially out of calibration, and it was subsequently adjusted/fixed and recalibrated successfully.

Calibrations Filter Find New Record **Save Record** Undo Changes Delete Record Close

Instrument Class: Rulers and Tape Measures Instrument No.: 8749
Instrument Name: Starret 12 foot tape Dec. Places: undefined Initial Pass/Fail F Final Pass/Fail P

Summary Reference and Notes Data

Calibration Date: 8/12/202
Usage#:
Employee: Chris Porter
Standard: 76573
Subcontractor:
Report Number:
Environmental:
Conditions

Response to Out of Calibration Condition: Re-evaluated suspected product - all in tolerance.

Select “P” (for pass) in the Final Pass/Fail field. This will turn off the “out-of-calibration” alarm for this instrument. (If the initial result was Pass, this field should be left blank.)

Enter the text “Re-evaluated suspect product – all in tolerance” in the “Response to Out-of-Calibration Condition” field. This will turn off the “missing response to out-of-calibration condition” alarm for this instrument.

Licensed to: Any Company,
Record: 9 of 9

Enter the data shown above and then click the “Save Record” button at the top. These two entries will turn off the alarms for instrument# 8749. The “Response to Out of Calibration Condition” field addresses and ISO-9000 requirement: that suspect materials verified with an instrument out of calibration should be re-evaluated. You should enter evidence that suspect materials were considered, evaluated, and/or inspected, and that they were controlled – if necessary. As long as any text is entered in this field, the corresponding “missing response” alarm will be turned off for the instrument. Close the “Calibration Results” form again with the Close button at the top right and verify (on the Switchboard and/or in the Instruments form/with instrument# 8749) that both the “out-of-calibration” alarm and the “missing response” alarm have been turned off. Note: if ANY instruments have these alarms on, the corresponding alarm *on the switchboard* will be on. In this case, this was the only instrument with these two alarms on – so these alarms turned off on the switchboard.

(Continued on next page intentionally)

19) Return to the Calibration Results form, locate the calibration record you added second – for instrument# 2339C, and change the Initial Result for Cal Point 1.500 (third record under Data tab) from 1.508 to 1.511, in order to put it over the high limit.

The screenshot shows the 'Calibrations' software interface. At the top, there are buttons for 'Undo Changes', 'Delete Record', and 'Close'. Below these, the instrument details are shown: 'Instrument Class: Height gages' and 'Instrument Name: Levinson'. The instrument number '2339C' is also visible. A dropdown menu for 'Initial Pass/Fail' is set to 'F' and 'Final Pass/Fail' is set to 'P'. The main data table has columns: 'Label', 'Cal. Po', 'Initial Result', 'Initial PF', 'Final Result', 'Final PF', and '%'. The table contains five rows of calibration data. A yellow callout box with the text 'Change this entry from 1.508 to 1.511 and then click in another record in the datasheet to save the result.' points to the 'Initial Result' cell of the third row (Y-axis, 1.500). Another yellow callout box with the text 'Notice that when the record is saved, the "P" in the Cal Point record and the "P" for the entire calibration record change automatically to an "F".' points to the 'Initial PF' cell of the same row. The status bar at the bottom shows 'Record: 4 of 4' and 'Record: 7 of 9'.

Label	Cal. Po	Initial Result	Initial PF	Final Result	Final PF	%			
X-axis	1.500	1.495	1.505	inches	gage 3766	1.497	P		
X-axis	6.000			inches	gage 3876		P		
Y-axis	1.500	1.490	1.510	inches	gage 3766	1.511	F		
Y-axis	6.000			inches	gage 3876		P		

Because the instrument has been left in an out-of-calibration state (as far as Cal Master knows), this instrument's out-of-calibration alarm should now be on. Also, because the initial result for the instrument was fail and there is no response for out-of-calibration condition entered yet on the Summary tab, this instrument's "missing response to out-of-calibration condition" alarm should also be on. Use the Close button at the upper right to return to the switchboard and verify these two alarms are once again on (not shown). Also, open the Instruments form again, find instrument# 2339C and verify these two alarms are shown on within this form (not shown). Close the Instruments form and return to the switchboard.

(Continued on next page intentionally)

20) Open the Calibration Results form once again, and locate the calibration record you added second – for instrument 2339C once again. Now let’s assume you’ve adjusted the above instrument and are now documenting the final, as-left calibration condition.

Enter the values shown here in the “Final Result” column.

Also, choose “P” for these two Cal Points (the points without high/low limits).

Notice a “P” is automatically inserted in the Final Pass/Fail field for the main calibration record after completing the Final PF column with “P”.

Label	Cal. Point	Low Limit	High Limit	Units	Standard	Initial Result	Initial PF	Final Result	Final PF
X-axis	1.500	1.495	1.505	inches	gage 3766	1.497	F	1.496	P
X-axis	6.000			inches	gage 3876		P		P
Y-axis	1.500	1.490	1.510	inches	gage 3766	1.511	F	1.499	P
Y-axis	6.000			inches	gage 3876		P		P

Even though the Initial Pass/Fail field of the main calibration record is “F”, because the Final Pass/Fail field shows “P”, the out-of-calibration alarm for this instrument should now be off. Close this form and verify this on the switchboard alarms and in the instrument record for instrument# 2339C in the Instruments form. Notice that the “missing response” alarm is still on for instrument # 2339C.

21) Close the Instruments for (if open) and return to the switchboard, shown below:

Cal-Master Silver
for ISO-9000 and its derivative standards
Managing Your Calibration System

Unlock Screen

Alarms

- One or more instruments in service are past due for calibration
- One or more instruments in service are nearing their calibration due dates
- One or more instruments in service are out of calibration
- One or more instruments are missing a response to an out-of-calibration condition

View Instrument(s) | Print Instrument(s) | View Calibration(s) | Print Calibration(s)

Instrument Classes | Instruments | Calibration Results | Charges

TUTORIAL DATABASE CONNECTED ... Using 8/12/2020 12:49:38 PM as Today's date
Change Date | Open/Start Tutorial

Reports

Connect Actual Database | Quick-Start Guide

Quit

TQS Associates, Inc.
www.tqsmedia.com

Licensed to: Any Company Inc. - Any City USA

Click the “View Calibration(s)” button under the “missing response” alarm

The Calibration Results form opens, filtered down to just those records with the “missing response” alarm on – just the record we added for instrument# 2339C in this case.

Notice we it shows record 1 of 1 at the lower left. If other instruments had this alarm, more records would be shown here, and you could scroll through them with the arrows.

ns Filter Find New Record Save Record Undo Changes Delete Record Close

Height gages Instrument No.: 2339C

Levinson Dec. Places: 3 Initial Pass/Fail F Final Pass/Fail P

Reference and Notes Data

Calibration Date: 8/12/2020 2:28:51 PM Response to Out of : Calibration Condition

Usage #: 1

Employee: Angela Kay

Standard: [Dropdown]

Subcontractor: [Dropdown] Optional

Report Number: [Text]

Environmental: 70 degrees C Conditions

Record: 1 of 1

Licensed to: Any Company, Inc. - Any City USA

Without closing the form, enter the text shown below for the “Response to Out of Calibration Condition” field, and then click the “Save Record” button at the top.

Calibrations Filter Find New Record Save Record Undo Changes Delete Record Close

Instrument Class: Height gages Instrument No.: 2339C

Instrument Name: Levinson Dec. Places: 3 Initial Pass/Fail F Final Pass/Fail P

Summary Reference and Notes Data

Calibration Date: 8/12/2020 2:28:51 PM Response to Out of : Calibration Condition

Usage #: 1

Employee: Angela Kay

Standard: [Dropdown]

Subcontractor: [Dropdown] Optional

Report Number: [Text]

Environmental: 70 de Conditions

Response to Out of : Calibration Condition: Screened WIP checked with this instrument. Nonconforming material tagged and segregated.

Enter “Screened WIP checked with this instrument. Nonconforming material tagged and segregated.”

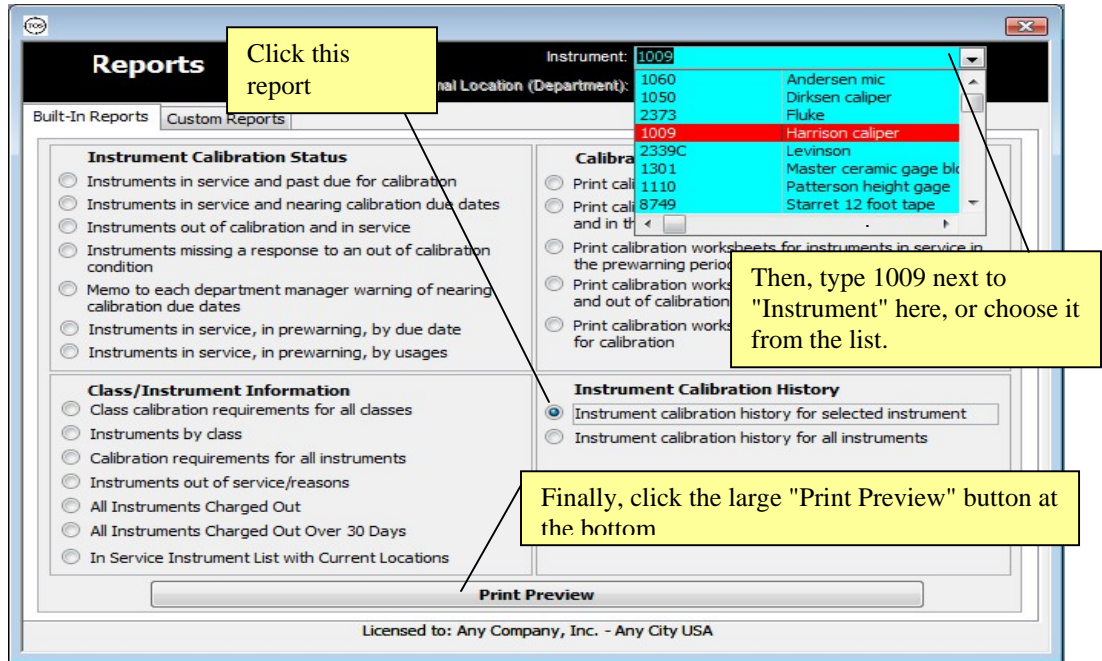
The thing to remember is: because the calibration record has an initial failure, you need a response here to avoid the “missing response” alarm.

Record: 1 of 1

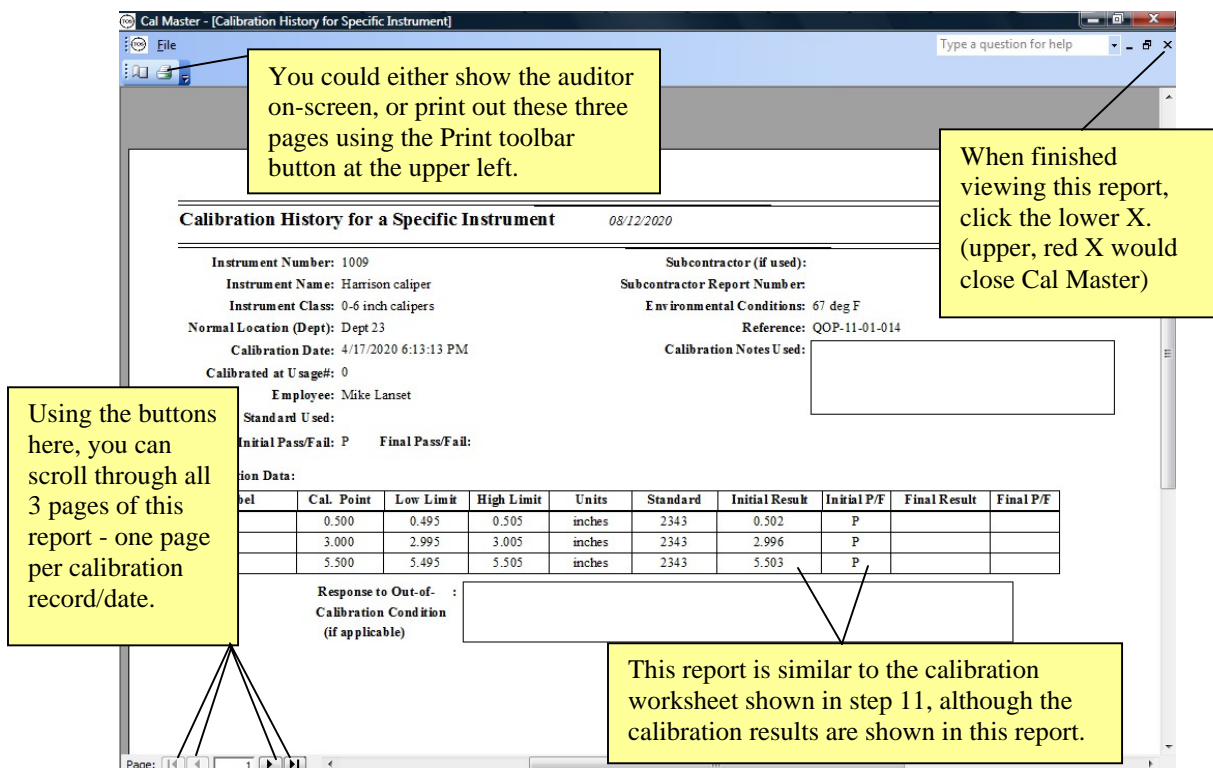
Licensed to: Any Company, Inc. - Any City USA

Close this form and verify the missing response alarm if now off (on the switchboard and in the Instruments form). Return to the switchboard.

22) If an auditor asks for past calibration records for a particular instrument, there are two ways of quickly summarizing the needed information. One way is to preview or print a report. Assume you are asked for all past calibration records for instrument ID 1009. Click the large "Reports" button on the main switchboard, near the bottom middle. The screen should appear as follows:



When the report appears, maximize it as described in step 11. The report should appear similar to the following:



After closing this report (with the lower X), close the "Reports" form by clicking the "Return to Switchboard" button at the top of the Reports form.

23) Another, on-screen-only method of demonstrating calibration history to an auditor is to use the "Filter". This is probably the quickest and easiest method of locating specific records, particularly when hard copies are not needed. From the switchboard, click the "Calibration Results" button, and then click the "Filter" button at the top. The screen should appear similar to the following:

The screenshot shows the 'Calibrations Filtered' interface. At the top, there is a toolbar with buttons: Filter, Find, New Record, Save Record, Undo Changes, Delete Record, and Close. Below the toolbar, there are input fields for Instrument Class (0-6 inch calipers), Instrument No. (1009), Instrument Name (Harrison caliper), Dec. Places (3), Initial Pass/Fail (P), and Final Pass/Fail. There are also tabs for Summary, Reference and Notes, and Data. A callout box points to the word 'Filtered' in red text, stating: 'While the filter is applied, the word "Filtered" appears here in red.' Another callout box points to the 'Apply Filter' button, stating: 'Click "0-6 inch calipers" under class, then click 1009 under instrument, and then click the "apply filter" button.' A third callout box points to the list of calibration records, stating: 'Notice that instrument 1009 has three calibration records on the listed dates.' The list of records is as follows:

Instrument Class=	Instrument=	Calibration Date=
0-6 inch calipers	1009 Harrison caliper	4/17/2020 6:13:13 PM
6-12 inch calipers		5/15/2020 1:19:02 PM
Gage block sets		7/15/2020 11:26:15 AM

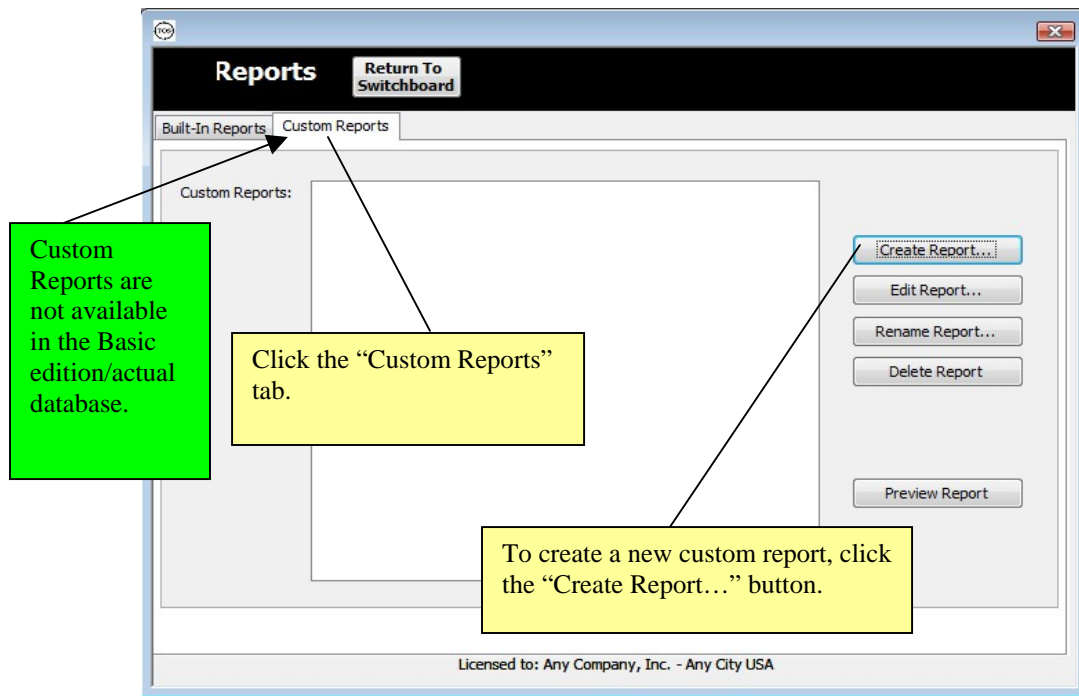
Other callouts include: 'Exclude out-of-service instruments' (unchecked), 'Record: 1 of 3' at the bottom, and a detailed instruction: 'Since no particular calibration date was highlighted in the filter form, when "apply filter" is clicked, all three calibration records are filtered in this form. Notice the total number of records is only 3 after applying the filter. If you close the filter form (which does not remove the active filter), you can use the arrows to scroll through them and show the auditor. You may also wish to create screenshots and print the records in this format.'

To remove the filter (and again view all calibration records), reopen the filter form by clicking the "Filter" button at the top (if not already open), and then click the "Clear Filter" button. Click Close on the filter form when done with the filter form.

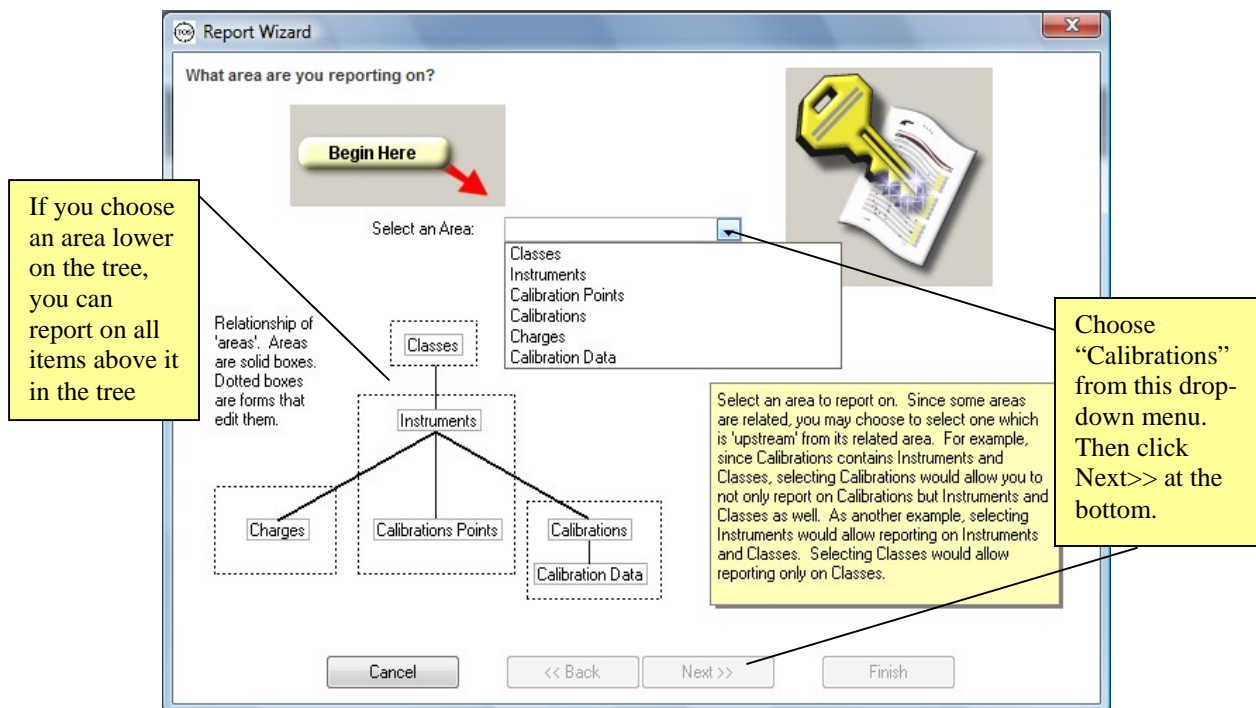
The filter is a very powerful feature. If you highlight only a class, and not an instrument or calibration date, then applying the filter will filter out all calibration records for all instruments in that class. Alternatively, if you choose an instrument and a calibration date, applying the filter will filter out just that one calibration record, making for a very quick method of finding required information.

Close the filter and the Instruments form, and return to the switchboard.

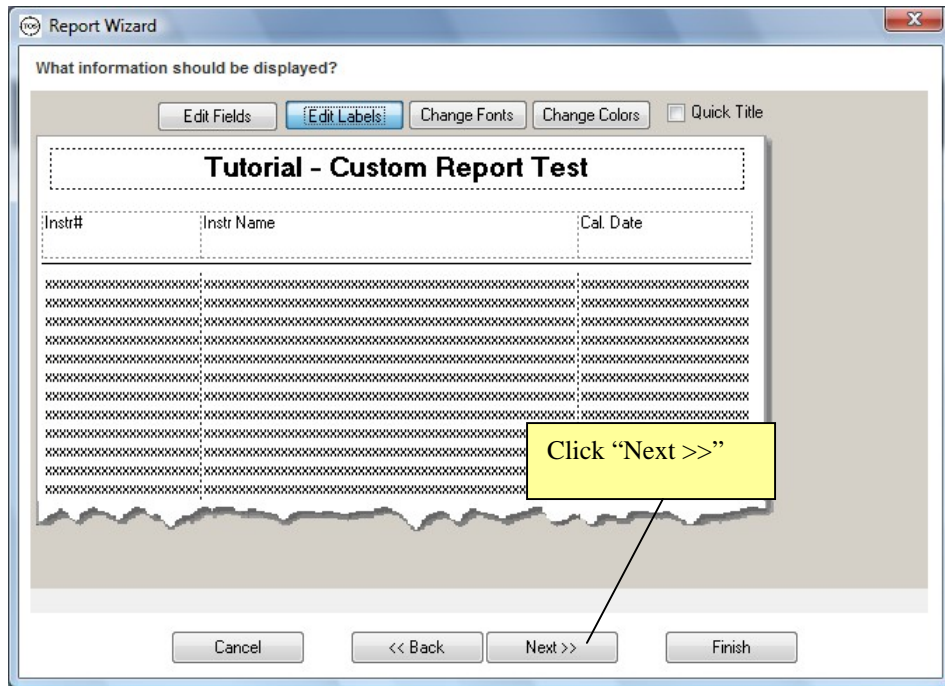
24) The Reports screen has many built-in reports. However, if your reporting needs are not met by the built-in reports, you may create and save an unlimited number of custom reports (not available in Basic edition/actual database). Click the Reports button on the main switchboard. The Built-In Reports tab is chosen by default. Click the “Custom Reports” tab.



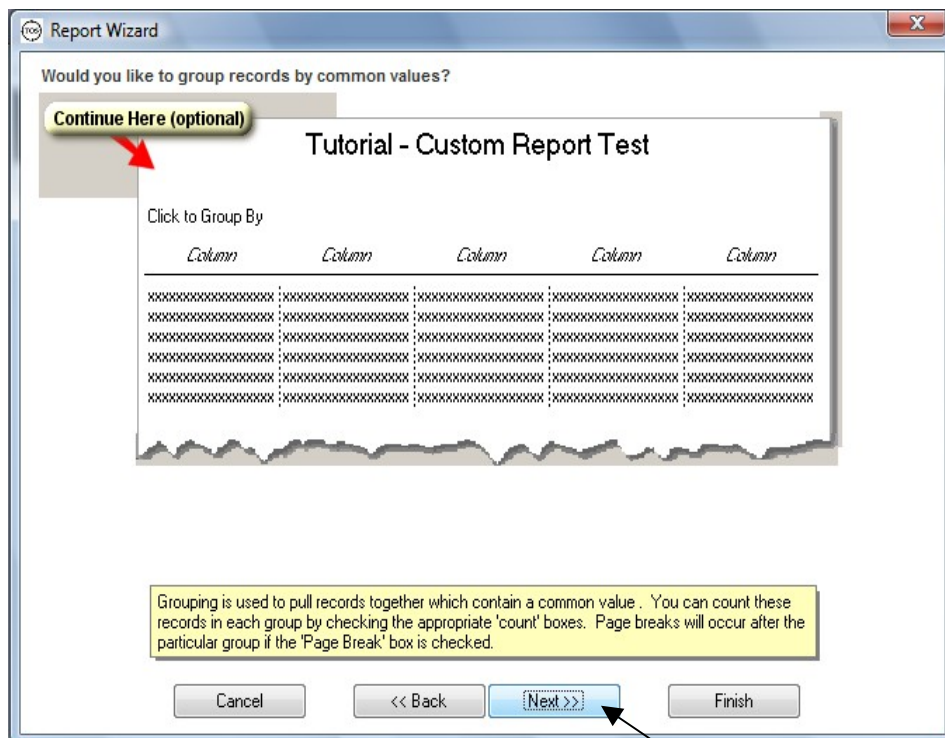
The following screen appears:



After widening the Instrument Name column, our screen looks like the following:



The following form appears:



Opt out of grouping records by clicking "Next >>".

The following form appears:

The screenshot shows the 'Report Wizard' dialog box at the 'Filter' step. The title bar reads 'Report Wizard'. The main question is 'Would you like to filter the data for specific records?'. On the left, under 'Filter where:', there is a dropdown menu for 'CI_Classname' with '0-6 inch calipers' selected. Below it is an 'Add where:' section. On the right, under 'Sort by:', there is a dropdown for 'In_Instrumentname' and a dropdown for 'Then by:' with 'Hi_Calibrationdate' selected. There are 'AZ' and 'ZA' buttons next to each dropdown. At the bottom, there are 'Cancel', '<< Back', 'Next >>', and 'Finish' buttons. A yellow callout box on the left says: 'Choose "CI_Classname" under this drop-down and then click "0-6 inch calipers" in the list box.' A yellow callout box on the top right says: 'Choose "In_Instrument name" and then click the AZ button to the right.' A yellow callout box on the bottom right says: 'Then choose "Hi_Calibrationdate", and click the AZ button to the right.' A yellow box at the bottom contains the text: 'Filtering allows you to report only on records which meet a certain criteria. If you would like the report to prompt you for a filter every time you open it, select "Quick Filter". Use the sort options to arrange the records in order of a given value.'

Choosing the above options will filter for records under the "0-6 inch calipers" class, and will sort results first by Instrument Name, and then by Calibration Date, both in ascending order. Next, click the "Next >>" button at the bottom. The following screen appears:

The screenshot shows the 'Report Wizard' dialog box at the 'Format' step. The title bar reads 'Report Wizard'. The main question is 'How should the report be formatted?'. At the top left, there is a 'Wizard is Complete!' button with a checkered flag icon. Below it, there are two sections: 'Orientation' with radio buttons for 'Portrait' (selected) and 'Landscape'; and 'Row formatting' with radio buttons for 'Row Lines', 'Row Boxes', and 'No formatting' (selected). At the bottom, there are 'Cancel', '<< Back', 'Next >>', and 'Finish' buttons. A yellow callout box on the right says: 'Leave the options on this page as shown and click the "Finish" button at the bottom right to preview the report.' A yellow box at the bottom contains the text: 'A default page orientation has been selected based on how wide your report is already going to be however you may change it at this time. Row formatting allows you to present records in a format for easier readability.'

The result is the following report:

Click "Close" at the top, and you'll be asked if you wish to name the report. Choose Yes, and then you'll be asked to save the default report name ("Report1") to something else. Change the report name from "Report1" to "Tutorial - Custom Report Test" and choose OK to save.

Instr#	Instr Name	Cal. Date
1009	Harrison caliper	4/7/2020 6:13:13 PM
1009	Harrison caliper	5/15/2020 1:19:02 PM
1009	Harrison caliper	7/15/2020 11:26:15 AM

After saving, you'll see your new report listed on the custom reports tab.

Custom report names are stored in this list box.

Click a custom report name, and then click "Preview Report" (to re-open a custom report), Edit Report, Rename Report, or Delete Report.

Reports Return To Switchboard

Built-In Reports Custom Reports

Custom Reports: Tutorial - Custom Report Test

Create Report... Edit Report... Rename Report... Delete Report Preview Report

Licensed to: Any Company, Inc. - Any City USA

25) End of Tutorial.