Auto Correlator
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Using the Auto Correlator feature to set alarms in the *eDART*™:

Things to have prior to running experiment:
➤ Install latest/greatest *eDART*™ Utilities software (on your Sales Meeting CD)
➤ Markers
➤ Something to contain the samples – box / bag etc.

eDART™ must be running. Our sample test was D II with 3 hold pressures to create 'almost short', 'good' and 'almost flashed' parts.

Part Sampling:
➤ Set process for first sample run
➤ Bring up the Summary Graph in the *eDART*™ and click on the Part Sampling button at the top of the screen.
➤ Mark each sample accordingly as it is ejected from the mold

The following screen will appear:

1. Click on Start new data file (only once)

2. Choose how many shots you want in your study

3. Name the test group – something clear and relevant

4. Give the details of this stage of the test under Additional notes – what your settings are and what you are testing

Once you have entered all in all of your information it should look something like this:
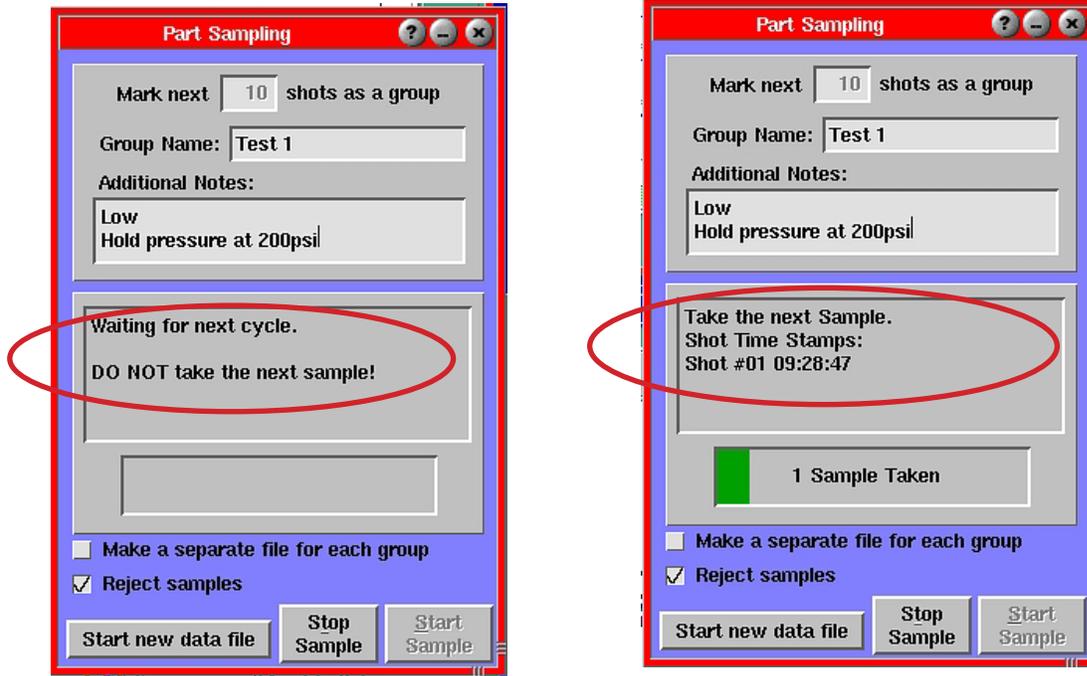
You may now press the Start Sample Button

The screen will tell you when you can begin taking samples from the machine.

Mark each part accordingly. The screen will indicate when the sample has finished. Make the necessary process changes for the second group. You then enter the information for the second test and click on 'Start Sample' just as in the first.
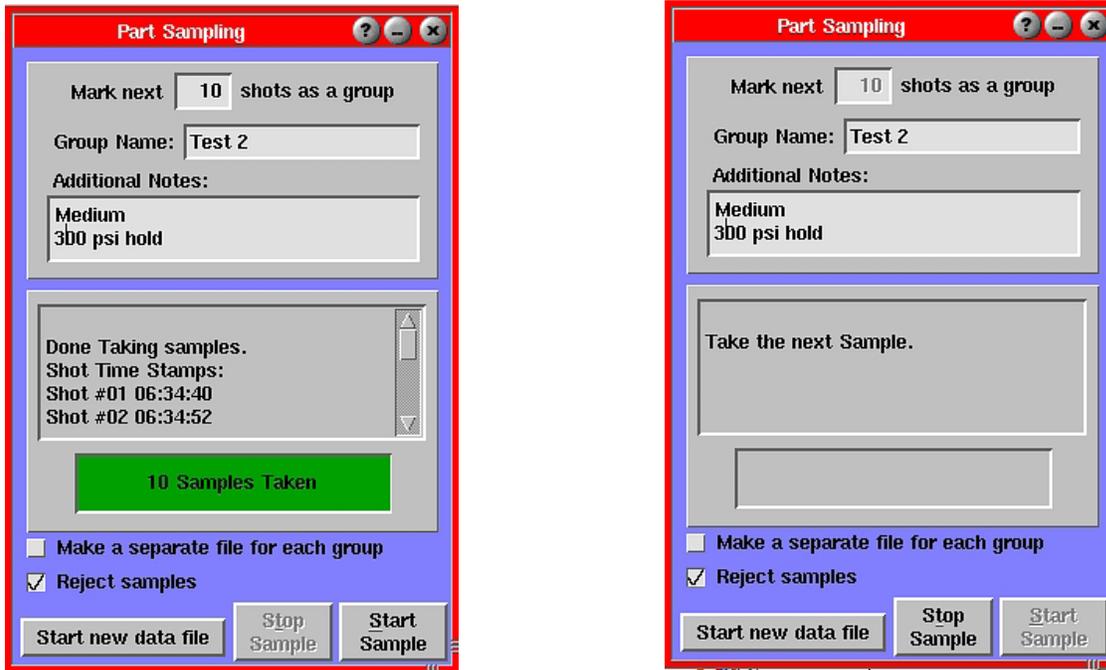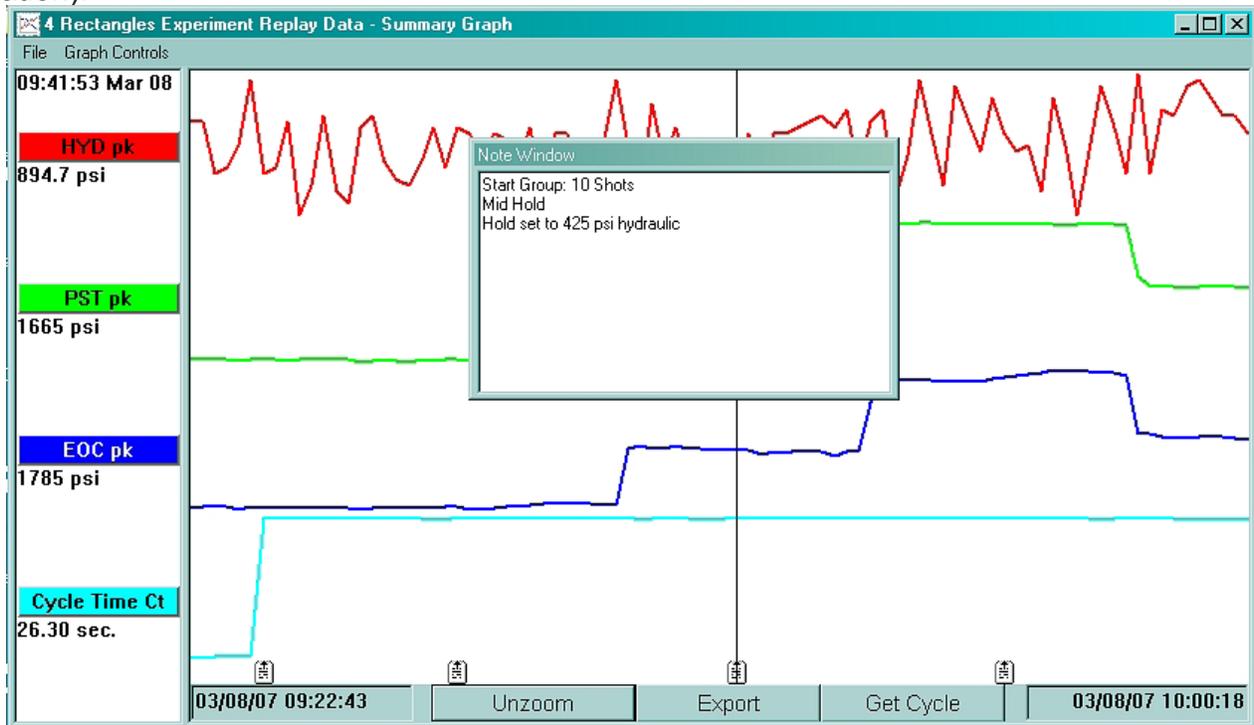

At the end of each test segment a note will appear in the Summary Graph at the point at which the samples were taken.

Repeat for previous steps for 3rd test (minimum of 3 process changes necessary for good correlation).

At this point the parts would be sent to QC for measurement. Make sure that all parts are grouped and labeled

Data Transfer:

To Transfer Data from *eDART™* to Windows®:
You will need:
➤ Laptop
➤ Cross over cable

Hook your laptop to the *eDART™* where you ran the data using the cross over cable.

Open the RJG System folder and double click on *eDART™* Data Extractor. This will launch the program.

The *eDART™* Data Extractor screen will pop up and show a list of the molds that have run on the *eDART™* that you are connected to.
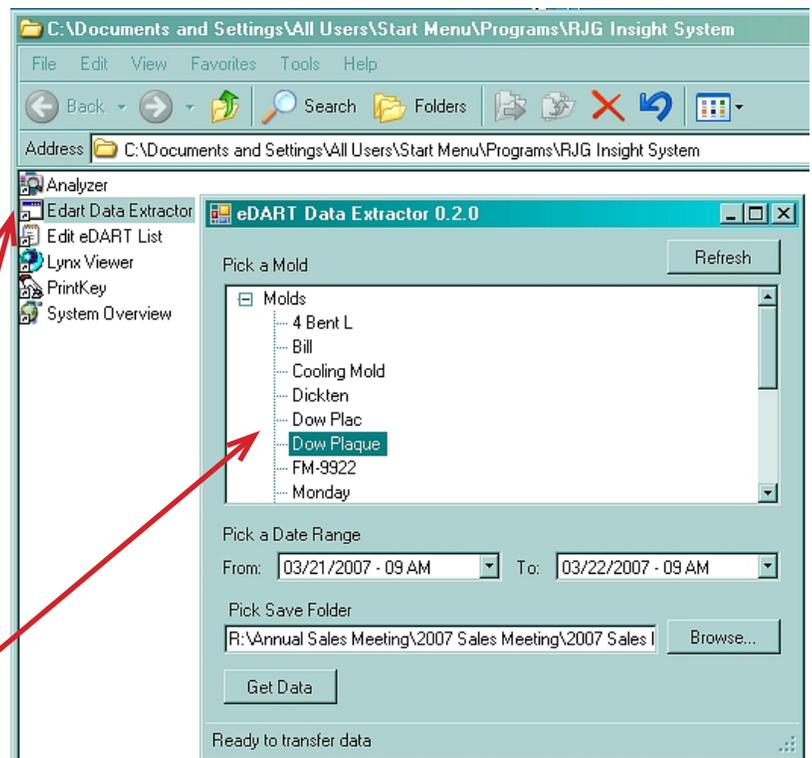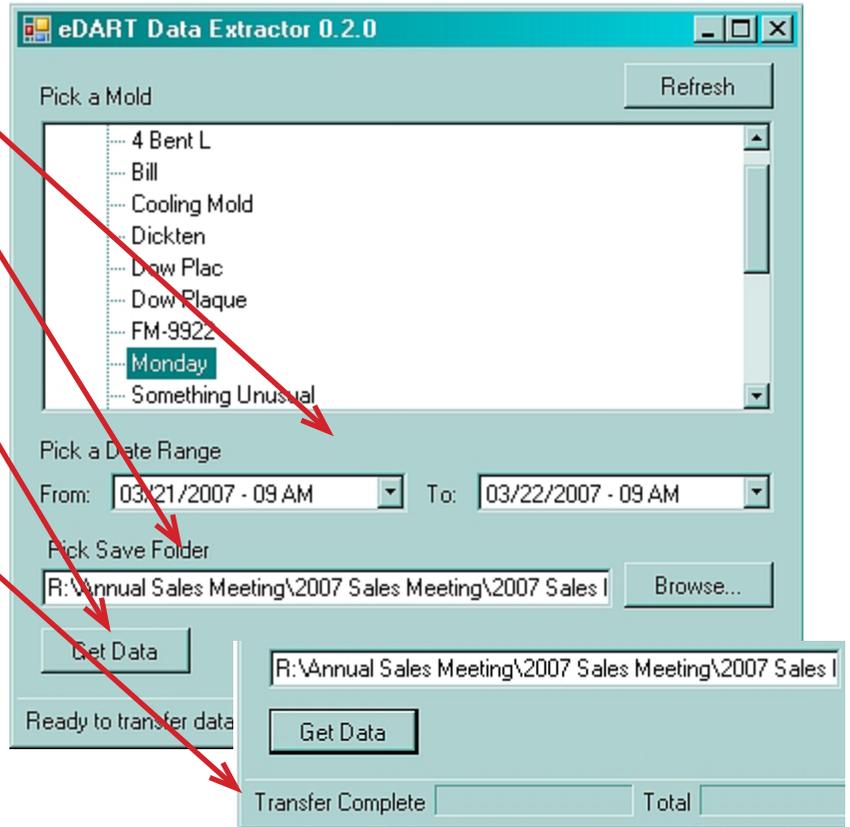
Once this opens, choose the day and time of the data that you wish to see.

Then go to the "Pick Save Folder" option and choose where you wish to save the data.

Once you have done this click on the "Get Data" button.

When transfer of data is complete it will indicate on the bottom of the screen.

Close the application and continue with instructions below.

To View Data and Enter Part Measurements:
Go to the RJG Insight System folder and double click on Analyzer. This folder can be found on the *eDART* System™ Utilities CD if not already on your computer. This screen will appear:
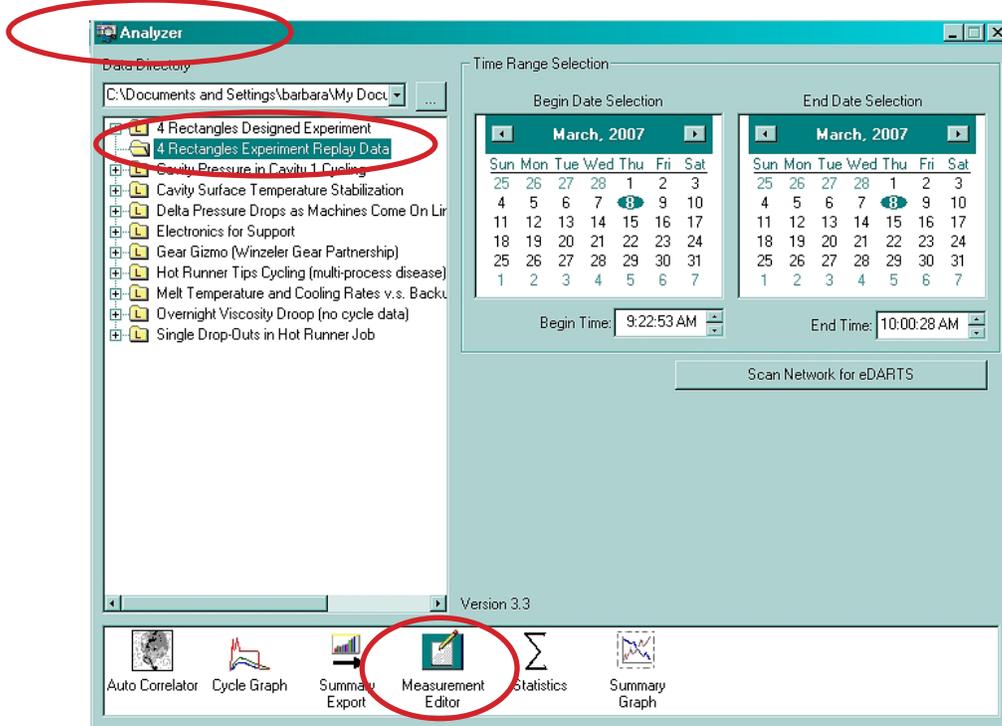
The location of your data will be in the Data Directory window at the top of the screen. Make sure that the path is highlighted in the window below the location and double click on Measurement Editor.

This screen will pop up:
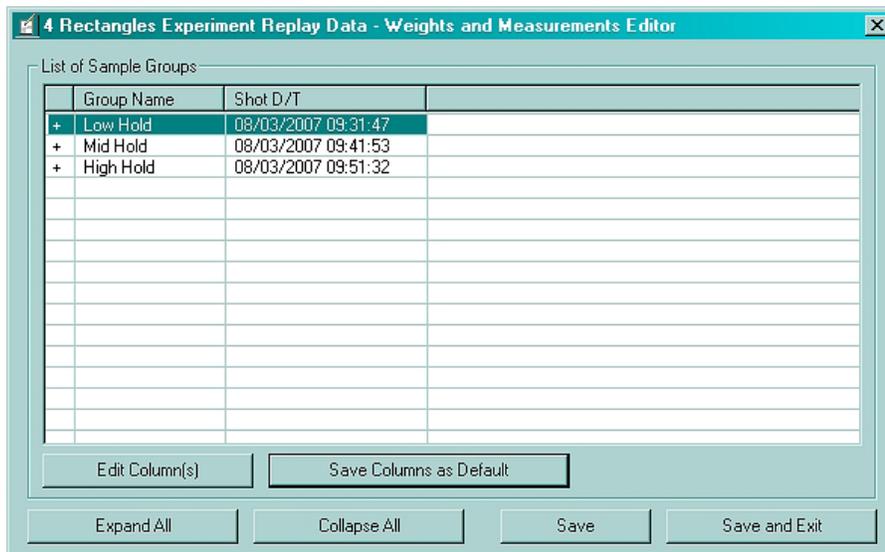
Once this screen appears you will need to expand the columns under the data labels by clicking on the + sign in front of the Group name as seen below.
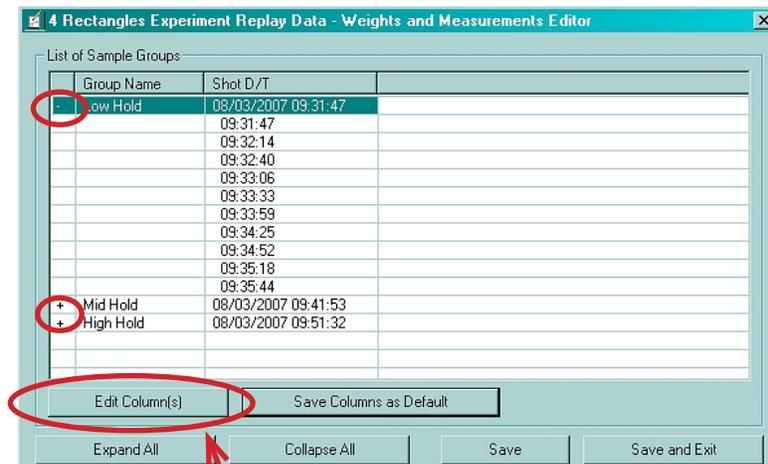
Do this for all groups. Then, Click on the Edit Column button.

With this screen you can add a column to the Measurement Editor. Click on "Add Column" button.
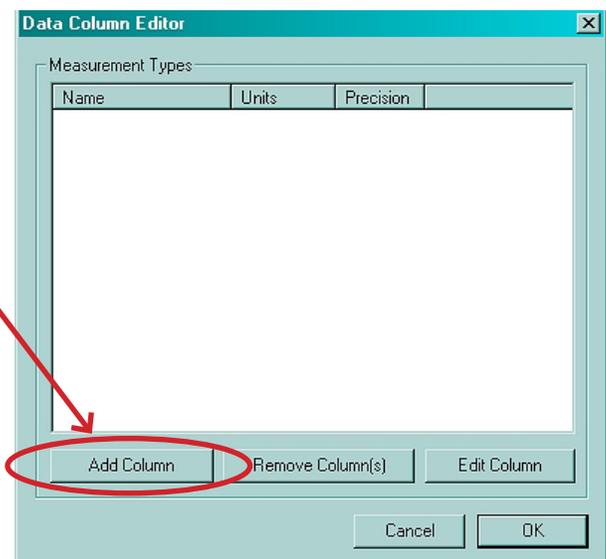
When this screen appears – choose your measurement type from the pull down menu. . Its designation will be based on what you are measuring for this study. In this case "Length". Then choose the units of measure. In this case "in" is being used. Choose the precision and hit OK.

The screen should look like the one on the below:
Click on OK. You should now see a column on the Measurement Editor that is labeled Length to the right of the Group Name.
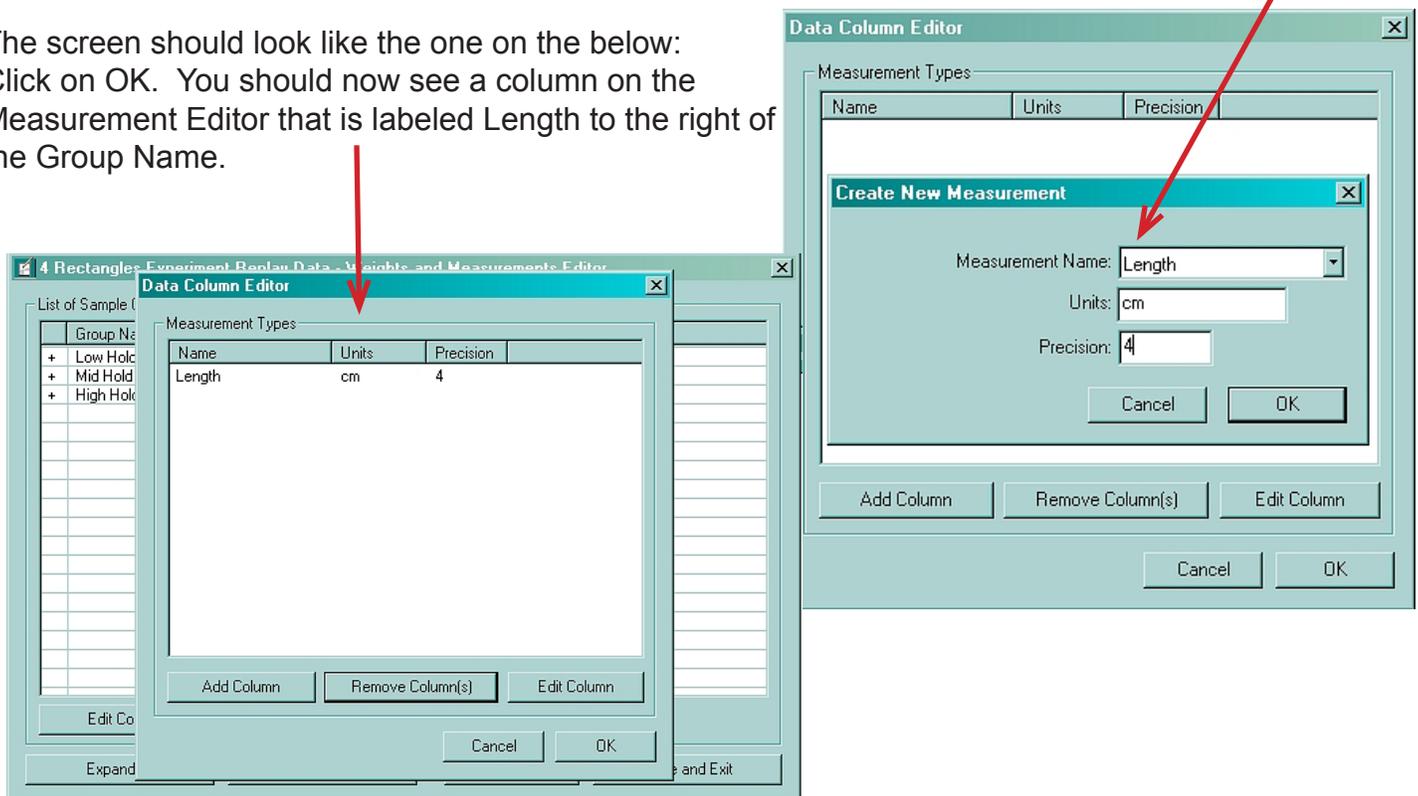
With the column added, you can now enter the data for each part. This can either be done by hand – typing in each number – or can be copy and pasted from Excel if this is how you logged the data when you first obtained it.

The screen should look like this after the data has been entered.

Hit "Save and Exit".
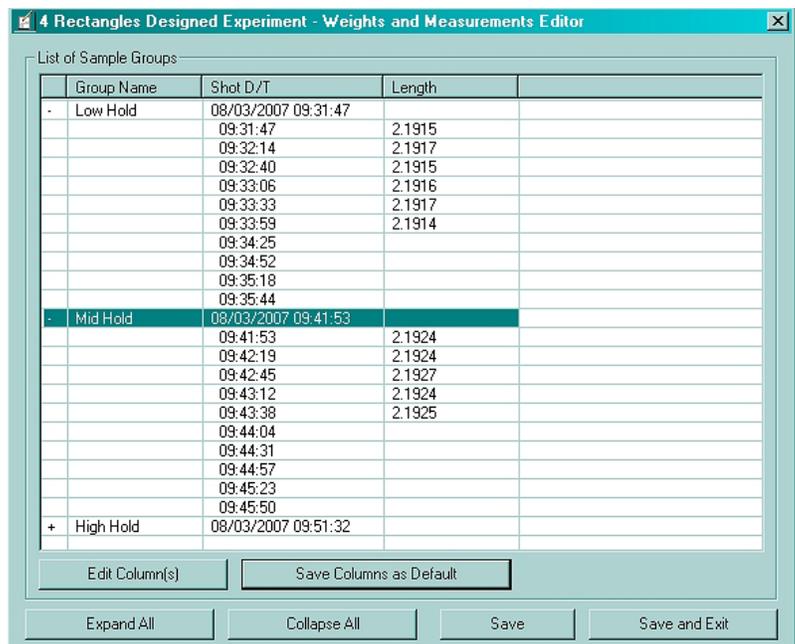
This returns you to the Analyzer. With your data location highlighted - double click on the Auto Correlator.

This screen will appear. When you click on the drop down menu, the options for measurement will be there. Choose the one you want – in this case – "Length". Once this is chosen the results of your data correlation will appear in the screen.

4 Rectangles Experiment Replay Data - Auto Part Measurement Correlator

Correlate to Part Measurement: ☐ Correlate to Any Value (not just part measurements)

☑ Correlate Only to In-Cavity Values

Data Type	Data Location	%

4 Rectangles Designed Experiment - Auto Part Measurement Correlator

Correlate to Part Measurement: ☐ Correlate to Any Value (not just part measurements)

Length ☑ Correlate Only to In-Cavity Values

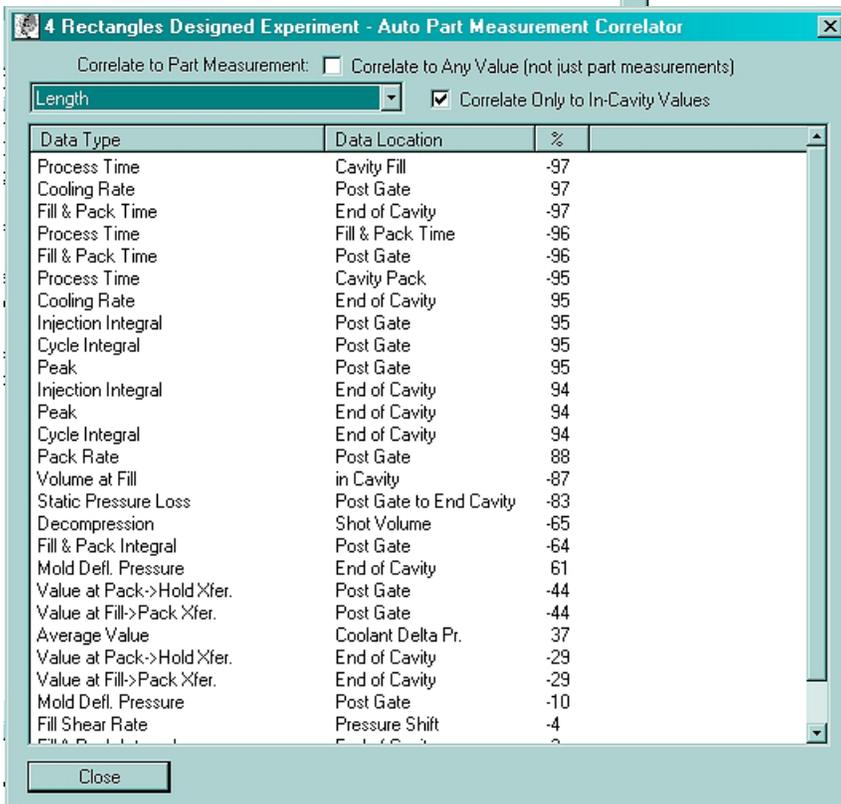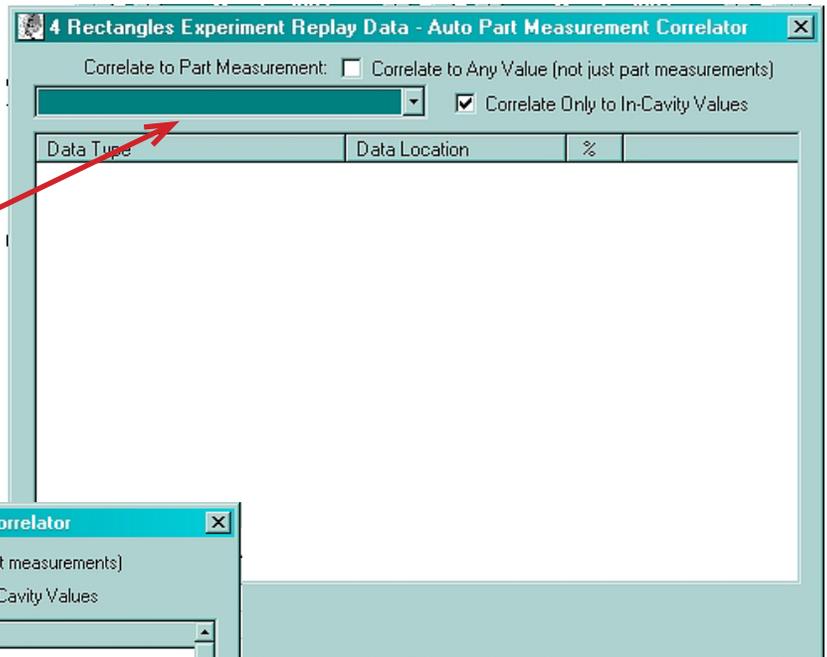| Data Type	Data Location	%
Process Time	Cavity Fill	-97
Cooling Rate	Post Gate	97
Fill & Pack Time	End of Cavity	-97
Process Time	Fill & Pack Time	-96
Fill & Pack Time	Post Gate	-96
Process Time	Cavity Pack	-95
Cooling Rate	End of Cavity	95
Injection Integral	Post Gate	95
Cycle Integral	Post Gate	95
Peak	Post Gate	95
Injection Integral	End of Cavity	94
Peak	End of Cavity	94
Cycle Integral	End of Cavity	94
Pack Rate	Post Gate	88
Volume at Fill	in Cavity	-87
Static Pressure Loss	Post Gate to End Cavity	-83
Decompression	Shot Volume	-65
Fill & Pack Integral	Post Gate	-64
Mold Defl. Pressure	End of Cavity	61
Value at Pack->Hold Xfer.	Post Gate	-44
Value at Fill->Pack Xfer.	Post Gate	-44
Average Value	Coolant Delta Pr.	37
Value at Pack->Hold Xfer.	End of Cavity	-29
Value at Fill->Pack Xfer.	End of Cavity	-29
Mold Defl. Pressure	Post Gate	-10
Fill Shear Rate	Pressure Shift	-4

Close

Setting Alarms:

Using the data obtained from the Auto Correlator you can now determine your alarm settings. Select a variable that is cavity based with a correlation that is ≥ + or -94%.

From those numbers you can see which part of the process shows the highest correlation and would be a good choice for monitoring alarms. When determining the setting the rule of thumb is that the bottom alarm should be set 1/3 above the lowest setting on your test and the high alarm should be 1/3 below the highest setting used in your test.

If you are still getting rejects after setting the alarms, give the part to QC to check and see if it is really a bad part. If so, then tighten the alarms accordingly.